AGENDA

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

September 4, 2018

REGULAR MEETING – 6:00 PM

City Council Study Sessions
Second Tuesday of each month – 6:00 p.m.

City Council Meetings
Special Presentations – 5:30 P.M.
First & Third Tuesday of each month – 6:00 p.m.

City Council Closed Session
Will be scheduled as needed at 4:30 p.m.

City Hall Council Chamber – 14177 Frederick Street

Upon request, this agenda will be made available in appropriate alternative formats to persons with disabilities, in compliance with the Americans with Disabilities Act of 1990. Any person with a disability who requires a modification or accommodation in order to participate in a meeting should direct such request to Guy Pegan, ADA Coordinator, at 951.413.3120 at least 72 hours before the meeting. The 72-hour notification will enable the City to make reasonable arrangements to ensure accessibility to this meeting.

Dr. Yxstian A. Gutierrez, Mayor

Victoria Baca, Mayor Pro Tem — David Marquez, Council Member
Ulises Cabrera, Council Member — Jeffrey J. Giba, Council Member

AGENDA
CITY COUNCIL OF THE CITY OF MORENO VALLEY
September 4, 2018

CALL TO ORDER - 5:30 PM

SPECIAL PRESENTATIONS

1. Business Spotlight

2. Proclamation Recognizing September as National Preparedness Month

3. Presentation recognizing the Moreno Valley Police Department Officer of the First Quarter, Mario Chavez

4. Recognition of Mary Hackworth as the MVPD Classified Employee of the first quarter.

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

THE CITY COUNCIL RECEIVES A SEPARATE STIPEND FOR CSD MEETINGS

REGULAR MEETING – 6:00 PM
SEPTEMBER 4, 2018

CALL TO ORDER

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

PLEDGE OF ALLEGIANCE

INVOCATION

Lieutenant Jen Liggett, Salvation Army

ROLL CALL

INTRODUCTIONS

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

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

Those wishing to speak should complete and submit a BLUE speaker slip to the Sergeant-at-Arms. There is a three-minute time limit per person. All remarks and questions shall be addressed to the presiding officer or to the City Council.

JOINT CONSENT CALENDARS (SECTIONS A-D)

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

A. CONSENT CALENDAR-CITY COUNCIL

A.1. ORDINANCES - READING BY TITLE ONLY - THE MOTION TO ADOPT AN ORDINANCE LISTED ON THE CONSENT CALENDAR INCLUDES WAIVER OF FULL READING OF THE ORDINANCE.

Recommendation: Waive reading of all Ordinances.

A.2. MINUTES - CITY COUNCIL - CLOSED SESSION - AUG 21, 2018 4:30 PM

Recommendation: Approve as submitted.

A.3. MINUTES - CITY COUNCIL - REGULAR MEETING - AUG 21, 2018 6:00 PM

Recommendation: Approve as submitted.

A.4. APPROVE FIRST AMENDMENT TO MEMORANDUM OF UNDERSTANDING FOR MORENO VALLEY COLLEGE PROMISE INITIATIVE (Report of: City Clerk)

Recommendations:

1. Approve the First Amendment to Memorandum of Understanding between the City of Moreno Valley and Riverside Community College District to extend support for first year Moreno Valley resident students attending Moreno Valley College via the Promise Initiative.

2. Authorize the City Manager to execute the attached Memorandum of Understanding with Riverside Community College District and authorize the one-time $50,000 expenditure.

3. Authorize a budget adjustment to the General Fund budget as set forth in the Fiscal Impact section of this report.

A.5. MAYORAL APPOINTMENTS TO THE EMERGING LEADERS COUNCIL AND THE PLANNING COMMISSION (Report of: City Clerk)

Recommendation:

1. Receive and confirm the Mayoral appointments as follows:

<u>Emerging Leaders Council</u>

Name	Position	Term
Wendy Acuna	Member	Ending 05/31/19

<u>Planning Commission</u>

Name	Position	Term
Robert Harris	Member	Ending 03/31/2021
JoAnn Stephan	Member	Ending 03/31/2021

A.6. 2018 CITY COUNCIL COMMISSION, BOARD, AND TASKFORCE PARTICIPATION APPOINTMENTS (Report of: City Clerk)

Recommendations: That the City Council:

1. Ratify the appointments to the various committees as noted on the Revised 2018 Council Committee Participation List – Terms End December 31, 2018.

A.7. LIST OF PERSONNEL CHANGES (Report of: Human Resources)

Recommendation:

1. Ratify the list of personnel changes as described.

A.8. AUTHORIZATION TO AWARD BID TO ENCO UTILITY SERVICES MORENO VALLEY LLC FOR THE MVU STREETLIGHT LED RETROFIT PROJECT NO. 805 0053 (Report of: Financial & Management Services)

Recommendations:

1. Award the Bid to ENCO Utility Services Moreno Valley LLC, the lowest responsible bidder, for the MVU Streetlight Retrofit project in the amount of $461,537 including a 15% contingency of $69,231 for a project total not to exceed $530,768.

2. Authorize the Chief Financial Officer/City Treasurer to execute any subsequent related minor change orders to the contract with ENCO Utility Services Moreno Valley LLC up to, but not exceeding, the contingencies for the project as stated in the report, subject to the approval of the City Attorney.

A.9. AWARD OF AN AGREEMENT FOR SPECIAL DISTRICTS CONSULTING SERVICES TO MULTIPLE CONSULTANTS (Report of: Public Works)

Recommendations:

1. Approve each Agreement for Project Related Services, in substantially the form attached hereto, with NBS, Webb Municipal Finance, LLC, and Willdan Financial Services to provide special tax consulting services on an as-needed basis for individual not-to exceed amounts of $150,000.

2. Authorize the City Manager to execute the Agreements and subject to the approval of the City Attorney, and provided sufficient funding appropriations and program approvals have been granted by the City Council, authorize the Public Works Director/City Engineer to execute project specific agreements in accordance with the terms of the Agreements.

A.10. PA13-0063 – MODULAR LOGISTICS CENTER - ADOPTION OF THE PROPOSED RESOLUTION FOR THE SUMMARY VACATION OF A PORTION OF EDWIN ROAD LOCATED ON THE SOUTH SIDE OF EDWIN ROAD WEST OF KITCHING STREET. DEVELOPER: 17350 PERRIS BOULEVARD, LLC (Report of: Public Works)

Recommendations:

1. Adopt Resolution No. 2018-XX. A Resolution of the City Council of the City of Moreno Valley, California, Ordering the Summary Vacation of a Portion of Edwin Road Located on the South Side of Edwin Road West of Kitching Street.

2. Direct the City Clerk to certify said resolution and transmit a copy of the resolution to the County Recorder's office for recording.

A.11. APPROVE THE FIRST AMENDMENT TO AGREEMENT FOR PROFESSIONAL CONSULTANT SERVICES WITH KOA FOR THE JUAN BAUTISTA DE ANZA MULTI-USE TRAIL - PHASE 2, PROJECT NO. 801 0077 (Report of: Public Works)

Recommendations:

1. Approve the First Amendment to Agreement for Professional Consultant Services with KOA Corporation to provide design consultant services for the Juan Bautista De Anza Multi-Use Trail Phase 2 Segment from El Portero Park to Lake Perris State Recreation Area.

2. Authorize the City Manager to execute the First Amendment to Agreement for Professional Consultant Services with KOA Corporation.

3. Authorize a Change Order to increase the Purchase Order with KOA Corporation for the amount of $192,386.00 when the First Amendment has been signed by all parties.

4. Authorize the Public Works Director/City Engineer to execute any subsequent related amendments to the Agreement for Professional Consultant Services with KOA, not to exceed the Purchase Order amount, subject to the approval by the City Attorney.

5. Authorize the Chief Financial Officer to approve a budget adjustment to transfer the grant funds from Project No. 801 0080 (Fund 2301) to Project No. 801 0077 (Fund 2301) for the Juan Bautista De Anza Multi-Use Trail Phase 2 as set forth in the fiscal impact section of this report.

A.12. ACCEPTANCE OF THE FISCAL YEAR 2018 BUREAU OF JUSTICE ASSISTANCE EDWARD BYRNE MEMORIAL JUSTICE ASSISTANCE GRANT PROGRAM AWARD (Report of: Community Development)

Recommendation:

1. Accept the Fiscal Year 2018 Bureau of Justice Assistance Edward Byrne Memorial Justice Assistance Grant Program grant award of $42,900 through the City of Riverside Police Department.

2. Authorize the City Manager, or his designee, to execute for and on behalf of the City of Moreno Valley, agreements and other related documents required by the Bureau of Justice Assistance for participation in the Edward Byrne Memorial Justice Assistance Grant Program, subject to the approval of the City Attorney.

3. Authorize the Chief Financial Officer, or his designee, to make any necessary budget adjustment appropriations related to expenditures and revenues for Fiscal Year 2018/2019 as outlined in the Fiscal Impact section of this report.

A.13. Second Reading and Adoption for Ordinance No. 941 (Report of: Community Development)

Recommendation:

That the City Council adopt Ordinance No. 941.

B. CONSENT CALENDAR-COMMUNITY SERVICES DISTRICT

B.1. ORDINANCES - READING BY TITLE ONLY - THE MOTION TO ADOPT AN ORDINANCE LISTED ON THE CONSENT CALENDAR INCLUDES WAIVER OF FULL READING OF THE ORDINANCE.

Recommendation: Waive reading of all Ordinances.

B.2. MINUTES - CLOSED SESSION OF AUG 21, 2018 4:30 PM (See A.2)

Recommendation: Approve as submitted.

B.3. MINUTES - REGULAR MEETING OF AUG 21, 2018 6:00 PM (See A.3)

Recommendation: Approve as submitted.

C. CONSENT CALENDAR - HOUSING AUTHORITY

C.1. ORDINANCES - READING BY TITLE ONLY - THE MOTION TO ADOPT AN ORDINANCE LISTED ON THE CONSENT CALENDAR INCLUDES WAIVER OF FULL READING OF THE ORDINANCE.

Recommendation: Waive reading of all Ordinances.

C.2. MINUTES - CLOSED SESSION OF AUG 21, 2018 4:30 PM (See A.2)

Recommendation: Approve as submitted.

C.3. MINUTES - REGULAR MEETING OF AUG 21, 2018 6:00 PM (See A.3)

Recommendation: Approve as submitted.

D. CONSENT CALENDAR - BOARD OF LIBRARY TRUSTEES

D.1. ORDINANCES - READING BY TITLE ONLY - THE MOTION TO ADOPT AN ORDINANCE LISTED ON THE CONSENT CALENDAR INCLUDES WAIVER OF FULL READING OF THE ORDINANCE.

Recommendation: Waive reading of all Ordinances.

D.2. MINUTES - CLOSED SESSION OF AUG 21, 2018 4:30 PM (See A.2)

Recommendation: Approve as submitted.

D.3. MINUTES - REGULAR MEETING OF AUG 21, 2018 6:00 PM (See A.3)

Recommendation: Approve as submitted.

E. PUBLIC HEARINGS

Questions or comments from the public on a Public Hearing matter are limited to five minutes per individual and must pertain to the subject under consideration.

Those wishing to speak should complete and submit a GOLDENROD speaker slip to the Sergeant-at-Arms.

E.1. A GENERAL PLAN AMENDMENT, CHANGE OF ZONE, AND CONDITIONAL USE PERMIT FOR DEVELOPMENT OF A DONUT STORE / CONVENIENCE STORE WITH GASOLINE SALES LOCATED AT THE NORTHEAST CORNER OF PERRIS BOULEVARD AND COTTONWOOD AVENUE. (Report of: Community Development)

Recommendations: That the City Council:

1. **ADOPT** Resolution No. 2018-XX: A Resolution of the City Council of the City of Moreno Valley **CERTIFYING** the Mitigated Negative Declaration prepared for the Yum Yum Donuts Moreno Valley project, inclusive of all related applications on file with the Community Development Department, incorporated herein by this reference, whereby the Mitigated Negative Declaration has been completed in compliance with the California Environmental Quality Act, and the information and findings contained in the Mitigated Negative Declaration reflects the City's independent judgment and analysis; and **ADOPTING** the Mitigation Monitoring and Reporting Program prepared for the Yum Yum Donuts Moreno Valley project; and

2. **ADOPT** Resolution No. 2018-XX: A Resolution of the City Council of the City of Moreno Valley approving General Plan Amendment PEN16-0086, based on the findings contained in this resolution, and as shown on the attachment included as Exhibit A; and

3. **INTRODUCE** and conduct the first reading by title only of Ordinance No. 2018-XX approving a Zone Change (PEN16-0087) from Office Commercial (OC) to Community Commercial (CC) for the areas described in the Ordinance, based on the findings in the Ordinance, and the revised Zoning Atlas; and

4. **ADOPT** Resolution No. 2018-XX: A Resolution of the City Council of the City of Moreno Valley approving Conditional Use Permit PEN16-0088 based on the findings contained in this resolution, and subject to the conditions of approval included as Exhibit A; and

5. **SCHEDULE** the introduced Ordinance for second reading and final action for the next regular City Council meeting.

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

G. GENERAL BUSINESS

G.1. AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, ADDING CHAPTER 12.45 "PARKING REGULATIONS FOR VEHICLES CONNECTED FOR ELECTRIC CHARGING PURPOSES" TO THE MORENO VALLEY MUNICIPAL CODE (Report of: Financial & Management Services)

Recommendation:

1. Introduce and conduct the first reading by title only of Ordinance No. XX. An Ordinance of the City Council of the City of Moreno Valley, California, adding Chapter 12.45 “Parking Regulations for Vehicles Connected for Electric Charging Purposes” to the Moreno Valley Municipal Code.

G.2. RESOLUTION OF THE CITY OF MORENO VALLEY SERVING AS THE SUCCESSOR AGENCY FOR THE COMMUNITY REDEVELOPMENT AGENCY OF THE CITY OF MORENO VALLEY APPROVING THE AMENDED RECOGNIZED OBLIGATION PAYMENT SCHEDULE FOR THE PERIOD OF JANUARY 1, 2019 THROUGH JUNE 30, 2019 (ROPS 18-19B) (Report of: Financial & Management Services)

Recommendations: That the City Council as Successor Agency:

1. Adopt Resolution No. SA 2018-04. A Resolution of the City Council of the City of Moreno Valley, California, Serving as Successor Agency to the Community Redevelopment Agency of the City of Moreno Valley Approving the Amended Recognized Obligation Payment Schedule for the Period of January 1, 2019 through June 30, 2019 (ROPS 18-19B), and Authorizing the City Manager acting for the Successor Agency or her Designee to Make Modifications Thereto.

2. Authorize the City Manager acting for the Successor Agency or her Designee to make modifications to the Schedule.

3. Authorize the transmittal of the ROPS 18-19B, for the period of January 1, 2019 through June 30, 2019, ("Exhibit A") to the Oversight Board for review and approval.

H. REPORTS

H.1. CITY COUNCIL REPORTS

(Informational Oral Presentation - not for Council action)

March Joint Powers Commission (JPC)

Riverside County Habitat Conservation Agency (RCHCA)

Riverside County Transportation Commission (RCTC)

Riverside Transit Agency (RTA)

Western Riverside Council of Governments (WRCOG)

Western Riverside County Regional Conservation Authority (RCA)

School District/City Joint Task Force

H.2. CITY MANAGER'S REPORT

(Informational Oral Presentation - not for Council action)

H.3. CITY ATTORNEY'S REPORT

(Informational Oral Presentation - not for Council action)

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

ADJOURNMENT

PUBLIC INSPECTION

The contents of the agenda packet are available for public inspection on the City's website at www.moval.org and in the City Clerk's office at 14177 Frederick Street during normal business hours.

Any written information related to an open session agenda item that is known by the City to have been distributed to all or a majority of the City Council less than 72 hours prior to this meeting will be made available for public inspection on the City's website at www.moval.org and in the City Clerk's office at 14177 Frederick Street during normal business hours.

CERTIFICATION

I, Pat Jacquez-Nares, City Clerk of the City of Moreno Valley, California, certify that 72 hours prior to this Regular Meeting, the City Council Agenda was posted on the City's website at: www.moval.org and in the following three public places pursuant to City of Moreno Valley Resolution No. 2007-40:

City Hall, City of Moreno Valley
14177 Frederick Street

Moreno Valley Library
25480 Alessandro Boulevard

Moreno Valley Senior/Community Center
25075 Fir Avenue

Pat Jacquez-Nares, CMC & CERA
City Clerk

Date Posted: August 30, 2018

TO:

FROM: Pat Jacquez-Nares, City Clerk

AGENDA DATE: September 4, 2018

TITLE: BUSINESS SPOTLIGHT

RECOMMENDED ACTION

CITY COUNCIL GOALS

None

CITY COUNCIL STRATEGIC PRIORITIES

1. **Economic Development**
2. **Public Safety**
3. **Library**
4. **Infrastructure**
5. **Beautification, Community Engagement, and Quality of Life**
6. **Youth Programs**

ATTACHMENTS

None

APPROVALS

TO:

FROM: Pat Jacquez-Nares, City Clerk

AGENDA DATE: September 4, 2018

TITLE: PROCLAMATION RECOGNIZING SEPTEMBER AS NATIONAL PREPAREDNESS MONTH

RECOMMENDED ACTION

CITY COUNCIL GOALS

None

CITY COUNCIL STRATEGIC PRIORITIES

1. **Economic Development**
2. **Public Safety**
3. **Library**
4. **Infrastructure**
5. **Beautification, Community Engagement, and Quality of Life**
6. **Youth Programs**

ATTACHMENTS

None

APPROVALS

TO:

FROM: Pat Jacquez-Nares, City Clerk

AGENDA DATE: September 4, 2018

TITLE: PRESENTATION RECOGNIZING THE MORENO VALLEY POLICE DEPARTMENT OFFICER OF THE FIRST QUARTER, MARIO CHAVEZ

RECOMMENDED ACTION

CITY COUNCIL GOALS

None

CITY COUNCIL STRATEGIC PRIORITIES

1. **Economic Development**
2. **Public Safety**
3. **Library**
4. **Infrastructure**
5. **Beautification, Community Engagement, and Quality of Life**
6. **Youth Programs**

ATTACHMENTS

None

APPROVALS

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

CLOSED SESSION – 4:30 PM
August 21, 2018

CALL TO ORDER

The Closed Session of the City Council of the City of Moreno Valley, Moreno Valley Community Services District, City as Successor Agency for the Community Redevelopment Agency of the City of Moreno Valley, and Housing Authority was called to order at 4:30 p.m. by Mayor Gutierrez in the Council Chamber located at 14177 Frederick Street, Moreno Valley, California.

Mayor Gutierrez announced that the City Council receives a separate stipend for CSD meetings.

ROLL CALL

Council:	Dr. Yxstian A. Gutierrez	Mayor
	Victoria Baca	Mayor Pro Tem
	Ulises Cabrera	Council Member
	Jeffrey J. Giba	Council Member
Absent:	David Marquez	Council Member

PUBLIC COMMENTS ON MATTERS ON THE AGENDA ONLY

Mayor Gutierrez opened the public comments portion of the meeting for items listed on the agenda only. There being no members of the public to come forward to speak, he closed the public comments.

CLOSED SESSION

City Attorney Koczanowicz announced that the City Council would recess to Closed Session to discuss the item as listed on the agenda and that staff did not anticipate any reportable action.

The Closed Session will be held pursuant to Government Code:

1. SECTION 54956.9(d)(1) - EXISTING LITIGATION 1 case Middlebrooks v. City of Moreno Valley

2. SECTION 54956.9(d)(4) - ANTICIPATED LITIGATION 1 case

Mayor Gutierrez recessed the Council to the City Manager's Conference Room, second floor, City Hall, for their Closed Session at 4:31 p.m.

Mayor Gutierrez reconvened the City Council in the Council Chamber from their Closed Session at 5:27 p.m.

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

City Attorney Koczanowicz reported there was no reportable action taken in Closed Session.

ADJOURNMENT

There being no further business to come before the City Council, Mayor Gutierrez adjourned the Closed Session at 5:28 p.m.

Submitted by:

____

Pat Jacquez-Nares, CMC & CERA, City Clerk,
Secretary, Moreno Valley Community Services District
Secretary, City as Successor Agency for the Community
Redevelopment Agency of the City of Moreno Valley
Secretary, Moreno Valley Housing Authority
Secretary, Board of Library Trustees

Approved by:

____

Dr. Yxstian A. Gutierrez
Mayor
City of Moreno Valley
President, Moreno Valley Community Services District
Chairperson, City as Successor Agency for the Community
Redevelopment Agency of the City of Moreno Valley
Chairperson, Moreno Valley Housing Authority
Chairperson, Board of Library Trustees

MINUTES
CITY COUNCIL REGULAR MEETING OF THE CITY OF MORENO VALLEY
August 21, 2018

CALL TO ORDER - 5:30 PM

SPECIAL PRESENTATIONS

1. Recognition of the Independence Day and Funfest Sponsors: 1) Skechers - Presenting Sponsor 2) Waste Management - Liberty Sponsor 3) Sares-Regis – Patriot Sponsor

2. Recognition of the Independence Day Parade Award Winners

3. Recognition of the Moreno Valley Unified School District Essay Contest Award Winners

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

REGULAR MEETING – 6:00 PM
August 21, 2018

CALL TO ORDER

The Joint Meeting of the City Council, Community Services District, City as Successor Agency for the Community Redevelopment Agency of the City of Moreno Valley, Moreno Valley Housing Authority and the Board of Library Trustees was called to order at 6:00 p.m. by Mayor Gutierrez in the Council Chamber located at 14177 Frederick Street.

PLEDGE OF ALLEGIANCE

The Pledge of Allegiance was led by Frank Wright.

INVOCATION

Pastor Kurt D. King, Moreno Valley and Imani Praise Fellowship SDA Churches

ROLL CALL

Council:	Dr. Yxstian A. Gutierrez	Mayor
	Victoria Baca	Mayor Pro Tem
	Ulises Cabrera	Council Member
	Jeffrey J. Giba	Council Member
Absent:	David Marquez	Council Member

INTRODUCTIONS

Staff:	Pat Jacquez-Nares	City Clerk
	Marshall Eyerman	Chief Financial Officer/City Treasurer
	Martin Koczanowicz	City Attorney
	Tom DeSantis	City Manager
	Allen Brock	Assistant City Manager

Mike Lee	Economic Development Director
Rick Sandzimier	Community Development Director
David Kurylowicz	Chief of Police
Abdul Ahmad	Fire Chief
Kathleen Sanchez	Human Resources Director
Patti Solano	Parks and Community Services Director
Michael Wolfe	Public Works Director/City Engineer

JOINT CONSENT CALENDARS (SECTIONS A-D)

Mayor Gutierrez announced that Item No. A.22 was removed per staff's request and will be heard at the September 4, 2018 meeting.

Council Member Giba requested that Item Nos. A.6, A.10, A.12, A.13, A.16, and A.19 be removed for a separate vote.

Mayor Gutierrez opened the Consent Agenda items for public comments, which were received from Rafael Brugueras (Supports Item Nos. A.20, and A.21).

RESULT:	**APPROVED [UNANIMOUS]**
MOVER:	Victoria Baca, Mayor Pro Tem
SECONDER:	Jeffrey J. Giba, Council Member
AYES:	Dr. Yxstian A. Gutierrez, Victoria Baca, Ulises Cabrera, Jeffrey J. Giba
ABSENT:	David Marquez

A. CONSENT CALENDAR-CITY COUNCIL

A.1. ORDINANCES - READING BY TITLE ONLY - THE MOTION TO ADOPT AN ORDINANCE LISTED ON THE CONSENT CALENDAR INCLUDES WAIVER OF FULL READING OF THE ORDINANCE.

Recommendation: Waive reading of all Ordinances.

A.2. City Council - Closed Session - Jun 19, 2018 4:30 PM

Recommendation: Approve as submitted.

A.3. City Council - Regular Meeting - Jun 19, 2018 6:00 PM

Recommendation: Approve as submitted.

A.4. PAYMENT REGISTER - MAY 2018 (Report of: Financial & Management Services)

Recommendation:

1. Receive and file the Payment Register.

A.5. ADOPT A RESOLUTION CERTIFYING A MITIGATED NEGATIVE DECLARATION FOR THE MORENO MASTER DRAINAGE PLAN LINE H-2 INTERIM STORM DRAIN, PROJECT NO. 804 0016 (Report of: Public Works)

Recommendation:

1. Adopt Resolution No. 2018-66, a Resolution of the City Council of the City of Moreno Valley, California, certifying a Mitigated Negative Declaration and the Mitigation Monitoring and Reporting Program for the Moreno Master Drainage Plan Line H-2 Interim Storm Drain Project.

A.6. ITEM NO. A.6. WAS REMOVED FOR SEPARATE ACTION BY COUNCIL MEMBER GIBA AND MOVED TO ITEM NO. F.1.

A.7. PAYMENT REGISTER - JUNE 2018 (Report of: Financial & Management Services)

Recommendation:

1. Receive and file the Payment Register.

A.8. Second Reading and Adoption for Ordinance No. 939 Specific Plan Amendment and Ordinance No. 940 Change of Zone (Report of: Community Development)

Recommendation:

1. That the City Council adopt Ordinance No. 939 and Ordinance No. 940.

A.9. PURSUANT TO A LANDOWNER PETITION, ANNEX ONE PARCEL INTO COMMUNITY FACILITIES DISTRICT NO. 2014-01 (MAINTENANCE SERVICES) - AS AMENDMENT NO. 29 (Report of: Public Works)

Recommendation:

1. Acting as the legislative body of Community Facilities District No. 2014-01 (Maintenance Services), adopt Resolution No. 2018-67, a Resolution of the City Council of the City of Moreno Valley, California, ordering the annexation of territory to City of Moreno Valley Community Facilities District No. 2014-01 (Maintenance Services) and approving the amended map for said District.

A.10. ITEM NO. A.10. WAS REMOVED FOR SEPARATE ACTION BY COUNCIL MEMBER GIBA AND MOVED TO ITEM NO. F.2.

A.11. RECEIPT OF QUARTERLY INVESTMENT REPORT FOR THE QUARTER ENDED JUNE 30, 2018 (Report of: Financial & Management Services)

Recommendation:

1. Receive and file the Quarterly Investment Report for quarter ended June 30, 2018, in compliance with the City's Investment Policy.

A.12. ITEM NO. A.12. WAS REMOVED FOR SEPARATE ACTION BY COUNCIL MEMBER GIBA AND MOVED TO ITEM NO. F.3.

A.13. ITEM NO. A.13. WAS REMOVED FOR SEPARATE ACTION BY COUNCIL MEMBER GIBA AND MOVED TO ITEM NO. F.4.

A.14. PEN16-0125/PEN17-0098 – APPROVE COOPERATIVE AGREEMENT BETWEEN THE RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, THE CITY, AND DUKE REALTY, LP FOR THE PERRIS VALLEY MDP PERRIS BOULEVARD STORM DRAIN, STAGE 1 AND PERRIS VALLEY MDP LATERAL B-1, STAGE 4 LOCATED ON PERRIS BOULEVARD, NORTH OF SAN MICHELE ROAD. DEVELOPER: DUKE REALTY, LP (Report of: Public Works)

Recommendations:

1. Approve the Cooperative Agreement with the Riverside County Flood Control and Water Conservation District (the District), the City of Moreno Valley, and Duke Realty, LP for the Perris Valley Master Drainage Plan (MDP) Perris Boulevard Storm Drain, Stage 1 and Perris Valley MDP Lateral B-1, Stage 4.

2. Authorize the City Manager to execute the Cooperative Agreement.

A.15. LIST OF PERSONNEL CHANGES (Report of: Human Resources)

Recommendation:

1. Ratify the list of personnel changes as described.

A.16. ITEM NO. A.16. WAS REMOVED FOR SEPARATE ACTION BY COUNCIL MEMBER GIBA AND MOVED TO ITEM NO. F.5.

A.17. AUTHORIZATION TO SUBMIT GRANT APPLICATIONS UNDER CYCLE 9 OF THE HIGHWAY SAFETY IMPROVEMENT PLAN (HSIP) (Report of: Public Works)

Recommendation:

1. Authorize the submittal of grant applications for Cycle 9 of the Highway Safety Improvement Program (HSIP).

A.18. 2018 CITY COUNCIL COMMISSION, BOARD, AND TASKFORCE PARTICIPATION APPOINTMENTS (Report of: City Clerk)

Recommendation: That the City Council:

1. Ratify the appointments to the various committees as noted on the 2018 Council Committee Participation List – Terms End December 31, 2018.

A.19. ITEM NO. A.19. WAS REMOVED FOR SEPARATE ACTION BY COUNCIL MEMBER GIBA AND MOVED TO ITEM NO. F.6.

A.20. APPROVE FUNDING FOR SENIOR COMMUNITY CENTER FACILITY IMPROVEMENTS (Report of: Parks & Community Services)

Recommendation:

1. Approve the amended budget and funding plan for facility improvements at the Moreno Valley Senior Community Center, as contained in the Fiscal Impact section of this report.

A.21. REQUEST FOR CITY PARTICIPATION IN EL GRITO- CELEBRATING HISPANIC HERITAGE (Report of: City Clerk)

Recommendations:

1. Consider a request for City participation in El Grito- Celebrating Hispanic Heritage event.

2. Approve the City' participation in the amount of $10,000 as set forth in the Fiscal Impact section of this report.

A.22. MAYORAL APPOINTMENTS TO THE LIBRARY COMMISSION AND THE SENIOR CITIZENS' BOARD (Report of: City Clerk)

Recommendation:

1. Receive and confirm the Mayoral appointments as follows:

Library Commission

Name	Position	Term
Mona Lisa Stallworth	Member	Ending 06/30/2021

Senior Citizens' Board

Name	Position	Term
Robert Snyder	Member	Ending 06/30/2021

B. CONSENT CALENDAR-COMMUNITY SERVICES DISTRICT

B.1. ORDINANCES - READING BY TITLE ONLY - THE MOTION TO ADOPT AN ORDINANCE LISTED ON THE CONSENT CALENDAR INCLUDES WAIVER OF FULL READING OF THE ORDINANCE.

Recommendation: Waive reading of all Ordinances.

B.2. MINUTES - CLOSED SESSION OF JUNE 19, 2018 4:30 PM (See A.2)

Recommendation: Approve as submitted.

B.3. MINUTES - REGULAR MEETING OF JUNE 19, 2018 6:00 PM (See A.3)

Recommendation: Approve as submitted.

C. CONSENT CALENDAR - HOUSING AUTHORITY

C.1. ORDINANCES - READING BY TITLE ONLY - THE MOTION TO ADOPT AN ORDINANCE LISTED ON THE CONSENT CALENDAR INCLUDES WAIVER OF FULL READING OF THE ORDINANCE.

Recommendation: Waive reading of all Ordinances.

C.2. MINUTES - CLOSED SESSION OF JUNE 19, 2018 4:30 PM (See A.2)

Recommendation: Approve as submitted.

C.3. MINUTES - REGULAR MEETING OF JUNE 19, 2018 6:00 PM (See A.3)

Recommendation: Approve as submitted.

C.4. EXCLUSIVE NEGOTIATION AGREEMENT BY AND BETWEEN THE MORENO VALLEY HOUSING AUTHORITY AND RANCHO BELAGO DEVELOPERS, INC. (Report of: Financial & Management Services)

Recommendations:

1. Approve the Exclusive Negotiation Agreement by and between the Moreno Valley Housing Authority and Rancho Belago Developers, Inc.

2. Authorize the Executive Director to execute the Exclusive Negotiation Agreement, subject to the approval of the City Attorney.

D. CONSENT CALENDAR - BOARD OF LIBRARY TRUSTEES

D.1. ORDINANCES - READING BY TITLE ONLY - THE MOTION TO ADOPT AN ORDINANCE LISTED ON THE CONSENT CALENDAR INCLUDES WAIVER OF FULL READING OF THE ORDINANCE.

Recommendation: Waive reading of all Ordinances.

D.2. MINUTES - CLOSED SESSION OF JUNE 19, 2018 4:30 PM (See A.2)

Recommendation: Approve as submitted.

D.3. MINUTES - REGULAR MEETING OF JUNE 19, 2018 6:00 PM (See A.3)

Recommendation: Approve as submitted.

Mayor Gutierrez administered the oath of office to the newly appointed Library Commissioner Mona Lisa Stallworth.

AGENDA ITEMS E, F, AND G WERE TAKEN OUT OF ORDER AND REFLECTED IN THE MINUTES.

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

F.1. RATIFY THE BASELINE AGREEMENT FOR THE TRADE CORRIDOR ENHANCEMENT PROGRAM AWARD WITH THE CALIFORNIA TRANSPORTATION COMMISSION AND THE CALIFORNIA DEPARTMENT OF TRANSPORTATION, AND APPROVE DESIGN AND CONSTRUCTION COOPERATIVE AGREEMENTS WITH THE CALIFORNIA DEPARTMENT OF TRANSPORTATION FOR THE STATE ROUTE 60/MORENO BEACH PHASE 2 INTERCHANGE IMPROVEMENTS - PROJECT NO. 801 0021 (Report of: Public Works)

Public Works Director/City Engineer Wolfe provided the report.

Council Member Giba questioned whether the funds would have to be repaid should the legislation be overturned after the election in November.

Public Works Director/City Engineer Wolfe responded that there is currently no known answer.

<u>Roy Bleckert</u>
1. Requested an accounting of the collection of the fees from the Ridge project.

Recommendations:

1. Ratify the Baseline Agreement for the Trade Corridor Enhancement Program Award with the California Transportation Commission and the California Department of Transportation for the State Route 60/Moreno Beach Phase 2 Interchange Improvements;

2. Authorize the City Manager to execute the Design Cooperative Agreement (District Agreement No. 08-1685) with the California Department of Transportation when it is finalized;

3. Authorize the City Manager to execute the Construction Cooperative Agreement with the California Department of Transportation when it is received;

4. Authorize the City Manager to execute any future amendments to the Baseline Agreement and the Cooperative Agreements subject to the approval of the City Attorney;

5. Authorize the Public Works Director/City Engineer to regularly update Exhibits A and B of the Baseline Agreement.

RESULT:	**APPROVED [UNANIMOUS]**
MOVER:	Jeffrey J. Giba, Council Member
SECONDER:	Ulises Cabrera, Council Member
AYES:	Dr. Yxstian A. Gutierrez, Victoria Baca, Ulises Cabrera, Jeffrey J. Giba
ABSENT:	David Marquez

F.2. FIRST AMENDMENT TO AFFORDABLE HOUSING AGREEMENT AND ASSIGNMENT OF RIGHTS BY AND BETWEEN CITY OF MORENO VALLEY AND RB BOULDER RIDGE, LP (Report of: Financial & Management Services)

Chief Financial Officer/City Treasurer Eyerman provided the report.

Council Member Giba asked why the location of the project has been moved from Alessandro/Lasselle to Day Street.

Chief Financial Officer/City Treasurer Eyerman remarked that the Day Street site allows for more financing options as well as provides a larger footprint.

<u>Rafael Brugueras</u>
1. Supports the developer's plan to proceed with the Day Street site.

<u>Roy Bleckert</u>
1. The free market is the ideal option to finance affordable housing because the Government is slow to act.

Recommendations: That the City Council:

1. Approve the First Amendment to the Affordable Housing Agreement by and between the City of Moreno Valley and RB Boulder Ridge, LP.

2. Authorize the City Manager to execute the First Amendment to the Affordable Housing Agreement, subject to the approval of the City Attorney.

RESULT:	**APPROVED [3 TO 1]**
MOVER:	Victoria Baca, Mayor Pro Tem
SECONDER:	Ulises Cabrera, Council Member
AYES:	Dr. Yxstian A. Gutierrez, Victoria Baca, Ulises Cabrera
NAYS:	Jeffrey J. Giba
ABSENT:	David Marquez

F.3. SECOND READING OF ORDINANCE NO. 938 AMENDING SECTIONS 5.02.390 AND 5.02.660 (C)(5) OF THE MUNICIPAL CODE DEFINING THE ACTIVE TERM OF A BUSINESS LICENSE (Report of: Financial & Management Services)

Chief Financial Officer/City Treasurer Eyerman provided the report.

Council Member Giba queried the length of time the current ordinance has been in place and what precipitated the proposed change.

Chief Financial Officer/City Treasurer Eyerman was not aware when the initial ordinance was adopted, and noted that the modification is requested to improve customer service.

City Manager DeSantis remarked that Council Member Cabrera notified him of the confusion experienced by business owners with the current renewal process.

Mayor Gutierrez thanked Council Member Cabrera for suggesting the change.

Council Member Cabrera noted that the change will hopefully alleviate the uncertainty of small business owners.

Rafael Brugueras
1. Expressed shock that the item was pulled.

Roy Bleckert
1. Suggested the repeal of the business license tax.

Council Member Giba stated that he doesn't always pull items on only his behalf, sometimes he does it at the request of a citizen. Expressed his confusion with the current process which failed to require staff to notify those obtaining licenses in October to expect a renewal invoice in December.

Recommendation:

1. That the City Council adopt Ordinance No. 938, an Ordinance of the City Council of the City of Moreno Valley, California, Amending Sections 5.02.390 and 5.02.660 of Title 5 of the City of Moreno Valley Municipal Code Relating to Term of an Active Business License.

RESULT:	**APPROVED [3 TO 1]**
MOVER:	Victoria Baca, Mayor Pro Tem
SECONDER:	Ulises Cabrera, Council Member
AYES:	Dr. Yxstian A. Gutierrez, Victoria Baca, Ulises Cabrera
NAYS:	Jeffrey J. Giba
ABSENT:	David Marquez

F.4. PA13-0002 (PM 36522) – ST. CHRISTOPHER CATHOLIC CHURCH - APPROVE PARCEL MAP 36522 LOCATED AT THE SOUTHEAST CORNER OF COTTONWOOD AVENUE AND PERRIS BOULEVARD. DEVELOPER: THE ROMAN CATHOLIC BISHOP OF SAN BERNARDINO, A CORPORATION SOLE (Report of: Public Works)

Public Works Director/City Engineer Wolfe provided the report.

Roy Bleckert

1. Reminded the City Council that the land zoning in the area needs to be fixed.

Council Member Cabrera stated that is he aware of the issue and is looking to include a modification in the next General Plan Update.

Recommendations:

1. Approve Parcel Map 36522 for PA13-0002.

2. Authorize the City Clerk to sign the map and transmit said map to the County Recorder's Office for recordation.

RESULT:	**APPROVED [UNANIMOUS]**
MOVER:	Victoria Baca, Mayor Pro Tem
SECONDER:	Ulises Cabrera, Council Member
AYES:	Dr. Yxstian A. Gutierrez, Victoria Baca, Ulises Cabrera, Jeffrey J. Giba
ABSENT:	David Marquez

F.5. ACCEPTANCE OF SUSTAINABLE TRANSPORTATION PLANNING GRANT FUNDING, FUNDING APPROPRIATION, AND RESOLUTION NO. 2018-68 AUTHORIZING THE CITY MANAGER TO EXECUTE AGREEMENT WITH CALTRANS FOR THE DRACAEA AVENUE NEIGHBORHOOD GREENWAY CORRIDOR STUDY PROJECT (Report of: Public Works)

Public Works Director/City Engineer Wolfe provided the report.

Council Member Giba questioned if any other corridor was considered and if so why the Dracaea Avenue corridor was selected.

Public Works Director/City Engineer Wolfe remarked that multiple corridors were considered, but the current one was selected based on its likelihood of garnering the grant.

Mayor Gutierrez announced that if more than three items are pulled at subsequent meetings he will call for a vote to have all of the items consolidated.

Roy Bleckert

1. Commented on the number of bicycle crashes along the corridor. Asserted that the bike lanes are not laid out in a manner conducive to bicyclists.
2. Recommended that the transportation issues should be reviewed comprehensively rather than individually.

Recommendations:

1. Accept the California Department of Transportation (Caltrans) Sustainable Communities grant award of up to $154,927 in funds to conduct the Dracaea Avenue Neighborhood Greenway Corridor Study.

2. Authorize the Chief Financial Officer to appropriate $154,927 as revenue and expense in the Capital Projects Grants fund (Fund 2301).

3. Amend the Adopted Capital Improvement Plan for Fiscal Years 17/18 and 18/19 to include the Dracaea Avenue Neighborhood Greenway Corridor Study as a funded project (810 0014).

4. Adopt Resolution No. 2018-68 a Resolution of the City Council of the City of Moreno Valley, California, authorizing the City Manager to Execute Agreements with Caltrans for the Dracaea Avenue Neighborhood Greenway Corridor Study.

RESULT:	**APPROVED [UNANIMOUS]**
MOVER:	Ulises Cabrera, Council Member
SECONDER:	Victoria Baca, Mayor Pro Tem
AYES:	Dr. Yxstian A. Gutierrez, Victoria Baca, Ulises Cabrera, Jeffrey J. Giba
ABSENT:	David Marquez

F.6. Approve Funding for Construction of Moreno Valley Community Park Skate Park (Report of: Parks & Community Services)

Parks & Community Services Director Solano provided the report.

Council Member Giba remarked that he was not aware of any of the outreach conducted by the Parks Department. He questioned when staff received direction from the City Council to expend time and money on the proposed skate park, why the current skate park wasn't considered for improvement, and what determined the location of the suggested skate park.

City Manager DeSantis declared that the item has not been voted on by the Council. He remarked that the item has come up at several council meetings, the youth submitted a petition calling for a skate park, and Mayor Gutierrez has mentioned it several times. A public meeting took place at Cottonwood Center. The location was discussed at the public meeting and residents felt it is ideal.

Council Member Giba asked why, in an effort to save money, was the other skate park not made more accessible, and items can be discussed at length, but no action may be taken unless staff, particularly the City Manager, receives direction at a public meeting.

City Manager DeSantis replied that the current facility is antiquated. Under his authority, bestowed by the City Council, he placed the item on the agenda for consideration.

Mayor Gutierrez remarked that he placed the item on the agenda as well.

<u>Rafael Brugueras</u>

1. Discussed why the location was selected.
2. Noted that funds will be provided by the Parks Development Impact Fees.

<u>Roy Bleckert</u>

1. Reminded everyone that a park was promised years ago on Cottonwood and Indian, which may have been a more ideal location.

<u>Jason Hunter</u>

1. Shocked to see signage announcing the upcoming skate park.
2. Argued that the City Manager has no authority to expend money regardless of spending authority, without Council approval.
3. Alleged that the City Council is violating the Brown Act or the City Manager is misappropriating public funds.

<u>Raychele Sterling</u>

1. Exhibited a photograph of the sign on her phone which she took two weeks ago, which she claimed is per say evidence of a violation.
2. Asserted that City Manager DeSantis is unscrupulous and invited residents to visit her web page.

Mayor Gutierrez declared that ad hominem is not allowed.

Mayor Gutierrez recessed the City Council meeting at 6:52 p.m.

Mayor Gutierrez reconvened the City Council meeting at 7:02 p.m.

Raychele Sterling (continued)

3. Directed the City Council to review the case, Baca v. Moreno Valley School District.
4. Purported that the project is the result of a serial meeting or usurpation of the City Council's authority.
5. The District Attorney's office would receive a complaint if it is determined that funds were appropriated without a vote by the City Council.

Louise Palomares

1. Accused Council Member Giba of filling the audience with mouthpieces.
2. The current skate park is not ideal and not easily accessible.

Mayor Gutierrez explained that a petition was submitted with over a thousand signatures requesting a skate park. He reiterated his directive to place the item on the agenda and mentioned that the City Manager has the authority to place items as well. He reasoned that the Strategic Plan dictates these types of projects and the item should be non-controversial.

Council Member Cabrera indicated that the item is beneficial for the youth and should not be associated with any negativity. A survey of high school students revealed that a skate park is highly coveted.

Mayor Gutierrez added that the results of the surveys were disclosed at public meetings.

Council Member Giba asserted that the issue isn't with the skate park, but the procedures followed. The City Council is being asked to vote on a project that has already moved forward without their prior explicit consent. He alleged that the law is being circumvented.

City Attorney Koczanowicz stated that the item is currently up for discussion and therefore not excluding any Council Members from offering their input. He noted that the CIP directed staff to commence work on the project. He confirmed the City Manager's authority to place items on the agenda. He affirmed that no law is being violated.

Mayor Pro Tem Baca asserted that she has been working on the project for two years. She proclaimed that no Council Member has the singular power to direct the City Manager, rather, the Council as a whole must vote to move an item forward. She asserted that no Brown Act violations are occurring.

Recommendation:

1. Approve the amended budget and funding plan for construction of Moreno Valley Community Park Skate Park, as contained in the Fiscal Impact section of this report.

RESULT:	**APPROVED [3 TO 1]**
MOVER:	Victoria Baca, Mayor Pro Tem
SECONDER:	Ulises Cabrera, Council Member
AYES:	Dr. Yxstian A. Gutierrez, Victoria Baca, Ulises Cabrera
NAYS:	Jeffrey J. Giba
ABSENT:	David Marquez

G. GENERAL BUSINESS

G.1. APPROVAL OF AN APPROPRIATION OF $1.1 MILLION TO THE CITYWIDE PAVEMENT REHABILITATION PROGRAM AND AUTHORIZATION TO APPROVE CHANGE ORDERS FOR ALL AMERICAN ASPHALT AND NINYO & MOORE – PROJECT NO. 801 0078 (Report of: Public Works)

Public Works Director/City Engineer Wolfe provided the report.

City Manager DeSantis thanked the City Council for requesting the item to be placed on the agenda.

Council Member Giba questioned why repairs are proposed for only two districts.

Public Works Director/City Engineer Wolfe remarked that the improvement areas were selected based on the City Council approved 2018/2019 list.

Council Member Giba stated that rather than follow the fairly recent 2018/2019 list, staff could have reevaluated the pavement in different areas of the City to ensure that repairs are allocated equitably.

Raychele Sterling

1. Claimed she was attending the meeting at the request of residents and not Council Member Giba.
2. Warned Council Member Baca regarding defamation of character.
3. Maintained that the proposed change order violates public bidding laws.

Rafael Brugueras

1. Argued that Districts 2 and 3 do not contain roads requiring immediate repair.
2. He contended that staff selected the streets in the most disrepair.

Council Member Cabrera asserted that the 2018/2019 list was approved by the City Council in June and although it falls far short of the scope required to bring the roads up to par, residents are pleased that repairs are being made. He asserted that politics should not play a part in the roadway improvements and any disagreement with the list could have been raised by a Council Member when it was first introduced.

Recommendations:

1. Approve an appropriation of $1.1 million from the General Fund to the Citywide Pavement Rehabilitation Program to repair additional street segments.

2. Approve the amended budget as set forth in the Fiscal Impact Section of this report.

3. Authorize a Change Order to increase the Purchase Order for All American Asphalt in the amount of $677,387.50 for the rehabilitation of additional arterial street segments.

4. Authorize a Change Order to increase the Purchase Order for Ninyo & Moore in the amount of up to $50,000.00 for providing additional professional geotechnical and material testing services.

RESULT:	**APPROVED [3 TO 1]**
MOVER:	Ulises Cabrera, Council Member
SECONDER:	Victoria Baca, Mayor Pro Tem
AYES:	Dr. Yxstian A. Gutierrez, Victoria Baca, Ulises Cabrera
NAYS:	Jeffrey J. Giba
ABSENT:	David Marquez

G.2. Approve Civic Center Amphitheater and Park Project, Funding Plan and Budget Appropriation (Report of: Parks & Community Services)

Parks & Community Services Director Solano provided the report.

Council Member Giba queried whether the proposed funding for the amphitheater went before the Finance Subcommittee.

City Manager DeSantis remarked that the proposed project is before the City Council for their deliberation and confirmed that the item did not go before the Finance Subcommittee.

Council Member Giba claimed that the public was deprived of an opportunity for input because the item was not discussed at a Finance Subcommittee meeting. He asked for confirmation from City Manager DeSantis that he said the project would cost $3-3.5 million.

City Manager DeSantis replied that he met and individually briefed four of the Council Members in March.

Council Member Giba purported that although the project may have been discussed in the past, staff never received direction from the City Council to spend any money on it.

Raychele Sterling
1. Remarked on the perceived inappropriateness of City Attorney Koczanowicz.
2. Expressed concern over the fact that no recent environmental study was conducted in light of the CEQA implications associated with the project.
3. Perturbed by the processes followed by the City in regards to this project.

Jason Hunter
1. Contended that he received an invitation for a groundbreaking event for the proposed amphitheater.
2. Alleged that decisions are being made behind closed doors without public input.

Mayor Gutierrez explained that the item is now being discussed at a public meeting.

Rafael Brugueras
1. Agreed with Parks & Community Services Director Solano on the need for an amphitheater.

Roy Bleckert
1. Encouraged the City Council to make the best decision by involving everyone and reminded them that all funding sources are supplied by the residents.

Louise Palomarez
1. Supports the project.
2. Accused Council Member Giba of employing the same measures to pass a storm drain project years ago.

Council Member Giba proclaimed that the project did not go through the proper course of action. In his opinion laws are being broken.

Mayor Gutierrez reiterated that the item is currently being discussed openly and it is mentioned in Momentum Moval and the Strategic Plan.

Council Member Cabrera pointed out that the funding is coming from development impact fees and is looking forward to its construction. He is also excited about developing a downtown area.

Mayor Pro Tem Baca expressed her excitement for the project and affirmed that no Brown Act violations are occurring.

Recommendations:

1. Approve the Civic Center Amphitheater and Park project and add the project to the City's current Capital Improvement Plan.

2. Approve the proposed funding plan and budget amendment, as contained in the Fiscal Impact section of this report.

RESULT:	**APPROVED [3 TO 1]**
MOVER:	Ulises Cabrera, Council Member
SECONDER:	Victoria Baca, Mayor Pro Tem
AYES:	Dr. Yxstian A. Gutierrez, Victoria Baca, Ulises Cabrera
NAYS:	Jeffrey J. Giba
ABSENT:	David Marquez

Mayor Gutierrez recessed the City Council meeting at 8:00 p.m.

Mayor Gutierrez reconvened the City Council meeting at 8:12 p.m.

E. PUBLIC HEARINGS

E.1. PUBLIC HEARING FOR TWO NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM MAIL BALLOT PROCEEDINGS (Report of: Public Works)

Special Districts Division Manager Cassel provided the report.

Mayor Gutierrez opened the Public Hearing at 8:14 p.m.

There being no comments in support or opposition, Mayor Gutierrez closed the Public Hearing at 8:14 p.m.

Recommendations: That the City Council:

1. Conduct the Public Hearing and accept public testimony for the mail ballot proceeding(s) for the National Pollutant Discharge Elimination System (NPDES) maximum Commercial/Industrial Regulatory Rate to be applied to two property tax bill(s).

2. Direct the City Clerk to open and count the returned NPDES ballot(s).

3. Verify and accept the results of the mail ballot proceeding(s) as maintained by the City Clerk on the Official Tally Sheet.

4. Receive and file the Official Tally Sheet with the City Clerk’s office.

5. If approved, set the rate and impose the NPDES Commercial/Industrial Regulatory Rate to the Assessor’s Parcel Number(s) as mentioned.

RESULT:	**APPROVED [UNANIMOUS]**
MOVER:	Victoria Baca, Mayor Pro Tem
SECONDER:	Ulises Cabrera, Council Member
AYES:	Dr. Yxstian A. Gutierrez, Victoria Baca, Ulises Cabrera, Jeffrey J. Giba
ABSENT:	David Marquez

E.2. PROPOSED ZONE CHANGE AND CONDITIONAL USE PERMIT FOR MORENO VALLEY STORAGE, A PROPOSED 538 UNIT MINI-STORAGE FACILITY WITH A CARETAKER'S RESIDENCE (Report of: Community Development)

Associate Planner Bradshaw provided the report.

Mayor Gutierrez opened the Public Hearing at 8:19 p.m.

Roy Bleckert
1. Pleased with the project.
2. Requested that the City Council review projects comprehensively in order to determine their effects on the City.

Rafael Brugueras
1. The applicant has a successful storage unit business and has put forward a plan that addresses resident's concerns.
2. Happy to see another lot in the City getting developed.

There being no further comments in support or opposition, Mayor Gutierrez closed the Public Hearing at 8:25 p.m.

Council Member Cabrera stated that storage units are ideal for the location.

Recommendations: That the City Council:

1. **ADOPT** Resolution No. 2018-69: A Resolution of the City Council of the City of Moreno Valley **CERTIFYING** the Mitigated Negative Declaration prepared for the Moreno Valley Storage project, inclusive of all related applications on file with the Community Development Department, incorporated herein by this reference, whereby the Mitigated Negative Declaration has been completed in compliance with the California Environmental Quality Act, and the information and findings contained in the Mitigated Negative Declaration reflects the City’s independent judgment and analysis; and **ADOPTING** the Mitigation Monitoring and Reporting Program prepared for the Moreno Valley Storage project; and

3. **ADOPT** Resolution No. 2018-70: A Resolution of the City Council of the City of Moreno Valley approving Conditional Use Permit PEN17-0135 for a 538 unit mini-storage facility subject to the Conditions of Approval included as Exhibit A; and

RESULT:	**APPROVED [UNANIMOUS]**
MOVER:	Jeffrey J. Giba, Council Member
SECONDER:	Ulises Cabrera, Council Member
AYES:	Dr. Yxstian A. Gutierrez, Victoria Baca, Ulises Cabrera, Jeffrey J. Giba
ABSENT:	David Marquez

2. **INTRODUCE** and conduct the first reading by title only of Ordinance No. 941 approving a Zone Change from Neighborhood Commercial (NC) to Community Commercial (CC) for the areas described in the Ordinance, based on the findings in the Ordinance, and the revised Zoning Atlas; and

4. **SCHEDULE** the introduced Ordinance for second reading and final action for the next regular City Council meeting.

RESULT:	**APPROVED [UNANIMOUS]**
MOVER:	Jeffrey J. Giba, Council Member
SECONDER:	Ulises Cabrera, Council Member
AYES:	Dr. Yxstian A. Gutierrez, Victoria Baca, Ulises Cabrera, Jeffrey J. Giba
ABSENT:	David Marquez

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

Raychele Sterling

1. Remarked that her motivation for attending the City Council meeting was to expose corruption.
2. Is alarmed by the accusations from residents which may warrant referral to the District Attorney.

Lindsay Robinson

1. Accused City staff of keeping constituents away from Council Member Giba.
2. Claimed the City Manager promised that he would place an item on the agenda to expand the districts.
3. Alleged that procedures are not being followed.

Donovan Saadiq

1. Purported that the premature skate park sign announcing its arrival is an indication that illegal activity is taking place at the City.
2. Requested that a bathroom be installed at Adrienne Mitchell Park.

Shauntae Wilder-Gonzalez

1. Embarrassed by the lack of decorum displayed at the City Council meeting.

Roy Bleckert
1. Government regulation stymies projects.
2. Centralized improvements generate greater returns than piecemeal projects.
3. Concerned that a developer wasn't properly vetted.
4. Long term impacts should be taken into consideration when voting on a project.

Marina Smiley
1. Discussed the volcano eruption in Hawaii.

Andrew Rodriguez
1. Claimed that the City's sign ordinance is not being enforced.

City Attorney Koczanowicz stated that removal or limitation of political signs based on their content is not permitted, but signs that create a visual hazard within the right of ways will be removed.

Jennifer Dean
1. Introduced the programs provided by Pacific View Charter School.

Sandra Murphy
1. Progress requires change, which while not always welcome, must be accepted.
2. The youth are relying on those in power to move them forward.

Rafael Brugueras
1. Exclaimed that the political signs he erects never create a hazard.
2. Excited to see new construction in the City.

Frank Wright
1. Agreed with the previous speaker who called for decorum.
2. Disagreed with the methods employed by others who denigrated the City Council.

Louise Palomarez
1. Agreed with the previous speaker's comments.
2. Suggested that a preceding speaker return to her own City to address the problems there.
3. Accused Council Member Giba of pushing a pair of projects through without proper review.

H. REPORTS

H.1. CITY COUNCIL REPORTS

(Informational Oral Presentation - not for Council action)

March Joint Powers Commission (JPC) - Mayor Pro Tem Baca

Mayor Pro Tem Baca reported the following:

The Commission recently approved an ordinance prohibiting cannabis dispensaries, manufacturing, cultivation, and deliveries, consistent with the County of Riverside's ordinance, to facilitate enforcement by County Sheriffs or County Code Enforcement offices.

We also approved a sublease of the existing DHL facility for air cargo operations by Amazon's Prime Air, as well as operating contracts with three Amazon air cargo carriers for up to five flights per day (with no night time flights). We're very excited that these actions will create up to 525 new jobs!

<u>Riverside County Habitat Conservation Agency (RCHCA)</u> - None

<u>Riverside County Transportation Commission (RCTC)</u> - Mayor Pro Tem Baca

Mayor Pro Tem Baca reported the following:

RCTC celebrated the 25th Anniversary for providing Freeway Service Patrol (FSP) in Riverside County. FSP is a roving team of tow trucks traveling selected Riverside County freeways to provide aid to motorists with car trouble. The operators can assist with flat tires, dead batteries, and vehicles that run out of fuel.

<u>Riverside Transit Agency (RTA)</u> - None

<u>Western Riverside Council of Governments (WRCOG)</u> - Mayor Gutierrez

Mayor Gutierrez reported the following:

- WRCOG anticipates annual jurisdictional meetings on TUMF Program fee collections/disbursements to occur from August through October, with final reports issued in December.

- Moreno Valley approved an amendment to purchase SCE-owned streetlights on September 19, 2017, with full approval granted on June 19, 2018. In all, eleven jurisdictions have now approved agreements to acquire SCE-owned streetlights.

- The 5th annual LED Holiday Light Exchange and Energy Efficiently Kit Giveaway will provide residents with new LED lights and energy efficiency kits in late 2018. The four-year program to date has allowed area wide public exchange of over 2,300 holiday lights and the distribution of 150 energy efficiency starter kits.

<u>Western Riverside County Regional Conservation Authority (RCA)</u> - None

School District/City Joint Task Force - Mayor Pro Tem Baca

Mayor Pro Tem Baca reported the following:

The Joint Task Force met earlier today. In addition to the City, representatives from Lake Perris State Recreation Area, Moreno Valley Unified School District, and Val Verde Unified School District attended the meeting.

- Lake Perris reported that they are expected 10,000 to 13,000 people for the upcoming holiday weekend. In addition, their concert series will be held on the following weekends: September 22-23 (2,000 expected) October 11-14 (7,000 expected), and November 1-4 (4,000 expected).

- Val Verde Unified School District has developed the Val Verde Educational Foundation. Its goal is to promote academic excellence, champion innovation in teaching, and provide sustained financial support for student scholarships. It actively seeks donations from the entire Val Verde community - families, staff, businesses and community organizations.

- The California Community College Chancellor's Office announced the expansion of the NextUp program to 15 additional California community colleges, including the three Riverside Community College District colleges of Norco, Moreno Valley and Riverside. NextUp, known as CAFYES (Cooperating Agencies Foster Youth Educational Support), gives current and former California foster youth extra support when pursuing their higher education goals at a local community college.

- Canyon Springs High School and the Moreno Valley Unified School District are starting the first football season at the new Canyon Springs High School Athletic Complex with a day of events, leading into a special Saturday evening game against inter-city rival Moreno Valley. The game on Saturday, August 25, will kick off at 7 p.m. In addition to the game, the school will host junior-level community football games beginning at 2 p.m., a carnival from 3 to 6 p.m. and a special opening ceremony including former athletes at 6:15 p.m. Fans are invited to stay after the game for a fireworks show and presentation of the Butterfield Cup trophy to the winning team.

- Moreno Valley Unified School District is looking for community members to participate in the District Walkthrough on September 5. Contact the District to sign up.

H.2. CITY MANAGER'S REPORT

(Informational Oral Presentation - not for Council action)

City Manager DeSantis expressed his appreciation to a majority of the City Council for approving projects which will benefit the residents. Confirmed that CIP budgets do not require review by the Finance Subcommittee. Stated that invitations for a groundbreaking event were not sent. Asserted that all actions taken in preparation of the items which appeared on the agenda were fully within the appropriation authority statutorily granted to the City Manager.

Praised the City staff for their work in preparation of the meeting. Heralded City staff on the numerous successful events which occurred over the summer. Thanked firefighter Patrick Odell for his role in saving the homes of Moreno Valley residents.

H.3. CITY ATTORNEY'S REPORT

(Informational Oral Presentation - not for Council action)

City Attorney Koczanowicz repeated the statement that CIP budgets are not required to go to the Finance Subcommittee. In response to a previous comment, he noted that the budget for one of the approved items contains a line item for an environmental review. He explained that the City Manager has the authority to spend $75,000 without prior approval. Asserted that corruption had not occurred. Read a section of the code enumerating the powers of the City Manager.

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

<u>Council Member Cabrera</u>

1. Welcomed everyone back from summer recess and back to school.
2. After discovering that not everyone is aware of the Homeless to Work program, he plans on distributing more fliers throughout the community.
3. Attended Rising Stars Business Academy ribbon cutting.
4. Excited about the passage of the skate park and the amphitheater.
5. Expressed his gratitude to Chief Ahmad and all the other firefighters for battling the wildfires.
6. Asked for patience as the City Council is working to improve more and more roads in the City.
7. Reminded residents to reach out to him should they know anyone in need of the food pantry.

<u>Mayor Pro Tem Baca</u>

1. Announced that the City Council as a whole approved the skate park and amphitheater, not individually.
2. She views political signs as free speech.
3. It is her opinion that City Manager DeSantis is the best in the nation.
4. Communicated her pleasure with the police force on a successful National Night Out.

5. Pleased with the turnout at the recent Coffee With a Cop.
6. Moreno Valley College will host a Welcome Day on Saturday, August 25, 2018.
7. Moreno Valley Hispanic Chamber of Commerce, Moreno Valley College, and the City of Moreno Valley will hold their 2nd Annual El Grito event on September 15, 2018.
8. Student banners for Val Verde Unified School District have been completed.
9. The 4th of July Parade and Fun Fest was well attended.

Mayor Gutierrez

1. Commended City Manager DeSantis.
2. Announced that the City of Moreno Valley was selected for participation in the Mayor's Institute.
3. Mentioned that the amphitheater and skate park are part of the Strategic Plan.
4. Invited everyone to the State of the City.
5. As a Champion City, Moreno Valley submitted an application for the Bloomberg Challenge in the hopes of winning $5 million for MoVal Learns. The winners will be notified in October.

ADJOURNMENT

There being no further business to come before the City Council, Mayor Gutierrez adjourned the meeting at 9:35 p.m.

Submitted by:

____

Pat Jacquez-Nares, CMC & CERA
City Clerk
Secretary, Moreno Valley Community Services District
Secretary, City as Successor Agency for the Community Redevelopment Agency of the City of Moreno Valley
Secretary, Moreno Valley Housing Authority
Secretary, Board of Library Trustees

Approved by:

____

Dr. Yxstian A. Gutierrez
Mayor
City of Moreno Valley
President, Moreno Valley Community Services District
Chairperson, City as Successor Agency for the Community Redevelopment Agency of the City of Moreno Valley
Chairperson, Moreno Valley Housing Authority
Chairperson, Board of Library Trustees

Report to City Council

TO: Mayor and City Council

FROM: Pat Jacquez-Nares, City Clerk
City Attorney,

AGENDA DATE: September 4, 2018

TITLE: APPROVE FIRST AMENDMENT TO MEMORANDUM OF UNDERSTANDING FOR MORENO VALLEY COLLEGE PROMISE INITIATIVE

RECOMMENDED ACTION

Recommendations:

1. Approve the First Amendment to Memorandum of Understanding between the City of Moreno Valley and Riverside Community College District to extend support for first year Moreno Valley resident students attending Moreno Valley College via the Promise Initiative.

2. Authorize the City Manager to execute the attached Memorandum of Understanding with Riverside Community College District and authorize the one-time $50,000 expenditure.

3. Authorize a budget adjustment to the General Fund budget as set forth in the Fiscal Impact section of this report.

SUMMARY

This report recommends approval of the First Amendment to the Memorandum of Understanding (MOU) between the City of Moreno Valley and Riverside Community College District (RCCD) to extend support Moreno Valley resident students enrolled in the Moreno Valley College (MVC) Promise Initiative. The extension of the MOU commits $50,000 for the 2018 - 2019 school year to continue to provide gap funding to offset first year college costs such as tuition, various fees and textbooks.

The goal of the MVC Promise Initiative is to ensure that students complete their associate degree transfer, and/ or workforce certificate requirements in a timely and efficient manner.

DISCUSSION

On August 15, 2017, the City Council approved an MOU between the City of Moreno Valley and the RCCD to assist Moreno Valley residents through MVC's Promise Initiative (Promise Initiative). The approved $50,000 expenditure supported Promise Initiative students for the 2017- 2018 school year. The proactive approach to community partnerships such as this serves the community by leveraging community resources to achieve the goals as outlined in the strategic plan to include expanding economic and workforce development efforts.

There is a direct correlation between attainment of higher education and economic prosperity for families and communities. It is projected that by 2020, 66% of all new jobs in California will require at least two years of college level education. The rising costs of higher education make it less accessible to low and middle income students. Even those who attend by receiving student loans, accumulate more debt than their more affluent peers.

MVC reports that the Promise Initiative has been highly successful and the City's support of the program earned a 2018 Programs Award of Excellence by the California Association for Local Economic Development (CALED) early this year.

The First Amendment to the MOU supporting the MVC Promise Initiative extends the MOU to cover the 2018- 2018 school year. There are no other amendments to the MOU.

About the Moreno Valley College Promise Initiative

Recognizing the need for financial assistance for many of the incoming students, MVC launched the MVC Promise Initiative in school year 2016/ 2017. Its goal is to ensure that graduating students from Moreno Valley and Val Verde Unified School Districts have access to financial resources for a successful first year of college.

The Promise Initiative is part of the First Year Experience program which provides an institutional framework for the positive transition of students from high school to college. According to Moreno Valley College, students with a solid foundation in the first year of college are significantly more likely to complete the first two years and transfer to a University. The framework includes structural and financial support.

ALTERNATIVES

1. Approve a First Amendment to the MOU between the City of Moreno Valley and RCCD extending the term and increasing the commitment by $50,000 to support the MVC Promise Initiative. Authorization of this expenditure is tangible support and leverage of other community resources for the goals as outlined in the strategic plan to

expand economic and workforce development efforts.

2. Do not approve the First Amendment to the MOU to provide continuing support for the Moreno Valley College Promise Initiative. This alternative would be a lost opportunity to continue the proactive partnership with Moreno Valley College leveraging resources to create positive economic impacts in the lives of Moreno Valley families and in the community.

FISCAL IMPACT

Should the City Council approve the First Amendment of the MOU continuation of support for Moreno Valley College Promise Initiative students, the $50,000 funding would be provided from the General Fund balance.

Appropriations/ Budget Adjustments						
Description	Fund	GL Account No.	Type	FY 18/19 Budget	Proposed Adjustments	FY 18/19 Amended Budget
MVC Promise Initiative	General	1010-10-01-10010-620199	Exp.	$ 93,500	$50,000	$143,500

NOTIFICATION

Agenda has been posted in accordance with the Brown Act. Staff discussed the extension of the existing MOU with Dr. Robin Steinback, President Moreno Valley College. Moreno Valley College is grateful for the City of Moreno Valley's partnership and interest in continuing to support the Promise Initiative.

PREPARATION OF STAFF REPORT

Prepared By:
Shanna Palau
Management Analyst

Department Head Approval:
Pat Jacquez-Nares
City Clerk

Concurred By:
Martin Koczanowicz
City Attorney

CITY COUNCIL GOALS

Advocacy. Develop cooperative intergovernmental relationships and be a forceful advocate of City policies, objectives, and goals to appropriate external governments, agencies and corporations.

Positive Environment. Create a positive environment for the development of Moreno Valley's future.

CITY COUNCIL STRATEGIC PRIORITIES

1. **Economic Development**
2. **Public Safety**
3. **Library**
4. **Infrastructure**
5. **Beautification, Community Engagement, and Quality of Life**
6. **Youth Programs**

ATTACHMENTS

1. Promise MOU Extention_2018_2019

APPROVALS

Budget Officer Approval	✓ Approved	8/27/18 12:12 PM
City Attorney Approval	✓ Approved	8/29/18 7:48 AM
City Manager Approval	✓ Approved	8/29/18 12:15 PM

FIRST AMENDMENT TO
MEMORANDUM OF UNDERSTANDING
BETWEEN
THE CITY OF MORENO VALLEY AND
RIVERSIDE COMMUNITY COLLEGE DISTRICT
ON BEHALF OF
MORENO VALLEY COLLEGE

This FIRST AMENDMENT TO MEMORANDUM OF UNDERSTANDING (FA) is entered into this 21st day of August 2018, by and between The City of Moreno Valley (City) and the Riverside Community College District on behalf of Moreno Valley College (College), both located in Riverside County, California. City and College may herein be individually referred to as "Party" or collectively as "Parties."

Consistent with the terms of the Memorandum of Understanding (MOU), having successfully completed the first year of the program, the City and the College agree to amend the MOU as follows:

1) The term of the MOU is extended to the 20018/19 school year.

2) All other terms of the MOU not changed by this FA remain in full force and effect.

IN WITNESS WHEREOF, City and College have caused this MOU to be duly executed as of the day and year as first written above.

____

Dr. Yxstian A. Gutierrez, Mayor
City of Moreno Valley

____

Dr. Robin Steinback, President
Moreno Valley College
Riverside Community College District

Attest:

____

Pat Jacquez-Nares, City Clerk
City of Moreno Valley

Approved as to form:

____

Martin D. Koczanowicz, City Attorney
City of Moreno Valley

Report to City Council

TO:	Mayor and City Council
FROM:	Pat Jacquez-Nares, City Clerk
AGENDA DATE:	September 4, 2018
TITLE:	MAYORAL APPOINTMENTS TO THE EMERGING LEADERS COUNCIL AND THE PLANNING COMMISSION

RECOMMENDED ACTION

Recommendation:

1. Receive and confirm the Mayoral appointments as follows:

Emerging Leaders Council

Name	Position	Term
Wendy Acuna	Member	Ending 05/31/19

Planning Commission

Name	Position	Term
Robert Harris	Member	Ending 03/31/2021
JoAnn Stephan	Member	Ending 03/31/2021

CITY COUNCIL GOALS

Advocacy. Develop cooperative intergovernmental relationships and be a forceful advocate of City policies, objectives, and goals to appropriate external governments, agencies and corporations.

CITY COUNCIL STRATEGIC PRIORITIES

1. Economic Development

2. **Public Safety**
3. **Library**
4. **Infrastructure**
5. **Beautification, Community Engagement, and Quality of Life**
6. **Youth Programs**

ATTACHMENTS

1. Wendy Acuna Redacted
2. Robert Harris redacted
3. JoAnn Stephan redacted

APPROVALS

Budget Officer Approval	✓ Approved	8/30/18 10:58 AM
City Attorney Approval	✓ Approved	8/30/18 11:16 AM
City Manager Approval	✓ Approved	8/30/18 11:17 AM

CITY CLERK
MORENO VALLEY
RECEIVED

18 AUG 17 PM 3:39

For City Clerk's Use
Stamp Date and Time Received

City of Moreno Valley

EMERGING LEADERS COUNCIL

Membership Application Form

The purpose of the Emerging Leaders Council (ELC) is to identify college or high school students with a desire and potential to become community leaders, educate and engage young adults in local government, and focus efforts on service to the Moreno Valley community. The Emerging Leaders Council was established as a standing committee with two-year terms by Resolution 2014-30. The attached Resolution No. 2015-31 modifies the existing provisions governing the Emerging Leaders Council.

Meeting Schedule: Fourth Monday of each month at 6:00 p.m., City Hall - Council Chamber, 14177 Frederick Street

Qualifications include: Moreno Valley residency, enrollment in high school or college, must be between the ages of 17 and 25. Please attach at least one letter of recommendation/reference.

Name: Wendy Acuna

Home Address: [redacted]

CONFIDENTIAL INFORMATION

Home Phone No.: [redacted]
Work Phone No.:
Cell Phone No.:

E-mail Address: [redacted]
Date of Birth:

College or High School: Riverside City College

Major: Criminal Justice

Why do you want to serve on the City's Emerging Leaders Council?

I joined the Emerging Leaders Council in 2014. I really enjoy helping our youth and bring active in our community.

If selected to serve on the Emerging Leaders Council, what do you believe you would be able to contribute to the ELC and your community? In what way(s) are you an "emerging leader"?

I have great communication skills and I am a great planner and organizer. I work well with others. I like to take initiative when I am assigned a task.

Attachment: Wendy Acuna Redacted (3237 : MAYORAL APPOINTMENTS TO THE UTILITIES COMMISSION AND THE EMERGING LEADERS

List any volunteer work that you have performed. Please provide the name(s) of the organization(s) and dates served:

Feed the Homeless - St. Christopher Catholic Church

How would you define Moreno Valley's strengths? Weaknesses? Why?

I read an article a few months back that said Moreno Valley was rated one of the most financially strong cities. I agree with that.

Briefly explain your understanding of the functions of municipal government.

City council oversees the general administration, makes policy, sets budgets

Do you have any experience chairing and/or participating in meetings that are regulated by the Brown Act?

Yes. I have served since 2014, and I am aware of the Brown Act.

What do you hope to accomplish by your participation on the Emerging Leaders Council? How will your participation enhance your future goals and objectives?

I hope to get our youth more involved with the community. I also hope to plan events for our community.

Are you able to commit to participating in one meeting per month? Each meeting can last approximately two hours. Yes [X] No [ ]

Do you have any means of transportation to arrive to meetings on time? Yes [X] No [■]

Have you ever been removed or asked to resign from a job or volunteer position?

Yes [ ] No [X]

May we contact the person who wrote your letter of recommendation? Yes [X] No [ ]

I hereby authorize that the City of Moreno Valley may obtain and review, on a confidential basis, such information regarding me as may be contained in the California State Summary Criminal History and in records of the California Department of Motor Vehicles. Yes [X] No [ ]

Pursuant to Resolution 2016-42 all board, commission, or council members must be registered voters of the City of Moreno Valley, provided they are at least 18 years old.

I hereby agree to attend all Board meetings, unless excused, and understand that I may be removed for lack of attendance, pursuant to Municipal Code, Subsection 2.06.010(C) which states, "If a member is absent without advance permission of the board or commission or the appointing authority from three consecutive regular meetings or from 25% of the duly scheduled meetings of the board or commission

To whom it may concern,

It's my absolute pleasure to recommend Wendy for the Emerging Leaders Council.

I thoroughly enjoyed my time working with Wendy, and came to know her as a truly valuable asset to absolutely any team. She is honest, dependable, and incredibly hard-working. Along with her undeniable talent, Wendy has always been an absolute joy to work with. She is a true team player, and always manages to foster positive discussions and bring the best out of other members.

Best wishes,

[redacted]

Student Mayor

Emerging Leaders Council

CITY CLERK
MORENO VALLEY
RECEIVED

18 FEB 14 PM 3:53

For City Clerk's Use
Stamp Date and Time Received

City of Moreno Valley

Boards and Commissions

Membership Application Form

Name: Robert Harris
Home Address: [redacted]
Moreno Valley Ca. 92557
How long have you resided in Moreno Valley? 35 yrs

CONFIDENTIAL INFORMATION

Home Phone No.: [redacted] Driver's License No.: [redacted]
Work Phone No.: [redacted] Email Address: [redacted]
Cell Phone No.: [redacted] Date of Birth: [redacted]

Employer Name: Retired Position: Registered Nurse
Address: NA

Board or Commission applying for*: 1st Choice Planning Commission
2nd Choice

*If applying for the Accessibility Appeals Board, please indicate which position you are applying for:
☐ Physically Challenged Person ☐ Person Experienced in Construction ☐ Public Member
*If applying for the Utilities Commission, please indicate which position you are applying for:
☐ Public Member ☐ Customer of Moreno Valley Utility ☐ Business Customer of Moreno Valley Utility

Why do you wish to serve on this Board and/or Commission?
I am a progressive City activist I would like to bring balance to our City ie. Jobs, Homes, Recreation and Medical facilities to serve our Community including our aging population.

List any education, training, or special skills, you have which may be relevant or of particular benefit to this Board and/or Commission:
Residential, Real Estate, Emergency RN, Emergency Services during Construction of Oil platform Edith, Pilot Director of Hospital Paramedic Program

Explain briefly your understanding of what this Board and/or Commission does, including its powers and limitations.
Planning review and authorization of projects brought to the planning Commission. limitations would include Compliance with all State and local laws

What do you hope to accomplish by your participation?
Help to make Moreno Valley a world Class City that the Residents can be proud of, this can be accomplished by Listening to Residents, Developers, and City Planning Staff.

List any employment, volunteer work, or membership in a service/community organization that you have served on, or are now a member of. Please provide the name(s) of the agency (ies), contact person, and dates served:

Member of Moreno Valley Jobs Coalition
Leo Gonzalez 951-833-8447
Elected Member Riverside County Democratic
Central Committee assembly dist 61

What other areas of interest do you have in our City government?

City activist
City Council meetings

Would you be available for meetings during the day ☐ or evening? ☑

Attendance of at least one (1) meeting is required prior to the appointment.
Date(s) of the meeting(s) attended: all WIC hearings at Planning Comm
Watch some hearings on MVTV3

Pursuant to Resolution 2016-42 all board and commission members must be registered voters of the City of Moreno Valley.

I authorize the City of Moreno Valley to obtain and review, on a confidential basis, such information regarding me as may be contained in the California State Summary Criminal History and in records of the California Department of Motor Vehicles. Yes ☑ No ☐ (The application shall not be considered if the NO box is checked.)

I hereby agree to attend all board or commission meetings, unless excused, and understand that I may be removed for lack of attendance, pursuant to Municipal Code, Subsection 2.06.010(C) which states, "If a member is absent without advance permission of the board or commission or of the appointing authority, from three consecutive regular meetings or from 25% of the duly scheduled meetings of the board or commission within any fiscal year, the membership shall thereupon become vacant and shall be filled as any other vacancy."

CERTIFICATE OF APPLICANT: I certify that all statements in this application are true and complete to the best of my knowledge. I understand that any false statements of material fact will subject me to disqualification or dismissal if appointed. I release the City of Moreno Valley from any liability for the use of the aforesaid information.

[redacted]
Signature

2/14/2018
Date

Please Note: Applications will be kept on file for potential future vacancies for one year after the application submittal date. Applications are accepted year-round. All applications are public record; personal information may be redacted to protect applicants' privacy.

Revised December 6, 2017

CITY CLERK
MORENO VALLEY
RECEIVED

18 FEB 15 PM 1:11

City of Moreno Valley

Boards and Commissions

Membership Application Form

Name: Jo Ann Stephan

Home Address: [redacted]

Moreno Valley, CA. 92557

How long have you resided in Moreno Valley? 34 yrs

CONFIDENTIAL INFORMATION

Home Phone No.: [redacted] Driver's License No.: [redacted]

Work Phone No.: Email Address: [redacted]

Cell Phone No.: [redacted] Date of Birth: [redacted]

Employer Name: Retired Position:

Address:

Board or Commission applying for*: 1st Choice Planning

2nd Choice

*If applying for the Accessibility Appeals Board, please indicate which position you are applying for:

☐ Physically Challenged Person ☐ Person Experienced in Construction ☐ Public Member

*If applying for the Utilities Commission, please indicate which position you are applying for:

☐ Public Member ☐ Customer of Moreno Valley Utility ☐ Business Customer of Moreno Valley Utility

Why do you wish to serve on this Board and/or Commission?

Get involved with what is being built or proposed and make sure guidelines our followed. Especially at the planning stages which are the first step to buildout.

List any education, training, or special skills, you have which may be relevant or of particular benefit to this Board and/or Commission:

Explain briefly your understanding of what this Board and/or Commission does, including its powers and limitations.

Considers matters that have to do with development & zoning in the city. That are within California Codes.

What do you hope to accomplish by your participation?

Get involved with development with our city.

List any employment, volunteer work, or membership in a service/community organization that you have served on, or are now a member of. Please provide the name(s) of the agency (ies), contact person, and dates served:

What other areas of interest do you have in our City government?

I have always played an active roll in what has gone one in Moreno Valley, where be development or Council elections & City aff

Would you be available for meetings during the day ☑ or evening? ☐

Attendance of at least one (1) meeting is required prior to the appointment.
Date(s) of the meeting(s) attended: ______

Pursuant to Resolution 2016-42 all board and commission members must be registered voters of the City of Moreno Valley.

I authorize the City of Moreno Valley to obtain and review, on a confidential basis, such information regarding me as may be contained in the California State Summary Criminal History and in records of the California Department of Motor Vehicles. Yes ☑ No ☐ (The application shall not be considered if the NO box is checked.)

I hereby agree to attend all board or commission meetings, unless excused, and understand that I may be removed for lack of attendance, pursuant to Municipal Code, Subsection 2.06.010(C) which states, "If a member is absent without advance permission of the board or commission or of the appointing authority, from three consecutive regular meetings or from 25% of the duly scheduled meetings of the board or commission within any fiscal year, the membership shall thereupon become vacant and shall be filled as any other vacancy."

CERTIFICATE OF APPLICANT: I certify that all statements in this application are true and complete to the best of my knowledge. I understand that any false statements of material fact will subject me to disqualification or dismissal if appointed. I release the City of Moreno Valley from any liability for the use of the aforesaid information.

[redacted]

Signature

2/15/2018
Date

Please Note: Applications will be kept on file for potential future vacancies for one year after the application submittal date. Applications are accepted year-round. All applications are public record; personal information may be redacted to protect applicants' privacy.

Report to City Council

TO:	Mayor and City Council
FROM:	Pat Jacquez-Nares, City Clerk
AGENDA DATE:	September 4, 2018
TITLE:	2018 CITY COUNCIL COMMISSION, BOARD, AND TASKFORCE PARTICIPATION APPOINTMENTS

RECOMMENDED ACTION

Recommendations: That the City Council:

1. Ratify the appointments to the various committees as noted on the Revised 2018 Council Committee Participation List – Terms End December 31, 2018.

SUMMARY

Council Member Marquez has notified the Mayor that he declined his nominations to Sub Committee or Liaison positions ratified by the Council at the last meeting. A revised list of appointments is presented to ensure continuity of Council participation. Mayor Gutierrez has revised the 2018 Council Committee Participation appointments to the various committees to reflect these changes the terms remain the same and end December 31, 2018.

PREPARATION OF STAFF REPORT

Prepared By:
Pat Jacquez-Nares
City Clerk

Department Head Approval:
Pat Jacquez-Nares
City Clerk

CITY COUNCIL GOALS

Advocacy. Develop cooperative intergovernmental relationships and be a forceful advocate of City policies, objectives, and goals to appropriate external governments, agencies and corporations.

CITY COUNCIL STRATEGIC PRIORITIES

1. **Economic Development**
2. **Public Safety**
3. **Library**
4. **Infrastructure**
5. **Beautification, Community Engagement, and Quality of Life**
6. **Youth Programs**

ATTACHMENTS

1. Revised 2018 Council Committee Participation

APPROVALS

Budget Officer Approval	✓ Approved	8/29/18 12:54 PM
City Attorney Approval	✓ Approved	8/29/18 2:12 PM
City Manager Approval	✓ Approved	8/29/18 3:55 PM

MAYOR'S RECOMMENDATION
REVISED 2018 COUNCIL COMMITTEE PARTICIPATION

CITY COUNCIL ADVISORY COMMISSIONS/ BOARDS :	***Primary***	***Alternate***	***Term***
Arts Commission	Cabrera	Baca	12/31/2018
Emerging Leaders Council	Cabrera	Gutierrez	12/31/2018
Environmental and Historical Preservation Board	Cabrera	Baca	12/31/2018
Library Commission	Cabrera	Gutierrez	12/31/2018
Parks, Community Services and Trails Committee	Baca		12/31/2018
Senior Citizens' Board	Baca		12/31/2018
Traffic Safety Commission	Cabrera		12/31/2018
Utilities Commission	Baca		12/31/2018
CITY COUNCIL SUBCOMMITTEES :			
Economic Development Subcommittee *Appoint 2 Primary*	Baca/Gutierrez		12/31/2018
Finance Subcommittee *Appoint 2 Primary*	Gutierrez/Cabrera		12/31/2018
Public Safety Subcommittee *Appoint 2 Primary*	Baca/Gutierrez		12/31/2018

Report to City Council

TO: Mayor and City Council

FROM: Kathleen Sanchez, Human Resources Director

AGENDA DATE: September 4, 2018

TITLE: LIST OF PERSONNEL CHANGES

RECOMMENDED ACTION

Recommendation:

1. Ratify the list of personnel changes as described.

DISCUSSION

The attached list of personnel changes scheduled since the last City Council meeting is presented for City Council ratification.

Staffing of City positions ensures assignment of highly qualified and trained personnel to achieve Momentum MoVal priorities, objectives and initiatives.

FISCAL IMPACT

All position changes are consistent with appropriations previously approved by the City Council.

PREPARATION OF STAFF REPORT

Prepared By:
Denise Hansen
Executive Assistant

Department Head Approval:
Kathleen M. Sanchez
Human Resources Director

CITY COUNCIL GOALS

None

CITY COUNCIL STRATEGIC PRIORITIES

1. **Economic Development**
2. **Public Safety**
3. **Library**
4. **Infrastructure**
5. **Beautification, Community Engagement, and Quality of Life**
6. **Youth Programs**

ATTACHMENTS

1. Personnel Changes 9.4.18

APPROVALS

Budget Officer Approval	✓ Approved	8/24/18 2:56 PM
City Attorney Approval	✓ Approved	8/23/18 8:50 AM
City Manager Approval	✓ Approved	8/27/18 11:52 AM

City of Moreno Valley
Personnel Changes
September 4, 2018

New Hires

Jacquelyn Lankhorst, Permit Technician
Fire Department/Fire Prevention Division

Joseph Baker, Recreation Program Leader
Parks & Community Services Department/Community Services Division

Promotions

Khrystyne Villalobos
From: Animal Services Assistant, Community Development Department/Animal Services Division
To: Animal Care Technician, Community Development Department/Animal Services Division

Transfers

Shanna Palau
From: Management Analyst, City Clerk/Council Office
To: Management Analyst, Human Resources Department

Separations

None

Report to City Council

TO:	Mayor and City Council
FROM:	Marshall Eyerman, Chief Financial Officer
AGENDA DATE:	September 4, 2018
TITLE:	AUTHORIZATION TO AWARD BID TO ENCO UTILITY SERVICES MORENO VALLEY LLC FOR THE MVU STREETLIGHT LED RETROFIT PROJECT NO. 805 0053

RECOMMENDED ACTION

Recommendations:

1. Award the Bid to ENCO Utility Services Moreno Valley LLC, the lowest responsible bidder, for the MVU Streetlight Retrofit project in the amount of $461,537 including a 15% contingency of $69,231 for a project total not to exceed $530,768.

2. Authorize the Chief Financial Officer/City Treasurer to execute any subsequent related minor change orders to the contract with ENCO Utility Services Moreno Valley LLC up to, but not exceeding, the contingencies for the project as stated in the report, subject to the approval of the City Attorney.

SUMMARY

This report recommends approval of a contract with ENCO Utility Services Moreno Valley LLC (ENCO) to retrofit approximately 11,257 streetlights to LED fixtures. The project includes installation of selected LED fixtures and the removal and disposal of luminaire heads and other discarded materials. The project is funded through a Lease/Purchase Agreement with Banc of America Leasing & Capital LLC. The total cost (including a 15%contingency) is $530,768.

BACKGROUND

Moreno Valley Utility (MVU) is acquiring 9,411 streetlight assets in the MVU service territory from Southern California Edison (SCE). The Purchase and Sale Agreement with SCE was approved by the City Council on October 18, 2016. Final approval of the purchase was received from the California Public Utilities Commission on March 31, 2018. The financing for the project is provided through the Lease/Purchase Agreement with Banc of America Leasing & Capital which was approved by the City Council on June 19, 2018.

The Notice Inviting Bids (NIB) was placed on PlanetBids, the City's online bidding portal on July 5, 2018 and closed on July, 27, 2018. Out of sixty-eight prospective bidders, MVU received twelve bid responses. Bid amounts ranged from a high of $2,002,507 to a low of $461,537. ENCO was found to be the lowest responsive and responsible bidder at $461, 537 which was under the project estimate of $1,000,000.

MVU will furnish an inventory of LED luminaires and photo cells for the project in compliance with the City standards. The contractor will retrofit approximately 11,257 streetlights (9,411 streetlights acquired from SCE and 1,846 current MVU streetlight assets) to the selected LED technology. Residential and arterial fixtures will be provided by the City and shall be General Electric 120/240 V, Evolve LED Medium Cobra Head with an Evolve light engine consisting of nested concentric and directional reflectors, an IP 65 rated optical enclosure, and an injected molded HIF acrylic lens. ENCO shall coordinate and install MVU approved LED luminaires and supply MVU with appropriate information to complete the SCE rebate incentive process. The luminaire for this project is a complete lighting unit consisting of LED lamp, driver and long-life photocell (Residential ERL1 0 04 B3 27 A Gray; Arterial ERLH0 11 B3 40 A Gray). The streetlight records shall be updated to reflect the fixture installed, serial number for warranty, and installation date. The contractor will provide all required services related to application, documentation and processing of applicable rebates through SCE to ensure full recovery of all applicable rebates is achieved. The contractor shall coordinate with the jurisdiction, MVU, and SCE in developing an acceptable methodology for processing the submittal, authorization and review of all rebates.

LED Retrofit

The following bids were received for the MVU LED Streetlight Retrofit Project. The lowest, responsive bidder was ENCO Utility Services Moreno Valley LLC. Staff is recommending that the City award the bid to ENCO Utility Services Moreno Valley LLC for $461,537 including a 15% contingency of $69,231 for a project total of $530,768.

	Contractor	Verified Bid Amounts
1.	ENCO Utility Services	$ 461,537
2.	International Line Builders	$ 549,454
3.	Siemens Industry Inc.	$ 627,578
4.	Sierra Pacific Electrical	$ 697,934
5.	Select Electric, Inc.	$ 776,733
6.	Foddrill Construction Corporation	$ 812,028
7.	PV GURU	$ 889,303
8.	E.E. Electric, INC.	$ 1,013,130
9.	Espinoza Electric	$ 1,069,415

10.	Aldridge Electric, Inc.	$ 1,198,870
11.	Elecnor Belco Electric, Inc.	$ 1,418,382
12.	Baker Electric	$ 2,002,507

ALTERNATIVES

1. Approve and authorize the recommended actions as presented in this staff report. Staff recommends this alternative which will execute an agreement to retrofit 11,257 streetlights in the MVU service territory.

2. Do not approve and authorize the recommended actions as presented in this staff report. Staff does not recommend this alternative because it will delay the upgrade of streetlight assets to LED technology and defer cost savings.

FISCAL IMPACT

The total cost (including a 15%contingency) is $530,768. The MVU LED Streetlight Retrofit, CIP Project No. 805 0053 is funded by the 2018 Lease/Purchase Agreement with Banc of America Leasing & Capital LLC. There is no impact to the General Fund.

Anticipated Project Schedule

Begin transition of 9,411 streetlights from SCE to MVU	September 2018
Begin LED retrofit	December 2018
Complete LED retrofit	December 2019

NOTIFICATION

The Notice Inviting Bids was sent to approved MVU vendors and placed on PlanetBids, the City's online bidding portal for twenty-three days. In total, thirteen Addendums were issued in response to questions from prospective bidders and were posted in PlanetBids.

PREPARATION OF STAFF REPORT

Prepared By:
Dean R. Ayer
Management Analyst

Department Head Approval:
Marshall Eyerman
Chief Financial Officer/City Treasurer

Concurred By:
Jeannette Olko
Electric Utility Division Manager

CITY COUNCIL GOALS

Public Facilities and Capital Projects. Ensure that needed public facilities, roadway improvements, and other infrastructure improvements are constructed and maintained.

CITY COUNCIL STRATEGIC PRIORITIES

1. **Economic Development**
2. **Public Safety**
3. **Library**
4. **Infrastructure**
5. **Beautification, Community Engagement, and Quality of Life**
6. **Youth Programs**

Objective 4.1: Develop a Moreno Valley Utility Strategic Plan to prepare for the 2020 expiration of the ENCO Utility Systems agreement.

ATTACHMENTS

1. MVU Streetlight Retrofit Agreement with ENCO

APPROVALS

Budget Officer Approval	✓ Approved	8/27/18 7:36 AM
City Attorney Approval	✓ Approved	8/24/18 3:52 PM
City Manager Approval	✓ Approved	8/27/18 11:34 AM

Agreement No.___________

AGREEMENT

Moreno Valley Utility
Streetlight Retrofit

THIS Agreement, effective as of the date signed by the City of Moreno Valley by and between the City of Moreno Valley, a municipal corporation, County of Riverside, State of California, hereinafter called the "City" and ENCO **Utility Services Moreno Valley LLC**, hereinafter called the "Contractor."

That the City and the Contractor for the consideration hereinafter named, agree as follows:

1. CONTRACT DOCUMENTS. The Contract Documents consist of the following, which are incorporated herein by this reference:

A. Governmental approvals, including, but not limited to, permits required for the Work
B. Any and all Contract Change Orders issued after execution of this Agreement
C. This Agreement
D. Addenda Nos. _______ inclusive, issued prior to the opening of the Bids
E. City Special Provisions, including the General Provisions and Technical Provisions
F. Standard Specifications for Public Works Construction ("Greenbook") – latest edition in effect at the Bid Deadline, as modified by the City Special Provisions
G. Reference Specifications/Reference Documents other than those listed in paragraph 2, below
H. Project Plans
I. City Standard Plans
J. Caltrans Standard Plans
K. The bound Bidding Documents
L. Contractor's Certificates of Insurance and Additional Insured Endorsements
M. Contractor's Bidder's Proposal and Subcontractor Listing

In the event of conflict between any of the Contract Documents, the provisions placing a more stringent requirement on the Contractor shall prevail. The Contractor shall provide the better quality or greater quantity of Work and/or materials unless otherwise directed by City in writing. In the event none of the Contract Documents place a more stringent requirement or greater burden on the Contractor, the controlling provision shall be that which is found in the document with higher precedence in accordance with the above order of precedence.

2. REFERENCE DOCUMENTS. The following Reference Documents are not considered Contract Documents and are made available to the Contractor for informational purposes:

A. None

3. SCOPE OF WORK. Moreno Valley Utility (MVU) is in the process of acquiring streetlight assets from Southern California Edison (SCE). This project involves the retrofit of approximately 11,257 newly acquired streetlights in the MVU service area to LED fixtures. MVU will furnish inventory of LED luminaires and photo cells for the project. Work is to be completed within 12 months of the contract award.

This base bid project also includes the installation of house-side shields on LED streetlights, and the removal and disposal of luminaire heads and any other discarded materials. The contractor will also be responsible for providing project record documentation. Please note that 11,257 is an estimate; the total number of streetlights could change during the process of acquiring assets from SCE.

The Contractor shall perform and provide all materials, tools, equipment, labor, and services necessary to complete the Work described in the Contract Documents, except as otherwise provided in the Plans, Standard Specifications, or City Special Provisions to be the responsibility of others.

4. PAYMENT.

4.1. **Contract Price and Basis for Payment.** In consideration for the Contractor's full, complete, timely, and faithful performance of the Work required by the Contract Documents, the City shall pay Contractor for the actual quantity of Work required under the Bid Items awarded by the City performed in accordance with the lump sum prices and unit prices for Bid Items and Alternate Bid Items, if any, set forth the Bidder's Proposal submitted with the Bid. The sum of the unit prices and lump sum prices for the Base Bid Items, awarded by the City is Four Hundred and Sixty-one Thousand Five Hundred and Thirty-seven Dollars ($461,537) ("Contract Price"). It is understood and agreed that the quantities set forth in the Bidder's Proposal for which unit prices are fixed are estimates only and that City will pay and Contractor will accept, as full payment for these items of work, the unit prices set forth in the Bidder's Proposal multiplied by the actual number of units performed, constructed, or completed as directed by the City Engineer.

4.2. **Payment Procedures.** Based upon applications for payment submitted by the Contractor to the City, the City shall make payments to the Contractor in accordance with Article 9 of the Standard Specifications, as modified by Article 9 of the City Special Provisions.

5. CONTRACT TIME.

A. Notice to Proceed. After the Agreement has been fully executed by the Contractor and the City, the City shall issue the "Notice to Proceed." The date specified in the Notice to Proceed constitutes the date of commencement of the Contract Time of **Three hundred and Sixty-five (365) Working Days for the project**. The Contract Time includes the time necessary to fulfill preconstruction requirements, and to complete construction of the Project (except as adjusted by subsequent Change Orders).

Critical preconstruction requirements include, but are not limited to, the following:

- Submitting and obtaining approval of critical required submittals
- Notifying all agencies, utilities, residents, etc., as outlined in the Bidding Documents

If the City's issuance of a Notice to Proceed is delayed due to Contractor's failure to return the fully executed Agreement and insurance and bond documents within ten (10) Working Days after Contract award, then Contractor agrees to the deduction of one (1) Working Day from the number of days to complete the Project for every Working Day of delay in the City's receipt of said documents. This right is in addition to and does not affect the City's right to demand forfeiture of Contractor's Bid Security if Contractor persistently delays in providing the required documentation.

6. LIQUIDATED DAMAGES AND CONTROL OF WORK

6.1. **Liquidated Damages.** The Contractor and City (collectively, the "Parties") have agreed to liquidate damages with respect to Contractor's failure to fulfill the preconstruction requirements, and/or failure to complete the Work within the Contract Time. The Parties intend for the liquidated damages set forth herein to apply to this Contract as set forth in Government Code Section 53069.85. Contractor acknowledges and agrees that the liquidated damages are intended to compensate the City solely for Contractor's failure to meet the deadline for completion of the Work and will not excuse Contractor from liability from any other breach, including any failure of the Work to conform to the requirements of the Contract Documents.

In the event that Contractor fails to fulfill the preconstruction requirements and/or fails to complete the Work within the Contract Time, Contractor agrees to pay the City **$1,000.00 per Calendar day** that completion of the Work is delayed beyond the Contract Time, as adjusted by Contract Change Orders. The Contractor will not be assessed liquidated damages for delays occasioned by the failure of the City or of the owner of a utility to provide for the removal or relocation of utility facilities.

The Contractor and City acknowledge and agree that the foregoing liquidated damages have been set based on an evaluation of damages that the City will incur in the event of late completion of the Work. The Contractor and City acknowledge and agree that the amount of such damages are impossible to ascertain as of the date of execution hereof and have agreed to such liquidated damages to fix the City's damages and to avoid later disputes. It is understood and agreed by Contractor that liquidated damages payable pursuant to this Agreement are not a penalty and that such amounts are not manifestly unreasonable under the circumstances existing as of the date of execution of this Agreement.

It is further mutually agreed that the City will have the right to deduct liquidated damages against progress payments or retainage and that the City will issue a Change Order or Construction Change Directive and reduce the Contract Price accordingly. In the event the remaining unpaid Contract Price is insufficient to cover the full amount of liquidated damages, Contractor shall pay the difference to the City.

6.2. Any work completed by the Contractor after the issuance of a Stop Work Notice by the City shall be rejected and/or removed and replaced as specified in Section 2-11 of the Special Provisions.

6.3. **Owner is Exempt from Liability for Early Completion Delay Damages**. While the Contractor may schedule completion of all of the Work, or portions thereof, earlier than the Contract Time, the Owner is exempt from liability for and the Contractor will not be entitled to an adjustment of the Contract Sum or to any additional costs, damages, including, but not limited to, claims for extended general conditions costs, home office overhead, jobsite overhead, and management or administrative costs, or compensation whatsoever, for use of float time or for Contractor's inability to complete the Work earlier than the Contract Time for any reason whatsoever, including but not limited to, delay cause by Owner or other Excusable Compensable Delay. See Section 6-6 of the Standard Specifications and City Special Provisions regarding compensation for delays.

7. INSURANCE.

7.1. **General**. The Contractor shall procure and maintain at its sole expense and throughout the term of this Agreement, any extension thereof, Commercial General Liability, Automobile Liability, and Workers' Compensation Insurance with such coverage limits as described herein.

7.2. **Additional Insured Endorsements**. The Contractor shall cause the insurance required by the Contract Document to include the City of Moreno Valley, the City Council and each member thereof, the Moreno Valley Housing Authority (MVHA), and the Moreno Valley Community Services District (CSD), and their respective officials, employees, commission members, officers, directors, agents, employees, volunteers and representatives as an additional insured. For the Commercial General Liability coverage, said parties shall be named as additional insureds utilizing either:

1. Insurance Services Office ("ISO") Additional Insured endorsement CG 20 10 (11/85); or

2. ISO Additional Insured endorsement CG 20 10 (10/01) and Additional Insured Completed Operations endorsement CG 20 37 (10/01); or

3. substitute endorsements providing equivalent coverage, approved by the City.

The endorsements shall be signed by a person authorized by the insurer to bind coverage on its behalf. The coverage shall contain no special limitations on the scope of protection afforded to such additional insureds. Coverage for such additional insureds does not extend to liability to the extent prohibited by Insurance Code Section 11580.4.

7.3. **Waivers of Subrogation**. All policies of insurance required by the Contract Documents shall include or be endorsed to provide a waiver by the insurers of any rights of recovery or subrogation that the insurers may have at any time against the City of Moreno Valley, the City Council and each member thereof, the Moreno Valley Housing Authority (MVHA), and the Moreno Valley Community Services District (CSD), and their respective officials, employees, commission members, officers, directors, agents, employees, volunteers and representatives.

7.4. **Primary Coverage**. All policies and endorsements shall stipulate that the Contractor's (and the Subcontractors') insurance coverage shall be primary insurance as respects the City of Moreno Valley, the City Council and each member thereof, the Moreno Valley Housing Authority (MVHA), and the Moreno Valley Community Services District (CSD), and their respective officials, employees, commission members, officers, directors, agents, employees, volunteers and representatives, and shall be excess of the Contractor's (and its Subcontractors') insurance and shall not contribute with it.

7.5. **Coverage Applies Separately to Each Insured and Additional Insured**. Coverage shall state that the Contractor's (and its Subcontractors') insurance shall apply separately to each insured or additional insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability. Coverage shall apply to any claim or suit brought by an additional insured against a named insured or other insured.

7.6. **Self-Insurance**. Any self-insurance (including deductibles or self-insured retention in excess of $50,000) in lieu of liability insurance must be declared by Contractor and approved by the City in writing prior to execution of the Agreement. The City's approval of self-insurance, if any, is within the City's sole discretion and is subject to the following conditions:

1. Contractor must, at all times during the term of the Agreement and for a period of at least **one (1)** year after completion of the Project, and any extension of the one-year correction guarantee period in accordance with Section 6-8.1 of the City Special Provisions, maintain and upon Owner's reasonable request provide evidence of:

   (a) Contractor's "net worth" (defined as "total assets" [defined as all items of value owned by the Contractor including tangible items such as cash, land, personal property and equipment and intangible items such as copyrights and business goodwill]) minus total outside liabilities must be reflected in a financial statement for the prior fiscal year reflecting sufficient income and budget for Contractor to afford at least one loss in an amount equal to the amount of self-insurance;

   (b) financial statements showing that Contractor has funds set aside/budgeted to finance the self-insured fund (i.e., Contractor has a program that fulfills functions that a primary insurer would fill; and

   (c) a claims procedure that identifies how a claim is supposed to be tendered to reach the financing provided by the self-insured fund.

2. If at any time after such self-insurance has been approved Contractor fails to meet the financial thresholds or otherwise fails to comply with the provisions set forth in this Paragraph 7, at the option of the City:

   (a) the Contractor shall immediately obtain and thereafter maintain the third party insurance required under this Paragraph 7 and otherwise on the terms required above; or

   (b) the insurer shall reduce or eliminate such deductibles or self-insured retention as respects the City, its officers, officials, employees and volunteers; or

   (c) the Contractor shall procure a bond guaranteeing payment of losses and related investigation, claim administration, and defense expenses.

7.7. **Insurer Financial Rating**. Insurance companies providing insurance hereunder shall be rated A-:VII or better in Best's Insurance Rating Guide and shall be legally licensed and qualified to conduct insurance business in the State of California.

7.8. **Notices to City of Cancellation or Changes.** Each insurance policy described in this Paragraph 7 shall contain a provision or be endorsed to state that coverage will not be cancelled without **thirty (30) days'** prior written notice by certified or registered mail to the City (this obligation may be satisfied in the alternative by requiring such notice to be provided by Contractor's insurance broker and set forth on its Certificate of Insurance provided to the City), except that cancellation for non-payment of premium shall require (10) days prior written notice by certified or registered mail. If an insurance carrier cancels any policy or elects not to renew any policy required to be maintained by Contractor pursuant to the Contract Documents, Contractor agrees to give written notice to the City at the address indicated on the first page of the Agreement. Contractor agrees to provide the same notice of cancellation and non-renewal to the City that is required by such policy(ies) to be provided to the First Named Insured under such policy(ies). Contractor shall provide confirmation that the required policies have been renewed not less than seven (7) days prior to the expiration of existing coverages and shall deliver renewal or replacement policies, certificates and endorsements to the City Clerk within fourteen (14) days of the expiration of existing coverages. Contractor agrees that upon receipt of any notice of cancellation or alteration of the policies, Contractor shall procure within five (5) days, other policies of insurance similar in all respects to the policy or policies to be cancelled or altered. Contractor shall furnish to the City Clerk copies of any endorsements that are subsequently issued amending coverage or limits within fourteen (14) days of the amendment.

7.9. **Commercial General Liability**. Coverage shall be written on an ISO Commercial General Liability "occurrence" form CG 00 01 (10/01 or later edition) or equivalent form approved by the City for coverage on an occurrence basis. The insurance shall cover liability, including, but not limited to, that arising from premises operations, stop gap liability, independent contractors, products-completed operations, personal injury, advertising injury, and liability assumed under an insured contract. The policy shall be endorsed to provide the Aggregate Per Project Endorsement ISO form CG 25 03 (11/85). Coverage shall contain no contractors' limitation or other endorsement limiting the scope of coverage for liability arising from pollution, explosion, collapse, or underground (x, c, u) property damage. Contractor shall provide Products/Completed Operations coverage to be maintained continuously for a minimum of **one (1) year** after Final Acceptance of the Work, and any extension of the one-year correction guarantee period in accordance with Section 6-8.1 of the City Special Provisions.

Contractor shall maintain Commercial General Liability insurance with the following minimum limits: $1,000,000 per occurrence / $2,000,000 aggregate / $2,000,000 products-completed operations.

7.10. **Business Automobile Liability**. Coverage shall be written on ISO form CA 00 01 (12/93 or later edition) or a substitute form providing equivalent coverage for owned, hired, leased and non-owned vehicles, whether scheduled or not, with $1,000,000 combined single limit per accident for bodily injury and property damage. If necessary, the policy shall be endorsed to provide contractual liability coverage.

7.11. **Workers' Compensation**. Contractor shall comply with the applicable sections of the California Labor Code concerning workers' compensation for injuries on the job. Compliance is accomplished in one of the following manners:

1. Provide copy of permissive self-insurance certificate approved by the State of California; or

2. Secure and maintain in force a policy of workers' compensation insurance with statutory limits and Employer's Liability Insurance with a minimal limit of **$1,000,000** per accident; or
3. Provide a "waiver" form certifying that no employees subject to the Labor Code's Workers' Compensation provision will be used in performance of this Contract.

7.12. **Subcontractors' Insurance**. The Contractor shall include all Subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each Subcontractor. All coverages for Subcontractors shall be subject to all of the requirements stated herein.

8. BONDS. The Contractor shall furnish a satisfactory Performance Bond meeting all statutory requirements of the State of California on the form provided by the City. The bond shall be furnished as a guarantee of the faithful performance of the requirements of the Contact Documents as may be amended from time to time, including, but not limited to, liability for delays and damages (both direct and consequential) to the City and the City's Separate Contractors and consultants, warranties, guarantees, and indemnity obligations, in an amount that shall remain equal to one hundred percent (100%) of the Contract Price.

The Contractor shall furnish a satisfactory Labor and Materials Payment Bond meeting all statutory requirements of the State of California on the form provided by the City in an amount that shall remain equal to one hundred percent (100%) of the Contract Price to secure payment of all claims, demands, stop notices, or charges of the State of California, of material suppliers, mechanics, or laborers employed by the Contractor or by any Subcontractor, or any person, form, or entity eligible to file a stop notice with respect to the Work.

All bonds shall be executed by a California-admitted surety insurer. Bonds issued by a California-admitted surety insurer listed on the latest version of the U.S Department of Treasury Circular 570 shall be deemed accepted unless specifically rejected by the City. Bonds issued by sureties not listed in Treasury Circular 570 must be accompanied by all documents enumerated in California Code of Civil Procedure Section 995.660(a). The bonds shall bear the same date as the Contract. The attorney-in-fact who executes the required bonds on behalf of the surety shall affix thereto a certified and current copy of the power of attorney. In the event of changes that increase the Contract Price, the amount of each bond shall be deemed to increase and at all times remain equal to the Contract Price. The signatures shall be acknowledged by a notary public. Every bond must display the surety's bond number and incorporate the Contract for construction of the Work by reference. The terms of the bonds shall provide that the surety agrees that no change, extension of time, alteration, or modification of the Contract Documents or the Work to be performed thereunder shall in any way affect its obligations and shall waive notice of any such change, extension of time, alteration, or modification of the Contract Documents. The surety further agrees that it is obligated under the bonds to any successor, grantee, or assignee of the City.

Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

Should any bond become insufficient, or should any of the sureties, in the opinion of the City, become non-responsible or unacceptable, the Contractor shall, within ten (10) Calendar Days after receiving notice from the City, provide written documentation to the Satisfaction of the City that Contractor has secured new or additional sureties for the bonds; otherwise the Contractor shall be in default of the Contract. No further payments shall be deemed due or will be made under Contract until a new surety(ies) qualifies and is accepted by the City.

Contractor agrees that the Labor and Materials Payment Bond and Faithful Performance Bond attached to this Agreement are for reference purposes only, and shall not be considered a part of this Agreement. Contractor further agrees that said bonds are separate obligations of the Contractor and its surety, and that any attorney's fee provision contained in any payment bond or performance bond shall not apply to this Agreement. In the event there is any litigation between the parties arising from the breach of this Agreement, each party will bear its own attorneys' fees in the litigation.

9. RECORDS. The Contractor and its Subcontractors shall maintain and keep books, payrolls, invoices of materials, and Project records current, and shall record all transactions pertaining to the Contract in accordance with generally acceptable accounting principles. Said books and records shall be made available to the City of Moreno Valley, Riverside County, the State of California, the Federal Government, and to any authorized representative thereof for purposes of audit and inspection at all reasonable times and places. All such books, payrolls, invoices of materials, and records shall be retained for at least three (3) years after Final Acceptance.

10. INDEMNIFICATION.

10.1. **General.** To the fullest extent permitted by law, the Contractor assumes liability for and agrees, at the Contractor's sole cost and expense, to promptly and fully indemnify, protect, hold harmless and defend (even if the allegations are false, fraudulent, or groundless), the City of Moreno Valley, its City Council, the Moreno Valley Housing Authority (MVHA), and the Moreno Valley Community Services District (CSD), and all of their respective officials, officers, directors, employees, commission members, representatives and agents ("Indemnitees"), from and against any and all claims, allegations, actions, suits, arbitrations, administrative proceedings, regulatory proceedings, or other legal proceeds, causes of action, demands, costs, judgments, liens, stop notices, penalties, liabilities, damages, losses, anticipated losses of revenues, and expenses (including, but not limited to, any fees of accountants, attorneys, experts or other professionals, or investigation expenses), or losses of any kind or nature whatsoever, whether actual, threatened or alleged, arising out of, resulting from, or in any way (either directly or indirectly), related to the Work, the Project or any breach of the Contract by Contractor or any of its officers, agents, employees, Subcontractors, Sub-subcontractors, or any person performing any of the Work, pursuant to a direct or indirect contract with the Contractor ("Indemnity Claims"). Such Indemnity Claims include, but are not limited to, claims for:

A. Any activity on or use of the City's premises or facilities;
B. Any liability incurred due to Contractor acting outside the scope of its authority pursuant to the Contract, whether or not caused in part by an Indemnified Party;
C. The failure of Contractor or the Work to comply with any Applicable Law, permit or orders;
D. Any misrepresentation, misstatement or omission with respect to any statement made in the Contract Documents or any document furnished by the Contractor in connection therewith;
E. Any breach of any duty, obligation or requirement under the Contract Documents, including, but not limited to any breach of Contractor's warranties, representations or agreements set forth in the Contract Documents;

F. Any failure to coordinate the Work with City's Separate Contractors;
G. Any failure to provide notice to any party as required under the Contract Documents;
H. Any failure to act in such a manner as to protect the Project from loss, cost, expense or liability;
I. Bodily or personal injury, emotional injury, sickness or disease, or death at any time to any persons including without limitation employees of Contractor;
J. Damage or injury to real property or personal property, equipment and materials (including, but without limitation, property under the care and custody of the Contractor or the City) sustained by any person or persons (including, but not limited to, companies, corporations, utility company or property owner, Contractor and its employees or agents, and members of the general public);
K. Any liability imposed by Applicable Law including, but not limited to criminal or civil fines or penalties;
L. Any dangerous, hazardous, unsafe or defective condition of, in or on the Site, of any nature whatsoever, which may exist by reason of any act, omission, neglect, or any use or occupation of the Site by Contractor, its officers, agents, employees, or Subcontractors;
M. Any operation conducted upon or any use or occupation of the Site by Contractor, its officers, agents, employees, or Subcontractors under or pursuant to the provisions of the Contract or otherwise;
N. Any acts, errors, omission or negligence of Contractor, its officers, agents, employees, or Subcontractors;
O. Infringement of any patent rights, licenses, copyrights or intellectual property which may be brought against the Contractor or Owner arising out of Contractor's Work, for which the Contractor is responsible; and
P. Any and all claims against the City seeking compensation for labor performed or materials used or furnished to be used in the Work or alleged to have been furnished on the Project, including all incidental or consequential damages resulting to the City from such claims.

10.2. **Effect of Indemnitees' Active Negligence**. Contractor's obligations to indemnify and hold the Indemnitees harmless **exclude** only such portion of any Indemnity Claim which is attributable to the active negligence or willful misconduct of the Indemnitee, provided such active negligence or willful misconduct is determined by agreement of the parties or by findings of a court of competent jurisdiction. In instances where an Indemnitee's active negligence accounts for only a percentage of the liability for the Indemnity Claim involved, the obligation of Contractor will be for that entire percentage of liability for the Indemnity Claim not attributable to the active negligence or willful misconduct of the Indemnitee(s). Such obligation shall not be construed to negate, abridge or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this Paragraph 10. Subject to the limits set forth herein, the Contractor, at its own expense, shall satisfy any resulting judgment that may be rendered against any Indemnitee resulting from an Indemnity Claim. The Indemnitees shall be consulted with regard to any proposed settlement.

10.3. **Independent Defense Obligation.** The duty of the Contractor to indemnify and hold harmless the Indemnitees includes the separate and independent duty to defend the Indemnitees, which duty arises immediately upon receipt by Contractor of the tender of any Indemnity Claim from an Indemnitee. The Contractor's obligation to defend the Indemnitee(s) shall be at Contractor's sole expense, and not be excused because of the Contractor's inability to evaluate liability or because the Contractor evaluates liability and determines that the Contractor is not liable. This duty to defend shall apply whether or not an Indemnity Claim has merit or is meritless, or which involves claims or allegations that any or all of the Indemnitees were actively, passively, or concurrently negligent, or which otherwise asserts that the Indemnitees are responsible, in whole or in part, for any Indemnity Claim. The Contractor shall respond within thirty (30) Calendar Days to the tender of any Indemnity Claim for defense and/or indemnity by an Indemnitee, unless the Indemnitee agrees in writing to an extension of this time. The defense provided to the Indemnitees by Contractor shall be by well qualified, adequately insured and experienced legal counsel acceptable to the City.

10.4. **Intent of Parties Regarding Scope of Indemnity.** It is the intent of the parties that the Contractor and its Subcontractors of all tiers shall provide the Indemnitees with the broadest defense and indemnity permitted by Applicable Law. In the event that any of the defense, indemnity or hold harmless provisions in the Contract Documents are found to be ambiguous, or in conflict with one another, it is the parties' intent that the broadest and most expansive interpretation in favor of providing defense and/or indemnity to the Indemnitees be given effect.

10.5. **Waiver of Indemnity Rights Against Indemnitees.** With respect to third party claims against the Contractor, to the fullest extent permitted by law, the Contractor waives any and all rights to any type of express or implied indemnity against the Indemnitees.

10.6. **Subcontractor Requirements.** In addition to the requirements set forth hereinabove, Contractor shall ensure, by written subcontract agreement, that each of Contractor's Subcontractors of every tier shall protect, defend, indemnify and hold harmless the Indemnitees with respect to Indemnity Claims arising out of, in connection with, or in any way related to each such Subcontractors' Work on the Project in the same manner in which Contractor is required to protect, defend, indemnify and hold the Indemnitees harmless. In the event Contractor fails to obtain such defense and indemnity obligations from others as required herein, Contractor agrees to be fully responsible to the Indemnitees according to the terms of this Paragraph 10.

10.7. **No Limitation or Waiver of Rights.** Contractor's obligations under this Paragraph 10 are in addition to any other rights or remedies which the Indemnitees may have under the law or under the Contract Documents. Contractor's indemnification and defense obligations set forth in this Paragraph 10 are separate and independent from the insurance provisions set forth in the Contract Documents, and do not limit, in any way, the applicability, scope, or obligations set forth in such insurance provisions. The purchase of insurance by the Contractor with respect to the obligations required herein shall in no event be construed as fulfillment or discharge of such obligations. In any and all claims against the Indemnitees by any employee of the Contractor, any Subcontractor, any supplier of the Contractor or Subcontractors, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the obligations under this Paragraph 10 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor or any supplier of either of them, under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts. Failure of the City to monitor compliance with these requirements imposes no additional obligations on the City and will in no way act as a waiver of any rights hereunder.

10.8. **Withholding to Secure Obligations.** In the event an Indemnity Claim arises prior to final payment to Contractor, the City may, in its sole discretion, reserve, retain or apply any monies due Contractor for the purpose of resolving such Indemnity Claims; provided, however, the City may release such funds if the Contractor provides the City with reasonable assurances of protection of the Indemnitees' interests. The City shall, in its sole discretion, determine whether such assurances are reasonable.

10.9. **Survival of Indemnity Obligations.** Contractor's obligations under this Paragraph 10 are binding on Contractor's and its Subcontractors' successors, heirs and assigns and shall survive the completion of the Work or termination of the Contractor's performance of the Work.

11. SUCCESSORS AND ASSIGNS. The Parties bind themselves, their heirs, executors, administrators, successors and assigns the covenants, agreements and obligations contained in the Contract Documents. The Contractor shall not, either voluntarily or by action of law, assign any right or obligation of the Contractor under the Contract Documents without prior written consent of the City.

(SIGNATURE PAGE FOLLOWS)

CITY OF MORENO VALLEY, Municipal Corporation

BY:______________________________
Mayor/City Manager *(Select only one)*

DATE:______________________________

INTERNAL USE ONLY

ATTEST:

____
City Clerk
(only needed if Mayor signs)

APPROVED AS TO LEGAL FORM:

____
City Attorney

____
Date

RECOMMENDED FOR APPROVAL:

____
Public Works Director/City Engineer
(if contract exceeds $15,000)

____
Date

(Name of Contractor)

License No./
Classification: C10 #748072

Expiration Date: 7/11/2019

Federal I.D. No.: 81-0559110

PRINT NAME: Robert de Korné

SIGNATURE:

TITLE: Senior V.P.

DATE: 8/15/2018

PRINT NAME: Ruby Irigoyen

SIGNATURE:

TITLE: Senior V.P. Customer Service

DATE: 8/15/2018

SIGNING INSTRUCTIONS TO THE CONTRACTOR:

Signature(s) must be accompanied by a completed notary certificate of acknowledgement attached hereto. A general partner must sign on behalf of a partnership. **Two (2)** corporate officers must sign on behalf of a corporation unless the corporation has a corporate resolution that allows one person to sign on behalf of the corporation; if applicable, said resolution must be attached hereto. The corporate seal may be affixed hereto.

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Riverside)

On August 15, 2018 before me, Mayra Robledo, Public Notary
(insert name and title of the officer)

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

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

WITNESS my hand and official seal.

MAYRA ROBLEDO
Notary Public - California
Riverside County
Commission # 2174033
My Comm. Expires Dec 1, 2020

Signature ______________________ (Seal)

ACKNOWLEDGMENT

> A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Riverside)

On August 15, 2018 before me, Mayra Robledo, Public Notary
(insert name and title of the officer)

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

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

WITNESS my hand and official seal.

MAYRA ROBLEDO
Notary Public - California
Riverside County
Commission # 2174033
My Comm. Expires Dec 1, 2020

Signature ____________________ **(Seal)**

Report to City Council

TO: Mayor and City Council

FROM: Michael L. Wolfe, P.E., Public Works Director/City Engineer

AGENDA DATE: September 4, 2018

TITLE: AWARD OF AN AGREEMENT FOR SPECIAL DISTRICTS CONSULTING SERVICES TO MULTIPLE CONSULTANTS

RECOMMENDED ACTION

Recommendations:

1. Approve each Agreement for Project Related Services, in substantially the form attached hereto, with NBS, Webb Municipal Finance, LLC, and Willdan Financial Services to provide special tax consulting services on an as-needed basis for individual not-to exceed amounts of $150,000.

2. Authorize the City Manager to execute the Agreements and subject to the approval of the City Attorney, and provided sufficient funding appropriations and program approvals have been granted by the City Council, authorize the Public Works Director/City Engineer to execute project specific agreements in accordance with the terms of the Agreements.

SUMMARY

This report recommends approving an Agreement for Project Related Services with NBS, Webb Municipal Finance, LLC, and Willdan Financial Services (collectively the “Consultant”). The Agreements will allow the City to enter into project specific agreements for services related to special financing district services on an as-needed basis with the Consultants. Such services may include assisting in the formation of new Community Facilities Districts (CFD), preparation of boundary maps for annexation into existing CFDs, and preparing annual Assessment Engineer Reports for the City’s Lighting and Landscape Maintenance Districts (L/LMD).

The scope of work for each special district project can be funded by developers wishing to form a district as part of their development project, by property owners annexing into existing districts, or through parcel charges collected to administer the district.

DISCUSSION

The City offers several types of special financing districts (e.g. CFDs and L/LMDs) for the development community's use. The districts help the developers and/or property owners to provide a funding source for services required as part of development of their property and which are not typically funded by the General Fund. These services may include funding debt service for acquisition of new public infrastructure and/or providing a funding source for ongoing maintenance and services of parks, street lighting, stormwater management, and public landscaping. Funding for the districts is generated through a levy on the annual property tax bill and can only be used to provide the service for which it was collected. Each type of district is unique with varying legislative requirements and processes, oftentimes requiring the expertise of consultants to navigate the complexities of each.

On February 13, 2018, a Request for Qualifications (RFQ) was issued for Special Districts Consulting Services. The RFQ requested information on a consultant's experience and expertise in a) formation of CFDs for those development projects wishing to issue bonds to finance public infrastructure improvements required as part of their development, b) preparation of boundary maps for those development projects annexing into a CFD, c) preparing the required annual engineer's reports related to the L/LMDs, and d) providing general special financing district consulting services.

Pursuant to the Moreno Valley Municipal Code, selection of professional services firms shall be based on demonstrated competence and qualifications for the types of services to be performed at fair and reasonable prices. Therefore, staff evaluated the four proposals received and rated them based on the responsiveness to the RFQ, the respondent's understanding of the program and services required, the experience of the firm in providing services to public sector entities of similar size and variety of districts, and the experience and qualifications of the individuals proposed to service the account. NBS, Webb Municipal Finance, LLC, and Willdan Financial Services were identified as the most qualified firms to provide the requested services.

The Agreements establish a short-list of qualified consultants and will provide the City flexibility in selecting a consultant for project based services based on demonstrated levels of technical expertise and time constraints. As services are needed, project based proposals (e.g. annual assessment engineer's reports, boundary map preparation, establishing a new district, etc.) will be solicited from the Consultants and a project specific agreement entered into with the top proposer. Each Agreement has a $150,000 not-to-exceed amount and will expire June 30, 2023. A purchase order will be created for, and only in the amount of, each project.

Staff recommends 1) award of individual Agreements to each of the Consultants, 2) authorizing the City Manager to execute them, and 3) authorizing the Public Works

Director/City Engineer to enter into project specific agreements, in accordance with the terms of the Agreement and subject to the approval of the City Attorney. Such agreements shall only be entered into provided it is within the authorized not-to-exceed amount and provided sufficient funding appropriations and program approvals have been granted by the City Council. Allowing the Public Works Director/City Engineer to enter into the project specific agreements allows for the provision of additional services in response to the development community's needs and legislative requirements of the districts without a delay in project delivery.

This action meets the Strategic Plan Priorities to provide business support services that grow the City's economic base and to develop and implement innovative, cost effective infrastructure maintenance programs, public facilities management strategies, and capital improvement programming and project delivery which enhance the quality of life for Moreno Valley residents.

ALTERNATIVES

1. Approve and authorize the recommended actions as presented in this report. *Staff recommends this alternate to provide professional and timely development services and to comply with legislative requirements.*

2. Do not approve and authorize the recommended actions in this report. *Staff does not recommend this alternative because it will reduce the City's ability to provide services to the development community and may impact its ability to comply with legislative requirements.*

FISCAL IMPACT

There are no budget adjustments being requested with the Agreements. Funding for each project specific agreement could be provided by developers requesting to form a district as part of their development project, by property owners annexing into existing districts, or through the parcel charges collected to administer the district. Costs for the annual district administration have been included within the budgets of each district. There is no fiscal impact on the General Fund.

NOTIFICATION

The RFQ was emailed to special financing district consultants and posted on the City's bid portal (PlanetBids).

PREPARATION OF STAFF REPORT

Prepared by:
Candace E. Cassel
Special Districts Division Manager

Department Head Approval:
Michael L. Wolfe, P.E.
Public Works Director/City Engineer

Concurred By:
Angelic Davis
Purchasing & Facilities Division Manager

CITY COUNCIL GOALS

Positive Environment. Create a positive environment for the development of Moreno Valley's future.

Community Image, Neighborhood Pride and Cleanliness. Promote a sense of community pride and foster an excellent image about our City by developing and executing programs which will result in quality development, enhanced neighborhood preservation efforts, including home rehabilitation and neighborhood restoration.

CITY COUNCIL STRATEGIC PRIORITIES

1. **Economic Development**
2. **Public Safety**
3. **Library**
4. **Infrastructure**
5. **Beautification, Community Engagement, and Quality of Life**
6. **Youth Programs**

See the Discussion section above for details of how this action supports the City Council's Strategic Priorities.

ATTACHMENTS

1. NBS Agreement
2. Webb Municipal Finance, LLC Agreement
3. Willdan Financial Services Agreement

APPROVALS

Budget Officer Approval	✓ Approved	8/24/18 2:59 PM
City Attorney Approval	✓ Approved	8/27/18 10:10 AM
City Manager Approval	✓ Approved	8/27/18 11:23 AM

AGREEMENT FOR PROJECT RELATED SERVICES
SPECIAL DISTRICTS CONSULTING SERVICES
PROJECT NO. 2018-016

This Agreement is by and between the City of Moreno Valley, California, a municipal corporation, hereinafter described as "City," and NBS, a (California corporation, partnership, sole ownership) hereinafter described as "Consultant." This Agreement is made and entered into effective on the date the City signs this Agreement.

RECITALS

WHEREAS, the City has determined it is in the public interest to pre-qualify consultants for potential future and yet to be determined professional work hereinafter described as "Projects"; and

WHEREAS, the City has determined the Projects involve the performance of professional and technical services of a temporary nature as more specifically described in Exhibit "A" (Professional and Technical Services) and Exhibit "B" (Consultant's Proposal) hereto; and

WHEREAS, the City does not have available employees to perform the services for the Projects; and

WHEREAS, the City has requested the Consultant to perform such services for the Projects on an as-needed basis; and

WHEREAS, the Consultant is professionally qualified in California to perform the professional and technical services required for the Projects, and hereby represents that it desires to and is professionally and legally capable of performing the services called for by this Agreement;

THEREFORE, the City and the Consultant, for the consideration hereinafter described, mutually agree as follows:

DESCRIPTION OF PROJECT

1. The Projects are described as special districts consulting services. Project No. 2018-016.

SCOPE OF SERVICES

2. The Consultant's scope of service is for special districts consulting services and further type of work within that area of expertise is described in Exhibit “A” and Exhibit "B" attached hereto and incorporated herein by this reference. In the event of a conflict, the City's Request for Qualifications shall take precedence over the Consultant's Proposal. A separate and specific scope of services shall be provided for each individual project requested to be performed by Consultant along with a separate agreement (“Project Specific Agreement”).

3. The City's responsibility is described on Exhibit "C" attached hereto and incorporated herein by this reference.

PAYMENT TERMS

4. There shall be no payment due under this Agreement. For each project requested by the City, a separate Project Specific Agreement shall be executed specifying a rate for the services provided and a “Not-to-Exceed” fee for the project. The City agrees to pay the Consultant and the Consultant agrees to receive an up to "Not-to-Exceed" fee of $150,000 for all Project Specific Agreements entered into during the term of this Agreement and shall be in accordance with the payment terms provided on Exhibit "D" attached hereto and incorporated herein by this reference unless otherwise noted within each Project Specific Agreement.

TIME FOR PERFORMANCE

5. Consultant shall not commence any services until a Project Specific Agreement

has been fully executed.

6. The Consultant shall commence services upon receipt of written direction to proceed from the City.

7. This Agreement shall be effective from effective date and shall continue in full force and effect date through June 30, 2023, subject to any earlier termination in accordance with this Agreement. The services of Consultant shall be completed in a sequence assuring expeditious completion, but in any event, all such services shall be completed prior to expiration of this Agreement.

8. (a) The Consultant agrees that the personnel, including the principal Project Manager, and all subconsultants assigned to the Project by the Consultant, shall be subject to the prior approval of the City.

(b) No change in subconsultants or key personnel shall be made by the Consultant without written prior approval of the City.

SPECIAL PROVISIONS

9. It is understood and agreed that the Consultant is, and at all times shall be, an independent contractor and nothing contained herein shall be construed as making the Consultant or any individual whose compensation for services is paid by the Consultant, an agent or employee of the City, or authorizing the Consultant to create or assume any obligation or liability for or on behalf of the City.

10. The Consultant may also retain or subcontract for the services of other necessary consultants with the prior written approval of the City. Payment for such services shall be the responsibility of the Consultant. Any and all subconsultants employed by the Consultant shall be subject to the terms and conditions of this Agreement and any subsequent

Project Specific Agreement, except that the City shall have no obligation to pay any subconsultant for services rendered on the Projects.

11. The Consultant and the City agree to use reasonable care and diligence to perform their respective services under this Agreement and any subsequent Project Specific Agreement.

12. The Consultant shall comply with applicable federal, state, and local laws in the performance of work under this Agreement and any subsequent Project Specific Agreement.

13. To the extent required by controlling federal, state and local law, Consultant shall not employ discriminatory practices in the provision of services, employment of personnel, or in any other respect on the basis of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, sexual orientation, ethnicity, status as a disabled veteran or veteran of the Vietnam era. Subject to the foregoing and during the performance of this Agreement, Consultant agrees as follows:

(a) Consultant will comply with all applicable laws and regulations providing that no person shall, on the grounds of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, sexual orientation, ethnicity, status as a disabled veteran or veteran of the Vietnam era be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity made possible by or resulting from this Agreement.

(b) Consultant will not discriminate against any employee or applicant for employment because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, sexual orientation, ethnicity, status as a disabled veteran or veteran of the Vietnam era. Consultant shall ensure

that applicants are employed, and the employees are treated during employment, without regard to their race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, sexual orientation, ethnicity, status as a disabled veteran or veteran of the Vietnam era. Such requirement shall apply to Consultant's employment practices including, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Consultant agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provision of this nondiscrimination clause.

(c) Consultant will, in all solicitations or advertisements for employees placed by or on behalf of Consultant in pursuit hereof, state that all qualified applicants will receive consideration for employment without regard to race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, sexual orientation, ethnicity, status as a disabled veteran or veteran of the Vietnam era.

(d) If Consultant should subcontract all or any portion of the services to be performed under this Agreement, Consultant shall cause each subcontractor to also comply with the requirements of this Section 13.

14. To the furthest extent allowed by law (including California Civil Code section 2782.8 if applicable), Consultant shall indemnify, hold harmless and defend the City, the Moreno Valley Community Services District ("CSD"), the Moreno Valley Housing Authority ("Housing Authority") and each of their officers, officials, employees, agents and volunteers from any and all loss, liability, fines, penalties, forfeitures, costs and damages (whether in contract, tort or strict liability, including but not limited to personal injury, death at any time and

property damage), and from any and all claims, demands and actions in law or equity (including reasonable attorney's fees and litigation expenses) that arise out of, pertain to, or relate to the negligence, recklessness or willful misconduct of Consultant, its principals, officers, employees, agents or volunteers in the performance of this Agreement.

If Consultant should subcontract all or any portion of the services to be performed under this Agreement, Consultant shall require each subcontractor to indemnify, hold harmless and defend City, CSD, Housing Authority and each of their officers, officials, employees, agents and volunteers in accordance with the terms of the preceding paragraph.

This section shall survive termination or expiration of this Agreement.

15. Insurance.

(a) Throughout the life of this Agreement, Consultant shall pay for and maintain in full force and effect all insurance as required in **Exhibit E**.

(b) If at any time during the life of the Agreement or any extension, Consultant or any of its subcontractors fail to maintain any required insurance in full force and effect, all services and work under this Agreement shall be discontinued immediately, and all payments due or that become due to Consultant shall be withheld until notice is received by City that the required insurance has been restored to full force and effect and that the premiums therefore have been paid for a period satisfactory to City. Any failure to maintain the required insurance shall be sufficient cause for City to terminate this Agreement. No action taken by City pursuant to this section shall in any way relieve Consultant of its responsibilities under this Agreement. The phrase “fail to maintain any required insurance” shall include, without limitation, notification received by City that an insurer has commenced proceedings, or has had proceedings commenced against it, indicating that the insurer is insolvent.

(c) The fact that insurance is obtained by Consultant shall not be deemed to release or diminish the liability of Consultant, including, without limitation, liability under the indemnity provisions of this Agreement. The duty to indemnify City shall apply to all claims and liability regardless of whether any insurance policies are applicable. The policy limits do not act as a limitation upon the amount of indemnification to be provided by Consultant. Approval or purchase of any insurance contracts or policies shall in no way relieve from liability nor limit the liability of Consultant, its principals, officers, agents, employees, persons under the supervision of Consultant, vendors, suppliers, invitees, consultants, sub-consultants, subcontractors, or anyone employed directly or indirectly by any of them.

(d) Upon request of City, Consultant shall immediately furnish City with a complete copy of any insurance policy required under this Agreement, including all endorsements, with said copy certified by the underwriter to be a true and correct copy of the original policy. This requirement shall survive expiration or termination of this Agreement.

(e) If Consultant should subcontract all or any portion of the services to be performed under this Agreement, Consultant shall require each subcontractor to provide insurance protection in favor of City and each of its officers, officials, employees, agents and volunteers in accordance with the terms of this section, except that any required certificates and applicable endorsements shall be on file with Consultant and City prior to the commencement of any services by the subcontractor.

16. The waiver by either party of a breach by the other of any provision of this Agreement shall not constitute a continuing waiver or a waiver of any subsequent breach of either the same or a different provision of this Agreement. No provisions of this Agreement may be waived unless in writing and signed by all parties to this Agreement. Waiver of any

one provision herein shall not be deemed to be a waiver of any other provision herein.

17. Consultant and subconsultants shall pay prevailing wage rates when required by the Labor Laws of the State of California.

18. (a) The Consultant shall deliver to the Public Works Director/City Engineer of the City or his designated representative, fully completed and detailed project-related documents which shall become the property of the City. The Consultant may retain, for its files, copies of any and all material, including drawings, documents, and specifications, produced by the Consultant in performance of this Agreement.

(b) The Consultant shall be entitled to copies of all furnished materials for his files and his subconsultants, if any.

(c) The City agrees to hold the Consultant free and harmless from any claim arising from any unauthorized use of computations, maps, and other documents prepared or provided by the Consultant under this Agreement, if used by the City on other work without the permission of the Consultant. Consultant acknowledges that Consultant work product produced under this agreement may be public record under State law.

19. (a) This Agreement shall terminate without any liability of City to Consultant upon the earlier of: (i) Consultant's filing for protection under the federal bankruptcy laws, or any bankruptcy petition or petition for receiver commenced by a third party against Consultant; (ii) 10 calendar days prior written notice with or without cause by City to Consultant; (iii) City's non-appropriation of funds sufficient to meet its obligations hereunder during any City fiscal year of this Agreement, or insufficient funding for any active Project; or (iv) expiration of this Agreement. The written notice shall specify the date of termination. Upon receipt of such notice, the Consultant may continue services on any active Project through the date of

termination, provided that no service(s) shall be commenced or continued after receipt of the notice, which is not intended to protect the interest of the City. The City shall pay the Consultant within thirty (30) days after the date of termination for all non-objected to services performed by the Consultant in accordance herewith through the date of termination. Consultant shall not be paid for any work or services performed or costs incurred which reasonably could have been avoided.

(b) In the event of termination due to failure of Consultant to satisfactorily perform in accordance with the terms of this Agreement, City may withhold an amount that would otherwise be payable as an offset to, but not in excess of, City's damages caused by such failure. In no event shall any payment by City pursuant to this Agreement constitute a waiver by City of any breach of this Agreement which may then exist on the part of Consultant, nor shall such payment impair or prejudice any remedy available to City with respect to the breach.

(c) Upon any breach of this Agreement by Consultant, City may (i) exercise any right, remedy (in contract, law or equity), or privilege which may be available to it under applicable laws of the State of California or any other applicable law; (ii) proceed by appropriate court action to enforce the terms of the Agreement; and/or (iii) recover all direct, indirect, consequential, economic and incidental damages for the breach of the Agreement. If it is determined that City improperly terminated this Agreement for default, such termination shall be deemed a termination for convenience.

(d) Consultant shall be liable for default unless nonperformance is caused by an occurrence beyond the reasonable control of Consultant and without its fault or negligence such as, acts of God or the public enemy, acts of City in its contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, unusually severe weather, and delays of common carriers. Consultant shall notify City in writing as soon as it is reasonably possible after the commencement of any excusable delay, setting forth the full particulars in connection therewith, and shall remedy such occurrence with all reasonable dispatch, and shall promptly give written notice to Administrator of the cessation of such occurrence.

20. This Agreement is binding upon the City and the Consultant and their successors and assigns. Except as otherwise provided herein, neither the City nor the Consultant shall assign, sublet, or transfer its interest in this Agreement or any part thereof without the prior written consent of the other.

21. A City representative shall be designated by the City and a Consultant representative shall be designated by the Consultant. The City representative and the Consultant representative shall be the primary contact person for each party regarding performance of this Agreement. The City representative shall cooperate with the Consultant, and the Consultant's representative shall cooperate with the City in all matters regarding this Agreement and in such a manner as will result in the performance of the services in a timely and expeditious fashion.

22. This Agreement represents the entire and integrated Agreement between the City and the Consultant, and supersedes all prior negotiations, representations or Agreements, either written or oral. This Agreement may be modified or amended only by a subsequent written Agreement signed by both parties.

23. Where the payment terms of any Project Specific Agreement provide for compensation on a time and materials basis, the Consultant shall maintain adequate records to permit inspection and audit of the Consultant's time and materials charges under this Agreement. The Consultant shall make such records available to the City at the Consultant's

office during normal business hours upon reasonable notice. Nothing herein shall convert such records into public records. Except as may be otherwise required by law, such records will be available only to the City. Such records shall be maintained by the Consultant for three (3) years following completion of the services under this Agreement.

24. The City and the Consultant agree, that to the extent permitted by law, until final approval by the City, all data shall be treated as confidential and will not be released to third parties without the prior written consent of both parties.

25. (a) Consultant shall comply, and require its subcontractors to comply, with all applicable (i) professional canons and requirements governing avoidance of impermissible client conflicts; and (ii) federal, state and local conflict of interest laws and regulations including, without limitation, California Government Code Section 1090 et. seq., the California Political Reform Act (California Government Code Section 87100 et. seq.) and the regulations of the Fair Political Practices Commission concerning disclosure and disqualification (2 California Code of Regulations Section 18700 et. seq.). At any time, upon written request of City, Consultant shall provide a written opinion of its legal counsel and that of any subcontractor that, after a due diligent inquiry, Consultant and the respective subcontractor(s) are in full compliance with all laws and regulations. Consultant shall take, and require its subcontractors to take, reasonable steps to avoid any appearance of a conflict of interest. Upon discovery of any facts giving rise to the appearance of a conflict of interest, Consultant shall immediately notify City of these facts in writing.

(b) In performing the work or services to be provided hereunder, Consultant shall not employ or retain the services of any person while such person either is employed by City or is a member of any City council, commission, board, committee, or similar City body.

This requirement may be waived in writing by the City Manager, if no actual or potential conflict is involved.

(c) Consultant represents and warrants that it has not paid or agreed to pay any compensation, contingent or otherwise, direct or indirect, to solicit or procure this Agreement or any rights/benefits hereunder.

(d) Neither Consultant, nor any of Consultant's subcontractors performing any services on this Project, shall bid for, assist anyone in the preparation of a bid for, or perform any services pursuant to, any other contract in connection with this Project unless fully disclosed to and approved by the City Manager, in advance and in writing. Consultant and any of its subcontractors shall have no interest, direct or indirect, in any other contract with a third party in connection with this Project unless such interest is in accordance with all applicable law and fully disclosed to and approved by the City Manager, in advance and in writing. Notwithstanding any approval given by the City Manager under this provision, Consultant shall remain responsible for complying with Section 25(a), above.

(e) If Consultant should subcontract all or any portion of the work to be performed or services to be provided under this Agreement, Consultant shall include the provisions of this Section 25 in each subcontract and require its subcontractors to comply therewith.

(f) This Section 25 shall survive expiration or termination of this Agreement.

26. All Plans, drawings, Specifications, reports, logs, and other documents prepared by the Consultant in its performance under this Agreement shall, upon completion of the project, be delivered to and be the property of the City, provided that the Consultant shall be entitled, at its own expense, to make copies thereof for its own use.

27. The laws of the State of California shall govern the rights, obligations, duties, and liabilities of the parties to this Agreement, and shall also govern the interpretation of this Agreement. Venue shall be vested in the Superior Court of the State of California, County of Riverside.

28. Supplementary General Provisions. (For projects that are funded by Federal programs). The following provisions, pursuant to 44 Code of Federal Regulations, Part 13, Subpart C, Section 13.36, as it may be amended from time to time, are included in the Agreement and are required to be included in all subcontracts entered into by CONTRACTOR for work pursuant to the Agreement, unless otherwise expressly provided herein. These provisions supersede any conflicting provisions in the General Conditions and shall take precedence over the General Conditions for purposes of interpretation of the General Conditions. These provisions do not otherwise modify or replace General Conditions not in direct conflict with these provisions. Definitions used in these provisions are as contained in the General Conditions.

a) CONTRACTOR shall be subject to the administrative, contractual, and legal remedies provided in the General Conditions in the event CONTRACTOR violates or breaches terms of the Agreement.

b) CITY may terminate the Agreement for cause or for convenience, and CONTRACTOR may terminate the Agreement, as provided the General Conditions.

c) CONTRACTOR shall comply with Executive Order 11246 of September 24, 1965, entitled Equal Employment Opportunity, as amended by Executive Order 11375 of October 13, 1967, and as supplemented in Department of Labor regulations (41 CFR chapter 60). (All construction contracts awarded in excess of

$10,000 by CITY and/or subcontracts in excess of $10,000 entered into by CONTRACTOR.)

d) CONTRACTOR shall comply with the Copeland Anti-Kickback Act (18 U.S.C. 874) as supplemented in Department of Labor regulations (29 CFR Part 3) (All contracts and subcontracts for construction or repair.)

e) CONTRACTOR shall comply with the Davis-Bacon Act (40 U.S.C. 276a to 276a7) as supplemented by Department of Labor regulations (29 CFR Part 5).

f) CONTRACTOR shall comply with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. *327330*) as supplemented by Department of Labor regulations (29 CFR Part 5).

g) CONTRACTOR shall observe CITY requirements and regulations pertaining to reporting included in the General Conditions.

h) Patent rights with respect to any discovery or invention which arises or is developed in the course of or under the Agreement shall be retained by the CITY.

i) Copyrights and rights in data developed in the course of or under the Agreement shall be the property of the CITY. FEMA/CalOES reserve a royalty-free, nonexclusive, irrevocable license to reproduce, publish or otherwise use or authorize to others to use for federal purposes a copyright in any work developed under the Agreement and/or subcontracts for work pursuant to the Agreement.

j) CONTRACTOR shall provide access by the City, the Federal grantor agency, the Comptroller General of the United States, or any of their duly authorized representatives to any books, documents, papers, and records of the contractor which are directly pertinent to that specific contract for the purpose of making audit, examination, excerpts, and transcriptions.

k) CONTRACTOR shall retain all required records for three years after CITY makes final payments and all other pending matters relating to the Agreement are closed.

l) CONTRACTOR shall comply with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. *1857*(h)), section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR part 15). (This provision applies to contracts exceeding $100,000 and to subcontracts entered into pursuant to such contracts.)

m) CONTRACTOR shall comply with mandatory standards and policies relating to energy efficiency which are contained in the State energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94163, 89 Stat. 871).

SIGNATURE PAGE FOLLOWS

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

City of Moreno Valley

BY: ______________________

Thomas M. DeSantis
City Manager

Date: ______________________

NBS

BY: ______________________

Name: ______________________

TITLE: ______________________
(President or Vice President)

Date: ______________________

BY: ______________________

Name: ______________________

TITLE: ______________________
(Corporate Secretary)

Date: ______________________

<u>INTERNAL USE ONLY</u>

ATTEST:

____
City Clerk
(only needed if Mayor signs)

APPROVED AS TO LEGAL FORM:

____
City Attorney

____
Date

RECOMMENDED FOR APPROVAL:

____
Department Head
(if contract exceeds 15,000)

____
Date

EXHIBIT A

PROFESSIONAL AND TECHNICAL SERVICES

Special Financing District Consultant services may include: a) preparation of annual engineer's reports; b) preparation of boundary maps for parcels annexing into a CFD; c) formation of Community Facilities Districts for service and for bonded districts; d) transition of community service districts into alternative district formats (e.g. annexing into or forming a landscape maintenance district); e) providing general special district consulting services; and f) collaboration on developing content for special financing district marketing pieces.

The professional services include tasks established by industry standards for the formation of districts and shall include standards similar to those set forth below:

1) Analyze and determine the type of district restructuring or formation for each unique situation.

2) Prepare the initial Rate and Method of Apportionment (RMA) or assessment calculation.

3) Calculate the initial special tax levy requirement or assessments.

4) Prepare a CFD Report or Engineer's Report (ER).

5) Prepare and deliver mylar copies of boundary maps.

6) Expend due diligence to ensure accuracy in reviewing and preparing all work products and timely submissions of such.

7) Provide clear written documentation concerning the approach taken to derive the conclusions reached.

8) Employ strict confidentiality of all documents made available by the City to the Consultant, sub consultant or any other appointed entity, in the course of completing a formation, which may contain private and/or confidential information, which includes but is not limited to property owner names and addresses.

9) Make all necessary arrangements for delivery and pick-up of documents to and from any agency, office or City Department/Division.

10) Meet with City staff to discuss task lists and associated jobs for further input and approval.

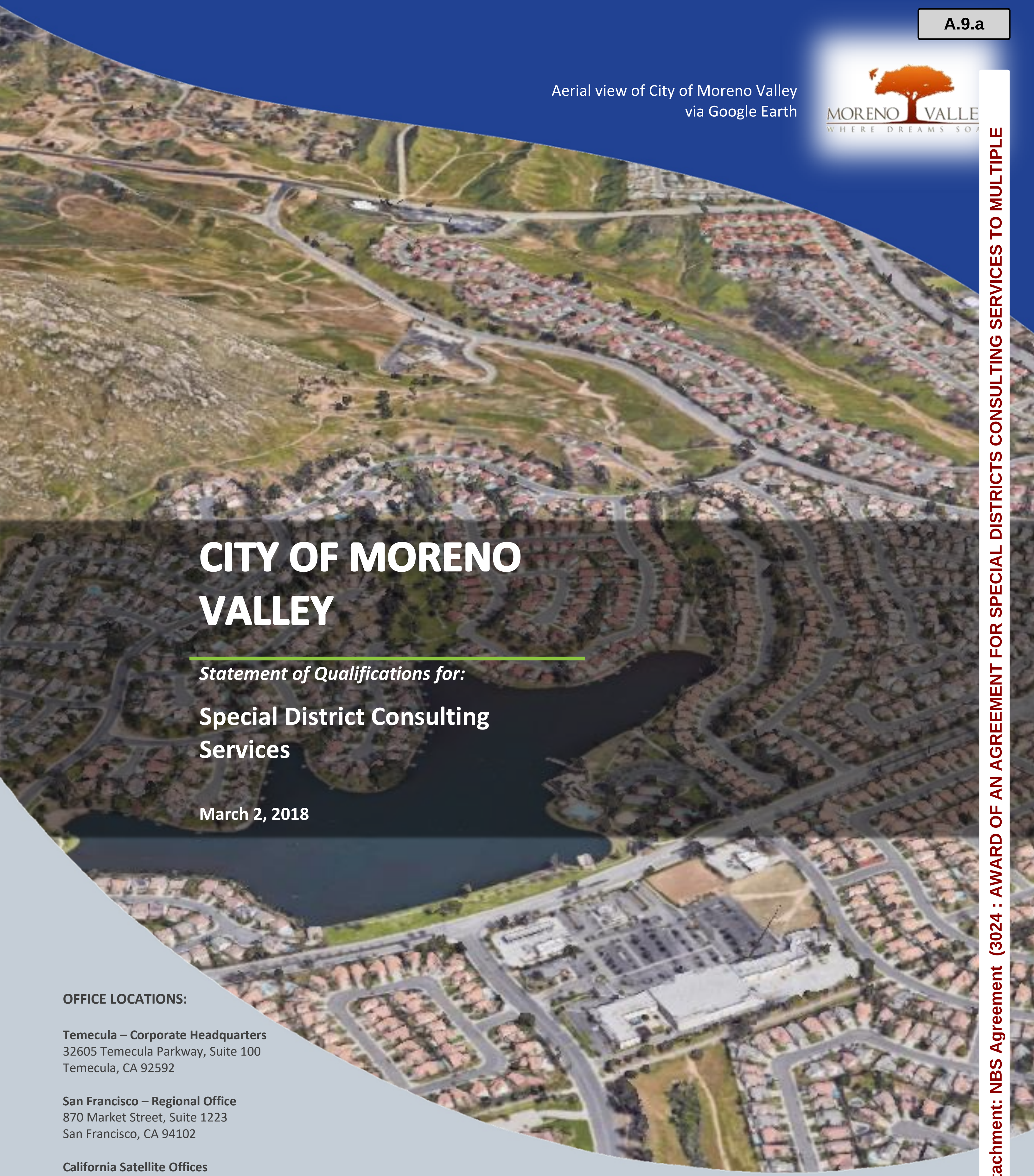
11) Attend meetings of the City Council (e.g. study session, Council meeting, subcommittee meetings), as requested

12) Participate in providing additional analysis and support for the issuance of any bonds.

EXHIBIT B

CONSULTANT'S RESPONSE TO RFQ

Aerial view of City of Moreno Valley
via Google Earth



MORENO VALLEY
WHERE DREAMS SOAR

CITY OF MORENO VALLEY

Statement of Qualifications for:

Special District Consulting Services

March 2, 2018

OFFICE LOCATIONS:

Temecula – Corporate Headquarters
32605 Temecula Parkway, Suite 100
Temecula, CA 92592

San Francisco – Regional Office
870 Market Street, Suite 1223
San Francisco, CA 94102

California Satellite Offices
Atascadero, Davis,
Huntington Beach,
Joshua Tree, Riverside,
Sacramento, San Jose

Phone: 800.676.7516

www.nbsgov.com

Prepared by:

NBS helping communities fund tomorrow

32605 Temecula Parkway,
Suite 100 Temecula, CA 92592
Toll free: 800.676.7516

www.nbsgov.com

March 2, 2018 **ELECTRONIC SUBMISSION VIA PLANETBIDS**

ATTN: City of Moreno Valley

RE: Statement of Qualifications for the City of Moreno Valley's Request for Qualifications for Special District Consulting Services

Dear City of Moreno Valley Staff,

We have read and fully understand the City of Moreno Valley's (City) recent Request for Qualifications for Special Districts Consulting Services. We understand that the City currently has a number of Special Financing Districts (SFDs) in place, including County Service Areas (CSAs), Community Facilities Districts (CFDs), and Landscape & Lighting Districts. These SFDs require a significant amount of administrative effort and technical support on an annual basis. In addition, there are new SFD formations, annexations to existing SFDs, and conversion or revamping of existing SFDs anticipated in the near future.

These efforts require diligent data management, and knowledge of industry best management and legal practices. It is incumbent upon the City to have the resources in place to support the overall existing and new developments within the area. We believe that NBS is perfectly-suited to these efforts and will demonstrate that within this document.

NBS Organization *(in response to RFQ request for "Contact Information" and "Organization" Items 1-3)*

NBS was founded 22 years ago in 1996 by experienced engineers and financial consultants, many of whom call the Inland Empire their home. The firm consists today of over 40 public finance professionals, and is owned by all of the staff, as a 100% employee-owned firm (an "ESOP"). The firm is organized by various public finance disciplines, but keenly focuses on assisting local government agencies, such as your City. Our "slogan" exemplifies that, in that we are ***"helping communities fund tomorrow."***

Our District Consulting Group, which focuses on SFD consulting and administration, provides a range of formation and ongoing administration of Assessment Districts (ADs), Landscape and Lighting Districts (LLDs), Business Improvement Districts (BIDs), Community Facilities Districts (CFDs), County Service Areas (CSA), property-related fee districts, and other special parcel tax districts. We have formed hundreds of new SFDs, and administered millions of parcels within such SFDs. As demonstration of our deep experience, we have been called upon recently to provide guidance and expertise on CSAs that have challenges, and to reform problematic assessment approaches and ADs formed by other consultants.

NBS' clients are made up of virtually 100% local government agencies, such as cities, special districts, and counties. This includes your City, of course, and we would be excited to continue to work on projects with you. We occasionally team up with outreach firms, engineers or financial advisors, but we strive to provide our clients with the best services we can offer in house. We don't anticipate using subcontractors for any of the efforts as specified in the RFQ.

As you review this Statement of Qualifications, please don't hesitate to contact me at 800.676.7516 or via email at tseufert@nbsgov.com. As requested, our Vendor Information form is included as Appendix A.

Tim Seufert
Managing Director

Michael Rentner
President (Authorized Signer)

helping communities fund tomorrow

TABLE OF CONTENTS

Registered Municipal Advisor

NBS is registered with the Municipal Securities Rulemaking Board (MSRB) and the U.S. Securities Exchange Commission (SEC) as a Municipal Advisor (MA).

Pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act, firms providing advice with respect to municipal financial products or the issuance of municipal securities shall be registered as an MA with the MSRB and the SEC.

ORGANIZATION | ITEM 4: FIRM EXPERIENCE

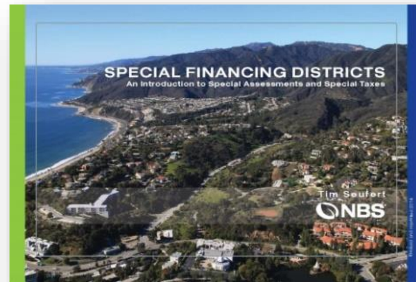
District Consulting Group

The anticipated projects fall squarely in our Special Financing District (SFD) consulting and administration group. This group's primary services focus on the formation and ongoing administration of Assessment Districts, Business Improvement Districts (BIDs), Community Facilities Districts (CFDs), County Services Areas (CSAs), property-related fee districts, and special parcel tax districts.

Our Publications

We present a unique set of qualifications and training to support our depth of experience and understanding in the work we perform. We believe in continuing education not only for our own team members, but also for our clients and other municipal agency employees. As industry leaders, we have published three booklets on related industry topics that can be downloaded free at www.nbsgov.com/publications or ordered through our office at 800.676.7516.

- ***Special Financing Districts Primer*** (Revised and republished in 2015) has been credited as the best publication on SFDs in a decade by prominent industry professionals.
- ***Rates, Fees and Charges Compendium***, released 2015, has received high regard and interest from industry professionals.
- ***Stormwater Pamphlet***, just released January 2018, contains a ten-step funding plan to support stormwater-related efforts.



Many public agencies utilize our publications as resources and training tools for their own staff.

NBS University – Continuing Education Workshops

We keep things fresh by periodically hosting content-rich workshops that bring industry insiders together to learn, share ideas and meet with their peers. Our topics qualify for continuing education (CE) units for the California Board of Accountancy. For information on our upcoming seminars, please visit www.nbsgov.com/university or send an email to be added to our contact list for future workshops: contactnbs@nbsgov.com.

Scope of Work

As mentioned, NBS is fully equipped with the experience and qualifications to provide the scope of services outlined in the RFQ. The City is requesting qualifications for special financing district consultants to: a) prepare annual engineer's reports; b) prepare boundary maps for parcels annexing into a CFD; c) form

Community Facilities Districts for service and for bonded districts; d) transition community service districts into alternative district formats (e.g. annexing into or forming a landscape maintenance district); e) provide general special district consulting services; and f) collaborate on developing content for special financing district marketing pieces.

NBS first approaches any such engagement with the mindset of a thoughtful guide and consultant. The first task is to understand the parameters and goals of the agency, and help with the selection of a funding/financing tool, form it mindfully, and provide a full-range of support from GIS-enabled mapping technology to "outreach" to database analysis.

Additional details and commentary are outlined *briefly* below.

ANNUAL ENGINEER'S REPORT PREPARATION

NBS has prepared hundreds of annual engineer's reports, as well as special tax or CFD reports. We have guided our clients to combine certain reports for efficiency, or completely re-written reports to better comply with Proposition 218.

SPECIAL TAX LEVY CALCULATION AND CFD REPORTING

NBS will calculate the initial, and annual ongoing, special tax levy requirement, as needed based on the formula. We prepare annual CFD reports for the agency as well as those required for reporting to the public, CDIAC and the state.

BOUNDARY MAP PREPARATION

NBS has invested in GIS and related technology to develop more interactive and intuitive maps. We have developed and recorded such maps in dozens of counties across California. This includes mylar, paper and electronic formats.

CFD FORMATION FOR SERVICE AND BONDED DISTRICTS INCLUDING DEVELOPMENT OF RMA

As mentioned elsewhere, NBS has formed dozens – if not hundreds of CFDs – both for infrastructure ("bonded" or with a loan of some sort) and for ongoing services. In addition, NBS has been called upon for analysis and support when refundings or additional bonds or loans are needed.

TRANSITION SERVICE DISTRICTS INTO ALTERNATIVE DISTRICTS

Should annexation or formation of alternative districts be in the best needs of the City, NBS will recommend alternatives accordingly. We have, for example, transitioned a number of our clients from assessment districts to CFDs, where there was benefit to do so. In addition, we have worked with dozens of County Service Areas (CSAs) and made recommendations for their ongoing administration as well as "substitute" funding tools.

GENERAL SPECIAL DISTRICT CONSULTING SERVICES/DISTRICT RESTRUCTURING

As discussed above, NBS views our role first and foremost as the "public agency advocate" and we will endeavor to form the district best suited to the need and the community. We formed an assessment and a CFD for one of our water district clients, in differing areas within their boundary as there were benefits to do so. We can also analyze and determine the type of district restructuring or formation for each unique situation.

MARKETING OUTREACH SERVICES

NBS recommends the City develop an ongoing community outreach plan as part of their Special Financing District (SFD) program in an effort to keep lines of communication open with the public. The community outreach plan should be designed and customized to meet the priorities and objectives of the City. The City's objective in having regular communications with the public is to develop the public's trust, utilizing communication and transparency in all related efforts. NBS will assist the City in developing various public outreach platforms in an effort to inform residents of special financing district activity. NBS can create one time or ongoing mailers, host town hall type meetings and perform a wide list of other outreach activities.

MEETING ATTENDANCE

NBS will prepare for and attend meetings of the City Council (e.g. study session, Council meeting, and subcommittee meetings) or City staff, as requested.

BOND ISSUANCE ANALYSIS AND SUPPORT

NBS will participate in providing additional analysis and support for the issuance of any bonds or loans. Moreover, NBS often works closely with our clients and other advisors to support complex bond deals.

ORGANIZATION | ITEM 5: REFERENCES

As per the City-provided References form, below is a sampling of projects and references similar in scope and magnitude to the City's needs:

1. Name of Public Agency: Valley-Wide Recreation & Park District

Address: 901 West Esplanade Avenue

City: San Jacinto State: CA Zip: 92581

Contact: Dean Wetter Title: General Manager

Telephone: 951.654.1505 Email: Dean@gorecreation.org

Service Dates: 1997 - Ongoing

Brief Summary of Project/Work provided:

The Valley-Wide Recreation and Park District serves a large geographic area in Riverside County. NBS has worked with Valley-Wide on their special financing districts since 1997, which includes the provision of Proposition 218 compliance and ballot consulting services. Over the years, NBS has performed LMD and CFD Formations, including "conversion" to a CFD model. In addition, NBS continues to manage the annexations for the District. NBS has been the District's trusted administrator of seven LMDs (more than 50 zones) and one CFD (3 zones) totaling over 88,800 unique parcels.

2. Name of Public Agency: City of San Jacinto

Address: 595 S. San Jacinto Avenue, Building A

City: San Jacinto State: CA Zip: 92583

Contact: Tom Prill Title: Finance Director

Telephone: 951.537.6350 Email: tprill@sanjacintoca.us

Service Dates: 2003 - Ongoing

Brief Summary of Project/Work provided:

The City utilizes a number of Special Financing Districts to support infrastructure and services. NBS has provided a range of formation services including Prop 218 compliance, as well as administration support services to the City for numerous assessment districts and CFDs. NBS also administers the City's 1972 Act L&L Districts, including over 65 zones used mainly for maintenance of the City's many neighborhood parks. NBS has been instrumental in helping the City tackle delinquency issues. NBS has participated with legal counsel in preparation of judicial foreclosure cases and analysis of bond tender programs used in foreclosure workouts.

3. Name of Public Agency: City of Long Beach

Address: 333 W. Ocean Boulevard, Sixth Floor

City: Long Beach

State: CA

Zip: 90802

Contact: David Nakamoto

Title: Treasurer

Telephone: 562.570.6845

Email: david.nakamoto@longbeach.gov

Service Dates: November 2011 - Ongoing

Brief Summary of Project/Work provided:

NBS has been providing formation and annual administration services for the City of Long Beach since 2000. NBS provides comprehensive administration services for the City's Special Taxes as well as the City's 1915 Act Assessment Districts, Community Facilities Districts, and Property and Business Improvement Districts. Over the years, the City has turned to our consultants to solve a number of challenges with the use of their special financing districts.

4. Name of Public Agency: City of Folsom

Address: 50 Natoma Street

City: Folsom

State: CA

Zip: 95630

Contact: John Donoghue

Title: Finance Analyst

Telephone: 916.355.7334

Email: jdonoghue@folsom.ca.us

Service Dates: 2001 - Ongoing

Brief Summary of Project/Work provided:

Since 2001, NBS has been performing Special Financing District Annual administration services for the City of Folsom, which includes CFD administration. NBS currently administers eleven CFDs (nine of which are bonded CFDs) on behalf of the City, in addition to 1915 Act Assessment Districts and Property and Business Improvement Districts. The City's CFDs include more than 11,000 parcels and an annual levy of approximately $13.4 million. The City has also trusted NBS to form new districts as well as provide ongoing SFD Formation and Consulting work related to the City's continued development.

ORGANIZATION | ITEMS 6 – 10

Item 6: Base Office Location

The individuals who will be assigned to the city will be based out of our headquarters' location of Temecula, California.

Item 7: SEC Regulatory Censure or Other Disciplinary Actions

Mandatory Disclosure of Conflicts of Interest and Legal or Disciplinary Events

Pursuant to Municipal Securities Rulemaking Board ("MSRB") Rule G-42, on Duties of Non-Solicitor Municipal Advisors, Municipal Advisors are required to make certain written disclosures to clients which include, amongst other things, Conflicts of Interest and any Legal or Disciplinary events of NBS Government Finance Group ("NBS") and its associated persons.

LEGAL OR DISCIPLINARY EVENTS

NBS does not have any legal events or disciplinary history on NBS's Form MA and Form MA-I, which includes information about any criminal actions, regulatory actions, investigations, terminations, judgments, liens, civil judicial actions, customer complaints, arbitrations and civil litigation. The Issuer may electronically access NBS's most recent Form MA and each most recent Form MA-I filed with the Commission at the following website: www.sec.gov/edgar/searchedgar/companysearch.html.

There have been no material changes to a legal or disciplinary event disclosure on any Form MA or Form MA-I filed with the SEC. If any material legal or regulatory action is brought against NBS, NBS will provide complete disclosure to the Issuer in detail allowing the Issuer to evaluate NBS, its management and personnel.

8) Describe any potential conflicts of interest with the City.

Item 8: Conflicts of Interest

NBS does not believe there will be any conflicts of interest with regard to these types of projects.

Please note the below is a mandated disclosure pertaining to Municipal Advisor guidelines:

NBS represents that in connection with the issuance of municipal securities, NBS may receive compensation from an Issuer or Obligated Person for services rendered. This compensation is fee for service based and rarely contingent upon the successful closing of a transaction and/or is based on the size of a transaction. Consistent with the requirements of MSRB Rule G-42, NBS hereby discloses that any such contingent and/or transactional compensation may present a potential conflict of interest regarding NBS's ability to provide unbiased advice to enter into such transaction. This conflict of interest will not impair NBS's ability to render unbiased and competent advice or to fulfill its fiduciary duty to the Issuer.

If NBS becomes aware of any additional potential or actual conflict of interest after this disclosure, NBS will disclose the detailed information in writing to the Issuer in a timely manner.

Item 9: Staff Hourly Rate Schedule

The following table shows our current hourly rates.

Title	Hourly Rate
Director	$205
Associate Director	$190
Senior Consultant / Manager	$160
Consultant	$140
Analyst	$120
Clerical/Support	$ 95

Expenses

Customary out-of-pocket expenses will be billed at actual cost to NBS. These expenses may include, but not be limited to, mailing fulfillment, postage, reproduction, telephone, travel, meals and various third-party charges for data, maps, and recording fees.

Typical Pricing

Included below, as requested, are some typical fee ranges for certain district formation projects. Please note that these fee ranges are for general purposes and actual fees will be negotiated at the appropriate time. These general ranges do not include expenses.

District Formation Type	Typical Fee
Non-Bonded CFD Annexation	$7,500
Non-Bonded CFD Formation	$14,500
Bonded CFD Formation	$24,500
Bond Issuance Disclosure	$12,500
Special/General Benefit Analysis including rates (proportionality) | Phase 1	$19,500
Formation Proceedings (resolutions, engineer's report, notice, ballot) | Phase 2	$9,500
Fiscal Impact Analysis	$17,500 - $24,500
Marketing Outreach Services | To be determined based on City's needs	TBD

Sample Timeline

This timeline is for sample purposes and only applies to non-bonded CFDs with a landowner vote and waiver of the election notice period:

CITY OF SAMPLE CITY
COMMUNITY FACILITIES DISTRICT NO. 2018-1
(WEST END/SOUTH OF ELM PROJECT)

FISCAL IMPACT ANALYSIS AND CFD FORMATION SCHEDULE

City Council Meets 1st & 3rd Tuesdays at 5:30pm

Estimated Timeframe	Scheduled Tasks
90 days	NBS distributes data request for inputs to Fiscal Impact Analysis
	City & Property owner provide data request
	NBS reviews data provided, incorporates data into Fiscal Impact Analysis, requests additional data, if needed
	NBS delivers draft Fiscal Impact Analysis Report
	City & Property Owner provide comments on draft Fiscal Impact Analysis Report
	NBS delivers final Fiscal Impact Analysis Report
30-60 days	NBS, City & Property Owner convene for CFD kick-off meeting to determine project schedule, identify special circumstances and establish meeting dates
	NBS distributes draft Local Goals & Policies, Petition, Boundary Map, Rate and Method of Apportionment and Resolution drafts for City & Property Owner review
	Comments due on all documents distributed to date
	Executed Petition, Final Resolution of Intention to Establish CFD, including Boundary Map and Rate and Method of Apportionment due to City Clerk
Public Hearing must be not less than 30 or more than 60 days after Intent Meeting, Landowners can waive the 90 election noticing with 100% consent	**Intent Meeting** – Consider Resolution Adopting Local Goals & Policies and Resolution of Intention, including Boundary Map/Rate and Method of Apportionment and setting the date of the Public Hearing
	City Clerk arranges for publication of the Hearing Notice in the local adjudicated newspaper at least 7 days prior to Public Hearing
	Boundary Map must be recorded on or before this date
	Final Resolution of Formation, Resolution Calling the Election, Resolution Declaring Election Results and CFD Ordinance due to City Clerk
	Public Hearing – City Council allows any public comments either oral or written. City Council determines whether there has been a majority protest or not, then considers Resolution of Formation calling a Special Election **Election –** City Clerk canvasses the Ballots, informs the City Council that the Question of levying the tax is approved, City Council considers the Resolution Declaring the Results of the Election and the first reading of the Ordinance Levying the Special Tax
15-30 days	Notice of Special Tax Lien recorded
	Ordinance Meeting – Second Reading of Ordinance Levying the Special Tax
	Publication of Ordinance

Sample Formation Steps

The graphic below is for sample purposes and only applies to non-bonded CFDs with a landowner vote and waiver of the election notice period. *Note: This page is intentionally formatted differently to improve legibility of its contents.*

COMMUNITY FACILITIES DISTRICTS FORMATION STEPS
NON-BONDED & LANDOWNER VOTE WITH ELECTION NOTICE WAIVER
(Commencing with Section 53311 of the Government Code)

START

Petition Initiated CFD

1. 10% Landowners
2. 10% Registered voters
3. Payment of pre-formation costs

Within 90 days

Local Agency Initiated CFD

1. Written request of 2 members of legislative body, or
2. Majority approval of legislative body

Legislative Body Commences Proceedings

1. Adopt Local Goals and Policies

2. Resolution of Intention
- Approve proposed CFD boundary
- Name CFD
- Describe services to be funded
- Establish Rate and Method of Apportionment and manner of collection of special tax
- Fix time and place for public hearing
- Describe voting procedures

3. Public Hearing
- Held not less than 30 or more than 60 days from adoption of Resolution of Intention
- Notice must be published not later than 7 days before Public Hearing
- If no majority protest, then:

4. Resolution of Formation
- Approve services to be funded
- Identify party responsible for preparing annual levy
- State that a lien will be recorded
- Identify the recording information for the boundary map
- Set election

5. Election
- 2/3 vote required
- If less than 12 registered voters then landowner election and not a registered voter election
- Voters consider:
  - levy of special tax
  - appropriations limit

6. Legislative Body Certifies Election Results
7. Ordinance to Levy Special Tax Adopted

END

Commence activities to levy and collect special taxes.

NBS
32605 Temecula Parkway, Suite 100
Temecula, CA 9259
Toll free: 800.676.7516
nbsgov.com

Item 10: No Obligation for Response Expenses

The City is not obligated in any way to pay any costs incurred by NBS in the preparation and submittal of our response to this RFQ.

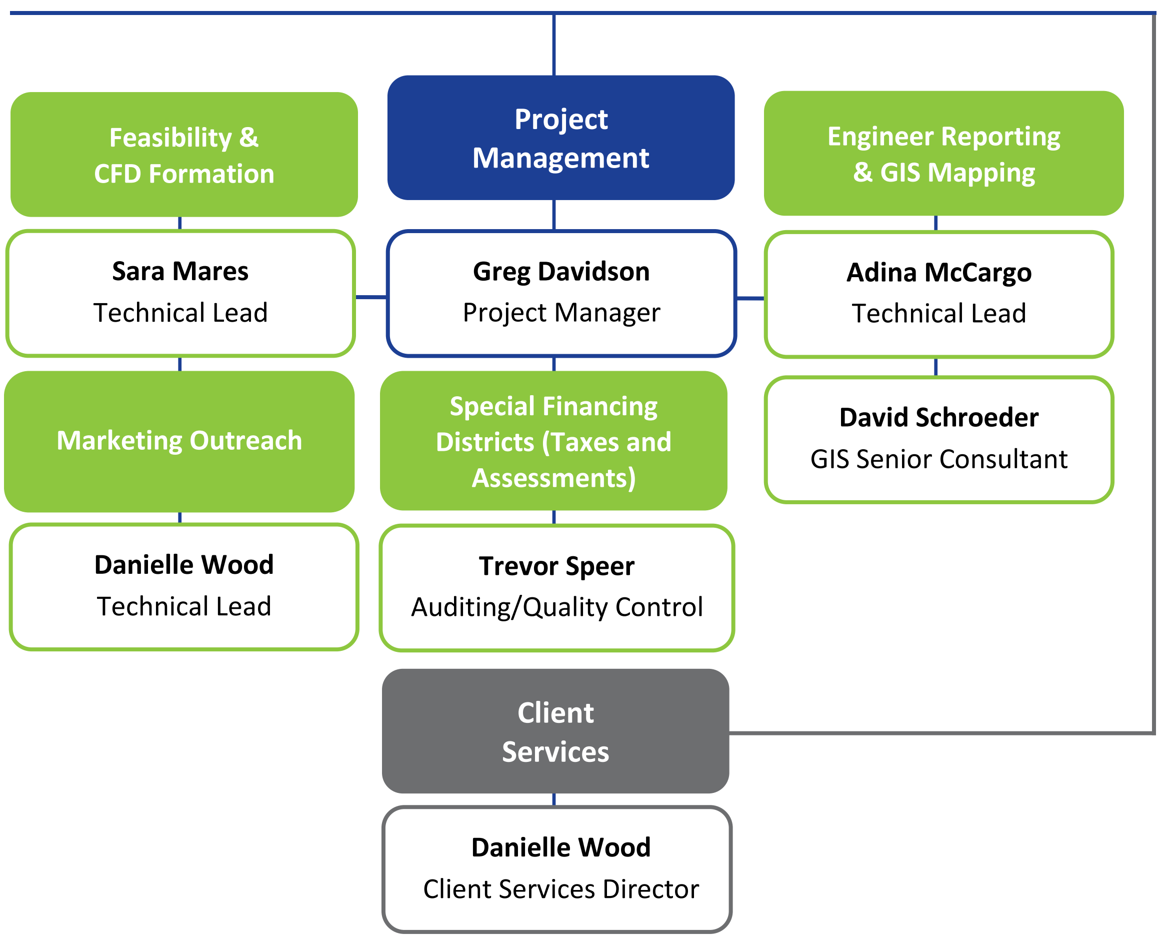
KEY PERSONNEL

The NBS team offers the City a comprehensive set of technical skills and experience to meet the needs of the City's Special Districts Consulting RFQ. The NBS team presented in this proposal will be available and fully committed to completing the study and meeting the deadlines of this project, and available for meetings and presentations. The background and experience of the NBS project manager and key staff are outlined below.

Project Organizational Chart

MORENO VALLEY
WHERE DREAMS SOAR

City Stakeholders, Management and Staff



Proposed Project Team Biographies

GREG DAVIDSON, PROJECT MANAGER

Role and Responsibilities: Greg Davidson will work closely with the City's designated leader/manager to monitor the project schedule and delivery of work products to the City's satisfaction. He will serve as an additional primary contact, providing senior-level technical analysis as warranted.

Work Experience: Greg Davidson has nearly two decades of experience working with SFDs and serving as a project manager on various consulting projects. His depth of experience spans actively forming and managing the ongoing administration and annual levy calculations for 1913/1915 Act Assessment Districts, Landscape Maintenance Districts, Mello-Roos Community Facilities Districts, and PBIDs. He also has several years of experience training staff, speaking at different engagements, preparing and disseminating Continuing Disclosures and providing Prop 218 consulting.

SARA MARES, TECHNICAL LEAD

Roles and Responsibilities: Sara Mares will be the primary day-to-day contact for the City's CFD Formation service needs. She will work closely with City staff and the team, and be in regular communication with the City, the bond team, and all others involved in the process.

Work Experience: Sara Mares is an Associate Director with NBS. She forms and administers Special Financing Districts (SFDs), including 1913 Act Assessment Districts, Community Facilities Districts, Landscape and Lighting Districts, and Benefit Assessment Districts. She has significant experience with ongoing special district administration including working with troubled districts, annual levy submittal, delinquency management, and continuing disclosure. Sara also has experience working with all aspects of the formation process, including planning, project management, budget analysis, development of Rate and Method of Apportionment and Engineer's Reports and presentations.

ADINA MCCARGO, TECHNICAL LEAD

Roles and Responsibilities: Adina McCargo will serve as City's primary contact related to Engineer Reporting and GIS Mapping needs. She has 15 years of experience working on consulting projects for special financing districts, including Community Facilities Districts, and Assessment Districts. Adina has experience working with all aspects of the formation process, including planning, project management, budget analysis, development of special assessment/tax formulas, and presentations.

Work Experience: Adina has 15 years of experience working with all aspects of special district formation and administration including creation of rate and method of apportionments, levy calculation and submittal, continuing disclosure reporting and delinquency management.

DAVID SCHROEDER, GIS SENIOR CONSULTANT

Roles and Responsibilities: David Schroeder will assist with the initial review and set up of maps within any District, including the analysis of County Assessor's Parcel Maps, Tax Rate Areas, and City Boundary Maps.

Work Experience: David is a GIS Senior consultant and has over 12 years of experience with special districts. He creates and analyzes maps and data associated with County Assessor's Parcels, District Boundaries, and custom images utilizing the latest GIS technology. In addition, David is able to display GIS maps over satellite imagery in order to view properties and maps with a high degree of detail as well as extract GIS parcel data to compare to other data sources, such as county-secured property tax rolls.

TREVOR SPEER, QUALITY CONTROL

Roles and Responsibilities: Trevor Speer will serve as the Quality Control lead for this engagement. Trevor has extensive experience with 1913/1915 Act Assessment Districts, Mello-Roos Community Facilities Districts, Landscaping and Lighting Districts, and Property-Based Business Improvement Districts.

Summary of Work Experience: Trevor is an Associate Director at NBS where he is in charge of quality control. He also forms and administers Special Financing Districts (SFDs), and performs revenue consulting work. He has over 12 years' experience working with all aspects of special district administration including levy calculation and submittal, continuing disclosure reporting and delinquency management.

DANIELLE WOOD, OUTREACH AND CLIENT SERVICES DIRECTOR

Roles and Responsibilities: Danielle Wood will work with the City on outreach efforts. She will also be responsible for obligating NBS to all commitments, schedule, and pricing for the project. She will ensure that the City's fundamental objectives are being met at all times. She will be an active representative of our corporate commitment to the highest level of service.

Work Experience: Danielle has nearly two decades of experience with NBS as a seasoned professional in Special District Formation and Administration.

NBS | Keeping Staff Informed of Industry Issues

We require all teammates to continue their education by attending professional training and personal growth seminars provided by both in-house experts and outside sources. We also frequently conduct internal training sessions to discover and discuss changes to key regulatory and governmental issues that may affect our clients.

NBS | Level of Staff Turnover

Our District Consulting Group has maintained low turnover, perhaps the lowest in our niche industry. The Group is also growing, with the addition of two Financial Analysts since January 2018. NBS as a whole also has low staff turnover and is respected for the longevity of staff. In 2014, NBS became a 100% employee-owned firm, which has strengthened that trend.

ADDITIONAL ITEMS

Additional Statements/Documents

1) Vendor Information – *please see Appendix A*
2) References – *please see pages 4 – 5*
3) A statement that the Consultant will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin.

   NBS will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin.
4) A statement that all federal laws and regulations shall be adhered to notwithstanding any state or local laws and regulations. In a case of conflict between federal, state or local laws or regulations the strictest shall be adhered to.

   NBS acknowledges that all federal laws and regulations shall be adhered to notwithstanding any state or local laws and regulations. In a case of conflict between federal, state or local laws or regulations the strictest shall be adhered to.
5) A Non-Collusion Affidavit shall be included – *please see Appendix B*
6) An Affidavit of Non-Conviction shall be included – *please see Appendix C*

APPENDICES

The appendices contain:

- Appendix A: Vendor Information Form
- Appendix B: Non-Collusion Affidavit
- Appendix C: Affidavit of Non-Conviction
- Appendix D: Additions or Exceptions to Agreement

APPENDIX A: VENDOR INFORMATION FORM

VENDOR INFORMATION

PROPOSER'S COMPANY INFORMATION (print or type)

Company Name: NBS Government Finance Group, DBA: NBS

Owner /Manager Name: Michael Renter, President

Contact Name: Tim Seufert

Mailing Address: 32605 Temecula Parkway, Suite 100

City: Temecula State: CA Zip: 92592

Remit to Address (if different from PO mailing address)

____

City: ____________ State: ________ Zip: ________

Web Site: www.nbsgov.com

Phone Number: 800.676.7516

E-mail Address: tseufert@nbsgov.com

Incorporated? YES ◉ or NO ○

Federal Tax I.D. # or Social # 33-0712512

How many years of relevant experience within the scope of this RFQ? 22 years

I certify that the information given above is accurate and complete; that the Terms and Conditions as issued by the City of Moreno Valley with this Request for Qualifications have been fully read, understood, and accepted in total; and that I am a duly authorized agent for responding purposes for the company named above.

Michael Rentner	President
(Print Responding Person's Name)	(Title)
	March 5, 2018
(Responding Person's Signature)	(Date)

APPENDIX B: NON-COLLUSION AFFIDAVIT

NON-COLLUSION AFFIDAVIT

STATE OF CALIFORNIA)
) SS
COUNTY OF)

(NAME) Michael Rentner, affiant being first duly sworn, deposes and says:

That he or she is President of
(sole owner, partner or other proper title)
NBS Government Finance Group, DBA: NBS the party making the foregoing Proposal
(Contractor)
that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the Contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company associations, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid (Public Contract Code Section 7106).

Proposer's Name: NBS Government Finance Group, DBA: NBS
(print)

Proposer's Address: 32605 Temecula Parkway, Suite 100, Temecula, CA 92592
(print)

Telephone No.: 800.676.7516

[signature] President
(Signature of Proposer) (Title)

APPENDIX C: AFFIDAVIT OF NON-CONVICTION

AFFIDAVIT OF NON-CONVICTION

I hereby affirm that:
I am the President and the duly authorized
(Title)
Representative of the firm of: NBS Government Finance Group, DBA: NBS
(Name of Corporation)
Whose address is: 32605 Temecula Parkway, Suite 100

Temecula, CA 92592 And that
I possess the legal authority to make this affidavit on behalf of myself and the firm for which I am acting.

Except as described in paragraph 3 below, neither I nor the above firm, nor to the best of my knowledge, and of its officers, directors, or partners, or any of its employees directory involved in obtaining Contracts with the City have been convicted of, or have plead nolo contendere to a charge of, or having during the course of an official investigation or other proceeding admitted in writing or under oath acts or omissions which constitute bribery, attempted bribery, or conspiracy to bride under the laws of any State of the Federal government (conduct prior to July 1, 1977 is not required to be reported).

State "none" or, as appropriate, list any convection, plea or admission described in paragraph two above, with the data, court, official, or administrative body; the individuals involved and their position with the firm, and sentence or disposition, if any. *None*

I acknowledge that this affidavit is required to allow the City to make a determination. I acknowledge that, if the representations set forth in the affidavit are not true and correct, the City may terminate ant Contract awarded and may take any other action.

I do solemnly declare and affirm under the penalties of perjury that the contents of this affidavit are true and correct.

Signature: Michael Rentner Date: March 5, 2018

Printed Name Michael Rentner Title: President

Name of Firm NBS Government Finance Group, DBA: NBS

APPENDIX D: ADDITIONS OR EXCEPTIONS

NBS accepts the terms, conditions and general form of the City of Moreno Valley Sample Agreement and Insurance Requirements with the following modification(s):

Sample Agreement; please note red strikeout language and new added language:

K. Additional Indemnity Obligations. Contractor shall defend, with counsel ~~of~~ approved by the City (reasonable acceptance not to be withheld)~~'s choosing~~ and at Contractor's own cost, expense and risk, any and all claims, suits, actions or other proceedings of every kind covered by Section "J" that may be brought or instituted against City, the Moreno Valley Housing Authority, and the CSD, and their officers, agents and employees.

Standard Insurance Requirements:

We are unable to obligate our carrier to make arbitrary changes so please remove all wording noted in red strikeout text below:

Please also note we are declaring our retention of $25,000.

Deductibles and Self-Insured Retentions

Consultant shall be responsible for payment of any deductibles contained in any insurance policy(ies) required hereunder and Consultant shall also be responsible for payment of any self-insured retentions. Any deductibles or self-insured retentions must be declared to, and approved by, the City Manager or his/her designee. ~~At the option of the City Manager or his/her designee, either (i) the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects City, CSD, Housing Authority and each of their officers, officials, employees, agents and volunteers; or (ii) Consultant shall provide a financial guarantee, satisfactory to the City Manager or his/her designee, guaranteeing payment of losses and related investigations, claim administration and defense expenses. At no time shall City be responsible for the payment of any deductibles or self-insured retentions.~~

EXHIBIT C

CITY - SERVICES TO BE PROVIDED

TO CONSULTANT

1. Furnish the Consultant all in-house data which is pertinent to services to be performed by the Consultant and which is within the custody or control of the City, including, but not limited to, copies of record and off-record maps and other record and off-record property data, right-of-way maps and other right-of-way data, pending or proposed subject property land division and development application data, all newly developed and pertinent design and project specification data, and such other pertinent data which may become available to the City.
2. Provide timely review, processing, and reasonably expeditious approval of all submittals by the Consultant.
3. Provide timely City staff liaison with the Consultant when requested and when reasonably needed.

EXHIBIT D

TERMS OF PAYMENT

1. The Consultant's compensation shall not exceed $150,000.
2. The Consultant will obtain, and keep current during the term of this Agreement, the required City of Moreno Valley business license. Proof of a current City of Moreno Valley business license will be required prior to any payments by the City. Any invoice not paid because the proof of a current City of Moreno Valley business license has not been provided will not incur any fees, late charges, or other penalties. Complete instructions for obtaining a City of Moreno Valley business license are located at: http://www.moval.org/do_biz/biz-license.shtml
3. The Consultant will electronically submit an invoice to the City once a month for progress payments along with documentation evidencing services completed to date. The progress payment is based on actual time and materials expended in furnishing authorized professional services during the preceding calendar month. At no time will the City pay for more services than have been satisfactorily completed and the City Engineer's determination of the amount due for any progress payment shall be final. The consultant will submit all original invoices to Accounts Payable staff at AccountsPayable@moval.org

   Accounts Payable questions can be directed to (951) 413-3073.

   Copies of invoices shall be submitted to the Special Districts Division at specialdistricts@moval.org or calls directed to (951) 413-3480.
4. The Consultant agrees that City payments will be received via Automated Clearing House (ACH) Direct Deposit and that the required ACH Authorization form will be completed prior to any payments by the City. Any invoice not paid

because the completed ACH Authorization Form has not been provided will not incur any fees, late charges, or other penalties. The ACH Authorization Form is located at:

http://www.moval.org/city_hall/forms.shtml#bf

5. The minimum information required on all invoices is:

A. Vendor Name, Mailing Address, and Phone Number
B. Invoice Date
C. Vendor Invoice Number
D. City-provided Reference Number (e.g. Project, Activity)
E. Detailed work hours by class title (e.g. Manager, Technician, or Specialist), services performed and rates, explicit portion of a contract amount, or detailed billing information that is sufficient to justify the invoice amount; single, lump amounts without detail are not acceptable.

6. The City shall pay the Consultant for all invoiced, authorized professional services within thirty (30) days of receipt of the invoice for same.

EXHIBIT E

INSURANCE REQUIREMENTS

Minimum Scope of Insurance

Coverage shall be at least as broad as:

1. The most current version of Insurance Services Office (ISO) Commercial General Liability Coverage Form CG 00 01, which shall include insurance for “bodily injury,” “property damage” and “personal and advertising injury” with coverage for premises and operations, products and completed operations, and contractual liability.

2. The most current version of Insurance Service Office (ISO) Business Auto Coverage Form CA 00 01, which shall include coverage for all owned, hired, and non-owned automobiles or other licensed vehicles (Code 1- Any Auto).

3. Workers’ Compensation insurance as required by the California Labor Code and Employer’s Liability Insurance.

4. Professional Liability (Errors and Omissions) insurance appropriate to Consultant’s profession.

Minimum Limits of Insurance

Consultant shall maintain limits of liability of not less than:

1. General Liability:

   $1,000,000 per occurrence for bodily injury and property damage
   $1,000,000 per occurrence for personal and advertising injury
   $2,000,000 aggregate for products and completed operations
   $2,000,000 general aggregate

2. Automobile Liability:

   $1,000,000 per accident for bodily injury and property damage

3. Employer’s Liability:

   $1,000,000 each accident for bodily injury
   $1,000,000 disease each employee
   $1,000,000 disease policy limit

4. Professional Liability (Errors and Omissions):

   $1,000,000 per claim/occurrence
   $2,000,000 policy aggregate

Umbrella or Excess Insurance

In the event Consultant purchases an Umbrella or Excess insurance policy(ies) to meet the "Minimum Limits of Insurance," this insurance policy(ies) shall "follow form" and afford no less coverage than the primary insurance policy(ies).

Deductibles and Self-Insured Retentions

Consultant shall be responsible for payment of any deductibles contained in any insurance policy(ies) required hereunder and Consultant shall also be responsible for payment of any self-insured retentions. Any deductibles or self-insured retentions must be declared to, and approved by, the City Manager or his/her designee. At the option of the City Manager or his/her designee, either (i) the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects City, CSD, Housing Authority and each of their officers, officials, employees, agents and volunteers; or (ii) Consultant shall provide a financial guarantee, satisfactory to the City Manager or his/her designee, guaranteeing payment of losses and related investigations, claim administration and defense expenses. At no time shall City be responsible for the payment of any deductibles or self-insured retentions.

Other Insurance Provisions

<u>The General Liability and Automobile Liability insurance policies</u> are to contain, or be endorsed to contain, the following provisions:

1. City, CSD, Housing Authority and each of their officers, officials, employees, agents and volunteers are to be covered as additional insureds.

2. The coverage shall contain no special limitations on the scope of protection afforded to City, CSD, Housing Authority and each of their officers, officials, employees, agents and volunteers.

3. Consultant's insurance coverage shall be primary and no contribution shall be required of City.

<u>The Workers' Compensation insurance policy</u> is to contain, or be endorsed to contain, the following provision: Consultant and its insurer shall waive any right of subrogation against City, CSD, Housing Authority and each of their officers, officials, employees, agents and volunteers.

If the Professional Liability (Errors and Omissions) insurance policy is written on a claims-made form:

1. The retroactive date must be shown, and must be before the effective date of the Agreement or the commencement of work by Consultant.
2. Insurance must be maintained and evidence of insurance must be provided for at least 3 years after any expiration or termination of the Agreement or, in the alternative, the policy shall be endorsed to provide not less than a 3-year discovery period.
3. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a retroactive date prior to the effective date of the Agreement or the commencement of work by Consultant, Consultant must purchase extended reporting coverage for a minimum of 3 years following the expiration or termination of the Agreement.
4. A copy of the claims reporting requirements must be submitted to City for review.
5. These requirements shall survive expiration or termination of the Agreement.

All policies of insurance required hereunder shall be endorsed to provide that the coverage shall not be cancelled, non-renewed, reduced in coverage or in limits except after 30 calendar day written notice by certified mail, return receipt requested, has been given to City. Upon issuance by the insurer, broker, or agent of a notice of cancellation, non-renewal, or reduction in coverage or in limits, Consultant shall furnish City with a new certificate and applicable endorsements for such policy(ies). In the event any policy is due to expire during the work to be performed for City, Consultant shall provide a new certificate, and applicable endorsements, evidencing renewal of such policy not less than 15 calendar days prior to the expiration date of the expiring policy.

Acceptability of Insurers

All policies of insurance required hereunder shall be placed with an insurance company(ies) admitted by the California Insurance Commissioner to do business in the State of California and rated not less than “A-VII” in Best’s Insurance Rating Guide; or authorized by the City Manager or his/her designee.

Verification of Coverage

Consultant shall furnish City with all certificate(s) and **applicable endorsements** effecting coverage required hereunder. All certificates and **applicable endorsements** are to be received and approved by the City Manager or his/her designee prior to City's execution of the Agreement and before work commences.

AGREEMENT FOR PROJECT RELATED SERVICES
SPECIAL DISTRICTS CONSULTING SERVICES
PROJECT NO. 2018-016

This Agreement is by and between the City of Moreno Valley, California, a municipal corporation, hereinafter described as "City," and Webb Municipal Finance, LLC, a (limited liability corporation) hereinafter described as "Consultant." This Agreement is made and entered into effective on the date the City signs this Agreement.

RECITALS

WHEREAS, the City has determined it is in the public interest to pre-qualify consultants for potential future and yet to be determined professional work hereinafter described as "Projects"; and

WHEREAS, the City has determined the Projects involve the performance of professional and technical services of a temporary nature as more specifically described in Exhibit "A" (Professional and Technical Services) and Exhibit "B" (Consultant's Proposal) hereto; and

WHEREAS, the City does not have available employees to perform the services for the Projects; and

WHEREAS, the City has requested the Consultant to perform such services for the Projects on an as-needed basis; and

WHEREAS, the Consultant is professionally qualified in California to perform the professional and technical services required for the Projects, and hereby represents that it desires to and is professionally and legally capable of performing the services called for by this Agreement;

THEREFORE, the City and the Consultant, for the consideration hereinafter described, mutually agree as follows:

DESCRIPTION OF PROJECT

1. The Projects are described as special districts consulting services. Project No. 2018-016.

SCOPE OF SERVICES

2. The Consultant's scope of service is for special districts consulting services and further type of work within that area of expertise is described in Exhibit "A" and Exhibit "B" attached hereto and incorporated herein by this reference. In the event of a conflict, the City's Request for Qualifications shall take precedence over the Consultant's Proposal. A separate and specific scope of services shall be provided for each individual project requested to be performed by Consultant along with a separate agreement ("Project Specific Agreement").

3. The City's responsibility is described on Exhibit "C" attached hereto and incorporated herein by this reference.

PAYMENT TERMS

4. There shall be no payment due under this Agreement. For each project requested by the City, a separate Project Specific Agreement shall be executed specifying a rate for the services provided and a "Not-to-Exceed" fee for the project. The City agrees to pay the Consultant and the Consultant agrees to receive an up to "Not-to-Exceed" fee of $150,000 for all Project Specific Agreements entered into during the term of this Agreement and shall be in accordance with the payment terms provided on Exhibit "D" attached hereto and incorporated herein by this reference unless otherwise noted within each Project Specific Agreement.

TIME FOR PERFORMANCE

5. Consultant shall not commence any services until a Project Specific Agreement

has been fully executed.

6. The Consultant shall commence services upon receipt of written direction to proceed from the City.

7. This Agreement shall be effective from effective date and shall continue in full force and effect date through June 30, 2023, subject to any earlier termination in accordance with this Agreement. The services of Consultant shall be completed in a sequence assuring expeditious completion, but in any event, all such services shall be completed prior to expiration of this Agreement.

8. (a) The Consultant agrees that the personnel, including the principal Project Manager, and all subconsultants assigned to the Project by the Consultant, shall be subject to the prior approval of the City.

(b) No change in subconsultants or key personnel shall be made by the Consultant without written prior approval of the City.

SPECIAL PROVISIONS

9. It is understood and agreed that the Consultant is, and at all times shall be, an independent contractor and nothing contained herein shall be construed as making the Consultant or any individual whose compensation for services is paid by the Consultant, an agent or employee of the City, or authorizing the Consultant to create or assume any obligation or liability for or on behalf of the City.

10. The Consultant may also retain or subcontract for the services of other necessary consultants with the prior written approval of the City. Payment for such services shall be the responsibility of the Consultant. Any and all subconsultants employed by the Consultant shall be subject to the terms and conditions of this Agreement and any subsequent

Project Specific Agreement, except that the City shall have no obligation to pay any subconsultant for services rendered on the Projects.

11. The Consultant and the City agree to use reasonable care and diligence to perform their respective services under this Agreement and any subsequent Project Specific Agreement.

12. The Consultant shall comply with applicable federal, state, and local laws in the performance of work under this Agreement and any subsequent Project Specific Agreement.

13. To the extent required by controlling federal, state and local law, Consultant shall not employ discriminatory practices in the provision of services, employment of personnel, or in any other respect on the basis of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, sexual orientation, ethnicity, status as a disabled veteran or veteran of the Vietnam era. Subject to the foregoing and during the performance of this Agreement, Consultant agrees as follows:

(a) Consultant will comply with all applicable laws and regulations providing that no person shall, on the grounds of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, sexual orientation, ethnicity, status as a disabled veteran or veteran of the Vietnam era be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity made possible by or resulting from this Agreement.

(b) Consultant will not discriminate against any employee or applicant for employment because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, sexual orientation, ethnicity, status as a disabled veteran or veteran of the Vietnam era. Consultant shall ensure

that applicants are employed, and the employees are treated during employment, without regard to their race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, sexual orientation, ethnicity, status as a disabled veteran or veteran of the Vietnam era. Such requirement shall apply to Consultant's employment practices including, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Consultant agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provision of this nondiscrimination clause.

(c) Consultant will, in all solicitations or advertisements for employees placed by or on behalf of Consultant in pursuit hereof, state that all qualified applicants will receive consideration for employment without regard to race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, sexual orientation, ethnicity, status as a disabled veteran or veteran of the Vietnam era.

(d) If Consultant should subcontract all or any portion of the services to be performed under this Agreement, Consultant shall cause each subcontractor to also comply with the requirements of this Section 13.

14. To the furthest extent allowed by law (including California Civil Code section 2782.8 if applicable), Consultant shall indemnify, hold harmless and defend the City, the Moreno Valley Community Services District ("CSD"), the Moreno Valley Housing Authority ("Housing Authority") and each of their officers, officials, employees, agents and volunteers from any and all loss, liability, fines, penalties, forfeitures, costs and damages (whether in contract, tort or strict liability, including but not limited to personal injury, death at any time and

property damage), and from any and all claims, demands and actions in law or equity (including reasonable attorney's fees and litigation expenses) to the extent that arise out of, pertain to, or relate to the negligence, recklessness or willful misconduct of Consultant, its principals, officers, employees, agents or volunteers in the performance of this Agreement.

If Consultant should subcontract all or any portion of the services to be performed under this Agreement, Consultant shall require each subcontractor to indemnify, hold harmless and defend City, CSD, Housing Authority and each of their officers, officials, employees, agents and volunteers in accordance with the terms of the preceding paragraph.

This section shall survive termination or expiration of this Agreement.

15. Insurance.

(a) Throughout the life of this Agreement, Consultant shall pay for and maintain in full force and effect all insurance as required in **Exhibit E** or as may be authorized in writing by the City Manager or his/her designee at any time and in his/her sole discretion.

(b) If at any time during the life of the Agreement or any extension, Consultant or any of its subcontractors fail to maintain any required insurance in full force and effect, all services and work under this Agreement shall be discontinued immediately, and all payments due or that become due to Consultant shall be withheld until notice is received by City that the required insurance has been restored to full force and effect and that the premiums therefore have been paid for a period satisfactory to City. Any failure to maintain the required insurance shall be sufficient cause for City to terminate this Agreement. No action taken by City pursuant to this section shall in any way relieve Consultant of its responsibilities under this Agreement. The phrase “fail to maintain any required insurance” shall include, without limitation, notification received by City that an insurer has commenced proceedings, or has had proceedings commenced against it, indicating that the insurer is insolvent.

(c) The fact that insurance is obtained by Consultant shall not be deemed to release or diminish the liability of Consultant, including, without limitation, liability under the indemnity provisions of this Agreement. The duty to indemnify City shall apply to all claims and liability regardless of whether any insurance policies are applicable. The policy limits do not act as a limitation upon the amount of indemnification to be provided by Consultant. Approval or purchase of any insurance contracts or policies shall in no way relieve from liability nor limit the liability of Consultant, its principals, officers, agents, employees, persons under the supervision of Consultant, vendors, suppliers, invitees, consultants, sub-consultants, subcontractors, or anyone employed directly or indirectly by any of them.

(d) Upon request of City, Consultant shall immediately furnish City with a complete copy of any insurance policy required under this Agreement, including all endorsements, with said copy certified by the underwriter to be a true and correct copy of the original policy. This requirement shall survive expiration or termination of this Agreement.

(e) If Consultant should subcontract all or any portion of the services to be performed under this Agreement, Consultant shall require each subcontractor to provide insurance protection in favor of City and each of its officers, officials, employees, agents and volunteers in accordance with the terms of this section, except that any required certificates and applicable endorsements shall be on file with Consultant and City prior to the commencement of any services by the subcontractor.

16. The waiver by either party of a breach by the other of any provision of this Agreement shall not constitute a continuing waiver or a waiver of any subsequent breach of either the same or a different provision of this Agreement. No provisions of this Agreement

may be waived unless in writing and signed by all parties to this Agreement. Waiver of any one provision herein shall not be deemed to be a waiver of any other provision herein.

17. Consultant and subconsultants shall pay prevailing wage rates when required by the Labor Laws of the State of California.

18. (a) The Consultant shall deliver to the Public Works Director/City Engineer of the City or his designated representative, fully completed and detailed project-related documents which shall become the property of the City. The Consultant may retain, for its files, copies of any and all material, including drawings, documents, and specifications, produced by the Consultant in performance of this Agreement.

(b) The Consultant shall be entitled to copies of all furnished materials for his files and his subconsultants, if any.

(c) The City agrees to hold the Consultant free and harmless from any claim arising from any unauthorized use of computations, maps, and other documents prepared or provided by the Consultant under this Agreement, if used by the City on other work without the permission of the Consultant. Consultant acknowledges that Consultant work product produced under this agreement may be public record under State law.

19. (a) This Agreement shall terminate without any liability of City to Consultant upon the earlier of: (i) Consultant's filing for protection under the federal bankruptcy laws, or any bankruptcy petition or petition for receiver commenced by a third party against Consultant; (ii) 10 calendar days prior written notice with or without cause by City to Consultant; (iii) City's non-appropriation of funds sufficient to meet its obligations hereunder during any City fiscal year of this Agreement, or insufficient funding for any active Project; or (iv) expiration of this Agreement. The written notice shall specify the date of termination. Upon receipt of such

notice, the Consultant may continue services on any active Project through the date of termination, provided that no service(s) shall be commenced or continued after receipt of the notice, which is not intended to protect the interest of the City. The City shall pay the Consultant within thirty (30) days after the date of termination for all non-objected to services performed by the Consultant in accordance herewith through the date of termination. Consultant shall not be paid for any work or services performed or costs incurred which reasonably could have been avoided.

(b) In the event of termination due to failure of Consultant to satisfactorily perform in accordance with the terms of this Agreement, City may withhold an amount that would otherwise be payable as an offset to, but not in excess of, City's damages caused by such failure. In no event shall any payment by City pursuant to this Agreement constitute a waiver by City of any breach of this Agreement which may then exist on the part of Consultant, nor shall such payment impair or prejudice any remedy available to City with respect to the breach.

(c) Upon any breach of this Agreement by Consultant, City may (i) exercise any right, remedy (in contract, law or equity), or privilege which may be available to it under applicable laws of the State of California or any other applicable law; (ii) proceed by appropriate court action to enforce the terms of the Agreement; and/or (iii) recover all direct, indirect, consequential, economic and incidental damages for the breach of the Agreement. If it is determined that City improperly terminated this Agreement for default, such termination shall be deemed a termination for convenience.

(d) Consultant shall be liable for default unless nonperformance is caused by an occurrence beyond the reasonable control of Consultant and without its fault or negligence such as, acts of God or the public enemy, acts of City in its contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, unusually severe weather, and delays of common carriers. Consultant shall notify City in writing as soon as it is reasonably possible after the commencement of any excusable delay, setting forth the full particulars in connection therewith, and shall remedy such occurrence with all reasonable dispatch, and shall promptly give written notice to Administrator of the cessation of such occurrence.

20. This Agreement is binding upon the City and the Consultant and their successors and assigns. Except as otherwise provided herein, neither the City nor the Consultant shall assign, sublet, or transfer its interest in this Agreement or any part thereof without the prior written consent of the other.

21. A City representative shall be designated by the City and a Consultant representative shall be designated by the Consultant. The City representative and the Consultant representative shall be the primary contact person for each party regarding performance of this Agreement. The City representative shall cooperate with the Consultant, and the Consultant's representative shall cooperate with the City in all matters regarding this Agreement and in such a manner as will result in the performance of the services in a timely and expeditious fashion.

22. This Agreement represents the entire and integrated Agreement between the City and the Consultant, and supersedes all prior negotiations, representations or Agreements, either written or oral. This Agreement may be modified or amended only by a subsequent written Agreement signed by both parties.

23. Where the payment terms of any Project Specific Agreement provide for compensation on a time and materials basis, the Consultant shall maintain adequate records to permit inspection and audit of the Consultant's time and materials charges under this

Agreement. The Consultant shall make such records available to the City at the Consultant's office during normal business hours upon reasonable notice. Nothing herein shall convert such records into public records. Except as may be otherwise required by law, such records will be available only to the City. Such records shall be maintained by the Consultant for three (3) years following completion of the services under this Agreement.

24. The City and the Consultant agree, that to the extent permitted by law, until final approval by the City, all data shall be treated as confidential and will not be released to third parties without the prior written consent of both parties.

25. (a) Consultant shall comply, and require its subcontractors to comply, with all applicable (i) professional canons and requirements governing avoidance of impermissible client conflicts; and (ii) federal, state and local conflict of interest laws and regulations including, without limitation, California Government Code Section 1090 et. seq., the California Political Reform Act (California Government Code Section 87100 et. seq.) and the regulations of the Fair Political Practices Commission concerning disclosure and disqualification (2 California Code of Regulations Section 18700 et. seq.). At any time, upon written request of City, Consultant shall provide a written opinion of its legal counsel and that of any subcontractor that, after a due diligent inquiry, Consultant and the respective subcontractor(s) are in full compliance with all laws and regulations. Consultant shall take, and require its subcontractors to take, reasonable steps to avoid any appearance of a conflict of interest. Upon discovery of any facts giving rise to the appearance of a conflict of interest, Consultant shall immediately notify City of these facts in writing.

(b) In performing the work or services to be provided hereunder, Consultant shall not employ or retain the services of any person while such person either is employed by

City or is a member of any City council, commission, board, committee, or similar City body. This requirement may be waived in writing by the City Manager, if no actual or potential conflict is involved.

(c) Consultant represents and warrants that it has not paid or agreed to pay any compensation, contingent or otherwise, direct or indirect, to solicit or procure this Agreement or any rights/benefits hereunder.

(d) Neither Consultant, nor any of Consultant's subcontractors performing any services on this Project, shall bid for, assist anyone in the preparation of a bid for, or perform any services pursuant to, any other contract in connection with this Project unless fully disclosed to and approved by the City Manager, in advance and in writing. Consultant and any of its subcontractors shall have no interest, direct or indirect, in any other contract with a third party in connection with this Project unless such interest is in accordance with all applicable law and fully disclosed to and approved by the City Manager, in advance and in writing. Notwithstanding any approval given by the City Manager under this provision, Consultant shall remain responsible for complying with Section 25(a), above.

(e) If Consultant should subcontract all or any portion of the work to be performed or services to be provided under this Agreement, Consultant shall include the provisions of this Section 25 in each subcontract and require its subcontractors to comply therewith.

(f) This Section 25 shall survive expiration or termination of this Agreement.

26. All Plans, drawings, Specifications, reports, logs, and other documents prepared by the Consultant in its performance under this Agreement shall, upon completion of the project, be delivered to and be the property of the City, provided that the Consultant shall be

entitled, at its own expense, to make copies thereof for its own use.

27. The laws of the State of California shall govern the rights, obligations, duties, and liabilities of the parties to this Agreement, and shall also govern the interpretation of this Agreement. Venue shall be vested in the Superior Court of the State of California, County of Riverside.

28. Supplementary General Provisions. (For projects that are funded by Federal programs). The following provisions, pursuant to 44 Code of Federal Regulations, Part 13, Subpart C, Section 13.36, as it may be amended from time to time, are included in the Agreement and are required to be included in all subcontracts entered into by CONTRACTOR for work pursuant to the Agreement, unless otherwise expressly provided herein. These provisions supersede any conflicting provisions in the General Conditions and shall take precedence over the General Conditions for purposes of interpretation of the General Conditions. These provisions do not otherwise modify or replace General Conditions not in direct conflict with these provisions. Definitions used in these provisions are as contained in the General Conditions.

a) CONTRACTOR shall be subject to the administrative, contractual, and legal remedies provided in the General Conditions in the event CONTRACTOR violates or breaches terms of the Agreement.

b) CITY may terminate the Agreement for cause or for convenience, and CONTRACTOR may terminate the Agreement, as provided the General Conditions.

c) CONTRACTOR shall comply with Executive Order 11246 of September 24, 1965, entitled Equal Employment Opportunity, as amended by Executive Order 11375 of October 13, 1967, and as supplemented in Department of Labor regulations (41 CFR chapter 60). (All construction contracts awarded in excess of $10,000 by CITY and/or subcontracts in excess of $10,000 entered into by CONTRACTOR.)

d) CONTRACTOR shall comply with the Copeland Anti-Kickback Act (18 U.S.C. 874) as supplemented in Department of Labor regulations (29 CFR Part 3) (All contracts and subcontracts for construction or repair.)

e) CONTRACTOR shall comply with the Davis-Bacon Act (40 U.S.C. 276a to 276a7) as supplemented by Department of Labor regulations (29 CFR Part 5).

f) CONTRACTOR shall comply with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. *327330*) as supplemented by Department of Labor regulations (29 CFR Part 5).

g) CONTRACTOR shall observe CITY requirements and regulations pertaining to reporting included in the General Conditions.

h) Patent rights with respect to any discovery or invention which arises or is developed in the course of or under the Agreement shall be retained by the CITY.

i) Copyrights and rights in data developed in the course of or under the Agreement shall be the property of the CITY. FEMA/CalOES reserve a royalty-free, nonexclusive, irrevocable license to reproduce, publish or otherwise use or authorize to others to use for federal purposes a copyright in any work developed under the Agreement and/or subcontracts for work pursuant to the Agreement.

j) CONTRACTOR shall provide access by the City, the Federal grantor agency, the Comptroller General of the United States, or any of their duly authorized representatives to any books, documents, papers, and records of the contractor which are directly pertinent to that specific contract for the purpose of making audit, examination, excerpts, and transcriptions.

k) CONTRACTOR shall retain all required records for three years after CITY makes final payments and all other pending matters relating to the Agreement are closed.

l) CONTRACTOR shall comply with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. *1857*(h)), section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR part 15). (This provision applies to contracts exceeding $100,000 and to subcontracts entered into pursuant to such contracts.)

m) CONTRACTOR shall comply with mandatory standards and policies relating to energy efficiency which are contained in the State energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94163, 89 Stat. 871).

SIGNATURE PAGE FOLLOWS

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

City of Moreno Valley

BY: ______________________
Thomas M. DeSantis
City Manager

Date: ______________________

Webb Municipal Finance, LLC

BY: ______________________

Name: ______________________

TITLE: ______________________
(President or Vice President)

Date: ______________________

BY: ______________________

Name: ______________________

TITLE: ______________________
(Corporate Secretary)

Date: ______________________

INTERNAL USE ONLY

ATTEST:

____
City Clerk
(only needed if Mayor signs)

APPROVED AS TO LEGAL FORM:

____
City Attorney

____
Date

RECOMMENDED FOR APPROVAL:

____
Department Head
(if contract exceeds 15,000)

____
Date

EXHIBIT A

PROFESSIONAL AND TECHNICAL SERVICES

Special Financing District Consultant services may include: a) preparation of annual engineer's reports; b) preparation of boundary maps for parcels annexing into a CFD; c) formation of Community Facilities Districts for service and for bonded districts; d) transition of community service districts into alternative district formats (e.g. annexing into or forming a landscape maintenance district); e) providing general special district consulting services; and f) collaboration on developing content for special financing district marketing pieces.

The professional services include tasks established by industry standards for the formation of districts and shall include standards similar to those set forth below:

1) Analyze and determine the type of district restructuring or formation for each unique situation.

2) Prepare the initial Rate and Method of Apportionment (RMA) or assessment calculation.

3) Calculate the initial special tax levy requirement or assessments.

4) Prepare a CFD Report or Engineer's Report (ER).

5) Prepare and deliver mylar copies of boundary maps.

6) Expend due diligence to ensure accuracy in reviewing and preparing all work products and timely submissions of such.

7) Provide clear written documentation concerning the approach taken to derive the conclusions reached.

8) Employ strict confidentiality of all documents made available by the City to the Consultant, sub consultant or any other appointed entity, in the course of completing a formation, which may contain private and/or confidential information, which includes but is not limited to property owner names and addresses.

9) Make all necessary arrangements for delivery and pick-up of documents to and from any agency, office or City Department/Division.

10) Meet with City staff to discuss task lists and associated jobs for further input and approval.

11) Attend meetings of the City Council (e.g. study session, Council meeting, subcommittee meetings), as requested

12) Participate in providing additional analysis and support for the issuance of any bonds.

EXHIBIT B

CONSULTANT'S RESPONSE TO RFQ

ALBERT A. WEBB ASSOCIATES

Request for Qualifications (RFQ)

Special District Consulting Services As Needed Basis

Prepared for

MORENO VALLEY
WHERE DREAMS SOAR

March 5, 2018

ALBERT A. WEBB ASSOCIATES

Corporate Headquarters
3788 McCray Street
Riverside, CA 92506
T: 951.686.1070

Palm Desert Office
41-990 Cook St., Bldg. I - #801B
Palm Desert, CA 92211
T: 951.686.1070

Murrieta Office
41870 Kalmia Street #160
Murrieta, CA 92562
T: 951.686.1070

Albert A. Webb Associates (WEBB) is eager to collaborate with the City of Moren Valley (City) providing Special District Consulting Services on an as needed basis WEBB has the in-house expertise to address the needs of the City. Our team is able t provide the City with all services without the hassle of multiple subconsultants.

Compliance Efforts

The U.S. Securities Exchange Commission (SEC) passed rules that may require firm and consultants providing certain types of advice to the municipal advisory consultant to register with the SEC. In compliance with the SEC's ruling, WEBB is taking proactiv measures to transition our existing Municipal Finance Department to a **new entity separate from the operating owners and principals of WEBB,** to be known a Webb Municipal Finance, LLC (WMF). WMF will provide the same valuable service we've offered to clients for 57 years including special tax consulting, assessmer engineering, annual administration, formation and annexation services, auditing an verification, delinquency management, continuing disclosure and disseminatior comprehensive regulatory reporting, and program management of special financin districts. Additionally, the existing Municipal Finance Department personnel will als transition to WMF, ensuring the team's institutional knowledge, history, and thoroug understanding of our clients' needs are preserved.

The transition to WMF is underway. WMF has filed an application to become registere as a Municipal Advisor with the SEC, and we anticipate transition steps to be complete on or before April 2018. Therefore, if awarded the contract for the City's services, WM will be assuming the contract and will sign the City's Standard Form of Agreement a such. Any services under this agreement will be provided by WMF.

WEBB's proposal details our firm's qualifications, the experience of the firm and projec teams, our quality assurance approach, and other pertinent information for the City' evaluation. A summary of highlights are noted as follows:

Project Understanding

The City is seeking a qualified firm with demonstrated competence and professiona qualifications needed to successfully perform consulting services pertaining to variou Special Districts, including but not limited to, Bonded Community Facilities District (CFD), Maintenance CFDs, Annexation to CFDs, Assessment Districts (AD), and Lightin and Landscape Maintenance Districts (LLMD).

WEBB has included detailed scopes of service for each of the following types of wor requested:

- LMD Formation and Annexation
- LMD Engineer's Report
- CFD Formation
- CFD Annexation
- CFD Bond Issuance
- Assessment District Formation

Quality Assurance

- Extensive and complete in-house quality assurance procedures
- Tested specialized approach to project management
- Quality control embedded in every stage of project development from kick-off to completion
- Constant communication to ensure all projects have ease of access to WEBB services throughout the contract

Qualifications

- Manageable amount of projects currently under contract due to our ability to increase our staffing levels to maintain a high quality of service without sacrificing local knowledge
- Our Team, **Heidi Schoeppe**, **Doris Domen**, **Matt Chesney**, and **David Messenger** have over 35 years of combined experience providing similar services to other public agencies throughout southern California
- Key personnel will be available as proposed for the duration of the project

References

- WEBB is the right choice for the City's Special District Administration Services with similar services being provided within the last five years to multiple public agencies, who have provided letters of recommendation. We are confident we are the right choice for the City for the following reasons:
    - Consulting firm with nearly 60 years of experience and in-house resources
    - GIS specialists who can develop auditing tools for all of the City's Districts
    - Information Technology Team who designed our proprietary database software, WebbSTAR™, and provides on-going database maintenance for all Special Districts WEBB administers
    - Multiple staff dedicated specifically for the City's project who can, at any time, help with all administrative functions and any special projects

Summary and Closure

WEBB has a highly qualified team of professionals with extensive experience in projects very similar to the City's Special District Consulting Services needs. Our work plan is to always provide cost effective and high-quality customer service to all our clients' projects.

All WEBB Project Team members are involved in every project and are available for comments, questions, and discussions at any frequency as requested by the City. Our team members will remain available throughout the duration of the contract. You can be confident your projects will be successfully completed in a timely and professional manner. We look forward to the opportunity to work together. If you have any questions regarding our proposal, please contact me directly at (951) 320-6087, or by email at heidi.schoeppe@webbassociates.com.

Sincerely,

Heidi Schoeppe

Heidi Schoeppe, Director - Municipal Finance
Albert A. Webb Associates
3788 McCray Street, Riverside, CA 92506
951.320.6087
heidi.schoeppe@webbassociates.com

TABLE OF CONTENTS

Section 1 - Organization

Firm Identification

Firm Profile

Legal Name: Albert A. Webb Associates

Subsidary/Affiliate Relationship: None

Legal Form: Corporation

Contact Person

Authorized to Sign: Heidi Schoeppe, Director

Corporate Phone: 951.320.6087

Corporate Email: heidi.schoeppe@webbassociates.com

WEBB has consistently provided planning and civil engineering services to public sector clients throughout Inlan Southern California for **72 years** and has provided municipal finance services for **57 years.** This means the City receive the benefit of a financially stable firm that has successfully overcome many rough economic times. WEBB is a mid-size consulting firm with offices in Riverside, Murrieta, and Palm Desert and has approximately 160 associates and ove 40 professional licenses held. A third of our associates have over 10 years with the firm and the in-house expertis to address the needs of cities, water and special districts, counties, regional agencies, and our partner firms withi the industry. The partnership with our clients, coupled with our mission of ***"integrity in our dealings with clients employees, public officials, and the public"*** is what makes WEBB a high quality consulting firm. ***All team member proposed for the City's projects work under roof out of our corporate headquarters located in Riverside. The WEBI Team is within ten miles of the City and can respond to all request at a moments notice.***

1945
Founding Year

160
Number of Employees

40
Professional Licenses

Corporate Headquarters
3788 McCray Street
Riverside, CA 92506

Palm Desert Office
41-990 Cook Street, Bldg. I-801B
Palm Desert, CA 92211

Murrieta
41870 Kalmia Street #160
Murrieta, CA 92562

Ownership

Matthew Webb, PE, TE, LS
President/CEO

Scott Webb
Chief Financial Officer

Steve Webb
Risk Management

Organizational Structure

Heidi Schoeppe
Director

Scott Hildebrandt, PE
Senior Vice President

William T. Malone, PE, PMP
Vice President

Mohammad Faghihi, PE, LS
Chief Operations Officer

Bruce Davis, PE
Senior Vice President

Dilesh Sheth, PE, TE
Vice President

Kevin W.M. Ferguson
Chief Development Officer

Wallace Franz, PE
Vice President

Jason Ardery, PE, TE, CPESC, QSD
Vice President

Sam Gershon, RCE
Senior Vice President

Brian Knoll, PE
Vice President

Stephanie Standerfer
Vice President

WEBB's Municipal Finance Department

WEBB's Municipal Finance Department was formed in 1960 to offer valuable services including special financing district assistance, tax roll billing, and annual administration of special financing districts on behalf of public agencies. *With over 57 years of special financing district services provided, the expertise, training, and experience of our staff will allow us to provide a high-level of service to the City.*

WEBB is a single-source consulting firm with in-house resources including a dedicated Engineer-of-Record, GIS specialists, and an Information Technology Team that designed our proprietary and internal municipal finance database software, WebbSTAR™. Our comprehensive list of services, proven experience in all areas of municipal finance, and an excellent project management approach with a focus on client service and communication, makes WEBB the absolute right choice to provide efficient and fluid management for all projects.

WEBB's Municipal Finance Department has successfully formed and administered more than 300 special financing districts. These special districts include Landscaping and Lighting Maintenance Act of 1972, Assessment Districts formed under the Municipal Improvement Act of 1913, the Improvement Bond Act of 1915, and the Benefit Assessment Act of 1982, Mello-Roos Community Facilities Act of 1982, County Services Areas, and others. Due to WEBB's in-house capabilities, our team is able to provide our clients with all required services without the addition of any subcontractors. Utilizing WEBB as a single resource for all special assessment and tax consulting needs enables our clients to save homeowners money without having to coordinate with multiple consultants.

The WEBB Team values our relationships we have with the communities in which we do business and we are equally vested in the City's success. WEBB currently provides administration, formation, annexation, bond issuance, and consulting services to over 20 public agencies. Below is a snapshot of WEBB's qualified experience:

>300	>275	>200	>$1.2B
Special Financing Districts Formations	**Completed Annexations**	**Bond Sales/Refundings**	**Bond Issuances Amount**

WEBB has the in-house expertise to address the needs of cities, counties, regional agencies, water and special districts, municipal finance agencies, and our partner firms within the industry. Our team is able to provide the City with all services without the addition of any subconsultants. The partnership with our clients, coupled with our mission of ***"integrity in our dealings with clients, employees, public officials, and the public"*** is what makes WEBB the highest quality consulting firm.

WEBB's Municipal Finance Department has successfully formed and administered more than 300 special districts. These special districts include 1915 Act Assessment Districts, 1982 Act Mello Roos Community Facilities Districts, and 1972 Act Landscape Maintenance Districts, Community Services Areas. Due to WEBB's in-house capabilities, our team is able to provide our clients with all requisite services without the addition of subcontractors. Utilizing WEBB as a single-resource for all special assessment and tax consulting services enables our clients to save homeowners money without having to coordinate with multiple consultants.

WEBB's senior level professionals have provided formation and annexation services for CFDs, ADs, and LLMDs across Inland Southern California and possess a thorough understanding of the specific nuances and challenges that exist with each formation and annexation. Our associates are key members of the team and are the individuals who produce the work product. Utilizing this operation model, WEBB is able to provide the highest level of service possible to the City. Additionally, the City will have access to the extensive technological and engineering resources WEBB has as a result of being a full-service civil engineering firm.

WEBB's In-House Services

WEBB has the in-house expertise to address the needs of cities, water and special districts, counties, regional agencies, municipal finance agencies, and our partner firms within the industry.

"WEBB provides complete turnkey services managing all aspects of our program. Even more valuable is their considerable expertise."

- Heidi Schrader, Finance Manager II Eastern Municipal Water District

The WEBB Team consists of senior level professionals who consistently provide assessment engineer services on a regular basis. This improves overall project management, reduces the opportunity for costly mistakes and delays, and allows our staff to continue to provide very effective and efficient services.

Administration Services

- Close-out Analysis at District Maturity
- Annual Levy Preparation
- City Council/Board Meetings Attendance
- Budget Analysis
- Monitor Fund Balances
- Delinquency Monitoring & Management
- Initiation of Foreclosure Process
- Bond Call Analysis & Preparation
- Annual Engineer's Report
- Prepare & Disseminate Annual Disclosure Report
- CDIAC Reporting Compliance
- Annexations
- Parcel Apportionment
- Bond Payoff Calculations
- Identification & Evaluation of Financing Alternatives
- Refunding Analysis
- Public Information Services

Formation Services

- Special Tax Consulting
- Assessment Engineering
- Prepare and Record Boundary Maps & Assessment Diagrams
- Time-line Preparation
- Rates & Method of Apportionment Preparation
- Budget/Cost Analysis
- Assessment Spread & Tax Allocation
- Engineer's Report
- Prepare & Record Notice of Special Tax Lien
- Reassessment District Reports
- Notices of Public Hearings
- Proposition 218 Compliance
- Ballot Preparation, Mailing, and Tabulation
- Attendance at City Council Meetings

Annexation Services

- Project Development Review
- Budget/Cost Analysis
- Special Tax Rate Analysis
- Time-line Preparation
- Rates & Method of Apportionment Preparation
- Preparation of Annexation Boundary Map
- Attendance at City Council Meetings
- Resolution/Ordinance Review & Assistance
- Prepare & Record Notice of Special Tax Lien

Administration Services

WEBB's Municipal Finance Department has an understanding of the manner in which a financing district will operate in the real world once formed. Our approach to the administration process has been developed through years of experience primarily focusing our services within Inland Southern California. We offer technical capabilities, in-depth knowledge of our industry, and responsiveness to the City's needs, as well as annual levy preparation, budget analysis, delinquency management, and annual reporting.

Formation Services

WEBB understands the challenges and complexities faced by governmental agencies in administering benefit assessment districts. We are skilled in preparing assessment allocations that meet the stringent requirements of Proposition 218 with respect to special benefits, general benefits, and benefits to publicly owned parcels required for Assessment Districts. WEBB prepares rates and methods of special tax apportionment for CFDs and ADs that are simple to administer and can be easily understood by the public.

Annexation Services

WEBB's annexation services include, but are not limited to project development review, time line preparation, cost analysis, budget and special tax rate establishment, annexation boundary map preparation, meeting attendance, landowner election assistance, recordation of notice of special tax lien, and general consulting services.

"We are comfortable relying on their expertise. I know that deadlines will be met, the tax levies will be correctly enrolled, and property owners will be given excellent service.."

- Amy Aguer, Controller
Coachella Valley Water District

WEBB's Technology Investments Capabilities and Innovations

Geographic Information Services

Our Geographic Information Services (GIS) provided by our in-house GIS Department is invaluable to our department as we perform our annual levy audits and district audits. Our Municipal Finance Department recognizes the direct relationship between geospatial data and land secured financing and has successfully integrated it into our annual administration process. We pioneered this mapping capability as a way to annually audit the placement of charges to the county rolls. WEBB utilizes this technology to assist in the classification of properties, in preparing financial analyses, and providing various reports including annual GIS audit maps. These services are unique in the public financing industry and allow the administrator to provide real time visual information to clients.

WEBB developed GIS audit maps as an in-house check for accuracy. Whenever we inherit new districts, we generate an audit map with the approved district boundaries identified on the map. It is through this technique that our team is able to identify any discrepancies between what was previously levied and what should have been applied. In addition to utilizing GIS as an internal auditing tool, WEBB performs parcel auditing, delinquency mapping, foreclosed property identification, and decreased assessed value by Tax Rate Area analysis.

WEBB has made significant investments into its technological architecture including both software and hardware. Recently, WEBB began developing its own proprietary software founded on more than 57 years of experience in providing municipal finance services to municipalities. WEBB has phased this project by implementing an in-house SQL database structure which gave us a usable blueprint on how to structure our new WebbSTAR™ application. WebbSTAR™ is a proprietary database management program designed to support municipalities and local agencies in providing administrative services for property related fees, assessments, charges, and taxes.

Our associates can perform the following tasks utilizing WebbSTAR™:

- Maintain property information and parcel data
- Calculate special assessments and taxes
- Maintain delinquency information
- Perform parcel changes and apportionments
- Manage debt service schedules and perform bond calls
- Log property owner calls and notes
- Generate a multitude of reports

Annual Administration, Formation, and Bond Sale Support Services for Special Districts

Client
City of Beaumont Finance
550 East 6th Street
Beaumont, CA 92223

Contact:
Melana Taylor
Finance Director
951.769.8520
mtaylor@ci.beaumont.ca.us

Calendar Year(s) of Service:
Fiscal Year 2015-Present

Contract Amount:
$185,450
Facilities - $3,960
Services - $1,145

Project Team:
Heidi Schoeppe - PIC
Richard Wall - PM
Doris Domen - Assistant PM
Charmaine McCarvel - QA/QC
Nadia Benali - Analyst
David Messenger - Analyst
Nanette Pratini, GISP - GIS

WEBB currently provides special tax consulting and annual administration service for the City. These services include the annual administration of 40 CFDs whic included 71 special taxes comprising the City's CFD program which include multiple Improvement Areas under CFD No. 93-1, and four new CFDs which WEBI assisted in the formation of. The new CFDs include CFD No. 2016-1, CFD Nc 2016-2, CFD No. 2016-3, and CFD No. 2016-4. The Fiscal Year 2017-18 annua administration efforts resulted in the successful enrollment of 71 individual specia taxes/fund numbers, which was comprised of 25,089 parcels totaling $24,037,45 in special tax revenues.

WEBB has also been a vital resource to the City in researching the historica documents and related files serving to bridge the gap of the previous City Sta which held all industry knowledge and historical background of the City's CFI program. Our project team has spent the nearly three years becoming CFD subjec experts for the City's Staff, Council, and the community. During our engagemen WEBB has assisted in multiple projects and tasks which were out-of-scope t our contract of services. Illustrating our commitment to client service, WEBI completed these numerous tasks without fail. The following are some examples c the types of activities WEBB assisted in and completed:

Project Highlights

- Identified and Corrected Several Prior CFD Administration Deficiencie Ensuring all CFDs are Administered as Defined in the Formation Documents
- Assistance to the City's Financial Advisor and Other Consultants in Providin CFD Budget Forecasts for the City's Work Out and Reconciliation Projects
- Created a Historical CFD Budget Looking Back 10 Years using Available Record
- Developed and Implemented the City's CFD Maintenance Services Program
- Developed and Implemented the City's First Public Safety Services Proram t Provide Funding for Police, Fire, and Paramedic Services
- Ongoing Support to the City's Finance Department Providing Historical an Current CFD Financial Records and Budget Preparation

March 29, 2017

Mr. Todd Parton
City Manager
City of Beaumont
550 E. 6th Street
Beaumont, CA 92373

RE: ACCURACY RATING STATEMENT FOR ALBERT A. WEBB ASSOCIATES

To Whom It May Concern,

It is without hesitation that the City of Beaumont (the "City") submits this statement of accuracy on behalf of Albert A. Webb Associates ("WEBB") for inclusion in the current request for proposal. WEBB has been providing special tax consultant services to the City for the past three years and provides many ongoing services that includes producing a suite of CFD reports. These reports include the annual CDIAC, Continuing Disclosure, Comprehensive Combined CFD Report, and the newest Parcel Tax Reporting created from the passage of Assembly Bill 2109.

Each of the completed reports is vigorously reviewed by our internal staff as well as our legal and bond counsel. The results of these reviews year after year confirm the same result – **WEBB provides stellar service and accuracy second to none.** The contents of all reports contain the correct facts and figures, conform to each specific reporting requirement, and given the rare instance of corrections, exhibit a high level of review and due diligence.

Given my experience with the WEBB team and reliance on their services, it is my pleasure to provide this letter confirming their level of service and accuracy rating. Please do not hesitate to contact me with questions.

Respectfully,

Todd Parton
City Manager
(951) 572-3220
tparton@ci.beaumont.ca.us

Formation, Debt Issuance, Administration, and Program Management Services for Community Facilities Districts

Client:
Eastern Municipal Water District
2270 Trumble Road
Perris, CA 92570

Contact:
Heidi Schrader, Financial Manager III
951.928.3777
schradeh@emwd.org

Calendar Year(s) of Service:
Fiscal Year 2000-2001 to Present

Contract Status:
Good Standing/Present

Project Team:
Heidi Schoeppe - PM
Matt Chesney - APM
Brent Howard - Analyst
Nanette Pratini - GIS

WEBB assumed and seamlessly transitioned the annual administration for a Eastern Municipal Water District (EMWD) Community Facilities Districts (CFD In addition to formation services and comprehensive administration services fc all districts, WEBB also performed parcel audit services for all assumed district and took on the role of Program Manager for EMWD's entire book of CFD work

Program Management Services

- Receives and manages all CFD related requests including formation of nev CFD's, amending the structure of an existing CFD, Joint Community Facilitie Agreement requests, and requests to issue CFD bonds from developer or consultants

Formation Services

- Prepares the Rate and Method of Apportionment and provide projections c special tax revenues

Bond Issuance and Refinancing

- Research, compile, and analyze appropriate data to generate tables fc inclusion in preliminary and final bond offerings
- Review and provide comments to all bond issuance documents and assist in any analysis and presentations for credit ratings

Administration Services

- Preparation of annual budgets, levy enrollments, CDIAC, SB165, and AB210 report preparation, special tax prepayment calculations and release of lien(s public information services, Notices of Special Tax, parcel and developmer status research, and delinquency management

Parcel Audit Services

- Performs levy and parcel audit services on assumed districts usin WebbSTAR™ software and our GIS platform

EASTERN MUNICIPAL WATER DISTRICT

April 4, 2017

Mr. Scott Miller
Chief Financial Officer/City Treasurer
City of Riverside
3900 Main Street
Riverside, CA 92522

Subject: Eastern Municipal Water District Accuracy Rating Statement for Albert A. Webb Associates

Dear Scott:

It is my pleasure to submit this statement of accuracy regarding Albert A. Webb Associates in response to the City of Riverside's current request for proposal for Assessment Engineer Services. Based upon the District's experience with the Webb team, I can attest to their accuracy, expertise, and high quality of work. Webb has been providing special tax administration, formation, and consulting services to the District for nearly 20 years, and provides program management services for the District's 90 separate financing areas.

Webb's exceptional service has enabled the District to administer the largest portfolio of land secured debt in California. In total, the District's CFDs currently have more than $198 million in outstanding debt. Webb provides many ongoing administrative services to the District, which include producing annual continuing disclosure reports required pursuant to SEC Rule 15c2-12, annual Senate Bill 165 reports, newly required annual AB 2109 parcel tax reports, and providing information utilized in the annual CDIAC reports.

The reports provided by Webb for the District's CFDs are complex yet accurate, and include information for more than 60 CFDs. In addition to these reports, for FY 2016-17 Webb enrolled special taxes on the Riverside County tax roll for 65 CFDs with 100% accuracy. Webb's accuracy, attention to detail, and quality control procedures set them apart from the competition.

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300
T 951.928.3777 • F 951.928.6177 www.emwd.org

Please feel free to contact me at (951) 928-3777 or turnerc@emwd.org or Heidi Schrader, Financial Manager III at schradeh@emwd.org should you have additional questions.

Sincerely,

Charles Turner
Director of Finance

CET:has

c: Heidi Schoeppe, Webb Associates

Formation and Administration Services

Client
Jurupa Community Services District
11201 Harrel Street
Jurupa Valley, CA 91752

Contact:
Steven Popelar
Director of Finance
951.685.7434
spopelar@jcsd.us

Calendar Year(s) of Service:
Fiscal Year 1988-1989 to Present

Contract Status:
Good Standing/Present

Project Team:
Heidi Schoeppe - PIC
Doris Domen - PM
Charmaine McCarvel - QA/QC
David Messenger - Analyst
Nanette Pratini - GIS

WEBB currently performs administrative services for 51 bonded and non-bonded Community Facility Districts (CFDs) including 17 annexations and seven Landscaping Maintenance Districts (LMDs), including 124 annexations. The recent formations of CFDs for JCSD include the design, construction, and acquisition of proposed facilities for JCSD that consist of master plan water system facilities including capacity in existing facilities and sewage treatment and disposal capacity, park and recreation facilities including incidental expenses related to the planning, design, and completion of such facilities, school district facilities that include K-12 public school facility improvements to be owned and operated by the school district, and/or County of Riverside improvements to be owned and operated by the County of Riverside, and/or City of Eastvale Development Impact Fees.

For both CFD and LMD formations and annexations, the WEBB Team participates in meetings with JCSD personnel either in person or by conference call.

Formation Services

- Projects the planned build-out scenarios to determine taxing capabilities, taking into consideration any overlapping debt in order to maintain the taxing limits outlined by JCSD's policies
- Review outline of plans & specifications, collection and review of all data related to the formation and annexation, preparation of the Engineer's Report including the establishment of general benefit (Assessment Methodology), preparation of assessment diagrams, assessment roll preparation, and assistance in the preparation of the ballots (Proposition 218)

Jurupa
Community Services District

March 30, 2017

City of Riverside
Finance Department
3900 Main Street
Riverside, CA 92522

RE: ACCURACY RATING STATEMENT FOR ALBERT A. WEBB ASSOCIATES

To Whom It May Concern,

It gives me great pleasure for the Jurupa Community Services District (the "District") to submit this statement of accuracy on behalf of Albert A. Webb Associates ("WEBB") for inclusion in the current request for proposal. WEBB has been providing special tax consultant services to the District for over 30 years. WEBB provides many ongoing reporting services to the District, including the following:

1. Annual CDIAC Reports
2. Annual Continuing Disclosure Reports,
3. Annual Senate Bill 165 Reports, and
4. The new AB 2109 Parcel Tax Reports.

WEBB also provides Annual Engineer's Reports for **eight Landscaping and Lighting Maintenance Districts.**

Each of these reports, once completed by WEBB, are vigorously reviewed by their internal staff as well as District staff. The results of these reviews, year after year, confirm the same result – WEBB provides timely and accurate deliverables. The contents of all reports contain the correct facts and figures, conform to each specific reporting requirement, and given the rare instance of corrections, exhibit a high level of review and due diligence.

Given my extensive experience with the WEBB team, I can provide this letter confirming their excellent level of service and accuracy. Please do not hesitate to contact me with questions.

Respectfully,

Steven Popelar

Steven Popelar
Director of Finance and Administration
(951) 685-7434, ext. 525
spopelar@jcsd.us

Consulting Services for Special Districts

Client
City of Chino
13220 Central Avenue
Chino, CA 91710

Client Contact:
Jose Alire
Assistant City Manager/Public Works
909.334.3265
jalire@cityofchino.org

Robert Burns
Director of Finance
909.334.3262
rburns@cityofchino.org

Calendar Year(s) of Service:
Fiscal Year 2007-2008 to Present

Contract Amount:
$90,632
$4,245/CFD

Project Team:
Heidi Schoeppe – PIC
Charmaine McCarvel - LMDs PM
Matt Webb –EOR
Nanette Pratini, GISP - GIS

WEBB performs full consulting and administrative services for the City of Chino's Community Facilities Districts (CFD) totaling 22 with 32 Special Taxes and Landscape and Lighting Districts (LLMD) and provides consulting for the City's Special Financing Districts. In this role, WEBB has performed CFD Formation Consulting Services including tax rate analysis, Rates and Method of Apportionment preparation, infrastructure financing services, and CFD annexation services including feasibility and budget analysis. Additional services provided by WEBB include CFD and Assessment District defeasance services, CFD refunding services, and Proposition 218 consulting services for the City's LLMDs.

Formation Services

- Completed three CFD formations
- Provide projections of tax revenues to ensure sufficient funds will be generated to meet debt service
- Prepare and record boundary maps
- Review CFD Reports for proposed facilities/services to be financed and/or maintained

Bond Issuance

- Completed six new money bond issuances and three multiple CFD refinancings
- Provide analysis and data for bond offering documents and review bond documentation

Proposition 218 Balloting Proceedings

- Provide assessment ballot proceedings for the City's lighting and landscape maintenance districts

Administration Services

- Data maintenance, levy preparation and submission, reserve monitoring, analysis and recommendation for Proposition 218 compliance proceedings, public information services, budget review, Engineer's Report preparation, and attendance at City Council meetings

CITY of CHINO

March 30, 2017

City of Riverside
Finance Department
3900 Main Street
Riverside, CA 92522

RE: Statement of Reporting Accuracy for Albert A. Webb Associates

To the City of Riverside,

I am pleased to provide this letter on behalf of the City of Chino, for Albert A. Webb Associates. Please use this letter as a statement of reporting accuracy for Albert A. Webb Associates, for inclusion in the City of Riverside request for proposal.

I oversee the administration of 22 Community Facilities Districts for the City of Chino, and for nearly 10 years, Albert A. Webb Associates has served as the Special Tax Consultant for the City, providing ongoing special district administration, formation, and consulting services. As Special Tax Consultant, WEBB prepares and files all of our Annual Continuing Disclosure reports and annual CDIAC reports. Webb also prepares our annual comprehensive reports, Senate Bill 165 Reports, Assembly Bill 2109 reports and delinquency reports, in addition to other administrative tasks, such as the preparation of annual budgets, enrollment of taxes, and ongoing property owner inquiry support. Additionally, WEBB is proactive in providing updates and information on new or proposed legislation, which affect the administration and reporting of special tax districts, such as Assembly Bill 2109 and Senate Bill 1029.

The reports, listed above, which WEBB prepares, are reviewed by City of Chino Staff. In working with WEBB for many years, the City of Chino confidently attests to the accuracy and thoroughness of each report. WEBB ensures all required reports are completed on time, are compliant with reporting requirements, and are without errors.

Please call me at 909-334-3341 or email me at rburns@cityofchino.org with any questions regarding this letter.

Sincerely,

Rob Burns

Rob Burns

Director of Finance

13220 Central Avenue, Chino, California 91710
Mailing Address: P.O. Box 667, Chino, California 91708-0667
(909) 334-3250 • (909) 334-3720 Fax
Web Site: www.cityofchino.org

ADMINISTRATION AND FORMATION SERVICES FOR SPECIAL DISTRICTS

Client:
City of Riverside
3900 Main Street, 6th Floor
Riverside, CA 92522

Contact:
Adam Raymond
Acting Chief Financial Officer/Treasurer
951.826.2396
araymond@riversideca.gov

Fiscal Years (FY) of Service:
Fiscal Year 2000-2001 to Present

Project Team:
Heidi Schoeppe - PIC
Doris Domen - PM
Charmaine McCarvel - APM
Matt Chesney - Project Analyst
David Messenger - Project Analyst
Nanette Pratini - GIS

WEBB has been providing formation, annexation, bond issuance and administration services to the City of Riverside since Fiscal Year 2000-2001. We have formed Community Facility Districts (CFD), 1913/1915 Act Assessment Districts (AD), and 1972 Act Landscape and Lighting Maintenance Districts (LLMD). The City's CFDs and ADs provide funding for the construction and acquisition of improvement facilities, as well as maintenance services throughout the City. The types of facilities financed through the use of special districts include roadway improvements, storm drain, water, landscape and irrigation improvements, wall rehabilitation, and street and display lighting. The City's Street Light Assessment District (SLAD) and LLMDs provide for the operation and maintenance costs of the City's street lighting and landscaping throughout the entire City.

Administration Services

- Four Assessment Districts
- Five City Community Facilities Districts
- Two Landscape and Lighting Maintenance Districts
- One Street Light Assessment District
- One City-wide Library Tax
- One Community Service Area Tax

Formation Services

- Prepared the CFD Report/Engineer's Report including the outline of the plans & specifications, collection and review of data related to the formation and Rates and Method of Apportionment
- Prepare boundary maps and assessment diagrams, tax roll preparation, tabulation of ballots, and annual annexation services

List three (3) references that most closely reflect similar projects and work that your company has worked on within the past five (5) years for a Public or Governmental Agency. (**Type or Print)**

1. Name of Public Agency: Eastern Municipal Water District

Address: 2270 Trumble Road

City: Perris State: CA Zip: 92570

Contact: Heidi Schrader Title: Finance Manager III

Telephone: 951.928.3777 Email: schradeh@emwd.org

Service Dates: 2000- Present

Brief Summary of Project/Work provided:
WEBB assumed and seamlessly transitioned the annual administration for all Eastern Municipal Water District (EMWD) Community Facilities Districts (CFD). In addition to formation services and comprehensive administration services for all districts, WEBB also performed parcel audit services for all assumed districts and took on the role of Program Manager for EMWD's entire book of CFD work.

2. Name of Public Agency: City of Beaumont

Address: 550 East 6th Street

City: Beaumont State: CA Zip: 92223

Contact: Melana Taylor Title: Finance Director

Telephone: 951.769.8520 Email: mtaylor@ci.beaumont.ca.us

Service Dates: 2000- Present

Brief Summary of Project/Work provided:
WEBB currently provides special tax consulting and annual administration services for the City. These services include the annual administration of 40 CFDs which included 71 special taxes comprising the City's CFD program which includes multiple Improvement Areas under CFD No. 93-1, and four new CFDs which WEBB assisted in the formation of. The new CFDs include CFD No. 2016-1, CFD No. 2016-2, CFD No. 2016-3, and CFD No. 2016-4. The Fiscal Year 2017-18 annual administration efforts resulted in the successful enrollment of 71 individual special taxes/fund numbers, which was comprised of 25,089 parcels totaling $24,037,459 in special tax revenues.

3. Name of Public Agency: City of Riverside

Address: 3900 Main Street, 6th Floor

City: Riverside State: CA Zip: 92522

Contact: Adam Raymond Title: Chief Financial Officer

Telephone: 951.826.2396 Email: araymond@riversideca.gov

Service Dates: 2000- Present

Brief Summary of Project/Work provided:
WEBB has been providing formation, annexation, bond issuance and administration services to the City of Riverside since Fiscal Year 2000-2001. We have formed Community Facility Districts (CFD), 1913/1915 Act Assessment Districts (AD), and 1972 Act Landscape and Lighting Maintenance Districts (LLMD). The City's CFDs and ADs provide funding for the construction and acquisition of improvement facilities, as well as maintenance services throughout the City. The types of facilities financed through the use of special districts include roadway improvements, storm drain, water, landscape and irrigation improvements, wall rehabilitation, and street and display lighting. The City's Street Light Assessment District (SLAD) and LLMDs provide for the operation and maintenance costs of the City's street lighting and landscaping throughout the entire City.

4. Name of Public Agency: Jurupa Community Services District

Address: 11201 Harrel Street

City: Jurupa Valley State: CA Zip: 91752

Contact: Steven Popelar Title: Director of Finance

Telephone: 951.685.7434 Email: spopelar@jcsd.us

Service Dates: 2012- Present

Brief Summary of Project/Work provided:
WEBB currently performs administrative services for 51 bonded and non-bonded Community Facility Districts (CFDs) including 17 annexations and seven Landscaping Maintenance Districts (LMDs), including 124 annexations. The recent formations of CFDs for JCSD include the design, construction, and acquisition of proposed facilities for JCSD that consist of master plan water system facilities including capacity in existing facilities and sewage treatment and disposal capacity, park and recreation facilities including incidental expenses related to the planning, design, and completion of such facilities, school district facilities that include K-12 public school facility improvements to be owned and operated by the school district, and/or County of Riverside improvements to be owned and operated by the County of Riverside, and/or City of Eastvale Development Impact Fees.

Project Management Methodology

WEBB understands the requirements in providing special district consultant services. We have developed our approac' through decades of experience and believe it to be the most appropriate and successful way to administer and forr Assessment Districts (AD), Community Facilities Districts (CFD), and other special financing districts. Other consultant may take a more boiler plate approach to these services, and may outsource some or all components of the projec but we believe providing comprehensive, in-house, services provides the greatest advantage to the City. Our scope c services includes, but is not limited to:

- Annual enrollment services
- Delinquency management services
- Reporting and compliance services
- Apportionment preparation services
- Audit mapping/GIS services

WEBB's special district consultant services are comprehensive and of the highest quality, as our annual administratio approach is honed by years of service. As your consultant, WEBB will facilitate the City's projects with our exceptiona technical capabilities, in-depth knowledge of our industry, and timely responsiveness to the City's needs. We have comprehensive list of services that include Engineer's Report preparation, property related data research, review c data/information related to the formation of City Districts, report document preparation, a variety of special projects o an as-needed basis, and access to various reports produced by our proprietary WebbSTAR™ system.

Our team meets the following requirements needed to successfully form and administer the City's Districts:

- Comprehensive in-house services including GIS, making project management as efficient as possible
- A highly competent team with proven experience in reporting, compliance, and special projects
- Technical capabilities to provide accurate calculation of the special assessments and placement of the charge on the County tax rolls

Communication

In order to achieve effective communication, we would determine the preferred method(s) of communication during ou initial kick-off meeting where we meet with City Staff and other interested parties to set the groundwork for open line of communication. We then use this method, as frequently as needed or desired, to immediately discuss all possibl issues that may arise, for quick and efficient resolution. Additionally, it is through this communication that WEBB woul coordinate with the City in obtaining information, setting goals, procedures, and expectations, in determining th appropriate amounts to levy, address any issues for the current year's levy, answer any property owner questions, an be an expert resource to the City for various challenges that may arise throughout the year.

In-House Technology

As mentioned, WEBB's Municipal Finance Team uses innovative in-house technology to assure accuracy when providin special district consulting services. Throughout the year, the Municipal Finance Team uses WebbSTAR™ to store a data relevant to each district, including complete parcel information, debt service schedules, and assessment roll data WebbSTAR™ is used to generate accurate levies and perform all subsequent tasks such as reporting and generating th data necessary to collaborate with WEBB's GIS Team to create boundary maps, audit maps, and assessment diagrams

Schedule Regulation

For each of the City's projects, a preliminary schedule will be prepared, provided, and discussed. In collaboration wit the City, WEBB will evaluate and modify the project schedule and milestones to set the final baseline schedule durin the initial project kick-off process. The baseline schedule will be monitored and tracked by our team to meet the projec milestones and manage critical path items. A tracking schedule will be provided with milestone updates and all schedul variances identified. WEBB is fully staffed and committed to completing projects on time and within budget to th satisfaction of the City. Having worked with numerous public agencies for 57 years, WEBB has a wealth of experienc working on Special District projects which translates to a comprehensive understanding of realistic time frames an appropriate project budgeting.

Quality Assurance/Quality Control Measures

Quality assurance/quality control (QA/QC) is a core value at WEBB that shapes our unique project management approach. Reinforced by experience and commitment to best practices, our QA/QC standards will provide optimal results for the City. The City can confidently trust that information received from WEBB is accurate and has passed through these QA/QC procedures, which we have developed over decades of our experience in providing administration and annexation services.

WEBB maintains a high level of quality assurance by following the protocols outlined below:

Constant Communication with City Staff

Communication between all team members and City Staff is critical to project success. WEBB will coordinate with the City to obtain information, set goals, procedures and expectations, address any issues, and be an expert resource to the City for various challenges that may arise throughout the year. Our project team is capable and always available to provide any services that the City may require. At the start of a project, WEBB evaluates and confirms the preferred methods of communication with City Staff and other parties of interest. WEBB then uses the established methods of communication throughout the project, improving the time it takes to develop quick and efficient resolutions in case an issue arises.

Conducting Internal Peer Reviews and Audits

To ensure and maintain quality assurance, WEBB has instituted an internal audit and review policy that requires a minimum of three individuals participating in the preparation and review of any deliverable product. Once a required document is prepared, it will be reviewed and audited by a QA/QC analyst. Any revisions are completed and the deliverable is then reviewed by a technical advisor and/or an assistant project manager. Finally, the product is reviewed and approved by the project manager prior to the dissemination of the information to the client. All levels of quality control are tracked and reported via a quality control signature sheet, which requires all associates who have worked on deliverables to attest to the accuracy of the deliverable product.

Using Technology to Cross Check Data

As mentioned previously, our team embraces innovative technology such as GIS and WebbSTAR™, both in-house resources, to enhance the quality of the services we provide our clients. Our associates have a keen understanding of the industry and are able to efficiently and effectively provide these services to the City. The use of these tools assist in the classification of properties so our team can more accurately prepare financial analyses through comparing various reports.

AD Formation Services

1. **Initial Assessment Engineering**

   A. **Initial Meeting -** WEBB will meet with City Staff and members of the Financing Team to establish the schedul of events, procedural and financial considerations, the proposed improvements, eligibility of improvements, an any limitations on the funding (i.e. Private Utilities). Discuss and identify the boundaries of the proposed AD identify the scope of responsibilities, and develop a program for public outreach and involvement.

   B. **Research Property Information -** Obtain the latest assessor's parcel maps and equalized tax roll from th Riverside County Assessor for all parcels within the proposed AD. In addition, obtain information on existin liens and assessments in order to determine overlapping debt (if necessary).

   C. **Computer Database Preparation -** Prepare a database showing the assessor's parcel numbers, land us codes, acreages, status of development, and assessed values of each parcel within the proposed AD. Fror this database, a mailing list will be prepared.

   D. **Prepare AD Study -** Using information gathered for the database preparation, prepare preliminary cost estimates The project cost will be based on the preliminary engineering design and will result in an estimate of the tota amount to bond. The total amount to bond will include construction and/or acquisition costs, constructio contingencies, incidental expenses including assessment engineering costs, bond counsel costs, surveyin and staking, plan checking, inspection, design engineering, and any other costs eligible and incidental to th construction of the project. Also included will be any financing costs associated with the bond issue includin the special reserve fund, capitalized interest, and bond discount.

   Consultation will occur with the bond counsel and underwriter for recommendations on the AD from a legal an financial perspective.

   E. **Prepare Boundary Map -** Prepare a Boundary Map for the AD depicting the boundary that includes all parcel that benefit from the proposed improvements.

   F. **Meetings -** WEBB will attend up to three meetings with City Staff and Consultants if required or deeme necessary by the City to accomplish the above Scope of Services described.

2. **AD Formation**

   A. **Prepare Preliminary Engineer's Report -** A Preliminary Engineer's Report will be prepared which contains a items as required by code, including a description of the proposed improvements, an engineer's estimate c the construction costs, and incidental expenses. These costs will be based on the preliminary cost informatio provided by the design engineer. Also included will be a narrative description of the methodology spreac including assumptions behind the determination of benefits, and an assessment roll, including the assessor' parcel numbers, owner's names, and preliminary assessment amounts. WEBB will attend up to two information meetings with the landowners to discuss the proposed improvements and financing mechanism, if necessary

   B. **Coordinate City Review Process -** WEBB will submit the Preliminary Engineer's Report to the City prior to th adoption of the Resolution of Intention (ROI) and conduct up to one meeting with City Staff to discuss possibl report revisions after City Staff review, if necessary.

C. **Assessment Ballot Proceedings (Proposition 218) -** After the Board of Directors adopts the Resolution Intention, WEBB will mail ballots as provided by legal counsel, pursuant to Proposition 218, to all property owners within the proposed AD by first class mail. Each ballot will contain the assessor's parcel number, the owner's name, mailing address, site address, proposed assessment (lien amount), and the explanation of benefit as required by Proposition 218. WEBB will also help coordinate the tabulation of the ballots at the close of the Public Hearing. WEBB will also address the inclusion of any amendments ordered by the City Council as a result of the Public Hearing.

D. **Participate in the Public Hearings -** WEBB will attend up to two Public Hearings and will be prepared to give a presentation on the contents of the Engineer's Report describing the proposed improvements, explaining the assessment spread methodology, and answer questions.

3. **Post Formation Proceedings**

A. **Assessment Diagrams -** The Assessment Engineer will coordinate the recordation of the Assessment Diagrams, Assessment Roll, and Notice of Assessment with the Riverside County Recorder, as prescribed by code.

B. **Mail Pre-Payment Notices -** WEBBwill mail the Pre-Payment Notices to the property owners with the pre-payment terms and amounts stipulated as part of the 30-day cash collection period. WEBB will also be available to answer any questions from property owners during this period. At the end of the 30-day cash collection period, a paid/unpaid list will be prepared by WEBB, which will be provided to the City.

CFD Formation Services

1. **Meeting Attendance -** WEBB will participate, either in person or via conference call, in regular scheduled meetings related to the CFD formation. Additionally, WEBB will be available to attend all meetings for the adoption of the resolution of intention and resolution of formation, assist with the election proceedings, and answer questions during the public hearing. WEBB will also be prepared to present information or answer all questions posed by the City Council or the public.

2. **Special Tax Structure Recommendation -** Subsequent to the review of the Specific Plan, Development Agreement and other documents related to the development, WEBB will provide the City a specific recommendation on the structuring of the CFD. WEBB will provide the City a feasibility analysis which will include but is not limited to: various financing options, priority of facilities/fees to be funded by the financing district, identification of zones (if applicable), and term of special taxes. The feasibility analysis will also take into account a variety of factors regarding the proposed financing district including: development timing, proposed land use, residential and commercial development, total cost of proposed improvements/services to be financed, and financing costs.

   WEBB's recommendation will ensure the CFD is formed in compliance with the Mello-Roos Community Facilities Act of 1982, the City's adopted Mello-Roos goals and policies, and according to industry standard practices.

   Based upon input received from the City Council, City Staff, financing team, and the landowners, WEBB will prepare, provide, and present revised special tax structures as requested, which will take into account a variety of absorption costs and bond assumptions.

3. **Rates and Method of Apportionment Preparation -** WEBB will prepare the Rates and Method of Apportionment (the "RMA") which describes the method of apportionment utilized to calculate the annual special taxes and considers the burdens of annual administration as well as the financial overlapping debt. The types of issues considered in the RMA will be clarity of language in the definition of terms, ability of the property to be assigned to different tax classifications, presence of a mechanism to levy taxes in the event of a change in project and usage, and presence of a mechanism to provide for the levy of a back-up tax.

4. **CFD Report Preparation -** WEBB will prepare the CFD public report, which contains a descriptio public facilities, estimated costs of the proposed facilities, projected bonded indebtedness, rate and method of apportionment, recorded boundary map, and the projected annual special tax. The report will be prepared i accordance with the Mello-Roos Community Facilities Act of 1982.

5. **CFD Boundary Map Preparation and Recordation -** WEBB's team of engineers will prepare the Boundary Ma illustrating the boundaries of territory proposed for inclusion in the CFD capturing the entirety of any parcel subject t taxation by the proposed CFD. The map shall meet the requirements of the Mello-Roos Community Facilities Act c 1982 and the San Bernardino County Recorder's office. Once completed WEBB will record the map with the Count Recorder's Office.

6. **Registrar of Voters Certification -** WEBB will prepare a list of the owner names and acreages and obtain a certificat from the Registrar of Voters confirming whether there are, or are not, registered voters within the boundaries of the CFD

7. **Preparation of Formation Resolutions and Election Materials -** WEBB will work with the City's legal counsel an assist in the preparation of the necessary formation resolutions and election materials. WEBB will provide informatio to the City's legal counsel including, but not limited to: the Rates and Method of Apportionment, boundary map current ownership information of the property proposed to be included within the CFD, and acreage informatio utilized in the determination of the number of votes per property owner.

8. **Notice of Special Tax Lien Preparation and Recordation -** Upon the successful formation of the CFD by a election of the property owners or registered voters, WEBB will prepare and record the Notice of Special Tax Lie with the Riverside County Recorder's Office. The notice will be prepared in accordance with Government Code an meet the specifications of the Riverside County Recorder's Office.

9. **Bond and Legal Document Review -** WEBB will review the City resolutions and ordinances required for successfu CFD formation and bond issuance including, but not limited to: the resolution of intention, the resolution to incu bonded indebtedness, the resolutions authorizing the levy of the special tax, and the resolution of formation. WEBI will ensure the resolutions and ordinances are prepared pursuant to the policies and procedures adopted by the Cit and are in compliance with the provisions found in Government Code.

10. **Document Preparation and Presentations -** WEBB will be prepared to assist in the preparation of all document related to the CFD formation, as well as presentations to the City Council, rating agencies, investors, and othe interested parties.

11. **Other Duties/Services -** WEBB will be prepared to provide additional duties and services assigned by the City anc or municipal advisor not identified in the above scope of work.

CFD Annexation Services

1. **Gathering Information -** WEBB will meet with City Staff, legal counsel, team of consultants, and project proponent to confirm the annexation schedule of events, procedural and financial considerations, establish the appropriate lan use classifications, and discuss and identify the boundaries of the proposed annexation.

2. **Data Collection -** WEBB will obtain the latest assessor's parcel maps and equalized tax roll information from th Riverside County Assessor's Office for the parcels within the proposed annexation and Geographic Informatio System (GIS) shape files for our in-house GIS platform for the annexation.

3. **Maintenance of Data -** WEBB will coordinate with the City in determining the necessary levels of services that would be required for proper allocation per the Rates and Method of Apportionment for the annexation.

4. **Project Development Review -** WEBB will coordinate with the City and property owner(s) to obtain tract map information, including street light plans, landscape plans, and other materials necessary to determine the quantities required to be installed and maintained at the appropriate level of service as conditioned by the City.

5. **Time-line -** WEBB will coordinate with City Staff to establish a schedule. WEBB will prepare a time line, based on the City's scheduling requirements, outlining key dates, events, and responsibilities adhering to statute requirements. We will review the timeline with City Staff and make adjustments as needed.

6. **Budget and Special Tax Rate Establishment -** WEBB will work collaboratively with City Staff to create budgets necessary in determining the proposed special tax rates for the annexation. By using the cost-modeling information gathered from the previous tasks WEBB will prepare preliminary cost estimates for maintenance of all improvements, landscaping, lighting, drainage, capital improvements, incidental costs, operating reserves, capital improvement reserves, and delinquency reserves. WEBB will establish the appropriate special tax rate per residential unit or acre based on the appropriate land use category for the proposed development.

7. **Annexation Boundary Map -** WEBB's team of engineers and GIS Specialists will prepare the Annexation Boundary Map, illustrating the boundaries of territory proposed for inclusion in the annexation, capturing the entirety of any parcel subject to taxation by the district. The map shall meet the requirements of the Mello-Roos Act and the Riverside County Recorder's Office. Additionally, WEBB will record the map with the Recorder's Office.

8. **Statement of Engineer -** WEBB will review and sign a Statement of Engineer, stating that a registered engineer supervised the preparation of the map of the boundaries, and verifying the acreage and owner information included in the annexation.

9. **Meetings -** WEBB will attend any necessary public meetings, as required by the appropriate improvement act(s), fully prepared to present necessary testimony and respond to public comments.

10. **Primary Contact Toll Free Phone Number -** WEBB will serve as primary contact with the public regarding the special tax. WEBB will provide a toll free number for the City and all property owners to provide information with regards to the annexation.

11. **Landowner Election -** WEBB will prepare a list of the owner names and acreages for the City's legal counsel so they may obtain a certificate from the Registrar of Voters confirming whether there are, or are not, registered voters within the boundaries of the annexation.

12. **Notice of Special Tax Lien -** WEBB will provide a list of Assessor's Parcels for the Notice of Special Tax Lien and record the notice.

13. **Consulting Services -** WEBB will provide consulting services and advice to the City as requested by the City. This includes due diligence to ensure accuracy in the process and provide clear written documentation in our approach to structuring the Rates and Method of Apportionment and the Special Tax roll. To assure and maintain quality assurance, WEBB has instituted an internal auditing and review policy that requires a minimum of two individuals with the appropriate expertise to review and audit any information prior to dissemination of that information to the client.

CFD Bond Issuance

1. **Kick-off Meeting and Gathering Information -** The purpose of this task is to establish lines of communicatio and gain understanding of the specific goals, components and criteria to meet the City's needs. WEBB will mee with City Staff, legal counsel, team of consultants and project proponents to confirm the CFD's schedule of events procedural and financial considerations.

2. **Data Collection -** WEBB will obtain data necessary to provide comprehensive data for inclusion in the Officia Statement, including the latest assessor's parcel maps and equalized tax roll information from the Riverside Count Assessor's Office for the parcels within the proposed District, overlapping land secured debt information, an Geographic Information System (GIS) shape files for our in-house GIS platform.

3. **Bond Documents Table Preparation and Review -** WEBB will prepare and provide final calculation to the financ team for inclusion in the Preliminary Official Statement (POS) and Official Statement (OS) to include - i) Maximur special tax coverage; ii) Value-to-lien computations; iii) Overlapping debt table; iv) Effective tax rate schedules; an v) Delinquency table. WEBB will review the POS, OS and other legal documents as they relate to any items and an tables WEBB provides.

4. **Location and Area Map -** WEBB will prepare a location and area map for inclusion in the POS and OS.

5. **Special Tax Certificate -** WEBB will review and sign the Special Tax Consultant Certificate that certifies that th maximum special tax rates are sufficient to meet debt service requirements and coverage ratios for bonds to b issued.

LLMD Annual Engineers Report Preparation

1. **Kick-off Meeting -** WEBB will meet and coordinate with City Staff to better understand the specific goals an objectives relating to the City's Landscape and Lighting Maintenance Districts. WEBB will review key elements of th LLMDs' annual administration, which includes, but is not limited to the review of administration expenses, reserv fund balances, and potential annexations (if applicable). WEBB will identify all existing district boundaries utilizing it in-house GIS department and ensure each district is assessed in accordance with the formation documents. WEBI will also keep City Staff apprised of any legislative updates which could potentially impact the LLMDs.

2. **Levy Timeline -** Prior to the kickoff meeting, WEBB will prepare a levy time-line with input from City Staff to includ key dates and time-frames for relevant tasks throughout the year relating to the annual administration of each LLMD

3. **LLMD Parcel Database -** WEBB will utilize its WebbSTAR™ Software to maintain a comprehensive database c the City's parcel information for the LLMDs in a form such that the annual levy submission to Riverside Count follows the guidelines as outlined in the County's fixed charge submission packet. WebbSTAR™ will maintain all dat related to individual parcels including special assessment information, principal assessments, acreage, land us codes, zones, dwelling units, EDU values, and property owner information, including site address and tract numbe WebbSTAR™ also provides a regularly updated delinquency history (delinquent amounts for each parcel includin penalties and interest, reference to those referred to foreclosure action, and paid prior year delinquency information current property ownership information, assessed valuation information, as well as more extensive informatior WEBB will update this parcel database information as necessitated by parcel changes.

   Utilizing our in-house GIS department, WEBB will provide the database in KMZ format which can be loaded int Google Earth in order to visually view the City's entire parcel database. All parcels will be searchable by APN or stree address and will accurately depict all district boundaries and current parcel assessment information.

4. **LLMD Meeting Attendance -** As requested by the City, WEBB will attend all requested meetings (council meetings, public hearings, staff meetings, etc.) relating to the annual administration of the LLMDs.

5. **Preparation of Engineer's Reports -** Prior to the annual public hearing, WEBB will file an Engineer's Report for each LLMD with the City Clerk. Each Engineer's Report will include a general description of the district, a copy of the plans and specifications, an estimate of costs, an assessment of the estimated cost to each parcel, an affidavit stating a professional engineer has prepared the report, a description of the method of assessment, and an assessment diagram. Each report will be prepared in accordance with the Landscaping and Lighting Act of 1972 and the provisions of California Constitution Article XIIID (Proposition 218).

6. **Copies of Engineer's Report -** WEBB will provide the City with the original copy of the full Engineer's Report, including the assessment roll as well as one copy of the Engineer's Report for City Staff to reproduce as needed.

7. **Annual Special Assessment Submittal -** Each year, WEBB will, in consultation with City Staff, determine the levy requirement for the current Fiscal Year for each LLMD. WEBB will calculate and prepare the annual levy for the each LLMD in the media, format, and configuration acceptable for direct submission to the Riverside County Auditor-Controller's Office prior to the statutory deadline and shall perform adjustments and corrections to the levies on the property tax rolls as necessary.

8. **Annual Levy Corrections -** If any corrections/revisions to the tax roll are determined to be necessary after the initial submittal, WEBB will research, recalculate and, with the City's approval, rectify the issue. WEBB will notify the City of the assessor's parcel numbers that were rejected by the County and therefore will not be assessed.

9. **Levy Detail Report -** Once the annual levies are finalized and submitted to the County, WebbSTAR™ will automatically generate the requested levy detail reports for each LLMD. These reports will be provided to the City (in electronic format and a hard copy) within 90 days of the final submittal to the County. Included with each report will be a description of the reasons for any significant variances (if any) between the budgeted amounts and those applied on the County tax roll.

10. **Additional Reporting Requirements (Value Added Service)** - WEBB will prepare all additional reports required by the state and its agencies, as well as keep the City apprised of all relevant reporting requirements and all proposed legislation which will amend or create new reporting obligations. For instance, AB 1666 was enacted by Governor Brown on July 25, 2016. This bill adds Section 53343.2 to the Government Code and requires local agencies which have a web site, within seven months after the last day of each fiscal year of each CFD, to display prominently on its web site: (i) a copy of an annual report for that fiscal year if requested pursuant to Section 53343.1; (ii) a copy of the report provided to the California Debt and Investment Advisory Commission pursuant to Section 53359.5; and (iii) A copy of the report provided to the Controller's office pursuant to Section 12463.2.

11. **LLMD Budget Review (Value Added Service) -** WEBB will review each LLMD's budget provided by the City and coordinate with City Staff to ensure accurate cost-recovery for the City provided services. WEBB will ensure the maximum allowable amount of assessments is collected each year to ensure services are not needed to be subsidized by the general fund.

LLMD District Formation/Annexation Services

1. **Time-line Preparation -** For each new District formation or annexation, WEBB will prepare and provide a time-line which will identify all relevant tasks relating to the formation or annexation. The time-line will be established to ensure a smooth and efficient project and will be in accordance with all California Code requirements.

2. **Budget Preparation -** Based upon information provided by the developer or property owner and in coordination with City Staff, WEBB will prepare a budget for the maintenance of improvements associated with the formation or annexation. The budgets will identify all annual expenses that will be incurred by the maintenance of City facilities.

3. **Parcel Database Preparation -** Based upon the parcels proposed to be included in the District, WEBB will establis a parcel database that will include, but not be limited to, the following: special assessment information, principa assessments, acreages, square footages, classifications, land use codes, zones, dwelling units, Equivalent Dwellin Unit values, property owner information, situs addresses, and tract and lot numbers.

4. **Special Assessment Calculation -** WEBB will, in accordance with the established method of assessment, calculat the annual special assessment for each parcel included in the formation or annexation.

5. **Assessment Diagram Preparation -** Utilizing its GIS team, WEBB will prepare the required assessment diagrar in accordance with applicable California Code, which will include all parcels proposed to be subject to the specia assessment.

6. **Preliminary Engineer's Report Preparation -** Prior to the public hearing and in accordance with the Landscapin and Lighting Act of 1972 and the California Constitution Article XIIID, WEBB will prepare and file the Engineer' Report for the City's LLMD with the City Clerk. The Engineer's Report will include the formation or annexation budget information, the listing of improvements to be maintained by the collection of the special assessments, th benefit spread methodology, a copy of plans and specifications, an estimate of costs, an assessment diagram, an a complete listing of parcels to be assessed and their total assessments. Every report will be prepared in accordanc with California Code.

   WEBB's Engineer's Report will include a statement of engineer signed by a Professional Engineer verifying th accuracy of the report. The original copy of the Engineer's Report will be provided to the City along with an additiona printed copy and a copy in PDF format.

7. **Final Engineer's Report and Assessment Roll -** Upon successful annexation/formation, WEBB will provide th final Engineer's Report and assessment roll to the City. The final Engineer's Report will be executed by one c WEBB's Professional Engineers.

8. **Preparation and Mailing of Notice of Public Hearing and Protest Ballots -** WEBB will assist the City Attorney i the preparation, if needed, of the notice of public hearing and protest ballots required by California Code. Each ballc will be mailed to the appropriate property owner for vote regarding the establishment of the special assessments.

9. **Ballot Tabulation -** WEBB will coordinate with the City Clerk and City Staff to assist with the tabulation of the ballots

10. **Meeting Attendance -** For each item requiring Council action, WEBB will attend all Council Meetings which require Cit Council action and will, as necessary, be available to answer questions posed by the Council, City Staff, and the public

11. **Staff Report and Resolution Preparation -** As necessary, WEBB will prepare staff reports and assist City Staff /Cit Attorney in the preparation of the resolutions as they relate to the District formation or annexation process.

Required Statements

- WEBB does not have any SEC regulatory censure or any other pertinent disciplinary actions or litigations related to services the firm provides.
- WEBB does not have any conflicts of interest with the City
- The City is not obligated in any way to pay any costs incurred by WEBB in the preparation and submittal of WEBB's response to this RFQ.

Sample Rate Schedule

The following schedule is proposed to show an estimate of fees. Project specific fee(s) can be negotiated on a project by project basis:

Special Projects and Services[(1)]

SERVICE	PROPOSED FEE[(2)]
CFD Formation Services	
Single CFD Formation	$20,000
Multiple Improvement Area CFD Formation (base fee)	$20,000
Plus an additional charge per Improvement Area	$5,000
Bond Issuance Services	
Bond Issuance Services (per CFD/Improvement Area)	$20,000
Lighting and Landscape Maintenance District (LLMD) Formation Services	
Single LLMD Formation	$25,000
Multiple Improvement Area LLMD Formation (base fee)	$25,000
Plus an additional charge per Improvement Area	$7,000
Lighting and Landscape District Annual Engineer Report Services	$6,000
Change Proceedings	
Simple Change Proceedings (e.g. Change Term of Tax)	$7,500
Complex Change Proceedings (e.g. Adjust Boundary, Amend Tax Rates)	$20,000
Annexations	
Annexation Services (Per Annexation) LMD or CFD	$7,000
Close Out Analysis and Report	
Close Out Analysis and Report	$5,000
Other Projects Not Listed	
Any other Project not listed are negotiable based on size and scope	Negotiable
Time-and-Material based projects	See attached Fee Schedule

(1) Most services (formations, bond issuance, change proceedings, prepayments) are to be paid through a developer/ property owner deposit collected at the onset of each project and not the City's funds.

(2) In situations where economies of scale of the project(s) warrant, the proposed fees may be negotiated on a case by case basis based on size and scope of the project(s).

For the services performed related to the projects that are not listed herein, compensation shall be at the hourly rates set forth on the attached Fee Schedule (following page), together with reimbursement, at cost, for incidental expenses incurred in connection with such services. Reimbursement for outside or subconsultant services will be at cost plus 15%.

ALBERT A. WEBB ASSOCIATES

Fee Schedule

CLASSIFICATION

Engineers/Project Managers/Planners/Scientists/ Assessment/Special Tax Consultants/Landscape Architects/Designers	Rates $/Hour
Principal II	258.00
Principal I	238.00
Senior III	217.00
Senior II	202.00
Senior I	191.00
Associate III	181.00
Associate II	166.00
Associate I	156.00
Assistant V	145.00
Assistant IV	130.00
Assistant III	115.00
Assistant II	100.00
Assistant I	84.00
Special Consultant	325.00

Survey Services

2-Person Survey Party	255.00
1-Person Survey Party	180.00

Inspection Services

Inspector (Non-Prevailing Wage)	125.00
Inspector (Prevailing Wage)	135.00

Administrative Services

Project Coordinator	98.00
Administrative Assistant III	88.00
Administrative Assistant II	78.00
Administrative Assistant I	62.00

Other Direct Expenses

Incidental Charges	Cost + 15%
Postage	Cost
Subcontracted Services	Cost + 15%
Survey/Inspection Per Diem	Prevailing Wage Rate
In-House Delivery Up to 1/2 hour	25.00
In-House Delivery 1/2 Hour to 1 Hour	50.00
In-House Delivery Over 1 Hour	75.00
Survey/Inspection Vehicle	0.81/Mile
Mileage	0.72/Mile

Note: All rates are subject to change based on annual inflation and cost of living adjustments. Prevailing wages are dictated by the California Department of Industrial Relations (DIR). As such, the indicated rate will remain in effect until revised rates are published by the DIR. The rate shown shall be subject to renegotiation to remain in compliance with State requirements if prevailing wages are increased by the DIR.

* ***A FINANCE CHARGE** of 1 ½ % per month (18% per year) will be added to any unpaid amount commencing thirty (30) days from invoice date. A mechanic's lien may be filed for any invoice remaining unpaid after thirty (30) days from invoice date.*

Section 2 - Personnel

Project Manager Overview

Knowledge, experience, and responsiveness are key elements of a strong team required to exceed the City's goals an expectations for this project. WEBB's Municipal Finance Team of professionals will deliver these key elements to all c the City's projects. WEBB's Municipal Finance Team are experts in the area of California Code and with a collaborativ effort, we are able to provide progressive solutions that are in concert with all laws and regulations within the industry.

Through WEBB's transitional period, the project team will maintain consistency of it's existing team which includes **Heic Schoeppe**, who will serve as Principal-in-Charge, and **Doris Domen,** who will serve as Project Manager. Our Municipa Finance Team has the institutional knowledge of the City's projects to successfully lead this project.

Doris Y. Domen

Senior Financial Analyst

Project Manager Highlights

- *Sixteen years of municipal finance experience*
- *Well-versed in governing laws, principles, and practices of municipal finance*
- *Has formed Landscape & Lighting Maintenance Districts*
- *Has successfully formed dozens of Special Tax Districts*
- *Results-oriented, detailed, and "hands-on" professiona*
- *Continuously inspires a teamwork philosophy*

Doris will be responsible for the day-to-day and technical management of the project and her functions will include:

- Facilitating frequent and consistent communications with the District
- Implementing the overall delivery plan
- Managing the overall scope, schedule, and budget
- Implementing the QA/QC Program

Doris will be assisted by Heidi who will serve as Principal-in-Charge. Heidi will handle all contractual matters and will focu on resolving any critical contract issues as soon as they are identified. Heidi is a leader in the development of innovativ solutions for the formation and administration of special financing districts for municipalities throughout California.

Also assisting with the District's project is **Matt Chesney**, who will serve as Assistant Project Manager and QA/Q Analyst, and **David Messenger**, who will serve as Financial Analyst. This assigned team, as listed in the organizationa chart provided herein, consists of senior level professionals who consistently provide special tax consulting service on a regular basis. This project team will remain constant through the contract, serving as consistent points-of-contac to ensure clear communication with the City.

All Municipal Finance Team members are available for comments, questions, and discussions at any frequency a requested by the City. WEBB believes the continuity of key personnel throughout the life cycle of a contract is essentia to establishing and maintaining a successful working relationship between client and consultant.

Key personnel will be available to the extent proposed for the duration of the project and no project team member will be removed or replaced without prior written concurrence of the City.

Licensed Engineer Overview

Knowledge, experience, and responsiveness are key elements of a strong team needed to exceed the City's goals and expectations for future projects. WEBB has a team of professionals that will deliver these key elements to all of the City's projects. Based upon the scope of work required, WEBB has selected **Matthew Webb, PE, TE, LS,** to act as the Licensed Engineer for the City's Assessment Engineering Services.

Matthew Webb, PE, TE, LS

President/CEO

"I will lead the City's Assessment Engineering Services with a "hands on" approach to ensure quality and on-time delivery of all deliverables. You will not find a team that has more experience working collaboratively on recent successful projects that have direct relevance to the support the City is seeking than you find with this project team."

- Matthew Webb, PE, TE, LS

Licensed Engineer Highlights

- *Thirty-six years of pertinent experience with WEBB*
- *Experience as Assessment Engineer for 13 public agencies*
- *Comprehensive knowledge of special assessment and tax issues concerning municipalities*
- *Extensive background leading multiple disciplines to better serve our clients*

Matthew Webb, PE, TE, LS, will serve as the Licensed Engineer for the City's Special District Engineering Projects. This decision benefits the City by providing the most qualified person to perform the required services outlined in the RFQ. Matthew will act as an extension of the City to ensure a successful outcome of all projects from beginning to end. This will include a strict adherence to project schedules and QA/QC standards that will be developed and maintained at the project's onset. Matthew is supported by a highly qualified project team with experience in forming, financing, and administering Special Districts. The experience of this team will ensure overall project management and provide very effective and efficient services. WEBB is committed to providing the highest quality service to the City and to the timely delivery of all aspects of the City's important projects as specified by the RFQ and described in our proposal.

Matthew, with over ***36 years of land financing experience, provides similar services to 13 public agencies*** preparing and reviewing Formation Engineer's Reports for Assessment Districts and Landscaping and Lighting Maintenance Districts, as well as Annual Engineer's Reports for Landscaping and Lighting Maintenance Districts. Matthew has vast knowledge and experience pertaining to various types of Special Districts including, but not limited to 1972 Act Landscaping and Lighting Maintenance Districts, 1913 and 1915 Act Assessment Districts, Community Facilities Districts, and 1982 Act Benefit Assessment Districts.

Coordination is critical for your Assessment Engineering Services. Our assigned project team, under Matthew's direction, consists of senior level professionals who will perform required tasks for the City. By taking this hands-on approach, an experienced professional always has in-depth knowledge of each project task. This improves overall project management, reduces the opportunity for costly mistakes and delays, and allows our staff to provide very effective and efficient service to the City.

Matthew will lead the City's projects with **Doris Domen,** WEBB's Project Manager. Doris will maintain direct and continued responsibility for services provided under the duration of the contract. Doris will serve as the primary contact managing the day-to-day activities throughout completion of all City projects. Our team members will always be readily available to the City and will remain accessible throughout to the extent required for successful completion of all City projects.

Key Personnel Organization

All WEBB team members are involved in every project and are available for comments, questions, and discussions a any frequency as requested by the City. Our approach fosters relationship building with City Staff, allows for ease i discussion of any potential issues that may arise, and immediately provides quick and efficient resolutions.

The continuity of key personnel throughout the life cycle of providing administration, consulting, and program managemer services for our clients is essential to establishing and maintaining a successful working relationship with the consultan Our assigned project teams consist of senior level professionals who already consistently provide these services an work with special districts on a regular basis.

WEBB is a single-source firm with over 40 professional licenses held and in-house GIS and IT specialists.

No subconsultants will be used on WEBB's Team.

"Along with Heidi and her team's undeniabl talent, the WEBB Team has been an absolut joy to work with. We consider them a extension of our staff due to the energy an commitment they have shown.."

- Heidi Schrader, Finance Manager II
Eastern Municipal Water Distric

MORENO VALLEY
WHERE DREAMS SOAR

Principal-in-Charge
Heidi Schoeppe
Director

Project Manager
Doris Domen
Senior Financial Analyst

Licensed Engineer
Matthew Webb, PE, TE, LS
President/CEO

Assistant Project Manager
Matt Chesney
Finance Manager

Analyst Support
David Messenger
Assistant Financial Analyst

Project Support
Nanette Pratini, GISP
GIS Specialist

Thanh Ly
Senior Database Administrator

Doris Domen

Senior Financial Analyst

YEARS OF EXPERIENCE

16 Years

As a Senior Financial Analyst at WEBB, Doris Domen is an expert on the administration of special financing districts, formation of Community Facilities Districts and Landscaping and Lighting Maintenance Districts, and bond issuance and refinancings for municipalities throughout Inland Southern California. Due to her technical skills and vast experience, she serves as a professional resource to her clients, her associates, and finance teams. Doris' goal is to provide unsurpassed customer service to her clients, which includes immediate responses to any questions or special projects that arise, as well as providing a superior quality of work product with an emphasis on detail.

With over 16 years in the field, Doris has managed infrastructure and services special district formations, and has executed numerous bond financing and refinancing projects totaling more than $642M in debt issuance with significant savings to her clients and their constituents. Doris has been instrumental in the formation of over 51 Facilities Districts and five Landscaping and Lighting Maintenance Districts. Doris specializes in providing full program management and administration which includes the preparation of Annual Disclosure, CDIAC, SB 165, and AB 2109 reports, annexations, district audits, constituent relations, and consulting services including Proposition 218, 1972 Act Landscaping and Lighting Maintenance Districts, 1915 Act Assessment Districts, Community Facilities Districts, and 1982 Benefit Assessment Districts. She has also assisted her clients with Special Projects such as general fund revenues analysis, street lighting audits, and analysis of the allocation of maintenance revenues.

Doris is currently the project manager for the City of Riverside, Jurupa Community Services District, and Edgemont Community Services District.

Administration and Program Management Services for Special Financing Districts, Jurupa Community Services District - Doris serves as the Project Manager for the Jurupa Community Services District, providing oversight for 51 bonded and non-bonded Community Facility Districts (CFDs), including 17 annexations and seven Landscaping Maintenance Districts (LMDs), including 124 annexations. The recent formations of CFDs for JCSD include the design, construction, and acquisition of proposed facilities for JCSD that consist of master plan water system facilities including capacity in existing facilities and sewage treatment and disposal capacity, park and recreation facilities including incidental expenses related to the planning, design, and completion of such facilities, school district facilities that include K-12 public school facility improvements to be owned and operated by the school district, and/or County of Riverside improvements to be owned and operated by the County of Riverside, and/or City of Eastvale Development Impact Fees.

Administration and Formation Services for Special Districts, City of Riverside - As Project Manager, Doris has been providing formation, annexation, bond issuance, and administration services to the City of Riverside since Fiscal Year 2000-2001. The City's CFDs and ADs provide funding for the construction and acquisition of improvement facilities, as well as maintenance services throughout the City. The types of facilities financed through the use of special districts include roadway improvements, storm drain, water, landscape and irrigation improvements, wall rehabilitation, and street and display lighting. The City's Street Light Assessment District (SLAD) and LLMDs provide for the operation and maintenance costs of the City's street lighting and landscaping throughout the entire City.

Matthew Webb, PE, TE, LS

President/CEO

Registered Civil Engineer 37385 (CA)
Registered Traffic Engineer 1898 (CA)
Registered Land Surveyor 5529 (CA)

EDUCATION

MS, Civil Engineering, Stanford University
BS, Civil Engineering, Stanford University

YEARS OF EXPERIENCE

36 Years

AFFILIATIONS

American Society of Civil Engineers
International Right-of-Way Associatio
Institute of Transportation Engineer
Tau Beta Pi Engineering Societ
Leonard Transportation Center Advisory Boar
The Monday Morning Group, Presider
The Raincross Grou
District Attorney Crime Prevention Foundation Boar
Mission Inn Foundation Board of Trustee
National Groundwater Associatio
Riverside Community Hospital Board of Director
Riverside Chamber of Commerce Board of Director
Riverside County Building Industry Association Board of Director
Inland Empire American Heart Association, Chairman of the Boar

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Matthew Webb is the President/CEO at WEBB and possesses over three decades of experience in preparing an reviewing Formation Engineer's Reports for Assessment Districts (AD) and Landscaping and Lighting Maintenanc Districts (LLMD), as well as Annual Engineer's Reports for LLMDs. Matthew has vast experience pertaining to variou types of Special Districts including, but not limited to the 1972 Act Landscaping and Lighting Maintenance Districts, th 1915 Act Assessment Districts, Community Facilities Districts, and the 1982 Act Benefit Assessment Districts.

Matthew serves as assessment engineer to 13 agencies, including the City of Riverside. His breadth of knowledge extensive experience, and responsibilities include:

- Preparation of Engineer's Report containing all items as required by code including proposed improvements engineer's estimate of costs and incidental expenses, a narrative description of the spread methodology, assessmer diagrams, preliminary annual assessment roll based upon current estimate of costs and expenses, confirmation c compliance with Proposition 218, and assumptions behind the determination of benefits
- Participation at public agency/public information meetings fully prepared to present all necessary testimony and t respond to all public comments pertaining to formations of ADs and LLMDs
- Experience in establishing lines of communication, preparing the assessment district schedule of events, reviewin procedural and financial considerations, discussing proposed improvements, the eligibility of those improvements and any limitations on the funding of those improvements

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Formation Engineering - LLMDs & ADs

- City of Riverside, Riverwalk LMD
- City of Corona, LMD No. 2003-1
- City of Corona, Corona Mall Business Improvement District
- City of Corona, AD 96-1
- City of Ontario, AD 106
- City of Indio, AD 2001-1
- City of Indio, ADs 2002-02 and 2002-3
- City of Indio, ADs 2003-1, 2003-2, 2003-3, 2003-5, and 2003-6
- City of Indio, ADs 2004-1, 2004-2, and 2004-3
- San Bernardino Special Districts, AD No. 2016-1 *(in progress)*
- Hi-Desert Water District, AD No. 2014-1
- Mission Springs Water District, AD 11, 12, 13
- Mission Springs Water District, AD 15 *(in progress)*
- Mission Springs Water District, AD 16 *(in progress)*
- Ventura County Watershed Protection District, Drainage Assessment Area No. 2015-1

Annual Engineer's Reporting - LLMDs

- City of Riverside, Riverwalk LMD
- City of Riverside, LMD No. 88-1
- City of Riverside, SLAD No. 1
- City of Corona, LMDs No. 84-1 and No. 84-2
- City of Corona, Corona Mall Business Improvement District
- City of Menifee, LLMD 89-1C Volume 1 and Volume 2
- City of Desert Hot Springs, LLMDs No. 1 and No. 2
- City of Desert Hot Springs, Drainage Assessment District No. 1
- City of Temecula, Temecula Community Services District Service Levels B, C, R and Recycling & Refuse Collection
- City of Chino, LLMD Nos. 75-1 and 75-2
- City of Chino, LLMD No. 76-1
- City of Chino, LLMD No. 83-2
- City of Chino, LLMD No. 2002-1
- City of Santee, Roadway Lighting District
- City of Santee, Santee Town Center LMD

Heidi Schoeppe

Director

EDUCATION

MS, Finance, San Diego State University
BS, Business Administration, California State University, San Marcos

YEARS OF EXPERIENCE

14 Years

AFFILIATIONS

California Society of Municipal Finance Officers
(Advisor for Professional Standards & Recognition Committee)
Government Finance Officers Association
(Member of Planning Committee for Woman's Public Finance Network)
Women in Public Finance
Committee on Assessments, Special Taxes & Other Financing Facilities
California Special District Association

Heidi Schoeppe, Director of WEBB's Municipal Finance Department, is a leader in the development of innovative solutions for the formation and administration of special financing districts for municipalities throughout California. Due to her technical skills and sound approach, Heidi serves as a professional resource to her clients, associates, and finance teams. Speaking at conferences throughout California, writing white papers, informing clients on proposed and enacted legislation, and being called upon as an expert consultant to financing teams, allows her the opportunity to provide her clients and team with the most up-to-date information in the field of special financing districts with a focus on the needs of her clients and their constituents.

With 14 years in the field, Heidi has managed infrastructure and services special financing district formations and has executed numerous bond financing and refinancing projects totaling more than $725M in debt issuance, providing significant savings to her clients and their constituents. Heidi has authored disclosure, debt, and land secured special financing district policies staying in front of legislative updates to ensure her clients are receiving sound advice. Heidi specializes in providing full program management, administration, annexation, district auditing, constituent relations, and consulting services, including Proposition 218, Landscaping and Lighting Maintenance Act of 1972, Municipal Improvement Act of 1913, Improvement Bond Act of 1915, and Benefit Assessment Act of 1982.

As lead consultant, Heidi serves as the program manager for the Eastern Municipal Water District (EMWD), the largest issuer of land secured debt in California. In addition to serving as the program manager for EMWD, Heidi serves in the same role for the following agencies: City of Chino, City of Temecula, Riverside County, Coachella Valley Water District, and City of Tustin, as well as being the Principal-In-Charge for 15 other public agencies. She has developed expertise pertaining to various types of special financing districts.

Administration and Formation Services for Special Districts, City of Riverside - Heidi currently serves as the Principal-in-Charge, providing formation, annexation, bond issuance, and administration services to the City of Riverside since Fiscal Year 2000-2001. We have formed Community Facility Districts (CFD), 1913/1915 Act Assessment Districts (AD), and 1972 Act Landscape and Lighting Maintenance Districts (LLMD). The City's CFDs and ADs provide funding for the construction and acquisition of improvement facilities, as well as maintenance services throughout the City. The types of facilities financed through the use of special districts include roadway improvements, storm drain, water, landscape and irrigation improvements, wall rehabilitation, and street and display lighting. The City's Street Light Assessment District (SLAD) and LLMDs provide for the operation and maintenance costs of the City's street lighting and landscaping throughout the entire City.

Formation, Debt Issuance, Administration, and Program Management Services for Community Facilities Districts, Eastern Municipal Water District - Heidi serves as the Principal-in-Charge and Program Manager for the Eastern Municipal Water District and is responsible for the program management of over 55 Community Facilities Districts comprising 92 separate financing areas, and annual administration for over 67 Community Facilities Districts/Improvement Areas. In addition to formation services and comprehensive administration services for all districts, Heidi and the WEBB Team also perform formation of new CFD's, amending the structure of an existing CFD, Joint Community Facilities Agreement requests, and requests to issue CFD bonds from developers or consultants.

Heidi Schoeppe

Director

Annual Administration, Formation, and Bond Sale Support Services for Special Districts, City of Beaumont - Heic currently serves as the Principal-in-Charge for the City of Beaumont where she is responsible for the oversight of th annual administration of the City's 71 CFDs/Improvement Areas as well as the formation of the newest CFDs includin CFD Nos. 2016-1, 2016-2, 2016-3, and 2016-4 and the creation of the City's first public safety special tax and th implementation of the City's maintenance services program for the newest CFDs.

Administration and Program Management Services for Special Financing Districts, Jurupa Community Service District - Heidi serves as the Principal-in-Charge for the Jurupa Community Services District (JCSD), providing oversigh for 51 bonded and non-bonded Community Facility Districts (CFDs), including 17 annexations and seven Landscapin Maintenance Districts (LMDs), including 124 annexations. The recent formations of CFDs for JCSD include the desigr construction, and acquisition of proposed facilities for JCSD that consist of master plan water system facilities includin capacity in existing facilities and sewage treatment and disposal capacity, park and recreation facilities includin incidental expenses related to the planning, design, and completion of such facilities, school district facilities that includ K-12 public school facility improvements to be owned and operated by the school district, and/or County of Riversid improvements to be owned and operated by the County of Riverside, and/or City of Eastvale Development Impact Fees

Administration and Consulting Services for Special Districts, City of Chino - Heidi serves as the Project Manage for the City of Chino. She is responsible for the annual administration for all Community Facilities District's, Certificate of Participation, Landscape and Lighting Maintenance Districts, and Tax Allocation Bonds for the City of Chino. Service provided in relation to these special financing districts include extensive delinquency management, prepaymer calculation and analysis, bond redemption analysis and preparation, annual budget preparation, fund balance analysis tracking parcel/district development, levy audit map preparation, preparation of Continuing Disclosure and CDIA(Reports, SB 165 Compliance, coordination of arbitrage rebate calculations, and various other special projects on an a needed basis.

Experience Highlights

Administration Services

- Parcel Research & Parcel Changes
- Assessment District Apportionments
- Budget Preparation & Analysis
- Annual Levy Calculation
- Annual Levy Submittal
- Rejected Parcel Research & Resubmittal
- Delinquent Parcel Research
- Property Owner Information Services
- Bond Call Analysis & Preparation
- Assessment District Prepayment Calculations
- Special Tax District Prepayment Calculations
- Foreclosure Proceedings Coordination
- District Close-out Analysis & Recommendation
- CDIAC Report Preparation & Filing
- SB 165 Report Preparation
- AB 2109 Report Preparation
- AB 1666 Compliance Review

Annexation Services

- Project Schedule Preparation
- LMD Annexation Proceedings
- Proposition 218 Compliance
- LMD Annexation Engineer's Reporting
- CFD Annexation Proceedings
- Cost Estimate Development
- Preparation of Staff Reports
- Resolutions & Ordinances
- Ballot Preparation
- Notice of Special Tax Preparation/Recordation
- Boundary Maps & Assessment Diagrams
- Map & Document Recordation Services

Formation Services

- Maintenance & Services CFD Formations
- Public Outreach & Meeting Attendance
- CFD Report Preparation
- Special Tax Rates Analysis
- Rates & Method of Apportionment Preparatio
- Boundary Map Preparation
- Review of Resolutions & Ordinances
- Assessment District Formation
- Assessment Spread Calculation
- Engineer's Report Preparation
- Assessment Diagram Preparation
- LMD Cost Estimate Calculations
- Public Services Fiscal Impact Analysis

Matt Chesney

Finance Manager

EDUCATION
BA, Business Administration, University of California - Riverside

YEARS OF EXPERIENCE
3 Years

AFFILIATIONS
California Society of Municipal Finance Officers
Committee on Assessments, Special Taxes & Other Financing Facilities

As a Manager at Webb Municipal Finance, LLC (WMF), Matt Chesney is responsible for providing administration, formation, annexation, and consulting services for hundreds of special financing districts for the Coachella Valley Water District, Eastern Municipal Water District (EMWD), City of Chino, City of Tustin, City of Temecula, City of Santee, and County of Riverside. Matt's attention to detail ensures each special financing district operates smoothly while reducing the burden placed upon public agency staff.

Matt has provided administration, formation, annexation, and consulting services of 1915 Act Assessment Districts, 1982 Mello-Roos Act Community Facilities Districts, and 1972 Act Landscaping and Lighting Maintenance Districts. During Fiscal Year 2016-17, he and the team were responsible for the placement of more than 63,500 charges on the tax roll generating more than $44 million in special tax and special assessment revenues. Matt provides comprehensive special financing district administration services which includes, but is not limited to the preparation of annual budgets, preparation of required annual continuing disclosure, CDIAC, SB 165, and AB 2109 reports and research including parcel changes, building permit issuance, delinquency tracking, and legislative updates affecting municipalities.

As Assistant Project Manager for EMWD, Matt is fully engaged with forming new CFDs to fund the construction of sewer and water improvements for new homes. Clients particularly benefit from Matt's skills in the comprehensive program management of special financing districts. In the case of EMWD, Matt plays an integral role in the operation of the agency's CFD program from formation to bond sale, all the way through administration and maturity of the bonds. This highly customized service has enabled EMWD to become one of WMF's largest clients and the largest issuer of land-secured municipal bonds in California.

David Messenger

Assistant Financial Analyst

EDUCATION
BA, Business Administration, California Baptist University

YEARS OF EXPERIENCE
6 Years

AFFILIATIONS
Committee on Assessments, Special Taxes & Other Financing Facilities
California Society of Municipal Finance Officers

With over six years of public agency experience in finance, David brings a high level of analytical skill to Webb Municipal Finance, LLC (WMF). As an Assistant II, David has been an integral member of many client teams, assisting with comprehensive administration, bond issuances, formations, and other special projects.

David's responsibilities include, but are not limited to budget review and recommendation, annual enrollment calculation and submittal, compliance report preparation, Engineer's Report and assessment diagram preparation, and property owner information services. David has been a vital component to WMF's Team, supporting the administration of over 70 CFDs, LLMDs, and ADs for agencies such as the City of Riverside, Jurupa Community Services District, and Edgemont Community Services District.

David has developed an adept knowledge of data and technology which are used throughout the Special Tax District administration process and has been responsible for generating GIS KML files which visually represent taxing jurisdictions. His proven attention to detail and strong work ethic, along with his friendly and diligent nature, make him an asset to the company and the clients for which he provides assistance.

Nanette Pratini, GISP

GIS Specialist

GIS Certification No. 30910

YEARS OF EXPERIENCE
25 Years

EDUCATIOI
MS, Ecology, University of California, Davi
BS, Wildlife & Fisheries Biology, University of California, Davi

AFFILIATION!
ESRI Inland User Grou
Society for Conservation GI

nette Pratini is an expert in Geographic Information Systems (GIS) at WEBB with extensive training and experience She uses state-of-the art GIS technology to prepare maps for presentations and documents, creating 3D visualizations and performing analyses and modeling of geospatial data, all of which greatly assist the public financing industry b providing real time visual information to clients.

Nanette has 25 years of experience in GIS and was involved in several groundbreaking GIS applications for the Universit of California and the Bureau of Land Management. She also coordinates with associates in Information Systems Engineering, Planning, and Hydrology to integrate GIS into workflows and web-based delivery systems for our clients She has developed relationships with several local agencies and is familiar with their GIS-related policies and procedures She is also responsible for maintaining the accuracy and integrity of GIS data for various public agencies, integratin CAD-based drawings with GIS, creating data standards, and training WEBB GIS users.

Thanh Ly

Senior Database Administrator

EDUCATION
Comptia A+, Server+, Network+, I-Net+, CWI Associate

YEARS OF EXPERIENCE
21 Years

AFFILIATION!
Institute of Electrical and Electronics Enginee
SQL PAS

As a Senior Database Administrator at WEBB, Thanh Ly was the architect who developed and deployed WebbSTAR™, creative proprietary enterprise Municipal Finance database software solution used by WEBB's Municipal Finance Tear to administer and levy property taxes for millions of parcels annually within the Counties of Riverside, San Bernardinc Orange, and San Diego with over 1.75 TB in data and growing.

With over 21 years of experience in information technology and a strong focus on data, enterprise databases, an software development, Thanh has developed an adept knowledge of data and technology which surrounds the speci tax industry.

At WEBB, Thanh also acts as project manager, technical lead, solution architect, and full-stack developer on variou database and software development projects using Microsoft .NET, C#, ASP.NET, MVC, Entity Framework, SQL, HTML CSS, JavaScript, VB.NET, Silverlight, WCF RIA Services, Web Services, and automation packages with SQL Serve Integration Services (SSIS) to Extract, Transform, and Load (ETL) data between systems, vendor APIs, etc.

Thanh has been a vital component to WEBB's Municipal Finance Team, supporting the development, deployment, an support of WebbSTAR™. His proven attention to detail and strong work ethic, along with his diligent nature, makes hir an asset to municipalities for which he provides assistance.

Keeping Current with Government Codes and Regulations Governing Special Districts

To further ensure proper compliance is maintained, WEBB stays current and compliant with the California Streets and Highways Code Landscape and Lighting Act of 1972, which governs the formation and administration of Landscape and Lighting Assessment Districts; the Benefit Assessment Act of 1982, which governs the financing of maintenance and operation of public systems such as drainage, flood control, and street lighting; Proposition 218, which controls and limits any increase in assessment and ties it to the special benefit received; as well as any case laws that affect the formation or administration of these Districts and other State and Federal requirements.

Staff Turnover

WEBB has not experienced any irregular turnover aside from personal life changes which have led past associates to pursue a career change. WEBB strides to provide, maintain, and evolve an office culture which installs a high level of pride in all associates to prevent turnover.

Section 3 - Additional Statements/Documents

- **WEBB will not discriminate against any employee or applicant for employment because of race, colo religion, sex, or national origin.**
- **All Federal laws and regulations shall be adhered to notwithstanding any state or local laws and regulations In a case of a conflict between federal, state or local laws or regulations the strictest shall be adhered to.**

VENDOR INFORMATION

PROPOSER'S COMPANY INFORMATION (print or type)

Company Name: Albert A. Webb Associates

Owner /Manager Name: Matt Webb, President/CEO

Contact Name: Heidi Schoeppe

Mailing Address: 3788 McCray Street

City: Riverside State: CA Zip: 92506

Remit to Address (if different from PO mailing address)

____

City: ________________ State: ________ Zip: ________

Web Site: www.webbassociates.com

Phone Number: 951-320-6087

E-mail Address: heidi.schoeppe@webbassociates.com

Incorporated? YES ◉ or NO ○

Federal Tax I.D. # or Social # 95-1723730

How many years of relevant experience within the scope of this RFQ? 57

I certify that the information given above is accurate and complete; that the Terms and Conditions as issued by the City of Moreno Valley with this Request for Qualifications have been fully read, understood, and accepted in total; and that I am a duly authorized agent for responding purposes for the company named above.

Heidi Schoeppe	Director
(Print Responding Person's Name)	(Title)
Heidi Schoeppe	3/5/18
(Responding Person's Signature)	(Date)

The following chart illustrates a list of contracts with other public agencies from the past five years for services similar in scope provided by WEBB.

CLIENT & LOCATION	CONTRACT AWARD DATE	SERVICES PROVIDED
City of Riverside 3900 Main Street, 6th Floor Riverside, CA 92522	Re-awarded July 2017	• Formation Services • Administration Services
County of Riverside Executive Office 4080 Lemon Street, 4th Fl. Riverside, CA 92501	Re-awarded November 2016	• Formation Services • Administration Services
City of Santee 10601 Magnolia Avenue Santee, CA 92071	FY2012-2013	• Administration Services • Formation Services • Annexation Services
City of Beaumont 550 E. 6th Street Beaumont, CA 92223	Re-awarded January 2017	• Administration Services
Jurupa Community Services District 11201 Harrel Street Jurupa Valley, CA 91752	Re-awarded July 2016	• Formation Services • Administration Services • Annexation Services
City of Chino 13220 Central Avenue Chino, CA 91710	Re-awarded July 2016	• Formation Services • Administration Services • Consulting Services • Bond Issuance
City of Norco 2870 Clark Avenue Norco, CA 91760	Re-awarded February 2016	• Administration Services • Parcel Audit • Rate Increase
City of Redlands 35 Cajon Street Redlands, CA 92373	Re-awarded October 2015	• Administration Services • Annexation Services
Riverside County Flood Control and Water Conservation District 1995 Market St. Riverside, CA 92501	Re-awarded July 2015	• Administration Services

CLIENT & LOCATION	CONTRACT AWARD DATE	SERVICES PROVIDED
Hi-Desert Water District 55439 29 Palms Hwy Yucca Valley, CA 92284	Awarded August 2015	• Administration Services
City of Temecula 41000 Main Street Temecula, CA 92590	Re-awarded May 2015	• Formation Services • Administration Services • Bond Issuance and Refinancing
Coachella Valley Water District 75-515 E. Hovely Lane Palm Desert, CA 92260	Awarded April 2015	• Formation Services • Administration Services
Eastern Municipal Water District 2270 Trumble Road Perris, CA 92570	Re-awarded December 2014	• Parcel Audit Services • Program Management Services • Formation Services • Administration Services • Bond Issuance and Refinancing
City of Ontario 303 E. "B" Street Ontario, CA 91764	Re-awarded July 2014	• Administration Services
Mission Springs Water District 66575 2nd Street Desert Hot Springs, CA 92240	Re-awarded June 2013	• Administration Services
City of Desert Hot Spring 65-950 Pierson Blvd. Desert Hot Springs CA 92240	Awarded April 2012 (Two 1 Year Renewals)	• Formation Services • Administration Services

NON-COLLUSION AFFIDAVIT

STATE OF CALIFORNIA)
) SS
COUNTY OF)

(NAME) Matthew E. Webb, affiant being first duly sworn, deposes and says:

That he or she is President/CEO of
(sole owner, partner or other proper title)
Albert A. Webb Associates the party making the foregoing Proposal
(Contractor)
that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the Contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company associations, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid (Public Contract Code Section 7106).

Proposer's Name: Matthew E. Webb
(print)

Proposer's Address: 3788 McCray Street, Riverside, CA 92506
(print)

Telephone No.: 951.686.1070

Matthew E. Webb
(Signature of Proposer)

President/CEO
(Title)

AFFIDAVIT OF NON-CONVICTION

I hereby affirm that:
I am the President/CEO and the duly authorized
(Title)
Representative of the firm of: Albert A. Webb Associates
(Name of Corporation)
Whose address is: 3788 McCray Street, Riverside, CA 92506

And that
I possess the legal authority to make this affidavit on behalf of myself and the firm for which I am acting.

Except as described in paragraph 3 below, neither I nor the above firm, nor to the best of my knowledge, and of its officers, directors, or partners, or any of its employees directory involved in obtaining Contracts with the City have been convicted of, or have plead nolo contendere to a charge of, or having during the course of an official investigation or other proceeding admitted in writing or under oath acts or omissions which constitute bribery, attempted bribery, or conspiracy to bride under the laws of any State of the Federal government (conduct prior to July 1, 1977 is not required to be reported).

State "none" or, as appropriate, list any convection, plea or admission described in paragraph two above, with the data, court, official, or administrative body; the individuals involved and their position with the firm, and sentence or disposition, if any.

I acknowledge that this affidavit is required to allow the City to make a determination. I acknowledge that, if the representations set forth in the affidavit are not true and correct, the City may terminate ant Contract awarded and may take any other action.

I do solemnly declare and affirm under the penalties of perjury that the contents of this affidavit are true and correct.

Signature: Matthew E. Webb Date: 3/5/2018

Printed Name Matthew E. Webb Title: President/CEO

Name of Firm Albert A. Webb Associates

EXHIBIT C

CITY - SERVICES TO BE PROVIDED

TO CONSULTANT

1. Furnish the Consultant all in-house data which is pertinent to services to be performed by the Consultant and which is within the custody or control of the City, including, but not limited to, copies of record and off-record maps and other record and off-record property data, right-of-way maps and other right-of-way data, pending or proposed subject property land division and development application data, all newly developed and pertinent design and project specification data, and such other pertinent data which may become available to the City.
2. Provide timely review, processing, and reasonably expeditious approval of all submittals by the Consultant.
3. Provide timely City staff liaison with the Consultant when requested and when reasonably needed.

EXHIBIT D

TERMS OF PAYMENT

1. The Consultant's compensation shall not exceed $150,000.
2. The Consultant will obtain, and keep current during the term of this Agreement, the required City of Moreno Valley business license. Proof of a current City of Moreno Valley business license will be required prior to any payments by the City. Any invoice not paid because the proof of a current City of Moreno Valley business license has not been provided will not incur any fees, late charges, or other penalties. Complete instructions for obtaining a City of Moreno Valley business license are located at: http://www.moval.org/do_biz/biz-license.shtml
3. The Consultant will electronically submit an invoice to the City once a month for progress payments along with documentation evidencing services completed to date. The progress payment is based on actual time and materials expended in furnishing authorized professional services during the preceding calendar month. At no time will the City pay for more services than have been satisfactorily completed and the City Engineer's determination of the amount due for any progress payment shall be final. The consultant will submit all original invoices to Accounts Payable staff at AccountsPayable@moval.org

   Accounts Payable questions can be directed to (951) 413-3073.

   Copies of invoices shall be submitted to the Special Districts Division at specialdistricts@moval.org or calls directed to (951) 413-3480.
4. The Consultant agrees that City payments will be received via Automated Clearing House (ACH) Direct Deposit and that the required ACH Authorization form will be completed prior to any payments by the City. Any invoice not paid

because the completed ACH Authorization Form has not been provided will not incur any fees, late charges, or other penalties. The ACH Authorization Form is located at:

http://www.moval.org/city_hall/forms.shtml#bf

5. The minimum information required on all invoices is:

   A. Vendor Name, Mailing Address, and Phone Number
   B. Invoice Date
   C. Vendor Invoice Number
   D. City-provided Reference Number (e.g. Project, Activity)
   E. Detailed work hours by class title (e.g. Manager, Technician, or Specialist), services performed and rates, explicit portion of a contract amount, or detailed billing information that is sufficient to justify the invoice amount; single, lump amounts without detail are not acceptable.

6. The City shall pay the Consultant for all invoiced, authorized professional services within thirty (30) days of receipt of the invoice for same.

EXHIBIT E

INSURANCE REQUIREMENTS

Minimum Scope of Insurance

Coverage shall be at least as broad as:

1. The most current version of Insurance Services Office (ISO) Commercial General Liability Coverage Form CG 00 01, which shall include insurance for "bodily injury," "property damage" and "personal and advertising injury" with coverage for premises and operations, products and completed operations, and contractual liability.

2. The most current version of Insurance Service Office (ISO) Business Auto Coverage Form CA 00 01, which shall include coverage for all owned, hired, and non-owned automobiles or other licensed vehicles (Code 1- Any Auto).

3. Workers' Compensation insurance as required by the California Labor Code and Employer's Liability Insurance.

4. Professional Liability (Errors and Omissions) insurance appropriate to Consultant's profession.

Minimum Limits of Insurance

Consultant shall maintain limits of liability of not less than:

1. General Liability:

   $1,000,000 per occurrence for bodily injury and property damage
   $1,000,000 per occurrence for personal and advertising injury
   $2,000,000 aggregate for products and completed operations
   $2,000,000 general aggregate

2. Automobile Liability:

   $1,000,000 per accident for bodily injury and property damage

3. Employer's Liability:

   $1,000,000 each accident for bodily injury
   $1,000,000 disease each employee
   $1,000,000 disease policy limit

4. Professional Liability (Errors and Omissions):

   $1,000,000 per claim/occurrence
   $2,000,000 policy aggregate

Umbrella or Excess Insurance

In the event Consultant purchases an Umbrella or Excess insurance policy(ies) to meet the "Minimum Limits of Insurance," this insurance policy(ies) shall "follow form" and afford no less coverage than the primary insurance policy(ies).

Deductibles and Self-Insured Retentions

Consultant shall be responsible for payment of any deductibles contained in any insurance policy(ies) required hereunder and Consultant shall also be responsible for payment of any self-insured retentions. Any deductibles or self-insured retentions must be declared to, and approved by, the City Manager or his/her designee. At the option of the City Manager or his/her designee, either (i) the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects City, CSD, Housing Authority and each of their officers, officials, employees, agents and volunteers; or (ii) Consultant shall provide a financial guarantee, satisfactory to the City Manager or his/her designee, guaranteeing payment of losses and related investigations, claim administration and defense expenses. At no time shall City be responsible for the payment of any deductibles or self-insured retentions.

Other Insurance Provisions

<u>The General Liability and Automobile Liability insurance policies</u> are to contain, or be endorsed to contain, the following provisions:

1. City, CSD, Housing Authority and each of their officers, officials, employees, agents and volunteers are to be covered as additional insureds.

2. The coverage shall contain no special limitations on the scope of protection afforded to City, CSD, Housing Authority and each of their officers, officials, employees, agents and volunteers.

3. Consultant's insurance coverage shall be primary and no contribution shall be required of City.

<u>The Workers' Compensation insurance policy</u> is to contain, or be endorsed to contain, the following provision: Consultant and its insurer shall waive any right of subrogation against City, CSD, Housing Authority and each of their officers, officials, employees, agents and volunteers.

If the Professional Liability (Errors and Omissions) insurance policy is written on a claims-made form:

1. The retroactive date must be shown, and must be before the effective date of the Agreement or the commencement of work by Consultant.
2. Insurance must be maintained and evidence of insurance must be provided for at least 3 years after any expiration or termination of the Agreement or, in the alternative, the policy shall be endorsed to provide not less than a 3-year discovery period.
3. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a retroactive date prior to the effective date of the Agreement or the commencement of work by Consultant, Consultant must purchase extended reporting coverage for a minimum of 3 years following the expiration or termination of the Agreement.
4. A copy of the claims reporting requirements must be submitted to City for review.
5. These requirements shall survive expiration or termination of the Agreement.

All policies of insurance required hereunder shall be endorsed to provide that the coverage shall not be cancelled, non-renewed, reduced in coverage or in limits except after 30 calendar day written notice by certified mail, return receipt requested, has been given to City. Upon issuance by the insurer, broker, or agent of a notice of cancellation, non-renewal, or reduction in coverage or in limits, Consultant shall furnish City with a new certificate and applicable endorsements for such policy(ies). In the event any policy is due to expire during the work to be performed for City, Consultant shall provide a new certificate, and applicable endorsements, evidencing renewal of such policy not less than 15 calendar days prior to the expiration date of the expiring policy.

Acceptability of Insurers

All policies of insurance required hereunder shall be placed with an insurance company(ies) admitted by the California Insurance Commissioner to do business in the State of California and rated not less than “A-VII” in Best’s Insurance Rating Guide; or authorized by the City Manager or his/her designee.

Verification of Coverage

Consultant shall furnish City with all certificate(s) and **applicable endorsements** effecting coverage required hereunder. All certificates and **applicable endorsements** are to be received and approved by the City Manager or his/her designee prior to City's execution of the Agreement and before work commences.

AGREEMENT FOR PROJECT RELATED SERVICES
SPECIAL DISTRICTS CONSULTING SERVICES
PROJECT NO. 2018-016

This Agreement is by and between the City of Moreno Valley, California, a municipal corporation, hereinafter described as "City," and Willdan Financial Services, a California corporation) hereinafter described as "Consultant." This Agreement is made and entered into effective on the date the City signs this Agreement.

RECITALS

WHEREAS, the City has determined it is in the public interest to pre-qualify consultants for potential future and yet to be determined professional work hereinafter described as "Projects"; and

WHEREAS, the City has determined the Projects involve the performance of professional and technical services of a temporary nature as more specifically described in Exhibit "A" (Professional and Technical Services) and Exhibit "B" (Consultant's Proposal) hereto; and

WHEREAS, the City does not have available employees to perform the services for the Projects; and

WHEREAS, the City has requested the Consultant to perform such services for the Projects on an as-needed basis; and

WHEREAS, the Consultant is professionally qualified in California to perform the professional and technical services required for the Projects, and hereby represents that it desires to and is professionally and legally capable of performing the services called for by this Agreement;

THEREFORE, the City and the Consultant, for the consideration hereinafter described, mutually agree as follows:

DESCRIPTION OF PROJECT

1. The Projects are described as special districts consulting services. Project No. 2018-016.

SCOPE OF SERVICES

2. The Consultant's scope of service is for special districts consulting services and further type of work within that area of expertise is described in Exhibit "A" and Exhibit "B" attached hereto and incorporated herein by this reference. In the event of a conflict, the City's Request for Qualifications shall take precedence over the Consultant's Proposal. A separate and specific scope of services shall be provided for each individual project requested to be performed by Consultant along with a separate agreement ("Project Specific Agreement").

3. The City's responsibility is described on Exhibit "C" attached hereto and incorporated herein by this reference.

PAYMENT TERMS

4. There shall be no payment due under this Agreement. For each project requested by the City, a separate Project Specific Agreement shall be executed specifying a rate for the services provided and a "Not-to-Exceed" fee for the project. The City agrees to pay the Consultant and the Consultant agrees to receive an up to "Not-to-Exceed" fee of $150,000 for all Project Specific Agreements entered into during the term of this Agreement and shall be in accordance with the payment terms provided on Exhibit "D" attached hereto and incorporated herein by this reference unless otherwise noted within each Project Specific Agreement.

TIME FOR PERFORMANCE

5. Consultant shall not commence any services until a Project Specific Agreement

has been fully executed.

6. The Consultant shall commence services upon receipt of written direction to proceed from the City.

7. This Agreement shall be effective from effective date and shall continue in full force and effect date through June 30, 2023, subject to any earlier termination in accordance with this Agreement. The services of Consultant shall be completed in a sequence assuring expeditious completion, but in any event, all such services shall be completed prior to expiration of this Agreement.

8. (a) The Consultant agrees that the personnel, including the principal Project Manager, and all subconsultants assigned to the Project by the Consultant, shall be subject to the prior approval of the City.

(b) No change in subconsultants or key personnel shall be made by the Consultant without written prior approval of the City.

SPECIAL PROVISIONS

9. It is understood and agreed that the Consultant is, and at all times shall be, an independent contractor and nothing contained herein shall be construed as making the Consultant or any individual whose compensation for services is paid by the Consultant, an agent or employee of the City, or authorizing the Consultant to create or assume any obligation or liability for or on behalf of the City.

10. The Consultant may also retain or subcontract for the services of other necessary consultants with the prior written approval of the City. Payment for such services shall be the responsibility of the Consultant. Any and all subconsultants employed by the Consultant shall be subject to the terms and conditions of this Agreement and any subsequent

Project Specific Agreement, except that the City shall have no obligation to pay any subconsultant for services rendered on the Projects.

11. The Consultant and the City agree to use reasonable care and diligence to perform their respective services under this Agreement and any subsequent Project Specific Agreement.

12. The Consultant shall comply with applicable federal, state, and local laws in the performance of work under this Agreement and any subsequent Project Specific Agreement.

13. To the extent required by controlling federal, state and local law, Consultant shall not employ discriminatory practices in the provision of services, employment of personnel, or in any other respect on the basis of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, sexual orientation, ethnicity, status as a disabled veteran or veteran of the Vietnam era. Subject to the foregoing and during the performance of this Agreement, Consultant agrees as follows:

(a) Consultant will comply with all applicable laws and regulations providing that no person shall, on the grounds of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, sexual orientation, ethnicity, status as a disabled veteran or veteran of the Vietnam era be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity made possible by or resulting from this Agreement.

(b) Consultant will not discriminate against any employee or applicant for employment because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, sexual orientation, ethnicity, status as a disabled veteran or veteran of the Vietnam era. Consultant shall ensure

that applicants are employed, and the employees are treated during employment, without regard to their race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, sexual orientation, ethnicity, status as a disabled veteran or veteran of the Vietnam era. Such requirement shall apply to Consultant's employment practices including, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Consultant agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provision of this nondiscrimination clause.

(c) Consultant will, in all solicitations or advertisements for employees placed by or on behalf of Consultant in pursuit hereof, state that all qualified applicants will receive consideration for employment without regard to race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, sexual orientation, ethnicity, status as a disabled veteran or veteran of the Vietnam era.

(d) If Consultant should subcontract all or any portion of the services to be performed under this Agreement, Consultant shall cause each subcontractor to also comply with the requirements of this Section 13.

14. To the furthest extent allowed by law (including California Civil Code section 2782.8 if applicable), Consultant shall indemnify, hold harmless and defend the City, the Moreno Valley Community Services District ("CSD"), the Moreno Valley Housing Authority ("Housing Authority") and each of their officers, officials, employees, agents and volunteers from any and all loss, liability, fines, penalties, forfeitures, costs and damages (whether in contract, tort or strict liability, including but not limited to personal injury, death at any time and

property damage), and from any and all claims, demands and actions in law or equity (including reasonable attorney's fees and litigation expenses) that arise out of, pertain to, or relate to the negligence, recklessness or willful misconduct of Consultant, its principals, officers, employees, agents or volunteers in the performance of this Agreement.

If Consultant should subcontract all or any portion of the services to be performed under this Agreement, Consultant shall require each subcontractor to indemnify, hold harmless and defend City, CSD, Housing Authority and each of their officers, officials, employees, agents and volunteers in accordance with the terms of the preceding paragraph.

This section shall survive termination or expiration of this Agreement.

15. Insurance.

(a) Throughout the life of this Agreement, Consultant shall pay for and maintain in full force and effect all insurance as required in **Exhibit E** or as may be authorized in writing by the City Manager or his/her designee at any time and in his/her sole discretion.

(b) If at any time during the life of the Agreement or any extension, Consultant or any of its subcontractors fail to maintain any required insurance in full force and effect, all services and work under this Agreement shall be discontinued immediately, and all payments due or that become due to Consultant shall be withheld until notice is received by City that the required insurance has been restored to full force and effect and that the premiums therefore have been paid for a period satisfactory to City. Any failure to maintain the required insurance shall be sufficient cause for City to terminate this Agreement. No action taken by City pursuant to this section shall in any way relieve Consultant of its responsibilities under this Agreement. The phrase “fail to maintain any required insurance” shall include, without limitation, notification received by City that an insurer has commenced proceedings, or has had proceedings commenced against it, indicating that the insurer is insolvent.

(c) The fact that insurance is obtained by Consultant shall not be deemed to release or diminish the liability of Consultant, including, without limitation, liability under the indemnity provisions of this Agreement. The duty to indemnify City shall apply to all claims and liability regardless of whether any insurance policies are applicable. The policy limits do not act as a limitation upon the amount of indemnification to be provided by Consultant. Approval or purchase of any insurance contracts or policies shall in no way relieve from liability nor limit the liability of Consultant, its principals, officers, agents, employees, persons under the supervision of Consultant, vendors, suppliers, invitees, consultants, sub-consultants, subcontractors, or anyone employed directly or indirectly by any of them.

(d) Upon request of City, Consultant shall immediately furnish City with a complete copy of any insurance policy required under this Agreement, including all endorsements, with said copy certified by the underwriter to be a true and correct copy of the original policy. This requirement shall survive expiration or termination of this Agreement.

(e) If Consultant should subcontract all or any portion of the services to be performed under this Agreement, Consultant shall require each subcontractor to provide insurance protection in favor of City and each of its officers, officials, employees, agents and volunteers in accordance with the terms of this section, except that any required certificates and applicable endorsements shall be on file with Consultant and City prior to the commencement of any services by the subcontractor.

16. The waiver by either party of a breach by the other of any provision of this Agreement shall not constitute a continuing waiver or a waiver of any subsequent breach of either the same or a different provision of this Agreement. No provisions of this Agreement

may be waived unless in writing and signed by all parties to this Agreement. Waiver of any one provision herein shall not be deemed to be a waiver of any other provision herein.

17. Consultant and subconsultants shall pay prevailing wage rates when required by the Labor Laws of the State of California.

18. (a) The Consultant shall deliver to the Public Works Director/City Engineer of the City or his designated representative, fully completed and detailed project-related documents which shall become the property of the City. The Consultant may retain, for its files, copies of any and all material, including drawings, documents, and specifications, produced by the Consultant in performance of this Agreement.

(b) The Consultant shall be entitled to copies of all furnished materials for his files and his subconsultants, if any.

(c) The City agrees to hold the Consultant free and harmless from any claim arising from any unauthorized use of computations, maps, and other documents prepared or provided by the Consultant under this Agreement, if used by the City on other work without the permission of the Consultant. Consultant acknowledges that Consultant work product produced under this agreement may be public record under State law.

19. (a) This Agreement shall terminate without any liability of City to Consultant upon the earlier of: (i) Consultant's filing for protection under the federal bankruptcy laws, or any bankruptcy petition or petition for receiver commenced by a third party against Consultant; (ii) 10 calendar days prior written notice with or without cause by City to Consultant; (iii) City's non-appropriation of funds sufficient to meet its obligations hereunder during any City fiscal year of this Agreement, or insufficient funding for any active Project; or (iv) expiration of this Agreement. The written notice shall specify the date of termination. Upon receipt of such

notice, the Consultant may continue services on any active Project through the date of termination, provided that no service(s) shall be commenced or continued after receipt of the notice, which is not intended to protect the interest of the City. The City shall pay the Consultant within thirty (30) days after the date of termination for all non-objected to services performed by the Consultant in accordance herewith through the date of termination. Consultant shall not be paid for any work or services performed or costs incurred which reasonably could have been avoided.

(b) In the event of termination due to failure of Consultant to satisfactorily perform in accordance with the terms of this Agreement, City may withhold an amount that would otherwise be payable as an offset to, but not in excess of, City's damages caused by such failure. In no event shall any payment by City pursuant to this Agreement constitute a waiver by City of any breach of this Agreement which may then exist on the part of Consultant, nor shall such payment impair or prejudice any remedy available to City with respect to the breach.

(c) Upon any breach of this Agreement by Consultant, City may (i) exercise any right, remedy (in contract, law or equity), or privilege which may be available to it under applicable laws of the State of California or any other applicable law; (ii) proceed by appropriate court action to enforce the terms of the Agreement; and/or (iii) recover all direct, indirect, consequential, economic and incidental damages for the breach of the Agreement. If it is determined that City improperly terminated this Agreement for default, such termination shall be deemed a termination for convenience.

(d) Consultant shall be liable for default unless nonperformance is caused by an occurrence beyond the reasonable control of Consultant and without its fault or negligence such as, acts of God or the public enemy, acts of City in its contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, unusually severe weather, and delays of common carriers. Consultant shall notify City in writing as soon as it is reasonably possible after the commencement of any excusable delay, setting forth the full particulars in connection therewith, and shall remedy such occurrence with all reasonable dispatch, and shall promptly give written notice to Administrator of the cessation of such occurrence.

20. This Agreement is binding upon the City and the Consultant and their successors and assigns. Except as otherwise provided herein, neither the City nor the Consultant shall assign, sublet, or transfer its interest in this Agreement or any part thereof without the prior written consent of the other.

21. A City representative shall be designated by the City and a Consultant representative shall be designated by the Consultant. The City representative and the Consultant representative shall be the primary contact person for each party regarding performance of this Agreement. The City representative shall cooperate with the Consultant, and the Consultant's representative shall cooperate with the City in all matters regarding this Agreement and in such a manner as will result in the performance of the services in a timely and expeditious fashion.

22. This Agreement represents the entire and integrated Agreement between the City and the Consultant, and supersedes all prior negotiations, representations or Agreements, either written or oral. This Agreement may be modified or amended only by a subsequent written Agreement signed by both parties.

23. Where the payment terms of any Project Specific Agreement provide for compensation on a time and materials basis, the Consultant shall maintain adequate records to permit inspection and audit of the Consultant's time and materials charges under this

Agreement. The Consultant shall make such records available to the City at the Consultant's office during normal business hours upon reasonable notice. Nothing herein shall convert such records into public records. Except as may be otherwise required by law, such records will be available only to the City. Such records shall be maintained by the Consultant for three (3) years following completion of the services under this Agreement.

24. The City and the Consultant agree, that to the extent permitted by law, until final approval by the City, all data shall be treated as confidential and will not be released to third parties without the prior written consent of both parties.

25. (a) Consultant shall comply, and require its subcontractors to comply, with all applicable (i) professional canons and requirements governing avoidance of impermissible client conflicts; and (ii) federal, state and local conflict of interest laws and regulations including, without limitation, California Government Code Section 1090 et. seq., the California Political Reform Act (California Government Code Section 87100 et. seq.) and the regulations of the Fair Political Practices Commission concerning disclosure and disqualification (2 California Code of Regulations Section 18700 et. seq.). At any time, upon written request of City, Consultant shall provide a written opinion of its legal counsel and that of any subcontractor that, after a due diligent inquiry, Consultant and the respective subcontractor(s) are in full compliance with all laws and regulations. Consultant shall take, and require its subcontractors to take, reasonable steps to avoid any appearance of a conflict of interest. Upon discovery of any facts giving rise to the appearance of a conflict of interest, Consultant shall immediately notify City of these facts in writing.

(b) In performing the work or services to be provided hereunder, Consultant shall not employ or retain the services of any person while such person either is employed by

City or is a member of any City council, commission, board, committee, or similar City body. This requirement may be waived in writing by the City Manager, if no actual or potential conflict is involved.

(c) Consultant represents and warrants that it has not paid or agreed to pay any compensation, contingent or otherwise, direct or indirect, to solicit or procure this Agreement or any rights/benefits hereunder.

(d) Neither Consultant, nor any of Consultant's subcontractors performing any services on this Project, shall bid for, assist anyone in the preparation of a bid for, or perform any services pursuant to, any other contract in connection with this Project unless fully disclosed to and approved by the City Manager, in advance and in writing. Consultant and any of its subcontractors shall have no interest, direct or indirect, in any other contract with a third party in connection with this Project unless such interest is in accordance with all applicable law and fully disclosed to and approved by the City Manager, in advance and in writing. Notwithstanding any approval given by the City Manager under this provision, Consultant shall remain responsible for complying with Section 25(a), above.

(e) If Consultant should subcontract all or any portion of the work to be performed or services to be provided under this Agreement, Consultant shall include the provisions of this Section 25 in each subcontract and require its subcontractors to comply therewith.

(f) This Section 25 shall survive expiration or termination of this Agreement.

26. All Plans, drawings, Specifications, reports, logs, and other documents prepared by the Consultant in its performance under this Agreement shall, upon completion of the project, be delivered to and be the property of the City, provided that the Consultant shall be

entitled, at its own expense, to make copies thereof for its own use.

27. The laws of the State of California shall govern the rights, obligations, duties, and liabilities of the parties to this Agreement, and shall also govern the interpretation of this Agreement. Venue shall be vested in the Superior Court of the State of California, County of Riverside.

28. Supplementary General Provisions. (For projects that are funded by Federal programs). The following provisions, pursuant to 44 Code of Federal Regulations, Part 13, Subpart C, Section 13.36, as it may be amended from time to time, are included in the Agreement and are required to be included in all subcontracts entered into by CONTRACTOR for work pursuant to the Agreement, unless otherwise expressly provided herein. These provisions supersede any conflicting provisions in the General Conditions and shall take precedence over the General Conditions for purposes of interpretation of the General Conditions. These provisions do not otherwise modify or replace General Conditions not in direct conflict with these provisions. Definitions used in these provisions are as contained in the General Conditions.

a) CONTRACTOR shall be subject to the administrative, contractual, and legal remedies provided in the General Conditions in the event CONTRACTOR violates or breaches terms of the Agreement.

b) CITY may terminate the Agreement for cause or for convenience, and CONTRACTOR may terminate the Agreement, as provided the General Conditions.

c) CONTRACTOR shall comply with Executive Order 11246 of September 24, 1965, entitled Equal Employment Opportunity, as amended by Executive Order 11375 of October 13, 1967, and as supplemented in Department of Labor regulations (41 CFR chapter 60). (All construction contracts awarded in excess of $10,000 by CITY and/or subcontracts in excess of $10,000 entered into by CONTRACTOR.)

d) CONTRACTOR shall comply with the Copeland Anti-Kickback Act (18 U.S.C. 874) as supplemented in Department of Labor regulations (29 CFR Part 3) (All contracts and subcontracts for construction or repair.)

e) CONTRACTOR shall comply with the Davis-Bacon Act (40 U.S.C. 276a to 276a7) as supplemented by Department of Labor regulations (29 CFR Part 5).

f) CONTRACTOR shall comply with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. *327330*) as supplemented by Department of Labor regulations (29 CFR Part 5).

g) CONTRACTOR shall observe CITY requirements and regulations pertaining to reporting included in the General Conditions.

h) Patent rights with respect to any discovery or invention which arises or is developed in the course of or under the Agreement shall be retained by the CITY.

i) Copyrights and rights in data developed in the course of or under the Agreement shall be the property of the CITY. FEMA/CalOES reserve a royalty-free, nonexclusive, irrevocable license to reproduce, publish or otherwise use or authorize to others to use for federal purposes a copyright in any work developed under the Agreement and/or subcontracts for work pursuant to the Agreement.

j) CONTRACTOR shall provide access by the City, the Federal grantor agency, the Comptroller General of the United States, or any of their duly authorized representatives to any books, documents, papers, and records of the contractor which are directly pertinent to that specific contract for the purpose of making audit, examination, excerpts, and transcriptions.

k) CONTRACTOR shall retain all required records for three years after CITY makes final payments and all other pending matters relating to the Agreement are closed.

l) CONTRACTOR shall comply with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. *1857*(h)), section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR part 15). (This provision applies to contracts exceeding $100,000 and to subcontracts entered into pursuant to such contracts.)

m) CONTRACTOR shall comply with mandatory standards and policies relating to energy efficiency which are contained in the State energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94163, 89 Stat. 871).

SIGNATURE PAGE FOLLOWS

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

City of Moreno Valley

BY: ______________________________

Thomas M. DeSantis
City Manager

Date: ______________________________

Willdan Financial Services

BY: ______________________________

Name: ______________________________

TITLE: ______________________________
(President or Vice President)

Date: ______________________________

BY: ______________________________

Name: ______________________________

TITLE: ______________________________
(Corporate Secretary)

Date: ______________________________

INTERNAL USE ONLY

ATTEST:

____
City Clerk
(only needed if Mayor signs)

APPROVED AS TO LEGAL FORM:

____
City Attorney

____
Date

RECOMMENDED FOR APPROVAL:

____
Department Head
(if contract exceeds 15,000)

____
Date

EXHIBIT A

PROFESSIONAL AND TECHNICAL SERVICES

Special Financing District Consultant services may include: a) preparation of annual engineer's reports; b) preparation of boundary maps for parcels annexing into a CFD; c) formation of Community Facilities Districts for service and for bonded districts; d) transition of community service districts into alternative district formats (e.g. annexing into or forming a landscape maintenance district); e) providing general special district consulting services; and f) collaboration on developing content for special financing district marketing pieces.

The professional services include tasks established by industry standards for the formation of districts and shall include standards similar to those set forth below:

1) Analyze and determine the type of district restructuring or formation for each unique situation.

2) Prepare the initial Rate and Method of Apportionment (RMA) or assessment calculation.

3) Calculate the initial special tax levy requirement or assessments.

4) Prepare a CFD Report or Engineer's Report (ER).

5) Prepare and deliver mylar copies of boundary maps.

6) Expend due diligence to ensure accuracy in reviewing and preparing all work products and timely submissions of such.

7) Provide clear written documentation concerning the approach taken to derive the conclusions reached.

8) Employ strict confidentiality of all documents made available by the City to the Consultant, sub consultant or any other appointed entity, in the course of completing a formation, which may contain private and/or confidential information, which includes but is not limited to property owner names and addresses.

9) Make all necessary arrangements for delivery and pick-up of documents to and from any agency, office or City Department/Division.

10) Meet with City staff to discuss task lists and associated jobs for further input and approval.

11) Attend meetings of the City Council (e.g. study session, Council meeting, subcommittee meetings), as requested

12) Participate in providing additional analysis and support for the issuance of any bonds.

EXHIBIT B

CONSULTANT'S RESPONSE TO RFQ

City of Moreno Valley

Statement of Qualifications

Special Districts Consulting Services

WILLDAN

WILLDAN FINANCIAL SERVICES

March 5, 2018

Purchasing Division
City of Moreno Valley
14177 Frederick Street
Moreno Valley, California 92552

Re: Statement of Qualifications to Provide Special District Consulting Services on an As Needed Basis to the City of Moreno Valley

To Whom It May Concern:

For fiscal year 2017/2018, the City of Moreno Valley ("City") levied and collected on the County tax rolls over $14 million for the City's Community Service Districts (CSDs), Lighting/Landscape Maintenance Districts, each comprised of multiple Zones, and Community Facilities Districts (CFDs). These special district revenues are used to fund the maintenance of various improvements, streetlights, landscaped facilities and storm drain facilities, to name a few. For over 20 years, Willdan Financial Services ("Willdan") has served as the City's financial consultant in several capacities.

As part of the City's continuing efforts to ensure they receive the best and most cost-effective assistance, a solicitation to evaluate firms providing special district consulting services has been released. Willdan is pleased to submit the following Statement of Qualifications (SOQ) identifying leading experts in the field of special district administration, formation and re-engineering, the most advanced special district administration software, and a depth of resources and customer service unmatched in the industry at a competitive fee.

Since our inception on June 24, 1988, Willdan Financial Services was founded on the premise of providing the items listed in the scope of services at an advanced level of customer support. The following are a few examples that make us uniquely equipped to continue to provide these services to the City.

Intimate Knowledge of the City of Moreno Valley — Since 1995 Willdan has provided special district administration, formation and annexation services, including continuing disclosure and arbitrage rebate services, to the City. Our staff possesses unmatched firsthand knowledge of mechanisms specific to the City, such as the conversion of certain CSD charges to assessments under the Landscaping and Lighting Act of 1972 and the creation of maintenance CFDs for landscaping improvements. We will continue to leverage our knowledge of your operations and key staff to facilitate and expedite the requested services. The longevity of our relationship with the City will allow Willdan to conduct projects in a cost-effective and efficient manner. Continuing this partnership also allows City staff to focus its time on direct City operations, rather than training consultants on the nuances of the City's special districts.

Tenured Core Team — Willdan has assembled a senior project team of subject matter experts who have worked together for more than 10 years, supporting special district administration, formation and re-engineering projects throughout California. For this on-call engagement, the project team's key resources are comprised of the following individuals, as well as their anticipated project role.

- Jim McGuire, Principal Consultant – City's main point of contact, acting as a technical advisor to the City and Willdan staff, and coordinating all Proposition 218 special projects;
- Susana Hernandez, Project Manager – preparation of Engineer's Reports and boundary maps, as well as refundings, and assist with CFD formations;
- Chris Fisher, Group Manager – oversee CFD formations and provide general special district consulting services, as needed;
- Stacee Reynolds, Senior Project Manager – manage projects involving the formation, annexation and/or re-engineering of assessment districts;
- Richard Kopecky, PE – Assessment Engineer;
- Mike Medve, Project Manager – manage CFD formation engagements;
- Pauline Nguyen, Senior Project Analyst – support assessment district formation, annexation and/or re-engineering engagements, including GIS; and
- Jo-Anne Bogias, Analyst – analytical support.

Proposition 218 Defensibility — Since the passage of Proposition 218 in November of 1996, greater focus has been placed on assessment methodologies, determination of benefit, and corresponding assessments. Willdan has prepared hundreds of levy reports implementing various assessment methodologies tailored to the specific attributes of the districts. As such, we understand our clients' concerns with respect to the legality of assessments and have years of unmatched experience in developing and implementing appropriate assessment strategies. We are fortunate to be in a position in which our knowledge will provide a tremendous benefit to the City.

I am confident that the attached proposal clearly demonstrates that Willdan and our assigned staff members have the exact core competencies, depth of resources, experience, and capabilities required to conduct the City's engagement, with the highest level of professionalism. If you wish to discuss any aspect of this proposal, please contact Mr. McGuire at (951) 587-3536 or via email at jmcguire@willdan.com.

Sincerely,

WILLDAN FINANCIAL SERVICES

Mark J. Risco

President & CEO

Table of Contents

Contact Information

1) RFP Contact

Principal Consultant Jim McGuire will serve as Willdan Financial Services' contact for questions related to this submittal. He can be reached directly at (909) 229-0826, or via email at jmcguire@willdan.com.

Vendor Information Form

VENDOR INFORMATION

PROPOSER'S COMPANY INFORMATION (print or type)

Company Name: Willdan Financial Services

Owner /Manager Name: Robert C. Fisher

Contact Name: Jim McGuire, Principal Consultant

Mailing Address: 27368 Via Industria, Ste 200

City: Temecula State: CA Zip: 92590

Remit to Address (if different from PO mailing address)

____

City: __________ State: ______ Zip: ______

Web Site: willdan.com/financial

Phone Number: 951-587-3500

E-mail Address: jmcguire@willdan.com

Incorporated? YES ◉ or NO ○

Federal Tax I.D. # or Social # 33-0302345

How many years of relevant experience within the scope of this RFQ? 29 years

I certify that the information given above is accurate and complete; that the Terms and Conditions as issued by the City of Moreno Valley with this Request for Qualifications have been fully read, understood, and accepted in total; and that I am a duly authorized agent for responding purposes for the company named above.

Robert C. Fisher
(Print Responding Person's Name)

Vice President
(Title)

[signature]
(Responding Person's Signature)

March 1, 2018
(Date)

Organization

1) Description of Organization

Willdan Financial Services is one of four operating divisions within Willdan Group, Inc. (WGI), which was founded over 50 years ago, in 1964, as an engineering firm working with local governments. Today, WGI is a publicly owned company (NASDAQ ticker: WLDN). WGI, through its subsidiaries, provides technical and consulting services that ensure the quality, value and security of our nation's infrastructure, systems, facilities, and environment. The firm has been a consistent industry leader in providing all aspects of municipal and infrastructure engineering, public works contracting, public financing, planning, building and safety, construction management, homeland security, and energy efficiency and sustainability services. Today, WGI has over 800 employees operating from offices in Arkansas, Arizona, California, Connecticut, Colorado, District of Columbia, Florida, Illinois, Kansas, Nevada, New Jersey, New York, Ohio, Oregon, Texas, and Washington.

Willdan Financial Services

Founded on June 24, 1988, Willdan Financial Services ("Willdan"), a California Corporation, is a ***wholly-owned subsidiary of Willdan Group, Inc. (WGI)*** and is one of the largest public sector financial consulting firms in the United States. Since that time, we have helped over 800 public agencies successfully address a broad range of financial challenges, such as financing the costs of growth and generating revenues to fund desired services.

Willdan assists local public agencies by providing the following services:

- Administration of special taxes, assessments, standby charges, and utility rates;
- District formation services for assessment/local improvement districts, Community Facilities Districts, Landscaping and Lighting Districts, and special taxes;
- Arbitrage rebate calculations;
- Continuing disclosure reports preparation and dissemination;
- Staff augmentation support; and
- Tax increment finance district formation and amendment.

In addition, we are dedicated to the improvement of our technology. Our Information Technology staff created Willdan's ***M*unicipal *A*dministration *G*overnment *I*nformation *C*oordinator — MuniMagic^{SM} —** a custom software program to address the specific requirements related to administering taxes, assessments, standby charges and fees. In addition, the program allows our clients to access parcel information through the Internet with a menu-driven format. With current changes in legislation and new programs focused on Property Assessed Clean Energy (PACE), Willdan IT/Development staff is currently developing a web base version of MuniMagic that will replace the current software program. The new software system is expected to be released in 2018.

Willdan's success is based on a corporate philosophy of personal service and we provide continuous support throughout the year. As you and your staff are aware we can always be reached should any questions or issues arise. Our standardized procedures and reporting formats ensure consistency within the District Administration, Federal Compliance and Financial Consulting groups and our "team approach" to servicing contracts means that if your assigned analyst is unavailable someone else will contact you without delay.

Our staff of over 70 full-time employees supports our clients by conducting year-round workshops and on-site training to assist them in keeping current with the latest developments in our areas of expertise.

The organization chart to the right represents Willdan's reporting structure, including the operating groups and the responsible manager, as well as additional personnel available to the City of Moreno Valley ("City").

2) Firm's Public Finance Section

Willdan Financial Services is the public finance section of WGI and provides expertise and support for the various financing techniques employed by public agencies to finance their operations and infrastructure. This division of WGI also supports the mandated reporting and other requirements associated with these financings but does not provide underwriting or financial advisory services for municipal securities.

Willdan Financial Services employs approximately 70 professionals providing the following primary services:

- District Administration Services
- Financial Consulting Services
- Federal Compliance Services

3) Types of Accounts Primarily Sought

Willdan typically pursues accounts in the public sector. Our clients include cities, counties, state agencies, port authorities, public utilities, special districts, and school districts in 35-plus states.

4) Firm Experience with Special Districts

Since our inception in 1988, Willdan has provided public agencies the benefit of a comprehensive approach to special district consulting by including District Formation and Administration; Delinquency Management; Continuing Disclosure; and Arbitrage Rebate in our service offerings. This multi-service approach provides us with the opportunity to facilitate the flow of information between the different service areas, which creates less of a draw on City staff time, and reduces costs for these services. It also ensures that solutions and approaches provided in one area of work are consistent with overall policies and objectives. For instance, we form special districts with specific features, such as simplified apportionment steps or prepayment provisions, to allow for ease of administration. Finally, methodologies are created in a manner that allows for consistent application of agency policies, such as cost recovery objectives, from project to project. Many of our clients are in and around the Inland Empire, so we understand the complexities and challenges faced by agencies within the local area, given the pace of development. In view of our experience, Willdan is committed to:

- Having highly qualified core staff actively involved in day-to-day operations;
- Providing comprehensive, proactive and friendly customer service;
- Interfacing in an informative and positive manner with City Council, staff, community organizations, and the public in general;
- Keeping up to date on the latest technology that allows specific data to be made available via the Internet to City staff, investors, and property owners at no additional charge;

- Staying current on legislation impacting the formation and administration of Community Facilities Districts (CFDs), such as SB 165, AB 2851 (annual reporting requirements), and AB 373 (recent modifications to Mello-Roos law); and
- Closely following legislation and legal proceedings involving assessments and other types of special districts, particularly issues related to Proposition 218.

Having spent decades providing and developing innovative approaches to special district formation and administration services in California, our methods and approaches will support the practical requirements of the City's special district implementation, or transition, and administration efforts. In so doing, Willdan will continue to meet and exceed the City of Moreno Valley's benchmarks for an outside special financing district consultant.

In the role of Special Tax Consultant and/or Assessment Engineer throughout the state, Willdan is often presented with proposed projects that necessitate preliminary analysis and review to determine the type of special financing district that best suits the project, while meeting client objectives and policies. While the City has primarily shifted to establishing CFDs for new developments rather than assessment districts, there will still be instances where other types of special financing districts make more sense from either a practical or political perspective. Willdan brings more than 29 years of experience specific to the formation and administration of a variety of special district mechanisms to this engagement. Having reviewed several developer applications for proposed CFD formation projects, and our previous review and analysis of the City's Community Services Districts (CSDs) and assessment districts, we understand the needs and objectives of City staff, the process that needs to be followed, and the kind of input and direction the City needs to implement the establishment of new districts and/or reorganize and re-engineer existing districts.

Special District Consulting Client Experience

The chart on the following page further demonstrates Willdan's recent special district consulting experience and the applicable service components of the agency's engagement, which are similar to those requested by the City.

Assessment Engineering Client Listing	Benefit Analysis	Analysis Implemented	Report Preparation	Public Outreach	District Administrator
City of Arcadia	■				■
City of Atwater	■	■	■		■
City of Fairfield	■	■	■		
City of Fillmore	■	■	■		■
City of Guadalupe	■	■	■		■
City of Indian Wells	■	■	■		■
City of Indio	■	■	■		■
City of Irvine	■		■		■
City of La Quinta	■		■	■	■
City of Laguna Beach	■	■	■	■	■
City of Lemon Grove	■	■	■		■
City of Lemoore	■	■	■		■
City of Livingston	■	■	■		■
City of McFarland	■		■		■
City of Moreno Valley	■	■	■		■
City of Murrieta	■	■	■		■
City of Palm Desert	■	■	■		■
City of Paso Robles	■	■	■	■	■
City of Pico Rivera	■	■	■	■	■
City of Poway	■		■		■
City of Rialto	■	■	■		■
City of Ridgecrest	■	■	■		■
City of Riverbank	■	■	■		■
City of Salinas	■	■	■		■
City of San Bernardino			■		
City of San Luis Obispo	■				
City of Santa Clarita	■	■	■		■
City of Tehachapi	■	■	■		■
City of Tracy	■	■	■		■
City of Yorba Linda	■	■	■	■	■
County of Sacramento	■	■	■		
Desert Recreation District (Indio, CA)	■		■		■
Los Angeles County Public Works	■		■		■
Sacramento Metropolitan Fire District	■		■		

5) References

To further exemplify our expertise, project descriptions along with client contact information, are provided below. We are proud of our reputation for customer service, and encourage you to contact our past clients regarding our commitment to excellence.

City of Santa Clarita, CA – Special District Administration and Re-engineering Services

Since 2010, Willdan has provided special district administration, formation and annexation services to the City of Santa Clarita. During this time, engagements have included the following.

- Transition of Landscape Maintenance Districts from the County of Los Angeles' jurisdiction to the City, which required the preparation of a special versus general benefit review and analysis of potential modifications necessary for Proposition 218 compliance and/or the re-engineering of special districts.
- Formation of the City's stormwater fee district in compliance with the federally-mandated National Pollution Discharge Elimination System (NPDES); included the tracking of all current annexations to the City's boundary and reviewing LAFCO documents for inclusion of the district.
- Annexation of new development to the City's Streetlight Maintenance District and separate Landscape Maintenance District, which includes preparation of the Engineer's Reports, resolutions and notices and ballots.

Principal Consultant Jim McGuire assisted the City of Santa Clarita with the transition of Landscape Maintenance Districts from County jurisdiction to the City.

Willdan presently administers the City's Landscape Maintenance District (over 88,000 parcels); Streetlight Maintenance District (57,177 parcels); Drainage Benefit Assessment District (2,646 parcels); Open Space Preservation District (over 64,000 parcels); Stormwater Fee (approximately 64,000 parcels); Community Facilities District 2002-1 (8 parcels); and National Pollution Discharge Elimination System (NPDES) charge, including Bridgeport, Creekside, Hart-Pony, and Hidden Creek (approximately 1,400 parcels). In aggregate, over 278,000 parcels are administered.

Client Contact: Kevin Tonoian, Special District Manager
23920 Valencia Boulevard, Santa Clarita, CA 91355
Tel #: (661) 286-4027; Email: ktonoian@santa-clarita.com

City of Yorba Linda, CA – Assessment Engineering Services for the Annual Levy of Street Lighting and Landscape Maintenance District

Willdan has worked with the City over the past eight years to develop and implement modifications to the district structure, budgets and assessments for the landscaping and lighting improvements throughout Yorba Linda. Through the late 1980's, the City established several assessment districts to fund the ongoing maintenance and operation of various public improvements. These districts were then consolidated in 1994 to establish the Citywide Consolidated Street Lighting and Landscape Maintenance District ("District"). In response to Proposition 218, the City, with Willdan's assistance, re-organized the District and conducted several successful assessment ballot proceedings. The current District and associated assessments provide a funding source for the maintenance and operation of various improvements which generally include, but are not limited to, specific landscaped areas, street lighting and traffic signals. These improvements are separated and assessed on both a citywide and local benefit basis.

Recognizing that property development and improvements associated with the District, and the infrastructure maintenance needs had changed, the City desired to re-evaluate the various improvements provided, the annual costs of maintaining those improvements (budgets), and the associated special benefit assessment allocations to properties within each of the local landscape zones. Over the least five years, Willdan has assisted the City with re-engineering the District to establish more localized zones and a true budget for each, identifying appropriate assessment amounts without triggering increases to the existing assessments, but identifying areas where assessment increases were needed. Willdan has worked with the City and an ad-hoc committee over the last two years to ballot the zones that were underfunded based on the re-engineering effort.

Willdan also annually administers this District on the City's behalf, which is comprised of over 22,200 parcels levying approximately $5.8 million. Furthermore, the Willdan Team has been tasked with the creation of expanded zone improvement descriptions, which are incorporated to the Engineer's Report to enhance the identification of special versus general benefit.

Client Contact: Brad Fowler, Interim Public Works Director
4845 Casa Loma Avenue, Yorba Linda, CA 92885
Tel #: (714) 961-7170; Email: bfowler@yorba-linda.org

City of Murrieta, CA – Community Services District and Park Tax Administration, Formations and Annexations

Willdan administers approximately 35,000 parcels on behalf of the City of Murrieta. Responsibilities include incorporating annexed territory into the citywide Community Services District (CSD) and citywide Park Tax; coordinating the levy timeline, key project milestones, and timeframes for the CSD; reviewing the special district boundary maps and current County Assessor's Office secured roll parcel information; maintaining the parcel database; identifying and determining appropriate designation and Method of Apportionment for undefined parcels; identifying specific CSD services to be charged to affected parcels; calculating the appropriate Equivalent Benefit Units (EBUs) and proposed CSD charges/park tax for each parcel using the applicable established rates and method; compiling a summary of the CSD charges and tax to be levied; and preparing the CSD's Annual Engineer's Report for the fiscal year, in accordance with the Government Code, Proposition 218, and the City's CSD format.

In addition to administering the CSD and park tax, Willdan is also responsible for the administration of the City's 14 CFDs including multiple improvement areas; 2 Assessment Districts; the Murrieta Consolidated Landscaping and Lighting District comprised of 29 benefit zones; and the Murrieta Fire Protection Department's citywide fire tax.

Client Contact: Lea Kolek, Parks and Recreation Manager
1 Town Square, Murrieta, CA 92562
Tel #: (951) 304-7275; Email: lkolek@murrietaca.gov

City of Paso Robles, CA – Assessment Engineering Services

Willdan performs the annual administration of the City's El Paso de Robles Landscape and Lighting Maintenance District No. 1, with 134 active zones and/or sub-areas; Community Facilities District 2005-1; and the El Paso de Robles Drainage Maintenance District No. 2008-1. The work involved in this project includes database maintenance, while researching parcel changes, and preparing and providing the applicable annual report(s). Additionally, staff calculates and apportions the special taxes, prepares draft staff reports, provides levies, researches parcel exceptions, fields inquiries, and attends meetings.

Willdan collaborated with the City's public relations firm to develop content for informational pamphlets and improvement maps.

In Fiscal Year 2016/2017 Willdan completed the re-engineering of the City's Maintenance District No. 1. It was the City's desire to re-engineer the District based on local improvements, shared improvements, and streetlight only improvements, if feasible, in order to simplify the overall district structure and to develop appropriate assessments for optimal service levels originally planned for all areas in the District. The overall project took over two years due to the numerous zones in the District as well as some of the zone structures. During the project Willdan assisted City staff and their public relations firm with the development of informational pamphlets and landscaping improvement maps that provided the location of improvements for each zone. These documents were created for the property owners to ensure that they were fully informed. In the role of project manager, Ms. Stacee Reynolds also developed an improvement only informational document by zone for the City and property owners in the District. She assisted in the completion of the re-engineering budget, benefit assessment analysis, conducted the community outreach meetings, prepared the Final Engineer's Report, staff reports, resolutions and ballots for the areas designated as underfunded in the District. Upon completion of the project, 40 percent of the underfunded zones approved the new increased assessment, which included an annual CPI inflator. This was the highest approval percentage in the last ten years for the City's District.

Client Contact: Freda Berman, Maintenance Superintendent Events Manager
625 Riverside Avenue, Paso Robles, CA 93446
Tel #: (805) 237-3873; Email: fberman@prcity.com

City of Poway, CA – Landscape Maintenance District Re-Engineering Services

The City of Poway funds landscaping improvements and services through revenue generated by nine Landscaping and Lighting Districts, all of which were formed prior to Proposition 218 and many of the assessments did not provide for an annual inflationary adjustment. Therefore, to ensure that existing district assessments and the future financial stability of specific landscape maintenance districts are appropriately addressed, the City retained Willdan to undergo an assessment engineering engagement specific to these districts. The project objective was to formulate recommendations and possible implementation options for City Council's consideration for the 2017/2018 fiscal year. The goal of this project is to identify appropriate and/or necessary modifications to the district and/or assessments that the City may consider for implementation based upon current case law and legislative authority.

Willdan also provides annual administration services for the City's Landscaping and Lighting Maintenance Districts. The districts are comprised of an aggregate 33,251 parcels. We also administer the City's fire fee, which is assessed to over 16,000 parcels.

Client Contact: Eric Heidemann, Public Works Operations Manager
13325 Civic Center Drive, Poway, CA 92064
Tel #: (858) 668-4705; Email: eheidemann@poway.org

City of Fairfield, CA – Special District Administration and Formation Services

Willdan performs the annual administration of the City of Fairfield's Community Facility Districts. The annual administration entails: calculating each parcel's special tax according to the Rate and Method of Apportionment; updating the district database according to secured roll information; apportioning parcels due to changes, splits, and merges; calculating prepayments and bond calls; preparing annual disclosure reports and district levy budgets; replying to property owners, realtors, and title companies; submitting the levy to the County in the required format; and updating and managing delinquencies.

In addition, Willdan assists the City on an ongoing, as-needed basis for formation and annexation services for various Community Facilities Districts and Landscaping and Lighting Districts as development occurs throughout the City. Willdan coordinates these formation and annexation processes with the City and prepares the pertinent documents including resolutions and staff reports, notices, ballots, Engineer's Reports, boundary maps, budgets, assessment rolls, registrar voter certifications, and consent and waiver forms.

Client Contact: Peri Dean, Special District Services
1000 Webster Street, Fairfield, CA 94533
Tel # (707) 428-7089; Email: pdean@fairfield.ca.gov

6) Location of Base Office

Each team member identified within this submission is based from Willdan Financial Services' division headquarters located in Temecula, California, which is located approximately 30 miles from Moreno Valley's City Hall.

7) Pertinent Disciplinary Actions

Willdan is not currently involved in any type of SEC regulatory censure or any other pertinent disciplinary actions or litigation related to services provided.

8) Potential Conflict of Interest

We are not aware of any potential conflicts of interest that currently exist or may arise as it relates to the City of Moreno Valley.

9) Rate Schedule

Provided below is Willdan's rate schedule.

Willdan Financial Services	
Title	**Hourly Rates**
Group Manager	$ 210
Principal	200
Senior Project Manager	165
Project Manager	145
Senior Project Analyst	130
Senior Analyst	120
Analyst	100
Analyst Assistant	75
Property Owner Services Representative	55

A) Reimbursable Expenses

Willdan will be reimbursed for out-of-pocket expenses. Examples of reimbursable expenses include, but are not limited to:

- Postage;
- Travel expenses;
- Mileage (current prevailing rate);
- Maps;
- Electronic data provided from the county and/or other applicable resources;
- Construction cost periodicals; and
- Copying (currently 6¢ per copy).

Charges for meeting and consulting with City Council, City management/staff, or other parties (or requests for reports containing information not included in the Engineer's Reports, parcel databases, County secured roll, or County tax payment tapes) will be at our then current hourly rates.

If a third party requests any documents, Willdan may, in accordance with Willdan's applicable rate schedule, charge such third party for providing said documents.

City shall reimburse Willdan for any costs Willdan incurs, including without limitation, copying costs, digitizing costs, travel expenses, employee time and attorneys' fees, to respond to the legal process of any governmental agency relating to City or relating to the project. Reimbursement shall be at Willdan's rates in effect at the time of such response.

B) Price Ranges and Timelines

Outlined below are the price ranges and timelines for the formation of the various proposed districts, including: bonded and maintenance CFDs and Landscaping and Lighting District.

Price Ranges

Willdan will provide district formation services for the price ranges represented below. These fee ranges are based upon a typical special district formation project, composed of less than or equal to 2,500 parcels. If the City wishes to form a special district containing more than 2,500 parcels, such as a citywide district, the fee would be based on the district type, as well as the funding requirements.

City of Moreno Valley District Formation Services Fee for Services	
Community Facilities District Formation – Facilities	$14,500 – $35,000
Community Facilities District Formation – Maintenance or Services	$14,500 – $26,500
Assessment Maintenance District	$13,500 – $27,500
Feasibility Study	$10,000 – $28,000
Additional/Optional Services	
Boundary Map Preparation	$450 for first page, $250 for each additional

A not-to-exceed fee will be provided when a specific formation project has been identified. To accurately quote the project, the following elements will need to be provided:

- Estimated project timeline;
- Development type (i.e. residential, commercial, retail, etc.);
- The location, extent and nature of the improvements (or services) to be funded;
- Availability of cost information related to the improvements to be funded, or the extent to which Willdan will assist in developing these estimates;
- Mix and pricing of products within each type of development;
- Number of meetings anticipated, and level of effort for stakeholder outreach and communication; and
- Information regarding potential phasing of bond issuances for larger bond amounts.

Please note the following:

- Our not-to-exceed fees are based on an hourly basis.
- Our fee will not be contingent on the outcome of the formation of the special district.
- The fee ranges quoted above do not include mailing costs (printing, processing and postage) for the notices and ballots. These costs are estimated to be $1.25 - $1.50 per parcel for each mailing. Any outreach or educational materials would be separate mailings.
- We will invoice the City monthly based on percentage of project completion.

Timelines

Outlined below are general timelines for the formation of a CFD and Landscaping and Lighting District. Prior to or immediately following the project kick-off meeting, a project specific timeline will be created for the City's review and feedback.

City of Moreno Valley
Community Facilities District Formation
Estimated Project Timeline

Work Plan	Week																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Task 1: Project Kick-Off Meeting																			
Task 2: Review CFD Policies																			
Task 3: Background Research																			
Task 4: Preliminary Tax Spread Analysis & Develop Tax Methodology																			
Task 5: Rate & Method of Apportionment of Special Tax																			
Task 6: Community Facilities District Report																			
Task 7: Document Review & Preparation																			
Task 8: Bond Issuance Support - *To Be Determined*																			

City of Moreno Valley
Landscaping and Lighting District Formation
Estimated Project Timeline

Work Plan	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9
PHASE I: BENEFIT ASSESSMENT ANALYSIS									
Project Kick-off Meeting									
Establish Improvement Matrix & Budget Model									
Review Benefits/Improvements & Assessment Methodologies									
Develop District Organization & Assessment Funding Models									
Develop Proposed Budget & Assessments									
Prepare Technical Memorandum									
PHASE II: PUBLIC OUTREACH									
PHASE III: DOCUMENTATION OF NEW ASSESSMENTS									
Prepare Engineer's Report									
Draft Resolutions									
Attend City Council Intent Meeting									
PHASE IV: BALLOT PROCEEDINGS									
Prepare Notice & Ballot									
Print & Mail Notice & Ballot									
Public Hearing & Ballot Tabulation									

Personnel

Our management and supervision philosophy for the project team is very simple; staff every position in sufficient numbers with experienced, capable personnel to deliver increased responsiveness and superior work products. With that philosophy in mind, we propose to staff this engagement with experienced professionals. We are confident that our team possesses the depth of experience that will successfully fulfill the desired work performance.

For this on-call engagement, the project team's key resources are comprised of the individuals listed below, which also identifies their anticipated project role.

- Jim McGuire, Principal Consultant – City's main point of contact, acting as a technical advisor to the City and Willdan staff, and coordinating all Proposition 218 special projects;
- Susana Hernandez, Project Manager – preparation of Engineer's Reports and boundary maps, as well as refundings, and assist with CFD formations;
- Chris Fisher, Group Manager – oversee CFD formations and provide general special district consulting services, as needed;
- Stacee Reynolds, Senior Project Manager – manage projects involving the formation, annexation and/or re-engineering of assessment districts;
- Richard Kopecky, PE – Assessment Engineer;
- Mike Medve, Project Manager – manage CFD formation engagements;
- Pauline Nguyen, Senior Project Analyst – support assessment district formation, annexation and/or re-engineering engagements, including GIS; and
- Jo-Anne Bogias, Analyst – analytical support.

Resumes

Resumes for the key personnel identified above are presented on the following pages.

Jim McGuire

Principal Consultant

Education

Bachelor of Science, University of California, Irvine

Areas of Expertise

Special District Annexations, Formations, and Administration

Parcel and Property-related Revenue Audits

Feasibility Studies

Proposition 218

24 Years' Experience

Principal Consultant Jim McGuire specializes in parcel and property-related revenue audits; district administration; and annexations/formations of various special districts, such as 1972 Act Landscaping and Lighting Districts, Community Facilities Districts, and Benefit Assessment Districts for streets and storm drain facilities, as well as Property and Business Improvement Districts. He is one of Willdan's lead technical advisors for Proposition 218 re-engineering evaluations, fiscal analyses, cost-recovery studies, and long-term strategic planning for maintenance districts. Mr. McGuire possesses over two decades of experience working with the public and local governments on special districts. His experience includes study sessions for staff and City Councils, along with facilitation and/or technical support for advisory committees and property owner workshops.

Project Experience

City of Moreno Valley – Needs Assessment of the Moreno Valley Community Services District: The Moreno Valley Community Services District (CSD) was formed in 1984 to continue the provision of services that were previously provided by the County of Riverside through County Service Areas. Over the past 30 years, additional Zones of Benefit were added to the CSD to provide funding for parks and community services, street lighting, landscape maintenance, and median landscape maintenance. The CSD was experiencing revenue shortfalls in most if not all of the Zones, which required either General Fund support or a reduction in services.

During the first half of 2012, Mr. McGuire assisted the City by performing an initial macro review and evaluation of the CSD and related charges. A comprehensive document was provided to the City outlining the findings of the analysis by Zone, as well as recommendations for their consideration and implementation. At present, Mr. McGuire is assisting the City with the withdrawal of a single Zone from the City's CSD, which requires the formation of a new 1972 Act District, development of an assessment methodology and Engineer's Report, and completion of a Proposition 218 compliant notice, ballot and Public Hearing process.

Cities of Yorba Linda, Moreno Valley, La Quinta, Palm Desert, Poway, Thousand Oaks, Tracy and Lemoore, McKinleyville Community Services District, Hollywood Entertainment District, Orange County Vector Control District and Sacramento Metropolitan Fire District: Conducted benefit analysis studies and assisted these agencies with implementation strategies related to the identification of special versus general benefit necessary for Proposition 218 compliance and/or the re-engineering of special districts.

Cities of Guadalupe, Lemoore, Moreno Valley, Murrieta, Palm Desert, Indio, Rancho Mirage, Fairfield, La Quinta, Tracy, Santa Clarita, Yorba Linda and El Centro; and County of Los Angeles: Over the past several years, Mr. McGuire has managed and provided, on an "as-needed basis" special assessment district formations and annexations, as well as Proposition 218 ballot proceedings for new or increased assessments, for each public agency identified.

Cities of Arcadia, Artesia, La Quinta, San Rafael, Thousand Oaks, and Yorba Linda, Pomona PBID, Pasadena PBID and Los Angeles County Parks and Recreation Department: During the assessment engineering engagements conducted for these public agencies, Mr. McGuire worked in conjunction with the Home Owner's Association and Citizen/Property Owner Advisory Committees.

Susana Hernandez

Project Manager

Education

Master's Degree in Political Science American Public University

Bachelor of Science in Mathematics / Applied Science, with an emphasis in Management and Accounting, University of California, Los Angeles

Areas of Expertise

Assessment Districts

Community Facilities Districts

Local Improvement Districts

Property and Business Improvement Districts

Sewer Districts

Community Services Districts

Analyzing District Finances

District Audits

Apportionments

Delinquency Management

Municipal Disclosure

Special District Formations and Annexations

Bond Financings, Refundings and Redemption

11 Years' Experience

Landscape and lighting districts, Community Facilities Districts, sewer districts, local improvement districts, and delinquency management are just some of Ms. Hernandez's areas of expertise. She assists in the research and analysis necessary to resolve local government financial issues related to district formation and administration. She also provides general information to public agencies and property owners on questions pertaining to assessments and special taxes, as well as on the status of property delinquencies.

Project Knowledge

Ms. Hernandez manages administration services of various types of land-based special financing districts, including the following.

- Levy calculations
- Apportionments
- Disclosure
- Delinquency management
- District audits
- Special district formations /annexations
- Bond financings and refundings

Relevant Project Experience

General District Administration – Ms. Hernandez manages the day-to-day district administration of over 100 districts throughout California. General district administration duties include preparing a comprehensive annual report, calculating and apportioning the special taxes, maintaining and updating an electronic database, submitting levies to the County Auditor/Controller's Office, researching and resubmitting installment amounts to the County, fielding inquiries via Willdan's toll-free number, monitoring delinquencies, providing an annual report to CDIAC, preparing Notices of Special Tax, calculating written prepayment quotes for special tax liens, and performing all bond call spreads.

1972 Act Landscape and Lighting Districts – Ms. Hernandez manages and serves as the administrator of over 30 landscaping and lighting districts for agencies throughout California.

Annual Administration of Sewer Districts – Ms. Hernandez manages and serves as the expert consultant for sewer districts with intricacies that include senior discounts, coordination with private utility companies, manipulation of data to locate the corresponding APN based on parcel characteristics and calculation of sewer charges. She currently assists the City of La Puente with two sewer service districts, as well as the Cities of Irwindale, Pinole, and Rialto.

District Formations and Annexations – Ms. Hernandez has formed Community Facilities and Landscape Maintenance Districts for various agencies, including the Cities of Covina, Fairfield, Kingsburg, Rialto, Riverbank, Livingston, Lemon Grove, and Moreno Valley; as well as the annexation of parcels to existing districts. Her duties include preparation of the Consent and Waiver forms, petitions, resolutions, Rate and Method of Apportionments, CFD reports, notices and ballots, and notices of special tax liens.

Stacee Reynolds

Senior Project Manager

Education

Master of Science, University of Phoenix

Bachelor of Science, LaSalle University

Areas of Expertise

Benefit/Maintenance Assessment Districts

Community Facilities Districts

Marks-Roos Pools

Local Improvement Districts

Professional Affiliations

California Society of Municipal Finance Officers

Municipal Management Association of Southern California

14 Years' Experience

Ms. Reynolds is a senior project manager in Willdan's District Administration Services group. Her responsibilities include the administration of Community Facilities Districts, Local Improvement Districts, Benefit/Maintenance Assessment Districts, and other special districts. She has experience creating and maintaining district databases, preparing annual assessments, charges and taxes, calculating prepayments, assisting with district analyses for refunding purposes, preparing bond calls, analyzing flow of funds, providing customer service to property owners, and overseeing the GIS team that creates and audits boundaries for new and existing clients.

Ms. Reynolds has over 26 years of combined accounting, finance, and project management experience. Prior to joining Willdan, Ms. Reynolds was a contract system specialist with SAP Public Services in Washington, DC, where she managed several government agency contracts.

Project Experience

City of Paso Robles – Assessment Re-engineering: Ms. Reynolds recently completed the re-engineering of the City's El Paso de Robles Landscape and Lighting Maintenance District No. 1. It was the City's desire to combine shared improvement areas, where feasible, in order to simplify the overall district structure and to develop appropriate assessments for optimal service levels originally planned for all areas in the District. She assisted in the preparation of the benefit assessment analysis, conducted the community outreach meetings, prepared the Engineer's Report, staff reports, resolutions and ballots for the areas designated as underfunded in the District. Upon completion of the project, 40 percent of the underfunded Zones approved the new increased assessment, which included an annual CPI inflator. This was the highest approval percentage in the last ten years for the City's District.

Cities of Indio, Rocklin, Stockton and Tracy: Assisted each city with the refunding of special tax bonds. Work involved the preparation of calculations for the Preliminary Official Statements and Official Statements

City of Santa Clarita – Special District Administration Services: Ms. Reynolds supervises and assists in the daily administration of the City's Community Facilities District, Open Space Preservation District (over 64,000 parcels), Landscape Maintenance District (approximately 50 zones comprised of 88,000 parcels), Streetlight Maintenance Districts (over 57,000 parcels), Drainage Benefit Assessment Districts (2,646 parcels), and Stormwater Pollution Prevention Fee District (over 64,000 parcels). Her duties include the review of the annual Engineer's Reports, resolutions, updated parcel databases, fees and submission of levies to the County of Los Angeles.

Ms. Reynolds has also been part of the Willdan Team tasked with the preparation of a benefit review and analysis of potential modifications to the special districts. The objective of these analyses is to ensure compliance with applicable assessment legislation, Proposition 218 and recent changes to applicable case law.

California Cities of Tracy, Chico, Covina, Loma Linda, and Ridgecrest – Landscaping and Lighting District Annexation Services: Ms. Reynolds assisted these cities with the annexation of new development to the exiting 1972 Act Districts. This includes the review of improvements and services to be funded and the areas/properties to be served to verify the existing special/general benefit nexus and assessment methodology is consistent with current case law.

City of Covina, CA – Lighting District Benefit Analysis Services: Conducted a benefit analysis study for the City's Lighting District No. 1978-79, comprised of over 3,200 parcels.

Pauline Nguyen

Senior Project Analyst

Education

Bachelor of Science, Management Information System, San Jose State University

Bachelor of Science, Finance, San Jose State University

Areas of Expertise

Geographical Information System (GIS) Mapping

Landscaping and Lighting Districts

Benefit Assessment Districts

Community Facilities Districts

11 Years' Experience

Ms. Nguyen serves as a senior project analyst within Willdan's District Administration Services group. She assists in the research and analysis specific to local government financial issues related to the annual administration of special districts, including document data entry and updating, database management, research and report preparation. She also provides general information on questions pertaining to assessment districts and special taxes (such as Mello Roos Pools), as well as the status of property delinquencies.

Ms. Nguyen is also responsible for projects involving the use of Geographical Information System technology (GIS). GIS is utilized to generate maps, shapefiles, boundaries, plot landscaping, lighting, and other public improvements; and create visual aids, tables, and exhibits for special district analyses, memoranda, and reports. In addition, quality control analyses are performed in relation to secured roll data; and by utilizing spatial and attributable data within spreadsheets, data sets, client maps, and shapefiles, existing parcel specifications and improvement data are identified, audited, and verified.

Ms. Nguyen came to Willdan with over 10 years of combined finance and information technology experience. Prior to joining Willdan, she served as an information technology specialist with KeyPoint Credit Union in Santa Clara, California, working with vendors and end users to develop and administer large financial databases.

Project Experience

Los Angeles County Department of Public Works: Ms. Nguyen administers the workflow for the Los Angeles County Department of Public Works. Her duties include maintaining the parcel databases for 37 Landscaping and Lighting Districts associated with several residential and commercial developments throughout the County; and assists in preparing the annual Engineer's Report and levying assessments for over 39,000 parcels, while assuring compliance with Proposition 218.

City of Santa Clarita: Ms. Nguyen assists in the administration of the City's Community Facilities District, Open Space Preservation District (comprised of over 64,000 parcels), Landscape Maintenance District (over 88,000 parcels), Streetlight Maintenance Districts (57,177 parcels), and Benefit Assessment Districts (comprised of 8 districts and 2,646 parcels). Her duties include the review of district budgets, the preparation and update of a parcel database, drafting resolutions, assisting with the preparation of the annual Engineer's Reports, updating and transferring the levy data to the County, and researching exceptions.

City of Compton: Ms. Nguyen administers the City's Landscaping and Lighting District and sewer charges, as well as assists in preparing the annual Engineer's Report, updating parcel changes, and submitting levy charges for over $5 million on nearly 36,000 parcels.

City of Rocklin: Ms. Nguyen assists with the annual administration of the City's Landscaping, Lighting and Park Maintenance Districts. The work for this project entails computation of assessments for each parcel; placement of the assessments on the County Assessor's tax roll; Proposition 218 compliance; verifying parcel data affecting each assessment parcel, including database maintenance and researching parcel changes; and preparing and providing the annual Engineer's Report on over 35,000 parcels.

Jo-Anne Bogias

Analyst

Areas of Expertise

Assessment Districts

Community Facilities Districts

Local Improvement Districts

Community Services Districts

Analyzing District Finances

Redeeming Bonds

Apportionments

Delinquency Management

Municipal Disclosure

Bond Refundings

5 Years' Experience

Ms. Bogias is an analyst within Willdan's DAS group. Community Facilities and Landscaping and Lighting Districts are a few of the areas of her expertise. She assists in the research and analysis required for local government financial issues related to district administration, including document data entry and updating, database management, research, and report preparation.

Ms. Bogias will provide analytical support to the City under the guidance of Ms. Hernandez. Her assigned tasks include: update content within the Engineer's Report, prepare resolutions for the Intent Meeting and Public Hearing, input and update of parcel data, research parcel changes, prepare the parcel database, review charge-exempt parcels, prepare applied reports and provide general information on questions relating to the assessments.

Ms. Bogias came to Willdan possessing over 20 years of combined finance and data analysis experience. Prior to joining Willdan, she served as a cost analyst with General Dynamics NASSCO in San Diego, California, working with new construction and repairs contract departments where she trained employees, and created and maintained work and department procedures. Ms. Bogias also created and implemented Professional Improvement Initiatives, which improved the functionality of cost analysts, estimators and contract administrators, as well as supporting departments. Furthermore, Ms. Bogias has excellent organizational and analytical skills and excels as a trouble-shooter.

Project Experience

Ms. Bogias currently works with the following agencies encompassing various services including 1972 Act Districts, Proposition 218, Community Facilities Districts and Assessment Districts:

Administers citywide landscaping and lighting districts on behalf of:

- City of Arcadia, CA
- City of Artesia, CA
- City of Camarillo, CA
- City of Irwindale, CA

Also, assists with the administration of special districts in:

- City of Covina, CA
- City of El Paso de Robles, CA
- City of Hermosa Beach, CA
- City of Indio, CA
- City of Lafayette, CA
- City of Paramount, CA
- Cucamonga School District; Rancho Cucamonga, CA
- Conejo Recreation & Park District; Thousand Oaks, CA

Chris Fisher

Financial Consulting Services Group Manager

Education

Bachelor of Science, Finance; San Francisco State University

Areas of Expertise

Multi-disciplinary Team Management

Special District Administration, Formation and Annexation

Cost of Services Studies

Proposition 218

Utility Rate Studies

Affiliations

California Society of Municipal Finance Officers

Municipal Management Association of Northern California

California Municipal Treasurers Association

19 Years' Experience

Mr. Fisher is a Vice President and the Group Manager of the Financial Consulting Services group. With 19 years of experience at Willdan, he has managed an array of financial consulting projects for public agencies in California, Arizona, Colorado and Florida, coordinating the activities of resources within Willdan, as well as those from other firms working conjointly on projects. Mr. Fisher is one of Willdan's experts in the formation and administration of various special districts, including bonded and/or maintenance assessment districts and Community Facilities Districts (CFDs).

Project Experience

City of Menifee – CFD Formation for the Town Center Project: In the role of principal-in-charge, Mr. Fisher assisted the City of Menifee with the formation of a CFD related to the Regent Properties/Town Center project. This formation will provide funding for maintenance and services related to stormwater control facilities in an area that is viewed as a key component of the City's future downtown area and its economic development strategy. One of the City's project objectives is to ensure that a revenue stream is established that ensures sufficient funding to provide for public facilities, maintenance and services to serve the new area, with minimal or no impact on the general fund. This CFD funds street sweeping, water quality basin maintenance, park improvements and maintenance, street lighting, and traffic signals. It is anticipated that the CFD will include not only the Town Center project, but also possibly future annexation areas beyond the core project boundary.

City of Moreno Valley, CA – CFD No. 7, Storm Drain and Street Improvements: As project manager, oversaw the formation of a CFD to finance the construction of storm drain and street infrastructure improvements for an industrial/warehouse project in the City. In this role, Mr. Fisher developed the overall project approach to achieve the City's objectives, coordinated Willdan staff activities, and was accountable for quality control and delivery of draft and final work products. He also coordinated with developers and their consultants in gathering data and documentation necessary to complete the analysis and prepared formation documents and reports. Mr. Fisher recently worked with the City to modify the RMA for the CFD, and support the financing team in the issuance of $3.625MM in bonds.

County of San Diego – Special Tax Consulting: Currently serving as Special Tax Consultant for CFDs formed within unincorporated areas of San Diego County. To meet the demands of continued growth within the County, assisted with the formation of CFD 2013-1 (Horse Creek Ridge), and is currently involved with the review of the developer application and initial steps of forming two other separate CFDs to fund services and improvements ranging from flood control maintenance and fire protection services to necessary capital improvements.

City of Chula Vista – Formation of CFDs 16-I (Millenia), 17-I (Western Chula Vista CFD) and 18-M (Otay Ranch Village 3): Assisted the City with three recent CFD formations. The first, CFD 17-I, was formed to allow for the financing of impact fees over an extended period through the payment of a special tax, to facilitate development of non-residential projects in certain areas of the City. This formation was completed in the spring of 2016. The second project, CFD 16-I, was completed to provide funding for the construction of basic infrastructure associated with the Millenia development project in the City. Formation was completed in September 2016. CFD 18-M was formed to provide funding for the maintenance of landscaping, trails, walls and storm water facilities in the Otay Ranch Village 3 development project. For each of these projects, Mr. Fisher worked with City staff in multiple departments and a diverse financing team including the financial advisor, legal counsel, developers and property owners, and developer's consultants.

Mike Medve

Project Manager

Education

Bachelor of Science, Information and Computer Science, Management and Mathematics Minors, Cum Laude, University of California, Irvine

Areas of Expertise

Public Finance

Facility Financing Plans

Special District Formation and Administration

Proposition 218

Fiscal Analysis

Tax Increment Financing

12 Years' Experience

Mr. Mike Medve is a Willdan project manager. He brings 12 years of consulting experience with expertise in public finance, including special district formation and administration, fiscal impact analysis, public facilities financing plans, integrated financing districts, Proposition 218, tax credit financing, state and federal grant and loan programs, sales tax revenue bonds, and infrastructure financing districts. He has served as special tax consultant for the formation of over 50 Community Facilities Districts (CFD), annexations and restructurings. He has also served as project manager for the annual administration of over 50 special districts.

Mr. Medve has been a financing team member for over $150 million in limited obligation bonds and over $50 million in grant funds. He has served as the lead consultant for dozens of clients, both public and private, throughout the country. His broad experience in nearly all aspects of public finance allows him to approach complex projects with confidence and ensure that the client has the information necessary to make informed decisions.

Project Experience

City of Yucaipa – Tax Increment/Special Tax Consulting: Mr. Medve provides consulting services related to the formation of one of the State's first Enhanced Infrastructure Financing Districts (EIFD). The EIFD is a new type of financing mechanism with the ability to combine CFD special taxes and tax increment financing to assist in funding public facilities and infrastructure with a broad public benefit. He is also assisting the City with its Cost Allocation Plan and User Fee update.

City of Murrieta – Special Tax Consulting: Mr. Medve assisted the City of Murrieta with change proceedings related to the existing CFD No. 2005-5 for the Golden Cities project. The CFD was modified to accommodate new sales prices and a new product mix.

City of Roseville – Special Tax Consulting: In 2014, Mr. Medve prepared an Amended Notice of Special Tax Lien for the City's Fiddyment Ranch CFD No. 1 (Facilities) and Fiddyment Ranch CFD No. 2 (Services). The amendment was necessary to reconcile changes in project land use with the special tax revenues that were needed to pay debt service and administration on outstanding infrastructure bonds and fund the annual operations and maintenance of existing facilities. In 2015, Willdan was retained to serve as Special Tax Consultant for the formation of an overlay CFD (Fiddyment Ranch CFD No. 5) that will refund a portion of the CFD No. 1 bonds and pay for additional infrastructure projects associated with the development. Facilities needed include streets, bridges, sewer improvements, storm drains, water infrastructure and landscaping. Willdan has also performed the annual administration for the City's CFDs for over a decade.

City of Laguna Beach – Utility Undergrounding District Formation: Mr. Medve has assisted the City with four undergrounding assessment district formations since 2014. Duties include plan review, site inspection, benefit allocation, producing Engineer's Reports, notices, ballots and other legal documents, and attending Public Hearings/Council meetings. Mr. Medve has innovated new techniques for benefit allocation that are more consistent with the requirements of Proposition 218 as interpreted by the California courts.

City of Newport Beach – Utility Undergrounding District Formation: In 2016, Mr. Medve assisted the City with an underground assessment district ballot proceeding and the coordination of several other undergrounding districts in various stages of development. Duties involved the development of assessment methodologies and Engineer's Reports, plan review, coordination with utility companies, and the tabulation/counting of ballots.

Richard Kopecky, PE

Assessment Engineer

Education

Bachelor of Science, Civil Engineering, University of Illinois

Areas of Expertise

Civil Engineer

Administration Engineering Development, including Drainage, Roads, Sewers, Soils/Geology, and Water

Certification

California Professional Engineer, #16742

41 Years' Experience

Mr. Kopecky, PE, manages engineering, building and safety, and public works departments for several Southern California cities. As a City's designated city engineer, building official and/or public works director, he has directed the full services of these departments, including Assessment Districts, budgets, building and safety plan check and inspection, City engineering, City traffic engineering, Community Development Block Grants, construction management and surveying, development and infrastructure review, disaster response and recovery, fee studies and special district formation, landscape architecture, planning, public works design, and water and wastewater design. He also developed and implemented the capital improvement program on behalf of client agencies as well.

Mr. Kopecky has served as the deputy building official for the City of Santa Clarita; plus, he was the City Engineer for the City of Lancaster for 11 years; the City of Santa Clarita for 3 years; the City of California City for 2 years; the City of Big Bear Lake for 2 years; and the City of Indian Wells for over 7 years.

Mr. Kopecky possesses extensive experience in developing solutions for the problems and challenges experienced by engineering and building and safety departments.

Assessment Engineering Experience

Acting in the capacity of Assessment Engineer and, in many cases, in tandem as civil engineer in both the designing and forming of a multitude of 1913/1915 Act Assessment Districts, Mr. Kopecky's related project experience includes the following.

Metropolitan Water District of Southern California (Standby Fees, Assessment Engineer): Willdan Engineering ("WE") annually assists Willdan Financial Services in administering and placing on the tax roll over 950,000 parcels of MWD's Readiness-To-Serve (RTS) Standby Charge for each of its 26-member agencies. Willdan is also responsible for reviewing requests for exemption from the RTS by property owners and preparing a report on our findings to MWD.

City of Rancho Mirage, CA: Magnolia Assessment District, Magnesia Falls

City of Cathedral City, CA: Dream Homes, East 35th Avenue and Cove Assessment Districts

City of La Quinta, CA: Assessment District No. 2000-2

City of Palm Desert, CA: Section 29 Improvement District, Monterey 170 / Section 29 Drainage Benefit Assessment District (1982 Act)

City of Santa Clarita, CA: Golden Valley Assessment District, Santa Clarita Mall Community Facilities District, Vermont/Everett Road Improvement District, and the Soledad Canyon Road Improvement District

City of Irvine, CA: Stonegate Assessment District, Orchard Hills Assessment District

City of Irvine, CA: Portola Springs and Orchard Hills Improvement Districts, 1913/15 Act Subdivision Improvements

Anaheim Convention Center, CA: Mello-Roos and 1913/15 Acts

2) Keep Professionals Informed

Willdan team members are active members of the American Public Works Association (APWA), California Society of Municipal Finance Officers (CSMFO), California Municipal Treasurers' Association (CMTA), the League of California Cities (LOCC) associations, as well as an industry professional group focused on special taxes and assessments. Willdan staff regularly attends many of the seminars, conferences, and workshops held by these professional groups, in order to stay on top of the many issues faced by local agencies. In addition to these efforts, Willdan works closely with our legislative advocate who represents 50 clients before the California State Legislature and has played a major role over the last 30 years in landmark legislation on behalf of our clients. They assist us with proposed modifications to current legislation that would have a beneficial bearing on the administrative and formation procedures for special assessments and taxes.

The following outlines the impact of new and existing special benefit assessments and special tax case law. Willdan is also currently working with professional organizations in our industry to address the refinement of legislation related to special district financing.

Assessment Case Law

It is important to recognize that the 2008 California Supreme Court decision regarding special benefit assessments (*Silicon Valley Taxpayers Association, Inc. v. the Santa Clara County Open Space Authority*), as well as subsequent Appellate Court decisions regarding assessments (*Town of Tiburon v. Bonander*; *Dahms v. Downtown Pomona PBID*; *Beutz v. County of Riverside*; and *Golden Hill Neighborhood Association, Inc. v. City of San Diego*) had a profound impact on how future assessments are structured, and must be carefully considered for establishing any new assessment being presented to property owners. Even a simple assessment for local improvements requires a more extensive evaluation of general benefit and support of the special benefits findings than may have been necessary in the past.

Willdan has prepared hundreds of Engineer's Reports implementing various assessment methodologies tailored to the specific attributes of the special district. Our firm possesses decades of unmatched experience in defending and implementing levies. ***Most recently, Willdan has conducted benefit analysis studies and assisted agencies with implementation strategies related to identification of special versus general benefit assessment engineering for the Cities of Guadalupe, Lemoore, Moreno Valley, Poway, and Yorba Linda, as well as Orange County Vector Control District and McKinleyville Community Services District.***

Furthermore, Group Manager Chris Fisher and Principal Consultant Jim McGuire have served on several industry working groups, and have spoken at seminars on the subject of assessments and special/general benefit in light of recent court cases and legislation that have come down over the past six to eight years. The working groups are focused on finding workable solutions and approaches that provide a means for public agencies to continue utilizing assessments, while ensuring that they are defensible and in compliance with the court decisions.

It is also important to note that Willdan Financial Services was the Engineer of Record for the Downtown Pomona PBID. The Court supported our approach to the special benefit proportionality documented within the report, as well as the allowance for discounts. Furthermore, an outcome from the Dahms v. Downtown Pomona PBID case was clarification related to the procedural requirements of Proposition 218. The Court upheld that the City can hold the Public Hearing on the 45th day after the mailing of Notice of Public Hearing.

Special Tax Case Law

The recent appellate court decision (*City of San Diego v. Melvin Shapiro*) has raised some concerns regarding the validity of a property owner vote election process for districts with less than 12 registered voters that may affect the formation and use of CFDs going forward. We have been in contact with several legal firms that specialize in district formations and related constitutional provisions to determine the full impact of this court decision and the best course of action moving forward.

3) Recent Turnover

Willdan Financial Services turnover for professional staff in 2017 was 18 percent. We do not anticipate staffing changes during the project, however, should the situation arise, any change in team members will be discussed and approved in concert with the City prior to the change being made.

Additional Statements/Documents

1) Vendor Information

VENDOR INFORMATION

PROPOSER'S COMPANY INFORMATION (print or type)

Company Name: Willdan Financial Services

Owner /Manager Name: Robert C. Fisher

Contact Name: Jim McGuire, Principal Consultant

Mailing Address: 27368 Via Industria, Ste 200

City: Temecula State: CA Zip: 92590

Remit to Address (if different from PO mailing address)

____

City: ______ State: ______ Zip: ______

Web Site: willdan.com/financial

Phone Number: 951-587-3500

E-mail Address: jmcguire@willdan.com

Incorporated? YES (●) or NO ( )

Federal Tax I.D. # or Social # 33-0302345

How many years of relevant experience within the scope of this RFQ? 29 years

I certify that the information given above is accurate and complete; that the Terms and Conditions as issued by the City of Moreno Valley with this Request for Qualifications have been fully read, understood, and accepted in total; and that I am a duly authorized agent for responding purposes for the company named above.

Robert C. Fisher
(Print Responding Person's Name)

Vice President
(Title)

[signature]
(Responding Person's Signature)

March 1, 2018
(Date)

2) References

Provided below and on the page that follows is the completed References form contained within the Request for Qualifications (RFQ). Please note the client references listed below, have also been included in the Organization / 5) References section within this submission, which contains more detailed descriptions.

REFERENCES

List three (3) references that most closely reflect similar projects and work that your company has worked on within the past five (5) years for a Public or Governmental Agency. (**Type or Print**)

1. Name of Public Agency: City of Santa Clarita

Address: 23920 Valencia Boulevard

City: Santa Clarita State: CA Zip: 91355

Contact: Kevin Tonoian Title: Special Districts Manager

Telephone: (661) 286-4027 Email: ktonoian@santa-clarita.com

Service Dates: March 2010 to present

Brief Summary of Project/Work provided:

Willdan provides special district administration and re-engineering services to the City. Also assisted the City with the transition of Landscape Maintenance Districts from the jurisdiction of the County of Los Angeles to the City. The transition required the preparation of a special versus general benefit review and analysis of potential modifications necessary for Proposition 218 compliance and/or the re-engineering of special districts. Also assisted with the annexation of new development to the City's Streetlight Maintenance District and separate Landscape Maintenance District, which includes preparation of the Engineer's Reports, resolutions, and notices and ballots.

2. Name of Public Agency: City of Yorba Linda

Address: 4845 Casa Loma Avenue

City: Yorba Linda State: CA Zip: 92885

Contact: Brad Fowler Title: Interim Public Works Director

Telephone: (714) 961-7170 Email: bfowler@yorba-linda.org

Service Dates: October 2010 to present

Brief Summary of Project/Work provided:

Willdan provides Assessment Engineering Services to the City of Yorba Linda for the annual levy of their Street Lighting and Landscape Maintenance District. Assisted the City with re-engineering the District to establish more localized zones and a true budget for each, identifying appropriate assessment amounts with without triggering increases to the existing assessments, but identifying areas where assessment increases were needed. Worked with the City and an ad-hoc committee over the last two years to ballot the zones that were underfunded based on the re-engineering effort.

3. Name of Public Agency: City of Paso Robles

Address: 625 Riverside Avenue

City: Paso Robles

State: CA

Zip: 93446

Contact: Freda Berman

Title: Maintenance Superintendent Events Manager

Telephone: (805) 237- 3873

Email: fberman@prcity.com

Service Dates: 2005 to present

Brief Summary of Project/Work provided:

Willdan serves as the administrator of the City's special districts, as well as provides assessment engineering services. In fiscal year 2016/2017 Willdan completed the re-engineering of the City's Maintenance District No. 1. It was the City's desire to re-engineer the District based on local improvements, shared improvements, and streetlight only improvements, if feasible in order to simplify the overall district structure and to develop appropriate assessment for optimal service levels originally planned for all areas in the District. Willdan also assisted City staff and their public relations firm with the development of informational pamphlets and landscaping improvement maps that provided the location of improvements for each zone.

4. Name of Public Agency: City of Murrieta

Address: 1 Town Square

City: Murrieta

State: CA

Zip: 92562

Contact: Lea Kolek

Title: Parks and Recreation Manager

Telephone: (951) 304-7275

Email: lkolek@murrietaca.gov

Service Dates: 2003 to present

Brief Summary of Project/Work provided:

Willdan administers approximately 35,000 parcels on behalf of the City of Murrieta, which includes the Community Services District, citywide park tax and CFDs. Willdan has provided as needed formation and annexation services to the City as well.

3) Equal Employment Opportunity

Willdan believes that all persons are entitled to equal employment opportunity and does not discriminate against its employees or applicants because of race, color, religion, sex, sexual orientation, pregnancy, marital status, national origin, citizenship, veteran status, ancestry, age, physical or mental disability, or medical condition, or any other consideration made unlawful by applicable laws. Equal employment opportunity is extended to all persons in all aspects of the employer-employee relationship, including recruitment, hiring, upgrading, training, promotion, transfers, discipline, layoff, recall, and termination.

4) Adherence to Governmental Regulations

Willdan will adhere to federal laws and regulations notwithstanding any state or local laws and regulations. In case of conflict between federal, state, or local laws or regulations, the strictest shall be adhered to.

5) Non-Collusion Affadavit

NON-COLLUSION AFFIDAVIT

STATE OF CALIFORNIA)
) SS
COUNTY OF)

(NAME) Robert C. Fisher, affiant being first duly sworn, deposes and says:

That he or she is Vice President of
(sole owner, partner or other proper title)
Willdan Financial Services the party making the foregoing Proposal
(Contractor)
that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the Contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company associations, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid (Public Contract Code Section 7106).

Proposer's Name: Robert C. Fisher
(print)

Proposer's Address: 27368 Via Industria, Suite 200, Temecula, CA 92590
(print)

Telephone No.: 951-587-3500

______________________ Vice President
(Signature of Proposer) (Title)

6) Affidavit of Non-Conviction

AFFIDAVIT OF NON-CONVICTION

I hereby affirm that:
I am the Vice President and the duly authorized
(Title)
Representative of the firm of: Willdan Financial Services
(Name of Corporation)
Whose address is: 27368 Via Industria, Ste 200 Temecula, CA 92590

And that
I possess the legal authority to make this affidavit on behalf of myself and the firm for which I am acting.

Except as described in paragraph 3 below, neither I nor the above firm, nor to the best of my knowledge, and of its officers, directors, or partners, or any of its employees directory involved in obtaining Contracts with the City have been convicted of, or have plead nolo contendere to a charge of, or having during the course of an official investigation or other proceeding admitted in writing or under oath acts or omissions which constitute bribery, attempted bribery, or conspiracy to bride under the laws of any State of the Federal government (conduct prior to July 1, 1977 is not required to be reported).

State "none" or, as appropriate, list any convection, plea or admission described in paragraph two above, with the data, court, official, or administrative body; the individuals involved and their position with the firm, and sentence or disposition, if any.

I acknowledge that this affidavit is required to allow the City to make a determination. I acknowledge that, if the representations set forth in the affidavit are not true and correct, the City may terminate ant Contract awarded and may take any other action.

I do solemnly declare and affirm under the penalties of perjury that the contents of this affidavit are true and correct.

Signature: Date: March 1, 2018

Printed Name Robert C. Fisher Title: Vice President

Name of Firm Willdan Financial Services

Exceptions

Willdan's attorney of record has reviewed the Special Districts Consulting Services, As Needed Basis, Request for Qualifications, including the sample Agreement for On-site and/or Professional Services, and we kindly request the City's consideration of the exceptions denoted below.

Request for Qualifications

IX. INDEMNIFICATION

A. Contractor shall indemnify, defend and hold the City, the Moreno Valley Housing Authority, and the Moreno Valley Community Services District (CSD), their officers, agents and employees harmless from any and all claims, damages, losses, causes of action and demands, including, without limitation, the payment of all consequential damages, expert witness fees, reasonable attorney's fees and other related costs and expenses, incurred in connection with or in any manner **and to the extent of** arising out of Contractor's **negligence or other wrongful conduct in the** performance of the work contemplated by this Agreement and this Agreement. Acceptance of this Agreement signifies that the Contractor is not covered under the City's general liability insurance, employee benefits, or worker's compensation. It further establishes that the Contractor shall be fully responsible for such coverage. Contractor's obligation to indemnify shall survive expiration or termination of this Agreement, and shall not be restricted to insurance proceeds, if any, received by the City, the Moreno Valley Housing Authority, and the CSD, and their officers, agents and employees.

B. Contractor shall defend, with counsel ~~of City's choosing and~~ **reasonably approved by City** at Contractor's own cost, expense and risk, any and all claims, suits, actions or other proceedings of every kind covered by Section "J" that may be brought or instituted against City, the Moreno Valley Housing Authority, and the CSD, and their officers, agents and employees **except in the case of the active negligence, sole negligence or willful misconduct of City**. Contractor shall pay and satisfy any judgment, award or decree that may be rendered against City, the Moreno Valley Housing Authority, and the CSD, and their officers, agents and employees **in proportion to Contractor's share of fault** as part of any such claim, suit, action or other proceeding. Contractor shall also reimburse City for the cost of any settlement paid by City, the Moreno Valley Housing Authority, and the CSD, and their officers, agents and employees as part of any such claim, suit, action or other proceeding **in proportion to Contractor's share of fault**. Such reimbursement shall include payment for City's attorney's fees and costs, including expert witness fees. Contractor shall reimburse City, the Moreno Valley Housing Authority, and the CSD, and their officers, agents and employees for any and all legal expenses and costs incurred by each of them in connection therewith or in enforcing the indemnity herein provided.

Sample Agreement for On-site and/or Professional Services

3. Standard Terms and Conditions

H. Legal Considerations. The Contractor shall comply with applicable federal, state, and local laws in the performance of this Agreement. Contractor shall be liable for ~~all~~ **Contractor's** violations of such laws and regulations in connection with services. If the Contractor performs any work knowing it to be contrary to such laws, rules and regulations and without giving written notice to the City, Contractor shall be solely responsible for all costs arising therefrom. Contractor shall defend, indemnify and hold City, its officials, directors, officers, employees and agents free and harmless, pursuant to the indemnification provisions of this Agreement, from any claim or liability arising out of **and to the extent of** any failure ~~or alleged failure~~ **of Contractor** to comply with such laws, rules or regulations.

J. Contractor Indemnification. Contractor shall indemnify, defend and hold the City, the Moreno Valley Housing Authority, and the Moreno Valley Community Services District (CSD), their officers, agents and employees harmless from any and all claims, damages, losses, causes of action and demands, including, without limitation, the payment of all consequential damages, expert witness fees, reasonable attorney's fees and other related costs and expenses, incurred in connection with ~~or~~ **and** in any manner **and to the extent** arising out of Contractor's **negligence or other wrongful conduct in its** performance of the work contemplated by this Agreement ~~and this Agreement~~. Acceptance of this Agreement signifies that the Contractor is not covered under the City's general liability insurance, employee benefits, or worker's compensation. It further establishes that the Contractor shall be fully responsible for such coverage. Contractor's obligation to indemnify shall survive expiration or termination of this Agreement, and shall not be restricted to insurance proceeds, if any, received by the City, the Moreno Valley Housing Authority, and the CSD, and their officers, agents and employees.

K. Additional Indemnity Obligations. Contractor shall defend, with counsel ~~of City's choosing~~ **with City's reasonable approval** and at Contractor's own cost, expense and risk, any and all claims, suits, actions or other proceedings of every kind covered by Section "J" that may be brought or instituted against City, the Moreno Valley Housing Authority, and the CSD, and their officers, agents and employees. Contractor shall pay and satisfy any judgment, award or decree that may be rendered against City, the Moreno Valley Housing Authority, and the CSD, and their officers, agents and employees as part of any such claim, suit, action or other proceeding**, except if the claim arises from City's sole negligence, active negligence or willful misconduct**. Contractor shall also reimburse City for the cost of any settlement paid by City, the Moreno Valley Housing Authority, and the CSD, and their officers, agents and employees as part of any such claim, suit, action or other proceeding. Such reimbursement shall include payment for City's attorney's fees and costs, including expert witness fees**, in proportion to Contractor's share of fault**. Contractor shall reimburse City, the Moreno Valley Housing Authority, and the CSD, and their officers, agents and employees for any and all legal expenses and costs incurred by each of them in connection therewith or in enforcing the indemnity herein provided**, in proportion to Contractor's share of fault**.

WILLDAN

27368 Via Industria, Suite 200
Temecula, California 92590-4856
T 800.755.6864 951.587.3500 | F 951.587.3510

www.willdan.com

Candace Cassel

From: Joanie Reynolds <jreynolds@willdan.com>
Sent: Thursday, July 19, 2018 10:36 AM
To: Candace Cassel
Cc: Jim McGuire; Susana Hernandez
Subject: Revised Exception Page for WFS Special Districts SOQ
Attachments: Moreno Valley Special District Consulting SOQ REVISED Exception Pg_7-19-18.pdf

Candace,
Per our conversation on Monday, our legal counsel has approved the removal of the struck through language within "H. Legal Considerations." Attached is the revised page 27 of the SOQ for the City's use.

Please let me know how I can be of further assistance in regard to the contract process. Thanks!

Joanie Reynolds
Proposal Services Supervisor

Willdan Financial Services
Comprehensive. Innovative. Trusted.
27368 Via Industria, Suite 200
Temecula, California 92590
T. 951.587.3500 / Direct: 951.587.3586
F. 951.587.3510

Exceptions

Willdan's attorney of record has reviewed the Special Districts Consulting Services, As Needed Basis, Request for Qualifications, including the sample Agreement for On-site and/or Professional Services, and we kindly request the City's consideration of the exceptions denoted below.

Request for Qualifications

IX. INDEMNIFICATION

A. Contractor shall indemnify, defend and hold the City, the Moreno Valley Housing Authority, and the Moreno Valley Community Services District (CSD), their officers, agents and employees harmless from any and all claims, damages, losses, causes of action and demands, including, without limitation, the payment of all consequential damages, expert witness fees, reasonable attorney's fees and other related costs and expenses, incurred in connection with or in any manner **and to the extent of** arising out of Contractor's **negligence or other wrongful conduct in the** performance of the work contemplated by this Agreement and this Agreement. Acceptance of this Agreement signifies that the Contractor is not covered under the City's general liability insurance, employee benefits, or worker's compensation. It further establishes that the Contractor shall be fully responsible for such coverage. Contractor's obligation to indemnify shall survive expiration or termination of this Agreement, and shall not be restricted to insurance proceeds, if any, received by the City, the Moreno Valley Housing Authority, and the CSD, and their officers, agents and employees.

B. Contractor shall defend, with counsel ~~of City's choosing and~~ **reasonably approved by City** at Contractor's own cost, expense and risk, any and all claims, suits, actions or other proceedings of every kind covered by Section "J" that may be brought or instituted against City, the Moreno Valley Housing Authority, and the CSD, and their officers, agents and employees **except in the case of the active negligence, sole negligence or willful misconduct of City**. Contractor shall pay and satisfy any judgment, award or decree that may be rendered against City, the Moreno Valley Housing Authority, and the CSD, and their officers, agents and employees **in proportion to Contractor's share of fault** as part of any such claim, suit, action or other proceeding. Contractor shall also reimburse City for the cost of any settlement paid by City, the Moreno Valley Housing Authority, and the CSD, and their officers, agents and employees as part of any such claim, suit, action or other proceeding **in proportion to Contractor's share of fault**. Such reimbursement shall include payment for City's attorney's fees and costs, including expert witness fees. Contractor shall reimburse City, the Moreno Valley Housing Authority, and the CSD, and their officers, agents and employees for any and all legal expenses and costs incurred by each of them in connection therewith or in enforcing the indemnity herein provided.

Sample Agreement for On-site and/or Professional Services

3. Standard Terms and Conditions

H. <u>Legal Considerations.</u> The Contractor shall comply with applicable federal, state, and local laws in the performance of this Agreement. Contractor shall be liable for all **Contractor's** violations of such laws and regulations in connection with services. If the Contractor performs any work knowing it to be contrary to such laws, rules and regulations and without giving written notice to the City, Contractor shall be solely responsible for all costs arising therefrom. Contractor shall defend, indemnify and hold City, its officials, directors, officers, employees and agents free and harmless, pursuant to the indemnification provisions of this Agreement, from any claim or liability arising out of **and to the extent of** any failure or alleged failure **of Contractor** to comply with such laws, rules or regulations.

J. <u>Contractor Indemnification.</u> Contractor shall indemnify, defend and hold the City, the Moreno Valley Housing Authority, and the Moreno Valley Community Services District (CSD), their officers, agents and employees harmless from any and all claims, damages, losses, causes of action and demands, including, without limitation, the payment of all consequential damages, expert witness fees, reasonable attorney's fees and other related costs and expenses, incurred in connection with ~~or~~ **and** in any manner **and to the extent** arising out of Contractor's **negligence or other wrongful conduct in its** performance of the work contemplated by this Agreement ~~and this Agreement~~. Acceptance of this Agreement signifies that the Contractor is not covered under the City's general liability insurance,

EXHIBIT C

CITY - SERVICES TO BE PROVIDED

TO CONSULTANT

1. Furnish the Consultant all in-house data which is pertinent to services to be performed by the Consultant and which is within the custody or control of the City, including, but not limited to, copies of record and off-record maps and other record and off-record property data, right-of-way maps and other right-of-way data, pending or proposed subject property land division and development application data, all newly developed and pertinent design and project specification data, and such other pertinent data which may become available to the City.
2. Provide timely review, processing, and reasonably expeditious approval of all submittals by the Consultant.
3. Provide timely City staff liaison with the Consultant when requested and when reasonably needed.

EXHIBIT D

TERMS OF PAYMENT

1. The Consultant's compensation shall not exceed $150,000.
2. The Consultant will obtain, and keep current during the term of this Agreement, the required City of Moreno Valley business license. Proof of a current City of Moreno Valley business license will be required prior to any payments by the City. Any invoice not paid because the proof of a current City of Moreno Valley business license has not been provided will not incur any fees, late charges, or other penalties. Complete instructions for obtaining a City of Moreno Valley business license are located at: http://www.moval.org/do_biz/biz-license.shtml
3. The Consultant will electronically submit an invoice to the City once a month for progress payments along with documentation evidencing services completed to date. The progress payment is based on actual time and materials expended in furnishing authorized professional services during the preceding calendar month. At no time will the City pay for more services than have been satisfactorily completed and the City Engineer's determination of the amount due for any progress payment shall be final. The consultant will submit all original invoices to Accounts Payable staff at AccountsPayable@moval.org

   Accounts Payable questions can be directed to (951) 413-3073.

   Copies of invoices shall be submitted to the Special Districts Division at specialdistricts@moval.org or calls directed to (951) 413-3480.
4. The Consultant agrees that City payments will be received via Automated Clearing House (ACH) Direct Deposit and that the required ACH Authorization form will be completed prior to any payments by the City. Any invoice not paid

because the completed ACH Authorization Form has not been provided will not incur any fees, late charges, or other penalties. The ACH Authorization Form is located at:

http://www.moval.org/city_hall/forms.shtml#bf

5. The minimum information required on all invoices is:

   A. Vendor Name, Mailing Address, and Phone Number
   B. Invoice Date
   C. Vendor Invoice Number
   D. City-provided Reference Number (e.g. Project, Activity)
   E. Detailed work hours by class title (e.g. Manager, Technician, or Specialist), services performed and rates, explicit portion of a contract amount, or detailed billing information that is sufficient to justify the invoice amount; single, lump amounts without detail are not acceptable.

6. The City shall pay the Consultant for all invoiced, authorized professional services within thirty (30) days of receipt of the invoice for same.

EXHIBIT E

INSURANCE REQUIREMENTS

Minimum Scope of Insurance

Coverage shall be at least as broad as:

1. The most current version of Insurance Services Office (ISO) Commercial General Liability Coverage Form CG 00 01, which shall include insurance for "bodily injury," "property damage" and "personal and advertising injury" with coverage for premises and operations, products and completed operations, and contractual liability.

2. The most current version of Insurance Service Office (ISO) Business Auto Coverage Form CA 00 01, which shall include coverage for all owned, hired, and non-owned automobiles or other licensed vehicles (Code 1- Any Auto).

3. Workers' Compensation insurance as required by the California Labor Code and Employer's Liability Insurance.

4. Professional Liability (Errors and Omissions) insurance appropriate to Consultant's profession.

Minimum Limits of Insurance

Consultant shall maintain limits of liability of not less than:

1. General Liability:

   $1,000,000 per occurrence for bodily injury and property damage
   $1,000,000 per occurrence for personal and advertising injury
   $2,000,000 aggregate for products and completed operations
   $2,000,000 general aggregate

2. Automobile Liability:

   $1,000,000 per accident for bodily injury and property damage

3. Employer's Liability:

   $1,000,000 each accident for bodily injury
   $1,000,000 disease each employee
   $1,000,000 disease policy limit

4. Professional Liability (Errors and Omissions):

$1,000,000 per claim/occurrence
$2,000,000 policy aggregate

Umbrella or Excess Insurance

In the event Consultant purchases an Umbrella or Excess insurance policy(ies) to meet the "Minimum Limits of Insurance," this insurance policy(ies) shall "follow form" and afford no less coverage than the primary insurance policy(ies).

Deductibles and Self-Insured Retentions

Consultant shall be responsible for payment of any deductibles contained in any insurance policy(ies) required hereunder and Consultant shall also be responsible for payment of any self-insured retentions. Any deductibles or self-insured retentions must be declared to, and approved by, the City Manager or his/her designee. At the option of the City Manager or his/her designee, either (i) the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects City, CSD, Housing Authority and each of their officers, officials, employees, agents and volunteers; or (ii) Consultant shall provide a financial guarantee, satisfactory to the City Manager or his/her designee, guaranteeing payment of losses and related investigations, claim administration and defense expenses. At no time shall City be responsible for the payment of any deductibles or self-insured retentions.

Other Insurance Provisions

The General Liability and Automobile Liability insurance policies are to contain, or be endorsed to contain, the following provisions:

1. City, CSD, Housing Authority and each of their officers, officials, employees, agents and volunteers are to be covered as additional insureds.

2. The coverage shall contain no special limitations on the scope of protection afforded to City, CSD, Housing Authority and each of their officers, officials, employees, agents and volunteers.

3. Consultant's insurance coverage shall be primary and no contribution shall be required of City.

The Workers' Compensation insurance policy is to contain, or be endorsed to contain, the following provision: Consultant and its insurer shall waive any right of subrogation against City, CSD, Housing Authority and each of their officers, officials, employees, agents and volunteers.

If the Professional Liability (Errors and Omissions) insurance policy is written on a claims-made form:

1. The retroactive date must be shown, and must be before the effective date of the Agreement or the commencement of work by Consultant.
2. Insurance must be maintained and evidence of insurance must be provided for at least 3 years after any expiration or termination of the Agreement or, in the alternative, the policy shall be endorsed to provide not less than a 3-year discovery period.
3. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a retroactive date prior to the effective date of the Agreement or the commencement of work by Consultant, Consultant must purchase extended reporting coverage for a minimum of 3 years following the expiration or termination of the Agreement.
4. A copy of the claims reporting requirements must be submitted to City for review.
5. These requirements shall survive expiration or termination of the Agreement.

All policies of insurance required hereunder shall be endorsed to provide that the coverage shall not be cancelled, non-renewed, reduced in coverage or in limits except after 30 calendar day written notice by certified mail, return receipt requested, has been given to City. Upon issuance by the insurer, broker, or agent of a notice of cancellation, non-renewal, or reduction in coverage or in limits, Consultant shall furnish City with a new certificate and applicable endorsements for such policy(ies). In the event any policy is due to expire during the work to be performed for City, Consultant shall provide a new certificate, and applicable endorsements, evidencing renewal of such policy not less than 15 calendar days prior to the expiration date of the expiring policy.

Acceptability of Insurers

All policies of insurance required hereunder shall be placed with an insurance company(ies) admitted by the California Insurance Commissioner to do business in the State of California and rated not less than “A-VII” in Best’s Insurance Rating Guide; or authorized by the City Manager or his/her designee.

Verification of Coverage

Consultant shall furnish City with all certificate(s) and **applicable endorsements** effecting coverage required hereunder. All certificates and **applicable endorsements** are to be received and approved by the City Manager or his/her designee prior to City's execution of the Agreement and before work commences.

Report to City Council

TO:	Mayor and City Council
FROM:	Michael L. Wolfe, P.E., Public Works Director/City Engineer
AGENDA DATE:	September 4, 2018
TITLE:	PA13-0063 – MODULAR LOGISTICS CENTER - ADOPTION OF THE PROPOSED RESOLUTION FOR THE SUMMARY VACATION OF A PORTION OF EDWIN ROAD LOCATED ON THE SOUTH SIDE OF EDWIN ROAD WEST OF KITCHING STREET. DEVELOPER: 17350 PERRIS BOULEVARD, LLC

RECOMMENDED ACTION

Recommendations:

1. Adopt Resolution No. 2018-XX. A Resolution of the City Council of the City of Moreno Valley, California, Ordering the Summary Vacation of a Portion of Edwin Road Located on the South Side of Edwin Road West of Kitching Street.

2. Direct the City Clerk to certify said resolution and transmit a copy of the resolution to the County Recorder's office for recording.

SUMMARY

This report recommends adoption of the proposed resolution for the summary vacation of a portion of the south side of Edwin Road west of Kitching Street. The project's Conditions of Approval for PA13-0063 require the vacation of a portion of Edwin Road for the construction of the proposed 1,109,378 square foot warehouse. The project site is located at the southwest corner of Kitching Street and Edwin Road.

DISCUSSION

Land Development staff reviewed the developer's request for a summary vacation of a portion of the cul-de-sac on Edwin Road located west of Kitching Street. The cul-de-sac on Edwin Road was originally granted by an easement recorded July 6, 2001 as Document No. 2001-309349 (Attachment 3) for a perpetual easement and right of way for public highway purposes, including public utility and public service facilities. In 2013, two Offers of Dedications were recorded which extended Edwin Road further west with an offset cul-de-sac (Attachment 4). As a result, the southerly portion of the cul-de-sac from the original Offer of Dedication that was accepted per Doc. No. 2001-309349 is no longer needed and therefore can be vacated for the construction of this project.

The City Council's approval to summarily vacate this portion of Edwin Road would abandon all of the City's rights for public highway purposes, including public utility and public service facilities, under the original easement which has been superseded by the new easement.

The provisions of Division 9, Part 3, Chapter 4 of the Streets and Highways Code of the State of California, designated the "Public Streets, Highways, and Service Easements Vacation Law" allows the City to summarily vacate said easement. Section 8330 allows for summary vacation on a street that has been superseded by relocation.

ALTERNATIVES

1. Approve the recommended actions as presented in this staff report. *Staff recommends this alternative as a portion of this easement is no longer needed and has been superseded by relocation of the necessary right-of-way.*

2. Do not approve the recommended actions as presented in this staff report. *Staff does not recommend this alternative as a portion of this easement would unnecessarily remain as an easement for public road purposes and delay the development project.*

FISCAL IMPACT

No fiscal impact is anticipated.

NOTIFICATION

Written notice has been given to the various utility companies. The public has been notified by publication of agenda.

PREPARATION OF STAFF REPORT

Prepared By:
Hoang Nguyen, P.E.
Associate Engineer

Department Head Approval:
Michael L. Wolfe, P.E.
Public Works Director/City Engineer

Concurred By:
Michael D. Lloyd, P.E.
Engineering Division Manager/Assistant City Engineer

CITY COUNCIL GOALS

Public Facilities and Capital Projects. Ensure that needed public facilities, roadway improvements, and other infrastructure improvements are constructed and maintained.

CITY COUNCIL STRATEGIC PRIORITIES

1. **Economic Development**
2. **Public Safety**
3. **Library**
4. **Infrastructure**
5. **Beautification, Community Engagement, and Quality of Life**
6. **Youth Programs**

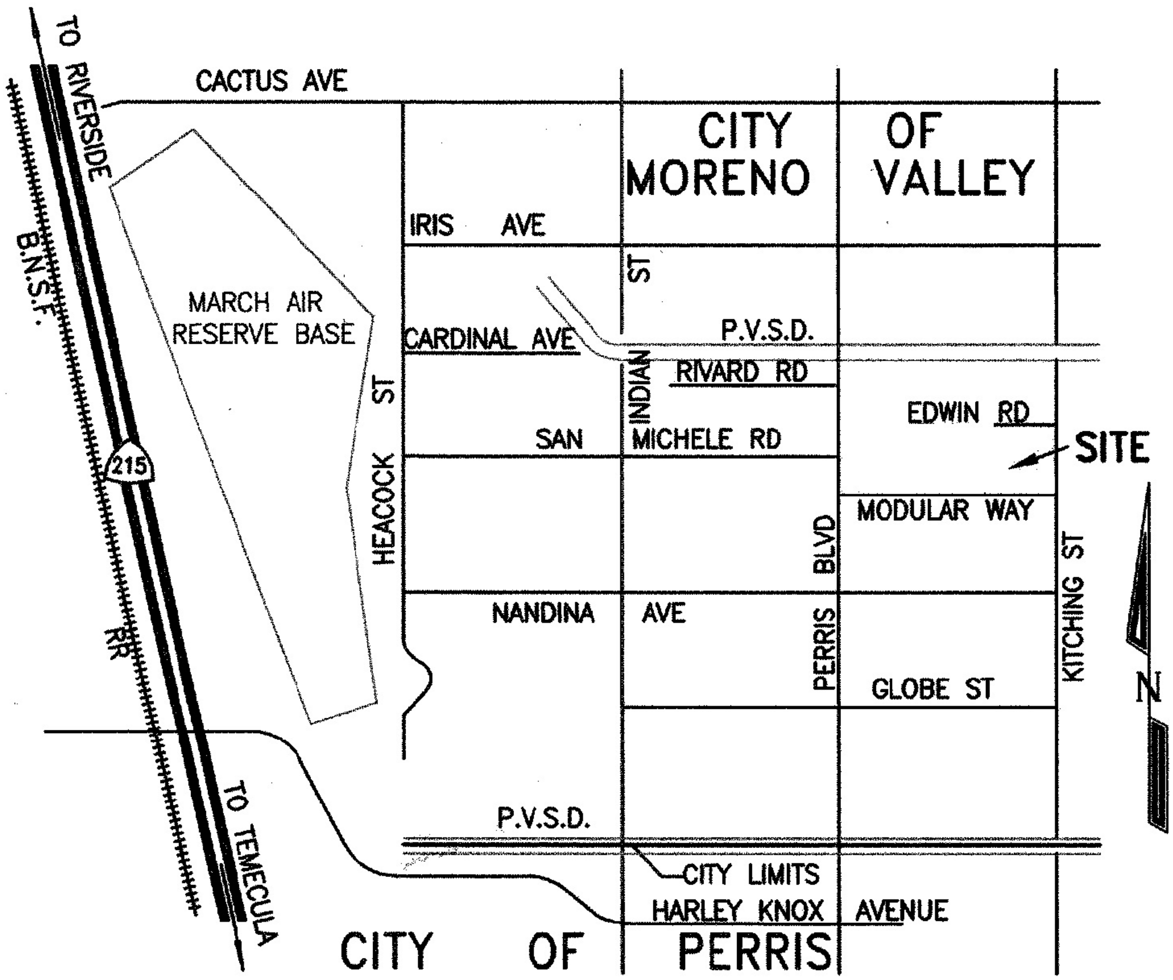
Objective 4.2: Develop and maintain a comprehensive Infrastructure Plan to invest in and deliver City infrastructure.

ATTACHMENTS

1. Vicinity Map - PA13-0063
2. Resolution 2018-XX - PA13-0063 Summary Vacation
3. Easement Document No. 2001-309349
4. Accepted Offers of Dedications Doc Nos. 2013-0568239 & 2013-0568240

APPROVALS

Budget Officer Approval	✓ Approved	8/24/18 3:00 PM
City Attorney Approval	✓ Approved	8/27/18 9:05 AM
City Manager Approval	✓ Approved	8/27/18 11:54 AM



VICINITY MAP

NOT TO SCALE

CITY OF MORENO VALLEY PUBLIC WORKS DEPARTMENT - LAND DEVELOPMENT	PA13-0063

RESOLUTION NO. 2018-XX

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, ORDERING THE SUMMARY VACATION OF A PORTION OF EDWIN ROAD LOCATED ON THE SOUTH SIDE OF EDWIN ROAD WEST OF KITCHING STREET

WHEREAS, the City Council of the City of Moreno Valley, California, acquired a perpetual easement and right-of-way for public highway purposes, including public utility and public service facilities, located on the south side of Edwin Road west of Kitching Street as described in that certain Document No. 2001-309349 of Official Records in the County of Riverside; and

WHEREAS, a portion of this right-of-way has been superseded by relocation of the public highway and no longer, nor in the future will be, useful for public highway purposes.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, DOES HEREBY RESOLVE AS FOLLOWS:

Section 1

That pursuant to the provisions of Chapter 4, Part 3, of Division 9 of the Streets and Highways Code of the State of California, designated the “Public Streets, Highways and Service Easements Vacation Law,” the following described portion of right-of-way is summarily vacated and abandoned:

That said portion of Edwin Road as described and illustrated on the plat, attached hereto and made a part hereof, marked as Exhibits “A” and “B”.

Section 2

That pursuant to the provisions of Sections 831 of Title 3 and 1112 of Title 4, Part 2, Division 2 of the California Civil Code of the State of California, title to the above-described portion of land reverts to the owners of the underlying fee thereof, free from use as an easement for public highway purposes.

Section 3

That this summary vacation is made based upon the fact that the right-of-way has been superseded by relocation of the street and is no longer needed for street purposes. That from and after the date the resolution is recorded, the easement vacated no longer constitutes a street or public service easement.

Section 4

That the City Clerk of the City of Moreno Valley, California, shall cause a certified copy of this Resolution to be recorded in the office of the Recorder for the County of Riverside, California.

APPROVED AND ADOPTED this 4th day of September 2018.

____
Mayor of the City of Moreno Valley

ATTEST:

____
City Clerk

APPROVED AS TO FORM:

______________________________ City Attorney

RESOLUTION JURAT

STATE OF CALIFORNIA)

COUNTY OF RIVERSIDE) ss.

CITY OF MORENO VALLEY)

I, Pat Jacquez-Nares, City Clerk of the City of Moreno Valley, California, do hereby certify that Resolution No. 2018-XX was duly and regularly adopted by the City Council of the City of Moreno Valley at a regular meeting thereof held on the 4th day of September, 2018 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

(Council Members, Mayor Pro Tem and Mayor)

____

CITY CLERK

(SEAL)

EXHIBIT "A"

EXHIBIT "A" – LEGAL DESCRIPTION
RIGHT OF WAY VACATION

Those portions of Lot Line Adjustment No. 1040 and Certificate of Compliance recorded October 20, 2016 as Document No. 2016-0460784 , Official Records of Riverside County, California, together with a portion of Edwin Road, conveyed to the City of Moreno Valley by Easement Deed recorded July 6, 2001 as Document No. 2001-309349, Official Records of Riverside County, California, lying in the northwest quarter of Section 32, Township 3 South, Range 3 West, San Bernardino Meridian, in the City of Moreno Valley, Riverside County, California, said portion being described as follows:

BEGINNING at the most easterly intersection of the southerly line of said Easement Deed parcel with a line that is parallel with and distant southerly 39.00 feet measured at a right angle from the centerline of Edwin Road (30.00 feet half width) as shown on Exhibit "B" of said Easement Deed, said intersection being the beginning of a non-tangent curve concave southeasterly, having a radius of 109.00 feet, the radial line from said point bears North 22°40'29" West;

Thence southwesterly along said curve and said southerly line, to the left, through a central angle of 05°18'10", an arc distance of 10.09 feet;

Thence South 62°01'21" West continuing along said southerly line, a distance of 50.00 feet, to the beginning of a tangent curve, concave to the north, having a radius of 52.00 feet;

Thence southwesterly and northwesterly along said southerly line and along said curve, to the right, through a central angle of 94°56'52", an arc distance of 86.17 feet to a point on a line that is parallel with and distant southerly 43.00 feet, measured at a right angle to said centerline of Edwin Road;

Thence South 89°10'25" East along said parallel line, a distance of 7.15 feet;

Thence North 45°49'35" East, a distance of 5.66 feet to a point on said parallel line that is parallel with and distant southerly 39.00 feet, measured at a right angle to said centerline of Edwin Road;

Thence South 89°10'25" East, along said parallel line, a distance of 114.33 feet, to the **POINT OF BEGINNING.**

Containing 2780 square feet, more or less.

SEE PLAT ATTACHED HERETO AS EXHIBIT "B" AND MADE A PART HEREOF.

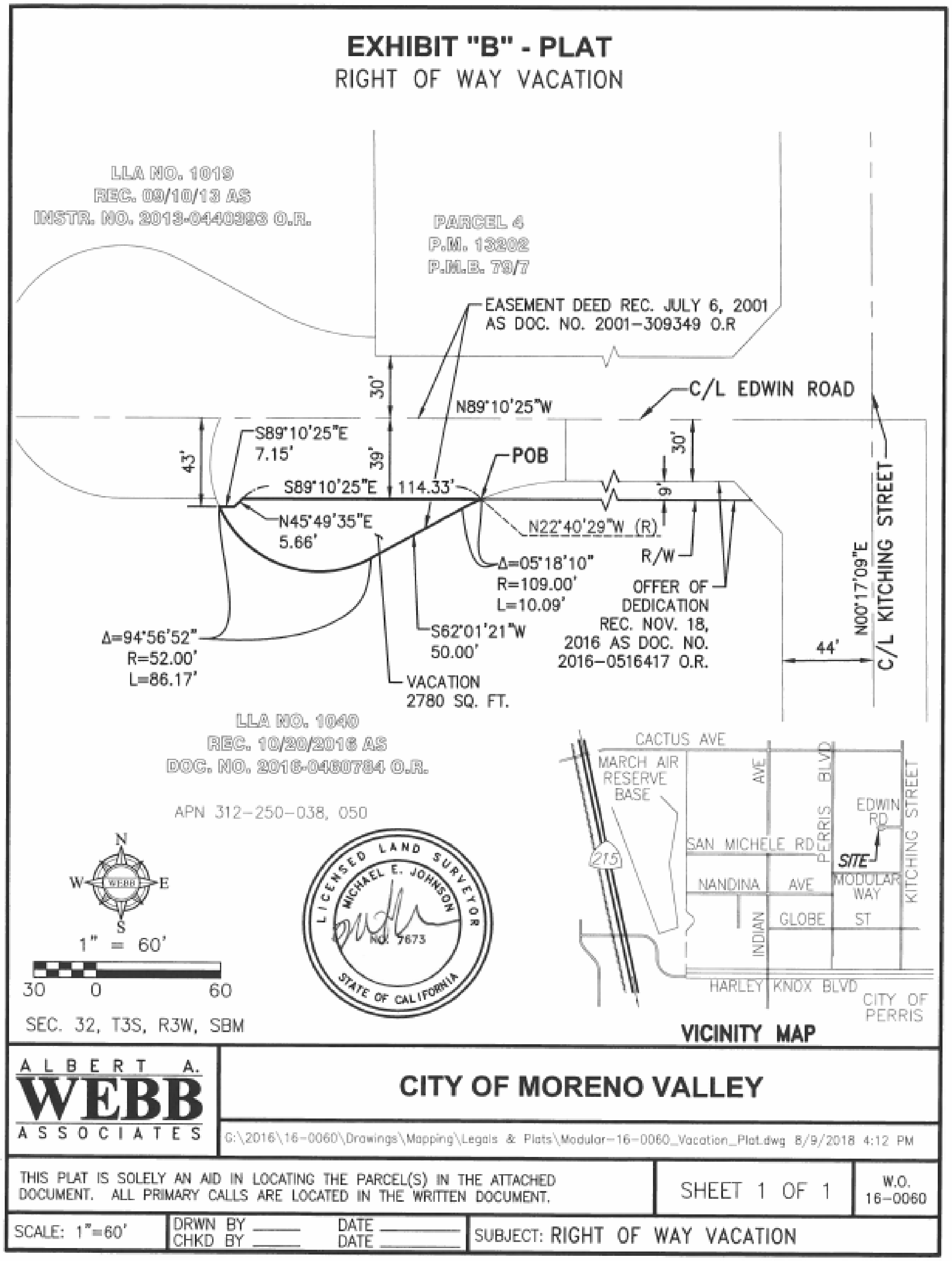
PREPARED UNDER MY SUPERVISION

Michael E. Johnson, L.S. 7673   11/9/16 Date

LICENSED LAND SURVEYOR MICHAEL E. JOHNSON NO. 7673 STATE OF CALIFORNIA

Prepared By: MJ
Checked By: MJ

Resolution No. 2018-XX
Date Adopted: September 4, 2018



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Resolution No. 2018-XX
Date Adopted: September 4, 2018

DOC # 2001-309349
07/06/2001 08:00A Fee:NC
Page 1 of 3
Recorded in Official Records
County of Riverside
Gary L. Orso
Assessor, County Clerk & Recorder

RECORDING REQUESTED BY AND WHEN RECORDED MAIL TO:

CITY CLERK
City of Moreno Valley
P.O. Box 88005
Moreno Valley, CA 92552-0805

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TRA: ________

Exempt from Recording Fee per
Govt. Code Sec. 6103
City of Moreno Valley
By:
APN: 312-250-012 + 013

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LC

EASEMENT DEED

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

KOTHLOW MORENO VALLEY LLC

GRANTOR(s) hereby **grant(s) and convey(s) to the CITY OF MORENO VALLEY**, a municipal corporation, a perpetual easement and right of way for public highway purposes, including public utility and public service facilities over, under, upon, and across, and within the real property in the City of Moreno Valley, County of Riverside, State of California, described as follows:

AS PER EXHIBIT "A", ATTACHED HERETO AND MADE A PART OF THIS EASEMENT DEED

All as illustrated on the plat attached hereto and marked Exhibit "B". IN WITNESS WHEREOF, this instrument has been executed this 25th day of June, 2001.

State of California }
County of Riverside }S.S.
On June 25, 2001 before me, Vicky Nicula, a notary public, personally appeared Mary Emanuelli personally known to me/or proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her authorized capacity, and that by her signature on this instrument the person or entity upon which the person acted, executed the instrument.

WITNESS my hand and official seal.

Vicky Nicula

KOTHLOW MORENO VALLEY LLC

Signature: Mary Emanuelli
By: Mary Emanuelli
Manager

V. NICULA
Commission # 1226453
Notary Public - California
Riverside County
My Comm. Expires Jun 27, 2003

(This area for official notarial seal)

EXHIBIT "A"

DEDICATION

Being a portion of Parcel 3 of Parcel Map No. 9314, as shown by map on file in Book 58 at page 27 thereof, Records of Riverside County, California, together with those portions of Parcels 2 and 3 of that property described in Lot Line Adjustment No. 9041 recorded June 15, 2001, as Instrument No. 270572, Official Records of Riverside County, California, located in the City of Moreno Valley, Riverside County, California, described as follows:

COMMENCING at the centerline intersection of Kitching Street (44.00 feet in half width) and Edwin Road (30.00 feet in half width), as shown on said Parcel Map No. 9314;

Thence South 89°51'28" West along said centerline of Edwin Road, a distance of 563.60 feet to the **POINT OF BEGINNING**;

Thence South 00°08'32" East, a distance of 30.00 feet to a point on the southerly right of way line of said Edwin Road, said point also being the beginning of a non-tangent curve, concave southeasterly, having a radius of 109.00 feet, the radial line from said point bears South 00°08'32" East;

Thence southwesterly along said curve, to the left, through a central angle of 28°47'56", an arc distance of 54.79 feet;

Thence South 61°03'32" West, a distance of 50.00 feet to the beginning of a tangent curve, concave northeasterly, having a radius of 52.00 feet;

Thence westerly, northwesterly and northerly along said curve, to the right, through a central angle of 143°49'40", an arc distance of 130.53 feet to a point on said centerline of Edwin Road, the radial line from said point bears South 65°06'48" East;

Thence North 89°51'28" East along said centerline of Edwin Road, a distance of 168.50 feet to the **point of beginning**.

Containing 0.21 acres, more or less.

SEE PLAT ATTACHED HERETO AS EXHIBIT "B".

Prepared under the Supervision of:

PROFESSIONAL LAND SURVEYOR
ALLEN W. MARTIN
NO. 5306
EXP. 12-31-03
STATE OF CALIFORNIA

Allen W. Martin, PLS 5306, Expires 12-31-03

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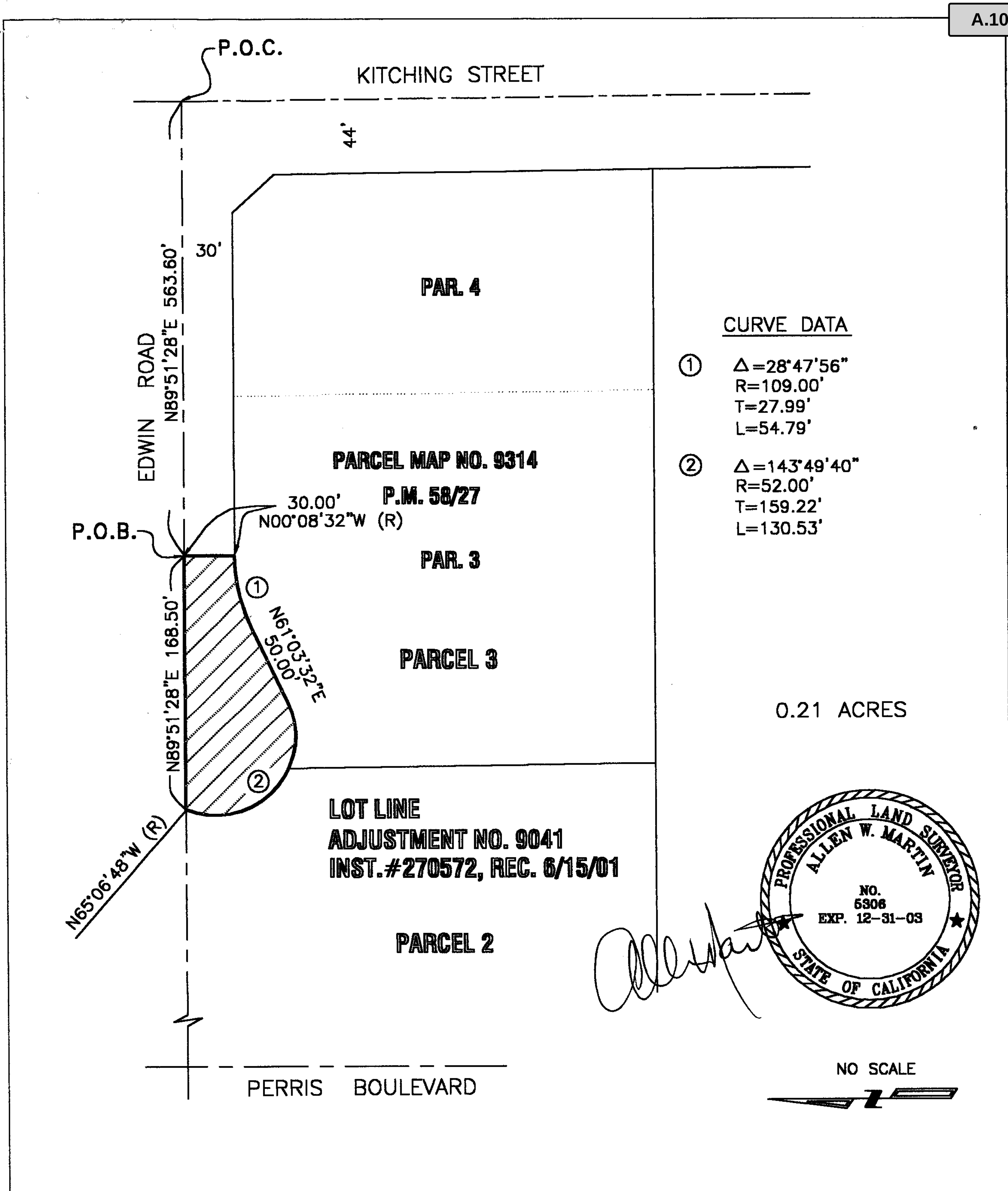

EXHIBIT "B"

THIS PLAT IS SOLELY AN AID IN LOCATING THE PARCEL(S) DESCRIBED IN THE ATTACHED DOCUMENT. IT IS NOT A PART OF THE WRITTEN DESCRIPTION THEREIN.	SHEET 1 OF 1	W.O. 99114
NO SCALE	DRWN BY Mld DATE 6-19-01 CHKD BY ____ DATE ____	SUBJECT: DEDICATION

2001-309349
07/06/2001 08:00A
3 of 3

DOC # 2013-0568239
12/05/2013 04:25P Fee:NC
Page 1 of 6
Recorded in Official Records
County of Riverside
Larry W. Ward
Assessor, County Clerk & Recorder

Recording requested by and when recorded, mail to:
Public Works/Land Development
City of Moreno Valley
P.O. Box 88005
Moreno Valley, CA 92552-0805

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Exempt from Recording Fee per
Govt. Code Sec. 6103
City of Moreno Valley
P12-146, PA06-0017
A.P.N. 312-250-048

(Space above this line for Recorder's use)
DOCUMENTARY TRANSFER TAX IS NONE. 0
Public Agency exempt.
Revenue and Taxation Code Section 11922

C
039

OFFER OF DEDICATION

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

First Industrial, L.P., a Delaware limited partnership

GRANTOR(S) hereby irrevocably offer(s) to DEDICATE to the CITY OF MORENO VALLEY, a municipa corporation, for themselves, successors or assigns a perpetual easement and right of way, subject to the completio of improvements, for public highway purposes, including public utility and public service facilities over, under upon, across, and within the real property in the City of Moreno Valley, County of Riverside, State of California described as follows:

All as described in the attached legal description and illustrated on the plats attached hereto and marked Exhibit "A" and "B" respectively. IN WITNESS WHEREOF, this instrument has been executed this 14TH day o November, 2013.

Grantor(s)
Signature(s) ______________________

Larry D. Cochrun

STATE OF CALIFORNIA)
County of Los Angeles)ss.
On 11/14/13 before me, Linda M. Bauer, a Notary Public in and for said State, personally appeared Larry D. Cochrun, who proved to me on the basis of satisfactory evidence to be the person(~~s~~) whose name(~~s~~) is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity(~~ies~~), and that by his/~~her/their~~ signature(~~s~~) on the instrument the person(~~s~~) or the entity upon behalf of which the person(~~s~~) acted, executed the instrument.

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

WITNESS my hand and official seal.

Signature ______________________
Signature of Notary Public

LINDA M. BAUER
NOTARY PUBLIC - CALIFORNIA
COMMISSION # 1951453
LOS ANGELES COUNTY
My Comm. Exp. Oct 7, 2015

Place Notary Seal Above

EXHIBIT "A"
PUBLIC ROAD & UTILITY EASEMENT

That portion of Parcel 3 of Parcel Map No. 7436, as shown by map on file in Book 26 of Parcel Maps at pages 32 and 33 thereof, Records of Riverside County, California, also being a portion of Lot Line Adjustment No. 1019 and Certificate of Compliance recorded September 10, 2013 as Document No. 2013-0440393, Official Records of Riverside County, California, located in Section 32, Township 3 South, Range 3 West, San Bernardino Meridian, said portion being described as follows:

BEGINNING at the southeast corner of said Parcel 3, said point also being the southeast corner of said Lot Line Adjustment;

Thence North 89°09'55" West along the southerly line of said Parcel 3 and along the southerly line of said Lot Line Adjustment, a distance of 178.27 feet to the beginning of a non-tangent curve, concave to the southeast, having a radius of 61.00 feet, the radial bearing from said point bears North 69°41'06" East;

Thence northwesterly, northerly and northeasterly along said curve, to the right, through a central angle of 38°50'46", an arc distance of 41.36 feet;

Thence North 12°40'07" West, a distance of 7.17 feet to the beginning of a non-tangent curve, concave to the southeast, having a radius of 65.00 feet, the radial line from said point bears South 66°03'26" East;

Thence northeasterly and easterly along said curve, to the right, through a central angle of 55°29'02", an arc distance of 62.94 feet;

Thence South 64°00'25" East, a distance of 7.18 feet to the beginning of a non-tangent curve, concave to the south, having a radius of 61.00 feet, the radial line from said point bears South 05°09'04" East;

Thence easterly and southeasterly along said curve, to the right, through a central angle of 34°47'49", an arc distance of 37.05 feet

Thence South 60°21'59" East, a distance of 50.00 feet to the beginning of a tangent curve, concave to the northeast, having a radius of 100.00 feet;

Thence southeasterly along said curve, to the left, through a central angle of 28°35'53", an arc distance of 49.91 feet to a point on the easterly line of said Parcel 3, said point also being on the easterly line of said Lot Line Adjustment;

Thence South 00°19'11" West along both said easterly lines, a distance of 39.00 feet to the **POINT OF BEGINNING**.

Containing 0.27 acres, more or less.

SEE PLAT ATTACHED HERETO AS EXHIBIT "B" AND MADE A PART HEREOF.

PREPARED UNDER MY SUPERVISION

10.10.13

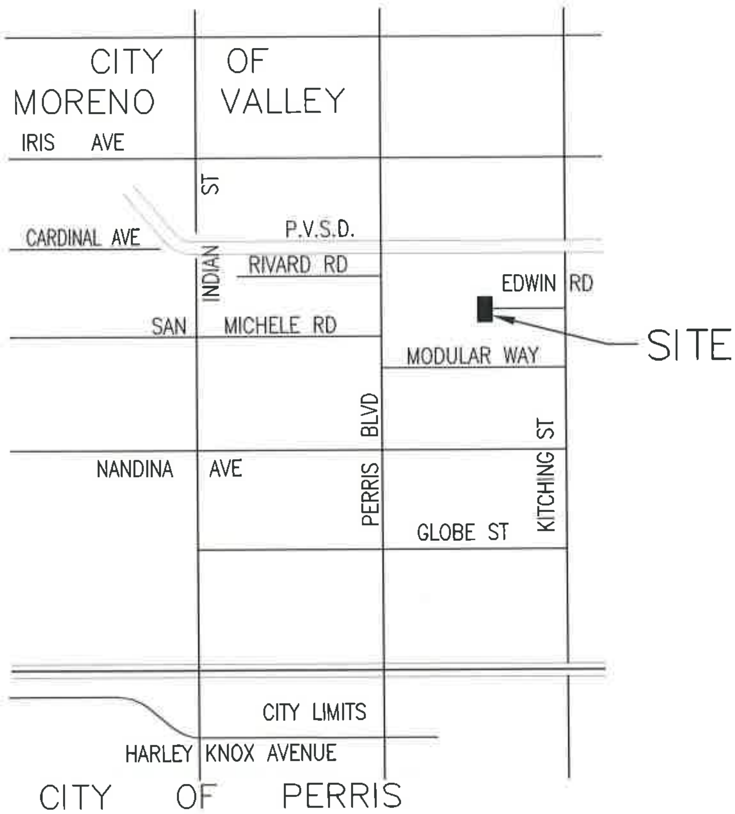
Andrew Y. Orosco, L.S. 5491   Date

LICENSED LAND SURVEYOR
ANDREW Y. OROSCO
LS 5491
STATE OF CALIFORNIA

Prepared by: gig
Checked by: AYO

EXHIBIT "B"

N
W WEBB E
S



VICINITY MAP

NOT TO SCALE

SEC 32, T3S, R3W, SBM

ALBERT A. WEBB ASSOCIATES

CITY OF MORENO VALLEY

G:\2012\12-0210\Parcel Merger\2012-0210 RW.dwg 10/9/2013

THIS PLAT IS SOLELY AN AID IN LOCATING THE PARCEL(S) IN THE ATTACHED DOCUMENT. ALL PRIMARY CALLS ARE LOCATED IN THE WRITTEN DOCUMENT.

SHEET 1 OF 2

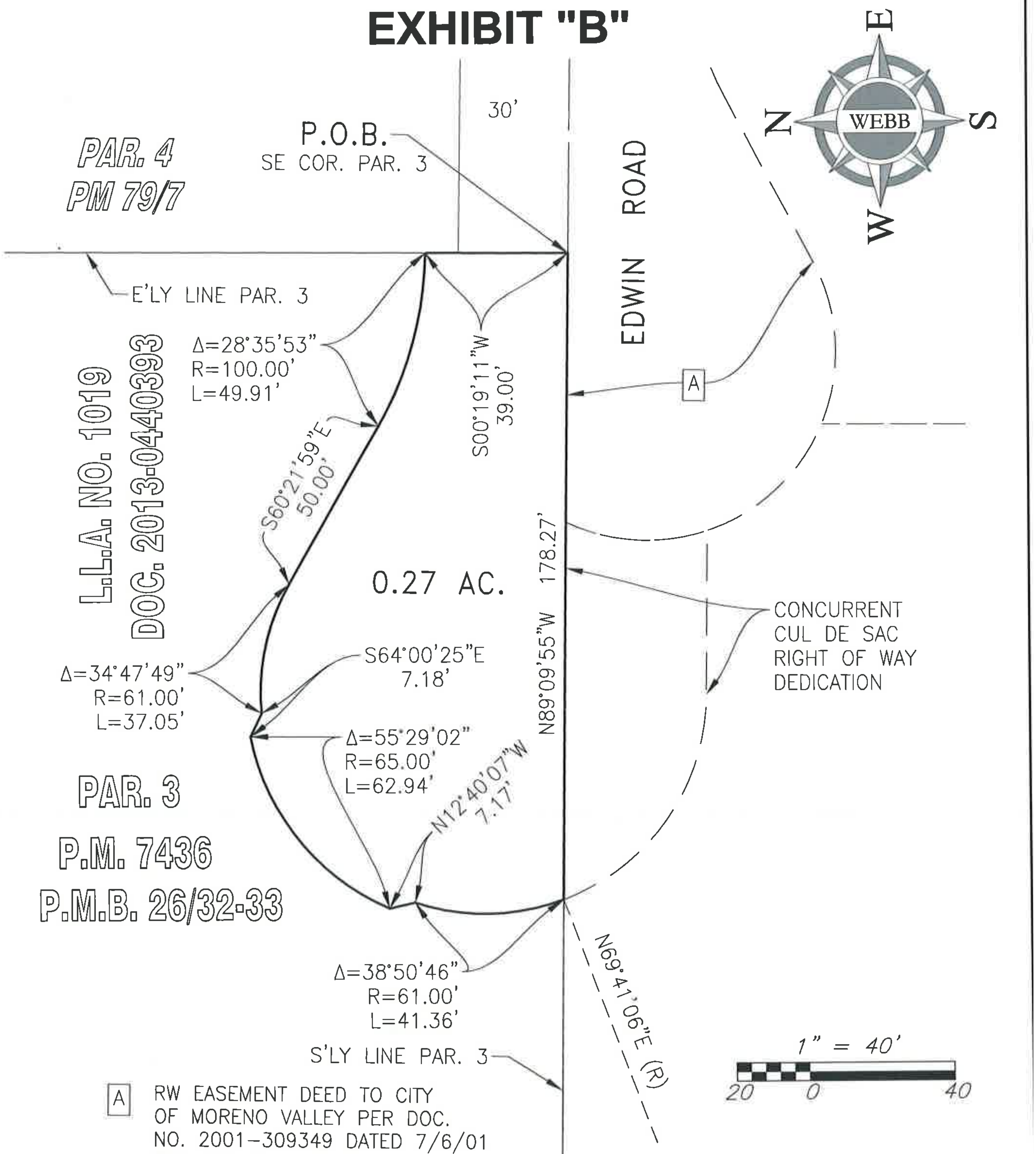
W.O. 20120210

SCALE: 1"=40'

DRWN BY AJA DATE 10/10/13
CHKD BY AYO DATE 10.10.13

SUBJECT: PUBLIC ROAD & UTILITY EASEMENT

EXHIBIT "B"



A RW EASEMENT DEED TO CITY OF MORENO VALLEY PER DOC. NO. 2001-309349 DATED 7/6/01 O.R. RIV. CO., CA.

SEC 32, T3S, R3W, SBM

ALBERT A. WEBB ASSOCIATES

CITY OF MORENO VALLEY

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SHEET 2 OF 2

W.O. 20120210

SCALE: 1"=40'
DRWN BY AJD DATE 10/10/13
CHKD BY AYO DATE 10-10-13
SUBJECT: PUBLIC ROAD & UTILITY EASEMENT

ACCEPTANCE CERTIFICATE

This is to certify that the interest in real property conveyed by the deed or grant dated **November 14, 2013** from **First Industrial, L.P., a Delaware limited partnership** to the City of Moreno Valley, a municipal corporation, in the form attached hereto, is hereby accepted, subject to completion of improvements, and the street improvements being accepted into and becoming a part of the City maintained street system, by the undersigned City Engineer on behalf of the City of Moreno Valley, pursuant to authority conferred by Resolution No. 94-5 of the City Council of Moreno Valley, adopted on January 25, 1994, and the grantee consented to recordation thereof.

Date: 12/5/13

By: ______________________________

mg Ahmad R. Ansari, R.C.E. #51318
Public Works Director/City Engineer
City of Moreno Valley

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

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

WITNESS my hand and official seal.

Signature ______________________________
Signature of Notary Public

Place Notary Seal Above

DOC # 2013-0568240
12/05/2013 04:25P Fee:NC
Page 1 of 5
Recorded in Official Records
County of Riverside
Larry W. Ward
Assessor, County Clerk & Recorder

Recording requested by and when recorded, mail to:
Public Works/Land Development
City of Moreno Valley
P.O. Box 88005
Moreno Valley, CA 92552-0805

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Exempt from Recording Fee per
Govt. Code Sec. 6103
City of Moreno Valley
P12-146, PA06-0017
A.P.N. 312-250-037

(Space above this line for Recorder's use)
DOCUMENTARY TRANSFER TAX IS NONE.
Public Agency exempt.
Revenue and Taxation Code Section 11922

C
039

OFFER OF DEDICATION

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

Kearny Modular Way, a Delaware limited liability company

GRANTOR(S) hereby irrevocably offer(s) to DEDICATE to the CITY OF MORENO VALLEY, a municipal corporation, for themselves, successors or assigns a perpetual easement and right of way, subject to the completion of improvements, for public highway purposes, including public utility and public service facilities over, under, upon, across, and within the real property in the City of Moreno Valley, County of Riverside, State of California, described as follows:

All as described in the attached legal description and illustrated on the plats attached hereto and marked Exhibits "A" and "B" respectively. IN WITNESS WHEREOF, this instrument has been executed this 21st day of November, 2013.

Grantor(s)
Signature(s) [signature]

Jeff Dritley
President

STATE OF CALIFORNIA)
County of Los Angeles)ss.
On Nov. 21, 2013 before me, C. Sherwood, a Notary Public in and for said State, personally appeared Jeff Dritley, who proved to me on the basis of satisfactory evidence to be the person~~(s)~~ whose name~~(s)~~ is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity~~(ies)~~, and that by his/~~her/their~~ signature~~(s)~~ on the instrument the person~~(s)~~ or the entity upon behalf of which the person~~(s)~~ acted, executed the instrument.

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

WITNESS my hand and official seal.

Signature C. Sherwood
Signature of Notary Public

C. SHERWOOD
COMM. #2036012
Notary Public - California
Los Angeles County
My Comm. Expires Sep. 4, 2017

Place Notary Seal Above

EXHIBIT "A"
PUBLIC ROAD & UTILITY EASEMENT

That portion of Parcel 2 of Lot Line Adjustment No. 904 and Certificate of Compliance recorded June 15, 2001 as Document No. 2001-270572, Official Records of Riverside County, California, together with a portion of Edwin Road, vacated by the City Council of the City of Moreno Valley by Resolution No. 2001-43, recorded September 5, 2001 as Document No. 2001-430566, Official Records of Riverside County, California, located in Section 32, Township 3 South, Range 3 West, San Bernardino Meridian, said portion being described as follows:

COMMENCING at the southeast corner of Parcel 3 of Parcel Map No. 7436, as shown by map on file in Book 26 of Parcel Maps at pages 32 and 33 thereof, Records of Riverside County, California, said point also being on the northerly line of that certain Easement for public highway purposes, as conveyed to the City of Moreno Valley by Easement Deed recorded July 6, 2001 as Document No. 2001-309349, Official Records of Riverside County, California;

Thence North 89°09'55" West along the southerly line of said Parcel 3 and along said northerly line, a distance of 73.86 feet to the **TRUE POINT OF BEGINNING**, said point being the northwesterly corner of said easement, so conveyed;

Thence continuing North 89°09'55" West along the southerly line of said Parcel 3 and along the northerly line of said Edwin Road (vacated), a distance of 104.41 feet to a point thereon, said point being the beginning of a non-tangent curve, concave to the northeast, having a radius of 61.00 feet, the radial bearing from said point bears North 69°41'38" East;

Thence southerly, southeasterly and easterly along said curve, to the left, through a central angle of 68°51'14", an arc distance of 73.31 feet;

Thence South 89°09'55" East, a distance of 45.47 feet to the beginning of a non-tangent curve, concave to the east, having a radius of 52.00 feet, said point also being on the boundary line of that certain Easement for public highway, so conveyed, the radial line from said point bears North 71°47'07" East;

Thence northwesterly and northeasterly along said curve and along said boundary line, to the right, through a central angle of 44°06'45", an arc distance of 40.04 feet to the **TRUE POINT OF BEGINNING**.

Containing 3,323 square feet, more or less.

SEE PLAT ATTACHED HERETO AS EXHIBIT "B" AND MADE A PART HEREOF.

PREPARED UNDER MY SUPERVISION

12/4/13

Andrew Y. Orosco, L.S. 5491 Date

Prepared by: ajj

Checked by: AYO

LICENSED LAND SURVEYOR
ANDREW Y. OROSCO
LS 5491
STATE OF CALIFORNIA

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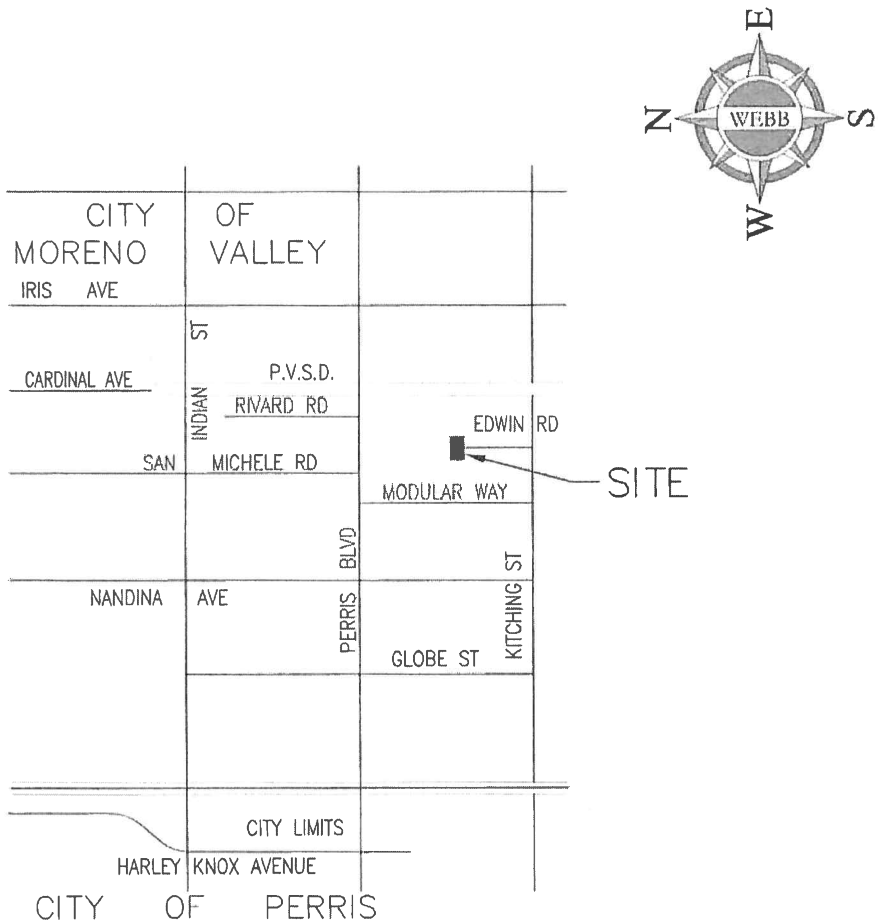
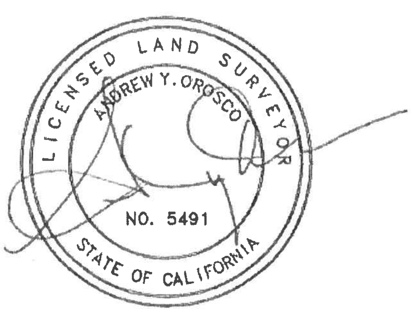
EXHIBIT "B"



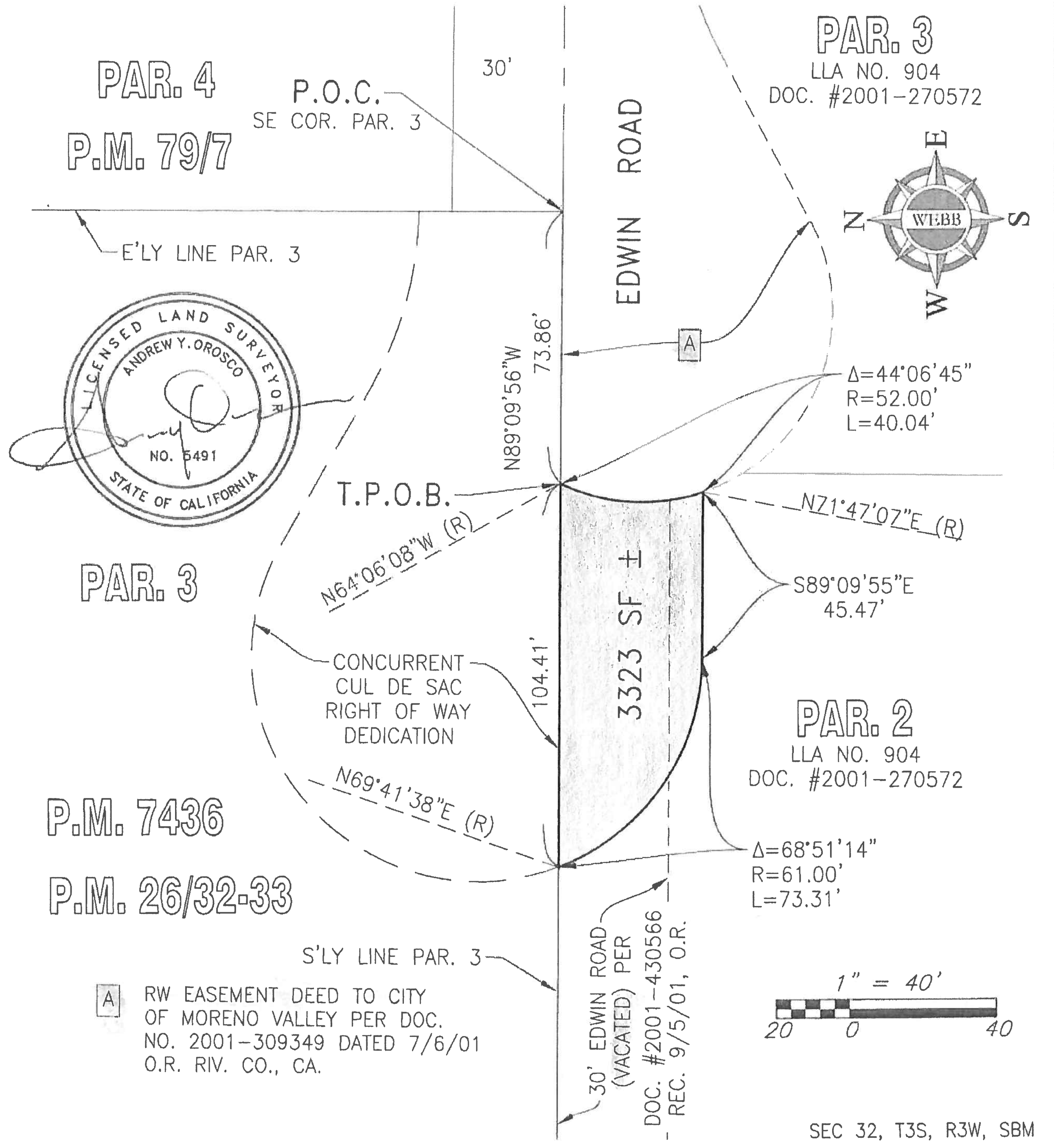
VICINITY MAP
NOT TO SCALE



SEC 32, T3S, R3W, SBM

ALBERT A. WEBB ASSOCIATES	CITY OF MORENO VALLEY			
	G:\2012\12-0210\Parcel Merger\2012-0210 RW Offsite.dwg 8/16/2013			
THIS PLAT IS SOLELY AN AID IN LOCATING THE PARCEL(S) IN THE ATTACHED DOCUMENT. ALL PRIMARY CALLS ARE LOCATED IN THE WRITTEN DOCUMENT.			SHEET 1 OF 2	W.O. 20120210
SCALE: 1"=40'	DRWN BY ajd CHKD BY AYO	DATE 12/4/13 DATE 12/4/13	SUBJECT: PUBLIC ROAD & UTILITY EASEMENT	

EXHIBIT "B"



ALBERT A. WEBB ASSOCIATES

CITY OF MORENO VALLEY

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THIS PLAT IS SOLELY AN AID IN LOCATING THE PARCEL(S) IN THE ATTACHED DOCUMENT. ALL PRIMARY CALLS ARE LOCATED IN THE WRITTEN DOCUMENT.	SHEET 2 OF 2	W.O. 20120210

SCALE: 1"=40'	DRWN BY AJO CHKD BY AHB	DATE 12/4/13 DATE 12/4/13	SUBJECT: PUBLIC ROAD & UTILITY EASEMENT

Attachment: Accepted Offers of Dedications Doc Nos. 2013-0568239 & 2013-0568240 (3189 : PA13-0063 – MODULAR LOGISTICS CENTER -

ACCEPTANCE CERTIFICATE

This is to certify that the interest in real property conveyed by the deed or grant dated **November 21, 2013** from **Kearny Modular Way, a Delaware limited liability company** to the City of Moreno Valley, a municipal corporation, in the form attached hereto, is hereby accepted, subject to completion of improvements, and the street improvements being accepted into and becoming a part of the City maintained street system, by the undersigned City Engineer on behalf of the City of Moreno Valley, pursuant to authority conferred by Resolution No. 94-5 of the City Council of Moreno Valley, adopted on January 25, 1994, and the grantee consented to recordation thereof.

Date: 12/5/13

By: ____________________

Ahmad R. Ansari, R.C.E. #51318
Public Works Director/City Engineer
City of Moreno Valley

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

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

WITNESS my hand and official seal.

Signature ______________________________
Signature of Notary Public

Place Notary Seal Above

Report to City Council

TO:	Mayor and City Council
FROM:	Michael L. Wolfe, P.E., Public Works Director/City Engineer
AGENDA DATE:	September 4, 2018
TITLE:	APPROVE THE FIRST AMENDMENT TO AGREEMENT FOR PROFESSIONAL CONSULTANT SERVICES WITH KOA FOR THE JUAN BAUTISTA DE ANZA MULTI-USE TRAIL - PHASE 2, PROJECT NO. 801 0077

RECOMMENDED ACTION

Recommendations:

1. Approve the First Amendment to Agreement for Professional Consultant Services with KOA Corporation to provide design consultant services for the Juan Bautista De Anza Multi-Use Trail Phase 2 Segment from El Portero Park to Lake Perris State Recreation Area.

2. Authorize the City Manager to execute the First Amendment to Agreement for Professional Consultant Services with KOA Corporation.

3. Authorize a Change Order to increase the Purchase Order with KOA Corporation for the amount of $192,386.00 when the First Amendment has been signed by all parties.

4. Authorize the Public Works Director/City Engineer to execute any subsequent related amendments to the Agreement for Professional Consultant Services with KOA, not to exceed the Purchase Order amount, subject to the approval by the City Attorney.

5. Authorize the Chief Financial Officer to approve a budget adjustment to transfer the grant funds from Project No. 801 0080 (Fund 2301) to Project No. 801 0077 (Fund 2301) for the Juan Bautista De Anza Multi-Use Trail Phase 2 as set forth in the fiscal impact section of this report.

SUMMARY

This report recommends approval of the First Amendment to Agreement for Professional Consultant Services with KOA Corporation for design consultant services including right of way acquisition, final design, and construction support for the Juan Bautista De Anza Multi-Use Trail from El Portero Park to Lake Perris State Recreation Area. This trail segment was identified as Priority 1 in the trail system to connect to Lake Perris State Recreation Area. The scope of services also includes the design of a pedestrian bridge connecting East Oleander Avenue to the trail system. This project is currently funded by Active Transportation Program (ATP) Cycle 3 State Grant which was accepted by the City Council at its February 20, 2018 meeting.

DISCUSSION

After completing a procurement process consistent with the City's Municipal Code for professional services, on September 5, 2017, Council approved the agreement for Professional Consultant Services to KOA Corporation (KOA) for Phase 1 of the project's scope of service only. Phase 1 of the scope of services included the preliminary engineering and environmental phase for the Juan Bautista De Anza Multi-Use Trail (formerly known as Aqueduct Multi-Use Trail System) from the Towngate Area to Lake Perris State Recreation Area ("Trail") for the amount of $181,122.83. Phase 2 of the scope of service is to provide complete right of way acquisition, design plans, specifications and estimate (PS&E) and construction support for one segment of the overall Trail project.

Phase 1 included the development of conceptual plans for missing segments of the trail, improved connections to adjacent neighborhoods, upgrades to existing segments that do not meet current standards, and enhanced trail crossings at streets. With the conceptual plans from Phase 1, the consultant assisted the City in submitting successful grant applications for two segments of the Trail project resulting in the City receiving a combined amount of $4.23 million from the State's ATP program.

At the February 20, 2018 City Council meeting, the Council accepted the ATP Cycle 3 grant for the El Portero Park to Lake Perris State Recreation Area segment of the Trail project. This segment is identified as a priority, which includes the design, right of way acquisition, and construction of a two-mile segment of the Trail project. This segment will close a gap in the southern portion of the trail and expanding connectivity to Rancho Verde High School and the existing multi-use trail surrounding Lake Perris.

KOA services covered by the proposed First Amendment will consist of right of way acquisition, utility coordination, geotechnical investigation, PS&E preparation, and construction support for the El Portero Park to Lake Perris State Recreation Area segment of the Trail project. Staff recommends approval of the First Amendment to Agreement for Professional Consultant Services with KOA Corporation as well as authorization to increase the Purchase Order in the amount of $192,386.00 and extend the agreement until December 2019. Amending the agreement with KOA for the design of one segment of the Trail project is consistent with the original procurement process undertaken in 2017 and will allow the project to stay on schedule.

Approval of the recommended actions would support Objective 4.6.1 of the Momentum MoVal Strategic Plan: “Complete the Juan Bautista De Anza Regional Trail.”

ALTERNATIVES

1. Approve and authorize the recommended actions as presented in this staff report. *This alternative will provide for the project to move forward in accordance with the grant requirements and allow for the development of a comprehensive plan that enhances connectivity and mobility for future consideration and programming.*

1. Do not approve and authorize the recommended actions as presented in this staff report and direct staff to undertake a new procurement process for the selection of a design team. *This alternative will likely result in a project delay and might result in losing the grant funding if certain grant-funding milestones are not met.*

FISCAL IMPACT

The amount of the original professional services agreement with KOA is $181,122.83. The amount of the proposed amendment is $192,386.00 resulting in a revised contract amount of $373,508.83. Project No. 801 0077 is in the approved FY17/18-18/19 CIP. On February 20, 2018 City Council accepted the Active Transportation Program (ATP) Cycle 3 State Grant for a total grant award of $2,849,000. Staff is also recommending that the City Council authorize the consolidation of two projects (Project 801 0077 and Project 801 0080). Project 801 0080 was created but is not required since this segment will be designed and constructed under Project 801 0077. If approved, this consolidation would move $2,759,000 of grant funds from Project 801 0080 to Project 801 0077. **There is no impact to the General Fund.**

Category	Fund	GL Account No.	Type (Rev/ Exp)	FY 18/19 Adopted Budget	Proposed Adjustments	FY 18/19 Amended Budget
CIP	Capital Projects Grants Fund (2301)	G/L: 2301-70-77-80001-720199 PN: 801 0080-2301-99	Exp	$4,190,063* $2,849,000*	($2,849,000) ($2,849,000)	$4,100,063 $0
CIP	Capital Projects Grants Fund (2301)	G/L: 2301-70-77-80001-720199 PN: 801 0077-2301-99	Exp	$4,190,063* $90,000	$2,759,000 $2,759,000	$4,100,063 $2,849,000

**Remaining FY 17/18 budget balance, which will be carried over in October if approved by the City Council.*

AVAILABLE PROJECT BUDGET FY 18/19:

Capital Projects Grants	
(Account No. 2301-70-77-80001) (Project No. 801 0077)	$2,849,000
Total	$2,849,000

ESTIMATED COSTS

Preliminary Engineering, Design, and Right-of-Way Consultant	$374,000
Right-of-Way Acquisition	$50,000
Construction	$2,300,000
Project Administration*	$125,000
Total Estimated Costs	**$2,849,000**

**Includes City project administration, application fees, related miscellaneous costs, and approvals.*

ANTICIPATED PROJECT SCHEDULE:

Complete Design	Winter 2018
Start of Construction	Summer 2019

NOTIFICATION

Public notification and community outreach will continue throughout the completion of this project.

PREPARATION OF STAFF REPORT

Prepared By:
Henry Ngo, P.E.
Capital Projects Division Manager

Department Head Approval:
Michael L. Wolfe, P.E.
Public Works Director/City Engineer

CITY COUNCIL GOALS

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

Public Facilities and Capital Projects. Ensure that needed public facilities, roadway improvements, and other infrastructure improvements are constructed and maintained.

CITY COUNCIL STRATEGIC PRIORITIES

1. **Economic Development**
2. **Public Safety**
3. **Library**
4. **Infrastructure**
5. **Beautification, Community Engagement, and Quality of Life**

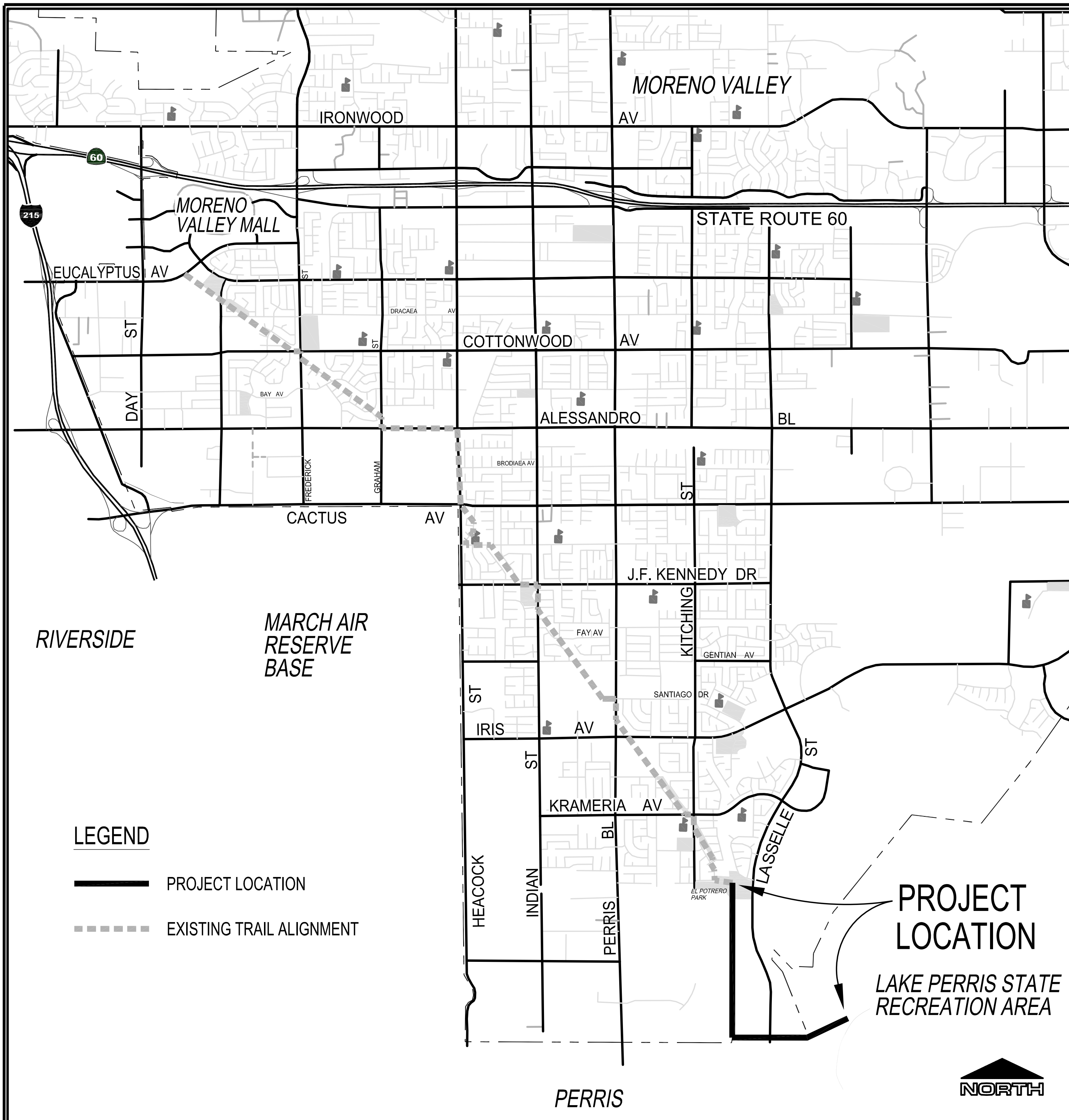
6. Youth Programs

ATTACHMENTS

1. Location Map
2. First Amendment to Agreement with KOA

APPROVALS

Budget Officer Approval	✓ Approved	8/28/18 6:15 PM
City Attorney Approval	✓ Approved	8/28/18 1:32 PM
City Manager Approval	✓ Approved	8/29/18 12:11 PM



ATP 3 Juan Bautista de Anza Multi-Use Trail Gap Closure

CITY OF MORENO VALLEY
DECEMBER 3, 1984

Public Works Department
Capital Projects Division

Scale: None

FROM EL POTRERO PARK TO
LAKE PERRIS STATE RECREATION AREA

FIRST AMENDMENT TO AGREEMENT FOR PROFESSIONAL CONSULTANT SERVICES WITH KOA FOR THE JUAN BAUTISTA DE ANZA MULTI-USE TRAIL FROM EL PORTERO PARK TO LAKE PERRIS STATE RECREATION AREA – PHASE 2
PROJECT NO. 801 0077
FEDERAL PROJECT NO. ATPSB1L-5441(074)

This First Amendment to Agreement is by and between the CITY of MORENO VALLEY, a municipal corporation, hereinafter referred to as "City," and **KOA Corporation**, a California corporation, hereinafter referred to as "Consultant." This First Amendment to Agreement is made and entered into effective on the date the City signs this Amendment.

RECITALS:

Whereas, the project title and project number were changed from Aqueduct Multi-Use Trail System, Project No. 801 0055 to Juan Bautista De Anza Multi-Use Trail System, Project No. 801 0077.

Whereas, the City and Consultant entered into an Agreement entitled "Agreement for Professional Consultant Services with KOA for the Preliminary Engineering/Environmental Phase for the Aqueduct Multi-Use Trail System from the Towngate Area to Lake Perris State Recreation Area, Project No. 801 0055," hereinafter referred to as "Agreement," dated October 24, 2017.

Whereas, it is desirable to amend the Agreement to expand the scope of the work for Phase 2 (design services) be performed by the Consultant as is more particularly described in Section 1 of this First Amendment.

Whereas, the Consultant has submitted a Proposal dated July 24, 2018 for expansion of the scope of work to be performed. A copy of said Proposal is attached as “Exhibit A -- First Amendment” and is incorporated herein by this reference.

AMENDMENT TO AGREEMENT FOR
PROFESSIONAL CONSULTANT SERVICES
PROJECT NO. 801 0077

SECTION 1 AMENDMENT TO ORIGINAL AGREEMENT:

1.1 The Agreement termination date is hereby extended to December 31, 2019 by this amendment, unless the termination date is further extended by an amendment to the Agreement.

1.2 Exhibit "B" to the Agreement is hereby amended by adding to the scope of work section described in "Exhibit A - First Amendment", entitled " Engineering Design Services Juan Bautista De Anza Trail – Phase 2 PS&E".

1.3 Exhibit "D" to the Agreement is hereby further amended by adding the amount of **$192,386.00** as set forth in the fee proposal as included in the above referenced "Exhibit A - First Amendment."

1.4 The total "Not to Exceed" fee for this contract is $373,508.83 ($181,122.83 for the original Agreement plus $192,386.00 for the First Amendment to Agreement).

SECTION 2

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

SIGNATURE PAGE TO FOLLOW

AMENDMENT TO AGREEMENT FOR
PROFESSIONAL CONSULTANT SERVICES
PROJECT NO. 801 0077

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

City of Moreno Valley	**KOA Corporation**
BY: ______________________________ Thomas M. DeSantis, City Manager	BY: ______________________________
	TITLE: ______________________________ (President or Vice President)
______________________________ Date	______________________________ Date
	BY: ______________________________
	TITLE: ______________________________ (Corporate Secretary)
	______________________________ Date

INTERNAL USE ONLY

APPROVED AS TO LEGAL FORM:

____
City Attorney

____
Date

RECOMMENDED FOR APPROVAL:

____
Public Works Director/City Engineer

____
Date

Attachment: "Exhibit A – First Amendment"

P:\PROJECTS\ML-801 0080 – Juan Bautista de Anza Gap Closure – ATP 3\Agrmnts\Design\Amendments\1st Amendment.doc

ATTACHMENT A

PROPOSAL FOR

ENGINEERING DESIGN SERVICES
JUAN BAUTISTA DE ANZA TRAIL PHASE 2 PS&E

CITY OF MORENO VALLEY PUBLIC WORKS DEPARTMENT

KOA

JULY 24, 2018

TABLE OF CONTENTS

3190 Shelby Street, Bldg. C
Ontario CA 91764 T: 909.890.9693 | www.koacorp.com
MONTEREY PARK ORANGE ONTARIO SAN DIEGO

TO

Attn: Mr. Henry Ngo, PE
Capital Projects Division Manager
City of Moreno Valley
14177 Frederick Street
Moreno Valley CA 92552-0805

FROM

Mr. Chuck Stephan, PE
VP, Director of CM Division
Principal-in-Charge/QA/QC
cstephan@koacorp.com
T: 323.260.4703
F: 323.260.4705

RFP/RFQ

Engineering Design Services Juan Bautista De Anza Trail Phase 2 PS&E

DATE

July 24, 2018

Dear Mr. Ngo:

KOA is pleased to submit this proposal to the City of Moreno Valley for Engineering Design Services for the Juan Bautista De Anza Trail Phase 2 PS&E. KOA has 30 years of specialization in engineering design of public works transportation projects. KOA's proposed team has extensive experience in design of projects for Southern California municipal agencies including street improvement and rehabilitation projects, ADA curb ramps and accessibility, libraries, fire stations, community buildings, and building renovations; wet utilities, including bio-swales, storm drains pipelines, sewer lines and pump stations, pipeline relining, water main replacement; streets, including widening and beautification, rehabilitation, resurfacing, traffic signals, fiber backbone installation, bike-paths, and curb, gutters and sidewalks; park projects, including soccer fields, landscaping, park buildings and lighting systems; as well as bridges, including rehabilitation and replacement, with local, state and federal-aid funds..

KOA was founded in 1987 and has a staff of 100+ personnel working out of four offices in the counties of Orange, Los Angeles, San Diego, and San Bernardino. KOA can meet and exceed your goals of completing your project on time and within a reasonable budget. A significant number of the projects that we work on have both state and federal funding, so we are very familiar with the reporting expectations for these types of projects. KOA will keep City staff in the loop at all times and produce relevant information so staff always has answers to any questions about the project.

I will be the Principal-in-Charge for this contract, and Ms. Ming Guan, PE, TE, will serve as the Project Manager. The contract will be managed through the Ontario office at 3190 Shelby Street, Bldg. C, Ontario, CA 91764. As a Vice President of KC am authorized to bind the firm to any contracts and agreements.

Thank you for your consideration of KOA's qualifications. If you have any questior please contact me at (310) 525-0678 or via email at cstephan@koacorp.com.

We look forward to working with the City of Moreno Valley.

Sincerely,
KOA Corporation

Chuck Stephan, PE
Vice President

SECTION 1: INTRODUCTION

Founded in 1987, KOA is a leading provider in traffic engineering, transportation planning and construction management services for public agencies and private sector clients. We offer our clients technical knowledge, innovative solutions and responsive services. The hallmark of our success is our dedication to the success of each and every project and our desire to leave a legacy of extraordinary contributions to our communities. Our staff includes certified transportation planners, registered civil and traffic engineers, project/construction managers, and construction inspectors. With four offices located in Southern California, KOA has provided engineering services for some of the largest public works and transportation planning projects throughout California.

OUR COMMITMENT AND DEDICATION

KOA is committed to providing our engineering design services for timely and economical project completion. We dedicate the necessary resources to complete each assignment on-time and within budget. Be assured that our key personnel will be assigned to the project for its duration and will not be removed or replaced by us without concurrence from the City. We maintain close attention to our clients by tracking our contract budgets and schedules on a weekly basis. We also maintain a 6-month look-ahead by project and personnel in order to proactively identify resource needs and availability.

ENGINEERING DESIGN SERVICES

KOA has provided engineering design services for many types of public works projects for the past 30 years. Our professional staff has experience in heavy civil projects, highways, roadways, trails, transportation projects, designing new and rehabilitation building projects, municipal water systems, sewers, utilities, electrical construction, bridges, and rail. KOA's engineering personnel have decades of experience on Caltrans, municipal, utility and private construction projects.

KOA has helped design and plan hundreds of miles of ADA compliant trails, pedestrian facilities, safe routes to schools, and streets and bikeways locally in southern California. The impetus for many of these projects is to improve public health and to increase safety and accessibility. Design experience, familiarity, and contact with stakeholders have been key aspects to nearly all of these projects.

The KOA team is qualified, fully prepared, and eager to provide the City of Moreno Valley with the required services to complete the Juan Bautista De Anza Phase 2 (ATP 3) PS&E from El Potrero Park to the Lake Perris State Recreation Area. This proposal reflects the necessary qualifications and proposed work plan for the team.

TYPES OF SERVICES

Civil Engineering
Traffic Engineering
Transportation Planning
Active Transportation
Highway & Transportation Design
Program Management
Construction Management

YEAR FOUNDED

1987

FORM OF THE ORGANIZATION

S Corporation

LOCATION OF OFFICES

Monterey Park
Orange
Ontario
San Diego

PROJECT OFFICE LOCATION

KOA Ontario Office
3190 Shelby Street, Bldg. C
Ontario CA 91764
(909) 890-9693

KEY CONTACTS

Chuck Stephan, PE
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Vice President/Project Manager
Direct: (909) 230-7207
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mguan@koacorp.com

SECTION 2: PROJECT UNDERSTANDING / SCOPE OF SERVICES

PROJECT UNDERSTANDING

The City of Moreno Valley is seeking a professional services engineering consultant firm to provide engineering design services to develop construction Plans, Specifications, and Estimate (PS&E) for the Juan Bautista De Anza Trail, Phase 2 (ATP 3), from El Potrero Park to the Lake Perris State Recreation Area, and for an additional southerly extension and bridge connection to the City of Perris bicycle trail along the County Flood Control Channel.

Funding is from the State of California Active Transportation Program (ATP) Phase 3, with priority augmentation from Senate Bill 1 (SB-1). Funding requires schedule priority, with completion of the PS&E by about October of 2018 to meet the start of construction requirement.

KOA will prepare the PS&E for the De Anza Trail, from El Potrero Park to the Lake Perris State Recreation Area, and an additional segment extending the Trail south and across the County flood control channel to join to the City of Perris bicycle trail. Design will be based on the Project Alignment plan that has already been developed by the City, and the environmental approval. The proposed trail extension to the City of Perris was not a part of the original alignment plan or environmental study, but was included in the ATP funding. The trail is anticipated to run from the westerly parking lot in Potrero Park, at the terminus of the ATP 2 project area currently in design, east across the park and existing bridge, then along the County flood control channel to the south City limit and Oleander Avenue (unimproved), then easterly to Rancho Verde High School, and into the Lake Perris State Recreation Area, connecting to the existing trail.

The City of Moreno Valley has completed a preliminary alignment plan for the Juan Bautista De Anza Trail project ("Trail"), which will fully develop an off-street multi-use pedestrian and bicycle path through the city. The Trail will connect various neighborhoods, parks, schools, shopping, commercial, and industrial areas across the city. Parts of the Trail have already been fully or partially completed, but significant stretches are undeveloped. The City plans to pursue construction of the Trail through available grants, development projects, or other funding opportunities as available.

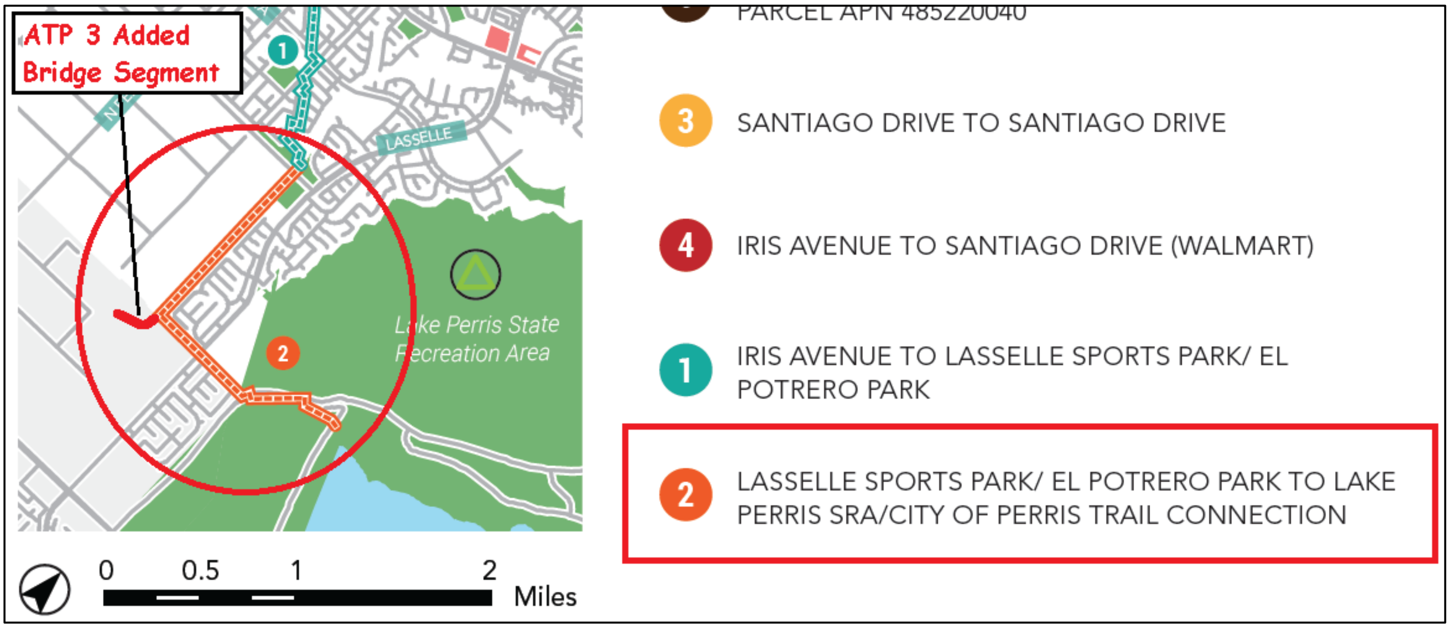
The Trail plan identifies and prioritizes 13 likely segment phases that may be pursued for improvement in phases. Segment 1 has already been funded through the State of California Active Transportation Program (ATP) Cycle 2 Call for Projects, and is currently in the design phase. Funding for Segment 2 was approved in the ATP Cycle 3 Call for Projects. The schedule for Segment 2 has been advanced by two years per Senate Bill 1 ATP Augmentation. The work proposed herein is in reference to Segment 2 of the Trail plan. We understand that the ATP Cycle 3 funding is considered as *non-federal aid funding*, and is not subject to federal requirements.

The approved ATP Cycle 3 funding provides:

$2,565,000 for construction
$90,000 for PA&ED
$160,000 for PS&E
$25,000 for ROW
$2,840,000 Total ATP funding
<u>$300,000</u> non-ATP funding (leveraging)
$3,140,000 Total project estimate

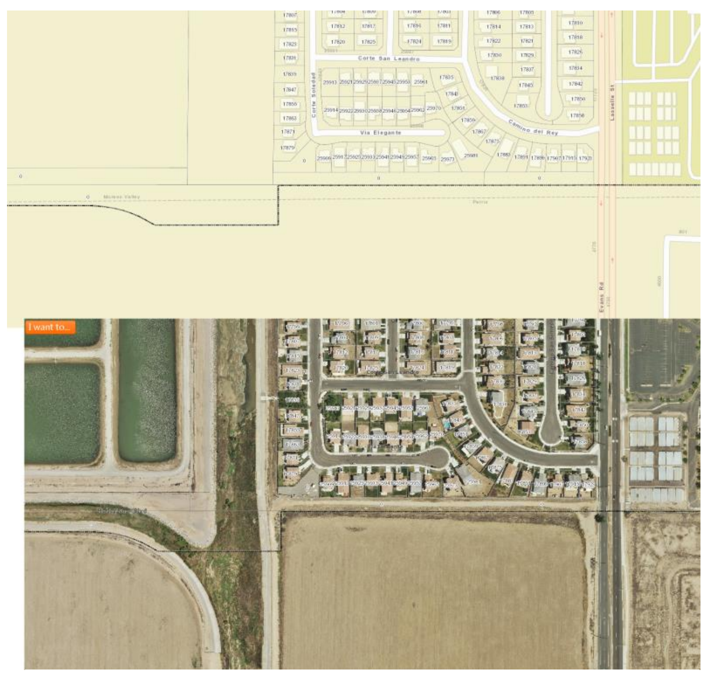
The SB-1 priority augmentation funding requires that the project begin construction before June 30, 2019. To meet this requirement, the PS&E should be complete by October, 2018. This schedule will require that the plans be expedited as efficiently as possible. There is no room for delay due to right of way obstacles, permitting through the Army Corps of Engineers, State Fish & Wildlife environmental review, extensive review time, or other time extensive impacts. KOA will expedite the project as much as feasible to meet the City's schedule needs.

Segment 2 of the Trail is planned to extend from the parking lot at El Potrero Park, to Lasselle Sports Park, south along the San Bernardino County Flood Control District (SBCFCD) channel, east along undeveloped Oleander Avenue, east on the south side of Rancho Verde High School, and into the Lake Perris State Recreation Area, connecting to the existing trail. In addition to Segment 2, the ATP grant included funding for extending the Trail southerly and across the flood control channel with a bridge to connect to the recently completed trail in the city of Perris. **This extension of the Trail, and the bridge, may extend into the city of Perris**. KOA will work with the City of Moreno Valley to coordinate design and permitting with the City of Perris.

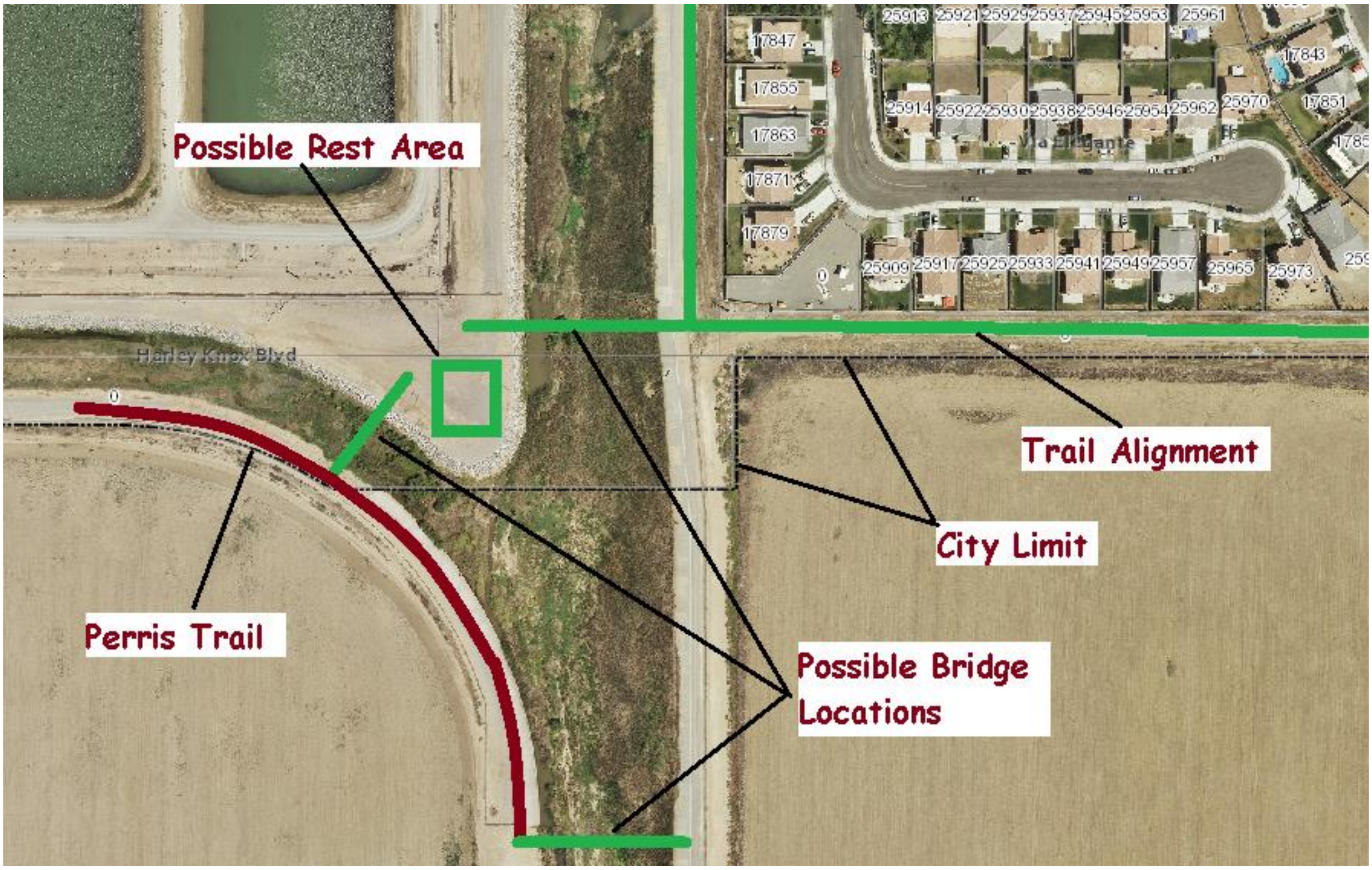


Segment 2 of the Juan Bautista de Anza Trail Plan included in ATP 3 grant funding

Proposed Segment 2 Trail alignment



City limit at the south end of the Trail



Possible bridge locations connecting to the completed trail in the City of Perris

The bridge crossing will need to be coordinated with the San Bernardino County Flood Control District (David Doublet, Deputy Director, 909-387-7918, ddoublet@dpw.sbcounty.gov). During development of the original trail alignment plan, SBCFCD stated that it approves of the trail concept.

We anticipate that the proposed bridge will be a manufactured steel truss bridge. KOA has specified similar bridges on three previous projects, and currently one project in the City of Highland, in consultation with Contech Engineered Solutions (http://www.conteches.com/products/bridges-and-structures). Contech standard bridge designs come up to 14' in width and about 220' in length. Longer spans are possible with a custom design. Bridges are designed to support a vehicle load to allow for maintenance truck passage. Premanufactured bridges are far more economical than a custom designed and engineered bridge, and are the best approach for the budget in this project.

Typically, we will show a proposed bridge configuration on the plan sheets, with an abutment envelope only. This allows the bidding Contractor's to determine an appropriate manufacturer to engineer the required bridge and abutment design for the best cost. The City could provide geotechnical information to facilitate the abutment design process.

SCOPE OF WORK

The work anticipated herein will include:

- Completion of PA&ED, especially for the added bridge portion
- Development of Plans, Specifications and Estimate (PS&E)
- Procurement of Right of Way/Easements

PROPOSED SUBCONSULTANTS

We propose utilizing the following sub-consultants for the work:

KDM Meridian - SURVEYING

KDM Meridian will provide Aerial Mapping for the project area as well as Topographic Field survey where the trail is near the existing streets. The complete survey will provide a complete topographic survey, noting existing features, elevations, locations, Right of Way, monuments, and descriptions.

ECORP - ENVIRONMENTAL

Environmental support for CEQA (bridge section)

The environmental study for the trail is expected to be obtained separately through the trail alignment design effort currently being completed. However, the bridge section is not included in that effort. A separate CEQA study will be required for the bridge section. We have included ECORP to provide support to the City Planning Department for this scope of work, and to provide consultation on the design to avoid environmental impacts.

From a preliminary review, the added bridge is likely to be exempt from CEQA under Class 3 (New Construction of conversion of Small Structures). The City of Moreno Valley would be the Lead Agency for the CEQA and it is assumed that a technical memorandum prepared by ECorp will be required to support the CEQA CE. Biological and Cultural Resources technical studies are anticipated to be prepared and included along with the technical memo.

SCST - GEOTECHNICAL ENGINEERING

SCST will provide for geotechnical investigation and engineering in order to develop a proposed trail structural section. The trail will need to be able to support heavy maintenance vehicles that are expected occasionally, especially along the flood control channel. Data may also be needed to support the bridge abutment design.

ACI- HYDROLOGY

ACI will provide Hydrology analysis of bridge and recommendations for design. ACI will also provide supporting reports for the environmental documents for the proposed work.

PROJECT ISSUES

LANDSCAPING/WAYFINDING

ATP funding typically does not allow for landscaping costs in the federal-aid portion of the funding. We expect that any landscaping will be minimal, and will include restoration of any impacts to existing landscaping and irrigation at El Potrero Park. We anticipate that wayfinding will mimic any design being developed on the ATP 2 project.

INTERSECTIONS/STREET CROSSINGS

The street crossing of Lasselle Avenue at Oleander Street to Rancho Verde High School is expected to require a new traffic signal. There was some mention of the signal being installed as a development condition at some point; however, there is currently no signal. KOA will provide a traffic signal design as an optional item of work. Note that if the project constructs a new traffic signal, it may add $250,000 to $300,000 to the construction cost. We expect that the street crossing at Lake Perris

Drive within the Lake Perris State Recreation Area will be a new STOP controlled intersection.

RIGHT OF WAY

We anticipate that right of way/easements will need to be considered from the following property owners:

- El Potrero Park
- Lasselle Sports Park
- Flood Control Channel
- Perris Trail
- Rancho Verde High School
- Lake Perris State Recreation Area
- Neighborhood connections
- City of Moreno Valley
- County of Riverside
- City of Perris
- School District
- CA State Parks
- HOA/Residents

PERMITS

We anticipate that various permits will be required for construction of the project, which may include the following:

- CA State Parks Encroachment Permit
- City of Moreno Valley Encroachment Permit
- City of Perris Encroachment Permit
- Riverside County Flood Control District Encroachment Permit
- County of Riverside (Flood Control District) Encroachment Permit and License Agreement

Note: If there are any delays or difficulties in obtaining said permits or easements, it may impact the construction schedule beyond the SB-1 funding priority requirement. KOA will assist the City in obtaining the necessary permits and easements as feasible. In addition, any environmental impacts beyond a CEQA Negative Declaration will have a similar impact. In case the Army Corps of Engineers or State Department of Fish & Game require environmental review, a significant delay would likely occur.

ALIGNMENT

Segment 2 of the Trail is planned to extend from the parking lot at El Potrero Park, to Lasselle Sports Park, south along the SBCFCD channel, west along undeveloped Oleander Avenue, west on the south side of Rancho Verde High School, and into the Lake Perris State Recreation Area, connecting to the existing trail. In addition to Segment 2, the ATP grant included funding for extending the Trail southerly and across the flood control channel with a bridge to connect to the recently completed trail in the City of Perris.

<u>El Potrero Park</u>

The start of Segment 2 of the Trail will join the terminus of the Segment 1 Trail at the west end of the El Potrero Park parking lot. KOA will coordinate the design and join details at this location with the Segment 1 design currently being developed. We anticipate that the Trail will run east alongside and augment the existing walkway through the park. Existing irrigation and turf landscaping will need to be adjusted to fit the new construction.

The Trail will continue to the existing bridge over the flood control channel that divides the park, where it will join the existing park trail and cross over the bridge.

The City of Moreno Valley, and the City Parks Department, will need to be consulted for this portion of the project.

<u>Flood Control Channel</u>

After crossing over the bridge, the Trail will veer south through El Potrero Park to Lasselle Park adjacent to the flood control channel. We anticipate that the Trail will provide a connection to the Lasselle Sports Park, and bicycle parking. From here, the Trail will continue approximately 1 mile south along the east side of the flood control channel. An easement will need to be obtained from San Bernardino County for this portion of the Trail. The Trail will likely serve dual use as a trail and County maintenance road. The City will need to determine if lighting will be provided, and if the trail will be gated and closed at any times.

The County of San Bernardino, and possible the Army Corps of Engineers, will need to be consulted for this portion of the project.

Residential Connectivity

The Trail will run directly adjacent to a residential tract on the east side of the channel. We propose to investigate if one or more Trail connections can be developed into these neighborhoods. The Trail will provide convenient off-street access for residents to Lasselle Park, El Potrero Park, and the various schools along the Trail.

The residents and HOA will need to be consulted for this portion of the project.

Oleander Avenue

Oleander Avenue is an undeveloped street located along the south end of the residential housing area. The Trail is planned to turn east from the flood control channel along Oleander Avenue to Lasselle Drive. The Trail will cross Lasselle Drive at a signalized intersection.

The City of Moreno Valley, and probably the City of Perris, will need to be consulted for this portion of the project.

Rancho Verde High School

The Trail will transit east along the south side of Rancho Verde High School to the Lake Perris State Recreation Area.

The School District and the High School will need to be consulted for this portion of the project.

Lake Perris State Recreation Area

The Trail will enter the Lake Perris State Recreation Area from Rancho Verde High School. The Trail will cross Lake Perris Drive at a STOP controlled intersection, then continue northeasterly parallel to existing paved streets until it joins the existing parking lot and trail within the Rancho Verde Lake Perris State Recreation Area.

The State of California will need to be consulted for this portion of the project.

Southerly Extension and Bridge

The ATP grant will fund an extension of the planned Trail to the south, where it will cross the flood control channel(s) and joir to the recently constructed trail on the west side of the channel. All of this work will occur within the City of Perris. In addition, an environmental analysis will need to be completed for this portion of the Trail, since it was not considered in the previous PA&ED phase.

The bridge is anticipated to be a manufactured steel truss bridge that will be shipped to the site and installed on cast in place concrete abutments. To minimize impact to the environment, the flood control channel, and the channel levees, it is anticipated that the bridge will span the entire channel, and not impact the channel side of the levees.

The flood control channel consists of a 300-foot-wide main channel to the south, and two narrower branches to the north. Since current manufactured bridge spans top out at about 220′ of span, we will analyze two options—one with a custom designed span of 300′ +/- crossing the main channel, and one with two standard designed shorter bridges crossing the narrower channels.

The City of Perris, and possibly the Army Corps of Engineers, will need to be consulted for this portion of the project.

PROJECT TASKS

PROJECT MANAGEMENT

Task 1.0 - Project Management and Administration

Under the project management task, KOA will be responsible for maintaining contact with the City's Project Manager to keep him/her informed of the developments on the project. KOA will develop a list of contact information. KOA will coordinate with each agency and determine permits or project specifications that are required. KOA will serve as the main coordinator and liaison between the City and agencies. It is anticipated that monthly PDT meetings will be held until the final completion of the project. The following specific subtasks will be performed:

1) *Management of project team including sub-consultants*
2) *Attend Project Start-up Meeting, Development and Agreement on Design Standards*
3) *Conduct PDT Meetings including Preparing Agenda and Meeting Minutes*
4) *Submittal of Monthly Progress Reports and Invoices including Updating Schedules*
5) *Quality Control of Submittals*

Deliverables:

- Meeting agendas, attendance rosters, and minutes
- Detailed project schedule
- Monthly project reports

PA&ED COMPLETION

Task 1.1: Review and Evaluate Conceptual Design and Preliminary Project Report

The KOA team will meet with the City to establish the design parameters for this project. KOA will also meet with the City and identify all applicable agencies with authority over any particular aspects of the project. KOA will review existing design plans, project reports, and other available project documents; and evaluate and refine conceptual design. ECORP will be available to consult with the design team to avoid environmental impacts, and to advise the City in regards to the Environmental document. Specific subtasks include:

1) *Review PA/ED Documents*
2) *Evaluate and Refine Conceptual Design*
3) *Communications with Stakeholders*
4) *Support City staff for Environmental Review of City of Perris extension*

Deliverables:

- Refined Conceptual Design, Change of Funding Scope Memorandum, if needed

Task 1.2: Utility Research and Coordination

KOA will provide preliminary notification/request letter and relocation/removal notices to all utility companies that have facilities within the limits of the project. The City shall provide KOA with the required format for the utility notice in Microsoft Word format. Specific subtasks include:

1) *Contact and Obtain Utility Information*
2) *Prepare notices and follow up requests with plans to utility companies*

Deliverables:

- Utility Log, Spreadsheet log of notices sent to utility companies and responses received

Task 1.3: Identify Right of Way Impact

The proposed multi-use Trail will require easements or right of way along most of the Trail. It is important that exact property lines on the parcel are indicated on the base map. Once the design footprint has been finalized, KOA will identify the needs for new rights-of-way, permanent easements, temporary construction easements, and rights-of-entry. The KOA team will prepare right-of-way maps showing existing rights-of-way and easements; areas requiring acquisition; assessor's parcel number; zoning; owner's name, addresses, and type of business; street centerlines; property lines; building footprints; setback distances from right-of-way to building; existing and proposed improvements within the affected areas, including potential easements required for maintenance access; utilities; and construction work area, as necessary.

KOA will assist the City in obtaining the necessary easements and right of way for the project. We anticipate that right of way will need to be considered from the following property owners:

- El Potrero Park
- Lasselle Sports Park
- Flood Control Channel
- Perris Trail
- Rancho Verde High School
- Lake Perris State Recreation Area
- Neighborhood connections
- City of Moreno Valley
- County of Riverside
- City of Perris
- School District
- CA State Parks
- HOA/Residents

Specific subtasks include:

1) *Identify Right of Way Impact*
2) *Prepare Right of Way Impact Map*
3) *Prepare legal descriptions*

Deliverables:

- *Right of Way Impact Map, Legal Descriptions*

Task 1.4: Provide Environmental Support

It is anticipated that the project will qualify for a CEQA categorical exemption, to be prepared by the City. Some consultation or supporting information may be required for this determination. We have retained ECORP to provide supporting environmental services within an estimated budget allowance.

From a preliminary review, the added bridge is likely to be exempt from CEQA under Class 3 (New Construction of conversion of Small Structures). The City of Moreno Valley would be the Lead Agency for the CEQA and it is assumed that a technical memorandum prepared by ECorp will be required to support the CEQA CE. Biological and Cultural Resources technical studies are anticipated to be prepared and included along with the technical memo. Specific subtask includes:

1) *Environmental Document Support*

Task 1.5: Preliminary Design Plans (30% Plans)

Preliminary design plans will focus on issues that require general agreement before proceeding with detailed design work. These will be resolved during the preliminary phase of the project. KOA will review and refine the conceptual plan and preliminary alignment plan for the proposed improvements; and identify associated impacts and costs. The preliminary design plan will include existing right-of-way, curbs, striping and marking, and As-Built data. Subtasks for this task will include:

1) *Prepare Preliminary Design Plan (30%)*
2) *Prepare Preliminary Cost Estimates*

Deliverables:

- Four (4) full-size copies of plan submittals at 30%
- Cost Estimates at 30%

FINAL PLANS, SPECIFICATIONS & ESTIMATES

Task 2.1: Data Review, Field Surveying and Base Mapping

Under this main task, the following subtasks will be performed. The KOA team will photograph the entire project area for our use during design, review, and as a pre-construction record. We can utilize our aerial camera ("drone") to obtain aerial imagery where beneficial.

The KOA team will obtain the available "As-Built" files. We will review the available data, proposed work, and develop a specific list of additional field data required for the project. The as-built information will also be field verified, as necessary, and the plans will be updated accordingly. Utility maps will be obtained from the utility agencies. Above ground and overhead utility information will be field verified. All improvement information obtained from records will also be verified in the field in conjunction with this review. Field Work includes:

- Identifying existing curb ramp conditions. Verifying field survey scope.
- Locating all utilities above and below ground. Identifying any possible conflicts.
- Identifying electrical service locations and providing for appropriate service equipment, conductors, conduit, and modifications, if applicable.

Specific subtasks include:

1) *Obtain and Review Existing Record Drawings and Utility Maps*
2) *Field Survey Topographic Features*
3) *Field Review Verification*
4) *Preparation of Base Map*

Deliverables:

- Report of potential conflicts
- Electronic copy of all field surveys in AutoCAD, latest format

Task 2.2: Utility Coordination and Potholing

KOA will send second notices to inform the utility company of their need to relocate their facilities prior to construction, or to adjust their facilities to grade after completion of the pavement construction. If requested by the City, potholing services will be performed under a supplement agreement. Specific subtasks include:

1) *Utility Coordination*
2) *Prepare notices and follow up requests with plans to utility companies*
3) *Pothole utilities (optional)*

Deliverables:

- Utility log
- Pothole Report (extra)

Task 2.3: Geotechnical Investigation

A geotechnical investigation will be performed to sample existing soils, and provide data and engineering for the Trail design. The geotechnical engineer will provide recommendations for pavement sections sufficient for the Trail structure and support of anticipated maintenance vehicle loadings. Additional data will be provided to support the Contractor in development of the bridge abutment design. In addition, an infiltration study will be performed of existing on site soils to determine permeability rates. The project will be designed to infiltrate stormwater and avoid runoff from the project site. Specific subtasks will include:

1) *Perform field investigation and sampling of on-site soils*
2) *Perform laboratory testing and analysis and infiltration study*
3) *Finalize Trail pavement section*
4) *Provide soil data for abutment design*

Task 2.4: Hydrology Study and Drainage Design

The KOA team will perform data research in support of the hydrology and environmental documents. The KOA team will perform a review of available hydrology information. A field investigation will be conducted to familiarize the project team with the drainage conditions, flow patterns, existing design constraints, and existing improvements in the project area. A 100-year hydrology study will be prepared for the drainage areas encompassing the trail based upon the existing (pre-project) and proposed (with-project) conditions. It is assumed that no significant off-site drainage areas are tributary to the proposed bike trail. The study will be performed using the Riverside County Flood Control District's hydrology method. Specific subtasks will include:

1) *Research and Data Gathering*
2) *Conduct Field Review*
3) *Hydrology study*
4) *Location Hydraulic Study and Summary Floodplain Encroachment Report*

Deliverables:

- Drainage improvements plan
- Exclusions: SWPPP, SUSMP, WQMP (available on request, if necessary)

Task 2.5: Prepare Interim and Final Plans, Specifications and Estimate

KOA will prepare and assemble a set of drawings for this project in a bid package format for City review, in accordance with the City of Moreno Valley standards. These plans will be prepared in 90%, 100% and Final Stages. The plans will be assembled after individual tasks are completed as defined in the tasks above. Other plans include, Vicinity Map, Roadway Sections showing pavement thickness, etc. Plans include:

- Demolition plan
- Trail improvement plans
- Drainage improvement plans (on-site infiltration)
- Bridge alignment and envelope plans
- Traffic signal design plans
- Intersection crossing plans
- Signing, striping and markings
- Details
- Notes

All approved plans will be provided to the City on compact disk in AutoCAD, as well as on "D" size Mylar. Specifications documents, including technical specifications, will be provided on digital medium disks in Microsoft Word format. The Engineers Estimate will be provided in Excel format. Specific subtasks include:

1) *Specifications and Special Provisions and Engineers Estimate*
2) *2nd Review 90% Submittal*
3) *Final 100% Review and Submittal*

Deliverables:

- Four (4) full-size copies of plan submittals at 90%, and 100% completion milestones
- Cost estimates at 90%, and 100% completion milestones
- Project specifications at 90% and 100% completion milestones
- One full-size signed Mylar of approved 100% plan set
- Electronic files
- One CD containing final signed plans (PDF and Autocad format), specifications, and estimate

Task 2.6 Stakeholder Outreach & Permit Assistance

KOA will work extensively with the City of Moreno Valley and all stake holders to effectively communicate complex issues to all impacted parties, enabling them to actively participate in policy, planning, and design processes, in order for them to make informed decisions. KOA will coordinate with all stake holders during the PAED and PS&E phases and assist the city with any permits that may be required. We anticipate that various permits will be required for construction of the project, which may include the following:

- CA State Parks Encroachment Permit
- City of Moreno Valley Encroachment Permit
- City of Perris Encroachment Permit
- Riverside County Flood Control District Encroachment Permit
- County of Riverside (Flood Control District) Encroachment Permit and License Agreement

Specific subtasks include:

1) *Outreach and Coordination with Stakeholders; Permit Assistance*

BIDDING AND CONSTRUCTION SUPPORT

Task 4.0: Engineering Support during Bidding, Award & Construction Phase

KOA will assist the City in advertising for bids, and providing plans and specifications. Tasks may include answering questions from prospective bidders, providing responses to requests for information (RFI's), preparing addenda to the PS&E during the advertisement period, and providing consultation and interpretation of construction documents. KOA will attend the project pre-construction meeting. During construction, we will be available to answer requests for information, requests for clarification, and address interpretation needing comment. We will issue clarifications or addenda if necessary. We will be available to review and comment on project submittals. KOA will work closely with the City's appointed construction inspector. Subtasks will be as follows:

1) *Bidding Services*
2) *Preconstruction meeting*
3) *Review Inquiries, submittals and change orders during construction*
4) *Prepare As Built Drawings*

Deliverables:

- RFI Responses
- As Built Drawing

OPTIONAL: CONSTRUCTION MANAGEMENT AND INSPECTION SERVICES

KOA maintains a complete Construction Management and Construction Inspection services division catering to Public Works projects. Our staff includes seasoned construction professionals, with QSP/QSD certifications, safety training, and other relevant training. KOA is available to provide these follow-on services as may be needed to continue the project through completion of construction.

QUALITY CONTROL

KOA is well known for producing high quality work products. We have numerous repeat public clients in the county of San Bernardino and elsewhere who appreciate the quality of work and services that we provide. KOA has established a thorough in-house quality control manual. All work prepared by KOA will go through a QA/QC process based on a checklist procedure. Two individuals are usually involved in the QA/QC process. The primary objective of KOA's quality control program is to ensure that every aspect of the work is constructed in accordance with the contract documents and approved submittals; is in compliance with the applicable code and to industry standards; and is performed consistent with the owner's expectation.

The City of Moreno Valley is our very valuable client and we will exercise our utmost care, as always, to ensure that the City receives the best professional services from us. Quality Control applies to the full spectrum of project activity from preparing proposals all the way to project close-out. It is inherent in the way we plan, do, check, and act to produce the work we perform for our clients, both internal and external.

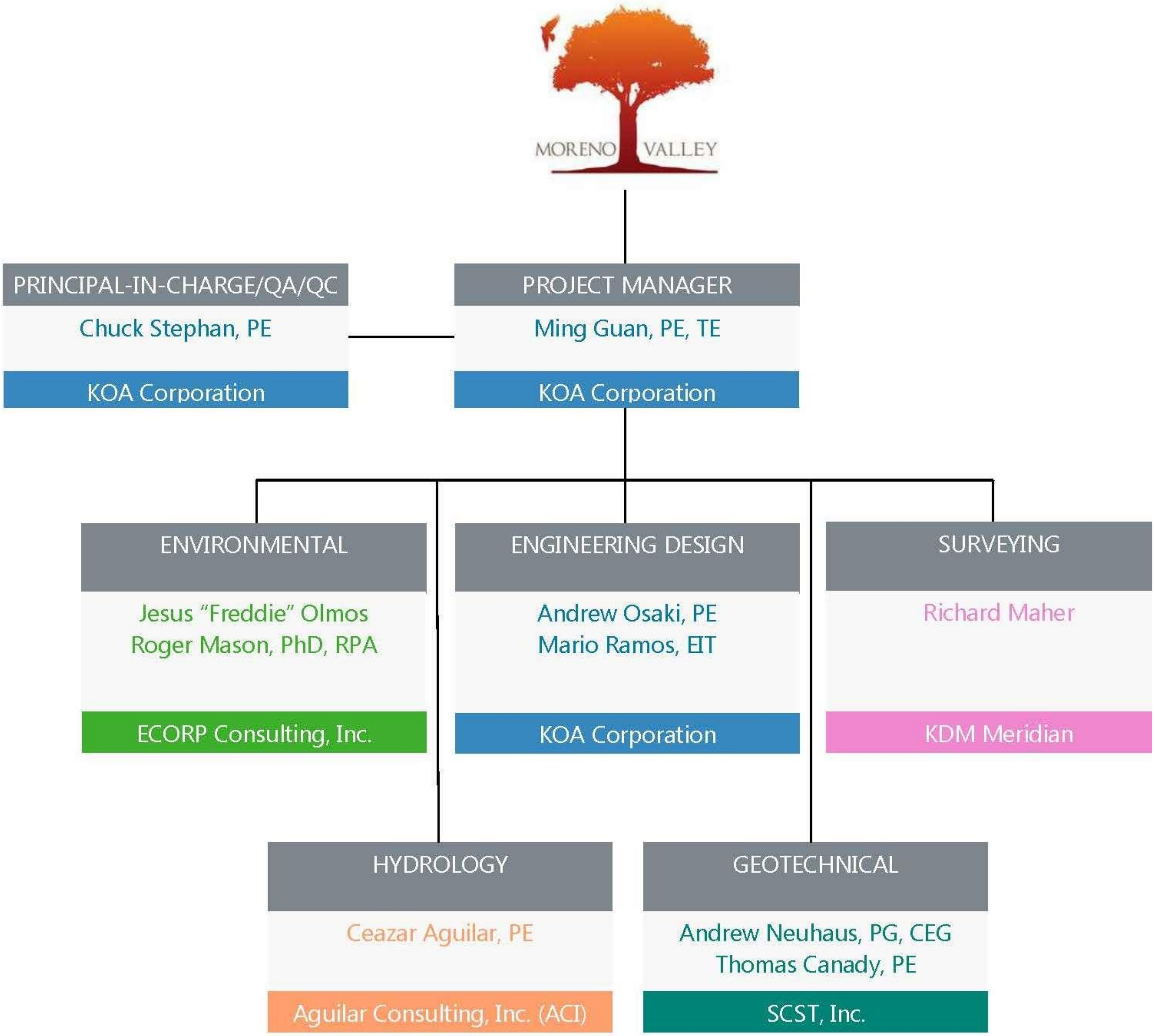
A QA/QC program is essential in providing sound environmental and engineering documents that can quickly be approved by the appropriate agencies with minimal comments and re-work. Prior to all submittals, each report is reviewed by a technical leader in the pertinent discipline for internal procedures followed, document revisions, check print stamps, and completed checklists, until the reviewer is satisfied with the submittal. When an inter-discipline review is required, it is performed in the same manner as the discipline reviews. All QA/QC documentation will be filed in the project files for easy retrieval for internal audits, and is readily available should the City require proof of review.

Chuck Stephan will be the Quality Control Officer for this project. He is well suited for the role as he is an experienced hands-on engineer and project manager who routinely reviews and guides the work of KOA design teams.

Understanding the expectations of the client and stakeholder agencies in advance ensures that the submittals will meet those expectations. This, in turn, builds trust and helps expedite the review and approval process. When submitted to City for review, the Project QA/QC Plan will be reviewed and assessed to ensure that these topic areas are covered and adequately addressed by the plan.

KOA

SECTION 3: STAFFING/ORGANIZATION CHART



CHUCK STEPHAN, PE, VP, SENIOR ENGINEER

PRINCIPAL-IN-CHARGE / QA/QC

KOA Corporation

Mr. Stephan has 35 years of experience in civil engineering design and project management on projects for many municipalities and private firms. He has diverse project experience in planning, design, management, and construction of transportation, educational, institutional, industrial, aerospace, municipal, residential and commercial projects. Mr. Stephan has a great deal of experience in civil engineering design, and construction management for municipal capital improvement projects, including pavement design and rehabilitation; ADA improvements; water pipelines; storm drain and sanitary sewers; medians and landscaping; parking lots; site improvements; plan checking; NPDES requirements.

EDUCATION

BS, Agricultural Engineering, California Polytechnic State University, San Luis Obispo, 1982

REGISTRATIONS

Professional Engineer, Civil, CA #C50481
Prof. Engineer, Civil, OR #1872
Prof. Engineer, Civil, HI #843

RELEVANT EXPERIENCE

City of La Habra Residential Water Main Replacements, and Transmission Pipeline Replacement, La Habra, CA
Mr. Stephan provided project management, project engineering, design, and construction management for various Caltrans funded water pipeline improvement projects which included ARHM pavement:

- Lambert Rd/Hacienda Rd Rehabilitation and Waterline Replacement Project, La Habra, CA
- Lambert Road Sidewalk Gap Closure Project Phases 1 and 2, Lambert Road and Beach Boulevard Intersection Improvement Project, La Habra, CA
- Residential Streets and Alley Rehabilitation and Waterline Replacements Project, La Habra, CA

Engineering Services, Program Management, Project Management, Design, and Construction Management, La Habra, CA
For more than ten years, Mr. Stephan has provided engineering services to the City of La Habra Department of Public Works for the management, design, and construction of various public works capital improvement projects and studies. These projects and services have included annual pavement rehabilitation projects, annual water main replacement projects, arterial rehabilitation projects with federal-aid funding, intersection improvements with federal-aid funding, pedestrian facilities (curb, gutter, sidewalk, ADA ramps) with Safe Routes to School funding, alley reconstruction with CDBG funding, plan checking, bid assistance, federal-aid reimbursements, park facility ADA improvements, athletic fields, survey staking, and storm drain improvements.

City of Torrance Residential Water Main Replacements, Torrance, CA Mr. Stephan provided project management, design, and construction management for various water pipeline improvement projects.

Engineering Services, Program Management, Project Management, Design, and Construction Management, Torrance, CA
Interim Project Manager. Mr. Stephan provided engineering services to the City of Torrance Department of Public Works for the management, design, and construction of various public works capital improvement projects and studies. Projects included: annual pavement rehabilitation projects; annual water main replacement projects, arterial rehabilitation projects with federal-aid funding, street widening and intersection improvements with federal-aid funding; pedestrian facilities, plan checking, bid assistance; federal-aid reimbursements and storm drain improvements.

City of Rancho Palos Verdes Hesse Park ADA Assessment and Recommendation Report, Rancho Palos Verdes, CA
Project Manager. Mr. Stephan investigated ADA deficiencies in the entire Rancho Palos Verdes Hesse Park area, including the Community Center, which houses meeting rooms, exercise room, kitchen and restrooms. The outdoor facilities include ballfields, volleyball courts, play area, picnic area, drinking fountains, walking paths, and parking areas, and access to public Right of way. Deliverables included a report with descriptions, map of deficient locations, and estimated cost to remedy.

MING GUAN, PE, TE, VP, Senior Engineer

PROJECT MANAGER

KOA Corporation

Ms. Guan has 12 years of experience with work in civil, traffic and highway design. Ms. Guan is an integral part of many KOA projects which have involved engineering design for roadway improvements, traffic signal designs, ramp metering, signing and striping, and traffic control plans. She has completed a number of roadway and intersection design projects for a number of agencies. She has hands-on experience in completing PS&E packages. She is also an adjunct professor at Cal Poly Pomona teaching Computer Programing, Traffic Engineer, Highway Engineering and Advanced Highway Engineering for Civil Engineering Department since 2008.

EDUCATION

MS, Civil Engineering, California State Polytechnic University, Pomona, 2011

BS, Civil Engineering, California State Polytechnic University, Pomona, 2006

REGISTRATIONS

Professional Engineer, Civil, CA #75793

Professional Engineer, Traffic, CA #2795

RELEVANT EXPERIENCE

Traffic Signal and Intersection Improvement Project, Fontana, CA

Project Manager. As Project Manager, Ms. Guan was responsible for Slover Avenue and Beech Avenue Intersection Modification and Traffic Signal Installation project. This project impacts one corner property and will require preparation of right of way plans and legal description. ADA ramps also have to be modified to comply with standards. The project is in the final stages of completion.

I-10/Rancho Avenue Eastbound On-Ramp Improvements, Colton, CA

Project Manager. KOA was recently selected by the City of Colton to complete the PA/ED and PS&E for the On Ramp Improvement project. Funded by SHOPP Minor A fund, the City desires to widen the I-10 eastbound on-ramp to accommodate safe truck turning movements. The proximity of the UPRR and the Santa Ana River basin on the south side of the project could influence the project design development. It is important to lay out the UPRR Railroad ROW during the preliminary design phase. Our goal is to avoid impacts to UPRR ROW and the overcrossing bridge. The project requires coordination with Caltrans; preparation of Fact Sheets as well as obtain an encroachment permit from Caltrans District 8. The proposed improvement includes traffic signal modification, installation of retaining wall, embankment, ramp widening, and striping. KOA will also assist the City during the construction phase of the project.

New Traffic Signal Design at I-215 (I-10 WB) On-Ramp and Waterman Avenue, San Bernardino, CA

Project Manager. The City of San Bernardino received funds to improve traffic operations for the I-215 on-ramp and Waterman Avenue intersection which forms a "T" shape intersection with no signal at neither direction. This project will require a new traffic signal, modification of the signing and striping. The KOA team prepared the PS&E package for the signal design per Caltrans and City of San Bernardino. KOA coordinated with Caltrans District 8 to obtain a Caltrans Encroachment Permit which included Utility Coordination, Synchro Analysis, Truck Turning Templates, Isofootcandle light diagram, Water Pollution Control Report, Cost Estimate, Traffic signal plans, Traffic memorandum, and Specifications.

Traffic Signal Design at Vista Chino Parkway (SR111) & Cerritos Road, Palm Springs, CA

Lead Engineer. KOA provided professional traffic engineering services for this City of Palm Springs project. The scope of work included completion of traffic signal installation plans and water pollution control program document. KOA is also responsible for obtaining a Caltrans encroachment permit. Ms. Guan was responsible for design plans, specifications and cost estimates.

SR-60/Perris Blvd. Lane Widening and Traffic Signal Modifications, Moreno Valley, CA

Lead Design Engineer. KOA completed the design and obtained permits from Caltrans for modifications at the interchange. The modifications included adding a southbound right-turn drop lane to the westbound on-ramp at the interchange. This project required traffic signal modifications; relocation of the Wendy's sign; and impact to Wendy's landscaping and drainage improvements. KOA completed a fact sheet for the project and obtained approval of the design variance from Caltrans. Since the project cost was below $3 million, Caltrans permitting followed the Streamlined Oversight Process.

Mt. Vernon Avenue over UPRR Bridge and Roadway Widening Project, Colton, CA

Project Manager. KOA was selected by the City for this major Federally Funded bridge widening project. This project requires the existing bridge to be widened from existing 2 lanes to 4 lanes with bike lanes on each side including curb gutter and sidewalk. The roadway also intersects with EB Ramps of I-10 interchange which will also require modification and approval from Caltrans District 8. This is a federally funded project so NEPA and CEQA Clearance will be required through Caltrans District 8 which has been delegated the NEPA clearance responsibility by FHWA. Main challenges of the project include maintaining the required clearance over the UPRR tracks; obtaining approval of the design from UPRR; and project approval from Caltrans District 8. Other design features include geometric design of the bridge alignment including EB ramp modifications at the interchange, hydraulic studies, drainage design, bridge structure design, and geotechnical studies including Initial Site Assessment study (ISA).

Riverside Avenue Improvement at Linden Street for the City of Rialto, CA

Project Manager. This project requires widening of existing street to 4 lanes with 10-foot shoulder. Total length of the project is about half a mile. The design challenges include consideration of ultimate design so that widening could blend into future widening without losing any new construction being done for the project. This type of design requires specific consideration of roadway camber and side slopes to match existing conditions, and other interim improvements previously constructed.

HSIP Cycle 6 Traffic Signal System, Redlands, CA

Project Manager. Funded by Highway Safety Improvement Program (HSIP) Cycle 6, a new traffic signal system will be installed at the intersection of Orange Street and Pioneer Avenue. Orange Street is a secondary arterial highway and Pioneer Avenue is a local street currently controlled with all-way stop signs. The intersection has experienced a significant increase in peak hour traffic due to the recent construction of t high school on Pioneer Avenue and Taxes Street approximately five years ago. The proposed signal is needed in order to accommodate the traffic and pedestrian movement. Signing and striping will be modified to accommodate signal operation. KOA is recently retained by the City to prepare PS&E packet for the project.

Traffic Signal and Interconnect Design, Rancho Cucamonga, CA

Project Manager. KOA was selected by the City of Rancho Cucamonga to provide design services and complete PS&E package for the following intersections:

Design new traffic signals at:

1) East Avenue at Miller Avenue
2) Sixth Street at Rochester Avenue
3) Milliken Avenue at Fifth Street
4) Rochester Avenue at Jersey Boulevard

Traffic Signal Interconnect at:

1) East Avenue at Miller Avenue Interconnect
2) Sixth Street at Rochester Avenue Interconnect
3) Milliken Avenue at Fifth Street Interconnect
4) Rochester Avenue at Jersey Boulevard Interconnect

ANDREW OSAKI, PE

ASSISTANT ENGINEER/ENGINEERING DESIGN

KOA Corporation

Mr. Osaki has been with KOA for 4 years since graduating from Cal Poly Pomona. He has worked on a number of roadway design and traffic engineering projects as a part of the KOA team. Quickly rising to become an accomplished design engineer, Mr. Osaki is now an integral part of many KOA projects. He is very well skilled in the application of Civil Design Software and has been instrumental in preparing PS&E package for projects in various sizes.

EDUCATION

B.S., Civil Engineering, Cal Poly Pomona, 2013

REGISTRATION

Professional Engineer, Civil, CA #88266

RELEVANT EXPERIENCE

Traffic Signal and Interconnect Design for City of Rancho Cucamonga, Rancho Cucamonga, CA

Assistant Engineer. KOA was selected by the City of Rancho Cucamonga to provide design services and complete PS&E package for the following intersections:

Design new traffic signals at:

1) East Avenue at Miller Avenue
2) Sixth Street at Rochester Avenue
3) Milliken Avenue at Fifth Street
4) Rochester Avenue at Jersey Boulevard

Traffic Signal Interconnect at:

1) East Avenue at Miller Avenue Interconnect
2) Sixth Street at Rochester Avenue Interconnect
3) Milliken Avenue at Fifth Street Interconnect
4) Rochester Avenue at Jersey Boulevard Interconnect

The project design services included intersection modifications at a couple of locations, construction of ADA Ramps, and signing and striping. At one of the intersections, coordination with the business owner was required for their access needs.

HSIP Cycle 6 Traffic Signal System, Redlands, CA

Assistant Engineer. Funded by Highway Safety Improvement Program (HSIP) Cycle 6, a new traffic signal system will be installed at the intersection of Orange Street and Pioneer Avenue. Orange Street is a secondary arterial highway and Pioneer Avenue is a local street currently controlled with all-way stop signs. The intersection has experienced a significant increase in peak hour traffic due to the recent construction of the high school approximately five years ago. The proposed signal is needed in order to accommodate the traffic and pedestrian movement. Signing and striping will be modified to accommodate signal operation. KOA was retained by the City to prepare PS&E packet for the project.

New Traffic Signal Design at I-215 (I-10 WB) On-Ramp and Waterman Avenue, San Bernardino, CA

Assistant Engineer. The City of San Bernardino received funds to improve traffic operations for the I-215 on-ramp and Waterman Avenue intersection which forms a "T" shape intersection with no signal at neither direction. This project will require a new traffic signal, modification of the signing and striping. The KOA team prepared the PS&E package for the signal design per Caltrans and City of San Bernardino.

Reche Vista Canyon Realignment, Moreno Valley, CA

Assistant Engineer. For this federally-funded project, the City selected KOA to complete the NEPA/CEQA documentation; right of way appraisal and acquisition along with study of alignments; and preparation of PS&E. The stretch of Reche Vista Drive to be realigned is included in the Federal Route System and the Comprehensive Transportation Plan (CTP) network; Reche Vista Drive is classified by the City's General Plan as an arterial highway.

MARIO RAMOS, EIT, ASSISTANT ENGINEER

ENGINEERING DESIGN

KOA Corporation

Mr. Mario Ramos is a versatile Assistant Engineer for KOA's Ontario office location. He has extensive experience with signal timing synchronization and ATP projects. He has been involved with the entire synchronization project process, from establishing the existing conditions of a network through data collection and field inventory, to then creating optimized timing plans via Synchro 9 software. He has experience converting timing information and creating converted timing sheets to fit the desired system. He is capable of implementing timing plans in the field at the controller and/or on site at an entity's Traffic Management Center (TMC). Utilizing Tru-Traffic software, he has completed several before and after studies in their entirety, including completing travel time runs, post processing data, and compiling reports.

EDUCATION

BS, Applied Physics, California State University San Marcos

Minor, Mathematics, California State University San Marcos

REGISTRATION

Engineer in Training, Civil, CA #162060

RELEVANT EXPERIENCE

Beech Avenue Improvement Project from Foothill Boulevard to north of P.E. Trail, Fontana, CA

Design Engineer. KOA prepared plans and cost estimates for the design of Beech Avenue. The project included new road construction plans for connecting Beech Avenue from Foothill Boulevard and just north of the Pacific Electric Trail. Traffic signals and interconnection are proposed along Beech Avenue at Foothill Boulevard, the Pacific Electric Trail, and at Miller Avenue. These plans proposed construction of ADA access ramps, bus bay, road widening, storm drain, signing and striping, fiber optic interconnection, and the installation of traffic signals.

Installation of four Traffic Signals at Various Locations, Rancho Cucamonga, CA

Design Engineer. KOA was selected by the City of Rancho Cucamonga to provide design services and complete PS&E package for the following intersection. Design new traffic signals and interconnect at East Avenue at Miller Avenue, Sixth Street at Rochester Avenue, Milliken Avenue at Fifth Street, and Rochester Avenue at Jersey Boulevard The project design services included intersection modifications at a couple of locations, construction of ADA Ramps, and signing and striping. At one of the intersections, coordination with the business owner was required for their access needs.

Waterman Avenue and 215 On-Ramp Traffic Signal Improvement, San Bernardino, CA

Design Engineer. The City of San Bernardino received funds to improve traffic operations for the I-215 on-ramp and Waterman Avenue intersection which forms a "T" shape intersection with no signal at neither direction. This project will require a new traffic signal, modification of the signing and striping. The KOA team prepared the PS&E package for the signal design per Caltrans and City of San Bernardino. KOA coordinated with Caltrans District 8 to obtain a Caltrans Encroachment Permit which included Utility Coordination, Synchro Analysis, Truck Turning Templates, Isofootcandle light diagram, Water Pollution Control Report, Cost Estimate, Traffic signal plans, Traffic memorandum, and Specifications.

HSIP Cycle 6-Orange Street and Pioneer Avenue Traffic Signal, Redlands, CA

Design Engineer. KOA was selected by the city of Redlands for engineering and design services for Orange Street and Pioneer Avenue Traffic Signal project. KOA's tasks included street improvement plans, utility coordination, synchro analysis, traffic memorandum, signing and striping, and a flashing yellow traffic signal installation. KOA also assisted the city in acquiring approval for the Caltrans RFA package and environmental documents. This project is in the final stages and is out for construction bid.

JESUS "FREDDIE" OLMOS

SENIOR ENVIRONMENTAL SCIENTIST

ECORP Consulting, Inc.

Mr. Olmos' professional experience involves California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) analysis and document preparation for government agencies and private clients. He has prepared and managed a variety of environmental documents, including Initial Studies/Negative Declarations (ISs/NDs), Mitigated Negative Declarations (MNDs), Environmental Impact Reports (EIRs), Environmental Impact Statements (EISs), Supplemental EISs/EIRs, Environmental Assessments (EAs), and Findings of No Significant Impact (FONSIs). While his experience focuses on environmental report writing and permit preparation, he also has experience with biological resources monitoring and surveying for public facilities construction and research projects. Mr. Olmos is proficient in oral and written Spanish. He is experienced in the bilingual English-Spanish translation of notices, documents, and handouts for CEQA and biological/cultural resources projects.

EDUCATION

BA, Environmental Analysis & Design, with a minor in Urban & Regional Planning, University of California, Irvine

REGISTRATION

Caltrans Environmental Compliance Training Course for Local Agency Partners and Consultants – Categorical Exemptions and Categorical Exclusions, Caltrans, 2013

RELEVANT EXPERIENCE

CEQA and Air Quality Peer Review Services for a 500,000-Square-Foot Warehouse located within the Renaissance Specific Plan, Rialto, CA

Project Manager and Lead Reviewer for peer review services provided for a CEQA IS prepared for a 500,000-square foot (SF) warehouse (Golden Bear Regional Food Distribution Center) located within the Renaissance Specific Plan in the City of Rialto. The IS was reviewed to determine if it was complete, legally adequate, unbiased, and an objective statement of the proposed project's environmental consequences. ECORP assisted the City in determining if the project impacts were addressed under the Renaissance Specific Plan Program EIR or if a new supplemental or focused EIR was required. In addition, the proposed project's consistency with the adopted Renaissance Specific Plan was evaluated and the Air Quality Technical Report was reviewed.

EIR and CEQA Plus Checklist for the Wastewater Treatment Plant Master Plan/Expansion, Rialto, CA

Project Manager for the CEQA EIR for the proposed Waste Water Treatment Plant expansion. Expansion and modernization of the facility will accommodate the projected population growth and future developed projects. The expansion would double the amount of waste water it could treat per day from 8 MGD to 16 MGD. After certification of the Rialto Wastewater Treatment Plant Master Plan/Expansion EIR, the City of Rialto/Chevron applied for Clean Water State Revolving Funds from the State Water Resources Control Board. Since State Revolving Funds are from the federal government, additional CEQA Plus documentation was required to comply with federal environmental regulations. The Rialto Wastewater Treatment Plant Master Plan/Expansion EIR and technical studies were used to complete the majority of the CEQA Plus Checklist. Additional services included a National Historic Preservation Act Section 106 evaluation, Native American Consultation, and Clean Air Act conformity determination. The checklist was completed on an accelerated schedule in order to meet funding deadlines.

PES, Joint CE/CE, and Cultural Resources Documentation for the Wildomar Bike and Multi-Purpose Trail Improvement Project, Wildomar, CA

Project Manager for a Caltrans PES and Joint CE/CE for the Proposed Project. Phase 1 would provide an on-street Class II bike lane along Clinton Keith Road from George Avenue to Grand Avenue (1.3 miles) and continue on Grand Avenue to Pasadena Street (1.4 miles). Phase 2 would provide a Class II or Class III bike lane along Grand Avenue from the City limit (Richard Lane) to Pasadena Street (2.3 miles). A Categorical Exemption was also prepared for the Multi-Purpose Trail proposed along a portion of Grand Avenue. Additional cultural resources documentation (APE, ASR, HPSR, Native America Consultation) was also prepared at the request of Caltrans.

CEAZAR AGUILAR, PE

HYDROLOGY TASK LEADER

Aguilar Consulting (ACI)

As Principal Engineer of ACI, Mr. Aguilar has over thirty years of experience in drainage, flood control and transportation design, hydrology, hydraulics, flood plain analysis, sediment production and transport analysis, stormwater quality, value engineering, and computer applications. He is a "hands-on" professional manager and leader of multi-faceted projects and program development. He is responsible for the overall design and supervision of staff and other consultants involved in major public works projects. Mr. Aguilar has a proven record of completing large projects and infrastructure management, including support activities, operating procedures and safety in a field or office environment. He has extensive experience in coordinating functions ranging from contract administration to on-site operations control to resolution of legal issues. Mr. Aguilar has developed an excellent reputation with various public agencies for providing thorough and efficient designs of roadways and flood control facilities and for emphasizing cooperative working relationships with public agency staff members.

EDUCATION

BS, Civil Engineering, California State Polytechnic University, Pomona, 1984

REGISTRATION

Professional Engineer, Civil, CA #41679

RELEVANT EXPERIENCE

Santa Ana River Trail (SART) Project, San Bernardino County, CA

Mr. Aguilar served as drainage manager on this 3.8-mile bike/pedestrian trail running along the Santa Ana River. For the most part, the proposed 10-foot AC paved trail runs along the top of the existing channel. For segments under existing bridges, a14-foot PCC section was provided. The project was funded by San Bernardino County Parks Department.

La Cadena Drive New Bridge Replacement Project, Colton, CA

Mr. Aguilar is currently managing the drainage design element of this HBP sponsored new Bridge project for La Cadena Drive over the Santa Ana River in the city of Colton, San Bernardino County. His team prepared the Floodplain, Sediment Transport and Scour Study for the Santa Ana River. He assisted in the preparation of the roadway hydrology and hydraulics study report.

Cathedral Canyon Low-Water Crossing Replacement Project (New Bridge) over Whitewater River, Cathedral City, CA

Mr. Aguilar served as drainage manager on this new bridge and channel improvements project. A new 14-foot PCC bike trail was designed to go under the proposed bridge and match the existing bike trail approximately 400 feet downstream and upstream of the new bridge location. Caltrans' standards were used to design the bike trail.

Mount Vernon Avenue Bridge Replacement and Roadway Widening Project, Colton, CA. Mr. Aguilar is currently serving as task leader-in-charge of the roadway hydrology and drainage design in support of the Mount Vernon Avenue Bridge Replacement and Roadway Widening project in the city of Colton. His team prepared the roadway hydrology and drainage report based upon the existing and proposed roadway conditions.

Pepper Avenue Street Extension, Rialto, CA. Mr. Aguilar served as the project manager for this roadway and drainage project. The project consisted of approximately 4,000 feet of roadway and catch basin/storm drain system, and regional channel construction.

ANDREW NEUHAUS, PG, CEG

SENIOR GEOLOGIST

SCST, Inc.

Andrew has 14 years of experience as an engineering geologist and is well versed in the planning and coordination of geotechnical investigations and implementation of project work plans, safety plans, and permit acquisition. He produces soil exploration logs in accordance with USCS standards utilizing his deep comprehension of subsurface soil conditions. During construction, Andrew advises on grading cleanouts, keyway construction, slope reinforcement, backfill operations, and deep foundation operations. He is skilled in geologic records research for site investigations and reconnaissance, and compiles complex geologic data sets for presentation. Andrew's duties include aiding with project management duties, review of construction plans and specifications, attending jobsite meetings, preparation of engineering reports and proposals, and reviewing and reporting test results.

EDUCATION

BS, Geology, California Lutheran University

REGISTRATIONS

Professional Geologist, CA, #8398
Certified Engineering Geologist, CA #2591

RELEVANT EXPERIENCE

Quarry Road Bridge over Spring Valley Creek, (Federal Aid Project No. BRLO-NBIL(520)), Spring Valley, CA
Geotechnical investigation, including preliminary foundation report and preliminary geotechnical design report for a proposed bridge that will be a continuous box girder structures supported on two abutments and two bents. Subsurface investigation was performed by drilling test borings, which were logged and sampled. The samples were tested to evaluate pertinent classification and engineering properties. A preliminary foundation and preliminary geotechnical design report were produced with our conclusions and geotechnical recommendations.

Avenue 44 Bridge over Coachella Valley Storm Water Channel (Federal Aid Project No. BRLKS-5275(024)), Indio, CA
Design and construction of a bridge spanning the Coachella Valley Storm Water Channel to replace the existing low water crossing. The new bridge will arch over the channel, will have an overall length of about 500 feet, and will carry four lanes of traffic and pedestrian walkways along both sides. New roadway approaches will be constructed to connect both ends of the bridge to the existing roadway. SCST prepared preliminary geotechnical design and foundation reports by reviewing available pertinent information to provide preliminary recommendations. SCST then prepared a geotechnical design report and foundation report. Services included review of existing data, field exploration consisting of drilling and logging of borings, laboratory testing of samples taken from the borings, engineering analysis to develop recommendations, and preparation of the geotechnical design and foundation reports.

North First Avenue Bridge over the Mojave River (Federal Aid Project No. BRLS 5298(031)), Barstow, CA
Proposed replacement of the existing bridge and overflow bridge. The new bridge is proposed to provide two 12-foot lanes of traffic, two 8-foot-wide shoulders, and an 8-foot wide sidewalk. The new 500-foot-long overflow bridge will also provide two 12-foot-wide lanes, two 8-foot wide shoulders, and an 8-foot-wide sidewalk. Both structures are anticipated to be cast-in-place prestressed box girder bridges supported on concrete columns and abutments founded on either driven piles or large diameter cast-in-drilled-hole (CIDH) piles. SCST reviewed the available geologic and seismic information, collected samples of near-surface soils, and performed laboratory testing on the samples to determine grain size distribution for scour analysis. A Preliminary Geotechnical Design Report with preliminary geotechnical design parameters for the bridge design and a Preliminary Foundation Report were then prepared. SCST also prepared a Phase I Environmental Site Assessment, and Aerially Deposited Lead Survey.

RICHARD MAHER, PLS

PRINCIPAL/LAND SURVEYOR

KDM Meridian

Mr. Maher is a Professional Land Surveyor registered in the State of California with twenty years of experience in Land Surveying and Civil Engineering. Since 1999 Mr. Maher has assisted in the review, grading, and exam development of the Land Surveyor's Yearly Licensure Exams for the CA State Board for Professional Engineers and Land Surveyors and continued to participate in this capacity through 2007.

Mr. Maher's experience includes extensive client relations, participating on a consulting basis, as part of a project team, or in the management of projects with over fifty different local, county, State, utility agencies, and private clients. In that capacity, he has been responsible in whole or in part in project development, right-of-way engineering, annexations, heavy and light construction, design topographic surveys, aerial control networks, legal descriptions, boundary surveys, records of survey, and parcel and tract map preparation. Mr. Maher's extended involvement in the details of survey department operations has provided him with working knowledge of state of the art technology, hardware, and software used industry wide. In doing so, Mr. Maher continues to be successful in providing the level of service unique to each client, acting as an extension of their staff, understanding their needs, anticipating issues, and providing solutions exceeding expectations.

More recently, Mr. Maher fulfilled the function of Survey Department Manager for a Civil Engineering and Survey Consulting firm in southern California specializing in Public Works with projects including street, sewer, water, and storm drain improvements, park, municipal and building improvements. His responsibilities ranged from the technical aspect of field and office survey operations, project management, department staffing and training, client relations, and department marketing.

EDUCATION

Civil Engineering, California State University, Fullerton, 1992
GPS Technology, University of California, Riverside Extension, 2012
CLSA Seminars/Conferences, Continuing Education, Present

REGISTRATIONS

Professional Land Surveyor, CA #7564

RELEVANT EXPERIENCE

CRA/LA Pacoima/Panorama, Los Angeles, CA. Preparation of base maps for design of street resurfacing, rehabilitation and curb, gutter, and sidewalk improvements.

CRA/LA Eastside Industrial, Los Angeles, CA. Preparation of base maps for design of street resurfacing, rehabilitation and curb, gutter, and sidewalk improvements.

San Fernando Road and Sheldon Street Improvements, Los Angeles, CA. Preparation of base maps for design of street resurfacing and streetscaping/landscaping, rehabilitation and curb, gutter, and sidewalk improvements.

Baldwin Avenue Median/Turn Lane Improvements, Arcadia, CA. Preparation of base maps for design of median/turn lane improvements.

Foothill Boulevard/Santa Anita Avenue Turn Lane Improvements, Arcadia, CA. Preparation of base maps for design of a dedicated right turn lane.

SECTION 4: PROJECT EXPERIENCE / REFERENCES

JUAN BAUTISTA DE ANZA TRAIL PLAN; ATP GRANT FUNDING

MORENO VALLEY, CA

The 9.5-mile-long Juan Bautista de Anza Pedestrian and Bicycle Path transects Moreno Valley from the northwest to the southeast corners of the city, providing a safe and viable commuter and recreation trail for the entire city. The trail connects schools and parks, dining, shopping, entertainment, office, commercial, and residential areas along the route, leading to the Lake Perris State Recreation Area and the City of Perris regional trail system to the south, and major shopping centers to the north. The project will provide an off-street Class I bike path, walking, and jogging facility for most of the length; on-street connections at two schools; and improved crossing at local and arterial streets. KOA is prepared the major planning and engineering basis of design, and environmental document for the project. During document development, KOA assisted the City in applying for, and winning, two Active Transportation Program (ATP) grants for significant portions of the project, which will connect several schools and parks along the corridor. ***Reference:*** *City of Moreno Valley, Margery Lazarus, PE, Senior Engineer, 14177 Frederick Street, Moreno Valley, CA 92552-0805, (951) 413-3133, margeryl@moval.org*

ATP CYCLE 1, HIGHLAND-REDLANDS CONNECTOR BICYCLE AND PEDESTRIAN IMPROVEMENTS

HIGHLAND/REDLANDS, CA

The proposed project will construct a non-motorized transportation project along 4.7 contiguous miles of streets and easements in the cities of Highland and Redlands. The project will construct bicycle and pedestrian improvements including pavement widening, curb and gutter, curb ramps, median curbs, sidewalks, pavement widening, pavement rehabilitation, slurry seal, pavement markings and striping, Class I and II bikeway/pedestrian paths, bicycle/pedestrian bridge, bike racks, bollards, bike signals, in-roadway bicycle detection, pedestrian heads, sharrows, enhanced crosswalks, warning beacons, roadway and bikeway signage, lighting, and speed feedback signs. The KOA team is responsible for Conceptual Development, Environmental Clearance, Right of Way engineering, and Final PS&E. The KOA team conducted workshop and public outreach in June 2017. The conceptual design has been completed for the project. ***Reference:*** *Dennis Barton, Project Manager, City of Highland, 27215 Base Line, Highland, CA 92346, (909) 864-8732, dbarton@cityofhighland.org*

GRAND AVE BIKE IMPROVEMENTS & MULTI-PURPOSE TRAIL IMPROVEMENTS

WILDOMAR, CA

KOA is leading a team to improve bicycle facilities for the City of Wildomar along a five-mile span of Grand Avenue and Clinton Keith Road. Street widening and trail improvements include the incorporation of Class 1, Class II, and Class III facilities for bicyclists and other non-motorized forms of transportation. The improvements will accommodate students attending a middle school on Grand Avenue and the local bicycling community. The team's services include traffic engineering, utility research, surveying, hydrology, geotechnical engineering, and right-of-way analysis. KOA is providing conceptual plans and alignments, bicycle safety and awareness education, traffic calming design, street crossing designs for bicycle and pedestrian uses, and designs for incorporating ADA access. ***Reference:*** *City of Wildomar, Dan York, Assistant City Manager, 23873 Clinton Keith Rd., Ste. 201, Wildomar, CA 92595, (951) 677-7751, dyork@cityofwildomar.org.*

BEECH BLVD IMPROVEMENT PROJECT FROM FOOTHILL BOULEVARD TO NORTH OF P.E. TRAIL

FONTANA, CA

KOA prepared plans and cost estimates for the design of Beech Avenue from Foothill Boulevard to Miller Avenue. The project included new road construction plans for connecting Beech Avenue from Foothill Boulevard and just north of the Pacific Electric Trail. Traffic signals and interconnection are proposed along Beech Avenue at Foothill Boulevard, the Pacific Electric Trail, and at Miller Avenue. These plans proposed construction of ADA access ramps, bus bay, road widening, storm drain, signing and striping, fiber optic interconnection, and the installation of traffic signals. Key issues involved were utility conflicts, right-of-way acquisitions, right-of-way limitations, and coordination with local business/agencies. ***Reference:*** *Mr. Noel, Castillo, Engineering Manager, City of Fontana, 8353 Sierra Ave, Fontana, CA 92335, (909) 350-7632, ncastillo@fontana.org.*

OAK CREEK VILLAGE JEFFREY OPEN SPACE TRAIL DESIGN

IRVINE, CA

The City retained KOA and our team to develop conceptual plans, construction-ready plans, specifications, and cost estimates for the development of the PA 12 – Oak Creek Village Jeffrey Open Space Trail (JOST). The preliminary design effort studied the trail immediately adjacent to Jeffrey Road and to the east adjacent to the golf course property. The design effort studied options for providing an overcrossing of Walnut Avenue, the I-5 freeway, and off-ramp, and for connecting to the planned trail to the north of the I-5 freeway. Some additional planned bridge improvements extended to Roosevelt Street to the north. The project was developed in accordance with the current JOST conceptual statements and design goals, the City of Irvine's Bicycle Transportation Plan, and per design direction throughout the project development phase. Specific services included surveying, alignment design, PS&E, conceptual design alternatives for a structure at the trailhead, permitting, bridge design, and a project study report for Caltrans review. ***Reference:*** *Cheryl Martinez, Associate Transportation Analyst, City of Irvine, 1 Civic Center Plaza, Irvine, CA 92623, (949) 724-7313, cmartinez@ci.irvine.ca.us.*

SUB-CONSULTANT FIRM SUMMARY

ECORP CONSULTING, INC.

ECORP Consulting Inc. (ECORP) is experienced in the preparation of Preliminary Environmental Study (PES) forms for projects per Caltrans' Local Assistance Procedures Manual (LAPM). ECORP has used the PES form to consult with Caltrans/FHWA to determine the appropriate NEPA and CEQA document for a project. ECORP staff have prepared Categorical Exclusions/Exemptions (CE/CEs), Environmental Assessments (EA), joint Initial Study/Environmental Assessments (IS/EAs), and Mitigated Negative Declaration/Finding of No Significant Impacts (MND/FONSIs) for a series of projects with Caltrans involvement. In addition, ECORP has prepared technical studies in support of the PES and NEPA/CEQA documents per the requirements from Caltrans' Standard Environmental Reference (SER) and FHWA. These include, but are not limited to: Section 106 National Historic Preservation Act (NHPA) compliance, Natural Environment Studies, Community Impact Assessments, Section 4(f), and Clean Air Act compliance. Based on their experience with similar projects with Caltrans involvement and federal funding, ECORP understands the added level of effort for NEPA documentation and coordination, including public participation, which needs to be factored into overall schedule for a successful project. They have experience working on CEQA/NEPA, biological, and cultural projects for several districts of Caltrans. The technical studies will be primarily be managed from the Redlands office located at 215 North Fifth Street, Redlands, CA 92374; (909) 307-0046; fax: (909) 307-0056.

- Bike and Multi-purpose Trail Improvement Project, Wildomar, CA
- West Street and Citron Street Sidewalk Gap Closure Project, Anaheim, CA

PROJECT ROLE
Environmental

YEAR FOUNDED
1987

PROJECT OFFICE LOCATION
215 North Fifth Street
Redlands, CA 92374
(909) 307-0046

KEY INDIVIDUALS
Jesus "Freddie" Olmos
Folmos@ecorpconsulting.com

AGUILAR CONSULTING, INC. (ACI)

Established in 2011 as an S-Corporation, Aguilar Consulting, Inc. (ACI) provides professional hydrology, hydraulics, floodplain and sediment transport studies, drainage and transportation design services. Their entrepreneurial spirit and commitment to innovation have allowed them to maintain a competitive cost structure while offering superior services. ACI employs 8 professionals primarily serving Southern California. ACI office is located at 2155 Chicago Avenue, Suite 301, Riverside, CA 92507; Phone Number is (951)300-1431; Fax Number is (951)300-1435.

- Santa Ana River Trail (SART) Project, San Bernardino County, CA
- Cathedral Canyon Low-Water Crossing Replacement Project over Whitewater River, Cathedral City, CA

PROJECT ROLE
Hydrology

YEAR FOUNDED
2011

PROJECT OFFICE LOCATION
2155 Chicago Avenue, Ste. 304
Riverside, CA 92507
(951) 300-1431
(951) 300-1435

KEY INDIVIDUALS
Ceazar Aguilar, President
(951) 300-1431 Work
(951) 709-4393 Cell
caguilar@aguilarconsultinginc.com

SCST, INC.

Founded in 1959, SCST, Inc. is a professional services firm providing geotechnical engineering, environmental consulting, special inspection, materials testing, and facilities consulting services. They are a State of California Disabled Veteran Business Enterprise (DVBE) and a certified Service-Disabled Veteran-Owned Small Business (SDVOSB) by the Department of Veterans Affairs CVE. SCST employs over 150 professionals, including skilled geotechnical engineers, engineering geologists, civil and environmental engineers, environmental scientists, multi-credentialed inspectors and technicians, and the appropriate management systems and support personnel committed to providing clients with high quality and tailored services. The firm also operates four geotechnical and materials laboratories throughout California.

PROJECT ROLE
Geotechnical Engineering

YEAR FOUNDED
1959

PROJECT OFFICE LOCATION
514 North California Avenue
Suite 5
Beaumont, CA 92223
(951) 294-7306

KEY INDIVIDUALS
Andrew Neuhaus, PG, CEG
Senior Geologist
aneuhaus@scst.com

KDM MERIDIAN

KDM Meridian is a professional Land Surveying and Civil Engineering consulting firm specializing in GPS, conventional land surveying, and project mapping, municipal engineering, and C.I.P. management.

Established in February of 2000, KDM Meridian has rapidly built a growing clientele by offering professional and technical services to public and private clients ranging from local, regional, state, and federal agencies, to utility agencies, development groups, private consulting firms, construction firms, professional and landscape architects, and attorneys. Additionally KDM Meridian has worked directly with City agencies providing topographic and mapping services for the purpose of public works design improvements. At least three-quarters of the projects performed by the firm are directly in relation to public works improvement and the staff at KDM Meridian is well versed in the requirements and understandings of its objectives and needs.

KDM Meridian is a California corporation located in the City of Lake Forest. The firm is currently fielding two survey crews on a regular basis to perform conventional and GPS land surveying, with the ability to provide up to four two-man crews on short notice. In-house personnel provide boundary, mapping, right-of-way, topographic, construction calculation, legal description, and related functions. There are eleven (11) regular full-time employees of whom four are California licensed surveyors, one licensed engineer, and one certified LSIT. The KDM Meridian staff functions as an extension of its client's staff to provide management, technical, and professional services in a responsive, cost effective, and professional manner, meeting their schedules and project goals.

PROJECT ROLE
Surveying services

YEAR FOUNDED
2000

PROJECT OFFICE LOCATION
22541 Aspan Street, Suite C
Lake Forest, CA 92630
(949) 768-0731
(949) 768-3731 fax

KEY INDIVIDUALS
Rich Maher, PLS, Principal
(949) 768-0731

PROPOSAL FEE

Professional Services for Juan Bautista Trail Phase 2 PS&E,
Segment of Multi-Use Trail from El Portrero Park to Lake Peris State Recreation Area
City of Moreno Valley

TASKS	Principal In Charge $188	Project Manager $142	Project Engineer $112	Design Engineer $90	CAD Technician $67	Admin. Assist. $67	Hydrology ACI	Surveying KDM	Environmental ECORP	Geotech SCST	TOTAL COST
A - GENERAL											
Task 1.0 - Project Management and Administration											
1) Management of project team including sub-consultants		8	4								$1,584
2) Project Start-up Meeting, Development and Agreement on Design Stds	2	4	4								$1,392
3) Conduct Meetings including Preparing Agenda and Meeting Minutes	8	8	12								$3,984
4) Submitting of Monthly Progress Reports and Invoices		4	8			8					$2,000
5) Quality Control of Submittals	8	4	4	2							$2,700
Subtotal	**18**	**28**	**32**	**2**		**8**	**$0**	**$0**	**$0**	**$0**	**$11,660**
General HOURS	**18**	**28**	**32**	**2**	**0**	**8**					
General COST	**$3,384**	**$3,976**	**$3,584**	**$180**	**$0**	**$536**	**$0**	**$0**	**$0**	**$0**	**$11,660**
B - PHASE I - PA& ED COMPLETION											
Task 1.1: Review and Evaluate Conceptual Design & Prelim Project Report											
1) Review PA/ED Documents	2	4	4								$1,392
2) Evaluate and Refine Conceptual Design	2	4	8	12	24						$4,528
3) Communications with Stakeholders	4	4	4								$1,768
4) Support City staff for Environmental Review of City of Perris extension	2	4	4	4							$1,752
Subtotal	**10**	**16**	**20**	**16**	**24**		**$0**	**$0**	**$0**	**$0**	**$9,440**
Task 1.2: Utility Research and Coordination											
1) Contact and Obtain Utility Information		2	2	4	8	2					$1,538
2) Prepare notices and follow up requests with plans to utility companies			2	2	4	2					$806
Subtotal		**2**	**4**	**6**	**12**	**4**	**$0**	**$0**	**$0**	**$0**	**$2,344**
Task 1.3: Identify Right of Way Impact											
1) Identify Right of Impact		2	4	4							$1,092
2) Prepare Exhibits (Assume 8 each)		1	2	8	16			$8,000			$10,158
3) Prepare legal descriptions (Assume 8 each)		4	4					$8,000			$9,016
Subtotal		**7**	**10**	**12**	**16**		**$0**	**$16,000**	**$0**	**$0**	**$20,266**
Task 1.4: Provide Environmental Support											
1) Environmental Document Support (ALLOWANCE)	2	4	4	4					$15,000		$16,752
Subtotal	**2**	**4**	**4**	**4**			**$0**	**$0**	**$15,000**	**$0**	**$16,752**
Task 1.5 - Preliminary Design Plans (30% Plans)											
1) Prepare Preliminary Design Plan(30%)	2	8	16	32	48						$9,400
2) Prepare Preliminary Cost Estimate	1	2	2	8	8						$1,952
Subtotal	**3**	**10**	**18**	**40**	**56**		**$0**	**$0**	**$0**	**$0**	**$11,352**
PHASE I HOURS	**15**	**39**	**56**	**78**	**108**	**4**					
PHASE I COST	**$2,820**	**$5,538**	**$6,272**	**$7,020**	**$7,236**	**$268**	**$0**	**$16,000**	**$15,000**	**$0**	**$60,154**
C - PHASE II - 100% PS&E											
Task 2.1 - Data Review, Field Surveying and Base Mapping											
1) Obtain and Review Existing Record Drawings and Utility Maps		4	8								$1,464
2) Field Survey Topographic Features			2					$33,000			$33,224
3) Field Review Verification	2		4	8	8						$2,080
4) Preparation of Base Map			2	8	20			$5,000			$7,284
Subtotal	**2**	**4**	**16**	**16**	**28**		**$0**	**$38,000**	**$0**	**$0**	**$44,052**
Task 2.2 - Utility Coordination and Potholing											
1) Utility Coordination		2		4		2					$778
2) Prepare notices and follow up requests with plans to utility companies		2		4		2					$778
3) Pothole utilities (Optional Assume 8 holes @ $1,200 Per hole)										$9,600	$9,600
Subtotal		**4**		**8**		**4**	**$0**	**$0**	**$0**	**$9,600**	**$11,156**
Task 2.3 - Geotechnical Investigation											
1) Perform field investigation and sampling of on-site soils		2		2						$4,000	$4,464
2) Perform laboratory testing and analysis		2		2						$4,500	$4,964
3) Finalize Trail pavement section		2		2						$3,500	$3,964
4) Provide soil data for abutment design		2		2						$2,000	$2,464
Subtotal		**8**		**8**			**$0**	**$0**	**$0**	**$14,000**	**$15,856**
Task 2.4 - Hydrology Study and Drainage Design											
1) Research and data Gathering		2	2				$1,000				$1,508
2) Conduct Field Review		2	2				$1,000				$1,508
3) Hydrology Study		2	4				$1,500				$2,232
4) Location Hydraulic Study and Summary Floodplain Encroachment Report		2	4				$1,500				$2,232
Subtotal		**8**	**12**				**$5,000**	**$0**	**$0**	**$0**	**$7,480**
Task 2.5 - Prepare Interim and Final Plans, Specifications and Estimate											
1) Specifications, Special Provisions and Engineers Estimate	4	4	12	20	8						$5,000
2) 2nd Review 90% Submittal	4	8	20	48	60	4					$12,736
3) Final 100% Review and Submittal	2	4	12	24	40	2					$7,262
Subtotal	**10**	**16**	**44**	**92**	**108**	**6**	**$0**	**$0**	**$0**	**$0**	**$24,998**
Task 2.6 Stakeholder Outreach & Permit Assistance											
1) Outreach and Coordination with Stakeholders; Permit Assistance	4	16	16	28		4					$7,604
Subtotal	**4**	**16**	**16**	**28**		**4**	**$0**	**$0**	**$0**	**$0**	**$7,604**
PHASE II HOURS	**16**	**56**	**88**	**152**	**136**	**14**					
PHASE II COST	**$3,008**	**$7,952**	**$9,856**	**$13,680**	**$9,112**	**$938**	**$5,000**	**$38,000**	**$0**	**$23,600**	**$111,146**
D - PHASE III – BIDDING AND CONSTRUCTION SUPPORT											
Task 3.1 - Engineering Support during Bidding, Award & Construction Phas											
1) Bidding Services		4		4	4						$1,196
2) Preconstruction meeting	2	2	2								$884
3) Review Inquiries, submittals and change orders during construction	2	8	12	16							$4,296
4) Prepare As Built Drawings		2	2	8	16						$2,300
Subtotal	**4**	**16**	**16**	**28**	**20**		**$0**	**$0**	**$0**	**$0**	**$8,676**
PHASE III HOURS	**4**	**16**	**16**	**28**	**20**	**0**					
PHASE III COST	**$752**	**$2,272**	**$1,792**	**$2,520**	**$1,340**	**$0**	**$0**	**$0**	**$0**	**$0**	**$8,676**
1) Reports, Printing and Mylars											**$500**
2) Mileage											**$250**
ALL PHASES TOTAL HOURS	**53**	**139**	**192**	**260**	**264**	**26**					
ALL PHASESTOTAL COST	**$9,964**	**$19,738**	**$21,504**	**$23,400**	**$17,688**	**$1,742**	**$5,000**	**$54,000**	**$15,000**	**$23,600**	**$192,386**

KOA

Report to City Council

TO:	Mayor and City Council
FROM:	Richard J. Sandzimier, Community Development Director
AGENDA DATE:	September 4, 2018
TITLE:	ACCEPTANCE OF THE FISCAL YEAR 2018 BUREAU OF JUSTICE ASSISTANCE EDWARD BYRNE MEMORIAL JUSTICE ASSISTANCE GRANT PROGRAM AWARD

RECOMMENDED ACTION

Recommendation:

1. Accept the Fiscal Year 2018 Bureau of Justice Assistance Edward Byrne Memorial Justice Assistance Grant Program grant award of $42,900 through the City of Riverside Police Department.

2. Authorize the City Manager, or his designee, to execute for and on behalf of the City of Moreno Valley, agreements and other related documents required by the Bureau of Justice Assistance for participation in the Edward Byrne Memorial Justice Assistance Grant Program, subject to the approval of the City Attorney.

3. Authorize the Chief Financial Officer, or his designee, to make any necessary budget adjustment appropriations related to expenditures and revenues for Fiscal Year 2018/2019 as outlined in the Fiscal Impact section of this report.

SUMMARY

This report recommends acceptance of the FY 2018 Bureau of Justice Assistance (BJA) Edward Byrne Memorial Justice Assistance Grant Program (JAG) conditional grant award in the amount of $42,900. As with prior JAG funding awards, the funds will be used to support Code and Neighborhood Services Weekend Code Enforcement Program.

DISCUSSION

The U.S. Department of Justice, through the Office of Justice Programs, provides federal leadership for the development of programs nationally aimed at preventing and suppressing crime. This effort is carried out through the formation of partnerships with other federal, state and local agencies. Additionally, the Office of Justice administers grants that assist states, tribes and local governments to focus on programs that address youth crime, substance abuse, family violence and other enforcement needs, prosecution of offenders, crime prevention and education of the community. As the funding allocated by the federal government goes to the states and subsequently the states provide allocations through the regions, the funding is considered conditional as the initial allocation to California is not yet confirmed. It is noted, that for the first time in 2017 California did not get an allocation.

For 2018, the JAG program has conditionally allocated a total of $411,391 to Riverside County and participating cities, including the $42,900 conditionally awarded to the City of Moreno Valley. The City of Moreno Valley is classified as a sub-grantee due to our programs that include emphasis on crime prevention through enforcement efforts. Moreno Valley's Code and Neighborhood Services Division is proposing the continued use of JAG funding for the City's Weekend Code Enforcement Program. Code enforcement services, including weekend days, is a key to combating neighborhood blight, unpermitted activities and serves as a deterrent to thwart crime.

In early 2009, the Code and Neighborhood Services Division experienced a significant loss of staffing resources due to budgetary constraints. However, at that time, community demands for services did not decrease, and in fact increased. This reality required the City to reevaluate programming and budgeting practices. It was a deliberate decision that any lax in addressing code and neighborhood service demands could put the City at risk of higher incidents of crime and blighted property conditions.

The City, therefore, has applied for JAG allocations annually since 2009 to help shore up the cost of the desired services. The City has been successful and has received regular annual awards. One exception of note was the 2017 allocation, which was not realized due to changed direction by the federal government in not confirming the State of California allocation. The Community Development Department was able to absorb the non-allocation due to other department budget savings in that fiscal year. Through the JAG Program the City has benefitted from approximately $577,587 in awards in support of the City's Weekend Code Enforcement Program., This strategy is in direct alignment with the Council's desire to identify and pursue alternate funding sources whenever possible.

Code and Neighborhood Services expends the grant award annually to fund two, part-time Code Officers currently assigned to the Weekend Code Enforcement Program.

ALTERNATIVES

1. Accept the Fiscal Year 2018 BJA Edward Byrne Memorial JAG grant award and approve revenue and expenditure allocation adjustments. *This alternative will allow the City to receive Fiscal Year 2018 BJA Edward Byrne Memorial JAG funding which will allow Code and Neighborhood Services to continue the*

Weekend Code Enforcement Program activities and ongoing efforts to reduce crime in the community.

2. Do not accept the Fiscal Year 2018 BJA Edward Byrne Memorial JAG grant award. *This alternative will prohibit the City from receiving Fiscal Year 2018 BJA Edward Byrne Memorial JAG funding which will hinder the continuation of the Weekend Code Enforcement program activities and efforts to reduce crime in the community.*

FISCAL IMPACT

The budget for this anticipated annual grant was approved by City Council through the adopted budget process in May 2017.

This grant has no requirement for matching funds. The revenue and expenditures for this grant have been budgeted in 2715-20-26-72115. Acceptance of this grant award will necessitate the adjustments outlined below.

As noted in the discussion above, the award of the grant is contingent upon the federal allocation of funding to the State and then allocation by the State to the regions. All expenses are expected to be reimbursed by the successful grant award, which would result in no impact to the General Fund. Should the federal allocation not come through, as experienced in FY 2017, the $42,900 costs would need to be covered by General Fund.

Description	Fund	GL Account No.	Type (Rev/Exp)	FY 18/19 Budget	Proposed Adjustments	FY 18/19 Amended Budget
Receipt of Grant	JAG	2715-20-26-72115-485000	Rev	$46,292	($3,392)	$42,900
Administration	JAG	2715-20-26-72115-611310	Exp	$44,752	($2,828)	$41,924
Administration	JAG	2715-20-26-72115-620410	Exp	$1,540	($564)	$976

NOTIFICATION

Publication of the Agenda

PREPARATION OF STAFF REPORT

Prepared By:
Steve Alvarado
Code and Neighborhood Services Division Manager

Department Head Approval:
Richard J. Sandzimier
Community Development Director

CITY COUNCIL GOALS

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

<u>Positive Environment</u>. Create a positive environment for the development of Moreno Valley's future.

<u>Community Image, Neighborhood Pride and Cleanliness</u>. Promote a sense of community pride and foster an excellent image about our City by developing and executing programs which will result in quality development, enhanced neighborhood preservation efforts, including home rehabilitation and neighborhood restoration.

CITY COUNCIL STRATEGIC PRIORITIES

1. **Economic Development**
2. **Public Safety**
3. **Library**
4. **Infrastructure**
5. **Beautification, Community Engagement, and Quality of Life**
6. **Youth Programs**

ATTACHMENTS

1. FY2018 JAG Interlocal Agreement

APPROVALS

Budget Officer Approval	✓ Approved	8/28/18 11:25 AM
City Attorney Approval	✓ Approved	8/28/18 1:28 PM
City Manager Approval	✓ Approved	8/28/18 1:37 PM

INTERLOCAL AGREEMENT
BETWEEN CITIES OF BANNING, CATHEDRAL CITY, COACHELLA, CORONA, DESERT HOT SPRINGS, HEMET, INDIO, JURUPA VALLEY, MORENO VALLEY, PALM SPRINGS, PERRIS, THE COUNTY OF RIVERSIDE AND
THE CITY OF RIVERSIDE, CA

CONCERNING DISTRIBUTION OF THE
2018 JUSTICE ASSISTANCE GRANT AWARD

This Agreement is made and entered into this ___ day of _____, 2018, by and between THE CITY OF RIVERSIDE, acting by and through its governing body, the Riverside City Council (hereinafter referred to as "CITY"), and the aforementioned COUNTY (hereinafter referred to as "COUNTY") and named CITIES (hereinafter referred to as "CITIES"), acting by and through their respective governing bodies, the Board of Supervisors and City Councils, all of whom are situated within the County of Riverside, State of California, as follows:

WHEREAS, each governing body, in performing governmental functions or in paying for the performance of governmental functions hereunder, shall make that performance or those payments from current revenues legally available to that party; and

WHEREAS, each governing body finds that the performance of this Agreement is in the best interests of all parties, that the undertaking will benefit the public, and that the division of costs fairly compensates the performing party for the services or functions under this Agreement; and

WHEREAS, the CITY agrees to release to COUNTY and CITIES their respective grant allocation from the JAG Award, less ten percent (10%) re-allocated to CITY, as reflected on Appendix 1 here attached and hereby incorporated by reference as part of this agreement, on a reimbursement basis; and CITY agrees to provide the administration of COUNTY's and CITIES' programs during the entire permissible duration of said programs; and additionally the COUNTY and CITIES each agree that it is their responsibility to ensure these funds are expended in accordance with JAG guidelines; and

WHEREAS, the COUNTY, CITIES and CITY believe it to be in their best interests to reallocate the JAG funds,

NOW THEREFORE, the CITY and COUNTY and CITIES agree as follows:

<u>Section 1.</u>

CITY agrees to release to COUNTY and CITIES up to their respective grant allocation from the JAG Award, less ten percent (10%) re-allocated to CITY, as reflected in Appendix 1 here attached and hereby incorporated by reference as part of this Agreement, on a reimbursement basis, from the JAG Award within (45) days upon receipt of fully documented reimbursement request, and; CITY agrees to provide the administration of COUNTY's and CITIES' programs during the entire permissible duration of said programs.

<u>Section 2.</u>

COUNTY and CITIES each agree that it is their responsibility to ensure these funds are expended in accordance with JAG guidelines.

Section 3.

COUNTY and CITIES agree to provide CITY with sufficient timely information as necessary within five business days after receiving written request from CITY to meet JAG requirements for quarterly financial and performance metrics reports and semi-annual programmatic reports.

Section 4.

Nothing arising from this Agreement shall impose any liability for claims or actions against CITY other than what is authorized by law.

Section 5.

Nothing arising from this Agreement shall impose any liability for claims or actions against COUNTY and/or CITIES other than what is authorized by law.

Section 6.

Each party to this Agreement will be responsible for its own actions in providing services under this Agreement and shall not be liable to any other party to this Agreement for any claim or action arising from the services provided under this Agreement.

Section 7.

The parties to this Agreement do not intend for any third party to obtain a right by virtue of this Agreement.

Section 8.

By entering into this Agreement, the parties do not intend to create any obligations, either express or implied, other than those set out herein; further, this Agreement shall not create any rights in any party not a signatory hereto.

WHEREFORE, all parties freely and voluntarily agree to all of the above terms.

CITY OF MORENO VALLEY, CA

____

City Manager

ATTEST:

____

City Clerk

APPROVED AS TO FORM:

____

City Attorney

Appendix 1
Eligible Agencies in FY2018 JAG Disparate Area

Riverside City FA	BJA Formula	To Fiscal Agent	New Allocation	% to FA
Riverside City	106,196	30,523	136,719	
Banning	11,604	-1,161	10,443	10.0%
Cathedral City	10,070	-1,007	9,063	10.0%
Coachella	11,169	-1,117	10,052	10.0%
Corona	13,929	-1,393	12,536	10.0%
Desert Hot Springs	17,303	-1,731	15,572	10.0%
Hemet	37,878	-3,788	34,090	10.0%
Indio	38,823	-3,883	34,940	10.0%
Jurupa Valley	20,805	-2,081	18,724	10.0%
Moreno Valley	47,667	-4,767	42,900	10.0%
Palm Springs	21,188	-2,119	19,069	10.0%
Perris	15,310	-1,531	13,779	10.0%
Riverside County	59,449	-5,945	53,504	10.0%
	411,391	0	411,391	
Less City of	-106,196			
Riverside allocation	305,195			
% To Fiscal Agent	10%			
$ To FA	30,523			

Report to City Council

TO:

FROM: Richard J. Sandzimier, Community Development Director

AGENDA DATE: September 4, 2018

TITLE: SECOND READING AND ADOPTION FOR ORDINANCE NO. 941

RECOMMENDED ACTION

That the City Council adopt Ordinance No. 941.

SUMMARY

This report recommends adoption of Ordinance No. 941, introduced at the last City Council meeting, approving a Change of Zone (PEN17-0134).

DISCUSSION

Based on review and consideration of the application a Change of Zone submitted by the applicant, Winchester Associates on behalf of Gossett Development, the City Council introduced the ordinance to change the zone from Neighborhood Commercial (NC) to Community Commercial (CC) amending pages 110 and 124 of the Official Zoning Atlas on 6.83 acres.

The Ordinance was introduced at the meeting of August 21, 2018.

ALTERNATIVES

The City Council has the following alternatives to consider:

1. Conduct the second reading by title only and adopt Ordinance No. 941.
2. Provide revisions to the draft Ordinance and have staff return with the revised draft for another adoption process.
3. Provide alternate direction to staff.

NOTIFICATION

Agenda was posted in accordance with the Brown Act.

CITY COUNCIL GOALS

None

CITY COUNCIL STRATEGIC PRIORITIES

1. **Economic Development**
2. **Public Safety**
3. **Library**
4. **Infrastructure**
5. **Beautification, Community Engagement, and Quality of Life**
6. **Youth Programs**

ATTACHMENTS

1. Ordinance 941 - Zone Change
2. Exhibit A to Ord 941

APPROVALS

Budget Officer Approval	✓ Approved	8/29/18 6:00 PM
City Attorney Approval	✓ Approved	8/29/18 6:00 PM
City Manager Approval	✓ Approved	8/30/18 11:19 AM

ORDINANCE NO. ____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, APPROVING ZONE CHANGE APPLICATION NO. PEN17-0134: AN AMENDMENT TO THE OFFICIAL ZONING ATLAS, CHANGING THE ZONING CLASSIFICATION FROM NEIGHBORHOOD COMMERCIAL (NC) TO COMMUNITY COMMERCIAL (CC) FOR APPROXIMATELY 6.83 ACRES GENERALLY LOCATED AT THE SOUTHWEST CORNER OF PERRIS BOULEVARD AND JOHN F. KENNEDY DRIVE (ASSESSOR'S PARCEL NUMBERS: 485-081-037, 485-081-038, 485-081-039, 485-081-041 AND 485-081-043).

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

SECTION 1 GENERAL:

1.1 The applicant, Winchester Associates, Inc., on behalf of Gossett Development, has filed application PEN17-0134, requesting an amendment to Pages 110 and 124 of the Official Zoning Atlas to change the zoning classification for certain property as described in the title of this ordinance and the attached Exhibit A.

1.2 Pursuant to the provisions of the law, a public hearing was held before the City Council on August 21, 2018, for deliberations and decision.

1.3 The matter was fully discussed, and the public and other agencies were given opportunity to present testimony and documentation.

1.4 An Initial Study has been prepared for the project for the purpose of compliance with the California Environmental Quality Act (CEQA). Based on the Initial Study, it was determined that the project impacts are less than significant and approval of a Mitigated Negative Declaration is recommended.

SECTION 2 FINDINGS:

2.1 Based upon substantial evidence presented to this City Council during the above-referenced meeting on August 21, 2018, including written and oral staff reports, and the record from the public hearing, this City Council hereby specifically finds as follows:

1. Conformance with General Plan Policies – The proposed amendment is consistent with the General Plan, and its goals, objectives, policies and programs.

FACT: The project area for the proposed Zone Change includes two vacant parcels (APNs: 485-081-037 and 043) totaling 4.47 acres and three adjacent developed commercial parcels (APNs: 485-081-038, -039 and 041) totaling 2.36 acres. The current General Plan Land Use designation for the project area is Commercial with a Neighborhood Commercial (NC) zoning designation.

The vacant parcels with the project area remain undeveloped with site challenges that include no direct access from Perris Boulevard and limited visibility from this same prominent arterial roadway.

The proposed zone change from Neighborhood Commercial (NC) to Community Commercial (CC) is compatible with the site's Commercial General Plan land use designation. The proposed change is also consistent with the intent of General Plan Community Goal 2.1, to establish a pattern of land uses, which organizes future growth, minimizes conflicts between land uses, and which promotes the rational utilization of presently underdeveloped and undeveloped parcels.

It is the intent of the Land Use Element of the General Plan as referenced in Objective 2.4, to provide commercial areas within the City that are conveniently located, efficient, attractive, and have safe and easy pedestrian and vehicular circulation in order to serve the retail and service commercial needs of Moreno Valley residents and businesses.

Policy 2.4.1 states that the primary purpose of areas designated Commercial is to provide property for business purposes, including, but not limited to, retail stores, restaurants, banks, hotels, professional offices, personal services and repair services.

2. Health, Safety and Welfare – The proposed amendment will not adversely affect the public health, safety or general welfare.

FACT: The Zone Change is consistent with the City's General Plan which was developed to guide the future development of the City. The Zone Change is a legislative action and will not result in any direct physical impacts.

Development of the vacant 4.47 acres within the project area will be required to comply with the City's General Plan policies and land use designation and the City's Municipal Code. This will ensure that future development is consistent with the General Plan, zoning, and public health safety and welfare. Therefore, the proposed Zone Change will not adversely affect the public health, safety or general welfare.

An Initial Study was prepared which assessed the potential of the proposed Zone Change, to impact the environment. The Initial Study provided the documentation of the factual basis for the finding in the Mitigated Negative Declaration that the proposed project will not have a significant effect on the environment. The City as the Lead Agency has prepared a Mitigated Negative Declaration (MND) pursuant to Sections 15070 et seq. of the State CEQA Guidelines. The preparation and review of the Initial Study / Mitigated Negative Declaration reflects the independent judgment of the City.

The Mitigated Negative Declaration has been considered by the City Council and there is no evidence that the proposed project will have a significant impact on public health or be materially injurious to surrounding properties of the environment as a whole.

3. Conformance with the Zoning Regulations – The proposed Zone Change is consistent with the purposes and intent of Title 9 of the City of Moreno Valley Municipal Code.

FACT: As proposed, with the adoption of the Change of Zone from NC to CC, the 6.83 acre project area will be consistent with the purposes and intent of Title 9. Future commercial development under the CC would continue to further the comprehensive and orderly development of the vacant 4.47 acres located within the project area.

The proposed Zone Change to CC is compatible with the established zoning designations of the parcels located at other prominent intersections along Perris Boulevard such as Alessandro Boulevard to the north and Iris Avenue to the south. The change from the existing NC to CC for the project area considers the land use patterns in this area of the community.

SECTION 3 AMENDMENT OF THE OFFICIAL ZONING ATLAS:

3.1 The City of Moreno Valley Official Zoning Atlas, as adopted by Ordinance No. 359, on April 14, 1992, of the City of Moreno Valley, and as amended thereafter from time to time by the City Council of the City of Moreno Valley, is further amended by placing in effect the zone or zone classification to Pages 110 and 124 of the Official Zoning Atlas as shown on the attached map marked “Exhibit A” and included herein by reference and on file in the office of the City Clerk).

SECTION 4 EFFECT OF ENACTMENT:

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

SECTION 5. NOTICE OF ADOPTION:

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

SECTION 6. EFFECTIVE DATE:

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

APPROVED AND ADOPTED this _____ day of _______________, _____.

____
Mayor

ATTEST:

____
City Clerk

APPROVED AS TO FORM:

____
City Attorney

ORDINANCE JURAT

STATE OF CALIFORNIA)

COUNTY OF RIVERSIDE) ss.

CITY OF MORENO VALLEY)

I, Pat Jacquez-Nares, City Clerk of the City of Moreno Valley, California, do hereby certify that Ordinance No. YYYY-___ was duly and regularly adopted by the City Council of the City of Moreno Valley at a regular meeting thereof held on the _____ day of September, 2018, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

(Council Members, Mayor Pro Tem and Mayor)

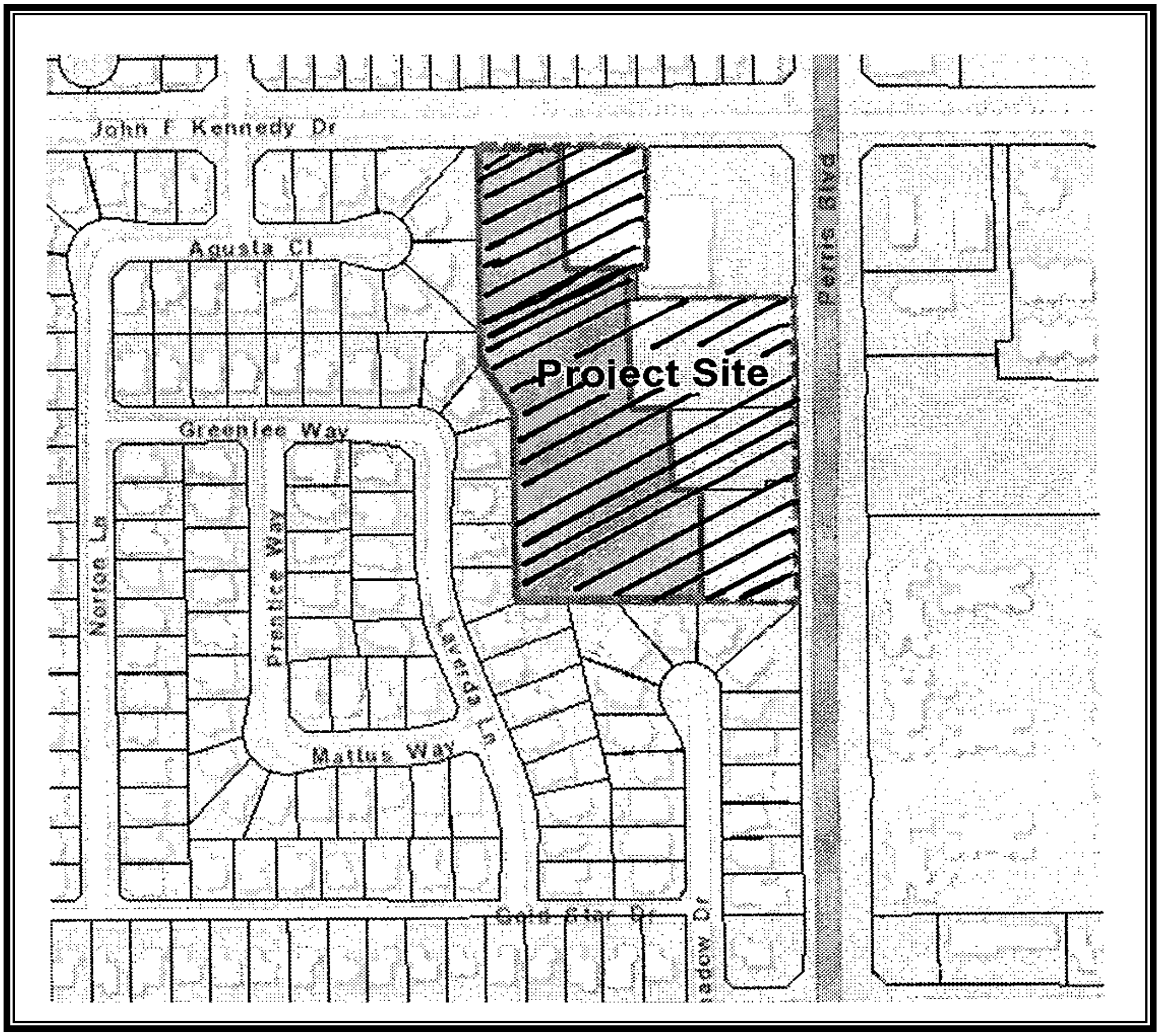
____

CITY CLERK

(SEAL)

ZONE CHANGE

Application No. PEN17-0134
APNs: 485-081-037, -043, -035, -038, -039, and -041
Ordinance No. 2018-XX



N

Exhibit A to ATT 6

Report to City Council

TO: Mayor and City Council

FROM: Richard J. Sandzimier, Community Development Director

AGENDA DATE: September 4, 2018

TITLE: A GENERAL PLAN AMENDMENT, CHANGE OF ZONE, AND CONDITIONAL USE PERMIT FOR DEVELOPMENT OF A DONUT STORE / CONVENIENCE STORE WITH GASOLINE SALES LOCATED AT THE NORTHEAST CORNER OF PERRIS BOULEVARD AND COTTONWOOD AVENUE.

RECOMMENDED ACTION

Recommendations: That the City Council:

1. **ADOPT** Resolution No. 2018-XX: A Resolution of the City Council of the City of Moreno Valley **CERTIFYING** the Mitigated Negative Declaration prepared for the Yum Yum Donuts Moreno Valley project, inclusive of all related applications on file with the Community Development Department, incorporated herein by this reference, whereby the Mitigated Negative Declaration has been completed in compliance with the California Environmental Quality Act, and the information and findings contained in the Mitigated Negative Declaration reflects the City's independent judgment and analysis; and **ADOPTING** the Mitigation Monitoring and Reporting Program prepared for the Yum Yum Donuts Moreno Valley project; and

2. **ADOPT** Resolution No. 2018-XX: A Resolution of the City Council of the City of Moreno Valley approving General Plan Amendment PEN16-0086, based on the findings contained in this resolution, and as shown on the attachment included as Exhibit A; and

3. **INTRODUCE** and conduct the first reading by title only of Ordinance No. 2018-XX approving a Zone Change (PEN16-0087) from Office Commercial (OC) to Community Commercial (CC) for the areas described in the Ordinance, based on the findings in the Ordinance, and the revised Zoning Atlas; and

4. **ADOPT** Resolution No. 2018-XX: A Resolution of the City Council of the City of Moreno Valley approving Conditional Use Permit PEN16-0088 based on the findings contained in this resolution, and subject to the conditions of approval included as Exhibit A; and

5. **SCHEDULE** the introduced Ordinance for second reading and final action for the next regular City Council meeting.

SUMMARY

This report recommends that the City Council convene a Public Hearing and consider the recommendations to approve a General Plan Amendment to change the land use designation from Residential Office to Commercial, a Zone Change to change the zoning from Office Commercial (OC) to Community Commercial (CC), and a Conditional Use Permit for a service station with a canopy for eight pump stations, and a 5,815 square foot donut store / convenience store with beer and wine sales, and a 900 square foot automated car wash.

DISCUSSION

Advisory Board/Commission Recommendation

The Planning Commission, at its July 26, 2018 meeting, held a public hearing and recommended that the City Council certify the Mitigated Negative Declaration, adopt a Mitigation Monitoring Reporting Program, and approve the General Plan Amendment, initiate the approval process for the Change of Zone and approve the Conditional Use Permit. There were two members of the public who commented on the project but did not express opposition to the project.

There was discussion at the hearing regarding the hours of operation for the car wash and the noise attenuation measures to reduce noise impacts from the operation of the car wash. The Planning Commission was supportive of the project as designed and conditioned. Staff added standard conditions of approval to require the project to participate in the City's programs to promote local hiring and participate in programs available to new businesses.

Project

This project proposes to develop a 1.77 acre site located at the northeast corner of Perris Boulevard and Cottonwood Avenue with a service station with a canopy for eight pump stations, and a 5,815 square foot donut store / convenience store with beer and wine sales, and a 900 square foot automated car wash. The proposed use requires approval of a General Plan Amendment and Zone Change.

General Plan Amendment

The General Plan Amendment will change the existing designation from Residential/Office (R/O) to Commercial (C). The properties to the immediate north and south with frontage on Perris Boulevard on the east side of Perris Boulevard also have a General Plan land use designation of R/O. The properties across the street to the west side of Perris Boulevard have a Commercial designation. The properties located farther east, west, northeast and southeast have an R5 designation.

Zone Change

The project site and the adjoining vacant parcels to the north are currently zoned Office Commercial (OC). The applicant is requesting a Zone Change to Community Commercial to allow for the service station and convenience store without an office park. If the Change of Zone is approved, the service station use and the convenience store with beer and wine sales would be allowed with approval of a Conditional Use Permit.

Land Use Change Discussion

The City's first General Plan in 1988, designated the site as Office. The project site is designated as Residential/Office in the current General Plan adopted in 2006. There have been no prior development approvals for a project on the site, and no development activity over the last 30 years. The commercial center to the west was developed more than twenty-five years ago. The proposed project may help to revitalize economic activity along Perris Boulevard.

Although the proposed change in the General Plan designation and zoning for the site is a departure from the established General Plan land use and zoning pattern for properties on the east side of Perris Boulevard. There are commercially designated properties on the east side of Perris Boulevard, both north of Fir Avenue and south of Bay Avenue.

Conditional Use Permit

The City's Municipal Code allows for service stations and convenience stores in the Community Commercial zone with approval of a Conditional Use Permit when located within 300 feet of existing residences or a residential zoning district. The project will include a canopy for eight pump stations, a 5,815 square foot donut store / convenience store, and a 900 square foot automated carwash.

The applicant is also requesting approval for the sale of beer and wine from the convenience store under a Type 20 license from the California Department of Alcohol Beverage Control. The sale of alcohol at the convenience store also requires approval of a Conditional Use Permit due to the proximity of existing residences.

The canopy and gas pumps are located near the southwest corner of the project site as far as possible from residences with the convenience store located near the southeast corner to serve as a buffer to the existing homes to the east. The car wash tunnel is located along the site's northern property line and will be separated from the adjacent residences to the east by an eight (8) foot tall decorative block wall. The wall will also help attenuate any potential impacts from noise from the operation of the car wash. However, other mitigation measures will apply to the design of the car wash as described in the Initial Study and Mitigation Monitoring and Reporting Program. In addition, the car wash tunnel is required to install doors that will close when the car wash is in use.

A Conditional Use Permit allows the City to impose special development requirements to ensure that certain uses will not be detrimental to surroundings. Conditional uses may be appropriate at one location but not at another because of the potential for impacts on surrounding properties. The following summarizes the project design elements that will minimize impacts on residential uses.

A. A 20 foot wide landscape setback is provided between the drive aisle for access to the car wash and the residential property line with the exception of the tapering of the driveway apron in proximity to Cottonwood Avenue. There will be an eight foot block wall between the project site and the nearest residences.
B. The canopy for the gasoline station is approximately 150 feet from the property line and buffered from residential uses by the building.
C. The trash enclosure for the project is located approximately 42 feet from the residential property line. The trash enclosure will be approximately 87 feet from the nearest residence. The Code requirement is to be located a minimum of 45 feet from any residential structure. The trash enclosure would be fully screened and include a covered roof.
D. Access doors for employees are limited to two doors on the east side of the building toward the residential.

<u>Access/Parking</u>

The primary access to the proposed development will be from driveways on Perris Boulevard and Cottonwood Avenue. The driveway on Perris Boulevard is limited to right-in and right-out turning movements due to the center median in Perris Boulevard. The driveway on Cottonwood Avenue will have full access subject to approval of a revised roadway striping concept for Cottonwood Avenue near the intersection of Perris Boulevard and Cottonwood Avenue.

<u>Design/Landscaping</u>

The project has been designed to satisfy the City's design and landscape standards. The landscape elements of the project include the landscape setback areas along Perris Boulevard and Cottonwood Avenue, street trees, parking lot landscaping, and landscape treatments along the perimeter of the site and within the bio-retention basin.

<u>Environmental</u>

Helix Environmental Planning, Inc. prepared an Initial Study in compliance with California Environmental Quality Act (CEQA) Guidelines. The Initial Study examined the potential of the proposed project to have an impact on the environment. The Initial Study provides information in support of the findings for a Mitigated Negative Declaration. Studies prepared for this project included a traffic study, an air quality study/greenhouse gas analysis, a cultural resource assessment, a preliminary hydrology study, a geotechnical study, a general biological assessment and burrowing owl study, and a Preliminary Water Quality Management Plan.

Project impacts were found to be less than significant for most categories in the Initial Study checklist. However, mitigation measures have been introduced to reduce impacts to a less than significant level for Traffic and Noise. Additionally, while not required to reduce an impact, mitigation measures for Cultural Resources have been included for the project to ensure compliance with City General Plan policies and other requirements related to Cultural Resources. The Mitigation Monitoring Program prepared for this project will ensure implementation of the mitigation measures (see Attachment 5).

ALTERNATIVES

1. Conduct a public hearing on this project, and take actions to certify the Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program, and approve the General Plan Amendment, Change of Zone and Conditional Use Permit applications, consistent with the recommendations of the Planning Commission. *Staff recommends this alternative.*

2. Conduct a public hearing on this project, and do not approve the applications for this project. This action would retain the existing Residential Office land use designation and the existing OC zone for the project site, and would not certify the Mitigated Negative Declaration, or approve the conditional use permit application. *Staff does not recommend this alternative.*

NOTIFICATION

The public notice for this project was mailed on August 23, 2018 to all property owners of record within 300' of the project site and other individuals or agencies that requested this information. The public hearing notice for the project was also posted on the project site on August 24, 2018 and a notice was published in the Press Enterprise on August 25, 2018. Staff has received no public inquiries in response to the noticing efforts.

The required noticing for the Mitigated Negative Declaration was completed in advance of the Planning Commission public hearing.

PREPARATION OF STAFF REPORT

Prepared By:
Jeff Bradshaw
Associate Planner

Department Head Approval:
Richard J. Sandzimier
Community Development Director

Concurred By:

CITY COUNCIL GOALS

Positive Environment. Create a positive environment for the development of Moreno Valley's future.

Community Image, Neighborhood Pride and Cleanliness. Promote a sense of community pride and foster an excellent image about our City by developing and executing programs which will result in quality development, enhanced neighborhood preservation efforts, including home rehabilitation and neighborhood restoration.

CITY COUNCIL STRATEGIC PRIORITIES

1. **Economic Development**
2. **Public Safety**
3. **Library**
4. **Infrastructure**
5. **Beautification, Community Engagement, and Quality of Life**
6. **Youth Programs**

Objective 1.1: Proactively attract high-quality businesses.

Objective 1.3: Promote local hiring through the expansion of local, quality, high paying jobs, and workforce development efforts.

Objective 1.5: Showcase Moreno Valley's unique assets.

Objective 1.9: Ensure the City's General Plan articulates the vision for how Moreno Valley wants to evolve over time, and provides an orderly and predictable process through which this vision is developed and implemented, including new attention to economic development, sustainability, public health, and innovation.

ATTACHMENTS

1. Public Hearing Notice
2. Radius Map
3. Resolution 2018-XX - Mitigated Negative Declaration
4. Exhibit A to Resolution 2018-XX - Mitigated Negative Declaration
5. Exhibit B to Resolution 2018-XX - Mitigation Monitoring Program
6. Resolution 2018-XX - General Plan Amendment
7. Exhibit A to Resolution 2018-XX - General Plan Amendment
8. Ordinance 2018-XX - Zone Change

9. Exhibit A to Resolution 2018-XX - Zone Change
10. Resolution 2018-XX - Conditional Use Permit
11. Exhibit A to Resolution 2018-XX - Conditional Use Permit
12. Architectural Rendering
13. Project Plans
14. Project Location Map
15. Planning Commission Minutes 07.26.18 - Draft
16. Air Quality and Green House Gas Study
17. Cultural Resources Assessment
18. Traffic Impact Study
19. Traffic Study - Cottonwood Memorandum
20. Noise Study

APPROVALS

Budget Officer Approval	✓ Approved	8/28/18 2:15 PM
City Attorney Approval	✓ Approved	8/29/18 7:43 AM
City Manager Approval	✓ Approved	8/29/18 12:11 PM

Notice of
PUBLIC HEARING

This may affect your property. Please read.

Notice is hereby given that a Public Hearing will be held by the City Council of the City of Moreno Valley on the following item(s):

CASES: PEN16-0086 – General Plan Amendment
PEN16-0087 – Zone Change
PEN16-0088 – Conditional Use Permit

APPLICANT: Yum Yum Donuts

OWNER: Yum Yum Donuts

REPRESENTATIVE: A&S Engineering, Inc.

LOCATION: Northeast corner of Perris Boulevard and Cottonwood Avenue

PROPOSAL: The applicant proposes to develop a 1.77 acre site which is currently zoned Office Commercial (OC) with a gas station. The proposed use is not permitted in the OC zone. Applications for this project include a General Plan Amendment to change the land use from Office to Commercial; a Zone Change to change the zoning from Office Commercial (OC) to Community Commercial (CC); and a Conditional Use Permit for a service station with a canopy for eight pump stations, a 5,815 square foot convenience store with alcohol sales and a donut shop and a 900 square foot automated carwash. The project as proposed requires a lot line adjustment.

ENVIRONMENTAL DETERMINATION: Mitigated Negative Declaration

COUNCIL DISTRICT: 3

STAFF RECOMMENDATION: Approval

Any person interested in any listed proposal can contact the Community Development Department, Planning Division, at 14177 Frederick St., Moreno Valley, California, during normal business hours (7:30 a.m. to 5:30 p.m., Monday through Thursday and Fridays from 7:30 a.m. to 4:30 p.m.), or may telephone (951) 413-3206 for further information. The associated documents will be available for public inspection at the above address.

In the case of Public Hearing items, any person may also appear and be heard in support of or opposition to the project or recommendation of adoption of the Environmental Determination at the time of the Hearing.

The City Council, at the Hearing or during deliberations, could approve changes or alternatives to the proposal.

If you challenge any of these items in court, you may be limited to raising only those items you or someone else raised at the Public Hearing described in this notice, or in written correspondence delivered to the City Council at, or prior to, the Public Hearing.

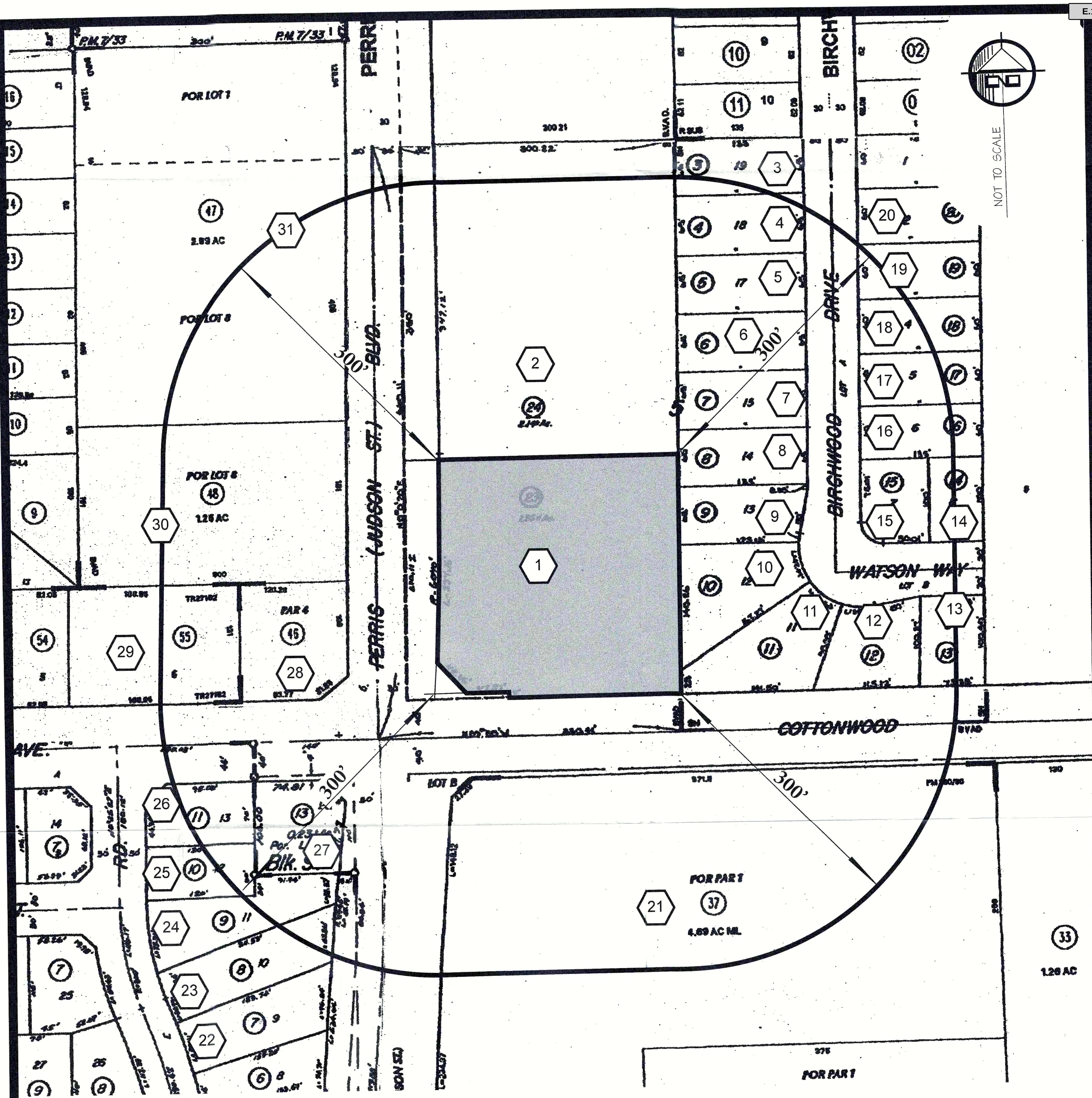
LOCATION N

CITY COUNCIL HEARING

City Council Chamber, City Hall
14177 Frederick Street
Moreno Valley, Calif. 92553

DATE AND TIME: September 4, 2018 at 6 PM
CONTACT PLANNER: Jeff Bradshaw
PHONE: (951) 413-3224

Upon request and in compliance with the Americans with Disabilities Act of 1990, any person with a disability who requires a modification or accommodation in order to participate in a meeting should direct such request to Guy Pegan, ADA Coordinator, at 951.413.3120 at least 48 hours before the meeting. The 48-hour notification will enable the City to make reasonable arrangements to ensure accessibility to this meeting.



MAP LEGEND

33 Indicates Map key Number

174 Indicates Assessor's Parcel Number

RADIUS MAPS
Data Management Services for Government and Business
211 South State College Blvd. No. 515
Anaheim, California 92806
(888) 272-3487

Public Notification Boundary

For

N.E. Cor. Perris Blvd. & Cottonwood Ave.

Moreno Valley CA 92553

APN 479-140-023

May 7, 2015

JN 15082

Attachment: Radius Map (3224 : A GENERAL PLAN AMENDMENT, CHANGE OF ZONE, AND CONDITIONAL USE PERMIT FOR DEVELOPMENT OF A DONUT STOR)

RESOLUTION NO. 2018-XX

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY CERTIFYING THE MITIGATED NEGATIVE DECLARATION AND APPROVING THE MITIGATION MONITORING AND REPORTING PROGRAM FOR THE YUM YUM DONUTS MORENO VALLEY PROJECT (PEN16-0086, PEN16-0087 and PEN16-0088).

WHEREAS, the applicant, Yum Yum Donuts, filed applications for the Yum Yum Donuts Moreno Valley Project ("Project"), which includes General Plan Amendment PEN16-0086, Zone Change PEN16-0087 and Conditional Use Permit PEN16-0088. The Project shall not be approved unless the Final Mitigated Negative Declaration is certified and approved; and

WHEREAS, the applications for the Project have been evaluated in accordance with established City of Moreno Valley (City) procedures, and with consideration of the General Plan and other applicable regulations; and

WHEREAS, an Initial Study, supporting technical studies, and Mitigated Negative Declaration for the Project were prepared, consistent with the California Environmental Quality Act (CEQA). The California Environmental Quality Act (CEQA) is a statewide environmental law contained in Public Resources Code §§21000-21177. CEQA applies to most public agency decisions to carry out, authorize, or approve actions that have the potential to affect the environment. CEQA requires that public agencies analyze and acknowledge the environmental consequences of their discretionary actions and consider alternatives and mitigation measures that could avoid or reduce significant adverse impacts to the environment when avoidance or reduction is feasible. The CEQA compliance process provides public agencies and the general public an opportunity to comment on a proposed project's environmental effects; and

WHEREAS, a 20-day public review period of the Initial Study and Mitigated Negative Declaration commenced on July 7, 2018 and concluded on July 26, 2018. The public Notice of Intent to adopt the Mitigated Negative Declaration was mailed to interested parties, public agencies as well as published in the local newspaper on July 7, 2018 and filed with the Riverside County Clerk; and

WHEREAS, the City, in conducting its own independent analysis of the Final Mitigated Negative Declaration, determined that a Mitigated Negative Declaration is an appropriate environmental determination for the Project as there is substantial evidence that demonstrates the Project with mitigation would not result in any significant environmental impacts; and

WHEREAS, a Mitigation Monitoring and Reporting Program (MMRP) has been prepared in accordance with CEQA Guidelines, and is designed to ensure compliance with the identified mitigation measures outlined in the Final Mitigated Negative Declaration through Project implementation; and

WHEREAS, the City of Moreno Valley, Community Development Department, located at 14177 Frederick Street, Moreno Valley, California 92552 is the custodian of documents and other materials that constitute the record of proceedings upon which the decision to adopt the Mitigated Negative Declaration is based; and

WHEREAS, the Planning Commission reviewed all environmental documentation for the project and recommended that the City Council adopt a Mitigated Negative Declaration and approved the Mitigation Monitoring Program for the project; and

WHEREAS, the City Council considered the Initial Study prepared for the Project for the purpose of compliance with the California Environmental Quality Act (CEQA), and based on the Initial Study including all supporting technical evidence, it was determined that the project impacts are expected to be less than significant with mitigation, and approval of a Mitigated Negative Declaration is an appropriate environmental determination for the Project; and

WHEREAS, all legal prerequisites to the adoption of this Resolution have occurred.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, DOES HEREBY RESOLVE AS FOLLOWS:

A. This City Council specifically finds that all of the facts set forth above in this Resolution are true and correct.

B. Based upon substantial evidence presented to this City Council during the above-referenced meeting on September 4, 2018, including written and oral staff reports, and the record from the public hearing, this City Council finds as follows:

1. Independent Judgment and Analysis - City staff coordinated the preparation of the Initial Study / Mitigated Negative Declaration and related technical studies with Helix Environmental Planning, Inc., for the Project. The documents were properly circulated for public review in accordance with the California Environmental Quality Act Guidelines. The Mitigated Negative Declaration/Initial Study has been completed along with the Mitigation Monitoring and Reporting Program (MMRP) to ensure compliance with all mitigation through project implementation. All environmental documents that comprise the Mitigated Negative Declaration, including all technical studies, were independently reviewed by the City. On the basis of the whole record, there is no substantial evidence that the Project as designed, conditioned and mitigated, will have a significant effect on the environment. The Mitigated Negative Declaration prepared and completed, in accordance with the CEQA Guidelines, reflects the independent judgment and analysis of the City.

BE IT FURTHER RESOLVED that the City Council HEREBY ADOPTS Resolution No. 2018-XX, and:

1. CERTIFIES that the Mitigated Negative Declaration prepared for General Plan Amendment PEN16-0086, Zone Change PEN16-0087 and Conditional Use Permit PEN16-0088 on file with the Community Development Department, incorporated herein by this reference, has been completed in compliance with the California Environmental Quality Act, that the City Council reviewed and considered the information contained in the Mitigated Negative Declaration and that the document reflects the City's independent judgment and analysis; attached hereto as Exhibit A and

2. APPROVES the Mitigation Monitoring Program prepared for Conditional Use Permit PEN16-0088, attached hereto as Exhibit B.

APPROVED AND ADOPTED this 4th day of September, 2018.

____
Mayor of the City of Moreno Valley

ATTEST:

____
City Clerk

APPROVED AS TO FORM:

____
City Attorney

RESOLUTION JURAT

STATE OF CALIFORNIA)

COUNTY OF RIVERSIDE) ss.

CITY OF MORENO VALLEY)

I, Pat Jacquez-Nares, City Clerk of the City of Moreno Valley, California, do hereby certify that Resolution No. 2018-XX was duly and regularly adopted by the City Council of the City of Moreno Valley at a regular meeting thereof held on the 4th day of September, 2018 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

(Council Members, Mayor Pro Tem and Mayor)

____
CITY CLERK

(SEAL)

Yum Yum Donuts Moreno Valley Project

Draft Initial Study/Mitigated Negative Declaration

July 2018 | ASE-01

Prepared for:

A & S Engineering
28405 Sand Canyon Road, Suite "B"
Canyon County, CA 91387

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

MITIGATED NEGATIVE DECLARATION

PROJECT TITLE AND FILE NUMBER: Yum Yum Donuts Moreno Valley Project; PEN16-0086, PEN16-0087, PEN16-0088

PROJECT APPLICANT: A & S Engineering

TELEPHONE NUMBER: (661) 250-9300

PROJECT LOCATION: Northeastern corner of the intersection of Perris Boulevard and Cottonwood Avenue

PROJECT DESCRIPTION: The Yum Yum Donuts Moreno Valley Project (project) proposes to develop a vacant lot for a 5,515-square foot Yum Yum Donuts restaurant and convenience store with car wash and gas station. Sixteen gas pumps through eight dispensers would be provided; a 5,075-square foot steel canopy would be installed above the gas pumps. The car wash structure would be 900 square feet with an adjacent 400-square foot equipment room. In addition, two underground storage tanks would be installed in the southwest corner of the project site to provide gas for the gas station.

The majority of the project site would be paved, and 28 vehicle parking spaces and 2 bicycle parking spaces would be provided. Access to the project site would be provided from driveways on both Perris Boulevard and Cottonwood Avenue. The project would include a monument sign. A trash enclosure with concrete masonry unit wall would be provided adjacent to the restaurant and convenience store. In addition, an 8-foot-high decorative block wall would be installed at the eastern property line.

Additional improvements would include signs at the access points; air, water, and vacuum units for vehicles; curb and sidewalk improvements; fire hydrant installation; storm drain improvements; and landscaping throughout the site.

FINDING

The City of Moreno Valley has reviewed the above project in accordance with the City of Moreno Valley's Guidelines for the Implementation of the California Environmental Quality Act, and has determined that an Environmental Impact Report need not be prepared because:

[ ] The proposed project will not have a significant effect on the environment.

[x] Although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because mitigation measures described in the attached Initial Study and hereby made a part of this Mitigated Negative Declaration have been added to the project. The Final Conditions of Approval contain the final form and content of all mitigation measures.

This determination is based upon an Initial Study. The project file, including the Initial Study and related documents is available for review during normal business hours (7:30 a.m. to 5:30 p.m. Monday through Thursday, and 7:30 a.m. to 4:30 p.m. on Friday) at the City of Moreno Valley, Community & Economic Development Department, Planning Division, 14177 Frederick Street, Moreno Valley, California 92553 Telephone (951) 413-3206.

PREPARED BY: Jeff Bradshaw DATE: July 6, 2018

NOTICE

The public is invited to comment on the Mitigated Negative Declaration. The appropriateness and adoption of the Mitigated Negative Declaration is considered at the time of project approval in light of comments received.

DATE ADOPTED: BY: Planning Commission

INITIAL STUDY/
ENVIRONMENTAL CHECKLIST FORM
CITY OF MORENO VALLEY

1. Project Title: Yum Yum Donuts Moreno Valley Project (PEN16-0086, PEN16-0087, PEN16-0088)

2. Lead Agency Name and Address: City of Moreno Valley Community & Economic Development Department, Planning Division, 14177 Frederick Street, Moreno Valley, CA 92552

3. Contact Person and Phone Number: Jeff Bradshaw, Associate Planner (951) 413-3224

4. Project Location: Northeastern corner of the intersection of Perris Boulevard and Cottonwood Avenue

5. Project Sponsor's Name and Address: A & S Engineering, 28405 Sand Canyon Road, Suite "B", Canyon Country, CA 91387

6. General Plan Designation: Existing designation is Office; proposed designation is Commercial

7. Zoning: Existing zoning is Office Commercial (OC); proposed zoning is Community Commercial (CC)

8. Description of the Project: The Yum Yum Donuts Moreno Valley Project (project) is located at the corner of Perris Boulevard and Cottonwood Avenue in the City of Moreno Valley (City; see Figure 1, *Regional Location*, and Figure 2, *Aerial Photograph*). The project site is composed of Assessor's Parcel Numbers (APNs) 479-140-023-2, 479-140-024-3, and 479-131-012-4. The project proposes to develop a vacant lot for a 5,515-square foot Yum Yum Donuts restaurant and convenience store with car wash and gas station (see Figure 3, *Site Plan*). Sixteen gas pumps through eight dispensers would be provided; a 5,075-square foot steel canopy would be installed above the gas pumps. The car wash structure would be 900 square feet with an adjacent 400-square foot equipment room. In addition, two underground storage tanks would be installed in the southwest corner of the project site to provide gas for the gas station.

   The project would include a General Plan Amendment (PEN16-0086) from Office to Commercial, a Zone Change (PEN16-0087) from Office Commercial (OC) to Community Commercial (CC), and Conditional Use Permit (PEN16-0088) for a service station and convenience store. The applicant proposes to sell beer and wine; the Conditional Use Permit is also required for the proposed alcohol sales.

   The majority of the project site would be paved, and 28 vehicle parking spaces and 2 bicycle parking spaces would be provided. Access to the project site would be provided from driveways on both Perris Boulevard and Cottonwood Avenue. The project would include a monument sign. A trash enclosure with concrete masonry unit wall would be provided adjacent to the restaurant and convenience store. In addition, an 8-foot-high decorative block wall would be installed at the eastern property line.

Additional improvements would include signs at the access points; air, water, and vacuum units for vehicles; curb and sidewalk improvements; fire hydrant installation; storm drain improvements; and landscaping throughout the site.

Construction is anticipated to begin in January 2019 and last six months. Site preparation activities would begin in January to be followed by grading in February. Both activities would involve approximately 200 cubic yards of soil export. Building construction would begin in March 2019.

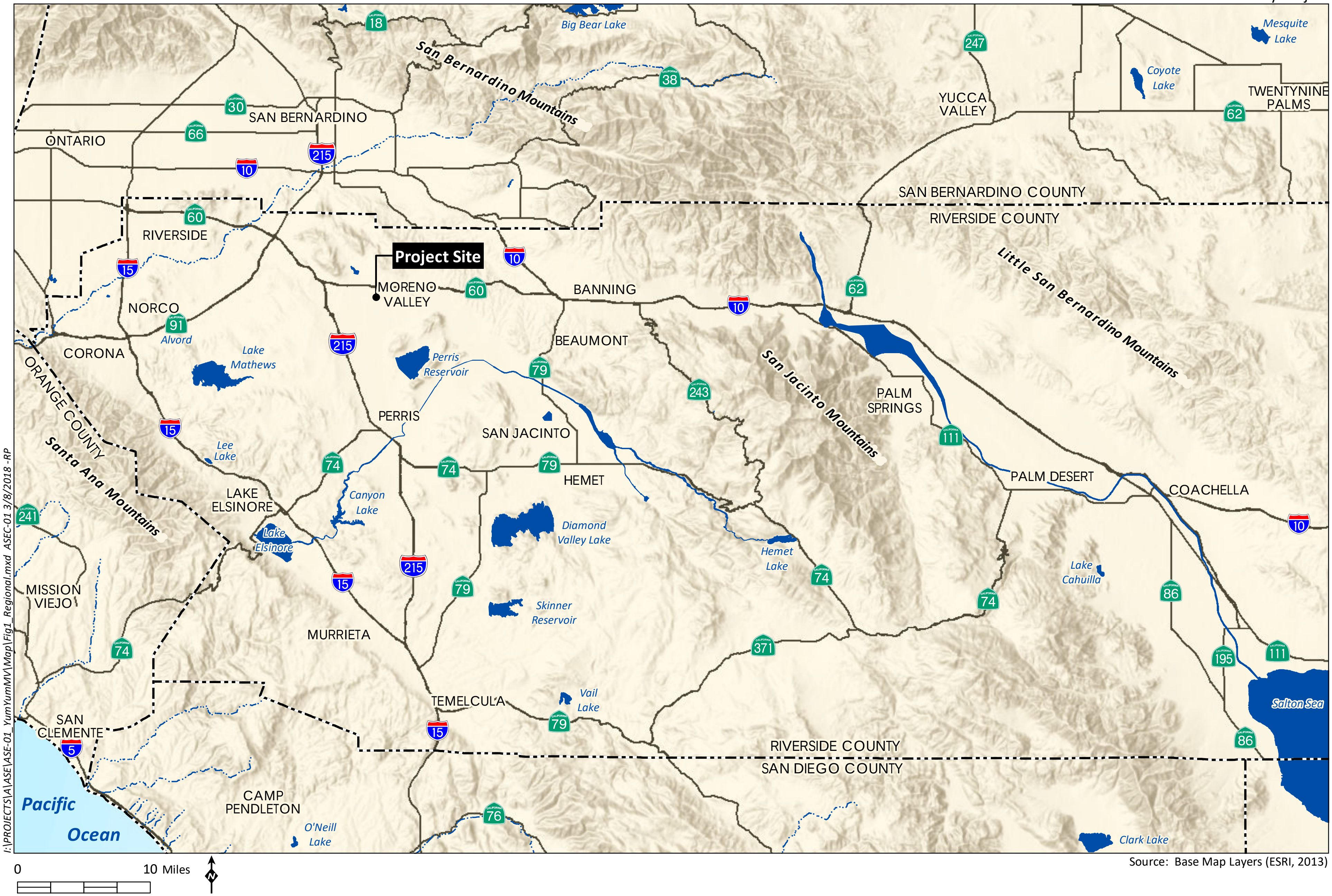
9. Surrounding Land Uses and Setting: Adjacent to the project site are single-family residences to the east, a commercial development across Perris Boulevard to the west, a church across Cottonwood Avenue to the south, and a vacant lot to the north. The vicinity of the project site is generally occupied by single-family residential neighborhoods and schools.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement): N/A

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has this consultation begun?

The City contacted applicable Tribes traditionally and culturally affiliated with the area in September 2015 for AB 52 consultation and in September 2016 for SB 18 consultation. The responding Tribes were the San Manuel Band of Mission Indians and Soboba Band of Luiseño Indians. The Soboba Band of Luiseño Indians was the only tribe to request consultation. The cultural resource mitigation measures, described further below, have been reviewed and accepted by the Soboba Band of Luiseño Indians.

Yum Yum Donuts Moreno Valley Project



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Regional Location

Figure 1

Yum Yum Donuts Moreno Valley Project

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Source: Base Map Layers (Eagle, 2014)

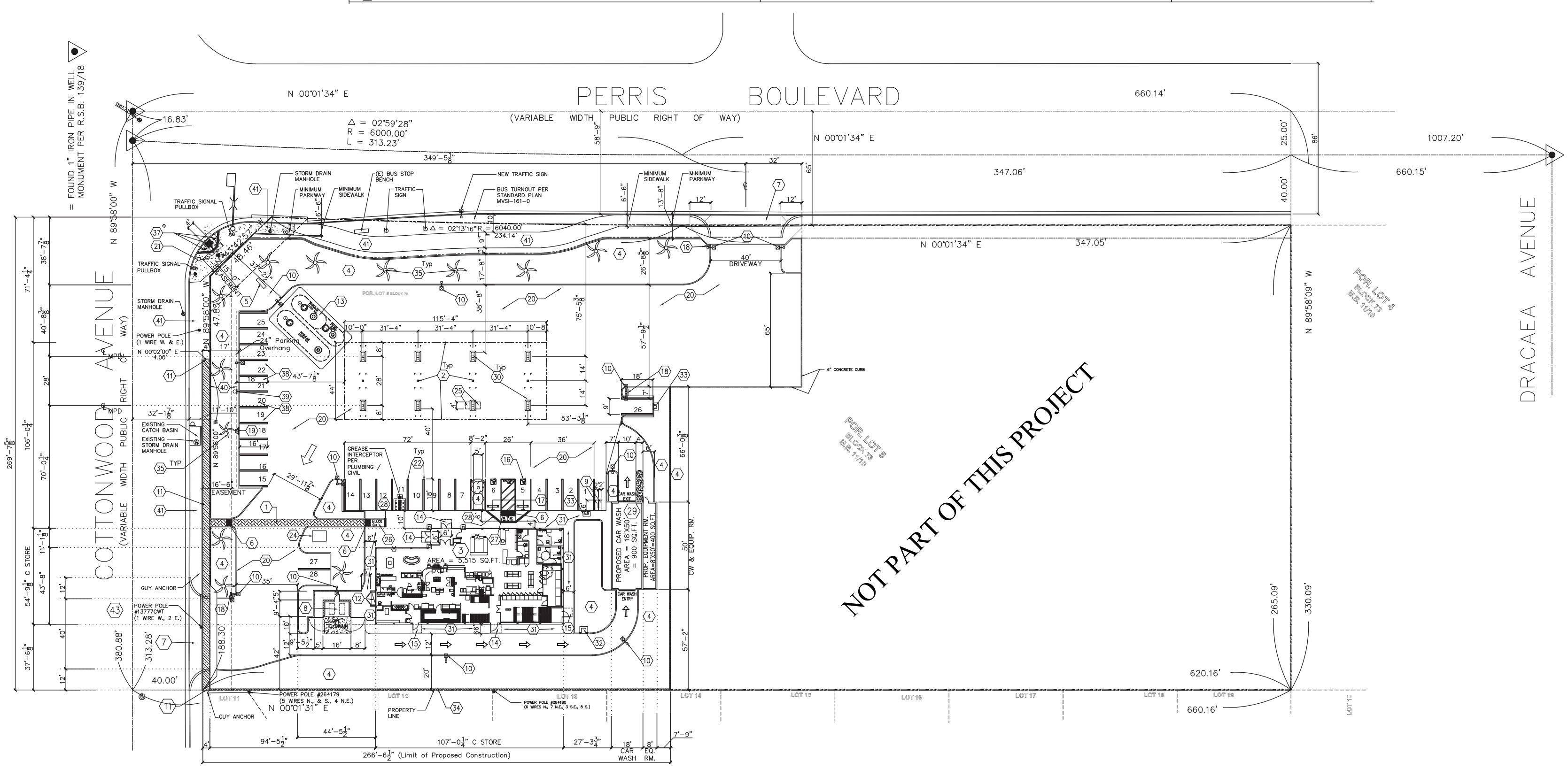
HELIX
Environmental Planning

Aerial Photograph

Figure 2

SCOPE OF WORK

1. INSTALL 48" MINIMUM ACCESSIBLE ROUTE (MISSION RED, INTERLOCKING DECORATIVE PAVING) SLOPE NOT TO EXCEED 4.5% WITH MAXIMUM 2.0% CROSS SLOPE
2. CONSTRUCT 5,075.0 SQUARE FEET, 4–COLUMNS STEEL CANOPY PER PLAN & ELEVATIONS
3. CONSTRUCT 5,515.0 SQUARE FEET BUILDING PER PLAN & ELEVATIONS AND STRUCTURAL DRAWINGS
4. CONSTRUCT LANDSCAPE & PLANTING AREA PER PLAN & LANDSCAPE DRAWINGS.
5. INSTALL NEW MONUMENT SIGN WITH PRICE SIGN PER PLAN. SIGNS ARE UNDER SEPARATE PERMIT.
6. INSTALL MINIMUM 36" WIDE YELLOW COLOR DETECTABLE WARNING PER PLAN AND CBC FIGURE 11B–705.1
7. CONSTRUCT (2) DRIVEWAYS PER CITY OF MORENO VALLEY STANDARD PLAN MVS1–112C–0 (OLD 118–C)
8. CONSTRUCT 9'–4"X16'–0"X9'–0" HIGH STUCCO FINISH CMU TRASH ENCLOSURE WITH SOLID ROOF COVER & DOUBLE STEEL GATE PER PLAN AND CITY STANDARD PLAN MVGF–660A–0 OPTION 1
9. STRIPE (8)–2'–6"X6'–0" BICYCLE PARKING SPACES WITH REQUIRED BIKE U RACK PER PLAN
10. INSTALL YARD LIGHTS PER ELECTRICAL DRAWINGS
11. 4'–0" DEDICATION PER PLAN
12. INSTALL MAIN SWITCH BOARD INSIDE ENLOSURE MATCH BUILDING PER ELECTRICAL DRAWINGS.
13. PROPOSED LOCATION FOR UNDERGROUND STORAGE TANKS
14. 6'–0"X5'–0" CLEAR AND LEVEL AREA SLOPE NOT TO EXCEED 2.0% AT ANY DIRECTION. FLOOR NOT MORE THAN ½" LOWER THAN THE THRESHOLD
15. 5'–0"X5'–0" CLEAR AND LEVEL AREA SLOPE NOT TO EXCEED 2.0% AT ANY DIRECTION. FLOOR NOT MORE THAN ½" LOWER THAN THE THRESHOLD
16. STRIPE 18'–0"X26'–0" DISABILITY PARKING SPACE PER PLAN. SLOPE NOT TO EXCEED 2.0% AT ANY DIRECTION
17. INSTALL DISABILITY PARKING SIGNS PER PLAN
18. INSTALL ADDITIONAL SIGN AT EACH ENTRANCE TO OFF STREET PARKING FACILITIES OR IMMEDIATELY ADJACENT AND VISIBLE FROM EACH ACCESSIBLE STALL OR SPACE PER PLAN
19. INSTALL AIR AND WATER UNIT PER PLAN, WITH FREE SIGN ON UNIT
20. CONSTRUCT REINFORCED CONCRETE PAVING AT THE ENTIRE OF SITE PER SOIL REPORT AND CIVIL DRAWINGS
21. INSTALL FIRE HYDRANT PER FIRE DEPARTMENT REQUIREMENT (6"X4"X2.5"X2.5")
22. STRIPE STANDARD PARKING STALLS PER CITY STANDARD FIGURE 9.11.080–6
23. INSTALL CANISTER ON TOP OF ROOF
24. ELECTRICAL TRANSFORMER CONCRETE PAD SEE ELECTRICAL SITE PLAN, TRANSFORMER INSTALLATION BY UTILITY COMPANY
25. 30"X48" CLEAR AND LEVEL AREA, SLOPE NO TO EXCEED 2.0% AT ANY DIRECTION
26. CONSTRUCT CURB RAMP WITH CURB AT EACH SIDE. SLOPE NOT TO EXCEED 8.0% AND 2.0% CROSS SLOPE
27. CONSTRUCT CURB RAMP WITH FLARE AT EACH SIDE. SLOPE NOT TO EXCEED 8.0% AND 2.0% CROSS SLOPE SLOPE ON FLARE = 8.0% AS WELL
28. CONSTRUCT GROOVED BORDER 12" INCHES WIDE AT LEVEL SURFACE OF THE SIDEWALK AT TOP APPROXIMATELY ¾" INCH ON CENTER
29. CONSTRUCT 1,300.0 SQUARE FEET CAR WASH BUILDING & EQUIPMENT ROOM PER PLAN & ELEVATIONS AND STRUCTURAL DRAWINGS
30. INSTALL PRODUCTION DISPENSER TYPICAL OF 8 PER PLAN
31. CONSTRUCT REINFORCED CONCRETE SIDEWALK, SLOPE NOT TO EXCEED 2.0% AT ANY DIRECTION
32. INSTALL CAR WASH COIN BOX WITH GUARD POST AT EACH SIDE PER CAR WASH MANUFACTURER DRAWINGS
33. INSTALL (2) VACUUM PER MANUFACTURER REQUIREMENT
34. CONSTRUCT 8'–0" HIGH DECORATIVE BLOCK WALL ALONG REAR FACILITY PER PLAN
35. ONE FOOT MINIMUM, AND 2 FEET MAXIMUM STREET TREE PER NOTE #30 ON ATTACHED.
36. NOT USED
37. CURB RAMP WITH FLARE AT BOTH SIDES WILL BE RECONSTRUCTED TO MEET CURRENT ACCESSIBILITY REQUIREMENTS WITH 8.33% SLOPE AND 2.0% CROSS SLOPE ON CURB RAMP 8.33% SLOPE ON FLARES WITH GROOVED BOARDER & 36" INCHES MINIMUM DETECTABLE WARNING
38. INSTALL SIGN FOR 9'–0"X18'–0" CARPOOL/VAN POOL LOW–EMITTING FUEL–EFFICIENT PARKING
39. INSTALL POLE WITH 208 / 240 V, 40 AMP GROUNDED AC OUTLET PER ELECTRICAL DRAWINGS
40. INSTALL 36" TALL BERM, OR HEDGE TO SCREEN THESE PARKING SPACES
41. CONSTRUCT CONCRETE SIDEWALK WITH CONCRETE CURB AND GUTTER ON COTTONWOOD AVENUE AND PERRIS BLVD PER CITY STANDARD
42. INSTALL 6" PLANTER CURB.
43. RELOCATE EXISTING POWER POLE.



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Source: A & S Engineering, 2018

HELIX Environmental Planning

Site Plan

Figure 3

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below (■) would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" or "Less than Significant With Mitigation Incorporated" as indicated by the checklist on the following pages.

	Aesthetics		Greenhouse Gas Emissions		Population/Housing
	Agricultural Resources		Hazards & Hazardous Materials		Public Services
	Air Quality		Hydrology/Water Quality		Recreation
	Biological Resources		Land Use/Planning	■	Transportation/Traffic
■	Cultural Resources		Mineral Resources	■	Tribal Cultural Resources
	Geology/Soils	■	Noise		Utilities/Service Systems
				■	Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.	
I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.	■
I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.	
I find that the proposed project MAY have a "potential significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.	
I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.	

Jeff Bradshaw 07/05/18

Signature Date

Jeff Bradshaw

Printed Name For

EVALUATION OF ENVIRONMENTAL IMPACTS

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Potentially Significant Unless Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analysis," as described in (5) below, may be cross-referenced).

5) Earlier analysis may be used where, pursuant to the tiering, program EIR, or other California Environmental Quality Act (CEQA) process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063 (c) (3) (d). In this case, a brief discussion should identify the following:

   (a) Earlier Analysis Used. Identify and state where they are available for review.

   (b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   (c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g. general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The analysis of each issue should identify: (a) the significance criteria or threshold used to evaluate each question; and (b) the mitigation measure identified, if any, to reduce the impact to less than significance.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
I. **AESTHETICS.** Would the project:				
a) Have a substantial adverse effect on a scenic vista?				■

Source: City of Moreno Valley General Plan Conservation Element, City of Moreno Valley General Plan (Figure 7-2, Major Scenic Resources)

The project site is located within Moreno Valley, which lies within a relatively flat valley floor surrounded by rugged hills and mountains. Topographic features of Moreno Valley that provide vistas include the Box Springs Mountains and Reche Canyon to the north, Moreno Peak in the middle of the City, the Badlands to the east and the Mount Russell area to the south. According to General Plan Figure 7-2, the project site is not located within a view corridor for the Box Springs Mountains, Reche Canyon, Moreno Peak, the Badlands, or Mount Russell (City 2006a). Therefore, implementation of the proposed project would not have a substantial effect on a scenic vista and no impacts would occur.

b) Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?				■

Source: California Scenic Highway Program (California Department of Transportation [Caltrans] Mapping System); City of Moreno Valley General Plan Conservation Element; City of Moreno Valley General Plan (Figure 7-2, Major Scenic Resources)

There are no State-designated or eligible scenic highways within the City. The project site is located approximately 12 miles north of Highway 74, which is the only facility within the project vicinity that is designated as a State-eligible scenic highway. The project site is located approximately one mile south of State Route 60 and three miles west of Moreno Beach Drive, which the City of Moreno Valley General Plan Figure 7-2 identifies as "Scenic Routes." Due to the distance and intervening topography and development, the project would not be visible from State Highway 74, State Route 60, or Moreno Beach Drive. Accordingly, implementation of the proposed project would not have a substantial effect on scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway corridor. No impacts would occur.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?			■	

Implementation of the proposed project would convert land that was previously vacant and undeveloped to a commercial development with a restaurant/convenience store building, car wash, equipment room, fuel station canopy, parking lot, landscaping, exterior lighting, signage, and public street improvements. The project site is located in a portion of the City that has been mostly developed with residential and commercial uses, with some vacant land remaining in the area. The design of the development would be consistent with the commercial uses located across Perris Boulevard, as well as the site's proposed General Plan Amendment land use designation change from Office to Commercial and the Zone Change from Office Commercial (OC) to Community Commercial (CC) In addition, project signage would be consistent with City of Moreno Valley Municipal Code requirements. Therefore, although the project would develop a vacant lot, it would not substantially degrade the existing visual character or quality of the site or its surroundings and impacts would be less than significant.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			■	

Source: City of Moreno Valley Municipal Code Chapter 9.08.100

The project site does not contain artificial light sources or sources of glare under existing conditions. The proposed project would include exterior lighting associated with the restaurant/convenience store, car wash, fuel station canopy, and parking lot. The proposed project would be required to adhere to the lighting requirements as set forth in the City Municipal Code. Municipal Code Chapter 9.08.100 specifies that all outdoor lighting associated with nonresidential uses shall be fully shielded and directed away from surrounding residential uses to reduce glare and light trespass and shall not exceed one-quarter-foot-candle minimum maintained lighting, measured from within five feet of any property line. Furthermore, the City's Municipal Code specifies that exterior lighting shall not blink, flash, or oscillate or be of unusually high intensity or brightness. The project would be required to demonstrate compliance with these requirements to the City prior to issuance of building permits. Project compliance with the lighting requirements of the City Municipal Code would ensure that the proposed project would not produce a new source of substantial light or glare from artificial lighting sources that would adversely affect day or nighttime views in the area. Therefore, impacts from lighting and glare would be less than significant.

II. **AGRICULTURE RESOURCES**: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency to non-agricultural use?				■

Source: California Department of Conservation, California Important Farmland Finder

According to mapping available from the California Department of Conservation California Important Farmland Finder, the project site is mapped within an area defined as "Urban and Built-Up Land," and does not support agricultural uses. The project site does not contain lands mapped by the State Department of Conservation as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. As such, the project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use, and no impact would occur.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				■

Source: City of Moreno Valley General Plan FEIR; Moreno Valley Map Viewer

No land within the City, including the project site, is under a Williamson contract (City 2006b, pp. 5.8-6). The project site is proposing a Zone Change to Community Commercial (CC) from Office Commercial (OC) and a General Plan Amendment land use designation change from Office to Commercial. Surrounding land uses are residential, commercial, and office. Accordingly, because the project site is not located on or adjacent to land zoned for agricultural use and is also not subject to a Williamson Act contract, the proposed project has no potential to conflict with existing zoning for agricultural use or a Williamson Act contract. Therefore, no impact would occur.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				■

Source: California Department of Conservation, California Important Farmland Finder

As previously discussed under Item II(a), the project site is located within land classified as "Urban and Built-Up" by the California Department of Conservation and does not support agricultural uses. Therefore, the project would not convert Farmland to a non-agricultural use, and no impacts would occur.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
III. **AIR QUALITY:** Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?				■

Source: South Coast Air Quality Management District (SCAQMD) 2016 Air Quality Management Plan

The project site is located in Riverside County, in the South Coast Air Basin (SCAB), where the SCAQMD is the agency principally responsible for comprehensive air pollution control. A regional agency, the SCAQMD works directly with the Southern California Association of Governments (SCAG), County transportation commissions, and local governments, and cooperates actively with all federal and State government agencies. The SCAQMD develops rules and regulations; establishes permitting requirements for stationary sources; inspects emissions sources; and enforces such measures through educational programs or fines, when necessary.

The SCAQMD is directly responsible for reducing emissions from stationary (area and point), mobile, and indirect sources. It has responded to this requirement by preparing a sequence of Air Quality Management Plans (AQMPs). An AQMP establishes a program of rules and regulations directed at attaining the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS). The regional plan applicable to the proposed project is the SCAQMD's AQMP.

On March 3, 2017, the SCAQMD adopted the 2016 AQMP, which is a regional and multi-agency effort (SCAQMD, California Air Resources Board [CARB], SCAG, and United States Environmental Protection Agency [USEPA]). The 2016 AQMP represents a comprehensive analysis of emissions, meteorology, atmospheric chemistry, regional growth projections, and the impact of existing control measures. The plan seeks to achieve multiple goals in partnership with other entities promoting reductions in criteria pollutant, greenhouse gases, and toxic risk, as well as efficiencies in energy use, transportation, and goods movement (SCAQMD 2017).

The main purpose of an AQMP is to bring an area into compliance with the requirements of federal and State air quality standards. For a project to be consistent with the AQMP, the pollutants emitted from the project should not (1) exceed the SCAQMD CEQA air quality significance thresholds or (2) conflict with or exceed the assumptions in the AQMP. As shown below under Item III(b), pollutant emissions from the proposed project would be less than the SCAQMD thresholds and would not result in a significant impact. Further, as the proposed project would be consistent with the site's proposed changes to the land use designation (from Office to Commercial) and zoning designation (from Office Commercial [OC] to Community Commercial [CC]), it would not result in development that may not have been anticipated in the AQMP. Therefore, the project would not conflict with the applicable AQMP, and no impacts would occur.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation.			■	

Sources: SCAQMD Air Quality Significance Thresholds; SCAQMD Air 2016 Air Quality Management Plan; Air Quality and Greenhouse Gas Emissions Technical Report (HELIX 2018; Appendix A); Traffic Impact Study (Kimley-Horn and Associates 2016; Appendix B)

The SCAQMD establishes significance thresholds to assess the regional impact of project-related air pollutant emissions in the SCAQMD. Table 1, *SCAQMD Criteria Pollutant Significant Mass Emissions Significance Thresholds*, summarizes the SCAQMD's mass emissions thresholds, which are presented for both long-term operational and short-term construction emissions. A project with emissions rates below these thresholds is considered to have a less-than-significant effect on air quality.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Table 1
SCAQMD CRITERIA POLLUTANT SIGNIFICANT MASS EMISSIONS SIGNIFICANCE THRESHOLDS

Criteria Pollutant	Emission Threshold (pounds per day)	
	Construction	Operation
Volatile Organic Compounds (VOC)	75	55
Oxides of Nitrogen (NO_X)	100	55
Carbon Monoxide (CO)	550	550
Particulate Matter (PM_{10})	150	150
Particulate Matter ($PM_{2.5}$)	55	55
Oxides of Sulfur (SO_X)	150	150
Lead	3	3

Source: SCAQMD 2015

Construction Impacts

The proposed project would result in construction emissions during site preparation, grading, underground utility installation, building construction, paving, and architectural coating activities. These emissions would be limited and short term. Construction emissions include those associated with the transport of construction materials and equipment to the site, and emissions associated with equipment operation and soil movement at the site. Other construction-related emissions would occur as a result of workers' vehicles traveling to and from the project site for construction activities. Criteria pollutant and ozone precursor emissions from project construction are assessed using the California Emissions Estimator Model (CalEEMod), Version 2016.3.2. CalEEMod is a computer model developed by SCAQMD with the input of several air quality management and pollution control districts to estimate criteria air pollutant emissions from various urban land uses. CalEEMod has the ability to calculate both mobile (i.e., vehicular) and area or stationary source emissions (SCAQMD 2013). Dust control by watering was assumed, consistent with the requirements of SCAQMD Rule 403 (SCAQMD 1976). A complete listing of the assumptions used in the analysis and model output is provided in Appendix A.

Maximum daily emissions during the peak work day are shown in Table 2, *Maximum Daily Construction Emissions*. As shown in Table 2, all criteria pollutant emissions would not exceed the respective screening thresholds. In addition, actual emissions could be less than those forecasted due to the conservative nature of the assumptions incorporated into the CalEEMod program regarding phasing. If construction is delayed or occurs over a longer time period, emissions could be reduced because of (1) a more modern and cleaner-burning construction equipment fleet mix and/or (2) a less intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval). Therefore, construction-related air quality impacts would be less than significant.

Table 2
MAXIMUM DAILY CONSTRUCTION EMISSIONS

Phase	Pollutant Emissions (pounds per day)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Site Preparation	1	9	4	<0.5	1	<0.5
Grading	1	9	8	<0.5	1	1
Underground Utilities	<0.5	2	2	<0.5	<0.5	<0.5
Building Construction	1	10	8	<0.5	1	1
Paving	1	8	8	<0.5	1	1
Architectural Coating	12	2	2	<0.5	<0.5	<0.5
Maximum Daily Emissions[1]	**12**	**11**	**11**	**<0.5**	**1**	**1**
SCAQMD Regional Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A).
[1] Except for ROG, maximum daily emissions occur when Grading and Underground Utilities phases overlap.
Note: Totals may not sum due to rounding.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Operational Impacts

Operational impacts were estimated using CalEEMod. Operational sources of emissions include area, energy, and transportation. Operational emissions from area sources include the use of consumer products, engine emissions from landscape maintenance equipment, and volatile organic compound (VOC) emissions from repainting of buildings.

Operational emissions from mobile source emissions are associated with project-related vehicle trip generation and trip length. Based on the Traffic Impact Study (TIS; Kimley-Horn and Associates, Inc. 2016), the project would generate 2,445 daily trips, 72 morning peak hour trips, 98 evening peak hour trips, and 138 Sunday peak hour trips. CalEEMod default vehicle speeds, trip purpose, and distance were used. The results of the CalEEMod calculations for project operations are shown in Table 3, *Maximum Daily Operational Emissions*.

Table 3
MAXIMUM DAILY OPERATIONAL EMISSIONS

Phase	Pollutant Emissions (pounds per day)					
	ROG	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Area	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Energy	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Mobile	3	24	22	<0.5	<0.5	1
Total Daily Emissions	**4**	**24**	**22**	**<0.5**	**<0.5**	**1**
SCAQMD Regional Thresholds	*55*	*55*	*550*	*150*	*150*	*55*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A).

As shown in Table 3, maximum daily operational emissions generated by the project would be below the screening level thresholds for criteria pollutants. Therefore, operational-related air quality impacts would be less than significant.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?			■	

Source: SCAQMD 2016 AQMP

The SCAQMD's approach for assessing cumulative impacts is based on the AQMP forecasts of attainment of ambient air quality standards in accordance with the requirements of the Federal and State Clean Air Acts. As discussed under Item III(a), the proposed project would be consistent with the AQMP, which is intended to bring the SCAB into attainment for all criteria pollutants. In addition, construction and operational emissions calculated for the proposed project would be lower than the applicable SCAQMD daily significance thresholds that are designed to assist the region in attaining the applicable State and national ambient air quality standards. Therefore, cumulative impacts would be less than significant.

d) Expose sensitive receptors to substantial pollutant concentrations?			■	

Source: Air Quality and Greenhouse Gas Emissions Technical Report (HELIX 2018; Appendix A); Traffic Impact Study (Kimley-Horn and Associates 2016)

Construction Impacts

Criteria Pollutants

The localized effects from the on-site portion of daily construction emissions were evaluated at sensitive receptor locations potentially impacted by the project according to the SCAQMD's localized significant threshold (LST) method. Consistent with the LST guidelines, when quantifying mass emissions for localized analysis, only emissions that occur on site are considered. Emissions related to off-site delivery/haul truck activity and construction worker trips are not considered in the evaluation of construction-related localized impacts, as these do not contribute to emissions generated on a project site. The closest sensitive receptors are the single-family residences located adjacent to the east of the project site. Therefore, the LSTs for receptors located at 82 feet (25 meters) are used. As shown in Table 4, *Maximum Localized Construction Emissions*, localized emissions for all criteria pollutants would remain below their respective SCAQMD LSTs. There would be a less-than-significant impact and no mitigation is required.

Table 4
MAXIMUM LOCALIZED DAILY CONSTRUCTION EMISSIONS

Phase	Pollutant Emissions (pounds per day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Site Preparation	9	4	<0.5	<0.5
Grading	9	8	1	1
Underground Utilities	2	2	<0.5	<0.5
Building Construction	10	8	1	1
Paving	8	7	<0.5	<0.5
Architectural Coating	2	2	<0.5	<0.5
Maximum Daily Emissions[1]	**11**	**10**	**1**	**1**
SCAQMD Localized Thresholds	*270*	*1,577*	*13*	*8*
Significant Impact?	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A).
[1] Maximum daily emissions occur when Grading and Underground Utilities phases overlap.
Note: Totals may not sum due to rounding.

Toxic Air Contaminants

The greatest potential for toxic air contaminants (TAC) emissions during construction would be related to diesel particulate matter (DPM) associated with heavy equipment operations during earth-moving activities. The SCAQMD does not consider diesel-related cancer risks from construction equipment to be an issue due to the short-term nature of construction activities. Construction activities associated with the proposed project would be sporadic, transitory, and short-term in nature (i.e., less than one year). The assessment of cancer risk is typically based on a 30-year exposure duration. Because exposure to diesel exhaust would be well below 30 years, construction of the proposed project is not anticipated to result in an elevated cancer risk to exposed persons due to the short-term nature of construction. As such, project-related TAC emission impacts during construction would not be significant and no mitigation is required.

Operational Impacts

Carbon Monoxide Hotspots

Carbon monoxide (CO) concentration is a direct function of motor vehicle activity (e.g., idling time and traffic flow conditions) particularly during peak commute hours and meteorological conditions. Under specific meteorological conditions (e.g., stable conditions that result in poor dispersion), CO concentrations may reach unhealthy levels with respect to local sensitive land uses such as residential areas, schools, and hospitals. As a result, the SCAQMD recommends analysis of CO emissions at the local and regional levels.

A CO hotspot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. If a project increases average delay at signalized intersections operating at Level of Service (LOS) E or F or causes an intersection that would operate at LOS D or better without the project to operate at LOS E or F with the project, a quantitative screening is required.

According to the project traffic study (Kimley-Horn and Associates, Inc. 2016), four of the intersections evaluated would meet these criteria, indicating that there would be a potential CO hotspot and a quantitative screening is required. The four intersections and their projected LOS include: Perris Boulevard at Atwood Avenue, which would operate at LOS E (AM) and F (PM/Sun); the unsignalized intersection of Cottonwood Avenue at Crape Myrtle Drive, which would operate at LOS F in the AM and E on Sunday;

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Perris Boulevard at Alessandro Boulevard, which would operate at LOS E in PM peak hours; and the Perris Boulevard Driveway, which would operate at LOS F during AM, PM and Sunday peak hours.

In the 2003 SCAQMD AQMP, the SCAQMD modeled the four highest volume intersections in the SCAB to determine the highest potential for a CO hotspot in the SCAB. By 2004, all intersections were estimated to fall below all CO standards. Due to the high level of urbanization in the Los Angeles area where the highest volume intersections are located and due to the continuing reduction in vehicle CO emissions, background CO concentrations are expected to be lower in the City than any of the intersections analyzed in the 2003 SCAQMD AQMP analysis. When qualitatively comparing the CO modeling locations in the 2003 AQMP to those in the project area, several factors can be used to demonstrate that the project area can be expected to have lower CO concentrations than in the attainment plan, including traffic demand.

As shown in Table 14 of the Air Quality and Greenhouse Gas Emissions Technical Report (HELIX 2018; *Appendix A*), traffic volumes at the project-affected intersections are less than the maximum traffic volumes in the AQMP modeled intersections, therefore CO concentrations would be less than those modeled for the AQMP intersections. There would be no exposure of sensitive receptors to a project-generated CO hotspot and impacts would be less than significant.

Toxic Air Contaminants

The new fuel facility would require authority to construct (ATC) and permit to operate (PTO) approval from the SCAQMD, which would review the facility design and location for compliance with SCAQMD standards for criteria pollutants and air quality. All tanks and dispensers would be equipped with the latest Phase I and Phase II Enhanced Vapor Recovery (EVR) air pollution control equipment technology per CARB regulations and associated Executive Orders. The Phase I EVR equipment controls the vapors in the return path from the tanks back to the tanker truck during offloading filling operations. Phase I EVR systems are 98 percent effective in controlling fugitive emissions from escaping into the environment. The Phase II EVR equipment, which also includes "in-station diagnostics," controls and monitors the vapors in the return path from the vehicles back to the tanks. Phase II EVR systems are 95 percent effective in controlling fugitive emissions from escaping into the environment. Therefore, operations expected to occur at the proposed project would not emit a significant quantity of toxic chemicals.

Other long-term operational emissions include toxic substances such as cleaning agents in use on site. Compliance with State and federal handling regulations would ensure that emissions remain below a level of significance. The use of such substances such as cleaning agents is regulated by the 1990 Federal Clean Air Act Amendments as well as State-adopted regulations for the chemical composition of consumer products. As such, project-related TAC emission impacts during operation would be less than significant.

e) Create objectionable odors affecting a substantial number of people?			■	

The Air Quality Section of the City General Plan's Environmental Impact Report (EIR; City 2006b) provides guidance for defining objectionable odors. For construction activities, odors would be short-term in nature and are subject to SCAQMD Rule 402 *Nuisance* (CARB 2018) and may be reported to the AQMD. In addition, impacts related to construction odors are limited to the number of people living and working near the source. The nearest residences are located adjacent to the east of the project. While some components of asphalt and diesel emissions are considered TACs, construction activities would be temporary and transitory and associated odors would not be unfamiliar and would cease upon construction completion. Therefore, odor impacts from construction of the project would be less than significant due to the duration of exposure.

Common sources of operational odor complaints include sewage treatment plants, landfills, recycling facilities, and agricultural uses. The proposed project, a donut restaurant and convenience store with a fueling station and car wash, would not include any of these uses. The fueling station would emit odors during operation in the form of diesel exhaust from vehicles and operation of the fueling pumps. The increase in odor emission, however, would be minimal, as vehicle exhaust is already prevalent in the area due to its proximity to busy roadways such as Perris Boulevard and Cottonwood Avenue.

Solid waste generated by the proposed on-site uses would be collected by a contracted waste hauler, ensuring that odors resulting from on-site waste would be managed and collected in a manner to prevent the proliferation of odors. Operational odor impacts would be less than significant.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. **BIOLOGICAL RESOURCES**. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U. S. Fish and Wildlife Service?				■
The project site is surrounded by urbanized development. The site itself consists of heavily disturbed vacant lots with non-native, ruderal (weedy), herbaceous vegetation typical of fallow, vacant lots in urbanized areas of the region. The site is currently subject to regular disturbance associated with noise and lighting from the surrounding developed areas and roadways; maintenance activities; and pedestrian and vehicle use. Wildlife species with the potential to use the site are expected to be limited to common, non-sensitive wildlife typical of urbanized areas. The site is not within a burrowing owl special survey area (Western Riverside County Conservation Authority 2018). No wetlands as defined by Section 404 of the Clean Water Act occur on the site or would be directly impacted by the proposed project. No sensitive natural communities (including riparian habitat), sensitive plant or animal species, potential jurisdictional waters and wetlands (federally protected or otherwise), or other sensitive biological resources are known to occur on the site. Impacts to sensitive habitat, wetlands, or natural communities would not occur.				
b) Have a substantially adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U. S. Wildlife Service?				■
See Item IV(a). No riparian habitat or sensitive natural communities are present on the project site, and no impacts would occur.				
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				■
See Items IV(a) and IV(b). No streams, drainages, vernal pools, or wetlands are present within the site. Therefore, the project would have no impact on federally protected wetlands.				
d) Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites?				■
The project site is located in an area that has undergone significant disturbance and is surrounded by urbanized development. It does not serve as a wildlife corridor or nursery site. Therefore, no impacts would occur.				
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				■
See Items IV(a) and IV(b). The project site is a disturbed parcel in a mostly urbanized area of the city. The site does not contain sensitive biological resources or native tree species subject to tree preservation ordinances. Therefore, no impacts would occur.				
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?				■
The project area is located within the Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The proposed project would not conflict with the MSHCP, or any other known local, regional, or state habitat conservations plans as the project site does not contain sensitive plant or animal species, vernal pools, or sensitive natural communities. In addition, the site is not within a burrowing owl special survey area or proposed conservation area (Western Riverside County Conservation Authority 2018). The project will be conditioned to pay required Stephen's kangaroo rat mitigation fees and will also be subject to impact fees to support the implementation for the MSHCP as provided for by City ordinance. Therefore, no impacts to the MSHCP or other habitat conservation area would occur.				

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
V. **CULTURAL RESOURCES**. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?				■

Source: Cultural Resources Survey Report for the Proposed Yum Yum Donuts Project (HELIX 2017; Appendix C)

HELIX conducted a record search of the California Historical Resources Information System (CHRIS) at the Eastern Information Center (EIC) on September 25, 2017. The records search covered a one-mile radius around the project area and included archaeological and historical resources, locations and citations for previous cultural resources studies, and a review of the state Office of Historic Preservation (OHP) historic properties directory. The records search indicated the presence of six previously recorded cultural resources within a one-mile radius of the project site, all of which are historic. None of the resources is located within the project site.

According to §15064.5 of the State CEQA Guidelines, a substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired. Because no historical resources are present on site, the proposed project would not result in an adverse change in the significance of an historical resource. Therefore, no impacts to historical resources would occur.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?		■		

Source: Cultural Resources Survey Report for the Proposed Yum Yum Donuts Project (HELIX 2017; Appendix C)

As discussed under Item V(a), a records search was conducted for a one-mile radius around the project area and indicated that there are no recorded archaeological resources within the project site.

HELIX contacted the Native American Heritage Commission (NAHC) on September 25, 2017 for a Sacred Lands File search and list of Native American contacts for the project area. The NAHC indicated in a response dated September 27, 2017 that no known sacred lands or Native American cultural resources are within the project area. Letters were sent on October 2, 2017 to Native American representatives and interested parties identified by the NAHC. Eight responses have been received to date.

The Pala Band of Mission Indians responded on October 4, 2017, that the project is not within the boundaries of the territory that the Tribe considers its Traditional Use Area and defers to the wishes of Tribes in closer proximity to the project area. The San Manuel Band of Mission Indians responded on October 5, 2017, that the proposed project area is within the Serrano ancestral territory and as such is of interest to the Tribe. However, due to the nature and location of the proposed project, they do not have concerns with the project's implementation, as planned, at this time. The Viejas Band of Kumeyaay Indians responded on October 5, 2017 that the project site has little cultural significance or ties to the Tribe and recommended that the Tribes closest to the area are contacted. They do, however, wish to be informed of any inadvertent discoveries of cultural artifacts, cremation sites, or human remains in order to have the opportunity to reevaluate their participation in the government-to-government consultation process. The Agua Caliente Band of Cahuilla Indians replied on October 19, 2017, that the project area is within the boundaries of the Tribe's Traditional Use Area; however, they defer to Soboba. The Pauma Band of Luiseño Indians responded on October 23, 2017, that they are unaware of any specific cultural resources within the project area. They would like to receive a copy of the cultural report once it is finalized. The Augustine Band of Cahuilla Indians responded on October 23, 2017, that they are unaware of specific cultural resources within the project area.

The Soboba Band of Luiseño Indians responded on November 2, 2017, that the project area is considered sensitive by the people of Soboba, as there are existing cultural sites in the surrounding areas. The Tribe indicates that they will discuss specifics in direct consultation with the lead agency. As such, they request the following:

- To initiate a consultation with the project proponents and lead agency.
- The transfer of information to the Soboba Band of Luiseño Indians regarding the progress of this project should be done as soon as new developments occur.
- Soboba Band of Luiseño Indians continues to act as a consulting tribal entity for this project.
- Working in and around traditional use areas intensifies the possibility of encountering cultural resources during the construction/excavation phase. For this reason the Soboba Band of Luiseño Indians requests that Native American

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Monitor(s) from the Soboba Band of Luiseño Indians Cultural Resource Department be present during any ground disturbing proceedings, including surveys and archaeological testing.

- Request that proper procedures be taken and requests of the tribe be honored.

The Rincon Band of Luiseño Indians responded on November 2, 2017. The project location is within the territory of the Luiseño people and within Rincon's specific area of Historic interest. The tribe is unaware of any known cultural resources within or near the project area. They requested a copy of the cultural resources report and records search results.

A pedestrian survey of the project site was conducted on September 28, 2017 by a HELIX archaeologist and Native American monitor from the Soboba Band of Luiseño Indians. No cultural material was observed within the archaeological survey area; however, the project area was found to be overlain by fill soils with modern asphalt and debris intermixed, and the original ground surface could not be observed. Additionally, the project site is located within alluvial soils, where there is a potential for buried cultural resources.

Although no archaeological resources have been recorded or identified within the project site, the potential to discover resources on site exists based on the presence of alluvial soils and cultural sensitivity of the area. As such, impacts would be potentially significant, and mitigation measures CR-1 through CR-6 have been identified to reduce the significance of cultural resource impacts.

Mitigation Measure CR-1: Prior to the issuance of a grading permit, the Developer shall retain a professional archaeologist to conduct monitoring of all mass grading and trenching activities. The Project Archaeologist shall have the authority to temporarily redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project Archaeologist, in consultation with the Consulting Tribe(s), the contractor, and the City, shall develop a Cultural Resources Management Plan (CRMP) in consultation pursuant to the definition in AB52 to address the details, timing and responsibility of all archaeological and cultural activities that will occur on the project site. A consulting tribe is defined as a tribe that initiated the AB 52 tribal consultation process for the Project, has not opted out of the AB52 consultation process, and has completed AB 52 consultation with the City as provided for in Cal Pub Res Code Section 21080.3.2(b)(1) of AB52. Details in the Plan shall include:

a. Project grading and development scheduling;

b. The Project archeologist and the Consulting Tribes(s) as defined in CR-1 shall attend the pre-grading meeting with the City, the construction manager and any contractors and will conduct a mandatory Cultural Resources Worker Sensitivity Training to those in attendance. The Training will include a brief review of the cultural sensitivity of the Project and the surrounding area; what resources could potentially be identified during earthmoving activities; the requirements of the monitoring program; the protocols that apply in the event inadvertent discoveries of cultural resources are identified, including who to contact and appropriate avoidance measures until the find(s) can be properly evaluated; and any other appropriate protocols. All new construction personnel that will conduct earthwork or grading activities that begin work on the Project following the initial Training must take the Cultural Sensitivity Training prior to beginning work and the Project archaeologist and Consulting Tribe(s) shall make themselves available to provide the training on an as-needed basis;

c. The protocols and stipulations that the contractor, City, Consulting Tribe(s) and Project archaeologist will follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resource deposits that shall be subject to a cultural resources evaluation.

Mitigation Measure CR-2: Prior to the issuance of a grading permit, the Developer shall secure agreements with the Soboba Band of Luiseño Indians for tribal monitoring. The Developer is also required to provide a minimum of 30 days advance notice to the tribes of all mass grading and trenching activities. The Native American Tribal Representatives shall have the authority to temporarily halt and redirect earth moving activities in the affected area in the event that suspected archaeological resources are unearthed. If the Native American Tribal Representatives suspect that an archaeological resource may have been unearthed, the Project Archaeologist or the Tribal Representatives shall immediately redirect grading operations in a 100-foot radius around the find to allow identification and evaluation of the suspected resource. In consultation with the Native American Tribal Representatives, the Project Archaeologist shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2.

Mitigation Measure CR-3: In the event that Native American cultural resources are discovered during the course of grading (inadvertent discoveries), the following procedures shall be carried out for final disposition of the discoveries:

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

a. One or more of the following treatments, in order of preference, shall be employed with the tribes. Evidence of such shall be provided to the City of Moreno Valley Planning Department:

i. Preservation-In-Place of the cultural resources, if feasible. Preservation in place means avoiding the resources, leaving them in the place they were found with no development affecting the integrity of the resources.

ii. Onsite reburial of the discovered items as detailed in the treatment plan required pursuant to Mitigation Measure CR-1. This shall include measures and provisions to protect the future reburial area from any future impacts in perpetuity. Reburial shall not occur until all legally required cataloging and basic recordation have been completed. No recordation of sacred items is permitted without the written consent of all Consulting Native American Tribal Governments as defined in CR-1.

Mitigation Measure CR-4: The City shall verify that the following note is included on the Grading Plan:

> "If any suspected archaeological resources are discovered during ground-disturbing activities and the Project Archaeologist or Native American Tribal Representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call the Project Archaeologist and the Tribal Representatives to the site to assess the significance of the find."

Mitigation Measure CR-5: If potential historic or cultural resources are uncovered during excavation or construction activities at the project site, work in the affected area must cease immediately and a qualified person meeting the Secretary of the Interior's standards (36 CFR 61), Tribal Representatives, and all site monitors per the Mitigation Measures, shall be consulted by the City to evaluate the find, and as appropriate recommend alternative measures to avoid, minimize or mitigate negative effects on the historic, or prehistoric resource. Determinations and recommendations by the consultant shall be immediately submitted to the Planning Division for consideration, and implemented as deemed appropriate by the Community Development Director, in consultation with the State Historic Preservation Officer (SHPO) and any and all Consulting Native American Tribes as defined in CR-1 before any further work commences in the affected area.

Mitigation Measure CR-6: If human remains are discovered, no further disturbance shall occur in the affected area until the County Coroner has made necessary findings as to origin. If the County Coroner determines that the remains are potentially Native American, the California Native American Heritage Commission shall be notified within 5-days of the published finding to be given a reasonable opportunity to identify the "most likely descendant". The "most likely descendant" shall then make recommendations, and engage in consultations concerning the treatment of the remains (California Public Resources Code 5097.98). (GP Objective 23.3, CEQA).

Adherence to mitigation measures CR-1 through CR-6 would reduce impacts to cultural resources to a less-than-significant level.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		■		

Source: City of Moreno Valley General Plan FEIR, Chapter 5.10 – Cultural Resources; County of Riverside General Plan

The project site is identified by the City's General Plan FEIR Figure 5.10-3 as having a "Low Potential" to contain unique paleontological resources. However, the County of Riverside General Plan (Figure OS-8) identifies the project site as having a "high" sensitivity to contain paleontological resources. To be conservative, this analysis is based on the conclusion from the County's General Plan and assumes that the alluvial soils underlying the project site have a high sensitivity for paleontological resources.

Project construction may involve excavation greater than four feet below the ground surface. Therefore, there is a potential to uncover fossils that may be buried beneath the surface of the site and impacts would be potentially significant. Mitigation measure PR-1 has been identified to reduce the significance of paleontological resource impacts.

Mitigation Measure PR-1: Prior to construction involving excavation four feet or more below existing surface grade, the construction contractor shall provide evidence that a qualified paleontologist has been retained, and that the paleontologist(s) shall

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

be present during all grading and other significant ground-disturbing activities that reach four feet or more below existing surface grade. In the event fossiliferous deposits are encountered, the following measures shall be implemented:

- Monitoring shall be conducted by qualified paleontological monitor(s) of excavation in areas identified as likely to contain paleontological resources, including very old alluvial fan deposits. Paleontological monitors shall be equipped to salvage fossils as they are unearthed, to avoid construction delays, and to remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. Monitors shall be empowered to temporarily halt or divert equipment to allow removal of abundant or large specimens. Monitoring may be reduced if the potentially fossiliferous units are determined upon exposure and examination by qualified paleontological personnel to have low potential to contain fossil resources.
- Paleontological monitoring of any earthmoving shall be conducted by a monitor, under direct guidance of a qualified paleontologist. Earthmoving in areas of the parcel where previously undisturbed sediments are buried, but not otherwise disturbed, will not be monitored.
- If too few fossil remains are found after 50 percent of the planned-for earthmoving has been completed, monitoring can be reduced or discontinued in those areas at the Project paleontologist's direction.
- Recovered specimens shall be prepared to a point of identification and permanent preservation, including washing of sediments to recover small invertebrates and vertebrates.
- Specimens shall be identified and curated into a professional, fully accredited museum repository with permanent retrievable storage. The paleontologist must have a written repository agreement in hand prior to the initiation of mitigation activities.
- A report of findings with and appended itemized inventory of specimens shall be prepared. The report and inventory, when submitted to the City along with confirmation of the curation of recovered of recovered specimens into an established, accredited museum repository, will signify completion of the program to mitigate impacts to paleontological resources.

Adherence to mitigation measure PR-1 would reduce impacts to paleontological resources to a less-than-significant level.

d) Disturb any human remains, including those interred outside of formal cemeteries?		■		

Source: Cultural Resources Survey Report for the Proposed Yum Yum Donuts Project (HELIX 2017; Appendix C)

The project site does not contain a known cemetery. While not anticipated, the possibility to encounter human remains exists, and impacts are assessed as potentially significant. In the unlikely event that human remains are discovered during project excavation or other ground disturbing activities, the project would implement mitigation measure CR-6, described above, to reduce impacts to a less than significant level.

VI. **GEOLOGY AND SOILS**. Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:

(i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			■	

Source: City of Moreno Valley General Plan Safety Element; City of Moreno Valley General Plan FEIR, Chapter 5.6 – Geology and Soils; California Department of Conservation "California Geological Survey Information Warehouse: Regulatory Maps"

The project site is located within a seismically active region and is within an Alquist-Priolo earthquake fault zone (California Department of Conservation 2015). The nearest mapped fault, however, is the San Jacinto Fault, which is located approximately six miles east of the project site as mapped on City of Moreno Valley General Plan FEIR Figure 5.6-2, *Seismic Hazards*. Because there are no faults located on the project site, the potential for the proposed project to expose people or structures to substantial adverse effects, including the risk of loss, injury or death involving ground rupture is considered low, and impacts would be less than significant.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(ii) Strong seismic ground shaking?			■	

Source: City of Moreno Valley General Plan Safety Element; City of Moreno Valley General Plan FEIR, Chapter 5.6 – Geology and Soils; Geotechnical Investigation (Southern California Soil & Testing, Inc. 2016)

As discussed above under Item VI(a)(i), the project site is located in a seismically active area of southern California and is expected to experience moderate to severe ground-shaking during the lifetime of the proposed project. As a mandatory condition of project approval, the project would be required to construct the proposed buildings in accordance with the California Building Standards Code (CBSC), also known as California Code of Regulations (CCR), Title 24 (Part 2), and the City of Moreno Valley Building Code, which is based on the CBSC with local amendments. The CBSC and City of Moreno Valley Building Code provide standards that must be met to safeguard life or limb, health, property, and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all buildings and structures, and have been specifically tailored for California earthquake conditions. With mandatory compliance with these standards, the project would not expose people or structures to substantial adverse effects, including loss, injury or death, involving seismic ground shaking, and impacts would be less than significant.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(iii) Seismic-related ground failure, including liquefaction?			■	

Source: City of Moreno Valley General Plan FEIR, Chapter 5.6 – Geology and Soils

Liquefaction occurs when loose, unconsolidated, water-laden soils are subject to shaking, causing the soils to lose cohesion and behave as a liquid. According to General Plan FEIR Figure 5.6-2, the project site is not located in an area with the potential for liquefaction. In addition, as described above in Item VI(a)(ii), the City would require that the property be developed in accordance with the latest applicable seismic safety guidelines, including the standard requirements of the CBSC and the City of Moreno Valley Building Code. Therefore, the project's impacts related to exposing people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving seismic-related ground failure, including liquefaction, would be less than significant.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(iv) Landslides?				■

Source: City of Moreno Valley General Plan; City of Moreno Valley General Plan FEIR, Chapter 5.6 – Geology and Soils; County of Riverside General Plan EIR Section 4.12

The City of Moreno Valley General Plan identifies the Badlands area of the City as having a potential for landslides. The project site is located approximately five miles from the Badlands area and is in a flat area lacking steep slopes. Therefore, the project site is not at risk of landslides and no related impacts would occur.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(b) Result in substantial soil erosion or the loss of topsoil?			■	

Source: Web Soil Survey, U.S. Department of Agriculture

On-site soils include Hanford coarse sandy loam (HcC) and Pachappa fine sandy loam (PaC2), each of which comprises approximately half the area of the site (U.S. Department of Agriculture 2017). Development of the vacant site would involve grading and soil movement, which could result in erosion. Because the project site has an area greater than one acre, the proposed project is required to obtain a National Pollutant Discharge Elimination System (NPDES) permit. A Storm Water Pollution Prevention Plan (SWPPP) would also be required to address erosion and discharge impacts associated with the proposed on-site grading. In addition to preparation of a SWPPP, new development projects submitted to the City would be required to submit a project-specific Water Quality Management Plan (WQMP). The WQMP would identify measures to treat and/or limit the entry of contaminants into the storm drain system. The WQMP is required to be incorporated by reference or attached to the project's SWPPP as the Post-Construction Management Plan. Through compliance with the required permits and plans, the project would not result in substantial soil erosion or loss of topsoil, and impacts would be less than significant.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			■	

See Items VI(a)(iii), VI(a)(iv), and VI(b). The project site has a low potential for liquefaction, landslides, and soil erosion. With compliance with the CBSC and the City of Moreno Valley Building Code design and engineering standards, impacts would be less than significant.

(d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			■	

Expansive soils generally have a significant amount of clay particles, which can give up water (shrink) or take on water (swell). The change in volume exerts stress on buildings and other loads placed on these soils. The extent of shrink/swell is influenced by the amount and kind of clay in the soil. The occurrence of these soils is often associated with geologic units having marginal stability. The distribution of expansive soils can be widely dispersed, and they can occur in hillside areas as well as low-lying alluvial basins.

The soil types discussed in Item VI(b) have a low shrink-swell potential due to their low clay content. Additionally, development of the proposed project site would be required to adhere to the CBSC and the City of Moreno Valley Building Code design and engineering standards. Impacts associated with this issue would therefore be less than significant.

(e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				■

The proposed project would be served by an existing wastewater disposal system and would not install septic tanks or alternative wastewater disposal systems on site. Therefore, no impact would occur.

VII. **GREENHOUSE GAS EMISSIONS.** Would this project?

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			■	

Source: Air Quality and Greenhouse Gas Emissions Technical Report (HELIX 2018; Appendix A); City Energy Efficiency and Climate Action Strategy (City 2012); SCAQMD Greenhouse Gas Interim CEQA Significance Thresholds

Global climate change refers to changes in average climatic conditions on Earth as a whole, including temperature, wind patterns, precipitation, and storms. Global temperatures are moderated by naturally occurring atmospheric gases, including water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone, and certain hydro-fluorocarbons. These gases, known as greenhouse gases (GHGs), allow solar radiation (sunlight) into the Earth's atmosphere, but prevent radiative heat from escaping, thus warming the Earth's atmosphere. GHGs are emitted by both natural processes and human activities. The accumulation of GHGs in the atmosphere regulates the Earth's temperature. Emissions of GHGs in excess of natural ambient concentrations are thought to be responsible for the enhancement of the greenhouse effect and contributing to what is termed "global warming," the trend of warming of the Earth's climate from anthropogenic activities.

GHGs vary widely in the power of their climatic effects; therefore, climate scientists have established a unit called global warming potential (GWP). The GWP of a gas is a measure of both potency and lifespan in the atmosphere as compared to CO_2. For example, since CH_4 and N_2O are approximately 25 and 298 times more powerful than CO_2, respectively, in their ability to trap heat in the atmosphere, they have GWPs of 25 and 298, respectively (CO_2 has a GWP of 1). Carbon dioxide equivalent (CO_2e) is a quantity that enables all GHG emissions to be considered as a group despite their varying GWP. The GWP of each GHG is multiplied by the prevalence of that gas to produce CO_2e.

The City's Energy Efficiency and Climate Action Strategy (CAS) has not implemented specific GHG significance thresholds (City 2012). The City is currently utilizing the SCAQMD's interim GHG significance threshold of 3,000 metric tons (MT) CO_2e per year of GHG emissions to determine significant impacts (SCAQMD 2008). This threshold is used to determine the significance of project GHG emissions.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Construction GHG emissions are generated by vehicle engine exhaust from construction equipment, on-road truck trips, and worker commuting trips. Construction GHG emissions were calculated using CalEEMod and the results are output in MT CO_2e. The estimated construction GHG emissions for the project are shown in Table 5, *Construction GHG Emissions*.

Table 5
CONSTRUCTION GHG EMISSIONS

Phase	Emissions (MT CO_2e)
Site Preparation	11
Grading	13
Underground Utilities	3
Building Construction	46
Paving	3
Architectural Coating	1
TOTAL CONSTRUCTION EMISSIONS[1]	**76**
Amortized Construction Emissions[2]	3

Source: CalEEMod (output data is provided in Appendix A).
[1] The total presented is the sum of the unrounded values.
[2] Construction emissions are amortized over 30 years in accordance with County guidance.

GHG emissions generated from construction activities are finite and for a relatively short-term period of time. Unlike the numerous opportunities available to reduce a project's long-term GHG emissions through design features, operational restrictions, use of green-building materials, etc., GHG emissions-reduction measures for construction equipment are relatively limited. Therefore, SCAQMD staff recommended that construction emissions be amortized over a 30-year project lifetime, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies. As shown in Table 5, the 30-year amortized construction emissions would be 3 MT CO_2e/yr.

During operations, area and indirect emissions sources associated with the proposed project would primarily result from electricity and natural gas consumption, water and wastewater transport, and solid waste generation. GHG emissions from electricity consumed on site by the proposed project would be generated off site by fuel combustion at the electricity provider. GHG emissions from water and wastewater transport are also indirect emissions resulting from the energy required to transport water from its source, and the energy required to treat wastewater and transport it to its treated discharge point. In addition, the project would generate mobile source emissions from motor vehicle trips. The various operational GHG emissions associated with the proposed project are shown in Table 6, *Annual Operational GHG Emissions*. The emissions include the amortized annual construction emissions anticipated for the project. As shown in the table, the proposed project's total annual GHG emissions resulting from operational activities would be 1,165 MT CO_2e per year. This value is less than the SCAQMD's 3,000 MT CO_2e per year interim threshold. Therefore, GHG emissions during project operation, including amortized construction emissions, would be less than significant.

Table 6
ANNUAL OPERATIONAL GHG EMISSIONS

Source	Emissions (MT CO_2e)
Area	<0.5
Energy	51
Mobile	1,092
Waste	13
Water	5
Operational Subtotal	1,162
Construction (Annualized over 30 years)	3
TOTAL OPERATIONAL EMISSIONS	**1,165**

Source: CalEEMod (output data is provided in Appendix A).
Note: Totals may not add up exactly due to rounding.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			■	

Source: Air Quality and Greenhouse Gas Emissions Technical Report (HELIX 2018; Appendix A); City Energy Efficiency and Climate Action Strategy (City 2012)

There are numerous State plans, policies, and regulations adopted for the purpose of reducing GHG emissions. The principal overall State plan and policy is Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020. Senate Bill (SB) 32 would require further reductions of 40 percent below 1990 levels by 2030. Because of the project's operational year in 2018, the project aims to reach the quantitative goals set by AB 32. Statewide plans and regulations such as GHG emissions standards for vehicles (AB 1493), the Low Carbon Fuel Standard, and regulations requiring an increasing fraction of electricity to be generated from renewable sources are being implemented at the statewide level; as such, compliance at the project level is not addressed. Therefore, the proposed project would not conflict with those plans and regulations.

As previously discussed, the City CAS does not have GHG emission thresholds and therefore utilizes the significance thresholds set forth by the SCAQMD. As discussed under Item VII(a), the proposed project's increase in GHG emissions would be less than the SCAQMD's screening threshold; therefore, the project would be consistent with the City CAS. Implementation of the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions, and impacts would be less than significant.

VIII. **HAZARDS AND HAZARDOUS MATERIALS.** Would the project?

a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?			■	

The project involves the construction and operation of fuel dispensers and underground storage tanks. The County of Riverside Health Department, Environmental Health Division, as the Certified Unified Program Agency (CUPA), would review the project to ensure the fuel dispensing system is designed in accordance with Federal and State Water Resources Control Board (SWRCB) standards for leak detection. The transport of fuel and tank filling operations would be conducted in compliance with applicable regulatory requirements. Other potentially hazardous materials associated with the fuel facility and/or car wash could be used and stored at the project site in accordance with regulatory requirements. Therefore, associated impacts would be less than significant.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			■	

See Item VIII(a). Construction and operation of the fuel facility, car wash, and restaurant/convenience store would be conducted in accordance with applicable regulatory requirements, and impacts from the upset and accident conditions involving the release of hazardous materials would be less than significant.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				■

Saint Christophers School is located to the south across Cottonwood Avenue, at a distance of 300 feet from the project site. As described under Item VIII(a), the project would comply with applicable regulatory requirements for hazardous materials. Therefore, the project would not emit hazardous emissions or create significant hazards from hazardous materials within one-quarter mile of an existing or proposed school, and no impacts would occur.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result would it create a significant hazard to the public or the environment?				■

Source: Department of Toxic Substance Control, Envirostor; State Water Resources Control Board, Geotracker

Pursuant to Government Code Section 65962.5, the Department of Toxic Substance Control's Envirostor and SWRCB Geotracker databases were searched for hazardous materials sites at or in proximity to the project site. The results of the searches indicated that no hazardous materials sites are located on or immediately adjacent to the project site. The closest listed site is located approximately 0.2 mile north of the project site at the intersection of Dracaea Avenue and Perris Boulevard. The site is associated with gasoline contamination and the case was closed in 2013. The site has no potential to have an adverse effect on the project site. As such, no impacts would occur.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				■

Source: City of Moreno Valley General Plan Safety Element Figure 6-5, Air Crash Hazards

The project site is located approximately 2.6 miles northeast of the nearest airport, March Air Reserve Base. According to City of Moreno Valley General Plan Figure 6-5, *Air Crash Hazards*, the project site is not located within an Accident Potential Zone or "Clear Zone" (i.e., high risk areas 3,000 feet from each end of the runway). Thus, because the project site is not located in an area identified as an Accident Potential Zone or a Clear Zone, implementation of the proposed project would not result in a safety hazard for people living or working in the project area, and no impacts would occur.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				■

There are no private airfields or airstrips in the vicinity of the project site. Therefore, there is no potential for the implementation of the project to result in a safety hazard for people residing or working in the project area and no impacts would occur.

g) Impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan?			■	

The project site does not contain emergency facilities, nor does it serve as an emergency evacuation route. During construction and long-term operation, the proposed project would be required to maintain adequate emergency access for emergency vehicles, as required by the City. Because the proposed project would not interfere with an adopted emergency response or evacuation plan, impacts would be less than significant.

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				■

Source: City of Moreno Valley General Plan FEIR Section 5-5

According to City of Moreno Valley General Plan FEIR Figure 5.5-2, the project site is not located in an area of substantial or high fire risk. The surrounding area has either been developed or has vacant lots mostly devoid of vegetation. No wildlands are located on or adjacent to the project site. Therefore, implementation of the proposed project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. No impacts related to wildland fires would occur.

IX. **HYDROLOGY AND WATER QUALIT**Y. Would the project:

a) Violate any water quality standards or waste discharge requirements?			■	

Construction of the project would involve grading, paving, utility installation, building construction, and landscaping installation, which would result in the generation of potential water quality pollutants such as silt, debris, chemicals, paints, and other solvents

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

with the potential to affect water quality. The project would be constructed and operated consistent with all applicable regulations established by the Santa Ana Regional Water Quality Control Board (RWQCB), which includes compliance with relevant NPDES permitting requirements and adoption and implementation of a SWPPP. Construction Best Management Practices (BMPs) that may be implemented during construction include silt fences, gravel bag barriers, street sweeping, solid waste management, stabilized construction entrance/exit, water conservation practices, and spill prevention and control. Implementation of these or similar BMPs would reduce potentially adverse impacts of storm waters discharged from portions of the site affected by construction activities.

Long-term operation of the project may also generate water quality pollutants such as sediment, nutrients, heavy metals, organic compounds, trash and debris, oxygen-demanding substances, oils and grease, bacteria and viruses, and pesticides. As required by the City, the project proponent would prepare a WQMP. Post-construction BMPs would include using low-impact development such as the project's bio-retention basins, which allow for peak runoff retention and reduction of pollutant loads. Adoption and implementation of the required long term WQMP, which reflect the project's commitment to install and maintain appropriate stormwater structural facilities, as well as implement non-structural BMPs, would reduce potential long-term water quality impacts related to stormwater discharges to a less-than-significant level.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?			■	

The proposed project would not require the use of groundwater. The project would increase the area of impervious surfaces on site through the development of a canopy structure, buildings, and a parking lot, which would reduce the amount of groundwater recharge. However, runoff from the proposed impervious surfaces would be directed into proposed on-site bio-retention basins, where it would be eventually conveyed to an area where it could infiltrate into the local groundwater basin. Therefore, the project would have a less than significant impact on groundwater supply and recharge.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?			■	

Source: Preliminary Hydrology Report prepared by Waber Consultants (2017; Appendix D)

The existing project site is relatively flat and sheet flows in a generally southeasterly direction towards Cottonwood Avenue. Upon implementation of the proposed project, the overall drainage direction would be similar to existing conditions, but would have the potential to generate more flow due to the increase in impervious surfaces (Waber Consultants 2017). The increased flow would be directed to vegetated bioretention basins located along the western, eastern, and southern portions of the site, which would accommodate the increased runoff.

The addition of impervious surfaces on site would decrease the amount of the exposed soil and would therefore reduce the potential for soil erosion and siltation to occur. Additionally, storm flows containing sediments would be captured by the bioretention basins, thus limiting erosion and siltation on- and off-site. Implementation of the proposed project would not alter the existing drainage pattern of the site in a manner which would result in substantial erosion or siltation on- or off-site, and impacts would be less than significant.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or surface runoff in a manner which would result in flooding on or off site?			■	

Source: Preliminary Hydrology Report prepared by Waber Consultants (2017; Appendix D)

See IX(c). Although the project would add impervious surfaces to the site that would have the potential to increase flow, the bio-retention basins would accommodate the increased runoff. Implementation of the project would therefore not increase the rate or amount of surface runoff in a manner that would result in flooding on or off site. Flooding impacts would be less than significant.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Create or contribute runoff which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			■	

Source: Preliminary Hydrology Report prepared by Waber Consultants (2017; Appendix D)

See IX(a), IX(c), and IX(d). Through the use of bioretention basins, and the implementation of a NPDES permit, SWPPP, BMPs, and a WQMP, implementation of the proposed project would not create or contribute runoff which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Impacts would be less than significant.

f) Otherwise substantially degrade water quality?				■

No additional water quality impacts are anticipated beyond those described above under Items IX(a) through IX(e).

g) Place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				■

Source: Federal Emergency Management Agency (FEMA 2008)

According to the FEMA Flood Insurance Rate Map for the area, the project site is not located within a 100-year floodplain. The project also does not include housing. Therefore, the project would not place housing within a 100-year floodplain, and no associated impact would occur.

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				■

See Item IX(g). The project would not place structures in a 100-year flood hazard area and no associated impact would occur.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				■

Source: City of Moreno Valley General Plan FEIR Section 5.5 – Hazards

The nearest dam to the project site is at the Perris Reservoir, located approximately 4.7 miles south of the project site. According to City of Moreno Valley General Plan FEIR Figure 5.5-2, the project site is not located in an identified dam inundation area. Therefore, no impacts from the failure of a levee or dam would occur.

j) Inundation by seiche, tsunami, or mudflow?				■

The Pacific Ocean is located over 40 miles from the project site; therefore, the potential for tsunamis to impact the project site is extremely low. The nearest water body to the project site is the Perris Reservoir, which is located approximately 4.7 miles to the south. Due to this distance, a seiche in the Perris Reservoir would not impact the project site.

Mudflows are shallow, water-saturated landslides that travel rapidly down slopes carrying rocks, brush, and other debris. A mudflow occurs naturally as a result of heavy rainfall on a slope that contains loose soil or debris. There are no steep slopes in the vicinity of the project site, and no impacts from mudflows would occur.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
X. **LAND USE AND PLANNING**. Would the project:				
a) Physically divide an established community?				■

The project site consists of vacant and undeveloped land located in a developed area of the City. The property is proposed to be developed in accordance with the proposed zoning designation (Community Commercial [CC]) and land use designation (Commercial). Development of the project site as a gas station, car wash, restaurant, and convenience store would not physically disrupt or divide the arrangement of the established community. Therefore, no impacts related physical dividing a community would occur.

b) Conflict with an applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				■

Source: City of Moreno Valley General Plan Land Use Map; City of Moreno Valley Zoning Map

The project proposes to develop the property with a restaurant, convenience store, car wash and gas station which would be consistent with the proposed zoning designation of Community Commercial (CC) and the proposed land use designation of Commercial. Therefore, the project would not conflict with an applicable land use plan, policy, or regulation and no impact would occur.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				■

As described under the response to Item IV(f), the project area is located within the Riverside County MSHCP. The proposed project would not conflict with the MSHCP, or other known local, regional or State habitat conservations plans as the project site does not contain sensitive plant or animal species, vernal pools, or sensitive natural communities. In addition, the site is not within a burrowing owl special survey area or proposed conservation area (Western Riverside County Conservation Authority 2018). The project will be conditioned to pay required Stephen's kangaroo rat mitigation fees and will also be subject to impact fees to support the implementation for the MSHCP as provided for by City ordinance. Therefore, no impacts to the MSHCP would occur.

XI. **MINERAL RESOURCES.** Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				■

Source: County of Riverside Open Space Element

The County of Riverside General Plan identifies the project area as Mineral Resource Zone 3 (MRZ-3). MRZ-3 denotes that mineral deposits are likely to exist; however, the significance of the deposit is undetermined. The proposed project would occur in an area that has not been used for mining, is designated as residential/office, and is surrounded by other urban development where mining operations are not expected to occur. Therefore, no impacts would occur.

b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				■

See Item XI(a), above. No impacts related to mineral resource recovery would occur.

XII. **NOISE.** Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		■		

Source: City of Moreno Valley General Plan FEIR Chapter 5.4 - Noise; Moreno Valley Municipal Code, Chapter 11.80; Roadway Construction Noise Model; Noise Mitigation Analysis for the Proposed Yum Yum Donuts Car Wash (Landrum and Brown 2018; Appendix E)

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Construction Noise Impacts

Construction noise impacts from general construction activities of the project would include noise generated from construction equipment involved in minor grading and building of the project structures. The loudest piece of equipment from this type of construction would be a backhoe used during grading and site preparation. According to the Roadway Construction Noise Model (RCNM; U.S. Department of Transportation [USDOT] 2008), at 130 feet (the approximate average distance of operating construction equipment to the nearest off-site noise sensitive land uses [NSLUs], the single-family residences adjacent to the eastern border of the project site), a backhoe would create a noise level of 65.3 A-weighted decibels (dBA) one-hour average sound level (L_{EQ}). Chapter 11.80 of the Moreno Valley Municipal Code states that any construction within the City shall only be completed between the hours of 7 a.m. to 7 p.m. Monday through Friday, excluding holidays and from 8 a.m. to 4 p.m. on Saturday, unless written approval is obtained from the City building official or City engineer. Construction activities would comply with the applicable hours; therefore, associated construction noise impacts from general construction activities would be less than significant.

Operational Noise Impacts

The City's Municipal Code sets exterior noise level standards for residential properties. The Code states that noise emitted from the proposed project shall not exceed 60 dBA at residential property lines during daytime hours (8 a.m. to 10 p.m.) and 55 dBA during nighttime hours (10 p.m. to 8 a.m.). The proposed car wash would be the loudest source of operational noise and is expected to operate 24 hours a day. As such, the proposed project would be required to comply with the 55 dBA nighttime noise level limit. The project's noise analysis determined that noise levels at the nearest residential area would be 58.5 dBA, which would exceed the nighttime noise limit (Landrum & Brown 2018). Therefore, noise levels would be potentially significant. Mitigation measure NOI-1 has been identified to reduce the significance of cultural resource impacts.

Mitigation Measure NOI-1: The following design items must be adhered to in order for the noise level limits to be met.

- The car wash equipment shall be the same as that used at the Arco facility described in the project's noise report (Landrum & Brown 2018), and placed in the same locations within the tunnel as at the Arco facility. The Arco facility is equipped with automatic doors at both the entrance and exit ends, and these doors are essential in reducing the noise levels from the car wash facility when they are closed.
- The building design (walls and roof) shall be the same materials as used at the Arco facility.
- The roll-up doors shall be the same type, and shall be installed the same as the Arco facility.
- Both the entrance end and exit end doors need to be in the closed position when a car is being
- washed and dried.
- A noise barrier shall be constructed that meets or exceeds the barrier shown in Exhibit 5 of the project's noise report (Landrum & Brown 2018).
- The noise barrier must have a surface density of at least 3.5 pounds per square foot, and shall have no openings or gaps. The wall may be constructed of stud and stucco, 3/8-inch plate glass, 5/8-inch Plexiglas, any masonry material, or a combination of these materials.

Analyzed noise levels from the car wash, built to the specifications at the Arco facility with a 6-foot wall at the property line as described in mitigation measure NOI-1, would be 49.4 dBA at the residential property line, which is in compliance with the nighttime noise ordinance (Landrum & Brown 2018). Project design proposes an 8-foot high wall that would cover the barrier shown in Exhibit 5 of the project's noise report, which would attenuate noise at a similar or greater level than the 6-foot wall analyzed in the noise analysis. Therefore, the project would not expose persons to noise in excess of general plan or noise ordinance standards, and associated impacts would be less than significant.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			■	

The project may generate minor ground vibrations during construction from the use of heavy machinery. The use of this equipment would be intermittent and temporary, and no pile drivers or other construction equipment type known to create excessive ground vibrations would be required.

Gas station, convenience store, restaurant, and car wash use is not typically associated with groundborne vibration or noise. Fuel delivery diesel trucks can generate minor vibration levels, but not to the extent that would adversely affect people in the project area. Overall, the project would have a less-than-significant impact associated with exposing the surrounding properties, or customers or workers on-site, to excessive groundborne vibrations or groundborne noise levels.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?		■		

Source: Noise Mitigation Analysis for the Proposed Yum Yum Donuts Car Wash (Landrum and Brown 2018; Appendix E); Traffic Impact Study (Kimley-Horn and Associates, Inc. 2016; Appendix B)

Operational noise impacts from the project include the car wash and increased traffic on nearby roadways. As discussed in Item XII(a), operation of the car wash would result in a potentially significant noise impact at the nearest residential areas. Through implementation of mitigation measure NOI-1, impacts would be less than significant.

The project is estimated to generate 2,445 average daily trips (ADT). The two roadway segments immediately adjacent to the project site include Perris Boulevard and Cottonwood Avenue. According to the project's TIS, Perris Boulevard from Eucalyptus Avenue to Cottonwood Avenue currently supports 31,219 ADT and Cottonwood Avenue from Perris Boulevard to Kitching Street currently supports 8,294 ADT. In general, in order to generate a 3 dBA increase in traffic noise (which is generally considered the human threshold for perception of a noise increase), traffic volumes on a roadway would have to double. The project's addition of ADT to Perris Boulevard and Cottonwood Avenue would not double traffic volumes and therefore would not cause a 3 dBA increase in noise. Impacts from long-term traffic noise generated by the project would be less than significant.

d) A substantially temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			■	

See Item XII(a) above. Although construction of the proposed project would result in temporary increases in ambient noise, the project would comply with applicable noise regulations. Therefore, associated impacts would be less than significant.

e) For a project located within an airport land use plan, or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				■

Source: City of Moreno Valley General Plan FEIR

The closest airport, the March Air Reserve Base, is located approximately 2.6 miles southwest of the project site. According to General Plan FEIR Figure 5.4-1, the project site is located well outside of the 60 dBA CNEL noise contour for the airport and would not be subjected to excessive noise levels due to operations at the March Air Reserve Base. Therefore, the project would not expose people residing or working in the project area to excessive noise levels associated with a public airport, and no airport noise-related impacts would occur.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				■

The project site is not located near a private airfield or airstrip. Therefore, the proposed project has no potential to expose people to excessive noise levels associated with operations at a private airstrip, and no associated impacts would occur.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. **POPULATION AND HOUSING.** Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				■

The project involves the construction and operation of a restaurant, convenience store, fuel facility, and car wash. No residential uses or other land uses associated with directly impacting population growth are included as part of the project. The temporary construction jobs associated with the project are expected to be fulfilled by the existing local labor pool, and it is not anticipated that the project would result in indirect population growth. Additionally, the project would use existing utilities and infrastructure on-site, and would not result in off-site improvements that would drive job or population growth; therefore, no impacts associated with population growth inducement would occur.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				■

The project site is vacant and would not displace existing housing. No impacts associated with housing displacement would occur.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				■

The project site is vacant and would not displace people. No impacts associated with displacement of people would occur.

XIV. **PUBLIC SERVICES**. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

a) Fire protection?			■	

Source: City of Moreno Valley General Plan Safety Element; City of Moreno Valley General Plan FEIR, Chapter 5.13-Public Services and Utilities; City of Moreno Valley Municipal Code, Chapter 3.42, Commercial and Development Impact Fees (Ordinance No. 695)

The City contracts with the Riverside County Fire Department to provide fire protection, fire prevention, and emergency services to its residents. The fire station nearest the project site is Station No. 99, located at 13400 Morrison Street, an approximate one and a half-mile driving distance east of the project site. The proposed project would increase the need for fire protection services within the City, but would not require the construction of new fire facilities to maintain acceptable service ratios, response times, or other performance objectives. The project would be required to adhere to all standards and conditions required by the City and the Riverside County Fire Department, including, but not limited to, restrictions on project design, imposition of construction standards, and payment of impact fees. Adherence to these standards would result in a less-than-significant impacts associated with the provision of fire protection.

b) Police protection?			■	

Source: Moreno Valley General Plan Safety Element; City of Moreno Valley General Plan FEIR, Chapter 5.13-Public Services and Utilities; City of Moreno Valley Municipal Code, Chapter 3.42, Commercial and Development Impact Fees (Ordinance No. 695)

The City contracts police services from the Riverside County Sheriff's Department. The Moreno Valley Police Department (MVPD) operates out of the Central Police Station, located at 22850 Calle San Juan de Los Lagos. The proposed project would incrementally increase the need for police protection services within the City. The proposed project would be required to adhere to all standards and conditions required by the City and the MVPD, including the payment of impact fees. While the proposed project would increase the need for police protection, it would not require the construction of new facilities to maintain acceptable service ratios, response times, or other performance objectives. Therefore, the proposed project would result in a less-than-significant impact associated with the provision of police protection.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Schools?				■
The proposed project does not include uses that would generate school age children. As such, implementation of the proposed project would not place an increased demand on schools or require the construction of new schools, and no impacts would occur.				
d) Parks?				■
The proposed project does not include uses that would increase population growth. As such, implementation of the proposed project would not place an increased demand on parks or require the construction of new parks, and no impacts would occur.				
e) Other public facilities?				■
The proposed project does not include uses that would increase population growth. As such, implementation of the proposed project would not place an increased demand on other public facilities or require the construction of new facilities, and no impacts would occur.				
XV. **RECREATION.**				
a) Would the project increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				■
See XIV(d), above. The proposed project would not increase the usage of parks and no impacts would occur.				
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				■
The project involves the construction and operation of a restaurant, convenience store, fuel facility, and car wash, and does not include recreational facilities or require the construction or expansion of recreational facilities. No impacts would occur.				
XVI. **TRANSPORTATION/TRAFFIC.** Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?		■		

Source: Traffic Impact Study (Kimley-Horn and Associates, Inc. 2016; Appendix E); Supplemental Traffic Assessment (Kimley Horn and Associates, Inc. 2017; back of Appendix E).

A TIS has been prepared for the proposed project (Kimley-Horn Associates, Inc. 2016). The study is summarized below.

Roadway segment and intersection operating conditions are typically described in terms of LOS. LOS is a scale used to indicate the quality of traffic flow on roadway segments and at intersections, with a range from LOS A (free flow, little congestion) to LOS F (forced flow, extreme congestion). Based upon City traffic study guidelines, a significant traffic impact under CEQA occurs when the addition of project traffic under the Existing Plus Project scenario causes an intersection or roadway that operates at an acceptable LOS under the Existing scenario to operate at an unacceptable LOS for Existing Plus Project conditions. Therefore, in this study, Existing Plus Project conditions are compared to Existing conditions to identify potentially significant, direct, project-related traffic impacts according to the following criteria:

- If an intersection operating at an acceptable LOS (LOS D or better) under Existing conditions and the addition of project traffic causes the intersection to operate at an unacceptable LOS (LOS E or F);

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

- If an intersection is operating at an unacceptable LOS (LOS E or F) under Existing conditions and the addition of project traffic at the intersection is 50 or more peak hour trips; or
- If a roadway segment operating at an acceptable LOS (LOS D or better) under Existing conditions and the addition of project traffic causes the roadway to operate an unacceptable LOS (LOS E or F).

According to the TIS, the proposed project is expected to generate 2,445 ADT, including a total of 190 AM peak-hour trips, 222 PM peak-hour trips, and 312 Sunday peak-hour trips. After applying pass-by reductions (for vehicles that would be traveling in the area regardless of the proposed project facilities), the development is projected to generate a total of 72 AM peak-hour trips, 98 PM peak-hour trips, and 138 Sunday peak-hour trips.

Cumulative traffic forecasts were developed using existing traffic volumes, an annual ambient growth rate per year to the project's opening year (assumed to be 2020), and traffic generated from cumulative projects. The cumulative projects consist of projects within a 3.5-mile radius of the project site that have been approved but are not yet built or fully occupied, as well as projects that are in various stages of the application and approval process but have not yet been approved. The cumulative projects were assessed for their proximity to the project site and for their potential to generate traffic based on their approved or pending land uses. As part of the Cumulative scenario, the St. Christopher's Catholic Church on the southeast corner of the intersection of Perris Boulevard and Cottonwood Avenue are assumed to undergo an expansion. The existing driveway along Cottonwood Avenue will be eliminated as part of that expansion. The removal of the church's driveway was taken into consideration in the analysis of future conditions.

Roadway segment conditions are listed in Table 7, *Roadway Segment Conditions,* for the following scenarios: Existing, Existing Plus Project, Existing Plus Cumulative Projects, and Existing Plus Cumulative Projects Plus Project. As shown in the table, the study roadway segments currently operate at an acceptable LOS and are projected to continue to operate at an acceptable LOS under the Existing Plus Project scenario. Both roadway segments along Perris Boulevard are anticipated to operate deficiently under the Existing Plus Cumulative Projects scenario and the Existing Plus Cumulative Projects Plus Project scenario, which would be a potentially significant cumulative impact. The project's contribution to this impact would be minimal, with an increase of 0.02 volume/capacity ratio for each roadway segment. Per the City of Moreno Valley General Plan Roadway Network, Perris Boulevard is planned to be widened to add one lane in each direction, which will increase the daily roadway capacity to 56,300 vehicles, which would exceed the projected traffic levels. This lane addition can be accomplished within the existing curb-to-curb width. Through Mitigation Measure TRA-1, the project would contribute to the Western Riverside Council of Governments (WRCOG) Transportation Uniform Mitigation Fee (TUMF) and the City of Moreno Valley Developer Impact Fee (DIF) program on a fair-share basis, and the project's cumulative impacts to roadway segments would be mitigated to less than significant.

Table 7
ROADWAY SEGMENT CONDITIONS

Roadway Segment	Existing		Existing Plus Project		Existing Plus Cumulative Projects		Existing Plus Cumulative Projects Plus Project	
	V/C[1]	LOS[2]	V/C	LOS	V/C	LOS	V/C	LOS
Perris Boulevard								
Eucalyptus Avenue to Cottonwood Avenue	0.83	D	0.86	D	**1.10**	**F**	**1.12**	**F**
Cottonwood Avenue to Alessandro Boulevard	0.72	C	0.74	C	**0.97**	**E**	**0.99**	**E**
Cottonwood Avenue								
Indian Street to Perris Boulevard	0.67	A	0.70	A	0.76	B	0.79	A
Perris Boulevard to Kitching Street	0.66	A	0.68	A	0.79	B	0.81	C

Source: Kimley-Horn and Associates, Inc. 2016
[1] V/C = Vehicle to Capacity ratio
[2] LOS = Level of Service
Bolded segments operate at an unacceptable LOS (LOS E or F)

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Intersection delays and corresponding LOS are listed in Table 8, *Intersection Conditions*. As shown in the table, in the Existing scenario all intersections currently operate at an acceptable LOS except the Cottonwood Avenue/Crape Myrtle Drive intersection during the AM peak hour. In the Existing Plus Project scenario, all intersections are projected to operate at an acceptable LOS except the Cottonwood Avenue/Crape Myrtle Drive intersection during the AM peak hour and the Perris Boulevard Driveway during the AM, PM, and Sunday peak hours. The project would contribute less than 10 peak hour trips to the Cottonwood Avenue/Crape Myrtle Drive intersection, which is below the 50 peak hour trip threshold, and direct impacts to this intersection would be less than significant. For the Perris Boulevard Driveway, the deficiency is not due to the relatively small amount of trips the project is adding to the exit, and instead caused by vehicles waiting to make a westbound left-turn out of the driveway onto Perris Boulevard, which have to cross multiple lanes of traffic on a busy roadway. In addition, the driveway on Perris Boulevard is consistent with Section 9.11.080 of the Moreno Valley Municipal Code for design parameters. The distance from the driveway to the intersection of Perris Boulevard and Cottonwood Avenue exceeds 350 feet when measured from the centerline of Cottonwood Avenue. The driveway is located at the far northern portion of the site, and aligns with the existing driveway on the west side of Perris Boulevard. The forecast delays would be experienced by patrons of the proposed project, rather than by travelers on public roadways. Therefore, the project's direct impacts at this intersection would be considered less than significant.

Regarding the cumulative scenarios, the following intersections are projected to operate at an unacceptable LOS under the Existing Plus Cumulative scenario:

- Perris Boulevard/Atwood Avenue (AM, PM, and Sunday peak hours)
- Cottonwood Avenue/Crape Myrtle Drive (AM peak hour)
- Perris Boulevard/Alessandro Boulevard (PM peak hour)
- Perris Boulevard Driveway (PM and Sunday peak hours)

With the addition of project traffic to the Cumulative Without Project scenario, the same intersections would operate at an unacceptable LOS:

- Perris Boulevard/Atwood Avenue (AM, PM, and Sunday peak hours)
- Cottonwood Avenue/Crape Myrtle Drive (AM and Sunday peak hours)
- Perris Boulevard/Alessandro Boulevard (PM peak hour)
- Perris Boulevard Driveway (AM, PM, and Sunday peak hours)

These intersections are forecasted to operate deficiently before the addition of project traffic. The deficiency at the Perris Boulevard Driveway in the Existing Plus Cumulative scenario is caused by egress vehicles from the shopping center to the west of the project site. In the Existing Plus Cumulative Plus Project scenario, the westbound approach at the driveway also operates deficiently. Due to the aforementioned reasons discussed above under the Existing Plus Project scenario, the project's contribution to cumulative impacts would be less than significant for this driveway.

With the exception of the Perris Boulevard/Alessandro Boulevard intersection, the deficient intersections are unsignalized. Due to the heavy traffic volumes anticipated in Opening Year 2020 as a result of growth and nearby projects, vehicles turning from minor streets onto Perris Boulevard are forecasted to encounter significant delays, regardless of their low volumes. A traffic signal warrant analysis was conducted for each of these intersections and, based on the low volumes, signalization was determined not to be warranted. The project's contribution to cumulative impacts at these intersections would be less than significant.

For the Perris Boulevard/Alessandro Boulevard intersection, planned improvements included in existing fee programs include an additional southbound left-turn lane and an additional northbound left-turn lane. Through Mitigation Measure TRA-1, the project would contribute to the Western Riverside Council of Governments (WRCOG) TUMF and the City's DIF program on a fair-share basis, and the project's contribution to cumulative impacts to this intersection would be mitigated to less than significant.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Table 8
INTERSECTION CONDITIONS

Intersection	Existing		Existing Plus Project		Existing Plus Cumulative Projects		Existing Plus Cumulative Projects Plus Project	
	Delay[1]	LOS[2]	Delay	LOS	Delay	LOS	Delay	LOS
AM Peak Hour								
Perris Blvd/Eucalyptus Ave	19.9	B	20.1	C	27.7	C	28.0	C
Perris Blvd/Atwood Ave	23.8	C	24.3	C	**46.4**	**E**	**47.8**	**E**
Perris Blvd/Dracaea Ave	26.5	C	27.0	C	44.3	D	45.1	D
Cottonwood Ave/Indian St	23.1	C	23.4	C	27.9	C	28.4	C
Cottonwood Ave/Perris Blvd	26.1	C	27.1	C	35.6	D	37.0	D
Cottonwood Ave/Crape Myrtle Dr	**39.5**	**E**	**40.5**	**E**	**65.3**	**F**	**68.0**	**F**
Cottonwood Ave/Kitching St	25.3	C	25.6	C	30.4	C	29.0	C
Perris Blvd/Bay Ave	22.2	C	22.5	C	27.9	C	28.6	C
Perris Blvd/Alessandro Blvd	30.1	C	30.2	C	50.7	D	51.1	D
Perris Blvd Driveway	13.2	B	**224.4**	**F**	16.2	C	**1275.4**	**F**
Cottonwood Ave Driveway	17.5	C	22.3	C	--*	--*	18.4	C
PM Peak Hour								
Perris Blvd/Eucalyptus Ave	20.4	C	20.8	C	28.9	C	29.5	C
Perris Blvd/Atwood Ave	29.0	D	29.8	D	**79.7**	**F**	**85.3**	**F**
Perris Blvd/Dracaea Ave	18.0	B	18.2	B	26.0	C	26.6	C
Cottonwood Ave/Indian St	20.1	C	20.3	C	22.4	C	22.8	C
Cottonwood Ave/Perris Blvd	21.7	C	22.5	C	30.9	C	32.7	C
Cottonwood Ave/Crape Myrtle Dr	15.2	C	15.4	C	18.1	C	18.4	C
Cottonwood Ave/Kitching St	16.1	B	16.2	B	16.6	B	16.7	B
Perris Blvd/Bay Ave	16.4	B	16.7	B	18.2	B	18.7	B
Perris Blvd/Alessandro Blvd	35.3	D	35.6	D	**64.8**	**E**	**65.4**	**E**
Perris Blvd Driveway	34.8	D	**260.0**	**F**	**626.3**	**F**	**2499.9**	**F**
Cottonwood Ave Driveway	13.0	B	14.8	B	--*	--*	13.7	B
Sunday Peak Hour								
Perris Blvd/Eucalyptus Ave	16.6	B	16.9	B	18.7	B	19.1	B
Perris Blvd/Atwood Ave	27.4	D	28.5	D	**65.2**	**F**	**71.1**	**F**
Perris Blvd/Dracaea Ave	20.6	C	20.8	C	27.8	C	28.7	C
Cottonwood Ave/Indian St	18.1	B	18.2	B	19.9	B	20.2	C
Cottonwood Ave/Perris Blvd	23.1	C	24.6	C	34.4	C	37.7	D
Cottonwood Ave/Crape Myrtle Dr	22.3	C	23.1	C	34.2	D	**35.9**	**E**
Cottonwood Ave/Kitching St	16.9	B	17.0	B	17.8	B	18.1	B
Perris Blvd/Bay Ave	14.6	B	14.8	B	17.2	B	17.5	B
Perris Blvd/Alessandro Blvd	28.6	C	28.8	C	38.3	D	38.8	D
Perris Blvd Driveway	32.6	D	**498.3**	**F**	**397.9**	**F**	**2664.0**	**F**
Cottonwood Ave Driveway	17.4	C	24.5	C	--*	--*	14.3	B

Source: Kimley-Horn and Associates, Inc. 2016
1 Delay = Second per vehicle
2 LOS = Level of Service
* Church Driveway Removed
Bolded intersections operate at an unacceptable LOS (LOS E or F)

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

The following mitigation measure is required:

Mitigation Measure TRA-1: Prior to issuance of the first building permit, the Project Applicant shall make a fair-share contribution in the funding of off-site improvements that are needed to serve acceptable cumulative traffic operations through the payment of the required Transportation Uniform Mitigation Fee (TUMF) fees in addition to the City of Moreno Valley Development Impact Fee (DIF). The fees shall be collected by the Western Riverside Council of Governments (WRCOG) for the TUMF and by the City of Moreno Valley for the DIF.

With implementation of mitigation measure TRA-1, the project would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, and associated traffic impacts would be less than significant.

A Supplemental Traffic Assessment (Kimley-Horn and Associates, Inc.) was prepared for the TIA to analyze trip generation rates from the proposed zoning change from Office Commercial (OC) to Community Commercial (CC). A CC zone includes land uses such as a fast food restaurant with drive-through that is not included in an OC zone. The gas station with convenience market and car wash, which was analyzed above, is permissible under both zones. A fast-food restaurant with drive-through, which would have a generally small building footprint, would generate a similar or lower amount of traffic compared to a gas station with convenience market and car wash. For instance, in a case where a fast-food restaurant is 3,000 square-feet, a gas station with twelve pumps would generate significantly more traffic on a daily and peak hour basis. Therefore, the above analysis and mitigation would be the conservative analysis, and would be the applicable analysis for the proposed project.

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?		■		

Source: Traffic Impact Study (Kimley-Horn and Associates, Inc. 2016; Appendix E); 2011 Riverside County Congestion Management Program

See Item XVI(a). Since the project would contribute to existing roadway and intersection deficiencies, it would cause potentially significant impacts to the performance of the circulation system and would have the potential to impact existing performance of the System of Highways and Principal Arterials governed by the Riverside County Congestion Management Plan (CMP). However, implementation of mitigation measure TRA-1 would reduce impacts to the performance of the circulation system, and subsequently would reduce conflicts with the Riverside County CMP to a less-than-significant level.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				■

The project site is located approximately 2.6 miles northeast of the nearest airport, March Air Reserve Base. The project site is not within the airport influence area of the airport. In addition, the proposed project would not include aviation components or structures where height would be an aviation concern and, therefore, would not affect air traffic patterns. No associated impacts would occur.

d) Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?				■

The project does not propose a design feature or incompatible uses that could substantially increase hazards. The project's driveways along Perris Boulevard and Cottonwood Avenue have been designed to allow safe ingress and egress. Therefore, no associated impacts would occur.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Result in inadequate emergency access?				■

Access to the site for emergency vehicles would be provided via the project driveways along Perris Boulevard and Cottonwood Avenue. The project would be subject to City review and approval for consistency with design requirements while acquiring building permits to ensure that no impediments to emergency access occur. No impacts would occur.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
f) Conflict with adopted policies or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?				■

Source: City of Moreno Valley General Plan Circulation Element; City of Moreno Valley Bicycle Master Plan; Traffic Impact Study (Kimley-Horn and Associates, Inc. 2016; Appendix E).

Pedestrian access would be provided via project-installed sidewalks on Perris Boulevard and Cottonwood Avenue. No sidewalks currently exist along the project frontage; therefore, these project elements would represent improvements to pedestrian circulation in the area. A Class II bike lane is located along Cottonwood Boulevard (City 2014). The project would not interfere with the existing bike lane. Regarding mass transit, the Riverside County Transit Agency provides transit lines that run along the project frontage. Route 18 operates along Cottonwood Avenue and Route 19 operates along Perris Boulevard. A bus stop for Route 19 is located on the east side of Perris Boulevard along the project frontage. The project would incorporate a bus turnout to allow for the continued operation of the adjacent bus stop, as well as both bus routes. Implementation of the project would not conflict or interfere with policies contained in the Circulation Element of the City's General Plan regarding alternative transportation modes. Therefore, no impacts related to these issues would occur.

XVII. **TRIBAL CULTURAL RESOURCES.** Would the project:

a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or		■		
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.		■		

Tribal cultural resources (TCRs) are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either included or determined to be eligible for inclusion in the California Register of Historical Resources or included in a local register of historical resources, as defined in subdivision (k) of Public Resources Code Section 5020.1, or determined to be significant pursuant to criteria set forth in Public Resources Code Section 5024.1. As discussed in Item V(b), the project would occur within an area sensitive for cultural resources, and therefore although there are no known TCRs on site the potential exists for encountering TCRs during ground-disturbing activities of project construction. As a result, project construction would be required to implement mitigation measures CR-1 through CR-6 to reduce potentially significant impacts to TCRs to less than significant.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. **UTILITIES AND SERVICE SYSTEMS.** Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?			■	

The proposed project would be required to comply with the applicable waste discharge prohibitions and water quality objectives established by the Santa Ana RWQCB. Treatment of wastewater generated by the project would be routine and would not exceed wastewater treatment requirements of the RWQCB. The Eastern Municipal Water District (EMWD) is the wastewater treatment provider for the project. The project would not exceed wastewater treatment capacity of the EMWD's Moreno Water Reclamation Facility. The project proponent would also be required to satisfy City and EMWD requirements related to the payment of fees and/or the provision of wastewater conveyance features, and installation and maintenance prior to the issuance of building permits. Adherence to these wastewater treatment requirements would result in a less than significant impact.

b) Require or result in construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			■	

Domestic water and wastewater services would be provided to the project site by EMWD. The proposed project would install connections to water and wastewater conveyance lines that exist beneath abutting public roadways. Except for small encroachments into adjacent public rights-of-way of paved streets to connect to existing lines and the construction of water and sewer lines on site, no physical disturbance for the installation of water or wastewater facilities would be required to service the proposed project. In addition, the project would not substantially increase the demand for water or wastewater treatment services and would not require the need for new or expanded water or wastewater treatment facilities; the project meets the existing zoning of the site and would not be adding additional population above what has been planned for by the EMWD. Adequate services are available to serve the project. Therefore, associated impacts would be less than significant.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			■	

The project would involve the construction of gutters, bio-retention basins, storm drain pipes, and storm drain outlet structures. The construction of stormwater drainage facilities proposed by the project would result in physical impacts to the surface and subsurface of the project site. These impacts are considered to be part of the project's construction phase and are evaluated throughout this Initial Study accordingly. The proposed drainage facilities are expected to be sufficient to convey post-development flows; therefore, the construction or expansion of additional off-site drainage facilities would not be required. Impacts associated with stormwater drainage facilities would be less than significant.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			■	

Source: EMWD 2015 Urban Water Management Plan

The operation of the proposed car wash, restaurant, convenience store, and gas station would result in an increase in potable water demand from the local water purveyor, EMWD. However, the proposed project is consistent with the assumptions made in EMWD's 2015 Urban Water Management Plan, as the Project site is consistent with the existing land use and zoning designations that are used to calculate population projections. EMWD's 2015 Urban Water Management Plan concludes that the EMWD has sufficient water supplies available to serve planned land uses within its service area through at least 2040. In addition, the proposed project would not be subject to the provisions of Senate Bill (SB) 610, requiring a Water Supply Assessment, because the proposed project does not involve a use that would result in water demand equivalent to a residential development of more than 500 dwelling units. Therefore, impacts related to water supply would be less than significant.

e) Result in a determination by the wastewater treatment provider which serves or may serve the project determined that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			■	

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Please see Items XVII(a) and XVII(b). EWMD would have adequate capacity for the proposed project. Impacts related to wastewater treatment capacity would be less than significant.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			■	

Source: CalRecycle "Facility/site Summary Details"; CalRecycle "Estimated Solid Waste Generation Rates; USEPA "Construction Waste Management Guidance"

Implementation of the proposed project would generate an incremental increase in solid waste volumes requiring off-site disposal during short-term construction and long-term operational activities. The project would be required to comply with City of Moreno Valley Ordinance No. 706, which requires a minimum of 50 percent of all construction waste and debris to be recycled. Additionally, the project would be required to comply with mandatory waste reduction requirements as described below under Item XVII(g).

Solid waste generated by the proposed project would be disposed at the Badlands Sanitary Landfill, the Lamb Canyon Sanitary Landfill, and/or the El Sobrante Landfill. Existing capacities at each of these landfills are discussed below.

The Badlands Landfill has a permitted disposal capacity of 4,800 tons per day and a remaining capacity of 15,748,799 cubic yards (CalRecycle 2018a). The Badlands Landfill is estimated to reach capacity in the year 2022; however, future landfill expansion opportunities exist at this site. During December 2017, which is the most recent time period for which reporting data are available, the Badlands Landfill accepted 70,127 tons of waste for an average daily amount of 2,805 tons (Riverside County Waste Management Department [RCWMD] 2018a).

The Lamb Canyon Landfill has a permitted disposal capacity of 5,500 tons per day and has a remaining capacity of 19,242,950 cubic yards (CalRecycle 2018b). The Lamb Canyon Landfill is estimated to reach capacity in the year 2029; however, future landfill expansion opportunities exist at this site. During October of 2017, which is the most recent time period for which reporting data are available, the Lamb Canyon Landfill accepted 47,281 tons of waste for an average daily amount of 1,818 tons (RCWMD 2017).

The El Sobrante Landfill has a permitted disposal capacity of 16,054 tons per day and a remaining capacity of 145,530,000 tons (CalRecycle 2018c). The El Sobrante Landfill is estimated to reach capacity in the year 2045; however, future landfill expansion opportunities exist at this site. During December of 2017, which is the most recent time period for which reporting data are available, the El Sobrante Landfill accepted 275,530 tons of waste for an average daily amount of 11,021 tons (RCWMD 2018b).

For the proposed project, waste would be generated by the construction process, primarily consisting of discarded materials and packaging. Based on the total project site area to undergo construction of 18,825 square feet and the USEPA's construction waste generation factor of 2.5 pounds per square foot for commercial construction (USEPA 2007), approximately 24 tons of waste would be generated during the construction process.

Based on a daily waste generation factor of five pounds of waste per 1,000 square feet of building area per day obtained from CalRecycle, long-term, on-going operation of the proposed 5,515-square foot restaurant and convenience store would generate approximately 27.5 pounds of waste per day (CalRecycle 2016). At least 50 percent is required to be recycled pursuant to State law.

Solid waste generated by the proposed project would be disposed at the aforementioned El Sobrante Landfill, the Badlands Sanitary Landfill, and/or the Lamb Canyon Sanitary Landfill. Each of these landfills receive well below their maximum permitted daily disposal volume and have the potential for future expansion. The landfills have sufficient capacity to accept solid waste generated by the project's construction and operational phases; therefore, associated impacts would be less than significant.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
g) Comply with federal, state, and local statues and regulations related to solid waste?			■	

The project would be required to comply with the City of Moreno Valley's waste reduction programs, including recycling and other diversion programs to divert the amount of solid waste deposited in landfills. In addition, in accordance with the California Solid Waste Reuse and Recycling Act of 1991 (California Public Resources Code Section 42911), the proposed project would provide adequate areas for collecting and loading recyclable materials where solid waste is collected. The implementation of these programs would reduce the amount of solid waste generated by the proposed project and diverted to landfills, which in turn would aid in the extension of the life of affected disposal sites. The project would comply with all applicable solid waste statutes and regulations; therefore, solid waste impacts would be less than significant.

XVIII. **MANDATORY FINDINGS OF SIGNIFICANCE.**

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?		■		

The project does not have the potential to impact sensitive biological resources. It does have the potential to degrade the quality of the environment associated with cultural and paleontological resources. Mitigation measures CR-1 through CR-6 have been incorporated to reduce impacts to a less-than-significant level.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?		■		

The proposed project, in combination with past, present, and reasonably foreseeable projects, may contribute a significant cumulative traffic impact, as identified under Item XVI(a). With implementation of the proposed mitigation measure, the project would not result in significant, unavoidable, or adverse cumulative impacts to traffic. Therefore, the project's potential impacts are not considered cumulatively considerable.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			■	

As discussed throughout this document, it is not anticipated that project activities would create conditions that would significantly directly or indirectly impact human beings. In issue areas regarding adverse effects on human beings, either no impact or a less-than-significant impact would occur. For this reason, environmental effects that would cause substantial adverse effects on human beings would be less than significant.

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Appendix A

Air Quality and Greenhouse Gas Emissions Technical Report

HELIX Environmental Planning

Yum Yum Donuts Moreno Valley Project

Air Quality and Greenhouse Gas Emissions Technical Report

March 2018 | ASE-01

Prepared for:

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Yum Yum Donuts Moreno Valley Project

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March 2018 | ASE-01

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ADT	average daily trips
AQMP	Air Quality Management Plan
C_2F_6	hexafluoroethane
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
CALGreen	California Green Building Standards Code
CAP	Climate Action Plan
CARB	California Air Resources Board
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CF_4	tetraflouromethane
CFC	chlorofluorocarbon
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
County	Riverside County
DPM	diesel particulate matter
EIR	Environmental Impact Report
EO	Executive Order
GHG	greenhouse gas
GWP	global warming potential
H_2S	hydrogen sulfide
HFC	hydrofluorocarbon
HI	Hazard Index
HRA	health risk assessment
I-	Interstate
IPCC	Intergovernmental Panel on Climate Change
LCFS	Low Carbon Fuel Standard
LOS	Level of Service
LST	localized significance threshold
mg/m^3	milligrams per cubic meter
MMT	million metric tons

ACRONYMS AND ABBREVIATIONS (cont.)

MT	metric tons
mpg	miles per gallon
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NASA	National Aeronautics and Space Administration
NHTSA	National Highway Traffic Safety Administration
NO	nitrogen oxide
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NO_X	nitrogen oxides
O_3	ozone
Pb	lead
PFC	perfluorocarbon
PM	particulate matter
PM_{10}	particulate matter less than 10 microns
$PM_{2.5}$	particulate matter less than 2.5 microns
ppm	parts per million
ROG	reactive organic gas
RTP	Regional Transportation Plan
SB	Senate Bill
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SF_6	hexafluoride
SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_X	sulfur oxides
SRA	source receptor area
TACs	toxic air contaminants
TIA	Transportation Impact Analysis
USEPA	U.S. Environmental Protection Agency
VMT	vehicle miles traveled
VOC	volatile organic compound

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EXECUTIVE SUMMARY

This report presents an assessment of potential air quality and greenhouse gas (GHG) emission impacts during construction and operation of the proposed Yum Yum Donuts Moreno Valley Project (project), located at the corner of Perris Boulevard and Cottonwood Avenue in the City of Moreno Valley (City).

The project would result in emissions of criteria air pollutants during construction and operation. Construction emissions include fugitive dust, heavy construction equipment exhaust, and vehicle trips associated with workers commuting to and from the site and trucks hauling materials. In accordance with South Coast Air Quality Management District (SCAQMD) Rule 403, fugitive dust control measures including the use of an on-site water truck to wet down active grading areas and roads at least twice daily are incorporated into the project design. Operational sources of emissions include area, on-site energy use, and transportation. Project emissions of criteria pollutants during construction and operation would remain below SCAQMD emissions thresholds.

The project would be consistent with air quality policies set forth by the SCAQMD as presented in the most recent Air Quality Management Plan.

Project-generated traffic would not result in a carbon monoxide hot spot. Construction and operation of the project would not result in exposure of sensitive receptors to significant quantities of toxic air contaminants (TACs). In addition, evaluation of potential odors from the project indicated that associated impacts would be less than significant.

Construction sources of GHG emissions include heavy construction equipment, worker vehicle miles traveled (VMT), and water use. Operational sources of GHG emissions include area, energy, transportation, water use, and solid waste. The project would be required to comply with the 2016 Title 24 Energy Code; the 2016 California Green Building Standards Code (CALGreen); the Assembly Bill (AB) 341 solid waste diversion target of 75 percent; reduction of potable water use by 20 percent when compared to the statewide average; low-flow water and bathroom fixtures; reduction of wastewater generation by 20 percent; weather-based irrigation systems; provide areas for storage and collection of recyclables and yard waste.

The project-related construction activities are estimated to generate 76 metric tons (MT) of carbon dioxide equivalent (CO_2e). Construction emissions are amortized over 30 years, such that the proposed construction activities would contribute an average of 3 MT per year of CO_2e emissions. The project-related operational and amortized construction GHG emissions for opening year are estimated to generate 1,165 MT CO_2e. Project emissions would not exceed the GHG screening threshold of 3,000 MT CO_2e established by the SCAQMD and adopted by the City Climate Action Strategy (CAS). Therefore, the project would be consistent with the City CAS and result in a less than significant impact related to GHG emissions.

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1.0 INTRODUCTION

This report presents an assessment of potential air quality and greenhouse gas (GHG) emissions impacts during construction and operation of the proposed Yum Yum Donuts Moreno Valley Project (project), located in the City of Moreno Valley (City) in Riverside County (County).

1.1 PROJECT LOCATION

The project site is located at the corner of Perris Boulevard and Cottonwood Avenue and is composed of Assessor's Parcel Numbers (APNs) 479-140-023-2, 479-140-024-3, and 479-131-012-4. Project site access would be provided via driveways on both Perris Boulevard and Cottonwood Avenue. Surrounding land uses include single-family residences to the east, a commercial area across Perris Boulevard to the west, a church across Cottonwood Avenue to the south, and a vacant lot to the north. Interstate (I-) 215 is located approximately 3.5 miles east of the project site (see Figure 1, *Regional Location*, and Figure 2, *Aerial Photograph*).

1.2 PROJECT DESCRIPTION

The project proposes to develop a 3.77-acre vacant lot for a 5,515-square foot Yum Yum Donuts restaurant and convenience market with a car wash and gas station. Sixteen gas pumps through eight production dispensers would be provided and a 5,075-square foot steel canopy would be constructed above. The car wash would be 900-square feet with an adjacent 400-square foot equipment room. Additionally, two underground storage tanks would be installed in the southeast corner of the project to provide gas. The majority of the project site would be paved and would provide 28 vehicle parking spaces and 2 bicycle parking spaces. Additional improvements include signs at the access points; air, water, and vacuum units for vehicles; curb and sidewalk improvements; fire hydrant installation; and storm drain improvements. Landscaping would be maintained throughout the site. See Figure 3, *Site Plan*, for details. The project would not require demolition, as the site is currently vacant and undeveloped.

1.3 CONSTRUCTION ACTIVITIES AND PHASING

Project construction is assumed to begin in January 2019 and be completed in June 2019, for a total construction period of six months. Construction activities include site preparation, grading, installation of underground utilities, construction of structures and paving and coating of the site. Grading and underground utilities installation are expected to overlap in February 2019. During grading, export of 200 cubic yards of soil is expected. Detailed construction phasing and equipment assumptions are summarized in Section 4.1, *Methodology*, and provided in Appendix A.

2.0 REGULATORY SETTING

2.1 AIR QUALITY

2.1.1 Criteria Pollutants

Criteria pollutants are defined by state and federal law as a risk to the health and welfare of the general public. In general, air pollutants include the following compounds:

- Ozone (O_3)
- Reactive organic gases (ROGs) or volatile organic compounds (VOCs)
- Carbon monoxide (CO)
- Nitrogen dioxide (NO_2)
- Respirable particulate matter and fine particulate matter (PM_{10} and $PM_{2.5}$)
- Sulfur dioxide (SO_2)
- Lead (Pb)

The following specific descriptions of health effects for each of the air pollutants potentially associated with project construction and operation are based on information provided by the California Air Resources Board (CARB; 2009) and the U.S. Environmental Protection Agency (USEPA; 2017a).

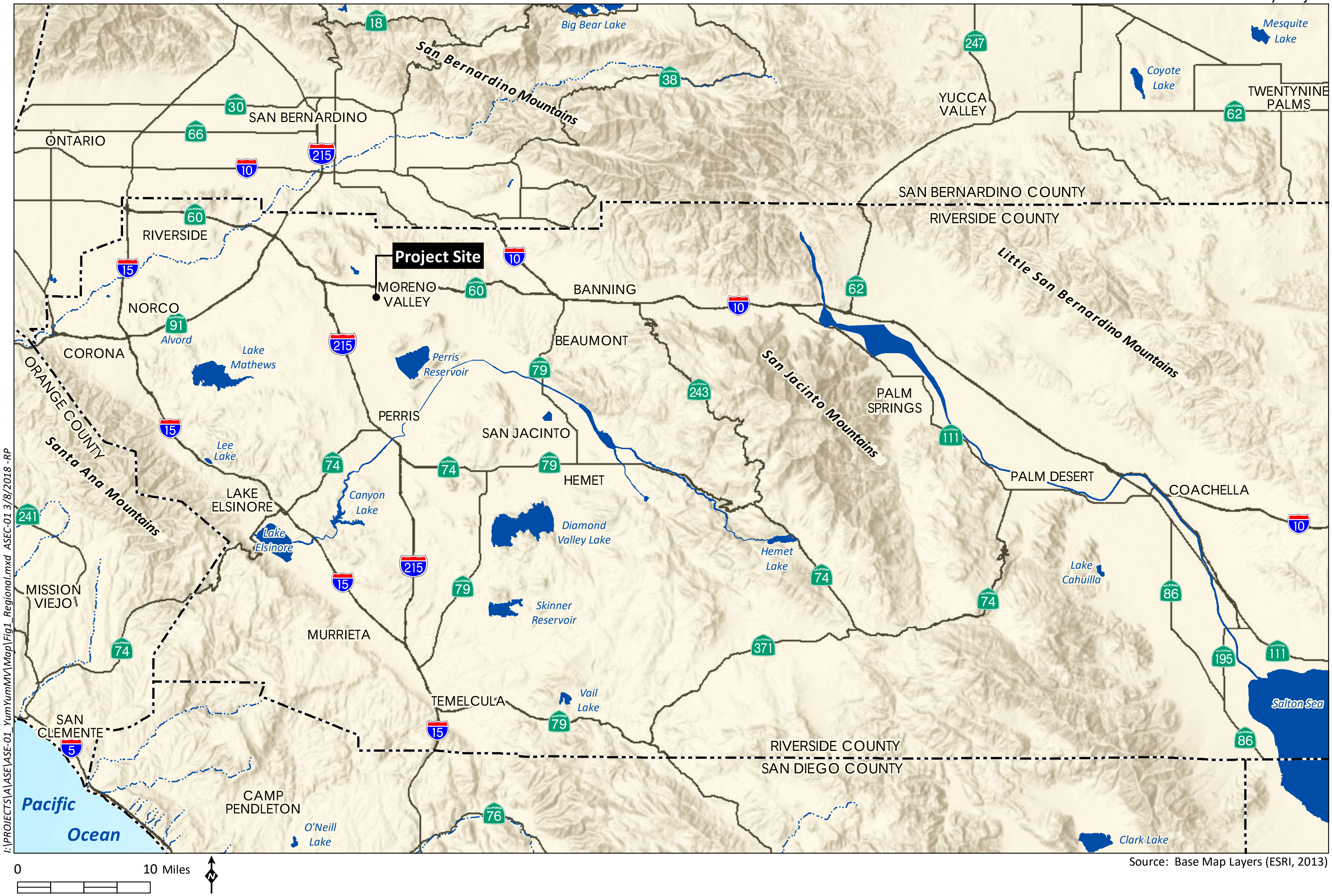
Ozone. Ozone is considered a photochemical oxidant, which is a chemical that is formed when VOCs and nitrogen oxides (NO_X), both by-products of fuel combustion, react in the presence of ultraviolet light. Ozone is considered a respiratory irritant and prolonged exposure can reduce lung function, aggravate asthma, and increase susceptibility to respiratory infections. Children and those with existing respiratory diseases are at greatest risk from exposure to ozone.

Reactive Organic Gases. ROGs (also known as VOCs) are compounds composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of ROGs. Other sources of ROGs include evaporative emissions from paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. While ROGs can be a health concern indoors, CARB regulates ROGs outdoors mainly because of their ability to create photochemical smog under certain conditions.

Carbon Monoxide. CO is a by-product of fuel combustion. CO is an odorless, colorless gas. CO affects red blood cells in the body by binding to hemoglobin and reducing the amount of oxygen that can be carried to the body's organs and tissues. CO can cause health effects to those with cardiovascular disease and can also affect mental alertness and vision.

Nitrogen Dioxide. NO_2, a species of the aforementioned NO_X, is also a by-product of fuel combustion and is formed both directly as a product of combustion and in the atmosphere through the reaction of nitrogen oxide (NO) with oxygen. NO_2 is a respiratory irritant and may affect those with existing respiratory illness, including asthma. NO_2 can also increase the risk of respiratory illness.

Yum Yum Donuts Moreno Valley Project



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Regional Location

Figure 1

Yum Yum Donuts Moreno Valley Project

Source: Base Map Layers (Eagle, 2014)

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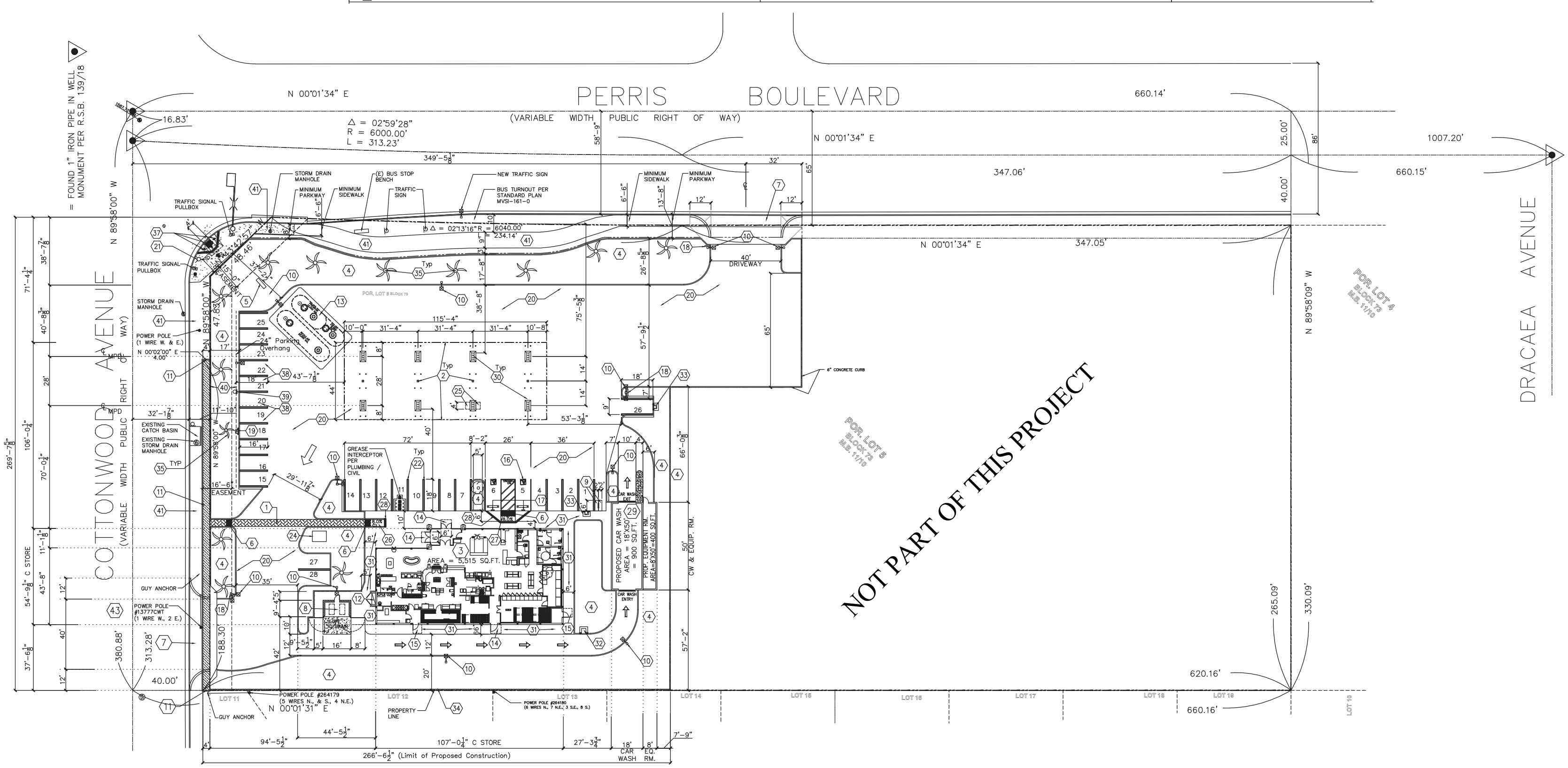
HELIX
Environmental Planning

Aerial Photograph

Figure 2

SCOPE OF WORK

1. INSTALL 48" MINIMUM ACCESSIBLE ROUTE (MISSION RED, INTERLOCKING DECORATIVE PAVING) SLOPE NOT TO EXCEED 4.5% WITH MAXIMUM 2.0% CROSS SLOPE
2. CONSTRUCT 5,075.0 SQUARE FEET, 4-COLUMNS STEEL CANOPY PER PLAN & ELEVATIONS
3. CONSTRUCT 5,515.0 SQUARE FEET BUILDING PER PLAN & ELEVATIONS AND STRUCTURAL DRAWINGS
4. CONSTRUCT LANDSCAPE & PLANTING AREA PER PLAN & LANDSCAPE DRAWINGS.
5. INSTALL NEW MONUMENT SIGN WITH PRICE SIGN PER PLAN. SIGNS ARE UNDER SEPARATE PERMIT.
6. INSTALL MINIMUM 36" WIDE YELLOW COLOR DETECTABLE WARNING PER PLAN AND CBC FIGURE 11B-705.1
7. CONSTRUCT (2) DRIVEWAYS PER CITY OF MORENO VALLEY STANDARD PLAN MVSI-112C-0 (OLD 118-C)
8. CONSTRUCT 9'-4"X16'-0"X9'-0" HIGH STUCCO FINISH CMU TRASH ENCLOSURE WITH SOLID ROOF COVER & DOUBLE STEEL GATE PER PLAN AND CITY STANDARD PLAN MVGF-660A-0 OPTION 1
9. STRIPE (8)-2'-6"X6'-0" BICYCLE PARKING SPACES WITH REQUIRED BIKE U RACK PER PLAN
10. INSTALL YARD LIGHTS PER ELECTRICAL DRAWINGS
11. 4'-0" DEDICATION PER PLAN
12. INSTALL MAIN SWITCH BOARD INSIDE ENLOSURE MATCH BUILDING PER ELECTRICAL DRAWINGS.
13. PROPOSED LOCATION FOR UNDERGROUND STORAGE TANKS
14. 6'-0"X5'-0" CLEAR AND LEVEL AREA SLOPE NOT TO EXCEED 2.0% AT ANY DIRECTION. FLOOR NOT MORE THAN ½" LOWER THAN THE THRESHOLD
15. 5'-0"X5'-0" CLEAR AND LEVEL AREA SLOPE NOT TO EXCEED 2.0% AT ANY DIRECTION. FLOOR NOT MORE THAN ½" LOWER THAN THE THRESHOLD
16. STRIPE 18'-0"X26'-0" DISABILITY PARKING SPACE PER PLAN. SLOPE NOT TO EXCEED 2.0% AT ANY DIRECTION
17. INSTALL DISABILITY PARKING SIGNS PER PLAN
18. INSTALL ADDITIONAL SIGN AT EACH ENTRANCE TO OFF STREET PARKING FACILITIES OR IMMEDIATELY ADJACENT AND VISIBLE FROM EACH ACCESSIBLE STALL OR SPACE PER PLAN
19. INSTALL AIR AND WATER UNIT PER PLAN, WITH FREE SIGN ON UNIT
20. CONSTRUCT REINFORCED CONCRETE PAVING AT THE ENTIRE OF SITE PER SOIL REPORT AND CIVIL DRAWINGS
21. INSTALL FIRE HYDRANT PER FIRE DEPARTMENT REQUIREMENT (6"X4"X2.5"X2.5")
22. STRIPE STANDARD PARKING STALLS PER CITY STANDARD FIGURE 9.11.080-6
23. INSTALL CANISTER ON TOP OF ROOF
24. ELECTRICAL TRANSFORMER CONCRETE PAD SEE ELECTRICAL SITE PLAN, TRANSFORMER INSTALLATION BY UTILITY COMPANY
25. 30"X48" CLEAR AND LEVEL AREA, SLOPE NO TO EXCEED 2.0% AT ANY DIRECTION
26. CONSTRUCT CURB RAMP WITH CURB AT EACH SIDE. SLOPE NOT TO EXCEED 8.0% AND 2.0% CROSS SLOPE
27. CONSTRUCT CURB RAMP WITH FLARE AT EACH SIDE. SLOPE NOT TO EXCEED 8.0% AND 2.0% CROSS SLOPE SLOPE ON FLARE = 8.0% AS WELL
28. CONSTRUCT GROOVED BORDER 12" INCHES WIDE AT LEVEL SURFACE OF THE SIDEWALK AT TOP APPROXIMATELY ¾" INCH ON CENTER
29. CONSTRUCT 1,300.0 SQUARE FEET CAR WASH BUILDING & EQUIPMENT ROOM PER PLAN & ELEVATIONS AND STRUCTURAL DRAWINGS
30. INSTALL PRODUCTION DISPENSER TYPICAL OF 8 PER PLAN
31. CONSTRUCT REINFORCED CONCRETE SIDEWALK, SLOPE NOT TO EXCEED 2.0% AT ANY DIRECTION
32. INSTALL CAR WASH COIN BOX WITH GUARD POST AT EACH SIDE PER CAR WASH MANUFACTURER DRAWINGS
33. INSTALL (2) VACUUM PER MANUFACTURER REQUIREMENT
34. CONSTRUCT 8'-0" HIGH DECORATIVE BLOCK WALL ALONG REAR FACILITY PER PLAN
35. ONE FOOT MINIMUM, AND 2 FEET MAXIMUM STREET TREE PER NOTE #30 ON ATTACHED.
36. NOT USED
37. CURB RAMP WITH FLARE AT BOTH SIDES WILL BE RECONSTRUCTED TO MEET CURRENT ACCESSIBILITY REQUIREMENTS WITH 8.33% SLOPE AND 2.0% CROSS SLOPE ON CURB RAMP 8.33% SLOPE ON FLARES WITH GROOVED BOARDER & 36" INCHES MINIMUM DETECTABLE WARNING
38. INSTALL SIGN FOR 9'-0"X18'-0" CARPOOL/VAN POOL LOW-EMITTING FUEL-EFFICIENT PARKING
39. INSTALL POLE WITH 208 / 240 V, 40 AMP GROUNDED AC OUTLET PER ELECTRICAL DRAWINGS
40. INSTALL 36" TALL BERM, OR HEDGE TO SCREEN THESE PARKING SPACES
41. CONSTRUCT CONCRETE SIDEWALK WITH CONCRETE CURB AND GUTTER ON COTTONWOOD AVENUE AND PERRIS BLVD PER CITY STANDARD
42. INSTALL 6" PLANTER CURB.
43. RELOCATE EXISTING POWER POLE.



Source: A & S Engineering, 2018

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Site Plan

Figure 3

Respirable Particulate Matter and Fine Particulate Matter. Respirable particulate matter, or PM_{10}, refers to particulate matter with an aerodynamic diameter of 10 microns or less. Fine particulate matter, or $PM_{2.5}$, refers to particulate matter with an aerodynamic diameter of 2.5 microns or less. Particulate matter in these size ranges have been determined to have the potential to lodge in the lungs and contribute to respiratory problems. PM_{10} and $PM_{2.5}$ arise from a variety of sources, including road dust, diesel exhaust, fuel combustion, tire and brake wear, construction operations, and windblown dust. PM_{10} and $PM_{2.5}$ can increase susceptibility to respiratory infections and can aggravate existing respiratory diseases such as asthma and chronic bronchitis. $PM_{2.5}$ is considered to have the potential to lodge deeper in the lungs. Particulate matter originating from diesel exhaust, diesel particulate matter (DPM), discussed in further detail below, is classified a carcinogen by CARB.

Sulfur dioxide. SO_2 is a colorless, reactive gas that is produced from the burning of sulfur-containing fuels such as coal and oil and by other industrial processes. Generally, the highest concentrations of SO_2 are found near large industrial sources. SO_2 is a respiratory irritant that can cause narrowing of the airways leading to wheezing and shortness of breath. Long-term exposure to SO_2 can cause respiratory illness and aggravate existing cardiovascular disease.

Lead. Lead in the atmosphere occurs as particulate matter. With the phase-out of leaded gasoline, large manufacturing facilities are the sources of the largest amounts of lead emissions. Lead is also present in some aircraft and racing fuels. Lead has the potential to cause gastrointestinal, central nervous system, kidney, and blood diseases upon prolonged exposure. Lead is also classified as a probable human carcinogen. Because emissions of lead are found only in specialty fuels and projects that are permitted by the local air district, lead is not an air quality of concern for the proposed project.

2.1.2 Toxic Air Contaminants

Toxic air contaminants (TACs) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or in serious illness or that may pose a present or potential hazard to human health. TACs include both organic and inorganic chemical substances that may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. One of the main sources of TACs in California is diesel engines which emit exhaust containing solid material known as diesel particulate matter (DPM) (CARB 2011). TACs are different than the criteria pollutants previously discussed because ambient air quality standards have not been established for TACs. TACs occurring at extremely low levels may still cause health effects, and it is typically difficult to identify levels of exposure that do not produce adverse health effects. TAC impacts are described by carcinogenic risk and by chronic (i.e., of long duration) and acute (i.e., severe but of short duration) adverse effects on human health.

2.1.3 Federal Air Quality Regulations

2.1.3.1 Federal Clean Air Act

Air quality is defined by ambient air concentrations of specific pollutants identified by the USEPA to be of concern with respect to health and welfare of the general public. The USEPA is responsible for enforcing the Federal Clean Air Act (CAA) of 1970 and its 1977 and 1990 Amendments. The CAA required the USEPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the USEPA established both primary and secondary standards for several criteria pollutants, which are introduced above. Table 1, *Ambient Air Quality Standards*, shows the federal and state ambient air quality standards for these pollutants.

The CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards. CARB has established the more stringent California Ambient Air Quality Standards (CAAQS) for the six criteria pollutants through the California Clean Air Act of 1988, and also has established CAAQS for additional pollutants, including sulfates, hydrogen sulfide (H_2S), vinyl chloride, and visibility-reducing particles. Areas that do not meet the NAAQS or the CAAQS for a particular pollutant are considered to be "nonattainment areas" for that pollutant.

Table 1
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards	
			Primary[1]	Secondary[2]
O_3	1 Hour	0.09 ppm (180 µg/m^3)	–	–
	8 Hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	Same as Primary
PM_{10}	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary
	AAM	20 µg/m^3	–	Same as Primary
$PM_{2.5}$	24 Hour	–	35 µg/m^3	Same as Primary
	AAM	12 µg/m^3	12.0 µg/m^3	15.0 µg/m^3
CO	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	–
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	–
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
NO_2	1 Hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)	–
	AAM	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary
SO_2	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	–
	3 Hour	–	–	0.5 ppm (1,300 µg/m^3)
	24 Hour	0.04 ppm (105 µg/m^3)	–	–
Lead	30-day Avg.	1.5 µg/m^3	–	–
	Calendar Quarter	–	1.5 µg/m^3	Same as Primary
	Rolling 3-month Avg.	–	0.15 µg/m^3	

Table 1 (cont.)
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per km – visibility ≥ 10 miles (0.07 per km – ≥30 miles for Lake Tahoe)	**No Federal Standards**
Sulfates	24 Hour	25 µg/m^3	
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m^3)	

Source: CARB 2016

[1] National Primary Standards: The levels of air quality necessary, within an adequate margin of safety, to protect the public health.

[2] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

O_3: ozone; ppm: parts per million; µg/m^3: micrograms per cubic meter; PM_{10}: particulate matter with an aerodynamic diameter of 10 microns or less;
AAM: Annual Arithmetic Mean; $PM_{2.5}$: fine particulate matter; CO: carbon monoxide; mg/m^3: milligrams per cubic meter; NO_2 nitrogen dioxide; SO_2: sulfur dioxide; km: kilometer; –: No Standard.

The USEPA has classified air basins (or portions thereof) as being in "attainment," "nonattainment," or "unclassified" for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. The project site is located within the South Coast Air Basin (SCAB) and, as such, is in an area designated a nonattainment area for certain pollutants that are regulated under the CAA. Table 2 of Section 2.2.3, *South Coast Air Basin Attainment Status*, lists the federal and state attainment status of the SCAB for the criteria pollutants. The USEPA classifies the SCAB as in attainment for CO, PM_{10}, NO_2, SO_2, and lead; in extreme nonattainment for 8-hour ozone; and in serious nonattainment for $PM_{2.5}$ with respect to federal air quality standards.

The CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the State Implementation Plan (SIP). The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The SIP is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The USEPA has the responsibility to review all SIPs to determine whether they conform to the requirements of the CAA.

2.1.4 California Air Quality Regulations

2.1.4.1 California Clean Air Act

The federal CAA allows states to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the California EPA (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the California Ambient Air Quality Standards (CAAQS). CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California's SIP, for which it works closely with the federal government and the local air districts.

In addition to primary and secondary AAQS, the state has established a set of episode criteria for ozone, CO, NO_2, SO_2, and PM. These criteria refer to episode levels representing periods of short-term exposure to air pollutants that actually threaten public health. Table 2, below, lists the state attainment status of the SCAB for the criteria pollutants. Under state designation, the SCAB is currently in attainment for CO, NO_2, SO_2, and lead; and in nonattainment for ozone, PM_{10}, and $PM_{2.5}$.

2.1.4.2 Toxic Air Contaminants

California's air toxics control program began in 1983 with the passage of the Toxic Air Contaminant Identification and Control Act, better known as AB 1807 or the Tanner Bill. When a compound becomes listed as a TAC under the Tanner process, the CARB normally establishes minimum statewide emission control measures to be adopted by local air pollution control districts (APCDs). Later legislative amendments (AB 2728) required the CARB to incorporate all 189 federal hazardous air pollutants (HAPs) into the state list of TACs.

Supplementing the Tanner process, AB 2588 – the Air Toxics "Hot Spots" Information and Assessment Act of 1987 – currently regulates over 600 air compounds, including all of the Tanner-designated TACs. Under AB 2588, specified facilities must quantify emissions of regulated air toxics and report them to the local APCD. If the APCD determines that a potentially significant public health risk is posed by a given facility, the facility is required to perform a health risk assessment (HRA) and notify the public in the affected area if the calculated risks exceed specified criteria.

On August 27, 1998, CARB formally identified PM emitted in both gaseous and particulate forms by diesel-fueled engines as a TAC (CARB 2010). The particles emitted by diesel engines are coated with chemicals, many of which have been identified by the USEPA as HAPs and by CARB as TACs. CARB's Scientific Advisory Committee has recommended a unit risk factor (URF) of 300 in 1 million over a 70-year exposure period for diesel particulate. In September 2000, the CARB approved the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (Diesel Risk Reduction Plan; CARB 2000). The Diesel Risk Reduction Plan outlined a comprehensive and ambitious program that included the development of numerous new control measures over the next several years aimed at substantially reducing emissions from new and existing on-road vehicles (e.g., heavy-duty trucks and buses), off-road equipment (e.g., graders, tractors, forklifts, sweepers, and boats), portable equipment (e.g., pumps), and stationary engines (e.g., stand-by power generators). These requirements are now in force on a statewide basis.

2.1.5 Local Regulations

2.1.5.1 South Coast Air Quality Management District

The project is located in Riverside County. Air quality in the non-desert portion of Riverside County is regulated by the South Coast Air Quality Management District (SCAQMD). As a regional agency, the SCAQMD works directly with the Southern California Association of Governments (SCAG), County transportation commissions, and local governments and cooperates actively with all federal and state government agencies. The SCAQMD develops rules and regulations; establishes permitting requirements for stationary sources; inspects emissions sources; and enforces such measures through educational programs or fines, when necessary.

The SCAQMD is directly responsible for reducing emissions from stationary (area and point), mobile, and indirect sources. It has responded to this requirement by preparing a sequence of Air Quality Management Plans (AQMP).

On March 3, 2017, the SCAQMD adopted the 2016 AQMP, which is a regional and multi-agency effort (SCAQMD, CARB, SCAG, and USEPA). The 2016 AQMP represents a comprehensive analysis of emissions, meteorology, atmospheric chemistry, regional growth projections, and the impact of existing control measures. The plan seeks to achieve multiple goals in partnership with other entities promoting reductions in criteria pollutant, greenhouse gases, and toxic risk, as well as efficiencies in energy use, transportation, and goods movement (SCAQMD 2017).

The AQMP, in combination with those from all other California nonattainment areas with serious (or worse) air quality problems, is submitted to CARB, which develops the California State Implementation Plan (SIP). The SIP relies on the same information from SCAG to develop emission inventories and emission reduction strategies that are included in the attainment demonstration for the air basin. The current federal and state attainment status for the South Coast Air Basin (SCAB) is presented in Table 2, *South Coast Air Basin Attainment Status*.

Table 2
SOUTH COAST AIR BASIN ATTAINMENT STATUS

Criteria Pollutant	Federal Designation	State Designation
O_3 (1-hour)	(No federal standard)	Nonattainment
O_3 (8-hour)	Extreme Nonattainment	Nonattainment
CO	Attainment (Maintenance)	Attainment
PM_{10}	Attainment (Maintenance)	Nonattainment
$PM_{2.5}$	Serious Nonattainment	Nonattainment
NO_2	Attainment (Maintenance)	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(No federal standard)	Attainment
Hydrogen Sulfide	(No federal standard)	Attainment
Visibility	(No federal standard)	Attainment

Source: SCAQMD 2016

2.2 GREENHOUSE GASES

2.2.1 Climate Change Overview

Global climate change refers to changes in average climatic conditions on Earth including temperature, wind patterns, precipitation, and storms. Global temperatures are moderated by atmospheric gases. These gases are commonly referred to as greenhouse gases (GHGs) because they function like a greenhouse by letting sunlight in but preventing heat from escaping, thus warming the Earth's atmosphere.

GHGs are emitted by natural processes and human (anthropogenic) activities. Anthropogenic GHG emissions are primarily associated with: (1) the burning of fossil fuels during motorized transport, electricity generation, natural gas consumption, industrial activity, manufacturing, and other activities; (2) deforestation; (3) agricultural activity; and (4) solid waste decomposition.

The temperature record shows a decades-long trend of warming, with 2016 global surface temperatures ranking as the warmest year on record (National Aeronautics and Space Administration [NASA] 2016). The newest realize in long-term warming trends announced 2017 ranked the second warmest year with an increase of 1.62 degrees Fahrenheit compared to the 1950-1980 average (NASA 2018). GHG emissions from human activities are the most significant driver of observed climate change since the mid-20th century (Intergovernmental Panel on Climate Change [IPCC] 2013). The IPCC constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. The statistical models show a "high confidence" that temperature increase caused by anthropogenic GHG emissions could be kept to less than two degrees Celsius relative to pre-industrial levels if atmospheric concentrations are stabilized at about 450 parts per million (ppm) carbon dioxide equivalent (CO_2e) by the year 2100 (IPCC 2014).

2.2.2 Types of Greenhouse Gases

The GHGs defined under California's Assembly Bill (AB) 32 include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

Carbon dioxide. CO_2 is the most important and common anthropogenic GHG. CO_2 is an odorless, colorless GHG. Natural sources include the decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungi; evaporation from oceans; and volcanic outgassing. Anthropogenic sources of CO_2 include burning fuels, such as coal, oil, natural gas, and wood. Data from ice cores indicate that CO_2 concentrations remained steady prior to the current period for approximately 10,000 years. The atmospheric CO_2 concentration in 2010 was 390 ppm, 39 percent above the concentration at the start of the Industrial Revolution (about 280 ppm in 1750). As of October 2017, the CO_2 concentration exceeded 403 ppm, a 44 percent increase since 1750 (National Oceanic and Atmospheric Administration [NOAA] 2018).

Methane. CH_4 is the main component of natural gas used in homes. A natural source of methane is from the decay of organic matter. Geological deposits known as natural gas fields contain methane, which is extracted for fuel. Other sources are from decay of organic material in landfills, fermentation of manure, and cattle digestion.

Nitrous oxide. N_2O is produced by both natural and human-related sources. N_2O is emitted during agricultural and industrial activities, as well as during the combustion of fossil fuels and solid waste. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic (fatty) acid production, and nitric acid production.

Hydrofluorocarbons. Fluorocarbons are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. Chlorofluorocarbons are nontoxic, nonflammable, insoluble, and chemically nonreactive in the troposphere (the level of air at Earth's surface). Chlorofluorocarbons were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone; therefore, their production was stopped as required by the 1989 Montreal Protocol.

Sulfur Hexafluoride. SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semi-conductor manufacturing, and as a tracer gas for leak detection.

GHGs have long atmospheric lifetimes that range from one year to several thousand years. Long atmospheric lifetimes allow for GHG emissions to disperse around the globe. Because GHG emissions vary widely in the power of their climatic effects, climate scientists have established a unit called global warming potential (GWP). The GWP of a gas is a measure of both potency and lifespan in the atmosphere as compared to CO_2. For example, because methane and N_2O are approximately 25 and 298 times more powerful than CO_2, respectively, in their ability to trap heat in the atmosphere, they have GWPs of 25 and 298, respectively (CO_2 has a GWP of 1). CO_2e is a quantity that enables all GHG emissions to be considered as a group despite their varying GWP. The GWP of each GHG is multiplied by the prevalence of that gas to produce CO_2e. The atmospheric lifetime and GWP of selected GHGs are summarized in Table 3, *Global Warming Potentials and Atmospheric Lifetimes*.

Table 3
GLOBAL WARMING POTENTIALS AND ATMOSPHERIC LIFETIMES

Greenhouse Gas	Atmospheric Lifetime (years)	Global Warming Potential (100-year time horizon)
Carbon Dioxide (CO_2)	50-200	1
Methane (CH_4)	12	25
Nitrous Oxide (N_2O)	114	298
HFC-134a	14	1,430
PFC: Tetraflouromethane (CF_4)	50,000	7,390
PFC: Hexafluoroethane (C_2F_6)	10,000	12,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

Source: IPCC 2007
HFC: hydrofluorocarbon; PFC: perfluorocarbon

2.2.3 Federal Greenhouse Gas Regulations

2.2.3.1 Federal Clean Air Act

The U.S. Supreme Court ruled on April 2, 2007, in *Massachusetts v. U.S. Environmental Protection Agency* (USEPA) that CO_2 is an air pollutant, as defined under the CAA, and that the USEPA has the authority to regulate emissions of GHGs. The USEPA announced that GHGs (including CO_2, CH_4, N_2O, HFC, PFC, and SF_6) threaten the public health and welfare of the American people. This action was a prerequisite to finalizing the USEPA's GHG emissions standards for light-duty vehicles, which were jointly proposed by the USEPA and the United States Department of Transportation's National Highway Traffic Safety Administration (NHTSA). The standards were established on April 1, 2010 for 2012 through 2016 model year vehicles and on October 15, 2012 for 2017 through 2025 model year vehicles (USEPA 2017b; USEPA and NHTSA 2012).

2.2.3.2 Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards

The USEPA and the NHTSA have been working together on developing a national program of regulations to reduce GHG emissions and to improve fuel economy of light-duty vehicles. The USEPA is finalizing the first-ever national GHG emissions standards under the CAA, and the NHTSA is finalizing Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act. On April 1, 2010, the USEPA and NHTSA announced a joint Final Rulemaking that established standards for 2012 through 2016 model year vehicles. This was followed up on October 15, 2012, when the agencies issued a Final Rulemaking with standards for model years 2017 through 2025. The rules require these vehicles to meet an estimated combined average emissions level of 250 grams per mile by 2016, decreasing to an average industry fleet-wide level of 163 grams per mile in model year 2025. The 2016 standard is equivalent to 35.5 miles per gallon (mpg), and the 2025 standard is equivalent to 54.5 mpg if the levels were achieved solely through improvements in fuel efficiency. The agencies expect, however, that a portion of these improvements will be made through improvements in air conditioning leakage and the use of alternative refrigerants that would not contribute to fuel economy. These standards would cut GHG emissions by an estimated 2 billion metric tons (MT) and 4 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2017–2025). The combined USEPA GHG emission standards and NHTSA CAFE standards resolve previously conflicting requirements under both federal programs and the standards of the State of California and other states that have adopted the California standards (USEPA 2017b; USEPA and NHTSA 2012).

2.2.4 California Greenhouse Gas Regulations

There are numerous State plans, policies, regulations, and laws related to GHG emissions and global climate change. Following is a discussion of some of these plans, policies, and regulations that (1) establish overall State policies and GHG emission reduction targets; (2) require State or local actions that result in direct or indirect GHG emission reductions for the proposed project; and (3) require California Environmental Quality Act (CEQA) analysis of GHG emissions.

2.2.4.1 California Code of Regulations, Title 24, Part 6

California Code of Regulations (CCR) Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. Energy-efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in GHG emissions.

The Title 24 standards are updated approximately every three years to allow consideration and possible incorporation of new energy efficiency technologies and methods. The latest update to the Title 24 standards occurred in 2016 and went into effect on January 1, 2017. The 2016 update to the Building Energy Efficiency Standards focuses on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. The most significant efficiency improvements to the residential Standards include improvements for attics, walls, water heating, and lighting. The Standards are divided into three basic sets. First, there is a basic set of mandatory requirements that apply to all buildings. Second, there is a set of performance standards – the energy budgets – that vary by climate zone (of which there are 16 in California) and building type; thus, the Standards are tailored to local conditions. Finally, the third set constitutes an alternative to the performance standards, which is a set of prescriptive packages that are basically a recipe or a checklist compliance approach.

2.2.4.2 California Green Building Standards Code

The California Green Building Standards Code (CALGreen; CCR Title 24, Part 11) is a code with mandatory requirements for new residential and nonresidential buildings (including industrial buildings) throughout California. The code is Part 11 of the California Building Standards Code in Title 24 of the CCR (California Building Standards Commission 2017). The current 2016 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings went into effect on January 1, 2017.

The development of CALGreen is intended to (1) cause a reduction in GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. In short, the code is established to reduce construction waste; make buildings more efficient in the use of materials and energy; and reduce environmental impact during and after construction.

CALGreen contains requirements for storm water control during construction; construction waste reduction; indoor water use reduction; material selection; natural resource conservation; site irrigation conservation; and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for the verification that all building systems, like heating and cooling equipment and lighting systems, are functioning at their maximum efficiency.

2.2.4.3 Executive Order S-3-05

On June 1, 2005, Executive Order (EO) S-3-05 proclaimed that California is vulnerable to climate change impacts. It declared that increased temperatures could reduce snowpack in the Sierra Nevada, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To avoid or reduce climate change impacts, EO S-3-05 calls for a reduction in GHG emissions to the year 2000 level by 2010, to year 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

2.2.4.4 Assembly Bill 32 – Global Warming Solution Act of 2006

The California Global Warming Solutions Act of 2006, widely known as AB 32, requires that the CARB develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB is directed to set a GHG emission limit, based on 1990 levels, to be achieved by 2020. The bill requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG emission reductions.

2.2.4.5 Executive Order B-30-15

On April 29, 2015, EO B-30-15 established a California GHG emission reduction target of 40 percent below 1990 levels by 2030. The EO aligns California's GHG emission reduction targets with those of leading international governments, including the 28 nation European Union. California is on track to meet or exceed the target of reducing greenhouse gas emissions to 1990 levels by 2020, as established in AB 32. California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the goal established by EO S-3-05 of reducing emissions 80 percent under 1990 levels by 2050.

2.2.4.6 Senate Bill 32

As a follow-up to AB 32 and in response to EO-B-30-15, Senate Bill (SB) 32 was passed by the California legislature in August 2016 to codify the EO's California GHG emission reduction target of 40 percent below 1990 levels by 2030.

2.2.4.7 Assembly Bill 1493 – Vehicular Emissions of Greenhouse Gases

AB 1493 (Pavley) requires that CARB develop and adopt regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State." On September 24, 2009, CARB adopted amendments to the Pavley regulations that intend to reduce GHG emissions in new passenger vehicles from 2009 through 2016. The amendments bind California's enforcement of AB 1493 (starting in 2009), while providing vehicle manufacturers with new compliance flexibility. The amendments also prepare California to merge its rules with the federal CAFE rules for passenger vehicles (CARB 2013). In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single packet of standards called Advanced Clean Cars (CARB 2013).

2.2.4.8 Assembly Bill 341

The state legislature enacted AB 341 (California Public Resource Code Section 42649.2), increasing the diversion target to 75 percent statewide. AB 341 requires all businesses and public entities that generate 4 cubic yards or more of waste per week to have a recycling program in place. The final regulation was approved by the Office of Administrative Law on May 7, 2012, and went into effect on July 1, 2012.

2.2.4.9 Executive Order S-01-07

This EO, signed by Governor Schwarzenegger on January 18, 2007, directs that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by the year 2020. It orders that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California and directs CARB to determine whether a LCFS can be adopted as a discrete early action measure pursuant to AB 32. CARB approved the LCFS as a discrete early action item with a regulation adopted and implemented in April 2010. Although challenged in 2011, the Ninth Circuit reversed the District Court's opinion and rejected arguments that implementing LCFS violates the interstate commerce clause in September 2013. CARB is therefore continuing to implement the LCFS statewide.

2.2.4.10 Senate Bill 350

Approved by Governor Brown on October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard eligible resources, including solar, wind, biomass, and geothermal. In addition, large utilities are required to develop and submit Integrated Resource Plans to detail how each entity will meet their customers resource needs, reduce greenhouse gas emissions, and increase the use of clean energy.

2.2.4.11 California Air Resources Board: Scoping Plan

On December 11, 2008, CARB adopted the Scoping Plan (CARB 2008) as directed by AB 32. The Scoping Plan proposes a set of actions designed to reduce overall GHG emissions in California to the levels required by AB 32. Measures applicable to development projects include those related to energy-efficiency building and appliance standards, the use of renewable sources for electricity generation, regional transportation targets, and green building strategy. Relative to transportation, the Scoping Plan includes nine measures or recommended actions related to reducing VMT and vehicle GHG emissions through fuel and efficiency measures. These measures would be implemented statewide rather than on a project by project basis.

CARB released the First Update to the Climate Change Scoping Plan in May 2014 to provide information on the development of measure-specific regulations and to adjust projections in consideration of the economic recession (CARB 2014). To determine the amount of GHG emission reductions needed to achieve the goal of AB 32 (i.e., 1990 levels by 2020) CARB developed a forecast of the AB 32 Baseline 2020 emissions, which is an estimate of the emissions expected to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. CARB estimated the AB 32 Baseline 2020 to be 509 million metric tons (MMT) of CO_2e. The Scoping Plan's current estimate of the necessary GHG emission reductions is 78 MMT CO_2e (CARB 2014). This represents an approximately 15 percent reduction. CARB is forecasting that this would be achieved through the following reductions by sector: 25 MMT CO_2e for energy, 23 MMT CO_2e for transportation, 5 MMT CO_2e for high-GWP GHGs, and 2 MMT CO_2e for waste. The remaining 23 MMT CO_2e would be achieved through Cap-and-Trade Program reductions. This reduction is flexible—if CARB receives new information and changes the other sectors' reductions to be less than expected, the agency can increase the Cap-and-Trade reduction (and vice versa).

In response to EO B-30-15 and SB 32, all state agencies with jurisdiction over sources of GHG emissions were directed to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 targets. CARB was directed to update the Scoping Plan to reflect the 2030 target and, therefore, is moving forward with the update process. The mid-term target is critical to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to continue driving down emissions. CARB is moving forward with a second update to the Scoping Plan to reflect the 2030 target set by Executive Order B-30-15 and codified by SB 32. The 2017 Climate Change Scoping Plan Update, Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target, was adopted December 2017. The Scoping Plan Update establishes a proposed framework for California to meet a 40 percent reduction in GHGs by 2030 compared to 1990 levels. This is the most aggressive climate target in North America and aligns California with the rest of the world in flighting climate change. The Proposed Plan would continue to move California towards a sustainable future while shifting dependence away from fossil fuels. The Plan would build on the Cap-and-Trade

Regulation, Low Carbon Fuel Standard program, and continue to increase the use of renewable energy through cleaner cars, trucks and freight movement, and reduce agricultural and waste methane emissions by utilizing it for energy needs. The Proposed Plan also addresses for the first time the GHG emissions from agriculture and forestry sectors along with other natural and working lands of California (CARB 2017a).

2.2.5 Local Regulations

2.2.5.1 South Coast Air Quality Management District

Beginning in April 2008, the SCAQMD convened a Working Group to provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. On December 5, 2008, the SCAQMD Governing Board adopted its staff proposal for an interim CEQA GHG significance threshold of 10,000 MT CO_2e per year for projects where the SCAQMD is the lead agency. The policy objective for establishing this significance threshold and the recommended screening thresholds below is to capture projects that represent approximately 90 percent of GHG emissions from new sources (SCAQMD 2008). These projects would be subject to further analysis and the incorporation of measures to reduce GHG emissions.

In September 2010, the Working Group presented a revised tiered approach to determining GHG significance for residential and commercial projects (SCAQMD 2010). These proposals have not been considered by the SCAQMD Board.

At Tier 1, GHG emissions impacts would be less than significant if a project qualifies under a categorical or statutory CEQA exemption. For projects that do not meet the Tier 1 criteria, the GHG emissions impact would be less than significant at Tier 2 if a project is consistent with a previously adopted GHG reduction plan that meets specific requirements. At Tier 3, the Working Group proposes extending the 10,000 MT CO_2e per year screening threshold currently applicable to industrial projects where the SCAQMD is the lead agency (described above) to other lead agency industrial projects. For residential and commercial projects, the Working Group proposes a 3,000 MT CO_2e per year threshold for all land use types. A project with emissions less than the applicable screening value would be considered to have less than significant GHG emissions.

2.2.5.2 City of Moreno Valley

The City developed an Energy Efficiency and Climate Action Strategy (CAS) that was adopted in October 2012 (City 2012a). The Energy Efficiency and CAS (Strategy) establishes policies, practices, and strategies, to assist the City in energy and water conservation and reduction of GHG emissions. The program will encourage its community members to reduce their own GHG emissions through energy and water conservation by providing training and public awareness. The Strategy will help lead agencies to assess cumulative impacts of a project and provide a means for future projects to address GHG impacts under CEQA. A lead agency may conclude that a project's GHG impact is not cumulatively significant if the project demonstrates consistency with this CAS (CEQA Guidelines Section 15183.5[h][3]).

Following the state's adopted AB 32 GHG reduction target, the City set a goal to reduce emissions to 1990 levels by the year 2020. This target was calculated as a 15 percent decrease from 2007 levels, as recommended in the AB 32 Scoping Plan (2007 was the closet year to 2005 with best data available).

The estimated business-as-usual emissions for the year 2020, based on population and housing growth projections associated with the assumptions used in the proposed General Plan, is 1,298,546 MT of CO_2e (City 2012b). To reach 15 percent below 2007 levels, the City must reduce GHG emissions to 798,693 MT of CO_2e by 2020. A community-wide emissions inventory was also calculated in 2010 which is the most current year with data available.

To reach the reduction target, the City is committed to incorporating sustainable features into the community. The Strategy includes measures that encourage energy efficiency and renewable energy in buildings, access to sustainable transportation, water conservation, and increased waste diversion. Through the CAS, the City has established goals and policies that incorporate environmental responsibility into its daily management of residential, commercial and industrial growth, education, energy and water use, air quality, transportation, waste reduction, economic development and open space and natural habitats to further their commitment. The development of the CAS may require the City's General Plan to be updated to reference the Strategy for direction on energy efficiency and GHG reduction.

3.0 EXISTING CONDITIONS

3.1 CLIMATE AND METEOROLOGY

The project site is in the SCAB, which consists of all or part of four counties: Los Angeles, San Bernardino, Riverside, and Orange. The distinctive climate of the SCAB is determined by its terrain and geographic location. The SCAB is a coastal plain with connecting broad valleys and low hills. It is bound by the Pacific Ocean to the southwest and high mountains around the rest of its perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light, average wind speeds.

The usually mild climatological pattern is interrupted occasionally by periods of extremely hot weather, winter storms, or Santa Ana winds. Winds in the project area are usually driven by the dominant land/sea breeze circulation system. Regional wind patterns are dominated by daytime onshore sea breezes. At night, the wind generally slows and reverses direction traveling toward the sea. Local canyons can also alter wind direction, with wind tending to flow parallel to the canyons. The vertical dispersion of air pollutants in the SCAB is hampered by the presence of persistent temperature inversions. High pressure systems, such as the semi-permanent high-pressure zone in which the SCAB is located, are characterized by an upper layer of dry air that warms as it descends, restricting the mobility of cooler marine-influenced air near the ground surface, and resulting in the formation of subsidence inversions. Such inversions restrict the vertical dispersion of air pollutants released into the marine layer and, together with strong sunlight, can produce worst-case conditions for the formation of photochemical smog. The basin-wide occurrence of inversions at 3,500 feet above mean sea level or less averages 191 days per year (SCAQMD 1993).

The annual average maximum temperature as measured at the Perris City climatic station, approximately 3 miles south of the project site, is 78.7°Farenheit (F). The highest monthly average maximum temperature (96.9°F) occurs in August, and the lowest monthly average minimum temperature (34.7°F) occurs in January. The average annual precipitation is approximately 10 inches (Western Regional Climate Center 2017).

3.2 EXISTING AIR QUALITY

3.2.1 Criteria Pollutants

3.2.1.1 Attainment Designations

Attainment designations are discussed in Section 2.1 and Table 2. The SCAB is a federal and state nonattainment area for 8-hour ozone and $PM_{2.5}$. The SCAB is also a state nonattainment area for 1-hour ozone and PM_{10}.

3.2.1.2 Monitored Air Quality

The SCAQMD maintains monitoring stations to measure ambient concentrations of pollutants in the SCAB. The nearest monitoring station to the project site is the Perris monitoring station, which is located approximately 10 miles south of the project site. The Perris station monitors ozone and PM_{10}. The Lake Elsinore monitoring station, located approximately 20 miles southeast of the project site in the City of Lake Elsinore monitors NO_2 and $PM_{2.5}$. Table 4, *Air Quality Monitoring Data*, presents a summary of the ambient pollutant concentrations monitored at the Perris and Lake Elsinore air quality monitoring stations during the last three years (2014 through 2016) for which the SCAQMD has reported data.

Table 4
AIR QUALITY MONITORING DATA

Pollutant Standards	2014	2015	2016
Ozone (O_3) [Perris]			
Maximum concentration 1-hour period (ppm)	0.117	0.124	0.131
Maximum concentration 8-hour period (ppm)	0.094	0.102	0.098
Days above 1-hour state standard (>0.09 ppm)	16	25	23
Days above 8-hour state/federal standard (>0.070 ppm)	59	49	55
Nitrogen Dioxide (NO_2) [Lake Elsinore]			
Maximum 1-hour concentration (ppm)	0.045	0.047	0.051
Days above state 1-hour standard (0.18 ppm)	0	0	0
Days above federal 1-hour standard (0.100 ppm)	0	0	0
Suspended Particulates (PM_{10}) [Perris]			
Maximum 24-hour concentration (μg/m^3)	87.0	188.0	76.0
Days above state standard (>50 μg/m^3)	6	4	*
Days above federal standard (>150 μg/m^3)	0	1	0
Suspended Particulates ($PM_{2.5}$) [Lake Elsinore]			
Maximum 24-hour concentration (μg/m^3)	33.7	42.2	31.5
Days above federal standard (>35 μg/m^3)	0	*	0

Source: CARB 2017b
ppm = parts per million
* insufficient data available to determine the value

The 1- and 8-hour ozone standards were exceeded several times in each of the sample years. The state PM_{10} standard was exceeded 6 times in 2014 and 4 times in 2015. The federal PM_{10} standard was exceeded once in 2015.

3.2.2 Greenhouse Gases

For 2012, total GHG emissions worldwide were estimated at 46,049 MMT CO_2e (World Resources Institute 2017). The U.S. contributed the second largest portion of GHG emissions (behind China) at 12 percent of global emissions, with 5,823 MMT CO_2e in 2012. On a national level in 2013, approximately 27 percent of GHG emissions are associated with transportation and about 31 percent are associated with electricity generation (USEPA 2015).

CARB performs statewide GHG inventories. The inventory is divided into six broad sectors; agriculture and forestry, commercial, electricity generation, industrial, residential, and transportation. Emissions are quantified in MMT CO_2e. Table 5, *California Greenhouse Gas Emissions by Sector*, shows the estimated statewide GHG emissions for the years 1990, 2000, 2010, and 2015 (CARB 2017d).

Table 5
CALIFORNIA GREENHOUSE GAS EMISSIONS BY SECTOR
(MMT CO_2e)

Sector	1990	2000	2010	2015
Agriculture and Forestry	23.6 (5%)	32.1 (7%)	34.5 (8%)	34.6 (8%)
Commercial	14.4 (3%)	15.0 (3%)	21.6 (5%)	22.2 (5%)
Electricity Generation	110.6 (26%)	105.2 (22%)	90.5 (20%)	84.1 (19%)
Industrial	103.0 (24%)	105.4 (22%)	102.7 (23%)	103.0 (23%)
Residential	29.7 (7%)	31.8 (7%)	32.2 (7%)	26.9 (6%)
Transportation	150.7 (35%)	178.1 (38%)	173.7 (38%)	169.4 (39%)
Unspecified Remaining	1.3 (<1%)	1.2 (<1%)	0.8 (<1%)	0.82(<1%)
TOTAL	**433.3**	**468.8**	**456.0**	**440.4**

Source: CARB 2007 and CARB 2017c

As shown in Table 5, statewide GHG emissions totaled 433 MMT CO_2e in 1990, 469 MMT CO_2e in 2000, 456 MMT CO_2e in 2010, and 440 MMT CO_2e in 2015. Transportation-related emissions consistently contribute the most GHG emissions, followed by electricity generation and industrial emissions.

The City prepared an emissions inventory as part of their CAS. The 2010 emissions inventory for the City is duplicated below in Table 6, *City of Moreno Valley Greenhouse Gas Emissions by Sector*. The sectors included in this inventory are somewhat different from those in the statewide inventory.

Table 6
CITY OF MORENO VALLEY GREENHOUSE GAS EMISSIONS
BY SECTOR (MT CO_2e [x 1,000])

Sector	2010
Transportation	514
Energy	277
Area Sources	69
Water and Wastewater	17
Solid Waste	44
TOTAL	**921**

Source: City 2012b

Similar to the statewide emissions, transportation-related GHG emissions were the greatest contributor, with approximately 56 percent of GHG emissions for the City in 2010. Energy-related GHG emissions ranked second, with approximately 30 percent in 2010.

4.0 METHODOLOGY AND SIGNIFICANCE CRITERIA

4.1 METHODOLOGY

Criteria pollutant and GHG emissions were calculated using the California Emissions Estimator Model (CalEEMod), Version 2016.3.2. CalEEMod is a computer model used to estimate criteria air pollutant and GHG emissions resulting from construction and operation of land development projects throughout the state of California. CalEEMod was developed by the SCAMQD with the input of several air quality management and pollution control districts. The input data and subsequent construction and operation emission estimates for the proposed project are discussed below. CalEEMod output files are included in Appendix A.

4.1.1 Construction Emissions

As described above, construction emissions are assessed using the CalEEMod. CalEEMod contains OFFROAD2011 emission factors and EMFAC2014 emission factors from CARB's models for off-road equipment and on-road vehicles, respectively. The construction analysis included modeling of the projected construction equipment that would be used during each construction activity and quantities of earth and debris to be moved. The model calculates emissions of CO, PM_{10}, $PM_{2.5}$, SO_2, and the ozone precursors ROG and NO_X.

Construction input data for CalEEMod include, but are not limited to, (1) the anticipated start and finish dates of construction activity; (2) inventories of construction equipment to be used; (3) areas to be excavated and graded; and (4) volumes of materials to be exported from and imported to the project area. The analysis assessed maximum daily emissions from individual construction activities, including site preparation, grading, underground utility installation, building construction, paving, and architectural coating. Construction would require heavy equipment during site preparation, grading, trenching for underground infrastructure, building construction, and paving. Construction equipment estimates are based on detailed assumptions provided by A & S Engineering and CalEEMod defaults. Table 7, *Construction Equipment Assumptions*, presents a summary of the assumed equipment that would be involved in each phase of construction.

Table 7
CONSTRUCTION EQUIPMENT ASSUMPTIONS

Construction Phase	Equipment	Number
Site Preparation	Graders	1
	Tractors/Loaders/Backhoes	1
Grading	Concrete/Industrial Saws	1
	Rubber Tired Dozers	1
	Tractors/Loaders/Backhoes	2
Underground Utilities Installation	Tractors/Loaders/Backhoes	1
Building Construction	Cranes	1
	Forklifts	2
	Tractors/Loaders/Backhoes	2
Paving	Pavers	1
	Cement and Mortar Mixers	4
	Rollers	1
	Tractors/Loaders/Backhoes	1
Architectural Coating	Air Compressors	1

Source: CalEEMod defaults and pers. communication with A & S Engineers.
Note: Output data, including equipment horsepower, is provided in Appendix A

The construction schedule was based on information provided by A & S Engineers. As shown in Table 8, *Anticipated Construction Schedule*, project development is assumed to start in January 2019 and projected to be complete June 2019. Grading and underground utilities installation will overlap for 20 days.

Table 8
ANTICIPATED CONSTRUCTION SCHEDULE

Construction Activity	Construction Period		
	Start	End	Number of Working Days
Site Preparation	1/1/2019	1/31/2019	23
Grading	2/1/2019	2/28/2019	20
Underground Utilities Installation	2/1/2019	2/28/2019	20
Building Construction	3/1/2019	6/14/2019	76
Paving	6/15/2019	6/21/2019	5
Architectural Coating	6/22/2019	6/28/2019	5

Source: Schedule provided by A & S Engineers.
Note: Output data is provided in Appendix A.

The quantity, duration, and the intensity of construction activity influence the amount of construction emissions and their related pollutant concentrations that occur at any one time. As such, the emission forecasts provided herein reflect a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction is occurring in a relatively intensive manner. Because of this conservative assumption, actual emissions could be less than those forecasted. If construction is delayed or occurs over a longer time period, emissions could be reduced because of (1) a more modern and cleaner-burning construction equipment fleet mix than incorporated in the CalEEMod, and/or (2) a less intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval). A complete listing of the assumptions used in the analysis and model output is provided in Appendix A of this report.

CalEEMod has the capability to calculate reductions in construction emissions from the effects of dust control, diesel-engine classifications, and other selected emissions reduction measures. Emissions calculations assume application of water during grading and a 15-miles per hour (mph) speed limit on unpaved surfaces in compliance with SCAQMD Rule 403, Fugitive Dust. Based on CalEEMod, Version 2016.3.2, the control efficiency for watering two times per day is 55 percent.

CalEEMod estimates construction emissions for each year of construction activity based on the annual construction equipment profile and other factors determined as needed to complete all phases of construction by the target completion year. As such, each year of construction activity has varying quantities of GHG emissions. Per SCAQMD Guidance, total construction GHG emissions resulting from the project are amortized over 30 years and added to operational GHG emissions.

4.1.2 Operation Emissions

Operational impacts were estimated using CalEEMod. Operational sources of emissions include area, energy, transportation, water use, and solid waste. Operational emissions from area sources include the use of consumer products, engine emissions from landscape maintenance equipment, and VOC emissions from repainting of buildings.

Operational emissions from mobile source emissions are associated with project-related vehicle trip generation and trip length. Based on the Transportation Impact Analysis (TIA; Kimley-Horn and Associates, Inc. 2016), the project would generate 2,445 daily trips, 72 morning peak hour trips, 98 evening peak hour trips, and 138 Sunday peak hour trips. CalEEMod default vehicle speeds, trip purpose, and distance were used. Model output data sheets are included in Appendix A.

4.1.3 Localized Significance Threshold Methodology

As part of the SCAQMD's environmental justice program, more attention has been focused on localized air quality effects. In addition to the CEQA significance thresholds for mass daily emissions and regional conditions, the SCAQMD has established thresholds for ambient air quality (Table 9, *SCAQMD Air Quality Significance Thresholds*) to address localized impacts. Also, while regional impact analysis is based on attaining or maintaining regional emissions standards, localized impact analysis compares the concentration of a pollutant at a receptor site to a health-based standard.

SCAQMD staff then developed localized significance threshold (LST) methodology and mass rate look-up tables by source receptor area (SRA) that can be used by public agencies to determine whether a project may generate significant adverse localized air quality impacts. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard; they are developed based on the ambient concentrations of that pollutant for each SRA (SCAQMD 2009). The LST methodology translates the concentration standards into emissions thresholds that are a function of project site area, source to receptor distance, and the location within the SCAB. The LST methodology is recommended to be limited to projects of five acres or less and to avoid the need for complex dispersion modeling. For projects that exceed five acres, the five-acre LST look-up values can be used as a screening tool to determine which pollutants require detailed analysis (Sun 2017). The proposed project is located on a 3.77-acre lot and will therefore utilize the applicable five-acre LST values. If a project exceeds the LST look up values, then the SCAQMD recommends that project-specific localized air quality modeling be performed.

4.2 SIGNIFICANCE CRITERIA

4.2.1 Air Quality

The following significance thresholds are based on Appendix G of the state CEQA Guidelines. A significant impact is identified if the project would result in any of the following:

(1) Conflict with or obstruct implementation of the applicable air quality plan;

(2) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

(3) Expose sensitive receptors to substantial pollutant concentrations;

(4) Result in a cumulatively-considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative standards for ozone precursors); or

(5) Create objectionable odors affecting a substantial number of people.

Appendix G of the State CEQA Guidelines states that the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. The SCAQMD has established significance thresholds to assess the regional and localized impacts of project-related air pollutant emissions. The significance thresholds are updated, as needed, to appropriately represent the most current technical information and attainment status in the SCAB. Table 9 presents the most current significance thresholds, including regional daily thresholds for short-term construction and long term operational emissions; maximum incremental cancer risk and hazard indices for TACs; and maximum ambient concentrations for exposure of sensitive receptors to localized pollutants. A project with daily emission rates, risk values, or concentrations below these thresholds is generally considered to have a less than significant effect on air quality.

Table 9
SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS

Mass Daily Thresholds (pounds per day)		
Pollutant	**Construction**	**Operation**
VOC	75	55
NO_X	100	55
CO	550	550
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_X	150	150
Lead	3	3

Table 9 (cont.)
SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS

Toxic Air Contaminants	
TACs	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)
Ambient Air Quality for Criteria Pollutants	
NO_2	1-hour average ≥ 0.18 ppm Annual average ≥ 0.03 ppm
CO	1-hour average ≥ 20.0 ppm (state) 8-hour average ≥ 9.0 ppm (state/federal)
PM_{10}	24-hour average ≥ 10.4 μg/m^3 (construction) 24-hour average ≥ 2.5 μg/m^3 (operation) Annual average ≥ 1.0 μg/m^3
$PM_{2.5}$	24-hour average ≥ 10.4 μg/m^3 (construction) 24-hour average ≥ 2.5 μg/m^3 (operation)
SO_2	1-hour average ≥ 0.075 ppm 24-hour average ≥ 0.04 ppm

Source: SCAQMD 2015

lbs/day: pounds per day; VOC: volatile organic compound; NOx: nitrogen oxides; CO: carbon monoxide; PM_{10}: respirable particulate matter with a diameter of 10 microns or less; $PM_{2.5}$: fine particulate matter with a diameter of 2.5 microns or less; SO_X: sulfur oxides; TACs: toxic air contaminants; GHG: greenhouse gas emissions; MT/yr: metric tons per year; CO_2e: carbon dioxide equivalent; NO_2: nitrogen dioxide; ppm: parts per million; μg/m^3: micrograms per cubic meter.

4.2.2 Greenhouse Gases

Given the relatively small levels of emissions generated by a typical development in relationship to the total amount of GHG emissions generated on a national or global basis, individual development projects are not expected to result in significant, direct impacts with respect to climate change. However, given the magnitude of the impact of GHG emissions on the global climate, GHG emissions from new development could result in significant, cumulative impacts with respect to climate change. Thus, the potential for a significant GHG impact is limited to cumulative impacts.

According to Appendix G of the CEQA Guidelines, a project would have a significant environmental impact if it would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

There are no established federal, state, or local quantitative thresholds applicable to the project to determine the quantity of GHG emissions that may have a significant effect on the environment. CARB, the SCAQMD, and various cities and agencies have proposed, or adopted on an interim basis, thresholds of significance that require the implementation of GHG emission reduction measures. For the proposed project, the most appropriate screening threshold for determining GHG emissions is the SCAQMD proposed Tier 3 screening threshold (SCAQMD 2010); therefore, a significant impact would occur if the proposed project would exceed the SCAQMD proposed Tier 3 screening threshold of 3,000 MT CO_2e per year.

5.0 AIR QUALITY IMPACT ANALYSIS

This section evaluates potential direct impacts of the proposed project related to the air pollutant emissions. Project-level air quality modeling was completed as part of this analysis. Complete modeling results are included as Appendix A of this report.

5.1 CONSISTENCY WITH AIR QUALITY PLANS

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties, and addresses regional issues relating to transportation, economy, community development, and environment. With regard to air quality planning, SCAG has prepared the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), a long-range transportation plan that uses growth forecasts to project trends out over a 20-year period to identify regional transportation strategies to address mobility needs. These growth forecasts form the basis for the land use and transportation control portions of the AQMP. These documents are utilized in the preparation of the air quality forecasts and consistency analysis included in the AQMP. Both the RTP/SCS and AQMP are based, in part, on projections originating with County and City General Plans.[1]

The proposed project is consistent with the City General Plan land use of *Office Commercial*. Because the project is consistent with the local general plan, pursuant to SCAQMD guidelines, the proposed project is considered consistent with the region's AQMP. As such, proposed project-related emissions are accounted for in the AQMP, which is crafted to bring the basin into attainment for all criteria pollutants. Accordingly, the proposed project would be consistent with the projections in the AQMP, thus resulting in a less than significant impact.

5.2 CONFORMANCE TO FEDERAL AND STATE AIR QUALITY STANDARDS

The project would generate criteria pollutants in the short term during construction and the long term during operation. To determine whether a project would result in emissions that would violate an air quality standard or contribute substantially to an existing or projected air quality violation, a project's emissions are evaluated based on the quantitative emission thresholds established by the SCAQMD (as shown in Table 9).

5.2.1 Construction

5.2.1.1 Project Emissions

The project's construction emissions were estimated using the CalEEMod model as described in Section 4.1.1. Project-specific input was based on general information provided in Section 1.0, assumptions provided by A & S Engineers, and default model settings to estimate reasonably conservative conditions. Additional details of phasing, selection of construction equipment, and other input parameters, including CalEEMod data, are included in Appendix A.

[1] SCAG serves as the federally designated metropolitan planning organization for the Southern California region.

The results of the calculations for project construction are shown in Table 10, *Maximum Daily Construction Emissions*. The data are presented as the maximum anticipated daily emissions for comparison with the SCAQMD thresholds.

Table 10
MAXIMUM DAILY CONSTRUCTION EMISSIONS

Phase	Pollutant Emissions (pounds/day)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Site Preparation	1	9	4	<0.5	1	<0.5
Grading	1	9	8	<0.5	1	1
Underground Utilities	<0.5	2	2	<0.5	<0.5	<0.5
Building Construction	1	10	8	<0.5	1	1
Paving	1	8	8	<0.5	1	1
Architectural Coating	12	2	2	<0.5	<0.5	<0.5
Maximum Daily Emissions[1]	**12**	**11**	**11**	**<0.5**	**1**	**<0.5**
SCAQMD Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)

[1] Maximum daily emissions of ROG emissions occur during architectural coating; all other maximum daily emissions occur when Grading and Underground Utilities phases overlap.

Note: Totals may not sum due to rounding.

As shown in Table 10, emissions of all criteria pollutants related to project construction would be below the SCAQMD significance thresholds. Therefore, direct impacts from criteria pollutants generated during construction would be less than significant and no mitigation would be required.

5.2.2 Operation

5.2.2.1 Project Emissions

The project's operational emissions were estimated using the CalEEMod model as described in Section 4.1.2. The CalEEMod model input was based on the current vehicle trip generation provided in the project's TIA (Kimley-Horn and Associates, Inc. 2016) and the building area. Operational emission calculations and model outputs are provided in Appendix A. Table 11, *Maximum Daily Operational Emissions*, presents the summary of operational emissions for the project.

Table 11
MAXIMUM DAILY OPERATIONAL EMISSIONS

Category	Pollutant Emissions (pounds per day)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Area	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Energy	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Mobile	3	24	22	<0.5	<0.5	1
Total Daily Emissions	**4**	**24**	**22**	**<0.5**	**<0.5**	**1**
SCAQMD Thresholds	*55*	*55*	*550*	*150*	*150*	*55*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)

Note: Totals may not sum due to rounding

As shown in Table 11, project emissions during operation would not exceed the daily thresholds set by the SCAQMD. Therefore, impacts from criteria pollutants generated during project operation would be less than significant and no mitigation would be required.

5.3 CUMULATIVELY CONSIDERABLE NET INCREASE OF NONATTAINMENT CRITERIA POLLUTANTS

In accordance with CEQA Guidelines Section 15064(h)(3), the SCAQMD's approach for assessing cumulative impacts is based on the AQMP forecasts of attainment of ambient air quality standards in accordance with the requirements of the federal and State Clean Air Acts. If a project is not consistent with the AQMP, which is intended to bring the SCAB into attainment for all criteria pollutants, that project can be considered cumulatively considerable. Additionally, if the mass regional emissions calculated for a project exceed the applicable SCAQMD daily significance thresholds that are designed to assist the region in attaining the applicable state and national ambient air quality standards, that project can be considered cumulatively considerable. As detailed in Section 5.2, Tables 10 and 11, construction and operational emissions would not exceed the SCAQMD regional significance thresholds for all criteria pollutants and would therefore not be cumulatively considerable.

For two or more projects within close proximity, that is, 1,640 feet (500 meters) or less from the same sensitive receptor, a local cumulative analysis must be performed. The onsite emissions from the related project must be added to the background concentration, which is then summed with the proposed project emissions for comparison to the SCAQMD LSTs or State and federal AAQS. If the related projects combine with the proposed project to result in an exceedance of the ambient standards, the project is considered cumulatively significant. There are no known projects within close proximity, defined as 1,640 feet (500 meters) or less, to the proposed project. Therefore, a local cumulative analysis is not required.

5.4 IMPACTS TO SENSITIVE RECEPTORS

5.4.1 Construction Activities

5.4.1.1 Criteria Pollutants

The localized effects from the on-site portion of daily construction emissions were evaluated at sensitive receptor locations potentially impacted by the project according to the SCAQMD's LST method, described above. Consistent with the LST guidelines, when quantifying mass emissions for localized analysis, only emissions that occur on site are considered. Emissions related to off-site delivery/haul truck activity and construction worker trips are not considered in the evaluation of construction-related localized impacts, as these do not contribute to emissions generated on a project site. The closest sensitive receptors are the single-family residences approximately 70 feet (21 meters) west of the project site. Therefore, the LSTs for receptors located at 82 feet (25 meters) are used. As shown in Table 12 below, localized emissions for all criteria pollutants would remain below their respective SCAQMD LSTs. There would be a less than significant impact and no mitigation is required.

Table 12
MAXIMUM LOCALIZED DAILY CONSTRUCTION EMISSIONS

Phase	Pollutant Emissions (pounds/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Site Preparation	9	4	<0.5	<0.5
Grading	9	8	1	1
Underground Utilities	2	2	<0.5	<0.5
Building Construction	10	8	1	1
Paving	8	7	<0.5	<0.5
Architectural Coating	2	2	<0.5	<0.5
Maximum Daily Emissions[1]	**11**	**10**	**1**	**1**
SCAQMD Thresholds	*270*	*1,557*	*13*	*8*
Significant Impact?	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)
[1] Maximum daily emissions occur when Grading and Underground Utilities phases overlap.
Note: Totals may not sum due to rounding.

5.4.1.2 Toxic Air Contaminants

The greatest potential for TAC emissions during construction would be related to DPM associated with heavy equipment operations during earth-moving activities. The SCAQMD does not consider diesel-related cancer risks from construction equipment to be an issue due to the short-term nature of construction activities. Construction activities associated with the proposed project would be sporadic, transitory, and short term in nature (i.e., less than one year). The assessment of cancer risk is typically based on a 30-year exposure duration. Because exposure to diesel exhaust would be well below 30 years, construction of the proposed project is not anticipated to result in an elevated cancer risk to exposed persons due to the short-term nature of construction. As such, project-related TAC emission impacts during construction would not be significant and no mitigation is required.

5.4.2 Operational Activities

5.4.2.1 CO Hotspots

CO concentration is a direct function of motor vehicle activity (e.g., idling time and traffic flow conditions) particularly during peak commute hours and meteorological conditions. Under specific meteorological conditions (e.g., stable conditions that result in poor dispersion), CO concentrations may reach unhealthy levels with respect to local sensitive land uses such as residential areas, schools, and hospitals. As a result, the SCAQMD recommends analysis of CO emissions at the local and regional levels.

A CO hotspot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. If a project increases average delay at signalized intersections operating at Level of Service (LOS) E or F or causes an intersection that would operate at LOS D or better without the project to operate at LOS E or F with the project, a quantitative screening is required.

According to the project traffic analysis (Kimley-Horn and Associates, Inc. 2016), four of the intersections evaluated would meet these criteria, indicating that there would be a potential CO hotspot and a quantitative screening is required. The four intersections and their projected LOS include; Perris Boulevard at Atwood Avenue which would operate at LOS E (AM) and F (PM/Sun); the unsignalized intersection of Cottonwood Avenue at Crape Myrtle Drive which would operate at LOS F in the AM and E on Sunday; Perris Boulevard at Alessandro Boulevard which would operate at LOS E in PM peak hours; and the Perris Boulevard Driveway which would operate at LOS F during all AM, PM and Sunday peak hours.

In the 2003 SCAQMD AQMP, the SCAQMD modeled the four highest volume intersections in the SCAB to determine the highest potential for a CO hotspot in the SCAB. The results of the SCAQMD's analysis are provided in Table 13 and illustrate that no intersections would exceed the federal or State 1-hour standards or the federal 8-hour standard and one intersection would likely exceed the State 8-hour CO standard (Long Beach-Imperial) in 2003[2]. By 2004, all intersections were estimated to fall below all CO standards and be further reduced in 2005. This decrease over time is largely due to improved technologies and the use of progressively cleaner vehicles.

Table 13
CARBON MONOXIDE MODELING RESULTS FROM THE 2003 AIR QUALITY MANAGEMENT PLAN (PPM)

Intersection	Morning 1-Hour	Afternoon 1-Hour	Peak 1-Hour	2003 8-hour	2004 8-hour	2005 8-hour
Wilshire Ave at Veteran Ave	4.6	3.5	-	4.2	4.0	3.7
Sunset Ave at Highland Ave	4.0	4.5	-	3.9	3.7	3.5
La Cienega Blvd at Century Blvd	3.7	3.1	-	5.8	5.5	5.2
Long Beach Blvd at Imperial Hwy	3.0	3.1	1.2	9.3	8.8	8.4

Ppm: parts per million
Note: The federal 1-hour standard is 35 ppm, the State 1-hour standard is 20 ppm, the federal 8-hour standard is 9 ppm, and State 8-hour standard is 9.0 ppm.
Sources: SCAQMD 2003

Due to the high level of urbanization in the Los Angeles area where the highest volume intersections are located and due to the continuing reduction in vehicle CO emissions, background CO concentrations are expected to be lower in the City than any of the intersections in Table 13. When qualitatively comparing the CO modeling locations in the 2003 AQMP to those in the project area, several factors can be used to demonstrate that the project area can be expected to have lower CO concentrations than in the attainment plan. The factors considered are traffic demand, emission variables, site variables, and meteorological variables.

Table 14, *Traffic Volume Comparison*, provides a summary of the traffic volumes contained in the SCAQMD's modeling and the traffic volumes for the proposed Project for comparison.

[2] It should be noted that the federal 8-hour CO standard is 9 ppm and not 9.0 ppm. As such, all values less than 9.5 do not exceed the standard. Therefore, the 2003 concentration for Long Beach Blvd/Imperial Hwy of 9.3 is said to not exceed the federal 8-hour CO standard.

Table 14
TRAFFIC VOLUME COMPARISON

Intersection		Eastbound (AM/PM)	Westbound (AM/PM)	Southbound (AM/PM)	Northbound (AM/PM)	TOTAL (AM/PM)
2003 AQMP	Wilshire Ave at Veteran Ave	4,951/2,069	1,830/3,317	721/1,400	560/933	**8,062/8,388**
	Sunset Ave at Highland Ave	1,417/1,764	1,342/1,540	2,304/1,832	1,551/2,238	**6,614/7,374**
	La Cienega Blvd at Century Blvd	2,540/2,243	1,890/2,728	1,384/2,029	821/1,674	**6,635/8,888**
	Long Beach Blvd at Imperial Hwy	1,217/2,020	1,760/1,400	479/944	756/1,150	**4,212/5,514**
Proposed Project	Perris Blvd at Atwood Ave	56/58	21/15	1311/1765	1531/1465	**2,919/3,303**
	Cottonwood Ave at Crape Myrtle Dr	373/424	532/343	1341/1706	1328/1376	**3,574/3,849**
	Perris Blvd at Alessandro Blvd	764/1842	1341/1136	1162/1427	1395/1255	**4,662/5,660**
	Perris Blvd Driveway	11/86	61/69	1334/1666	1480/1468	**2,886/3,289**

Source: SCAQMD 2003; Kimley-Horn and Associates, Inc. 2016.

As shown in Table 14, traffic volumes at the project-affected intersections are less than the maximum traffic volumes in the AQMP modeled intersections, therefore CO concentrations would be less than those modeled for the AQMP intersections. There would be no exposure of sensitive receptors to a project-generated CO hotspot and impacts would be less than significant.

5.4.2.2 Toxic Air Contaminants

The new fuel facility would require authority to construct (ATC) and permit to operate (PTO) approval from the SCAQMD, which will review the facility design and location for compliance with SCAQMD standards for criteria pollutants and air quality. All tanks and dispensers would be equipped with the latest Phase I and Phase II Enhanced Vapor Recovery (EVR) air pollution control equipment technology per CARB regulations and associated Executive Orders. The Phase I EVR equipment controls the vapors in the return path from the tanks back to the tanker truck during offloading filling operations. Phase I EVR systems are 98 percent effective in controlling fugitive emissions from escaping into the environment. The Phase II EVR equipment, which also includes “in-station diagnostics,” controls and monitors the vapors in the return path from the vehicles back to the tanks. Phase II EVR systems are 95 percent effective in controlling fugitive emissions from escaping into the environment. Therefore, operations expected to occur at the proposed project would not emit a significant quantity of toxic chemicals.

Other long-term operational emissions include toxic substances such as cleaning agents in use on site, compliance with State and federal handling regulations would ensure that emissions remain below a level of significance. The use of such substances such as cleaning agents is regulated by the 1990 Federal Clean Air Act Amendments as well as State-adopted regulations for the chemical composition of consumer products. As such, project-related TAC emission impacts during operation would be less than significant and no mitigation is required.

5.5 ODORS

The Air Quality Section of the City General Plan's Environmental Impact Report (EIR; City 2006) provides guidance for defining objectionable odors. For construction activities, odors would be short-term in nature and are subject to SCAQMD Rule 402 *Nuisance* (CARB 2018) and may be reported to the AQMD (City 2012c). In addition, construction odors are limited to the number of people living and working near the source. The nearest residences are located adjacent to the east of the project. While some components of asphalt and diesel emissions are considered toxic air contaminants, construction activities would be temporary and transitory and associated odors would not be unfamiliar and would cease upon construction completion. Therefore, odor impacts from construction of the project would be less than significant due to the duration of exposure.

Common sources of operational odor complaints include sewage treatment plants, landfills, recycling facilities, and agricultural uses. The proposed project, a donut restaurant and convenience store with a fueling station and car wash, would not include any of these uses. The fueling station would emit odors during operation in the form of diesel exhaust from vehicles and operation of the fueling pumps. The increase in odor emission, however, would be minimal, as vehicle exhaust is already prevalent in the area due to its proximity to busy roadways such as Perris Boulevard and Cottonwood Avenue.

Solid waste generated by the proposed on-site uses would be collected by a contracted waste hauler, ensuring that any odors resulting from on-site waste would be managed and collected in a manner to prevent the proliferation of odors. Operational odor impacts would be less than significant.

6.0 GREENHOUSE GAS IMPACT ANALYSIS

This section evaluates potential impacts of the proposed project related to the generation of GHG emissions. Complete modeling results are included as Appendix A of this report.

6.1 GREENHOUSE GAS EMISSIONS

6.1.1 Construction

Project construction GHG emissions were estimated using the CalEEMod model as described in Section 4.1. Project-specific input was based on general information provided in Section 1.0, information provided by A & S Engineers, and default model settings to estimate reasonably conservative conditions. Additional details of phasing, selection of construction equipment, and other input parameters, including CalEEMod data, are included in Appendix A.

Emissions of GHGs related to the construction of the project would be temporary. As shown in Table 15, *Estimated Construction GHG Emissions*, total GHG emissions associated with construction of the project are estimated at 76 MT CO_2e. For construction emissions, SCAQMD recommends that the emissions be amortized (i.e., averaged) over 30 years and added to operational emissions. Averaged over 30 years, the proposed construction activities would contribute approximately 3 MT CO_2e emissions per year.

Table 15
ESTIMATED CONSTRUCTION GHG EMISSIONS

Phase	Emissions ($MT\ CO_2e$)
Site Preparation	11
Grading	13
Underground Utilities	3
Building Construction	46
Paving	3
Architectural Coating	1
TOTAL[1]	**76**
Amortized Construction Emissions[2]	3

Source: CalEEMod (output data is provided in Appendix A)
[1] The total presented is the sum of the unrounded values.
[2] Construction emissions are amortized over 30 years in accordance with SCAQMD guidance.

6.1.2 Operational Emissions

Operational sources of GHG emissions include: (1) area sources (landscaping equipment); (2) energy use; (3) vehicle use; (4) solid waste generation; and (5) water conveyance and treatment.

6.1.2.1 Area Source Emissions

Project area sources include emissions from use of consumer products, landscaping equipment, and VOC emissions from repainting buildings. GHG emissions associated with area sources were estimated using the CalEEMod default values for the project. The annual GHG emissions from area sources are estimated to be less than 0.5 MT CO_2e per year.

6.1.2.2 Energy Emissions

The project would use electricity for lighting, heating, and cooling. Electricity generation typically entails the combustion of fossil fuels, including natural gas and coal, which are then stored and transported to end users. A building's electricity use is thus associated with the off-site or indirect emission of GHGs at the source of electricity generation (power plant). Project electricity will be supplied by Southern California Edison. No natural gas would be used in the project.

With the implementation of energy-reducing project design features to comply with 2016 Title 24 standards, the annual GHG emissions from electricity consumption are estimated to be 51 MT CO_2e.

6.1.2.3 Vehicular (Mobile) Sources

Operational emissions from mobile source emissions are associated with project-related vehicle trip generation and trip length. Based on information from Traffic Impact Study prepared for the project (Kimley-Horn and Associates, Inc. 2016), after applying additional pass-by reductions, the project would generate 2,445 ADTs, 72 morning peak hour trips, 98 evening peak hours trips, and 138 Sunday trips. CalEEMod default vehicle speeds were used. The project would result in vehicle-related emissions of 1,092 MT CO_2e.

6.1.2.4 Solid Waste Sources

Solid waste generated by the project would also contribute to GHG emissions. Treatment and disposal of solid waste produces emissions of methane. For the project calculations, a countywide average waste disposal rate was used and was obtained from the California Department of Resources Recycling and Recovery (CalRecycle). This analysis assumes that the countywide average already accounts for the 50 percent diversion requirement from AB 75. In 2012, the State legislature enacted AB 341, increasing the diversion target to 75 percent statewide by 2020. Therefore, a 25 percent diversion rate over the countywide average was applied to the project in this analysis. Using CalEEMod defaults and a 25 percent operational solid waste diversion rate in accordance AB 341 standards, GHG emissions from project-related solid waste would be 13 MT CO_2e per year.

6.1.2.5 Water Sources

Water-related GHG emissions are from the conveyance and treatment of water. The California Energy Commission's 2006 Refining Estimates of Water-Related Energy Use in California defines average energy values for water in southern California. These values are used in CalEEMod to establish default water-related emission factors. Using these defaults and a 20 percent reduction in potable water use and wastewater generation in accordance with CALGreen, the project's estimated GHG emissions related to water treatment and conveyance would be 5 MT CO_2e per year.

6.1.3 Other GHG Emission Sources

Ozone is also a GHG; however, unlike other GHGs, ozone in the troposphere is relatively short lived and therefore is not global in nature. According to CARB, it is difficult to make an accurate determination of the contribution of ozone precursors (NO_X and VOCs) to global warming (CARB 2006). Therefore, it is assumed that emission of ozone precursors associated with the project would not significantly contribute to climate change.

At present, there is a federal ban on chlorofluorocarbons (CFCs); therefore, it is assumed that the project would not generate emissions of this GHG. Implementation of the project may emit a small amount of HFC emissions from leakage, service of, and from disposal at the end of the life of refrigeration and air conditioning equipment. However, these emissions are not quantifiable and are assumed to be negligible. PFCs and sulfur hexafluoride are typically used in heavy-duty industrial manufacturing applications. The proposed project is a donut restaurant and convenience store with a fueling station and carwash and would not include heavy-duty industrial manufacturing applications. Therefore, it is not anticipated that the project would contribute significant emissions of these GHGs.

6.1.4 Summary

Table 16, *Total Estimated Operational GHG Emissions*, includes the total annual emissions for the project. The emissions include the amortized annual construction emissions anticipated for the project. Appendix A contains the CalEEMod output files for the project. As shown in Table 16, the project would result in annual GHG emissions of 1,165 MT CO_2e. This value is less than the SCAQMD's 3,000 MT CO_2e per year interim threshold. Therefore, GHG emissions during project operation, including amortized construction emissions, are less than significant.

Table 16
TOTAL ESTIMATED OPERATIONAL GHG EMISSIONS

Emission Sources	Emissions (MT CO_2e)
	2019
Area Sources	<0.5
Energy Sources	51
Vehicular (Mobile) Sources	1,092
Solid Waste Sources	13
Water Sources	5
Operational Subtotal	*1,162*
Construction (Annualized over 30 years)	3
TOTAL OPERATIONAL EMISSIONS	**1,165**

Source: CalEEMod output data is provided in Appendix A
Note: Totals may not add up exactly due to rounding.

6.2 CONSISTENCY WITH LOCAL PLANS ADOPTED FOR THE PURPOSE OF REDUCING GHG EMISSIONS

There are numerous State plans, policies, and regulations adopted for the purpose of reducing GHG emissions. The principal overall State plan and policy is AB 32, the California Global Warming Solutions Act of 2006. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020. SB 32 would require further reductions of 40 percent below 1990 levels by 2030. Because of the project's operational year in 2018, the project aims to reach the quantitative goals set by AB 32. Statewide plans and regulations such as GHG emissions standards for vehicles (AB 1493), the LCFS, and regulations requiring an increasing fraction of electricity to be generated from renewable sources are being implemented at the statewide level; as such, compliance at the project level is not addressed. Therefore, the proposed project does not conflict with those plans and regulations.

As previously discussed, the City CAS does not have GHG emission thresholds and therefore utilizes the significance thresholds set forth by the SCAQMD. The SCAQMD applies a screening threshold for Tier 3 of 3,000 MT of CO_2e per year. The proposed project's increase in GHG emissions would be less than the SCAQMD's screening threshold; therefore, the project would be consistent with the City CAS. Implementation of the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. This would represent a less than significant impact.

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Appendix A

CalEEMod Output

ASE-01 Yum Yum Donuts Project

Riverside-Mojave Desert SCAQMD County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	28.00	Space	0.25	11,200.00	0
Convenience Market With Gas Pumps	11.89	1000sqft	0.27	11,890.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Information provided by A & S Engineering

Off-road Equipment -

Grading - Information provided by A & S Engineering

Trips and VMT - Provided by A & S Engineers

Architectural Coating - 50 g/L is assumed

Vehicle Trips - ADT provided by TIA (2,445 trips per day)

Area Coating - 50 g/L is assumed

Construction Off-road Equipment Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	100	50
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	100.00	76.00
tblConstructionPhase	NumDays	2.00	20.00
tblConstructionPhase	NumDays	1.00	23.00
tblConstructionPhase	PhaseEndDate	6/20/2019	6/28/2019
tblConstructionPhase	PhaseEndDate	6/6/2019	6/14/2019

tblConstructionPhase	PhaseEndDate	1/17/2019	2/28/2019
tblConstructionPhase	PhaseEndDate	6/13/2019	6/21/2019
tblConstructionPhase	PhaseEndDate	1/15/2019	1/31/2019
tblConstructionPhase	PhaseStartDate	6/14/2019	6/22/2019
tblConstructionPhase	PhaseStartDate	1/18/2019	3/1/2019
tblConstructionPhase	PhaseStartDate	1/16/2019	2/1/2019
tblConstructionPhase	PhaseStartDate	6/7/2019	6/15/2019
tblConstructionPhase	PhaseStartDate	1/15/2019	1/1/2019
tblGrading	AcresOfGrading	11.50	3.77
tblGrading	MaterialExported	0.00	200.00
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblTripsAndVMT	HaulingTripNumber	25.00	40.00
tblVehicleTrips	ST_TR	1,448.33	205.64
tblVehicleTrips	SU_TR	1,182.08	205.64
tblVehicleTrips	WD_TR	845.60	205.64

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	11.6107	11.4933	10.5254	0.0179	0.9345	0.6953	1.6297	0.4621	0.6581	1.1202	0.0000	1,757.7706	1,757.7706	0.3691	0.0000	1,766.0885
Maximum	**11.6107**	**11.4933**	**10.5254**	**0.0179**	**0.9345**	**0.6953**	**1.6297**	**0.4621**	**0.6581**	**1.1202**	**0.0000**	**1,757.7706**	**1,757.7706**	**0.3691**	**0.0000**	**1,766.0885**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	11.6107	11.4933	10.5254	0.0179	0.5197	0.6953	1.2149	0.2344	0.6581	0.8925	0.0000	1,757.7706	1,757.7706	0.3691	0.0000	1,766.0885
Maximum	**11.6107**	**11.4933**	**10.5254**	**0.0179**	**0.5197**	**0.6953**	**1.2149**	**0.2344**	**0.6581**	**0.8925**	**0.0000**	**1,757.7706**	**1,757.7706**	**0.3691**	**0.0000**	**1,766.0885**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**44.39**	**0.00**	**25.45**	**49.27**	**0.00**	**20.33**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2553	4.0000e-005	4.1100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.7300e-003	8.7300e-003	2.0000e-005		9.3200e-003
Energy	7.8000e-004	7.0900e-003	5.9600e-003	4.0000e-005		5.4000e-004	5.4000e-004		5.4000e-004	5.4000e-004		8.5079	8.5079	1.6000e-004	1.6000e-004	8.5585
Mobile	3.4671	23.6452	22.0651	0.0618	3.1129	0.0670	3.1799	0.8331	0.0632	0.8963		6,342.4908	6,342.4908	0.8538		6,363.8369
Total	**3.7232**	**23.6523**	**22.0752**	**0.0619**	**3.1129**	**0.0676**	**3.1805**	**0.8331**	**0.0638**	**0.8968**		**6,351.0075**	**6,351.0075**	**0.8540**	**1.6000e-004**	**6,372.4046**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2553	4.0000e-005	4.1100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.7300e-003	8.7300e-003	2.0000e-005		9.3200e-003
Energy	7.8000e-004	7.0900e-003	5.9600e-003	4.0000e-005		5.4000e-004	5.4000e-004		5.4000e-004	5.4000e-004		8.5079	8.5079	1.6000e-004	1.6000e-004	8.5585
Mobile	3.4671	23.6452	22.0651	0.0618	3.1129	0.0670	3.1799	0.8331	0.0632	0.8963		6,342.4908	6,342.4908	0.8538		6,363.8369
Total	**3.7232**	**23.6523**	**22.0752**	**0.0619**	**3.1129**	**0.0676**	**3.1805**	**0.8331**	**0.0638**	**0.8968**		**6,351.0075**	**6,351.0075**	**0.8540**	**1.6000e-004**	**6,372.4046**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2019	1/31/2019	5	23	
2	Grading	Grading	2/1/2019	2/28/2019	5	20	
3	Building Construction	Building Construction	3/1/2019	6/14/2019	5	76	
4	Paving	Paving	6/15/2019	6/21/2019	5	5	
5	Architectural Coating	Architectural Coating	6/22/2019	6/28/2019	5	5	
6	Underground Infrastructure/Utilities	Trenching	2/1/2019	2/28/2019	5	20	

Acres of Grading (Site Preparation Phase): 3.77

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.25

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 17,835; Non-Residential Outdoor: 5,945; Striped Parking Area: 672 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Underground Infrastructure/Utilities	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Underground Infrastructure/Utilities	1	3.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	40.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	9.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1738	0.0000	0.1738	0.0188	0.0000	0.0188			0.0000			0.0000
Off-Road	0.7195	8.9170	4.1407	9.7500e-003		0.3672	0.3672		0.3378	0.3378		965.1690	965.1690	0.3054		972.8032
Total	**0.7195**	**8.9170**	**4.1407**	**9.7500e-003**	**0.1738**	**0.3672**	**0.5410**	**0.0188**	**0.3378**	**0.3566**		**965.1690**	**965.1690**	**0.3054**		**972.8032**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0269	0.0175	0.1800	5.1000e-004	0.0559	3.4000e-004	0.0562	0.0148	3.2000e-004	0.0151		51.0259	51.0259	1.3800e-003		51.0605
Total	**0.0269**	**0.0175**	**0.1800**	**5.1000e-004**	**0.0559**	**3.4000e-004**	**0.0562**	**0.0148**	**3.2000e-004**	**0.0151**		**51.0259**	**51.0259**	**1.3800e-003**		**51.0605**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0782	0.0000	0.0782	8.4500e-003	0.0000	8.4500e-003			0.0000			0.0000
Off-Road	0.7195	8.9170	4.1407	9.7500e-003		0.3672	0.3672		0.3378	0.3378	0.0000	965.1690	965.1690	0.3054		972.8032
Total	**0.7195**	**8.9170**	**4.1407**	**9.7500e-003**	**0.0782**	**0.3672**	**0.4454**	**8.4500e-003**	**0.3378**	**0.3463**	**0.0000**	**965.1690**	**965.1690**	**0.3054**		**972.8032**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0269	0.0175	0.1800	5.1000e-004	0.0559	3.4000e-004	0.0562	0.0148	3.2000e-004	0.0151		51.0259	51.0259	1.3800e-003		51.0605
Total	**0.0269**	**0.0175**	**0.1800**	**5.1000e-004**	**0.0559**	**3.4000e-004**	**0.0562**	**0.0148**	**3.2000e-004**	**0.0151**		**51.0259**	**51.0259**	**1.3800e-003**		**51.0605**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7542	0.0000	0.7542	0.4140	0.0000	0.4140			0.0000			0.0000
Off-Road	0.9530	8.6039	7.6917	0.0120		0.5371	0.5371		0.5125	0.5125		1,159.6570	1,159.6570	0.2211		1,165.1847
Total	**0.9530**	**8.6039**	**7.6917**	**0.0120**	**0.7542**	**0.5371**	**1.2913**	**0.4140**	**0.5125**	**0.9265**		**1,159.6570**	**1,159.6570**	**0.2211**		**1,165.1847**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0118	0.5161	0.0722	1.5000e-003	0.0350	1.8800e-003	0.0369	9.5900e-003	1.8000e-003	0.0114		159.1512	159.1512	0.0111		159.4288
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0538	0.0350	0.3601	1.0200e-003	0.1118	6.9000e-004	0.1125	0.0296	6.4000e-004	0.0303		102.0517	102.0517	2.7700e-003		102.1209
Total	**0.0656**	**0.5511**	**0.4323**	**2.5200e-003**	**0.1468**	**2.5700e-003**	**0.1493**	**0.0392**	**2.4400e-003**	**0.0417**		**261.2030**	**261.2030**	**0.0139**		**261.5497**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3394	0.0000	0.3394	0.1863	0.0000	0.1863			0.0000			0.0000
Off-Road	0.9530	8.6039	7.6917	0.0120		0.5371	0.5371		0.5125	0.5125	0.0000	1,159.6570	1,159.6570	0.2211		1,165.1847
Total	**0.9530**	**8.6039**	**7.6917**	**0.0120**	**0.3394**	**0.5371**	**0.8765**	**0.1863**	**0.5125**	**0.6988**	**0.0000**	**1,159.6570**	**1,159.6570**	**0.2211**		**1,165.1847**

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0118	0.5161	0.0722	1.5000e-003	0.0350	1.8800e-003	0.0369	9.5900e-003	1.8000e-003	0.0114		159.1512	159.1512	0.0111		159.4288
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0538	0.0350	0.3601	1.0200e-003	0.1118	6.9000e-004	0.1125	0.0296	6.4000e-004	0.0303		102.0517	102.0517	2.7700e-003		102.1209
Total	**0.0656**	**0.5511**	**0.4323**	**2.5200e-003**	**0.1468**	**2.5700e-003**	**0.1493**	**0.0392**	**2.4400e-003**	**0.0417**		**261.2030**	**261.2030**	**0.0139**		**261.5497**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9576	9.8207	7.5432	0.0114		0.6054	0.6054		0.5569	0.5569		1,127.6696	1,127.6696	0.3568		1,136.5892
Total	**0.9576**	**9.8207**	**7.5432**	**0.0114**		**0.6054**	**0.6054**		**0.5569**	**0.5569**		**1,127.6696**	**1,127.6696**	**0.3568**		**1,136.5892**

3.4 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0140	0.4543	0.0992	1.0100e-003	0.0256	3.5000e-003	0.0291	7.3800e-003	3.3500e-003	0.0107		106.7755	106.7755	9.8600e-003		107.0219
Worker	0.0484	0.0315	0.3241	9.2000e-004	0.1006	6.2000e-004	0.1012	0.0267	5.7000e-004	0.0273		91.8465	91.8465	2.4900e-003		91.9089
Total	**0.0624**	**0.4858**	**0.4233**	**1.9300e-003**	**0.1262**	**4.1200e-003**	**0.1303**	**0.0341**	**3.9200e-003**	**0.0380**		**198.6220**	**198.6220**	**0.0124**		**198.9308**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9576	9.8207	7.5432	0.0114		0.6054	0.6054		0.5569	0.5569	0.0000	1,127.6696	1,127.6696	0.3568		1,136.5892
Total	**0.9576**	**9.8207**	**7.5432**	**0.0114**		**0.6054**	**0.6054**		**0.5569**	**0.5569**	**0.0000**	**1,127.6696**	**1,127.6696**	**0.3568**		**1,136.5892**

3.4 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0140	0.4543	0.0992	1.0100e-003	0.0256	3.5000e-003	0.0291	7.3800e-003	3.3500e-003	0.0107		106.7755	106.7755	9.8600e-003		107.0219
Worker	0.0484	0.0315	0.3241	9.2000e-004	0.1006	6.2000e-004	0.1012	0.0267	5.7000e-004	0.0273		91.8465	91.8465	2.4900e-003		91.9089
Total	**0.0624**	**0.4858**	**0.4233**	**1.9300e-003**	**0.1262**	**4.1200e-003**	**0.1303**	**0.0341**	**3.9200e-003**	**0.0380**		**198.6220**	**198.6220**	**0.0124**		**198.9308**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8300	7.8446	7.1478	0.0113		0.4425	0.4425		0.4106	0.4106		1,055.1823	1,055.1823	0.3016		1,062.7231
Paving	0.1310					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9610**	**7.8446**	**7.1478**	**0.0113**		**0.4425**	**0.4425**		**0.4106**	**0.4106**		**1,055.1823**	**1,055.1823**	**0.3016**		**1,062.7231**

3.5 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0968	0.0630	0.6481	1.8400e-003	0.2012	1.2400e-003	0.2024	0.0534	1.1400e-003	0.0545		183.6931	183.6931	4.9800e-003		183.8177
Total	**0.0968**	**0.0630**	**0.6481**	**1.8400e-003**	**0.2012**	**1.2400e-003**	**0.2024**	**0.0534**	**1.1400e-003**	**0.0545**		**183.6931**	**183.6931**	**4.9800e-003**		**183.8177**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8300	7.8446	7.1478	0.0113		0.4425	0.4425		0.4106	0.4106	0.0000	1,055.182 3	1,055.182 3	0.3016		1,062.723 1
Paving	0.1310					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9610**	**7.8446**	**7.1478**	**0.0113**		**0.4425**	**0.4425**		**0.4106**	**0.4106**	**0.0000**	**1,055.182 3**	**1,055.182 3**	**0.3016**		**1,062.723 1**

3.5 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0968	0.0630	0.6481	1.8400e-003	0.2012	1.2400e-003	0.2024	0.0534	1.1400e-003	0.0545		183.6931	183.6931	4.9800e-003		183.8177
Total	**0.0968**	**0.0630**	**0.6481**	**1.8400e-003**	**0.2012**	**1.2400e-003**	**0.2024**	**0.0534**	**1.1400e-003**	**0.0545**		**183.6931**	**183.6931**	**4.9800e-003**		**183.8177**

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	11.3335					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	**11.5999**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.6 Architectural Coating - 2019

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0108	7.0000e-003	0.0720	2.0000e-004	0.0224	1.4000e-004	0.0225	5.9300e-003	1.3000e-004	6.0600e-003		20.4103	20.4103	5.5000e-004		20.4242
Total	**0.0108**	**7.0000e-003**	**0.0720**	**2.0000e-004**	**0.0224**	**1.4000e-004**	**0.0225**	**5.9300e-003**	**1.3000e-004**	**6.0600e-003**		**20.4103**	**20.4103**	**5.5000e-004**		**20.4242**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Archit. Coating	11.3335					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		282.0423
Total	**11.5999**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.6 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0108	7.0000e-003	0.0720	2.0000e-004	0.0224	1.4000e-004	0.0225	5.9300e-003	1.3000e-004	6.0600e-003		20.4103	20.4103	5.5000e-004		20.4242
Total	**0.0108**	**7.0000e-003**	**0.0720**	**2.0000e-004**	**0.0224**	**1.4000e-004**	**0.0225**	**5.9300e-003**	**1.3000e-004**	**6.0600e-003**		**20.4103**	**20.4103**	**5.5000e-004**		**20.4242**

3.7 Underground Infrastructure/Utilities - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2319	2.3279	2.2933	3.0900e-003		0.1554	0.1554		0.1430	0.1430		306.2951	306.2951	0.0969		308.7178
Total	**0.2319**	**2.3279**	**2.2933**	**3.0900e-003**		**0.1554**	**0.1554**		**0.1430**	**0.1430**		**306.2951**	**306.2951**	**0.0969**		**308.7178**

3.7 Underground Infrastructure/Utilities - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0161	0.0105	0.1080	3.1000e-004	0.0335	2.1000e-004	0.0337	8.8900e-003	1.9000e-004	9.0800e-003		30.6155	30.6155	8.3000e-004		30.6363
Total	**0.0161**	**0.0105**	**0.1080**	**3.1000e-004**	**0.0335**	**2.1000e-004**	**0.0337**	**8.8900e-003**	**1.9000e-004**	**9.0800e-003**		**30.6155**	**30.6155**	**8.3000e-004**		**30.6363**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2319	2.3279	2.2933	3.0900e-003		0.1554	0.1554		0.1430	0.1430	0.0000	306.2951	306.2951	0.0969		308.7178
Total	**0.2319**	**2.3279**	**2.2933**	**3.0900e-003**		**0.1554**	**0.1554**		**0.1430**	**0.1430**	**0.0000**	**306.2951**	**306.2951**	**0.0969**		**308.7178**

3.7 Underground Infrastructure/Utilities - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0161	0.0105	0.1080	3.1000e-004	0.0335	2.1000e-004	0.0337	8.8900e-003	1.9000e-004	9.0800e-003		30.6155	30.6155	8.3000e-004		30.6363
Total	**0.0161**	**0.0105**	**0.1080**	**3.1000e-004**	**0.0335**	**2.1000e-004**	**0.0337**	**8.8900e-003**	**1.9000e-004**	**9.0800e-003**		**30.6155**	**30.6155**	**8.3000e-004**		**30.6363**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.4671	23.6452	22.0651	0.0618	3.1129	0.0670	3.1799	0.8331	0.0632	0.8963		6,342.4908	6,342.4908	0.8538		6,363.8369
Unmitigated	3.4671	23.6452	22.0651	0.0618	3.1129	0.0670	3.1799	0.8331	0.0632	0.8963		6,342.4908	6,342.4908	0.8538		6,363.8369

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market With Gas Pumps	2,445.00	2,445.00	2445.00	1,459,359	1,459,359
Parking Lot	0.00	0.00	0.00		
Total	2,445.00	2,445.00	2,445.00	1,459,359	1,459,359

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Convenience Market With Gas	16.60	8.40	6.90	0.80	80.20	19.00	14	21	65
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market With Gas Pumps	0.533383	0.039495	0.183627	0.126156	0.018688	0.005561	0.017029	0.066607	0.001345	0.001247	0.004677	0.000974	0.001211
Parking Lot	0.533383	0.039495	0.183627	0.126156	0.018688	0.005561	0.017029	0.066607	0.001345	0.001247	0.004677	0.000974	0.001211

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	7.8000e-004	7.0900e-003	5.9600e-003	4.0000e-005		5.4000e-004	5.4000e-004		5.4000e-004	5.4000e-004		8.5079	8.5079	1.6000e-004	1.6000e-004	8.5585
NaturalGas Unmitigated	7.8000e-004	7.0900e-003	5.9600e-003	4.0000e-005		5.4000e-004	5.4000e-004		5.4000e-004	5.4000e-004		8.5079	8.5079	1.6000e-004	1.6000e-004	8.5585

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market With Gas Pumps	72.3173	7.8000e-004	7.0900e-003	5.9600e-003	4.0000e-005		5.4000e-004	5.4000e-004		5.4000e-004	5.4000e-004		8.5079	8.5079	1.6000e-004	1.6000e-004	8.5585
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**7.8000e-004**	**7.0900e-003**	**5.9600e-003**	**4.0000e-005**		**5.4000e-004**	**5.4000e-004**		**5.4000e-004**	**5.4000e-004**		**8.5079**	**8.5079**	**1.6000e-004**	**1.6000e-004**	**8.5585**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market With Gas Pumps	0.0723173	7.8000e-004	7.0900e-003	5.9600e-003	4.0000e-005		5.4000e-004	5.4000e-004		5.4000e-004	5.4000e-004		8.5079	8.5079	1.6000e-004	1.6000e-004	8.5585
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**7.8000e-004**	**7.0900e-003**	**5.9600e-003**	**4.0000e-005**		**5.4000e-004**	**5.4000e-004**		**5.4000e-004**	**5.4000e-004**		**8.5079**	**8.5079**	**1.6000e-004**	**1.6000e-004**	**8.5585**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2553	4.0000e-005	4.1100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.7300e-003	8.7300e-003	2.0000e-005		9.3200e-003
Unmitigated	0.2553	4.0000e-005	4.1100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.7300e-003	8.7300e-003	2.0000e-005		9.3200e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0155					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2394					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.9000e-004	4.0000e-005	4.1100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.7300e-003	8.7300e-003	2.0000e-005		9.3200e-003
Total	**0.2553**	**4.0000e-005**	**4.1100e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**8.7300e-003**	**8.7300e-003**	**2.0000e-005**		**9.3200e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0155					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2394					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.9000e-004	4.0000e-005	4.1100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.7300e-003	8.7300e-003	2.0000e-005		9.3200e-003
Total	**0.2553**	**4.0000e-005**	**4.1100e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**8.7300e-003**	**8.7300e-003**	**2.0000e-005**		**9.3200e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ASE-01 Yum Yum Donuts Project

Riverside-Mojave Desert SCAQMD County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	28.00	Space	0.25	11,200.00	0
Convenience Market With Gas Pumps	11.89	1000sqft	0.27	11,890.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Information provided by A & S Engineering

Off-road Equipment -

Grading - Information provided by A & S Engineering

Trips and VMT - Provided by A & S Engineers

Architectural Coating - 50 g/L is assumed

Vehicle Trips - ADT provided by TIA (2,445 trips per day)

Area Coating - 50 g/L is assumed

Construction Off-road Equipment Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	100	50
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	100.00	76.00
tblConstructionPhase	NumDays	2.00	20.00
tblConstructionPhase	NumDays	1.00	23.00
tblConstructionPhase	PhaseEndDate	6/20/2019	6/28/2019
tblConstructionPhase	PhaseEndDate	6/6/2019	6/14/2019

tblConstructionPhase	PhaseEndDate	1/17/2019	2/28/2019
tblConstructionPhase	PhaseEndDate	6/13/2019	6/21/2019
tblConstructionPhase	PhaseEndDate	1/15/2019	1/31/2019
tblConstructionPhase	PhaseStartDate	6/14/2019	6/22/2019
tblConstructionPhase	PhaseStartDate	1/18/2019	3/1/2019
tblConstructionPhase	PhaseStartDate	1/16/2019	2/1/2019
tblConstructionPhase	PhaseStartDate	6/7/2019	6/15/2019
tblConstructionPhase	PhaseStartDate	1/15/2019	1/1/2019
tblGrading	AcresOfGrading	11.50	3.77
tblGrading	MaterialExported	0.00	200.00
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblTripsAndVMT	HaulingTripNumber	25.00	40.00
tblVehicleTrips	ST_TR	1,448.33	205.64
tblVehicleTrips	SU_TR	1,182.08	205.64
tblVehicleTrips	WD_TR	845.60	205.64

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0914	0.6341	0.4827	8.5000e-004	0.0172	0.0358	0.0530	6.4200e-003	0.0331	0.0396	0.0000	76.0056	76.0056	0.0197	0.0000	76.4975
Maximum	**0.0914**	**0.6341**	**0.4827**	**8.5000e-004**	**0.0172**	**0.0358**	**0.0530**	**6.4200e-003**	**0.0331**	**0.0396**	**0.0000**	**76.0056**	**76.0056**	**0.0197**	**0.0000**	**76.4975**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0914	0.6341	0.4827	8.5000e-004	0.0120	0.0358	0.0477	4.0200e-003	0.0331	0.0372	0.0000	76.0055	76.0055	0.0197	0.0000	76.4974
Maximum	**0.0914**	**0.6341**	**0.4827**	**8.5000e-004**	**0.0120**	**0.0358**	**0.0477**	**4.0200e-003**	**0.0331**	**0.0372**	**0.0000**	**76.0055**	**76.0055**	**0.0197**	**0.0000**	**76.4974**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**30.49**	**0.00**	**9.91**	**37.38**	**0.00**	**6.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2019	3-31-2019	0.3602	0.3602
2	4-1-2019	6-30-2019	0.3594	0.3594
		Highest	0.3602	0.3602

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0466	0.0000	5.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.9000e-004	9.9000e-004	0.0000	0.0000	1.0600e-003
Energy	1.4000e-004	1.2900e-003	1.0900e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	50.5052	50.5052	2.0500e-003	4.5000e-004	50.6892
Mobile	0.6263	4.3937	3.9647	0.0117	0.5573	0.0119	0.5692	0.1494	0.0112	0.1605	0.0000	1,088.6350	1,088.6350	0.1336	0.0000	1,091.9737
Waste						0.0000	0.0000		0.0000	0.0000	7.2529	0.0000	7.2529	0.4286	0.0000	17.9687
Water						0.0000	0.0000		0.0000	0.0000	0.2794	5.5647	5.8442	0.0289	7.3000e-004	6.7835
Total	**0.6730**	**4.3950**	**3.9663**	**0.0117**	**0.5573**	**0.0120**	**0.5693**	**0.1494**	**0.0113**	**0.1606**	**7.5323**	**1,144.7059**	**1,152.2382**	**0.5932**	**1.1800e-003**	**1,167.4161**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0466	0.0000	5.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.9000e-004	9.9000e-004	0.0000	0.0000	1.0600e-003
Energy	1.4000e-004	1.2900e-003	1.0900e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	50.5052	50.5052	2.0500e-003	4.5000e-004	50.6892
Mobile	0.6263	4.3937	3.9647	0.0117	0.5573	0.0119	0.5692	0.1494	0.0112	0.1605	0.0000	1,088.6350	1,088.6350	0.1336	0.0000	1,091.9737
Waste						0.0000	0.0000		0.0000	0.0000	5.4397	0.0000	5.4397	0.3215	0.0000	13.4765
Water						0.0000	0.0000		0.0000	0.0000	0.2235	4.4518	4.6753	0.0231	5.8000e-004	5.4268
Total	**0.6730**	**4.3950**	**3.9663**	**0.0117**	**0.5573**	**0.0120**	**0.5693**	**0.1494**	**0.0113**	**0.1606**	**5.6632**	**1,143.5930**	**1,149.2561**	**0.4802**	**1.0300e-003**	**1,161.5672**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**24.81**	**0.10**	**0.26**	**19.04**	**12.71**	**0.50**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2019	1/31/2019	5	23	
2	Grading	Grading	2/1/2019	2/28/2019	5	20	
3	Building Construction	Building Construction	3/1/2019	6/14/2019	5	76	
4	Paving	Paving	6/15/2019	6/21/2019	5	5	
5	Architectural Coating	Architectural Coating	6/22/2019	6/28/2019	5	5	
6	Underground Infrastructure/Utilities	Trenching	2/1/2019	2/28/2019	5	20	

Acres of Grading (Site Preparation Phase): 3.77

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.25

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 17,835; Non-Residential Outdoor: 5,945; Striped Parking Area: 672 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Underground Infrastructure/Utilities	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Underground Infrastructure/Utilities	1	3.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	40.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	9.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.0000e-003	0.0000	2.0000e-003	2.2000e-004	0.0000	2.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.2700e-003	0.1026	0.0476	1.1000e-004		4.2200e-003	4.2200e-003		3.8900e-003	3.8900e-003	0.0000	10.0693	10.0693	3.1900e-003	0.0000	10.1489
Total	**8.2700e-003**	**0.1026**	**0.0476**	**1.1000e-004**	**2.0000e-003**	**4.2200e-003**	**6.2200e-003**	**2.2000e-004**	**3.8900e-003**	**4.1100e-003**	**0.0000**	**10.0693**	**10.0693**	**3.1900e-003**	**0.0000**	**10.1489**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9000e-004	2.1000e-004	2.1800e-003	1.0000e-005	6.3000e-004	0.0000	6.4000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5460	0.5460	1.0000e-005	0.0000	0.5464
Total	**2.9000e-004**	**2.1000e-004**	**2.1800e-003**	**1.0000e-005**	**6.3000e-004**	**0.0000**	**6.4000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.5460**	**0.5460**	**1.0000e-005**	**0.0000**	**0.5464**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.0000e-004	0.0000	9.0000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.2700e-003	0.1025	0.0476	1.1000e-004		4.2200e-003	4.2200e-003		3.8900e-003	3.8900e-003	0.0000	10.0692	10.0692	3.1900e-003	0.0000	10.1489
Total	**8.2700e-003**	**0.1025**	**0.0476**	**1.1000e-004**	**9.0000e-004**	**4.2200e-003**	**5.1200e-003**	**1.0000e-004**	**3.8900e-003**	**3.9900e-003**	**0.0000**	**10.0692**	**10.0692**	**3.1900e-003**	**0.0000**	**10.1489**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9000e-004	2.1000e-004	2.1800e-003	1.0000e-005	6.3000e-004	0.0000	6.4000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5460	0.5460	1.0000e-005	0.0000	0.5464
Total	**2.9000e-004**	**2.1000e-004**	**2.1800e-003**	**1.0000e-005**	**6.3000e-004**	**0.0000**	**6.4000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.5460**	**0.5460**	**1.0000e-005**	**0.0000**	**0.5464**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5400e-003	0.0000	7.5400e-003	4.1400e-003	0.0000	4.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.5300e-003	0.0860	0.0769	1.2000e-004		5.3700e-003	5.3700e-003		5.1200e-003	5.1200e-003	0.0000	10.5202	10.5202	2.0100e-003	0.0000	10.5704
Total	**9.5300e-003**	**0.0860**	**0.0769**	**1.2000e-004**	**7.5400e-003**	**5.3700e-003**	**0.0129**	**4.1400e-003**	**5.1200e-003**	**9.2600e-003**	**0.0000**	**10.5202**	**10.5202**	**2.0100e-003**	**0.0000**	**10.5704**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.1000e-004	5.2400e-003	6.6000e-004	2.0000e-005	3.4000e-004	2.0000e-005	3.6000e-004	9.0000e-005	2.0000e-005	1.1000e-004	0.0000	1.4651	1.4651	1.0000e-004	0.0000	1.4675
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-004	3.6000e-004	3.7900e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9496	0.9496	3.0000e-005	0.0000	0.9503
Total	**6.1000e-004**	**5.6000e-003**	**4.4500e-003**	**3.0000e-005**	**1.4400e-003**	**3.0000e-005**	**1.4700e-003**	**3.8000e-004**	**3.0000e-005**	**4.1000e-004**	**0.0000**	**2.4147**	**2.4147**	**1.3000e-004**	**0.0000**	**2.4177**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.3900e-003	0.0000	3.3900e-003	1.8600e-003	0.0000	1.8600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.5300e-003	0.0860	0.0769	1.2000e-004		5.3700e-003	5.3700e-003		5.1200e-003	5.1200e-003	0.0000	10.5202	10.5202	2.0100e-003	0.0000	10.5704
Total	**9.5300e-003**	**0.0860**	**0.0769**	**1.2000e-004**	**3.3900e-003**	**5.3700e-003**	**8.7600e-003**	**1.8600e-003**	**5.1200e-003**	**6.9800e-003**	**0.0000**	**10.5202**	**10.5202**	**2.0100e-003**	**0.0000**	**10.5704**

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.1000e-004	5.2400e-003	6.6000e-004	2.0000e-005	3.4000e-004	2.0000e-005	3.6000e-004	9.0000e-005	2.0000e-005	1.1000e-004	0.0000	1.4651	1.4651	1.0000e-004	0.0000	1.4675
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-004	3.6000e-004	3.7900e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9496	0.9496	3.0000e-005	0.0000	0.9503
Total	**6.1000e-004**	**5.6000e-003**	**4.4500e-003**	**3.0000e-005**	**1.4400e-003**	**3.0000e-005**	**1.4700e-003**	**3.8000e-004**	**3.0000e-005**	**4.1000e-004**	**0.0000**	**2.4147**	**2.4147**	**1.3000e-004**	**0.0000**	**2.4177**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0364	0.3732	0.2866	4.3000e-004		0.0230	0.0230		0.0212	0.0212	0.0000	38.8742	38.8742	0.0123	0.0000	39.1817
Total	**0.0364**	**0.3732**	**0.2866**	**4.3000e-004**		**0.0230**	**0.0230**		**0.0212**	**0.0212**	**0.0000**	**38.8742**	**38.8742**	**0.0123**	**0.0000**	**39.1817**

3.4 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2000e-004	0.0175	3.4900e-003	4.0000e-005	9.6000e-004	1.3000e-004	1.0900e-003	2.8000e-004	1.3000e-004	4.0000e-004	0.0000	3.7638	3.7638	3.2000e-004	0.0000	3.7718
Worker	1.7000e-003	1.2400e-003	0.0130	4.0000e-005	3.7600e-003	2.0000e-005	3.7800e-003	1.0000e-003	2.0000e-005	1.0200e-003	0.0000	3.2477	3.2477	9.0000e-005	0.0000	3.2499
Total	**2.2200e-003**	**0.0188**	**0.0165**	**8.0000e-005**	**4.7200e-003**	**1.5000e-004**	**4.8700e-003**	**1.2800e-003**	**1.5000e-004**	**1.4200e-003**	**0.0000**	**7.0114**	**7.0114**	**4.1000e-004**	**0.0000**	**7.0217**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0364	0.3732	0.2866	4.3000e-004		0.0230	0.0230		0.0212	0.0212	0.0000	38.8741	38.8741	0.0123	0.0000	39.1816
Total	**0.0364**	**0.3732**	**0.2866**	**4.3000e-004**		**0.0230**	**0.0230**		**0.0212**	**0.0212**	**0.0000**	**38.8741**	**38.8741**	**0.0123**	**0.0000**	**39.1816**

3.4 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2000e-004	0.0175	3.4900e-003	4.0000e-005	9.6000e-004	1.3000e-004	1.0900e-003	2.8000e-004	1.3000e-004	4.0000e-004	0.0000	3.7638	3.7638	3.2000e-004	0.0000	3.7718
Worker	1.7000e-003	1.2400e-003	0.0130	4.0000e-005	3.7600e-003	2.0000e-005	3.7800e-003	1.0000e-003	2.0000e-005	1.0200e-003	0.0000	3.2477	3.2477	9.0000e-005	0.0000	3.2499
Total	**2.2200e-003**	**0.0188**	**0.0165**	**8.0000e-005**	**4.7200e-003**	**1.5000e-004**	**4.8700e-003**	**1.2800e-003**	**1.5000e-004**	**1.4200e-003**	**0.0000**	**7.0114**	**7.0114**	**4.1000e-004**	**0.0000**	**7.0217**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.0700e-003	0.0196	0.0179	3.0000e-005		1.1100e-003	1.1100e-003		1.0300e-003	1.0300e-003	0.0000	2.3931	2.3931	6.8000e-004	0.0000	2.4102
Paving	3.3000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.4000e-003**	**0.0196**	**0.0179**	**3.0000e-005**		**1.1100e-003**	**1.1100e-003**		**1.0300e-003**	**1.0300e-003**	**0.0000**	**2.3931**	**2.3931**	**6.8000e-004**	**0.0000**	**2.4102**

3.5 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.6000e-004	1.7100e-003	0.0000	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4273	0.4273	1.0000e-005	0.0000	0.4276
Total	**2.2000e-004**	**1.6000e-004**	**1.7100e-003**	**0.0000**	**4.9000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4273**	**0.4273**	**1.0000e-005**	**0.0000**	**0.4276**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.0700e-003	0.0196	0.0179	3.0000e-005		1.1100e-003	1.1100e-003		1.0300e-003	1.0300e-003	0.0000	2.3931	2.3931	6.8000e-004	0.0000	2.4102
Paving	3.3000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.4000e-003**	**0.0196**	**0.0179**	**3.0000e-005**		**1.1100e-003**	**1.1100e-003**		**1.0300e-003**	**1.0300e-003**	**0.0000**	**2.3931**	**2.3931**	**6.8000e-004**	**0.0000**	**2.4102**

3.5 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.6000e-004	1.7100e-003	0.0000	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4273	0.4273	1.0000e-005	0.0000	0.4276
Total	**2.2000e-004**	**1.6000e-004**	**1.7100e-003**	**0.0000**	**4.9000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4273**	**0.4273**	**1.0000e-005**	**0.0000**	**0.4276**

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0283					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7000e-004	4.5900e-003	4.6000e-003	1.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	0.6383	0.6383	5.0000e-005	0.0000	0.6397
Total	**0.0290**	**4.5900e-003**	**4.6000e-003**	**1.0000e-005**		**3.2000e-004**	**3.2000e-004**		**3.2000e-004**	**3.2000e-004**	**0.0000**	**0.6383**	**0.6383**	**5.0000e-005**	**0.0000**	**0.6397**

3.6 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	5.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0475	0.0475	0.0000	0.0000	0.0475
Total	**2.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**5.0000e-005**	**0.0000**	**6.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0475**	**0.0475**	**0.0000**	**0.0000**	**0.0475**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0283					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7000e-004	4.5900e-003	4.6000e-003	1.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	0.6383	0.6383	5.0000e-005	0.0000	0.6397
Total	**0.0290**	**4.5900e-003**	**4.6000e-003**	**1.0000e-005**		**3.2000e-004**	**3.2000e-004**		**3.2000e-004**	**3.2000e-004**	**0.0000**	**0.6383**	**0.6383**	**5.0000e-005**	**0.0000**	**0.6397**

3.6 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	5.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0475	0.0475	0.0000	0.0000	0.0475
Total	**2.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**5.0000e-005**	**0.0000**	**6.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0475**	**0.0475**	**0.0000**	**0.0000**	**0.0475**

3.7 Underground Infrastructure/Utilities - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.3200e-003	0.0233	0.0229	3.0000e-005		1.5500e-003	1.5500e-003		1.4300e-003	1.4300e-003	0.0000	2.7787	2.7787	8.8000e-004	0.0000	2.8006
Total	**2.3200e-003**	**0.0233**	**0.0229**	**3.0000e-005**		**1.5500e-003**	**1.5500e-003**		**1.4300e-003**	**1.4300e-003**	**0.0000**	**2.7787**	**2.7787**	**8.8000e-004**	**0.0000**	**2.8006**

3.7 Underground Infrastructure/Utilities - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.1000e-004	1.1400e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2849	0.2849	1.0000e-005	0.0000	0.2851
Total	**1.5000e-004**	**1.1000e-004**	**1.1400e-003**	**0.0000**	**3.3000e-004**	**0.0000**	**3.3000e-004**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2849**	**0.2849**	**1.0000e-005**	**0.0000**	**0.2851**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.3200e-003	0.0233	0.0229	3.0000e-005		1.5500e-003	1.5500e-003		1.4300e-003	1.4300e-003	0.0000	2.7787	2.7787	8.8000e-004	0.0000	2.8006
Total	**2.3200e-003**	**0.0233**	**0.0229**	**3.0000e-005**		**1.5500e-003**	**1.5500e-003**		**1.4300e-003**	**1.4300e-003**	**0.0000**	**2.7787**	**2.7787**	**8.8000e-004**	**0.0000**	**2.8006**

3.7 Underground Infrastructure/Utilities - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.1000e-004	1.1400e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2849	0.2849	1.0000e-005	0.0000	0.2851
Total	**1.5000e-004**	**1.1000e-004**	**1.1400e-003**	**0.0000**	**3.3000e-004**	**0.0000**	**3.3000e-004**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2849**	**0.2849**	**1.0000e-005**	**0.0000**	**0.2851**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.6263	4.3937	3.9647	0.0117	0.5573	0.0119	0.5692	0.1494	0.0112	0.1605	0.0000	1,088.635 0	1,088.635 0	0.1336	0.0000	1,091.973 7
Unmitigated	0.6263	4.3937	3.9647	0.0117	0.5573	0.0119	0.5692	0.1494	0.0112	0.1605	0.0000	1,088.635 0	1,088.635 0	0.1336	0.0000	1,091.973 7

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market With Gas Pumps	2,445.00	2,445.00	2445.00	1,459,359	1,459,359
Parking Lot	0.00	0.00	0.00		
Total	2,445.00	2,445.00	2,445.00	1,459,359	1,459,359

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Convenience Market With Gas	16.60	8.40	6.90	0.80	80.20	19.00	14	21	65
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market With Gas Pumps	0.533383	0.039495	0.183627	0.126156	0.018688	0.005561	0.017029	0.066607	0.001345	0.001247	0.004677	0.000974	0.001211
Parking Lot	0.533383	0.039495	0.183627	0.126156	0.018688	0.005561	0.017029	0.066607	0.001345	0.001247	0.004677	0.000974	0.001211

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	49.0966	49.0966	2.0300e-003	4.2000e-004	49.2722
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	49.0966	49.0966	2.0300e-003	4.2000e-004	49.2722
NaturalGas Mitigated	1.4000e-004	1.2900e-003	1.0900e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4086	1.4086	3.0000e-005	3.0000e-005	1.4170
NaturalGas Unmitigated	1.4000e-004	1.2900e-003	1.0900e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4086	1.4086	3.0000e-005	3.0000e-005	1.4170

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Convenience Market With Gas Pumps	26395.8	1.4000e-004	1.2900e-003	1.0900e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4086	1.4086	3.0000e-005	3.0000e-005	1.4170
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.4000e-004**	**1.2900e-003**	**1.0900e-003**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**	**0.0000**	**1.4086**	**1.4086**	**3.0000e-005**	**3.0000e-005**	**1.4170**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Convenience Market With Gas Pumps	26395.8	1.4000e-004	1.2900e-003	1.0900e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4086	1.4086	3.0000e-005	3.0000e-005	1.4170
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.4000e-004**	**1.2900e-003**	**1.0900e-003**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**	**0.0000**	**1.4086**	**1.4086**	**3.0000e-005**	**3.0000e-005**	**1.4170**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market With Gas Pumps	150171	47.8476	1.9800e-003	4.1000e-004	48.0188
Parking Lot	3920	1.2490	5.0000e-005	1.0000e-005	1.2535
Total		**49.0966**	**2.0300e-003**	**4.2000e-004**	**49.2722**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market With Gas Pumps	150171	47.8476	1.9800e-003	4.1000e-004	48.0188
Parking Lot	3920	1.2490	5.0000e-005	1.0000e-005	1.2535
Total		**49.0966**	**2.0300e-003**	**4.2000e-004**	**49.2722**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0466	0.0000	5.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.9000e-004	9.9000e-004	0.0000	0.0000	1.0600e-003
Unmitigated	0.0466	0.0000	5.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.9000e-004	9.9000e-004	0.0000	0.0000	1.0600e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.8300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0437					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.9000e-004	9.9000e-004	0.0000	0.0000	1.0600e-003
Total	**0.0466**	**0.0000**	**5.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.9000e-004**	**9.9000e-004**	**0.0000**	**0.0000**	**1.0600e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.8300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0437					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.9000e-004	9.9000e-004	0.0000	0.0000	1.0600e-003
Total	**0.0466**	**0.0000**	**5.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.9000e-004**	**9.9000e-004**	**0.0000**	**0.0000**	**1.0600e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	4.6753	0.0231	5.8000e-004	5.4268
Unmitigated	5.8442	0.0289	7.3000e-004	6.7835

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market With Gas Pumps	0.880722 / 0.539798	5.8442	0.0289	7.3000e-004	6.7835
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**5.8442**	**0.0289**	**7.3000e-004**	**6.7835**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market With Gas Pumps	0.704578 / 0.431838	4.6753	0.0231	5.8000e-004	5.4268
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**4.6753**	**0.0231**	**5.8000e-004**	**5.4268**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	5.4397	0.3215	0.0000	13.4765
Unmitigated	7.2529	0.4286	0.0000	17.9687

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Convenience Market With Gas Pumps	35.73	7.2529	0.4286	0.0000	17.9687
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**7.2529**	**0.4286**	**0.0000**	**17.9687**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Convenience Market With Gas Pumps	26.7975	5.4397	0.3215	0.0000	13.4765
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**5.4397**	**0.3215**	**0.0000**	**13.4765**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B

Traffic Impact Study and Supplemental Traffic Assessment

TRAFFIC IMPACT STUDY
FOR THE
PERRIS BLVD/COTTONWOOD AVE PROJECT
IN THE CITY OF MORENO VALLEY

Prepared for:

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TRAFFIC IMPACT STUDY
FOR THE PERRIS BLVD/COTTONWOOD AVE PROJECT
IN THE CITY OF MORENO VALLEY

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FOR THE PERRIS BLVD/COTTONWOOD AVE PROJECT
IN THE CITY OF MORENO VALLEY

INTRODUCTION

This traffic impact study has been prepared to evaluate the project-related traffic impacts associated with the proposed development of a Yum Yum Donut Shop and Gas Station with Car Wash within a vacant parcel located at the northeast corner of Perris Boulevard and Cottonwood Avenue in the City of Moreno Valley, California. The study assesses the project impact by providing an analysis of existing and future conditions, with and without project traffic. This document follows the assumptions established during discussions with the City of Moreno Valley staff and the approved Scoping Agreement. The approved Scoping Agreement is provided in *Appendix A*.

This report has been prepared in accordance with the City of Moreno Valley Traffic Impact Analysis Preparation Guide.

PROJECT DESCRIPTION

The proposed project, designated as Planning Case PA15-0030, will be developed on the northeast corner of Perris Boulevard and Cottonwood Avenue in the City of Moreno Valley. The project site location is shown in its regional setting on Figure 1. The project will involve development of a 16-pump gas station with a 5,515-square-foot building consisting of a donut shop/convenience market and a drive-through car wash. The project site is located in an Office Commerical (OC) zone based on the City of Moreno Valley Zoning Code, which allows the development of retail sales and service. The site is bounded to the south by Cottonwood Avenue, to the north by vacant parcels, to the west by Perris Boulevard, and to the east by residential land uses. Ingress and egress to the site will be provided via an unsignalized driveway on Perris Boulevard and an unsignalized driveway on Cottonwood Avenue. There is an existing church on Cottonwood Avenue across the street from the project. The project site plan is shown on Figure 2.

The project is anticipated to be completed in 2016. To be consistent with the analysis methodology detailed in the City's guidelines, a minimum five-year horizon was considered for the future conditions analysis. Therefore, a project opening year of 2020 was used in this study.

NOT TO SCALE

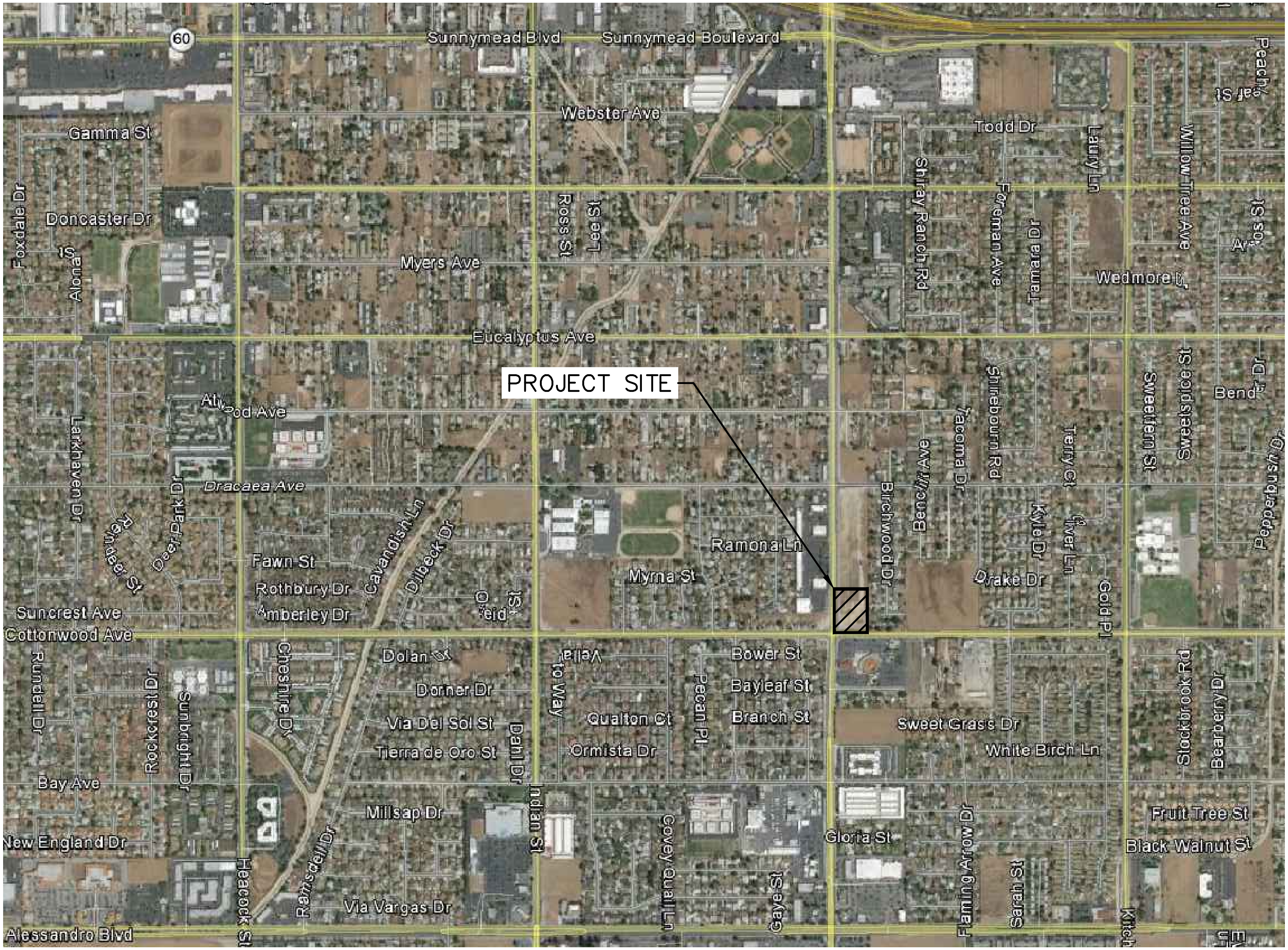


FIGURE 1
VICINITY MAP

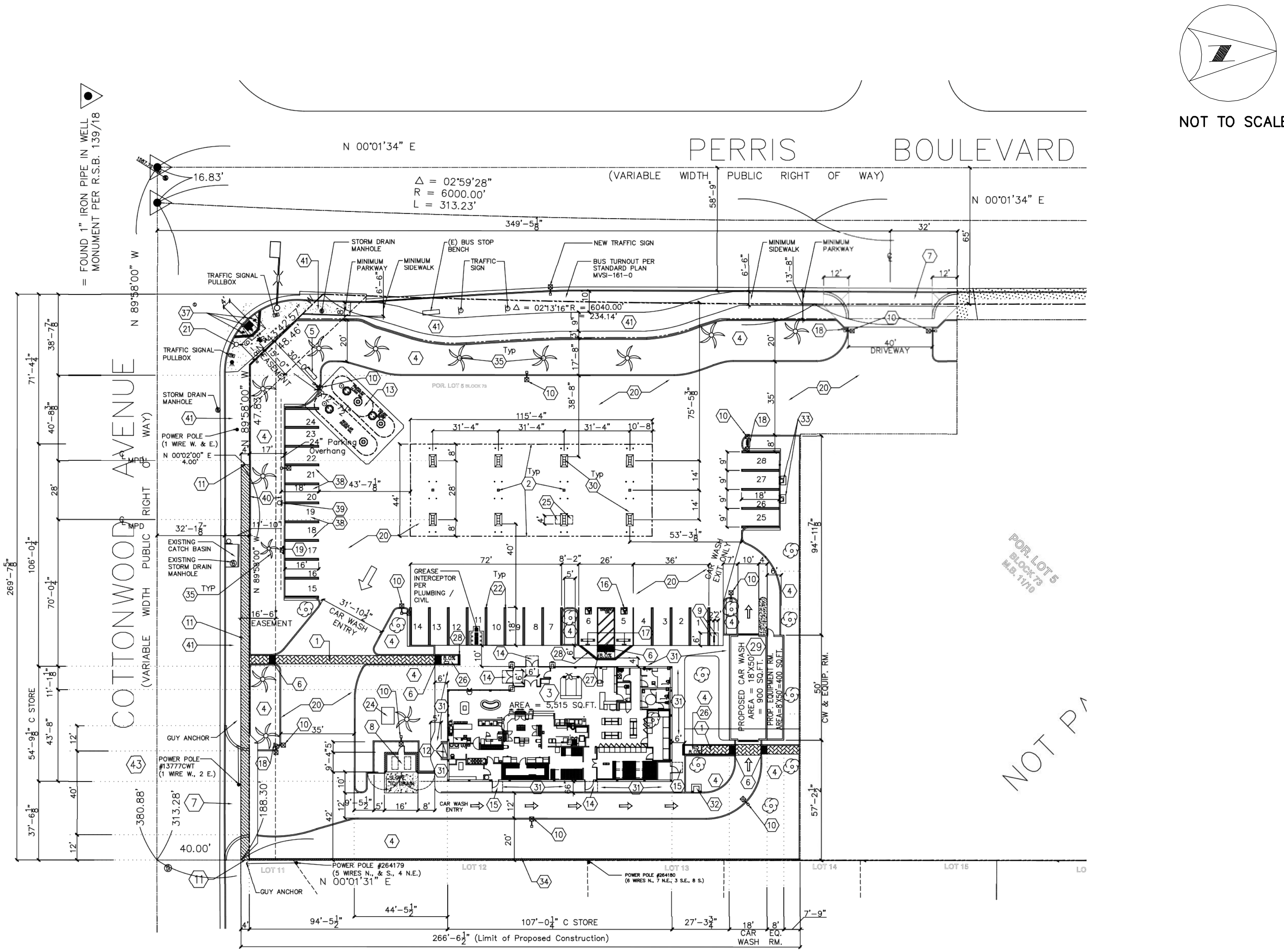


FIGURE 2
PROJECT SITE PLAN

ANALYSIS SCENARIOS AND METHODOLOGY

Analysis Scenarios

The study area was determined with input from City Staff through the scoping process. The following study intersections were identified for evaluation:

Int. #	Study Intersection	Traffic Control	LOS Standard[1]
1	Perris Boulevard at Eucalyptus Avenue	Signalized	D
2	Perris Boulevard at Atwood Avenue	Unsignalized	D
3	Perris Boulevard at Dracaea Avenue	Signalized	D
4	Cottonwood Avenue at Indian Street	Signalized	C
5	Cottonwood Avenue at Perris Boulevard	Signalized	D
6	Cottonwood Avenue at Crape Myrtle Drive	Unsignalized	C
7	Cottonwood Avenue at Kitching Street	Signalized	C
8	Perris Boulevard at Bay Avenue	Signalized	D
9	Perris Boulevard at Alessandro Boulevard	Signalized	D
D1	Perris Boulevard Driveway	Unsignalized	D
D2	Cottonwood Avenue Driveway	Unsignalized	D

[1] The Level of Service (LOS) Standard is based on the City of Moreno Valley General Plan (July 2006)

The following roadway segments were also identified for evaluation:

1. Perris Boulevard: Eucalyptus Avenue to Cottonwood Avenue
2. Perris Boulevard: Cottonwood Avenue to Alessandro Boulevard
3. Cottonwood Avenue: Indian Street to Perris Boulevard
4. Cottonwood Avenue: Perris Boulevard to Kitching Street

The location of the study intersections and roadway segments are shown on Figure 3. Based on the City's guidelines, this traffic analysis provides an evaluation of daily as well as morning and evening peak hour operations. Additionally, City staff identified the need to study Sunday noon conditions to account for traffic generated by the existing church adjacent to the project site. The analysis includes the following scenarios:

- Existing Conditions
- Existing With Project Conditions
- Cumulative (Opening Year 2020) Without Project
- Cumulative (Opening Year 2020) With Project

Any mitigation measures for the future conditions will be identified, if necessary.

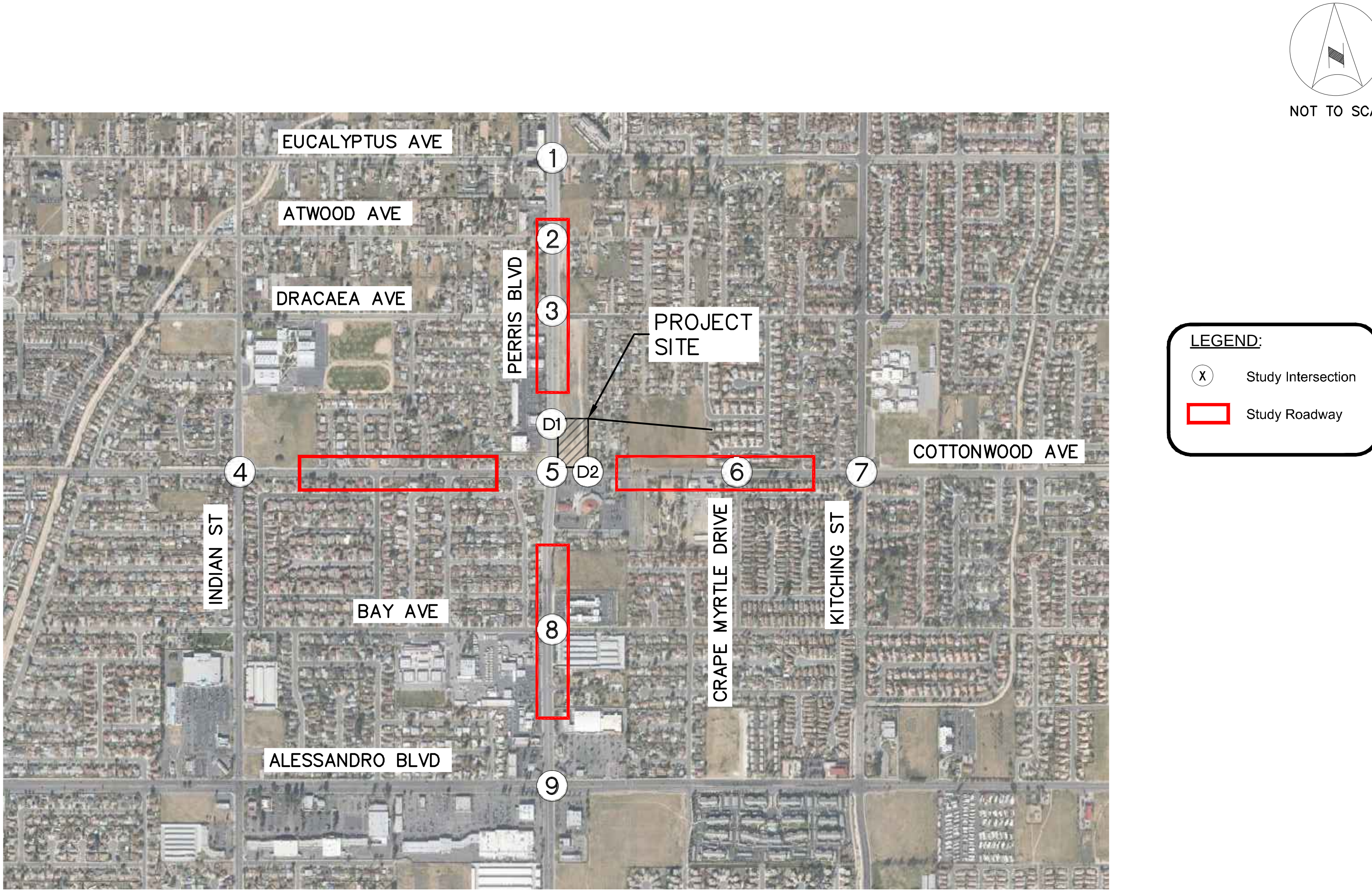


FIGURE 3
STUDY INTERSECTIONS AND ROADWAYS

ANALYSIS METHODOLOGY

The Synchro 8 software (Trafficware) was used to analyze the peak hour operations of both signalized and unsignalized intersections. Synchro 8 uses the methodologies outlined in the 2010 *Highway Capacity Manual (HCM)*. Analysis assumptions presented in the City of Moreno Valley Traffic Impact Analysis Preparation Guide were used.

Signalized Intersections

The 2010 Highway Capacity Manual (HCM), published by the Transportation Research Board (TRB), establishes a system whereby highway facilities are rated for their ability to accommodate traffic volumes. The terminology "Level of Service" is used to provide a qualitative evaluation based on certain quantitative calculations, which are related to empirical values.

Level of Service (LOS) for signalized intersections is defined in terms of average vehicle delay, which is a measure of driver discomfort, frustration, fuel consumption, and loss of travel time. Specifically, LOS criteria are stated in terms of the average control delay per vehicle for the peak 15-minute period within the hour analyzed. The average control delay includes initial deceleration delay, queue move-up time, and final acceleration time in additional to the stop delay. The Level of Service criteria for the various LOS designations are summarized on the following chart.

LEVEL OF SERVICE (LOS) CRITERIA FOR SIGNALIZED INTERSECTIONS			
LOS	Control Delay (sec/veh)	V/C Ratio	Description
A	≤10.0	≤ 0.60	Operations with very low delay and most vehicles do not stop.
B	>10.0 – 20.0	0.61 – 0.70	Operations with good progression but with some restricted movement.
C	>20.0 – 35.0	0.71 – 0.80	Operations where a significant number of vehicles are stopping with some backup and light congestion.
D	>35.0 – 55.0	0.81 – 0.90	Operations where congestion is noticeable, longer delays occur, and many vehicles stop. The proportion of vehicles not stopping declines.
E	>55.0 – 80.0	0.91 – 1.00	Operations where there is significant delay, extensive queuing, and poor progression.
F	>80.0	> 1.00	Operations are unacceptable to most drivers, when the arrival rates exceed the capacity of the intersection.
Source: 2010 Highway Capacity Manual, Chapter 18, Page 18-6, Exhibit 18-4			

Unsignalized Intersections

The Level of Service for unsignalized intersections is determined by the computed or measured control delay and is defined for each minor movement. The Level of Service criteria for unsignalized intersections, as described in the 2010 Highway Capacity Manual, are provided in the following chart.

LEVEL OF SERVICE (LOS) CRITERIA FOR UNSIGNALIZED INTERSECTIONS	
Level of Service	Control Delay (sec/veh)
A	0 - 10.0
B	>10.0 - 15.0
C	>15.0 - 25.0
D	>25.0 - 35.0
E	>35.0 - 50.0
F	>50.0
Note: The LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for major-street approaches, or for the intersection as a whole. Source: 2010 Highway Capacity Manual, Chapter 19, Page 19-2, Exhibit 19-1	

Roadway Segments

In order to determine the project-related impacts on the study area roadway segments, the following roadway capacities, provided in the City of Moreno Valley Traffic Impact Analysis Preparation Guide, were used. Roadway capacities are provided in vehicles per day.

TYPE OF ROADWAY	LEVEL OF SERVICE FOR ROADWAY SEGMENTS				
	A	**B**	**C**	**D**	**E**
Six Lane Divided Arterial	33,900	39,400	45,000	50,600	56,300
Four Lane Divided Arterial	22,500	26,300	30,000	33,800	37,500
Four Lane Undivided Arterial	15,000	17,500	20,000	22,500	25,000
Two Lane Industrial Collector	7,500	8,800	10,000	11,300	12,500
Two Lane Undivided Residential	N/A	N/A	N/A	N/A	2,000

Significant Impact Criteria

Based on the City of Moreno Traffic Impact Analysis Preparation Guide, significant impacts are defined by the California Environmental Quality Act (CEQA) under the following conditions:

- Existing traffic conditions exceed the General Plan target LOS.
- When cumulative traffic exceeds the target LOS, and impacts cannot be mitigated through the Transportation Uniform Mitigation Fee (TUMF) and/or the City of Moreno Valley Developer Impact Fee (DIF) network (or other funding mechanism), project conditions of approval, or other implementation mechanism.

EXISTING TRAFFIC CONDITIONS

This section summarizes the existing roadway circulation network, daily and peak-hour traffic volumes, and existing operating conditions and Level of Service at the study intersections and roadway segments.

Existing Street System

Regional access to the site will be provided by the SR-60 and the I-215 Freeways. The SR-60 Freeway is located approximately 1.0 mile to the north of the project site. The I-215 Freeway is located approximately 3.5 miles to the west of the project site.

Local access to the project vicinity is provided by several roadways. Roadway classifications were taken from the City of Moreno Valley General Plan Circulation Element. These roadway classifications are shown on Figure 4. Typical roadway cross sections corresponding to these classifications are shown on Figure 5.

Perris Boulevard is a four-lane divided roadway with two lanes in each direction and a two-way-left-turn median. Perris Boulevard has a width of 86 feet measured from curb to curb within the study area. The posted speed limit is 40 miles per hour. The street traverses the City of Moreno Valley in the north-south direction and is classified as a Divided Arterial in the City of Moreno Valley General Plan.

Cottonwood Avenue is a two-lane divided roadway with one lane in each direction and a two-way-left-turn median. Cottonwood Avenue has a width of 64 feet measured from curb to curb. The posted speed limit is 45 miles per hour throughout the study area. There is currently a bike lane striped in each direction. Based on the City of Moreno Valley Bicycle Master Plan, Cottonwood Avenue is designated as a Bicycle Boulevard. The street runs east-west and is classified as a Minor Arterial in the City of Moreno Valley General Plan.

Alessandro Boulevard is a six-lane divided roadway running east-west with three lanes in each direction and a two-way-left-turn median. At the intersection of Perris Boulevard, there is a raised median

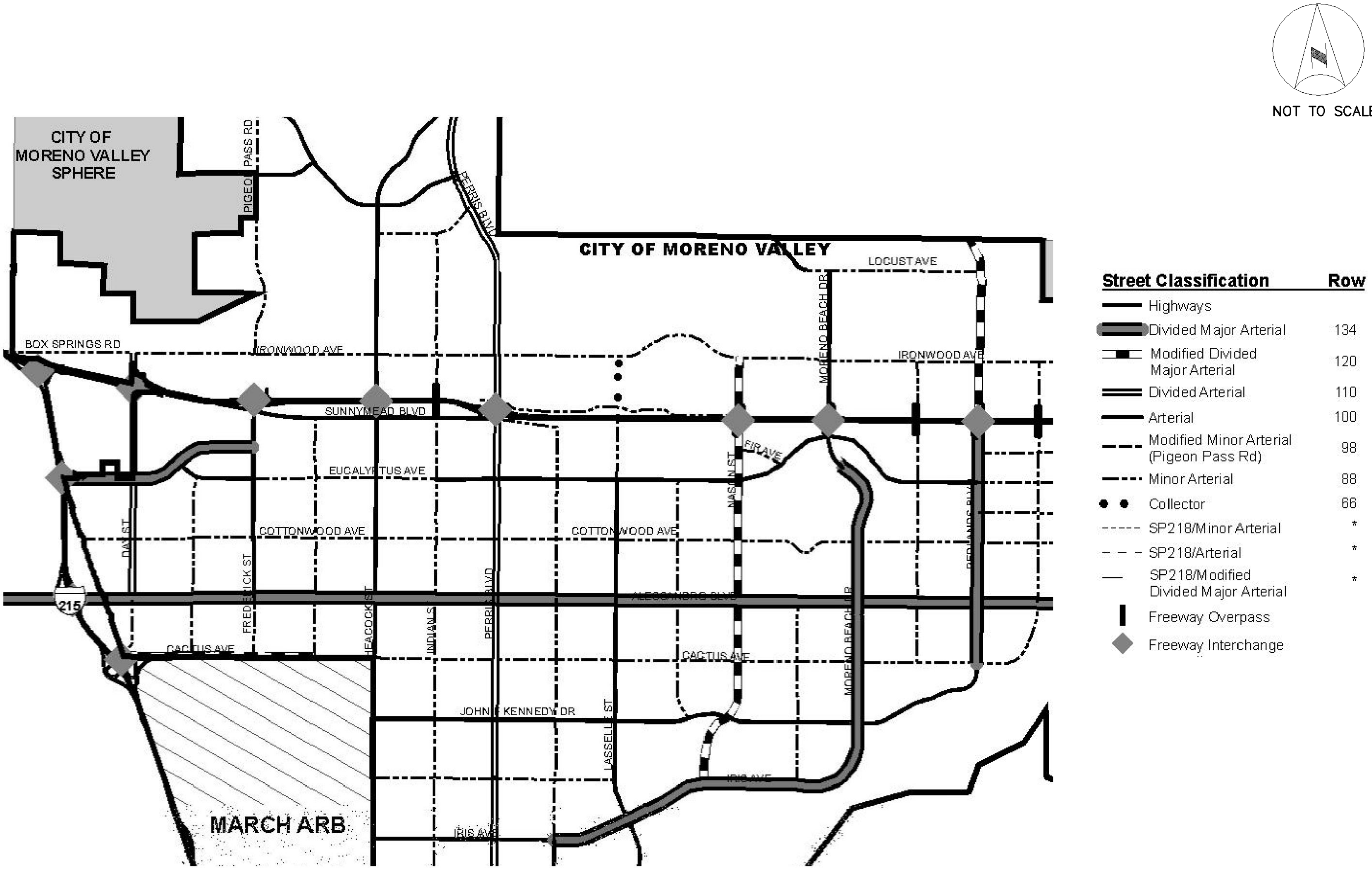


FIGURE 4
GENERAL PLAN ROADWAY NETWORK
SOURCE: CITY OF MORENO VALLEY GENERAL PLAN CIRCULATION ELEMENT

Kimley»Horn

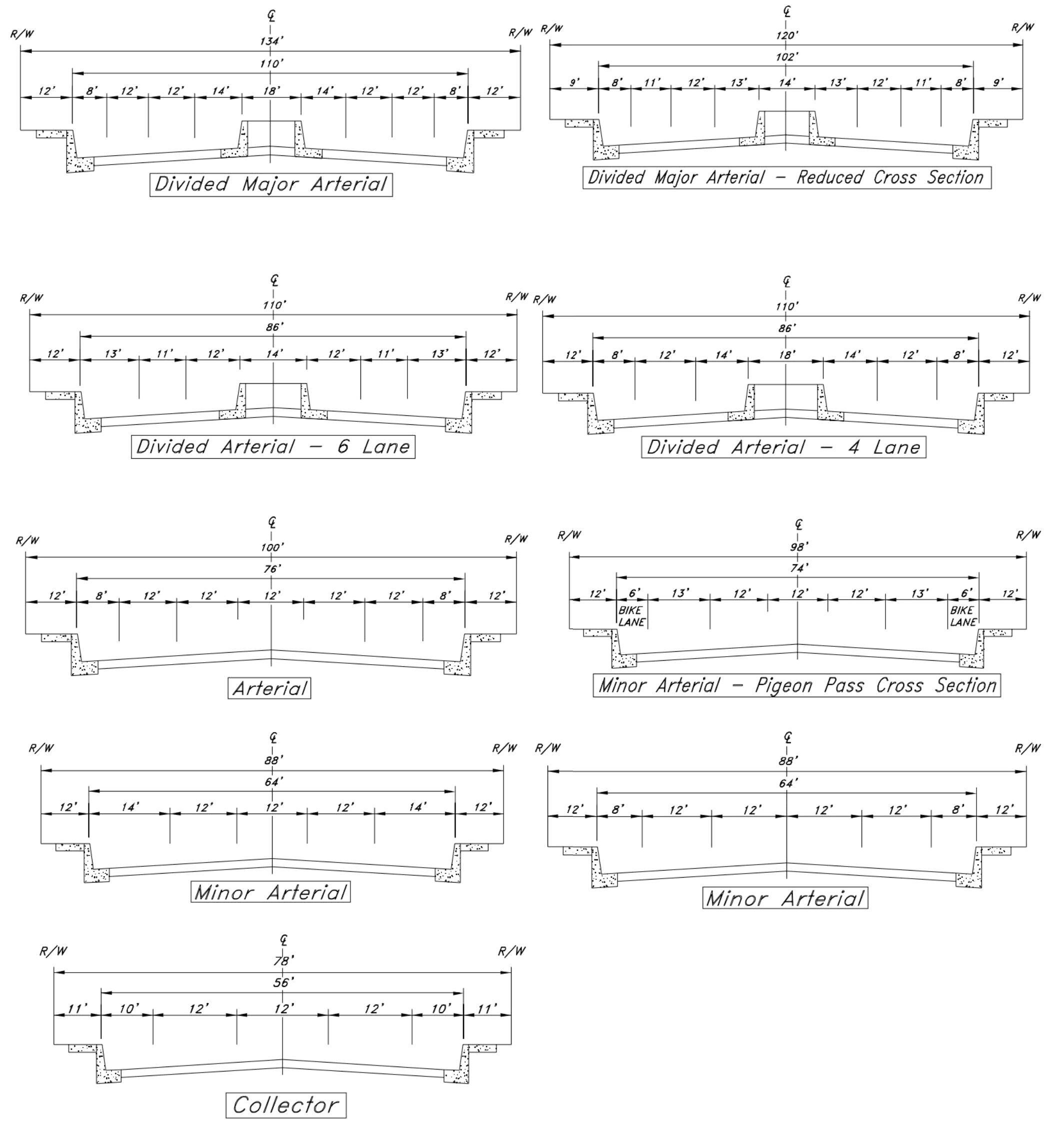


FIGURE 5
ROADWAY CROSS SECTIONS

SOURCE: CITY OF MORENO VALLEY GENERAL PLAN CIRCULATION ELEMENT

along Alessandro Boulevard. Alessandro Boulevard has a width of 110 feet measured from curb to curb. The posted speed limit is 45 miles per hour. The street is classified as a Divided Major Arterial in the City of Moreno Valley General Plan.

Existing Transit Services

Riverside Transit Agency Route 18 is a bus route that operates along Cottonwood Avenue within the project vicinity. Route 18 operates seven days a week and provides transportation services between Sunnymead Ranch and Moreno Valley College.

Riverside Transit Agency Route 19 is a bus route that currently operates along Perris Boulevard within the project vicinity. Route 19 operates seven days a week and provides transportation between the Moreno Valley Mall and the Perris Station Transit Center to the south of the project site.

Riverside Transit Agency Route 20 is a bus route that runs in the east-west direction along Alessandro Boulevard within the study area. Route 20 operates seven days a week and provides transportation between Magnolia Center in the City of Riverside and Moreno Valley College.

Truck Routes

Perris Boulevard is a designated truck route within the study area and provides access to the SR-60 Freeway to the north of the project site. Alessandro Boulevard is a truck route in the east-west direction along its entirety within the City of Moreno Valley limits.

Existing Traffic Volumes

Existing morning peak period (7:00 to 9:00 AM) and evening peak period (4:00 to 6:00 PM) turning movement counts were collected for all study intersections, and 24-hour roadway volumes were collected for all study roadway segments. Sunday Noon counts (11:00 AM to 2:00 PM) were collected at all study intersections to coincide with peak traffic generated by the St. Christopher Catholic Church. The counts were completed in September, 2015, when area schools were in session.

The existing lane configurations and traffic control at the study intersections are shown in Figure 6. Existing peak hour turning movement volumes at the study intersections and daily volumes on study roadways are shown in Figure 7. Existing Sunday traffic volumes are shown in Figure 8. Peak hour intersection traffic count and daily roadway traffic count worksheets are provided in *Appendix B*.

Intersection Analysis – Existing Operating Conditions

The study intersections were analyzed in accordance with the analysis methodology described earlier in this report. Intersection Level of Service worksheets are provided in *Appendix C*. The Existing Conditions analysis results and Level of Service for the study intersections are presented in Table 1. Review of this table shows that all study intersections currently operate at LOS D or better during all peak hour periods, with the exception of the unsignalized intersection of Cottonwood Avenue at Crape Myrtle Drive. The intersection currently operates at a LOS E in the morning peak hour based on the worst-case approach. This worst-case delay is caused by 31 vehicles making a southbound left-turn movement from the minor street approach.

Roadway Segment Analysis – Existing Conditions

The study roadway segments were analyzed in accordance with the analysis methodology described earlier in this report. The Existing Conditions analysis results and Level of Service for the study roadway segments are presented in Table 2. As review of this table shows, all study roadway segments are currently operating at LOS D or better under Existing Conditions.

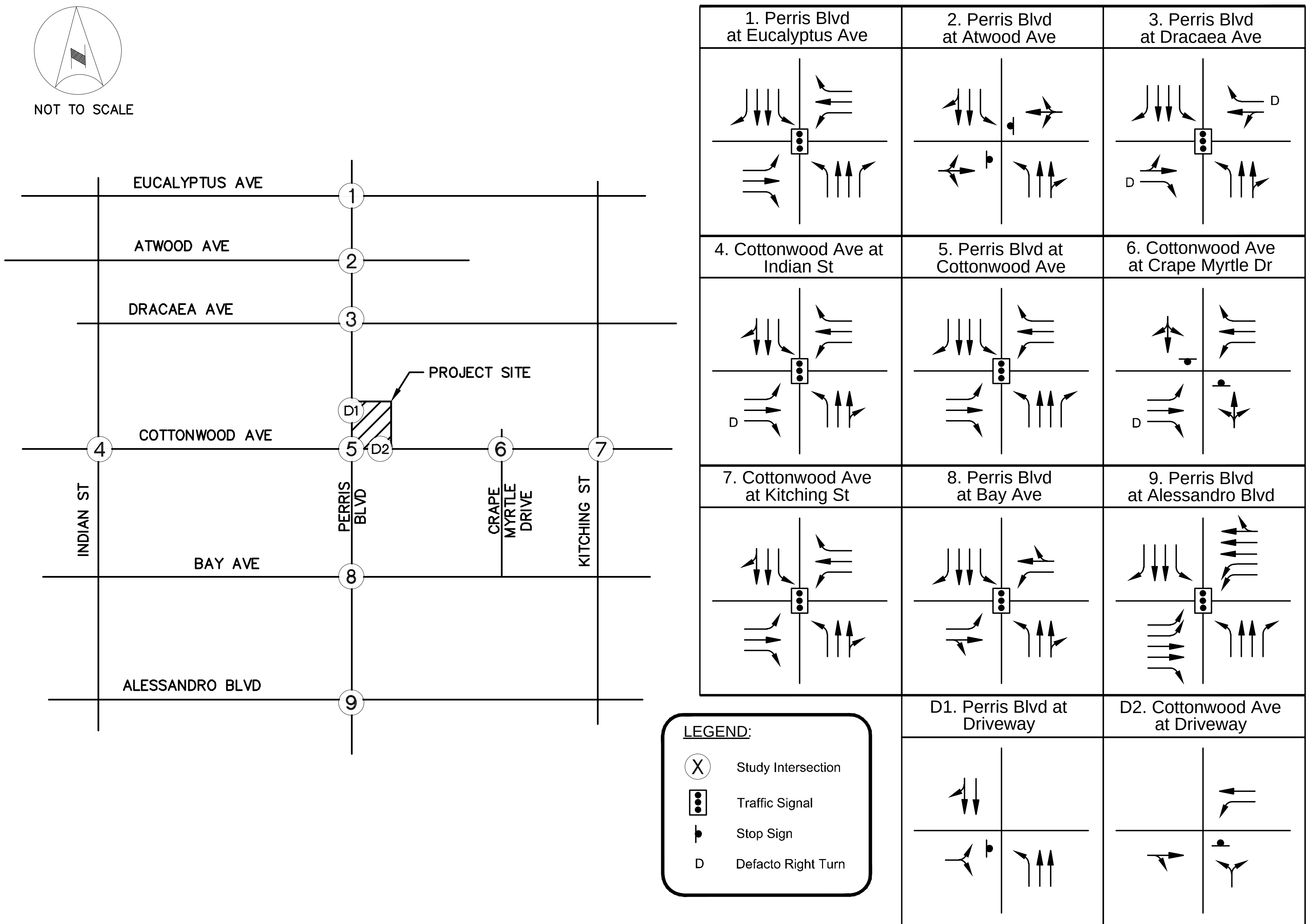


FIGURE 6
EXISTING LANE CONFIGURATION AND TRAFFIC CONTROL

Kimley»Horn

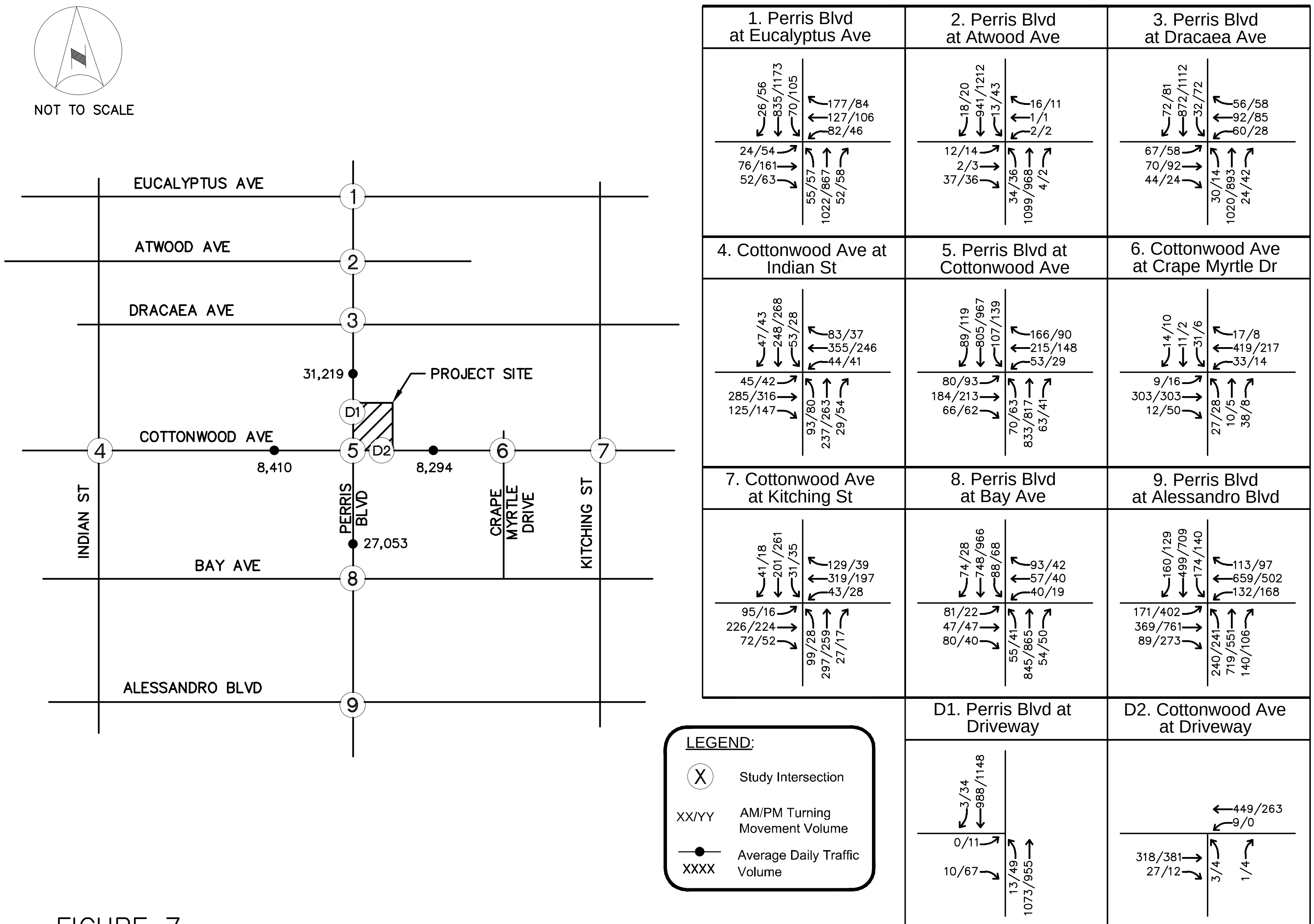
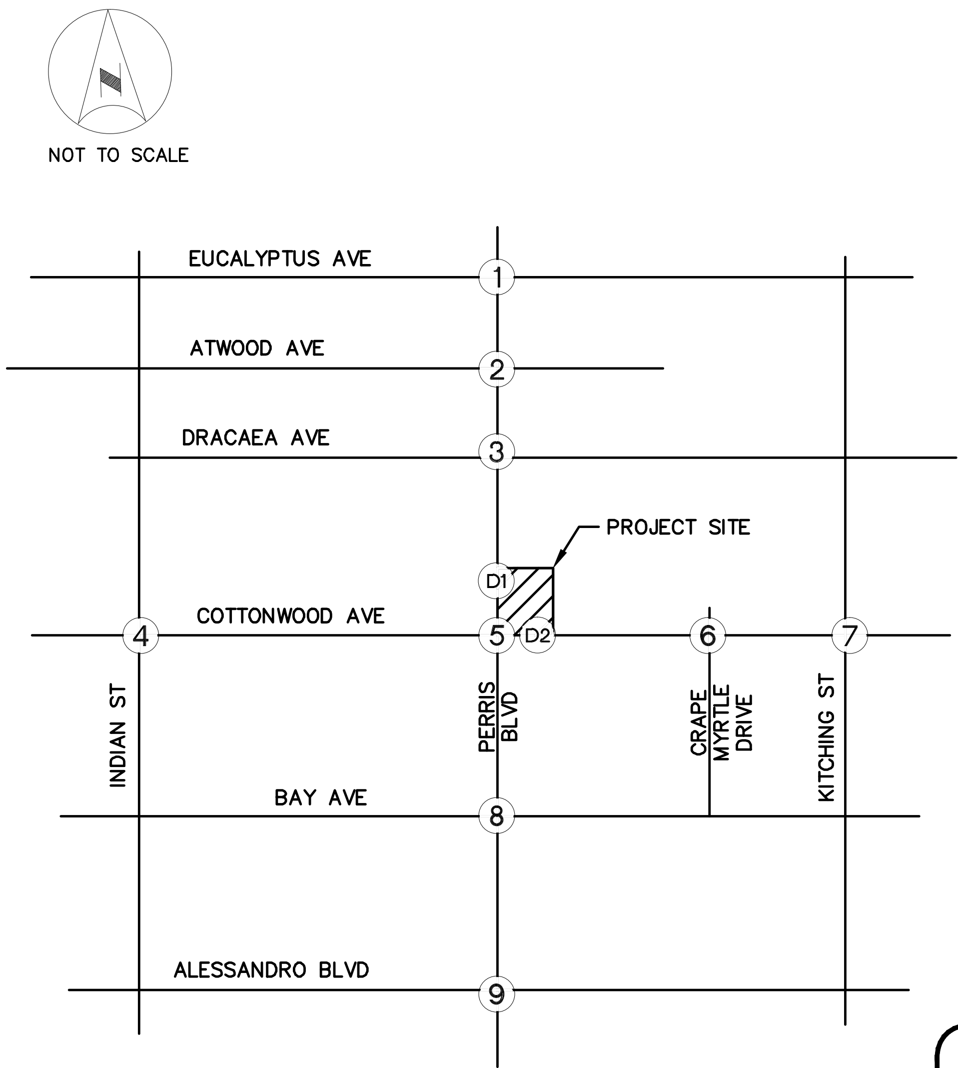


FIGURE 7
EXISTING TRAFFIC VOLUMES – WEEKDAY



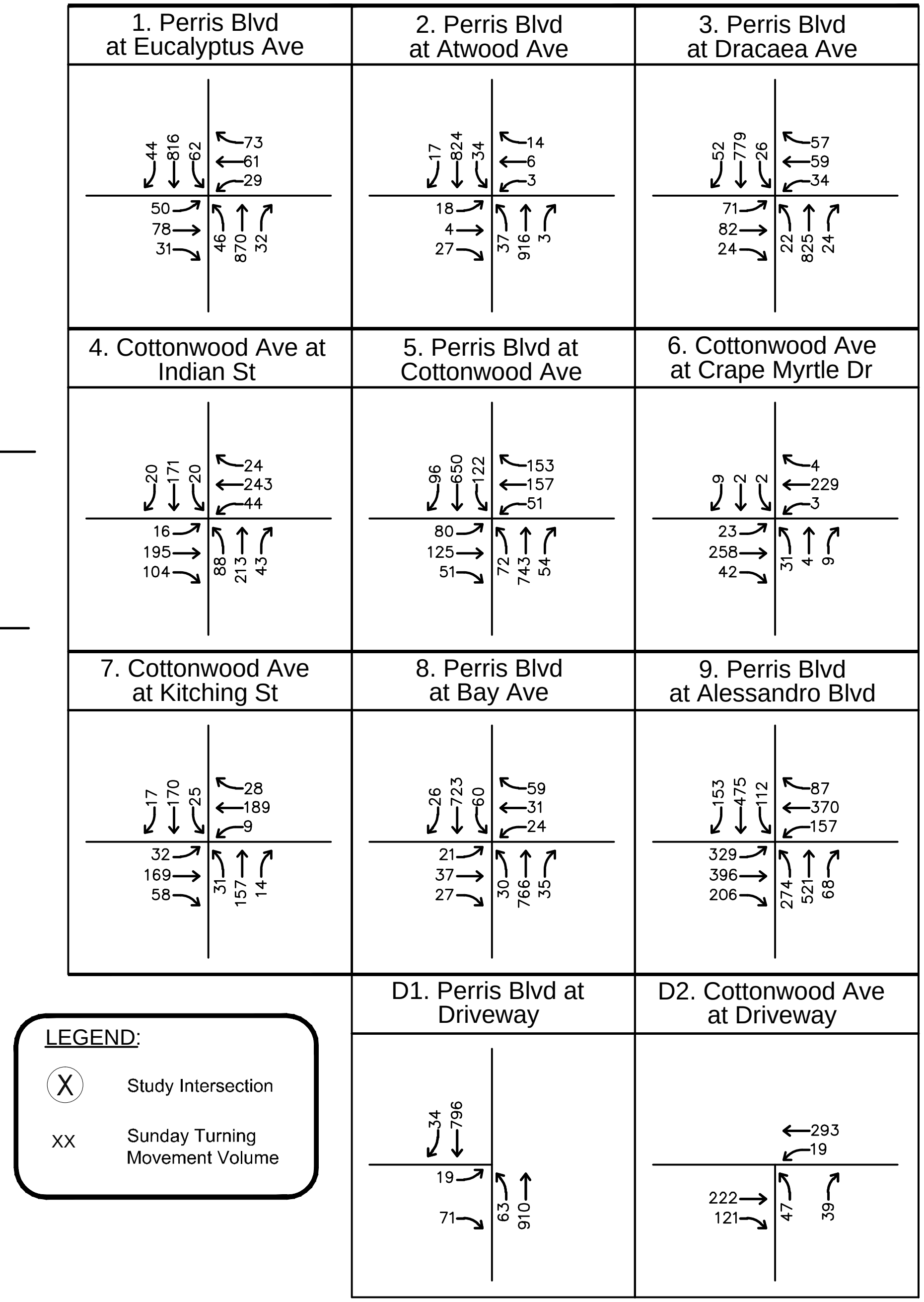


FIGURE 8
EXISTING TRAFFIC VOLUMES – SUNDAY

TABLE 1
SUMMARY OF INTERSECTION OPERATION
EXISTING CONDITIONS

Int. #	Intersection	Intersection Control	Peak Hour	Existing Conditions	
				Delay (sec/veh)	LOS
1	Perris Boulevard at Eucalyptus Avenue	Signal	AM	19.9	B
			PM	20.4	C
			SUN	16.6	B
2	Perris Boulevard at Atwood Avenue	Unsignalized	AM	23.8	C
			PM	29.0	D
			SUN	27.4	D
3	Perris Boulevard at Dracaea Avenue	Signal	AM	26.5	C
			PM	18.0	B
			SUN	20.6	C
4	Cottonwood Avenue at Indian Street	Signal	AM	23.1	C
			PM	20.1	C
			SUN	18.1	B
5	Cottonwood Avenue at Perris Boulevard	Signal	AM	26.1	C
			PM	21.7	C
			SUN	23.1	C
6	Cottonwood Avenue at Crape Myrtle Drive	Unsignalized	AM	39.5	E
			PM	15.2	C
			SUN	22.3	C
7	Cottonwood Avenue at Kitching Street	Signal	AM	25.3	C
			PM	16.1	B
			SUN	16.9	B
8	Perris Boulevard at Bay Ave	Signal	AM	22.2	C
			PM	16.4	B
			SUN	14.6	B
9	Perris Boulevard at Alessandro Boulevard	Signal	AM	30.1	C
			PM	35.3	D
			SUN	28.6	C
D1	Perris Boulevard Driveway	Unsignalized	AM	13.2	B
			PM	34.8	D
			SUN	32.6	D
D2	Cottonwood Avenue Driveway	Unsignalized	AM	17.5	C
			PM	13.0	B
			SUN	17.4	C

Unsignalized Intersection Delay is reported for the worst approach

TABLE 2
SUMMARY OF ROADWAY OPERATIONS
EXISTING CONDITIONS

Roadway Segment	Roadway Classification	Roadway Capacity	ADT	V/C	LOS
Perris Boulevard: Eucalyptus Avenue to Cottonwood Avenue	4-Lane Divided Arterial	37,500	31,219	0.83	D
Perris Boulevard: Cottonwood Avenue to Alessandro Boulevard	4-Lane Divided Arterial	37,500	27,053	0.72	C
Cottonwood Avenue: Indian Street to Perris Boulevard	2-Lane Arterial	12,500	8,410	0.67	A
Cottonwood Avenue: Perris Boulevard to Kitching Street	2-Lane Arterial	12,500	8,294	0.66	A

Trip Generation

The trips expected to be generated by the project were calculated using trip generation rates published in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition (2012). Trip rates are based on ITE Land Use Category 946 – Gas Station with Convenience Market & Car Wash.

It is recognized that not all inbound and outbound trips to the proposed project will be "new" trips on the roadway system in the vicinity of the proposed project. Some trips to the project site will consist of "pass-by" trips -- motorists who are already traveling on the surrounding roadways from one place to another. Common pass-by trips for a gas station would be individuals who stop at the project site on the way to work, home, or school.

The ITE Trip Generation Handbook, 9th Edition (2012) was used to determine the pass-by factors for the Gas Station with Convenience Market & Car Wash. For the Gas Station component, a pass-by rate of 62% was applied to the morning peak hour, and a pass-by rate of 56% was applied to the evening peak hour. Since pass-by rates were not provided for the Sunday peak, the lower 56% from the evening peak hour was used for a conservative estimate. The trip generation assumptions were approved by City Staff in the Scoping Agreement.

Daily, morning peak hour, evening peak hour, and Sunday trip generation estimates are summarized on Table 3. The project is estimated to generate 2,445 daily trips, 190 morning peak hour trips, 222 evening peak hour trips, and 312 Sunday peak hour trips. After applying pass-by reductions, the development is projected to generate a net of 2,445 daily trips, 72 morning peak hour trips, 98 evening peak hour trips, and 138 Sunday peak hour trips.

Trip Distribution and Assignment

Project trip distribution and assignment assumptions for the proposed project were developed with approval from the City Traffic Engineering staff. The distribution and assignment assumptions took into account existing traffic patterns. Trip distribution assumptions are shown on Figure 9.

Based on the proposed project trip distribution, project trips were assigned through the study intersections. The resulting project-related traffic weekday and Sunday volumes at each study intersection and roadway are shown on Figure 10 and Figure 11, respectively. The volumes provided on Figure 10 and Figure 11 account for pass-by trips, which would typically be added to project driveways but not to non-adjacent study intersections; pass-by trips are assumed to be part of the existing flow of traffic until reaching the project site. A breakdown of non pass-by and pass-by trips can be found in *Appendix D*.

The trip assignment in this section is based on the existing roadway geometry. Additional access alternatives to account for the potential construction of raised medians on Perris Boulevard and Cottonwood Avenue are discussed in the *Project Access Alternatives* section of this report.

TABLE 3
SUMMARY OF PROJECT TRIP GENERATION

Land Use	ITE Code	Unit	Trip Generation Rates [1]									
			Daily	AM Peak Hour			PM Peak Hour			Sunday Noon [3]		
				In	Out	Total	In	Out	Total	In	Out	Total
Gasoline Station w/ Conv. Mkt. & Car Wash	946	Fueling Position	152.84	6.04	5.80	11.84	7.07	6.79	13.86	9.73	9.73	19.46

Land Use	Quantity	Unit	Trip Generation Estimates									
			Daily	AM Peak Hour			PM Peak Hour			Sunday Noon		
				In	Out	Total	In	Out	Total	In	Out	Total
Gasoline Station w/ Conv. Mkt. & Car Wash	16	Fueling Position	2,445	97	93	190	113	109	222	156	156	312
- Pass-by Trips (AM 62%, PM 56%) [2]			-	-60	-58	-118	-63	-61	-124	-87	-87	-174
Total Project Trips			2,445	37	35	72	50	48	98	68	68	138

[1] *Source: Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition*

[2] *Source: ITE Trip Generation Manual - Volume 1: User's Guide and Handbook. A pass-by rate of 56% was used for Sunday trips.*

[3] *Sunday Peak Hour trips were calculated based on ITE rates for the Saturday Peak Hour of Generator.*

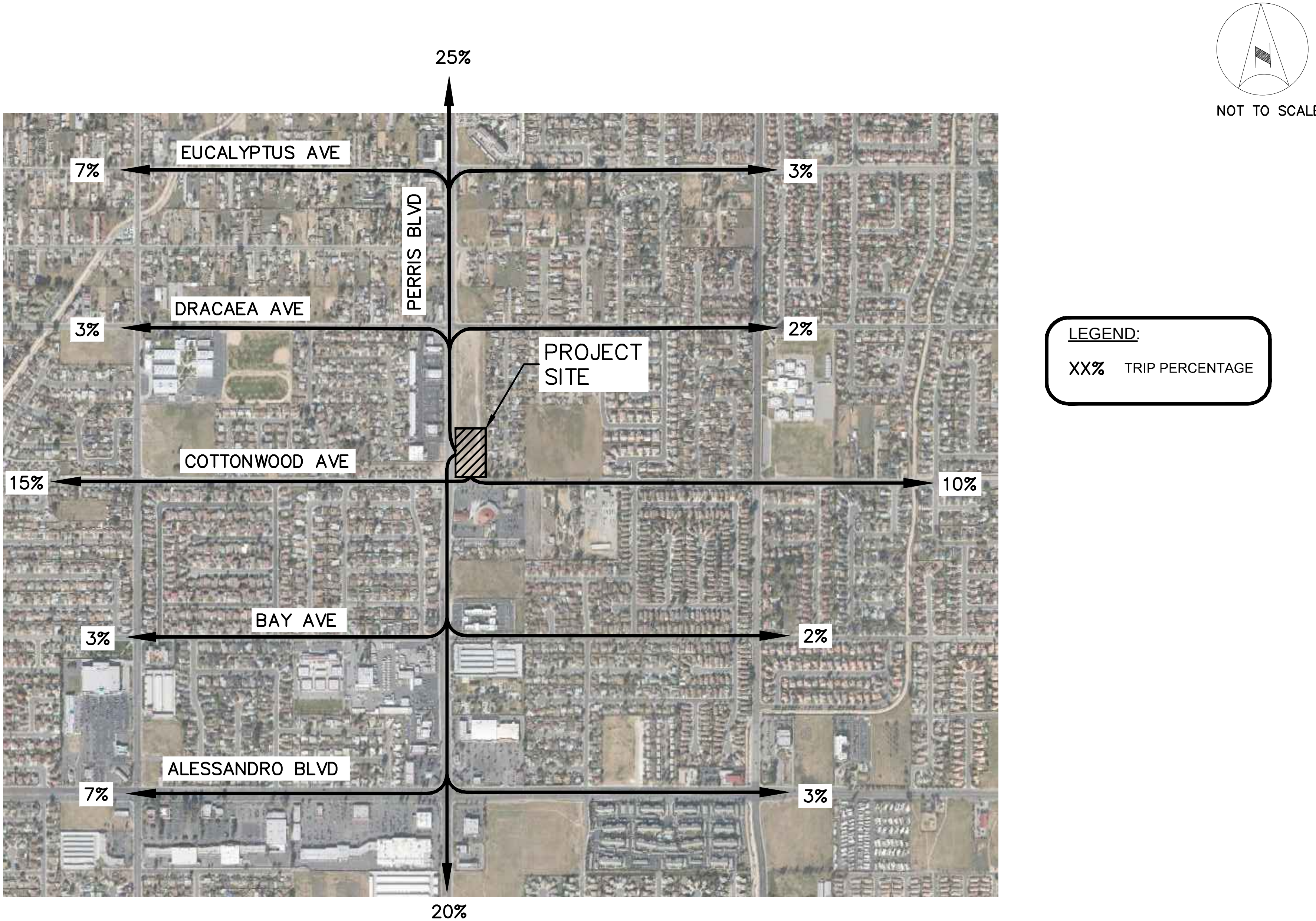
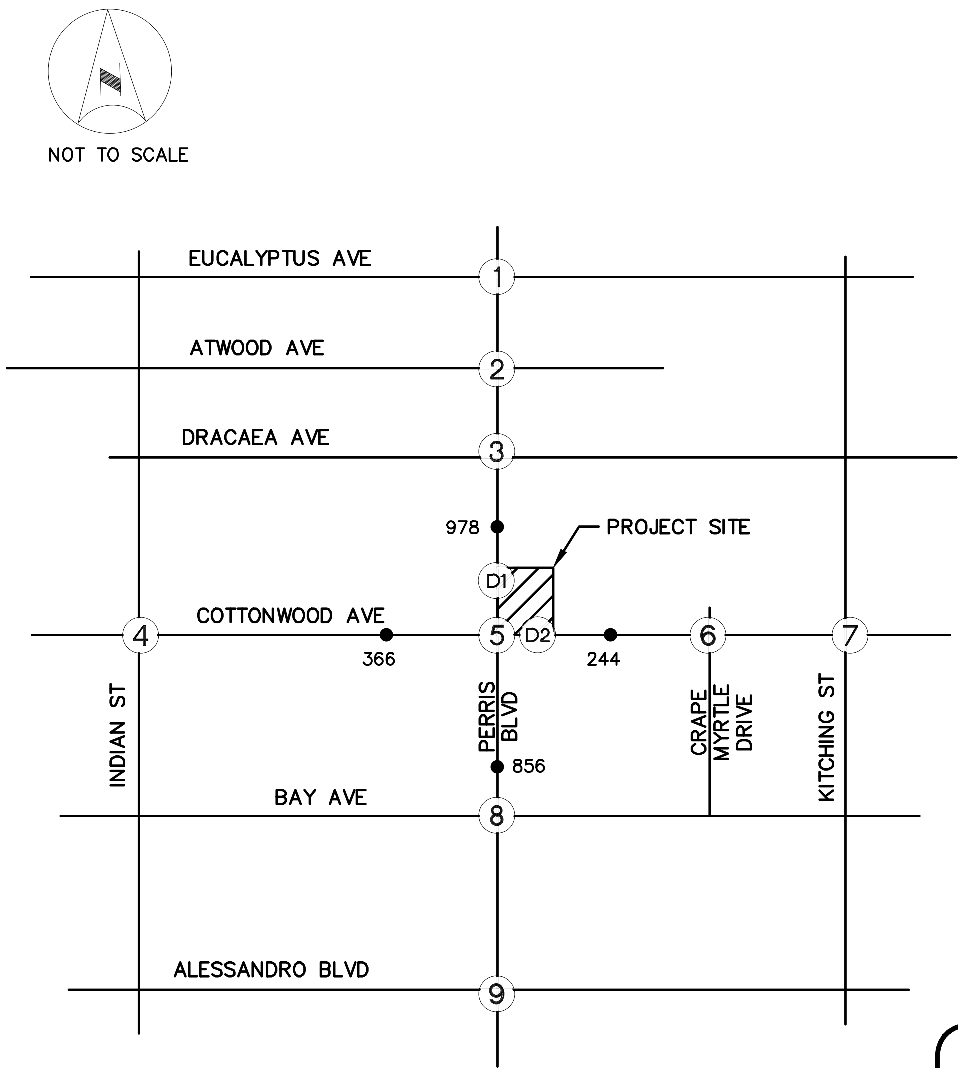


FIGURE 9
TRIP DISTRIBUTION ASSUMPTIONS



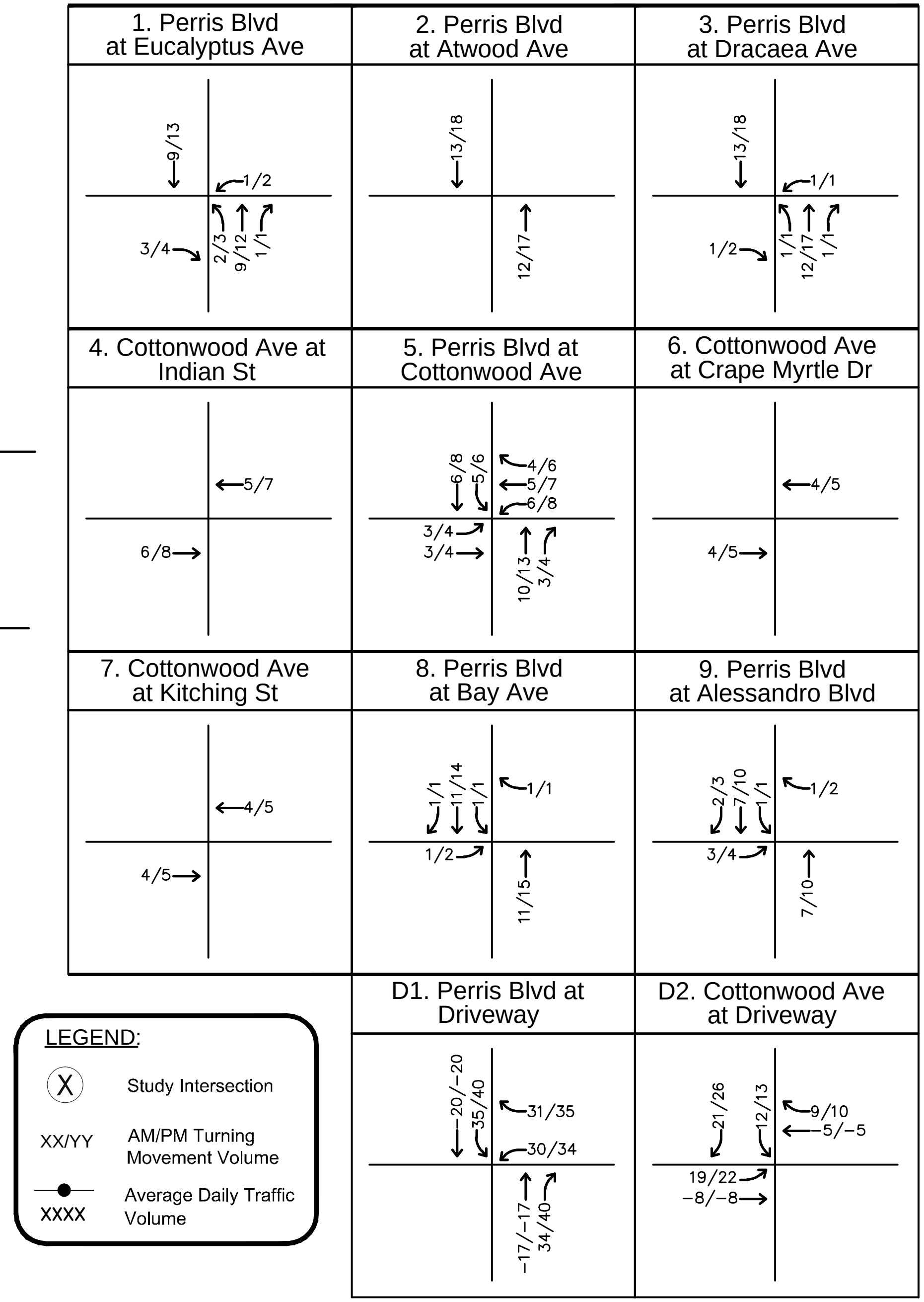


FIGURE 10
PROJECT TRAFFIC – WEEKDAY TRIPS

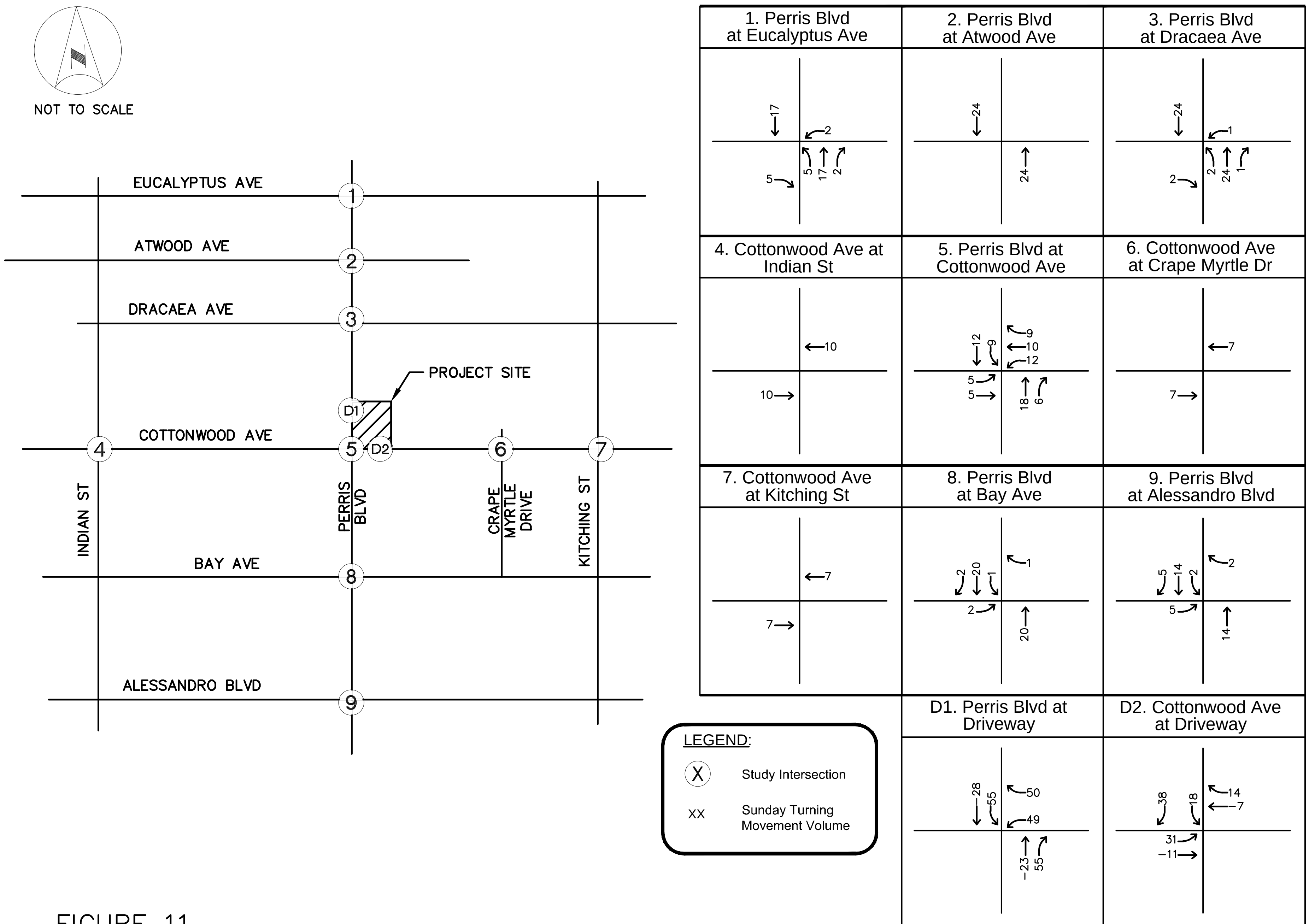


FIGURE 11
PROJECT TRAFFIC – SUNDAY TRIPS

EXISTING WITH PROJECT CONDITIONS

The Existing With Project analysis provides a summary of the impacts associated with adding project-related trips to existing traffic volumes. The Existing With Project scenario is a hypothetical scenario which assumes that the Project would be fully implemented at the present time and full absorption of Project traffic on the existing circulation system.

Intersection Analysis – Existing With Project

Existing With Project weekday and Sunday peak hour traffic volumes are shown on Figure 12 and Figure 13, respectively. The intersection analysis was conducted for the Existing With Project scenario, and the results are presented on Table 4. Intersection analysis worksheets are provided in *Appendix C*. Review of this table indicates that all study intersections will operate at acceptable Level of Service, with the exception of the following:

- Cottonwood Avenue at Crape Myrtle Drive (AM LOS E) – Southbound Approach
- Perris Boulevard Driveway (AM LOS F, PM LOS F, Sunday LOS F) – Westbound Approach

The intersection of Cottonwood Avenue at Crape Myrtle Drive is unsignalized and is shown to already operate deficiently in Existing Conditions. The deficiency is caused by the low volumes turning from the minor street approach.

The Perris Boulevard Driveway is unsignalized. The LOS F delay would be experienced by vehicles making a westbound left-turn out of the driveway onto Perris Boulevard.

Roadway Segment Analysis – Existing With Project

Existing With Project daily roadway segment volumes are shown on Figure 12, shown previously. The daily roadway segment analysis was conducted for the Existing With Project scenario, and the results are presented in Table 5. Review of this table indicates that all study roadway segments will continue to operate at Level of Service D or better with the addition of project traffic.

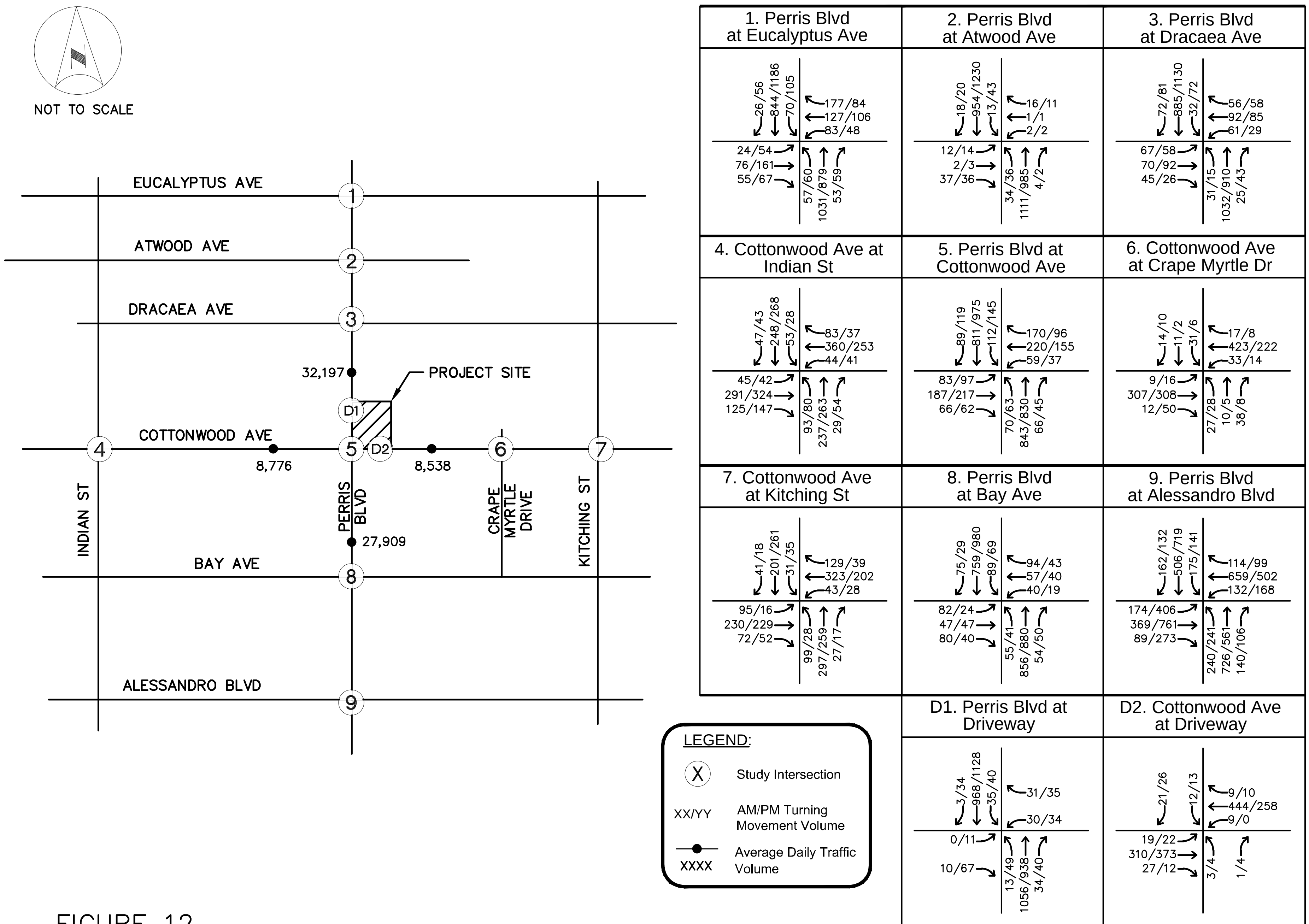


FIGURE 12
EXISTING WITH PROJECT
TRAFFIC VOLUMES – WEEKDAY

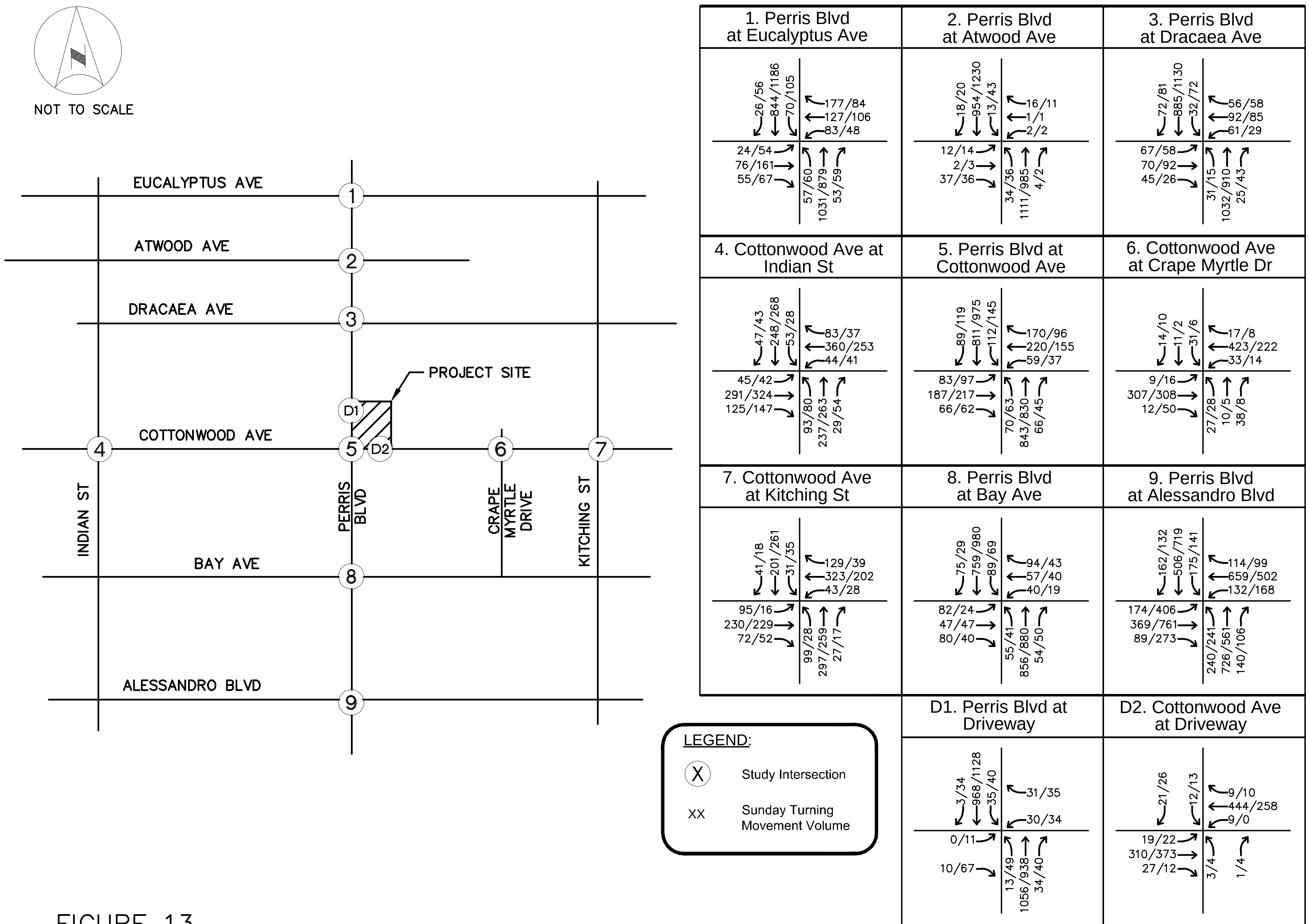


FIGURE 13
EXISTING WITH PROJECT
TRAFFIC VOLUMES – SUNDAY

TABLE 4 SUMMARY OF INTERSECTION OPERATIONS EXISTING WITH PROJECT CONDITIONS							
Int. #	Intersection	Peak Hour	Existing Conditions		Existing With Project Conditions		Project Impact
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
1	Perris Boulevard at Eucalyptus Avenue	AM	19.9	B	20.1	C	0.2
		PM	20.4	C	20.8	C	0.4
		SUN	16.6	B	16.9	B	0.3
2	Perris Boulevard at Atwood Avenue	AM	23.8	C	24.3	C	0.5
		PM	29.0	D	29.8	D	0.8
		SUN	27.4	D	28.5	D	1.1
3	Perris Boulevard at Dracaea Avenue	AM	26.5	C	27.0	C	0.5
		PM	18.0	B	18.2	B	0.2
		SUN	20.6	C	20.8	C	0.2
4	Cottonwood Avenue at Indian Street	AM	23.1	C	23.4	C	0.3
		PM	20.1	C	20.3	C	0.2
		SUN	18.1	B	18.2	B	0.1
5	Cottonwood Avenue at Perris Boulevard	AM	26.1	C	27.1	C	1.0
		PM	21.7	C	22.5	C	0.8
		SUN	23.1	C	24.6	C	1.5
6	Cottonwood Avenue at Crape Myrtle Drive	AM	39.5	E	40.5	E	1.0
		PM	15.2	C	15.4	C	0.2
		SUN	22.3	C	23.1	C	0.8
7	Cottonwood Avenue at Kitching Street	AM	25.3	C	25.6	C	0.3
		PM	16.1	B	16.2	B	0.1
		SUN	16.9	B	17.0	B	0.1
8	Perris Boulevard at Bay Ave	AM	22.2	C	22.5	C	0.3
		PM	16.4	B	16.7	B	0.3
		SUN	14.6	B	14.8	B	0.2
9	Perris Boulevard at Alessandro Boulevard	AM	30.1	C	30.2	C	0.1
		PM	35.3	D	35.6	D	0.3
		SUN	28.6	C	28.8	C	0.2
D1	Perris Boulevard Driveway	AM	13.2	B	224.4	F	211.2
		PM	34.8	D	260.0	F	225.2
		SUN	32.6	D	498.3	F	465.7
D2	Cottonwood Avenue Driveway	AM	17.5	C	22.3	C	4.8
		PM	13.0	B	14.8	B	1.8
		SUN	17.4	C	24.5	C	7.1

TABLE 5
SUMMARY OF ROADWAY OPERATIONS
EXISTING WITH PROJECT CONDITIONS

Roadway Segment	Roadway Classification	Roadway Capacity	ADT	V/C	LOS
Perris Boulevard: Eucalyptus Avenue to Cottonwood Avenue	4-Lane Divided Arterial	37,500	32,197	0.86	D
Perris Boulevard: Cottonwood Avenue to Alessandro Boulevard	4-Lane Divided Arterial	37,500	27,909	0.74	C
Cottonwood Avenue: Indian Street to Perris Boulevard	2-Lane Arterial	12,500	8,776	0.70	A
Cottonwood Avenue: Perris Boulevard to Kitching Street	2-Lane Arterial	12,500	8,538	0.68	A

FUTURE CONDITIONS

Cumulative (Opening Year 2020) Without Project

Cumulative Without Project traffic forecasts were developed using the following "build-up" forecasting method:

- Existing traffic volumes, plus
- An annual ambient growth rate of 2% per year to Opening Year 2020, plus
- Cumulative projects traffic
    - Cumulative projects consist of projects that have been approved but are not yet built or fully occupied, as well as projects that are in various stages of the application and approval process, but have not yet been approved. These projects are considered to be "reasonably foreseeable," and must therefore be included in the Cumulative Projects analysis.

Cumulative Project information was obtained from the City of Moreno Valley Planning and Economic Development Department at the start of the study process. Cumulative projects within a 3.5 mile radius of the project site were considered. For the purpose of this traffic study, the projects were assessed for their proximity to the project site and for their potential to generate traffic based on their approved or pending land uses. Therefore, not all projects are anticipated to affect the study area. A summary of the Cumulative Projects is provided on Table 6. The location of the Cumulative Projects in relation to the project site is shown on Figure 14. Cumulative weekday and Sunday project-related trips at study intersections and roadways are shown on Figure 15 and Figure 16, respectively.

As part of the Cumulative scenario, the St. Christopher's Catholic Church on the southeast corner of the intersection of Perris Boulevard and Cottonwood Avenue will undergo an expansion. The existing driveway along Cottonwood Avenue will be eliminated as part of that expansion. The removal of the church's driveway was taken into consideration in the analysis of future conditions.

Ambient growth and project-related trips for the Cumulative Projects were added to the study intersections and roadways. Cumulative Without Project weekday and Sunday traffic volumes are shown on Figure 17 and Figure 18, respectively.

Intersection Analysis – Cumulative (Opening Year 2020) Without Project

The study intersections were analyzed with the annual growth and traffic from the Cumulative Projects. Intersection Level of Service worksheets are provided in *Appendix D*. The Cumulative Without Project analysis results and Level of Service for the study intersections are presented in Table 7.

Review of this table shows that, with the addition Cumulative Projects traffic and an ambient traffic growth rate, the following intersections would operate at an unacceptable Level of Service:

TABLE 6
SUMMARY OF CUMULATIVE PROJECTS

Map #	Builder/Applicant	Quantity	Unit	Trip Generation Estimates [1]									
					AM Peak Hour			PM Peak Hour			Weekend		
				Daily	In	Out	Total	In	Out	Total	In	Out	Total
Single-Family Residential Development													
1	TR 34151 Moreno Valley Property Investment LLC	37	DU	352	7	21	28	23	14	37	17	15	32
2	TR 28860 Professor's Fund IV, LLC	9	DU	86	2	5	7	6	3	9	4	4	8
3	TR 36760 Mission Pacific Land Co.	189	DU	1,799	36	106	142	119	70	189	86	76	162
4	TR 31297 Randy McFarland	7	DU	67	1	4	5	4	3	7	3	3	6
5	TR 31305 Richland Communities, Inc.	87	DU	828	16	49	65	55	32	87	40	35	75
6	TR 34112 SKG Pacific Enterprises Inc.	63	DU	600	12	35	47	40	23	63	29	25	54
7	TR 31517 Professor Prop Six/Winchester Associates	83	DU	790	16	47	63	52	31	83	38	34	72
8	TR 31621 Skyline Homes	12	DU	114	2	7	9	8	4	12	5	5	10
9	TR 32126 Salvador Torres	35	DU	333	7	20	27	22	13	35	16	14	30
10	TR 32194 Arman Pezeshifar	32	DU	305	6	18	24	20	12	32	15	13	28
11	TR 32218 Granite Capital/Winchesters Associates, Inc.	63	DU	600	12	35	47	40	23	63	29	25	54
12	TR 32284 Joe Anderson	32	DU	305	6	18	24	20	12	32	15	13	28
13	TR 32408 Sandstone, Inc.	80	DU	762	15	45	60	50	30	80	36	32	68
14	TR 32505 DR Horton	72	DU	685	14	41	55	45	27	72	33	29	62
15	TR 32548 Gabel, Cook and Associates	107	DU	1,019	20	60	80	67	40	107	49	43	92
16	TR 32645 Winchester Associates	53	DU	505	10	30	40	33	20	53	24	21	45
17	TR 32716 Bob Rogers	57	DU	543	11	32	43	36	21	57	26	23	49
18	TR 32978 Focus Estates	19	DU	181	4	11	15	12	7	19	9	8	17
19	TR 33024 Adam Wislar	8	DU	76	2	5	7	5	3	8	4	3	7
20	TR 27251 RSI	156	DU	1,485	29	88	117	98	58	156	71	63	134
21	TR 33388 SCH Development, LLC	16	DU	152	3	9	12	10	6	16	7	6	13
22	TR 32844 Winchester Associates	105	DU	1,000	20	59	79	66	39	105	48	42	90
23	TR 33810 David Boyle Engineering	16	DU	152	3	9	12	10	6	16	7	6	13
24	TR 33963 Rance Garrett	31	DU	295	6	17	23	20	11	31	14	13	27
25	TR 34043 RM3 Building and Development	12	DU	114	2	7	9	8	4	12	5	5	10
26	TR 34748 Rados	135	DU	1,285	25	76	101	85	50	135	62	55	117
27	TR 35663 OFA	12	DU	114	2	7	9	8	4	12	5	5	10
28	TR 32835 Beazer Homes	274	DU	2,608	52	154	206	173	101	274	125	111	236
29	TR 30268 Pacific Communities	83	DU	790	16	47	63	52	31	83	38	34	72
30	TR 31618 Frontier Homes	56	DU	533	11	32	43	35	21	56	26	23	49
31	TR 31494 Winchester Associates	12	DU	114	2	7	9	8	4	12	5	5	10
32	TR 32715 GFR-Trinity	30	DU	286	6	17	23	19	11	30	14	12	26
33	TR 33256 Granite Homes	79	DU	752	15	44	59	50	29	79	36	32	68
34	TR 32711 Issac Genah	9	DU	86	2	5	7	6	3	9	4	4	8
35	TR 31789 GFR	24	DU	228	5	14	19	15	9	24	11	10	21
36	TR 35429 Ralph Liu	54	DU	514	10	30	40	34	20	54	25	22	47
37	TR 22180 MPLC Legacy 140 Partners, LP	543	DU	5,169	102	306	408	342	201	543	247	219	466
38	TR 36436 CV Communities	159	DU	1,514	30	90	120	100	59	159	72	64	136
39	TR 36401 Continental East Fund III, LLC	92	DU	876	17	52	69	58	34	92	42	37	79
40	TR 36598 Habitat for Humanity	8	DU	76	2	5	7	5	3	8	4	3	7
41	TR 36761 Right Solutions, LLC	8	DU	76	2	5	7	5	3	8	4	3	7
42	TR 31592 CV Communities	139	DU	1,323	26	78	104	88	51	139	63	56	119
43	TR 36708 Nova Homes	127	DU	1,209	24	72	96	80	47	127	58	51	109
44	TR 29920 MVR Properties, LLC	299	DU	2,846	56	168	224	188	111	299	136	121	257
45	TR 36882 Frontier Homes	40	DU	381	8	23	31	25	15	40	18	16	34
46	TR 36719 Kuo Ming Lee	34	DU	324	6	19	25	21	13	34	15	14	29

TABLE 6
SUMMARY OF CUMULATIVE PROJECTS (CONTINUED)

47	TR 29920 Pacific Communities	98	DU	933	18	55	73	62	36	98	45	40	85
Multi-Family Residential Development													
48	TR 31814 Jesse Huizar	60	DU	399	6	24	30	24	13	37	15	15	30
49	TR 32215 Winchester Associates "Scottish Village"	194	DU	1,290	20	79	99	78	42	120	49	49	98
50	TR 32756 Jimmy Lee	24	DU	160	2	10	12	10	5	15	6	6	12
51	TR 32917 Continental East Fund	227	DU	1,510	23	93	116	91	49	140	58	58	116
52	TR 33417 Jimmy Lee	60	DU	399	6	24	30	24	13	37	15	15	30
53	TR 33607 TL Group Corp.	52	DU	346	5	21	26	21	11	32	13	13	26
54	TR 33771 Jian Qiang Liu	12	DU	80	1	5	6	5	3	8	3	3	6
55	TR 34216 Creative Design Associates	39	DU	259	4	16	20	16	8	24	10	10	20
56	TR 34681 Perris Pacific Company	49	DU	326	5	20	25	20	11	31	12	12	24
57	TR 34988 Status Properties	271	DU	1,802	28	111	139	109	59	168	69	69	138
58	TR 35369 Tason Myers Property	12	DU	80	1	5	6	5	3	8	3	3	6
59	TR 35663 Jimmy Lee	12	DU	80	1	5	6	5	3	8	3	3	6
60	TR 35769 Michael Chen	16	DU	106	2	7	9	6	3	9	4	4	8
61	TR 34544 Cottonwood 939, LLC	84	DU	559	9	34	43	34	18	52	21	21	42
62	PA 09-0006 Jim Nydam	15	DU	100	2	6	8	6	3	9	4	4	8
63	PA 13-0006 Rancho Belago Developers, Inc.	141	DU	938	14	58	72	57	31	88	36	36	72
64	PA 14-0027 Tilak Chopra	40	DU	266	4	16	20	16	9	25	10	10	20
65	TR 35304 Jimmy Lee	12	DU	80	1	5	6	5	3	8	3	3	6
66	PA 14-0028 MV Bella Vista GP, LLC	220	DU	1,463	22	90	112	89	48	137	56	56	112
67	PA 14-0042 Latso SC Inc.	112	DU	745	11	46	57	45	24	69	29	29	58
68	TR 32142 GHA	66	DU	439	7	27	34	27	14	41	17	17	34
Medical/Office Development													
69	TownGate Square	170.000	KSF	1,875	233	32	265	43	210	253	44	51	95
70	Olivewood Plaza	22.758	KSF	251	31	4	35	6	28	34	6	7	13
71	Riverside County Office Building	52.000	KSF	574	71	10	81	13	64	77	13	16	29
72	Fresenius Medical Care	12.000	KSF	434	23	6	29	12	31	43	3	4	7
73	Riverside University Medical Center	34.749	KSF	1,255	66	17	83	35	89	124	9	11	20
74	Kaiser Permanente (Emergeny room Exp.)	8.500	KSF	307	16	4	20	9	22	31	2	3	5
Commercial Development													
75	Alessandro & Lasselle	140.000	KSF	5,978	83	51	134	249	270	519	36	42	78
76	Rancho Belago Plaza	14.000	KSF	598	8	5	13	25	27	52	4	4	8
77	South Moreno Valley Walmart [2]	-	-	9,625	218	170	388	411	423	834	543	543	1,086
81	St. Christopher Catholic Church Expansion[3]	3.200	KSF	-	-	-	-	-	-	-	56	58	114
Industrial/Job Development													
78	Centerpointe Business Park	1,734.030	KSF	11,843	1,165	257	1,422	310	1,165	1,475	161	117	278
79	Moreno Valley Industrial Area	3,509.496	KSF	23,970	2,358	519	2,877	628	2,358	2,986	326	236	562
80	SR-60 Business Park	3,079.928	KSF	21,036	2,070	456	2,526	551	2,070	2,621	286	207	493

Note: [1] Source: Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition
[2] Source: Moreno Valley Walmart Traffic Impact Analysis, Urban Crossroads, Inc. March 2015 (Revised).
[3] Source: St Christopher Catholic Church Master Plan Traffic Impact Study, Federhart & Associates, October 2012

NOT TO SCALE

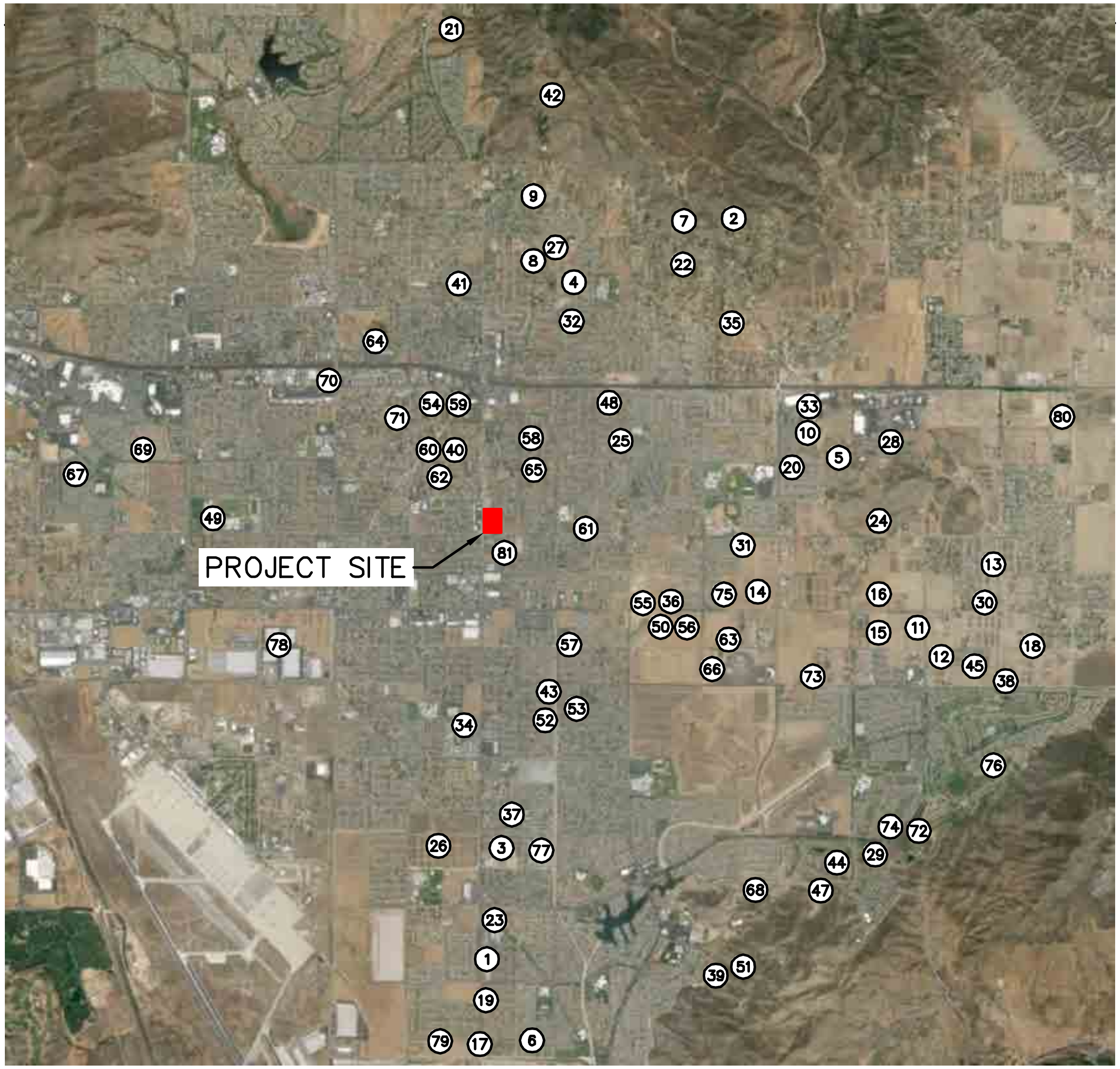


FIGURE 14
CUMULATIVE PROJECT LOCATIONS

Kimley»Horn

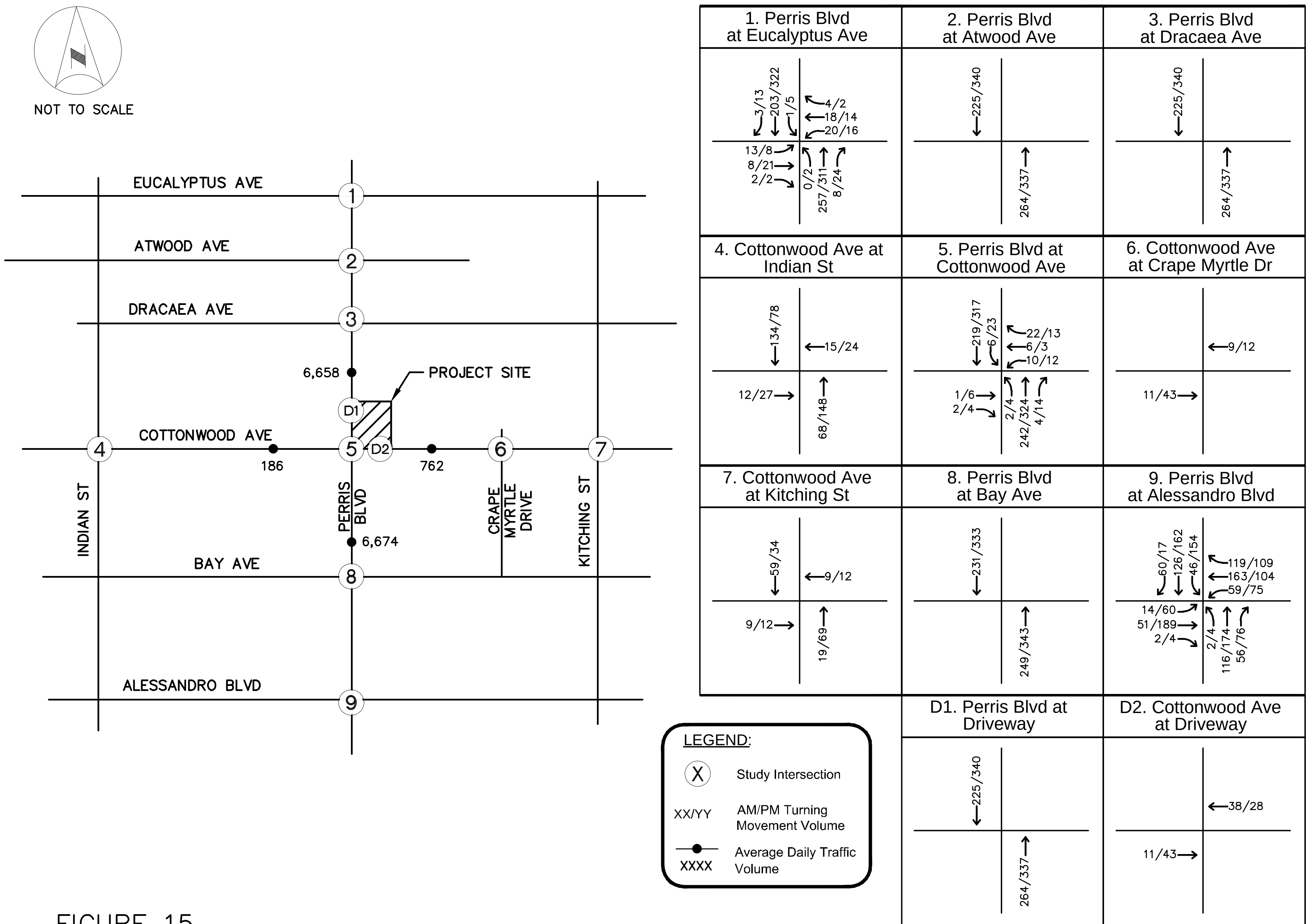


FIGURE 15
CUMULATIVE PROJECT
TRAFFIC VOLUMES – WEEKDAY

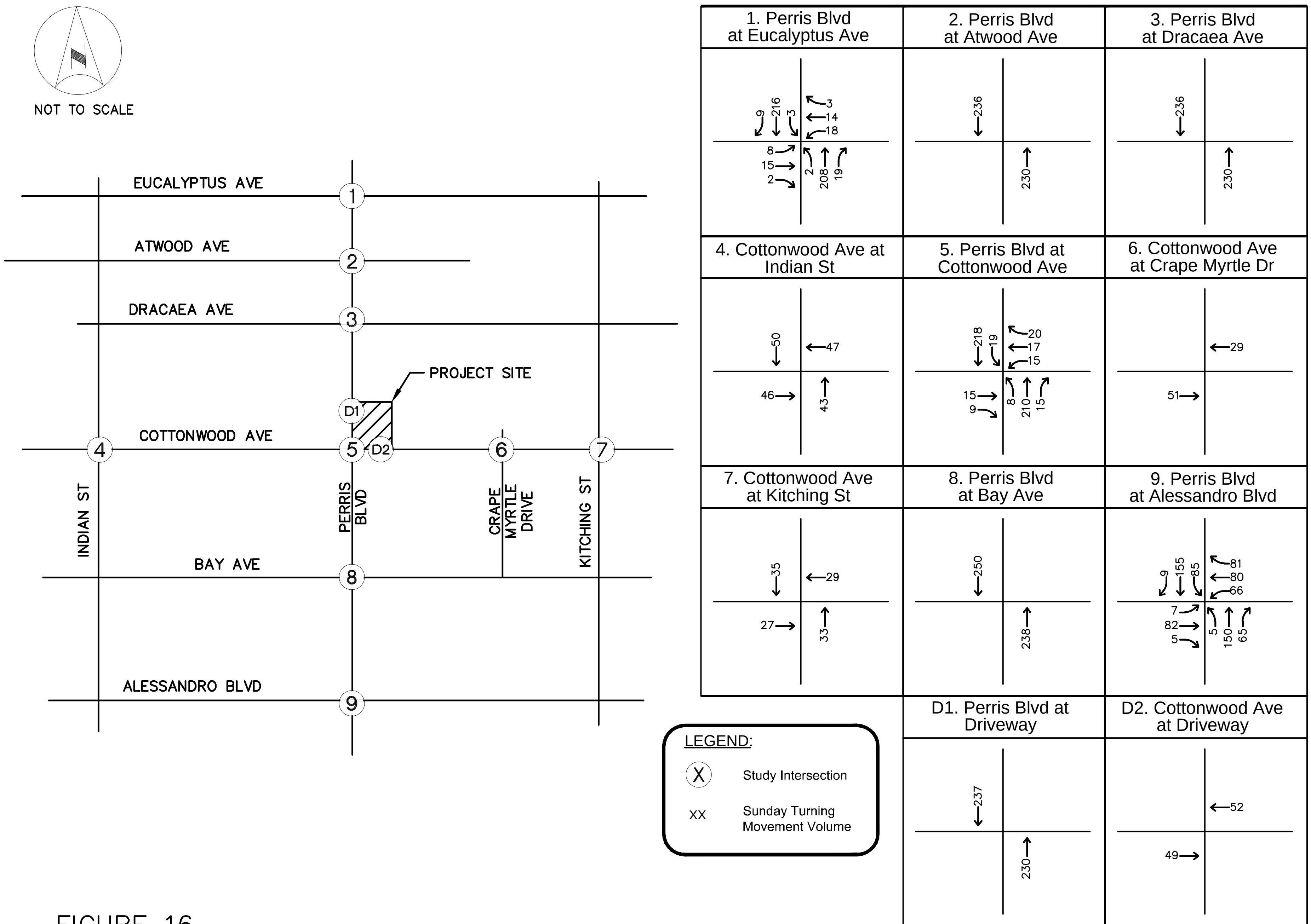


FIGURE 16
CUMULATIVE PROJECT
TRAFFIC VOLUMES – SUNDAY

Kimley»Horn

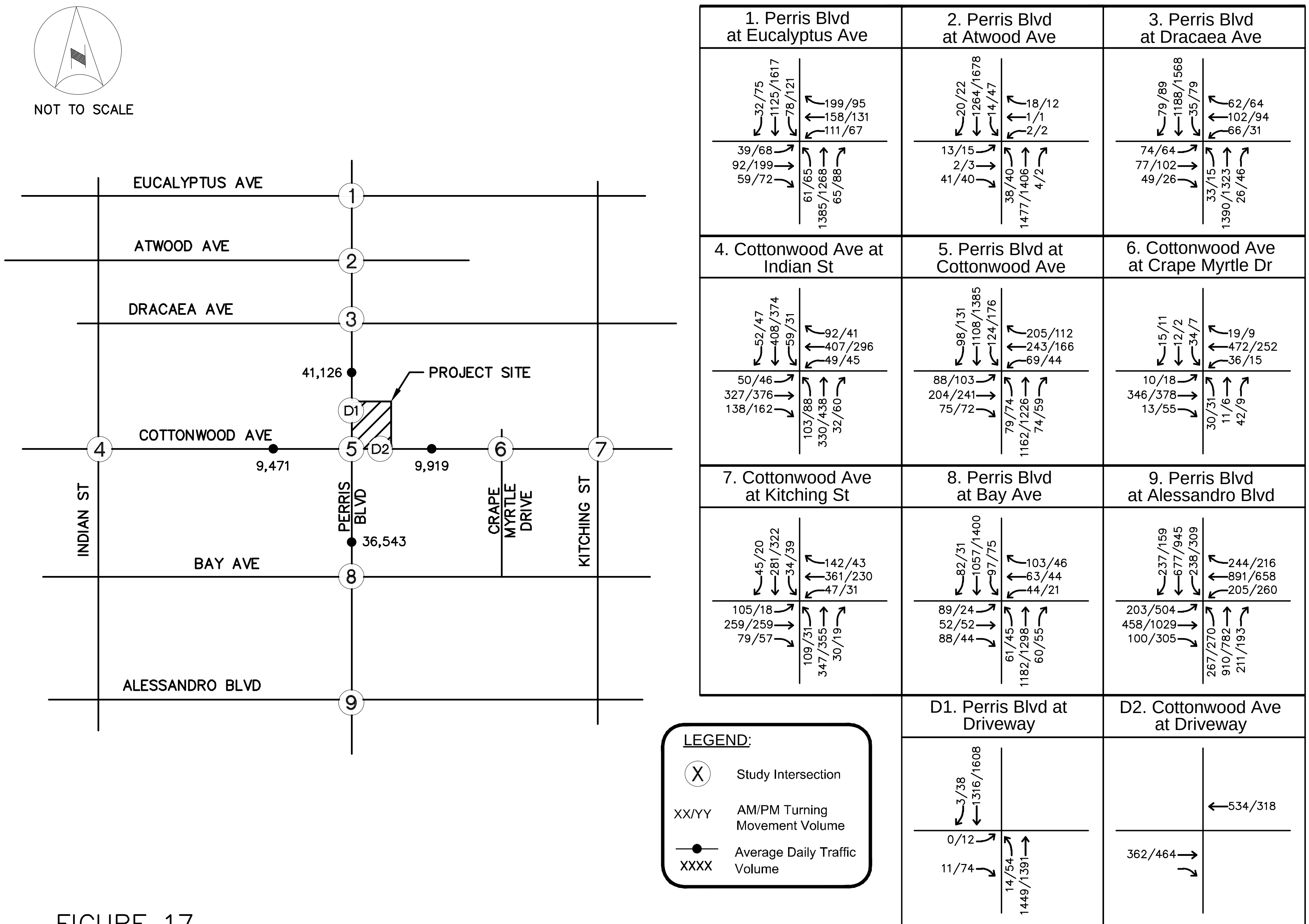


FIGURE 17
CUMULATIVE WITHOUT PROJECT
TRAFFIC VOLUMES – WEEKDAY

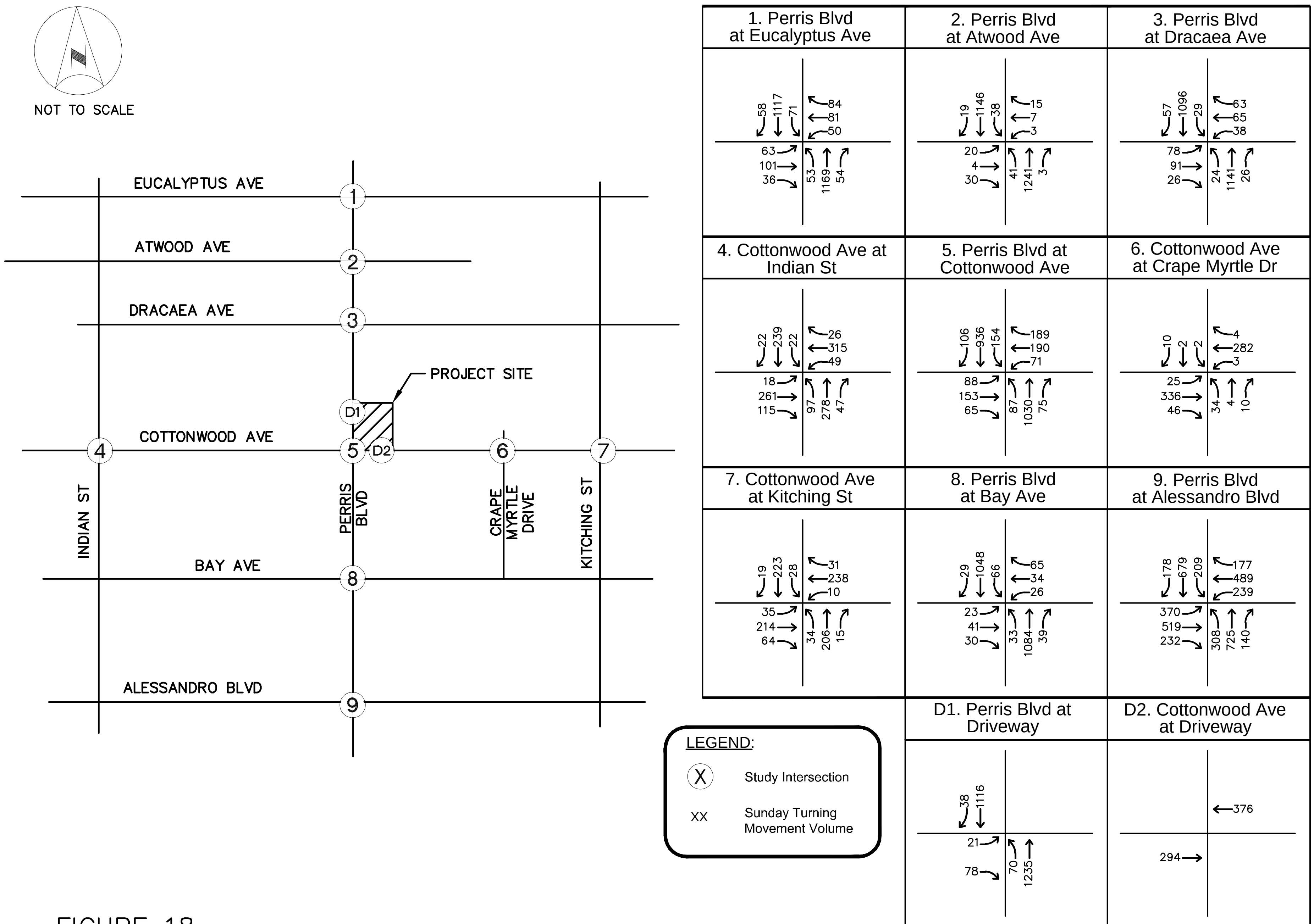


FIGURE 18
CUMULATIVE WITHOUT PROJECT
TRAFFIC VOLUMES – SUNDAY

TABLE 7 SUMMARY OF INTERSECTION OPERATION CUMULATIVE WITHOUT PROJECT					
Int. #	Intersection	Intersection Control	Peak Hour	Cumulative Conditions	
				Delay (sec/veh)	LOS
1	Perris Boulevard at Eucalyptus Avenue	Signal	AM	27.7	C
			PM	28.9	C
			SUN	18.7	B
2	Perris Boulevard at Atwood Avenue	Unsignalized	AM	46.4	E
			PM	79.7	F
			SUN	65.2	F
3	Perris Boulevard at Dracaea Avenue	Signal	AM	44.3	D
			PM	26.0	C
			SUN	27.8	C
4	Cottonwood Avenue at Indian Street	Signal	AM	27.9	C
			PM	22.4	C
			SUN	19.9	B
5	Cottonwood Avenue at Perris Boulevard	Signal	AM	35.6	D
			PM	30.9	C
			SUN	34.4	C
6	Cottonwood Avenue at Crape Myrtle Drive	Unsignalized	AM	65.3	F
			PM	18.1	C
			SUN	34.2	D
7	Cottonwood Avenue at Kitching Street	Signal	AM	30.4	C
			PM	16.6	B
			SUN	17.8	B
8	Perris Boulevard at Bay Ave	Signal	AM	27.9	C
			PM	18.2	B
			SUN	17.2	B
9	Perris Boulevard at Alessandro Boulevard	Signal	AM	50.7	D
			PM	64.8	E
			SUN	38.3	D
D1	Perris Boulevard Driveway	Unsignalized	AM	16.2	C
			PM	626.3	F
			SUN	397.9	F
D2	Cottonwood Avenue Driveway	Unsignalized	Church Driveway Removed		
Unsignalized Intersection Delay is reported for the worst approach					

- Perris Boulevard at Atwood Avenue (AM LOS E, PM LOS F, Sunday LOS F)
- Cottonwood Avenue at Crape Myrtle Drive (AM LOS F)
- Perris Boulevard at Alessandro Boulevard (PM LOS E)
- Perris Boulevard Driveway (PM LOS F, Sunday LOS F)

With the exception of the Perris Boulevard at Alessandro Boulevard intersection, the deficient intersections are unsignalized. Due to the heavy traffic volumes anticipated in Opening Year 2020 as a result of growth and nearby projects, vehicles turning from minor streets onto Perris Boulevard are forecasted to encounter significant delays, regardless of their low volumes.

Roadway Segment Analysis – Cumulative (Opening Year 2020) Without Project

The study roadway segments were analyzed in accordance with the analysis methodology described earlier in this report. The Cumulative Without Project analysis results and Level of Service for the study roadway segments are presented in Table 8. As shown in this table, both roadway segments along Perris Boulevard are anticipated to operate deficiently in the Cumulative Without Project scenario.

Cumulative (Opening Year 2020) With Project

Project-related traffic was added to the Cumulative Without Project traffic volumes. Cumulative With Project traffic volumes are shown on Figure 19 and Figure 20.

Intersection Analysis – Cumulative (Opening Year 2020) With Project

Cumulative With Project peak hour intersection operations are summarized in Table 9. With the addition of project traffic, the following intersections would operate at an unacceptable Level of Service:

- Perris Boulevard at Atwood Avenue (AM LOS E, PM LOS F, Sunday LOS F)
- Cottonwood Avenue at Crape Myrtle Drive (AM LOS F, Sunday LOS E)
- Perris Boulevard at Alessandro Boulevard (PM LOS E)
- Perris Boulevard Driveway (AM LOS F, PM LOS F, Sunday LOS F)

These intersections are forecasted to operate deficiently before the addition of project traffic. The deficiency at the Perris Boulevard Driveway in the Without Project scenario is caused by egress vehicles from the shopping center to the west. In the With Project scenario, the westbound approach at the driveway also operates deficiently. At the remaining intersections, the project alone does not trigger the deficiencies, but rather contributes to a less-than-significant cumulative impact.

Roadway Segment Analysis – Cumulative (Opening Year 2020) With Project

The study roadway segments were analyzed in accordance with the analysis methodology described earlier in this report. Cumulative With Project analysis results and Level of Service for the study roadway segments are presented in Table 10. As shown in this table, both roadway segments along Perris Boulevard would continue to operate deficiently with the addition of project traffic.

TABLE 8
SUMMARY OF ROADWAY OPERATIONS
CUMULATIVE (OPENING YEAR 2020) WITHOUT PROJECT

Roadway Segment	Roadway Classification	Roadway Capacity	ADT	V/C	LOS
Perris Boulevard: Eucalyptus Avenue to Cottonwood Avenue	4-Lane Divided Arterial	37,500	41,126	1.10	F
Perris Boulevard: Cottonwood Avenue to Alessandro Boulevard	4-Lane Divided Arterial	37,500	36,543	0.97	E
Cottonwood Avenue: Indian Street to Perris Boulevard	2-Lane Arterial	12,500	9,471	0.76	B
Cottonwood Avenue: Perris Boulevard to Kitching Street	2-Lane Arterial	12,500	9,919	0.79	B

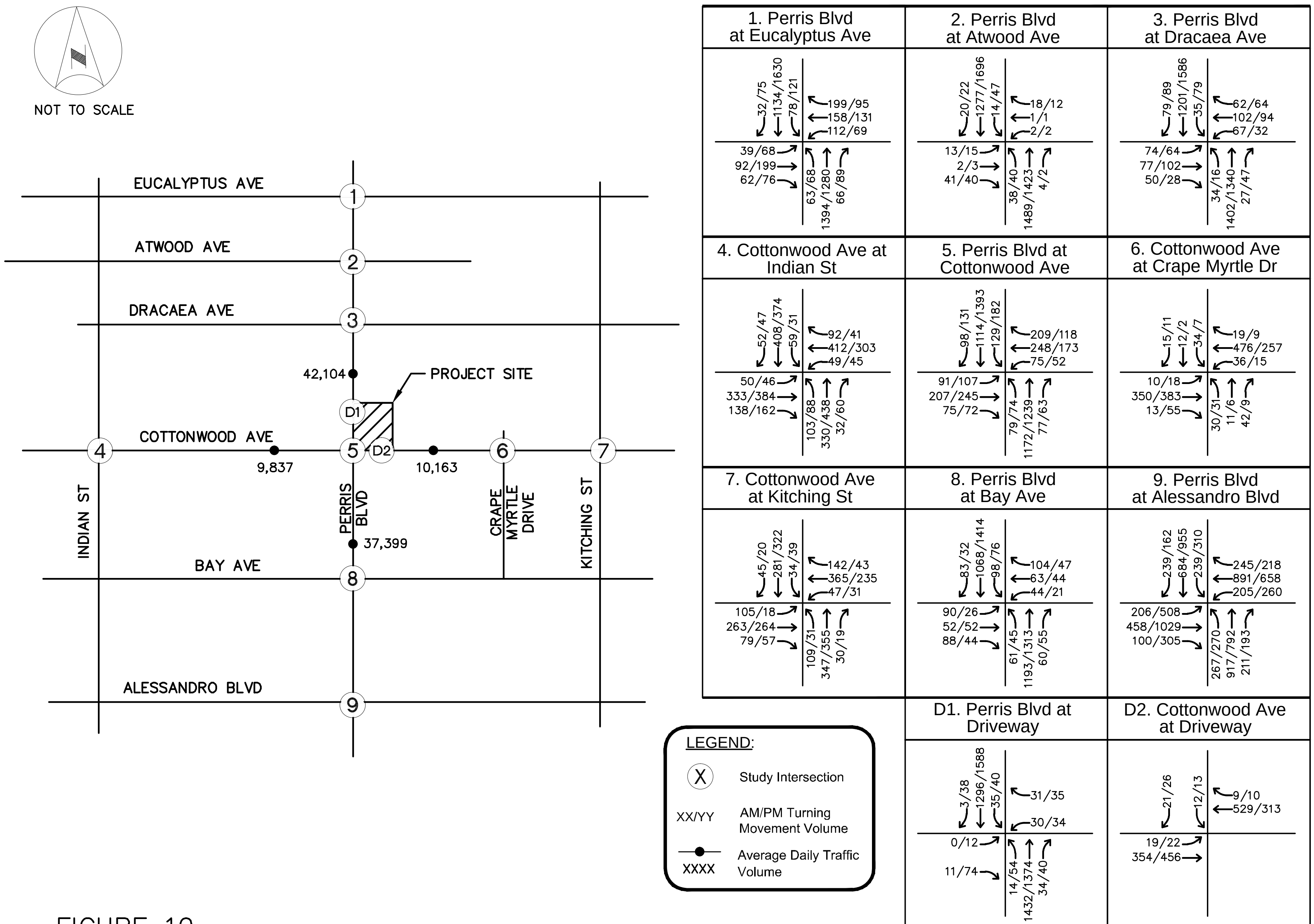
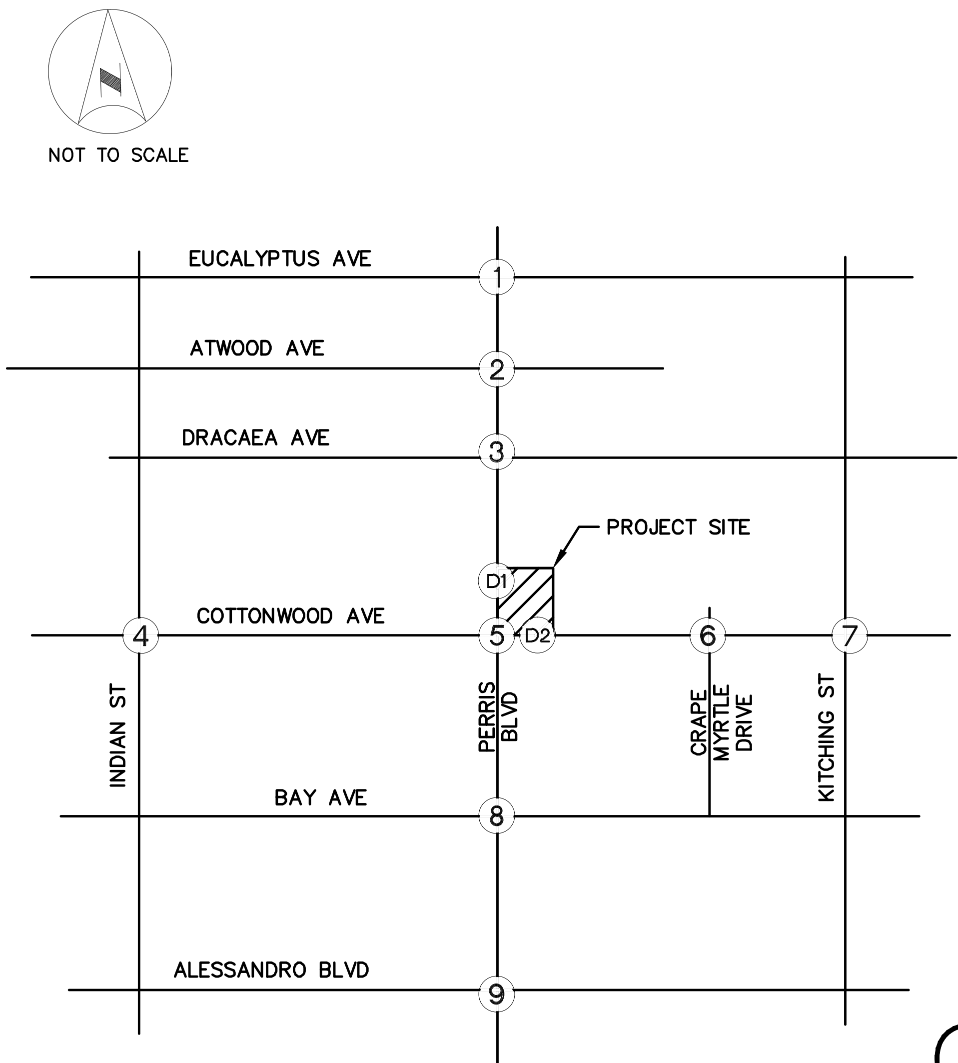
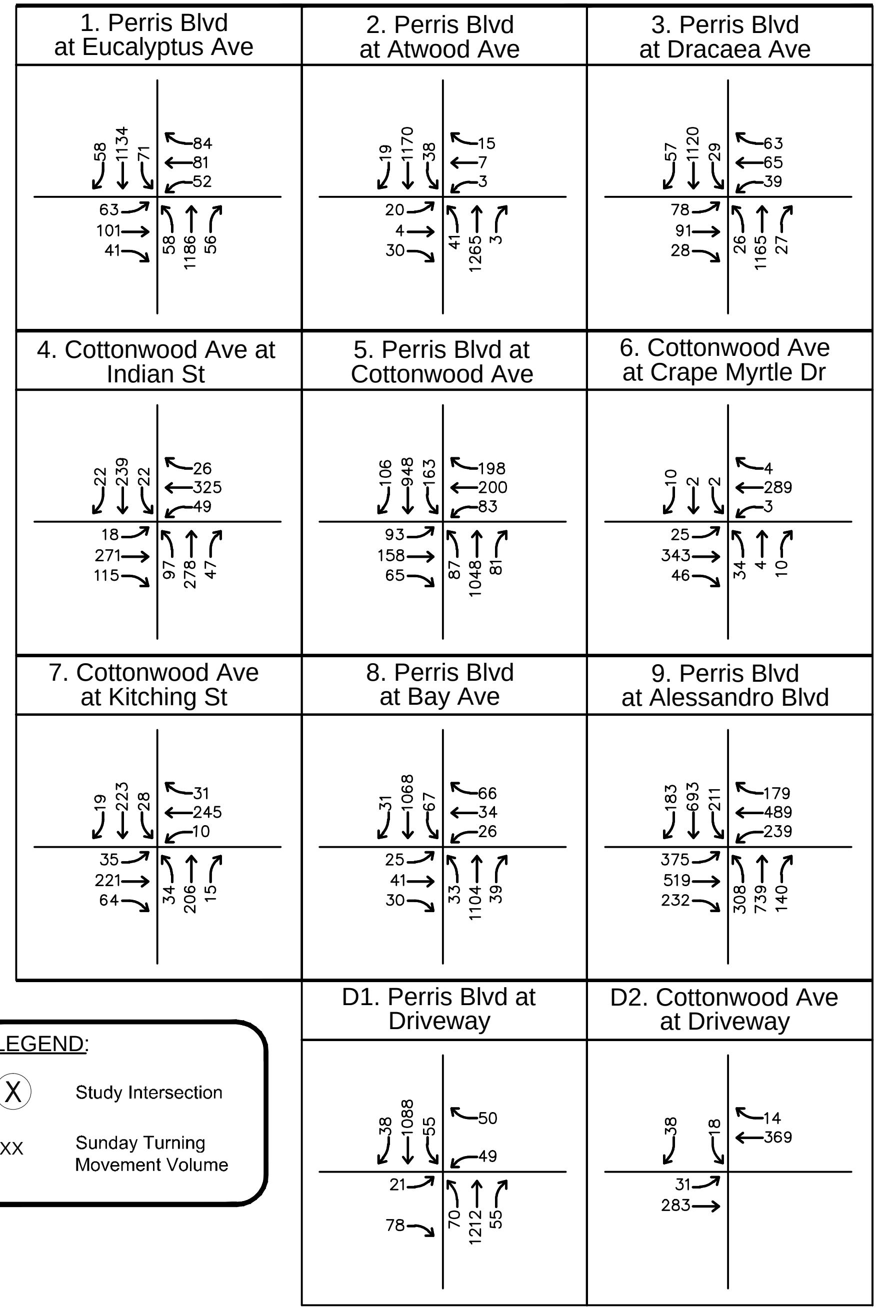


FIGURE 19
CUMULATIVE WITH PROJECT
TRAFFIC VOLUMES – WEEKDAY

Kimley»Horn





LEGEND:

(X) Study Intersection

XX Sunday Turning Movement Volume

FIGURE 20
CUMULATIVE WITH PROJECT
TRAFFIC VOLUMES – SUNDAY

Attachment: Exhibit A to Resolution 2018-XX - Mitigated Negative Declaration (3224 : A GENERAL PLAN

TABLE 9
SUMMARY OF INTERSECTION OPERATIONS
CUMULATIVE WITH PROJECT

Int. #	Intersection	Peak Hour	Cumulative Without Project		Cumulative With Project		Project Impact
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
1	Perris Boulevard at Eucalyptus Avenue	AM	27.7	C	28.0	C	0.3
		PM	28.9	C	29.5	C	0.6
		SUN	18.7	B	19.1	B	0.4
2	Perris Boulevard at Atwood Avenue	AM	46.4	E	47.8	E	1.4
		PM	79.7	F	85.3	F	5.6
		SUN	65.2	F	71.1	F	5.9
3	Perris Boulevard at Dracaea Avenue	AM	44.3	D	45.1	D	0.8
		PM	26.0	C	26.6	C	0.6
		SUN	27.8	C	28.7	C	0.9
4	Cottonwood Avenue at Indian Street	AM	27.9	C	28.4	C	0.5
		PM	22.4	C	22.8	C	0.4
		SUN	19.9	B	20.2	C	0.3
5	Cottonwood Avenue at Perris Boulevard	AM	35.6	D	37.0	D	1.4
		PM	30.9	C	32.7	C	1.8
		SUN	34.4	C	37.7	D	3.3
6	Cottonwood Avenue at Crape Myrtle Drive	AM	65.3	F	68.0	F	2.7
		PM	18.1	C	18.4	C	0.3
		SUN	34.2	D	35.9	E	1.7
7	Cottonwood Avenue at Kitching Street	AM	30.4	C	29.0	C	-1.4
		PM	16.6	B	16.7	B	0.1
		SUN	17.8	B	18.1	B	0.3
8	Perris Boulevard at Bay Ave	AM	27.9	C	28.6	C	0.7
		PM	18.2	B	18.7	B	0.5
		SUN	17.2	B	17.5	B	0.3
9	Perris Boulevard at Alessandro Boulevard	AM	50.7	D	51.1	D	0.4
		PM	64.8	E	65.4	E	0.6
		SUN	38.3	D	38.8	D	0.5
D1	Perris Boulevard Driveway	AM	16.2	C	1275.4	F	1259.2
		PM	626.3	F	2499.9	F	1873.6
		SUN	397.9	F	2664.0	F	2266.1
D2	Cottonwood Avenue Driveway	AM	Church Driveway Removed		18.4	C	
		PM			13.7	B	
		SUN			14.3	B	

TABLE 10
SUMMARY OF ROADWAY OPERATIONS
CUMULATIVE (OPENING YEAR 2020) WITH PROJECT

Roadway Segment	Roadway Classification	Roadway Capacity	ADT	V/C	LOS
Perris Boulevard: Eucalyptus Avenue to Cottonwood Avenue	4-Lane Divided Arterial	37,500	42,104	1.12	F
Perris Boulevard: Cottonwood Avenue to Alessandro Boulevard	4-Lane Divided Arterial	37,500	37,399	0.99	E
Cottonwood Avenue: Indian Street to Perris Boulevard	2-Lane Arterial	12,500	9,837	0.79	A
Cottonwood Avenue: Perris Boulevard to Kitching Street	2-Lane Arterial	12,500	10,163	0.81	C

PROJECT ACCESS ALTERNATIVES

If the current roadway geometry is maintained on Perris Boulevard and Cottonwood Avenue along the project frontage, then each driveway can accommodate full ingress and egress movements. However, the potential for turn restrictions at each driveway has not yet been determined at this time. To assess the potential construction of a raised median along Perris Boulevard and/or Cottonwood Avenue, and the resulting turn restrictions caused by these medians, several project access alternatives were analyzed for the Cumulative (Opening Year 2020) With Project scenario. These alternatives are described below:

- Alternative 1 – Left-in/left-out movements restricted at both driveways. This alternative analyzes the potential for a raised median on both Perris Boulevard and Cottonwood Avenue. Only right-in/right-out movements would be allowed at both driveways.

- Alternative 2 – Left-out movements restricted at Perris Driveway and left-in/left-out movements are restricted at the Cottonwood Avenue driveway. This alternative allows southbound left turns into the driveway along Perris Boulevard, but assumes that only right-in/right-out movements are allowed along Cottonwood Avenue.

- Alternative 3 – Left-in/left-out movements are restricted at the Perris Driveway. Full movements allowed at the Cottonwood Driveway to maintain existing conditions.

Each alternative is anticipated to cause variations in project trip assignment at immediately adjacent intersections. These variations result from additional U-turn movements required to maintain access to the site from each direction, as well as from differences in pass-by trip assignment. The resulting project trip assignments for each alternative are shown on Figures 21-26. A breakdown of pass-by trips can be found in *Appendix C*.

Intersection Analysis – Cumulative (Opening Year 2020) With Project

Cumulative With Project peak hour intersection operations for Alternative 1, Alternative 2, and Alternative 3 are summarized in Table 11. The project, regardless of access alternative, is not anticipated to contribute sufficient traffic to the transportation system to cause an additional deficiency compared to the Cumulative Without Project scenario. However, the intersections operating deficiently in the Cumulative Without Project scenario would continue to do so.

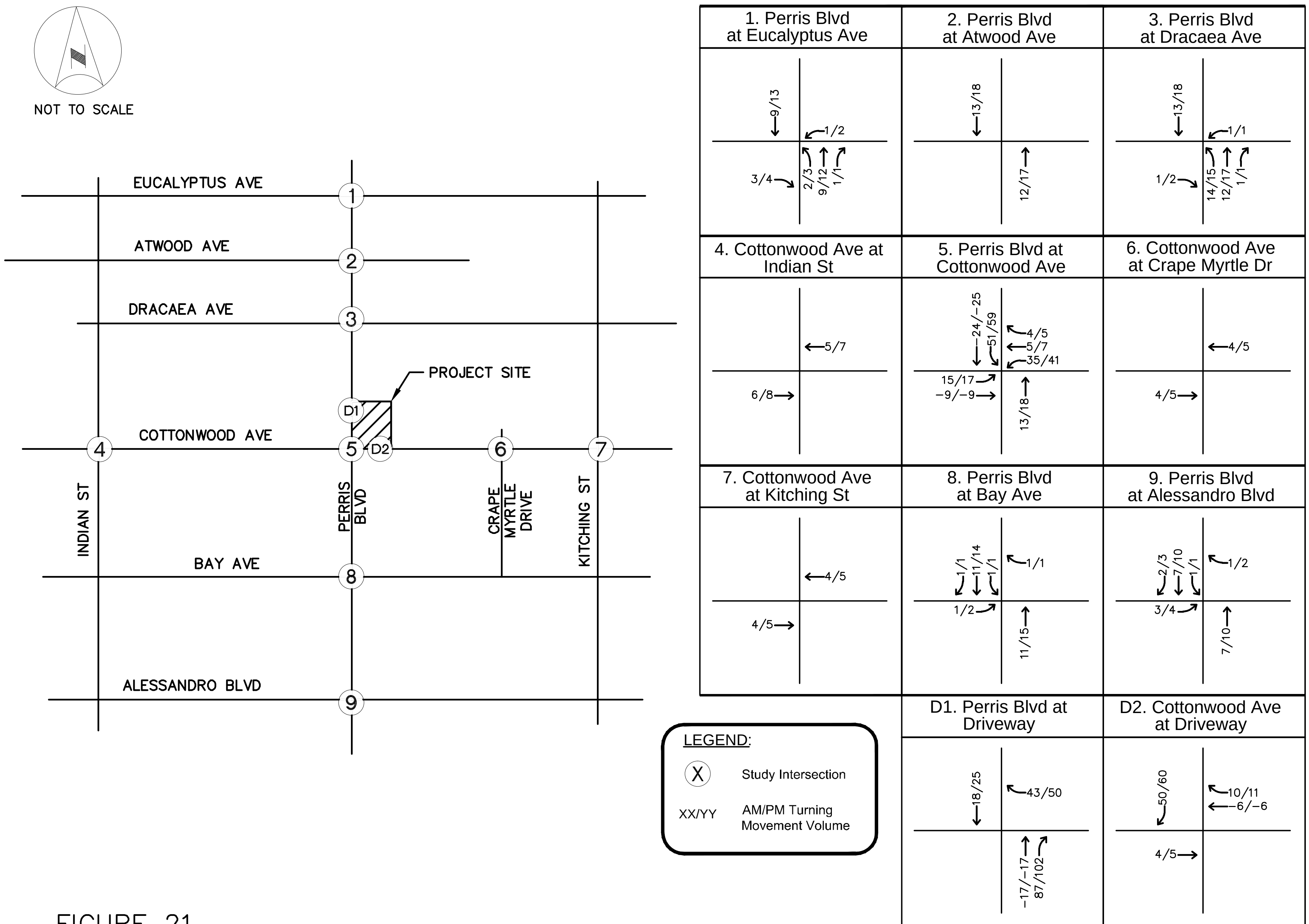


FIGURE 21
PROJECT TRAFFIC – ALTERNATIVE 1 WEEKDAY TRIPS

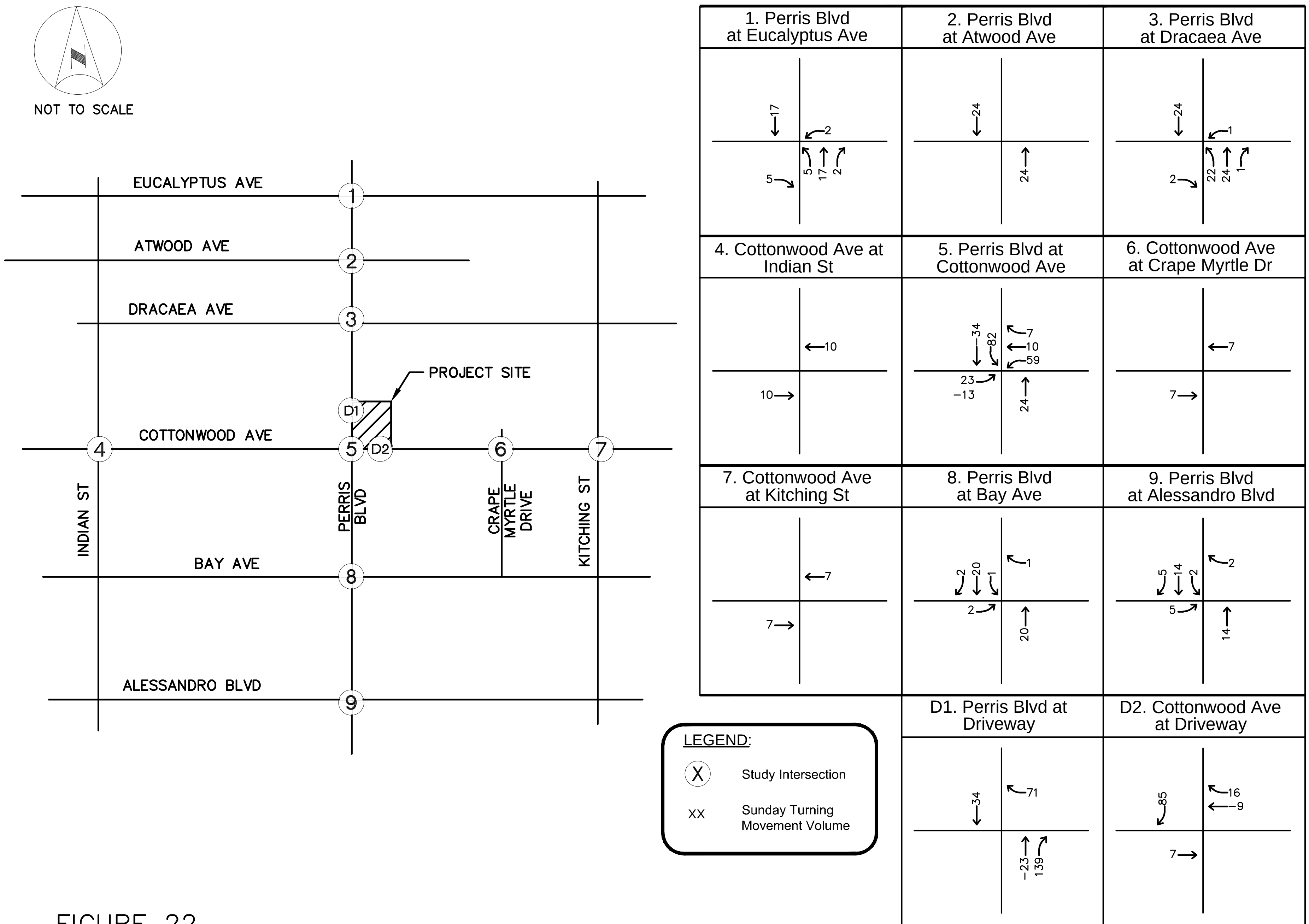


FIGURE 22
PROJECT TRAFFIC – ALTERNATIVE 1 SUNDAY TRIPS

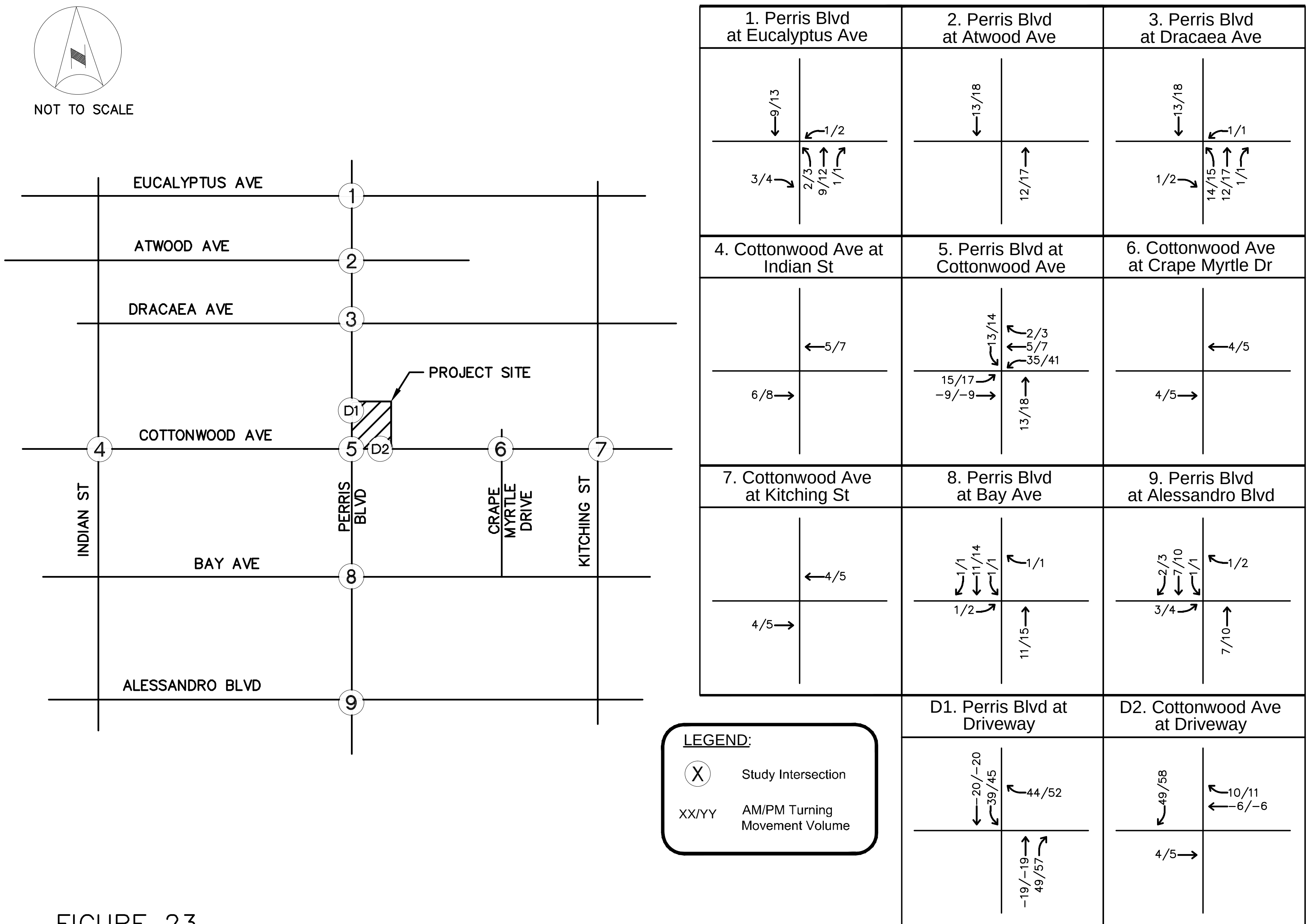


FIGURE 23
PROJECT TRAFFIC – ALTERNATIVE 2 WEEKDAY TRIPS

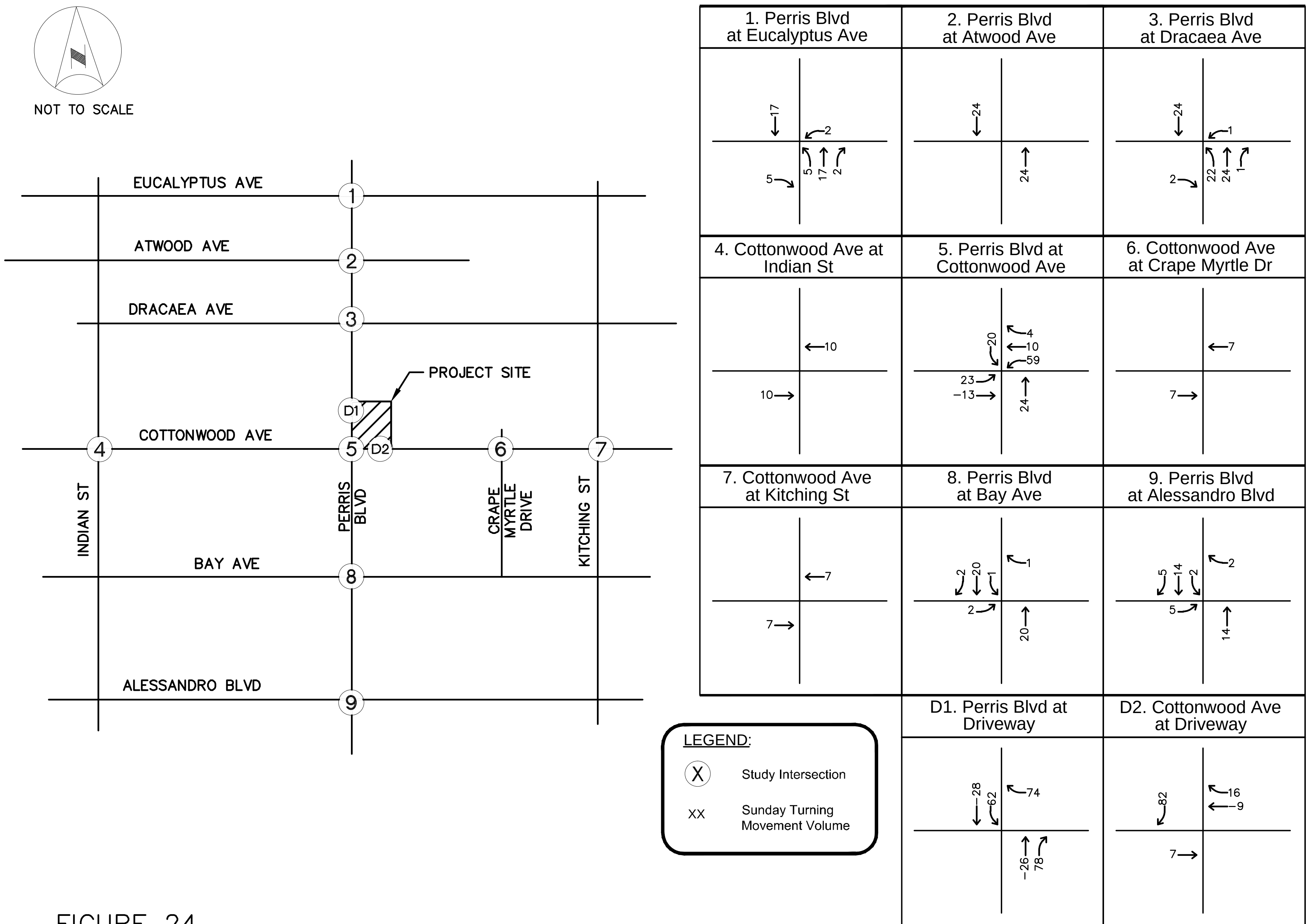


FIGURE 24
PROJECT TRAFFIC – ALTERNATIVE 2 SUNDAY TRIPS

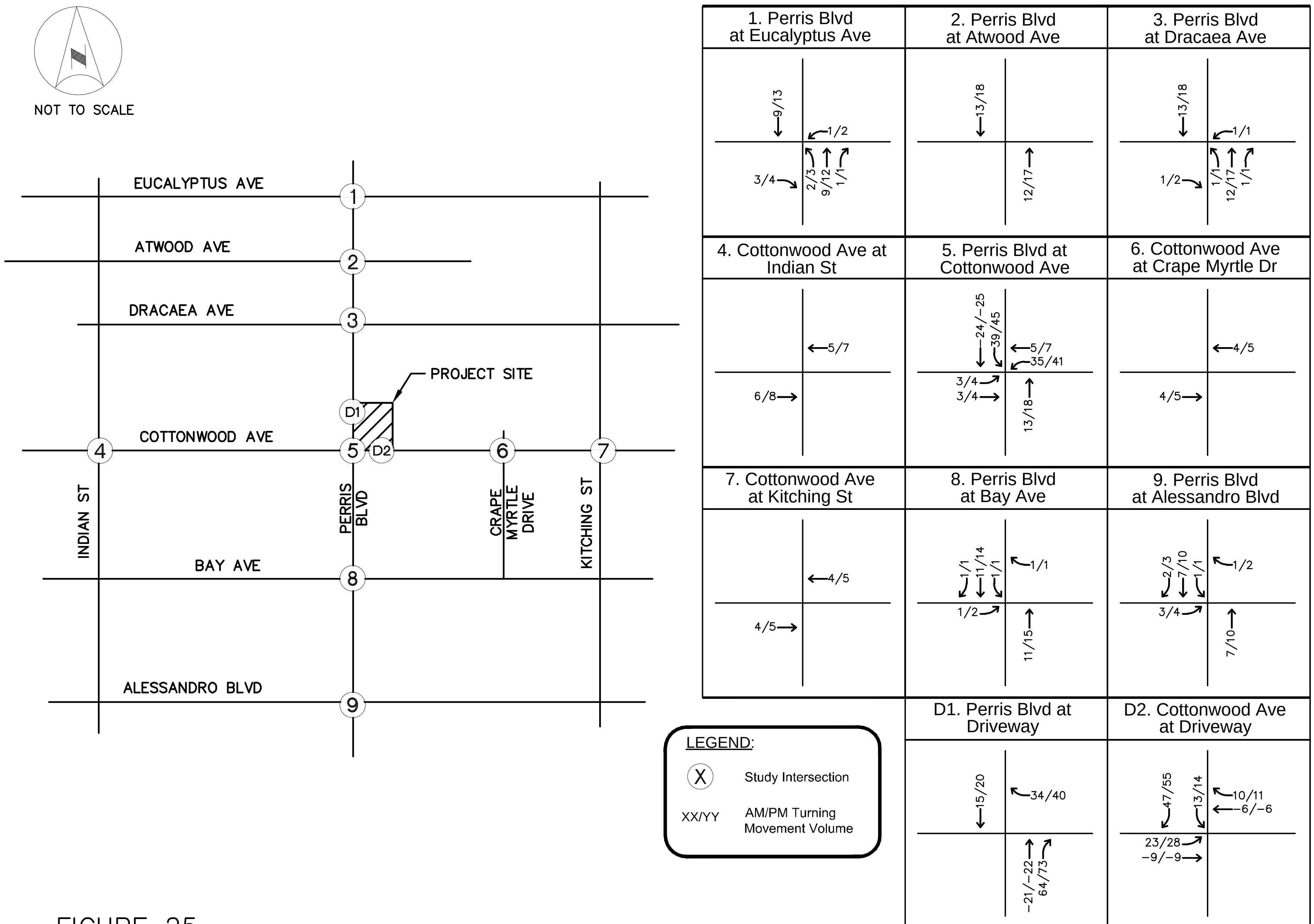


FIGURE 25
PROJECT TRAFFIC — ALTERNATIVE 3 WEEKDAY TRIPS

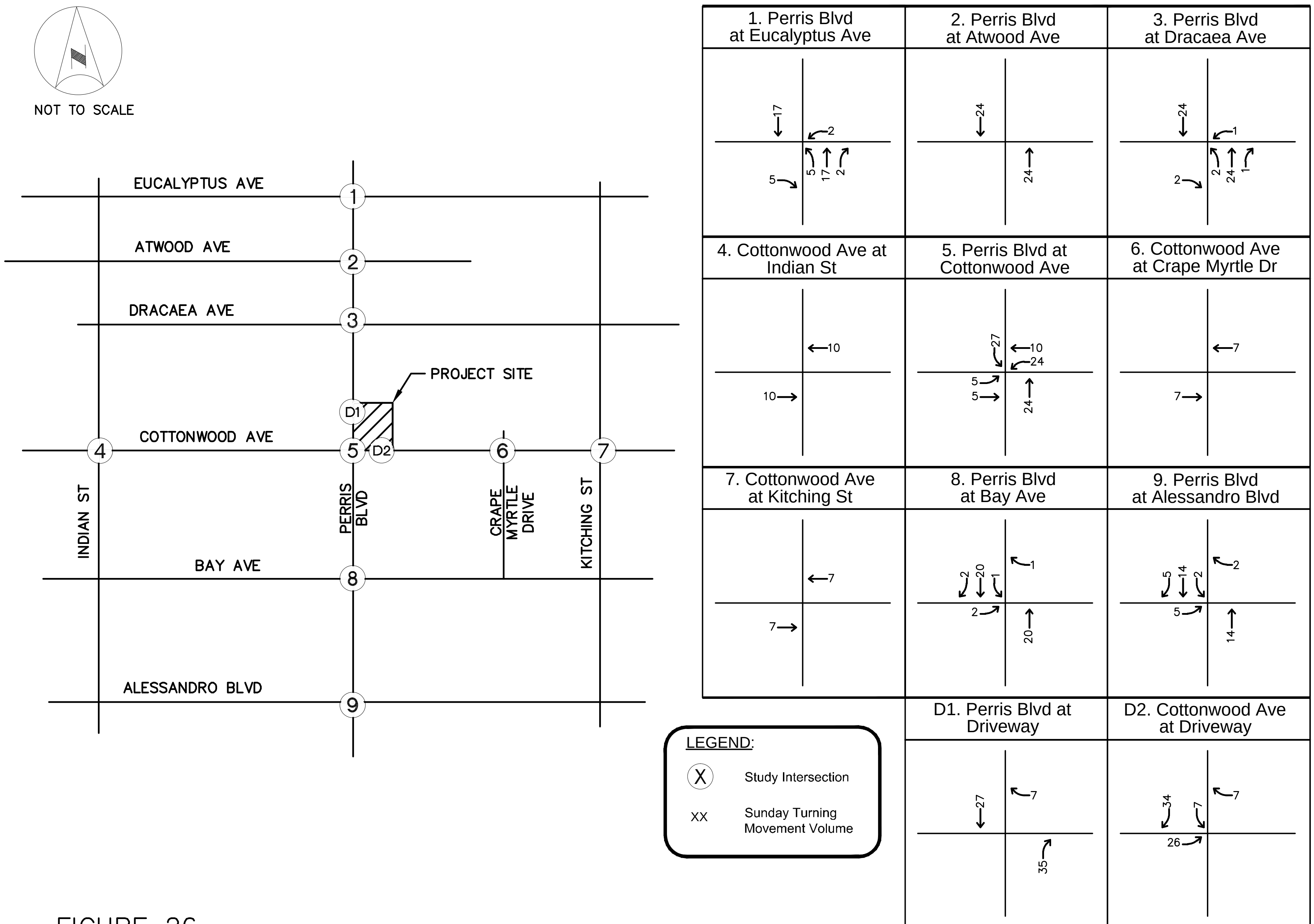


FIGURE 26
PROJECT TRAFFIC – ALTERNATIVE 3 SUNDAY TRIPS

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TABLE 11
SUMMARY OF INTERSECTION OPERATIONS
CUMULATIVE WITHOUT AND WITH PROJECT ALTERNATIVES

Int. #	Intersection	Peak Hour	Cumulative Without Project		Cumulative With Alternative 1		Project Impact	Cumulative With Alternative 2		Project Impact	Cumulative With Alternative 3		Project Impact
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	Delay (sec/veh)	LOS	Delay (sec/veh)	Delay (sec/veh)	LOS	Delay (sec/veh)
1	Perris Boulevard at Eucalyptus Avenue	AM	27.7	C	28.0	C	0.3	28.0	C	0.3	28.0	C	0.3
		PM	28.9	C	29.5	C	0.6	29.5	C	0.6	29.5	C	0.6
		SUN	18.7	B	19.1	B	0.4	19.1	B	0.4	19.1	B	0.4
2	Perris Boulevard at Atwood Avenue	AM	46.4	E	47.8	E	1.4	47.8	E	1.4	47.8	E	1.4
		PM	79.7	F	85.3	F	5.6	85.3	F	5.6	85.3	F	5.6
		SUN	65.2	F	71.1	F	5.9	71.1	F	5.9	71.1	F	5.9
3	Perris Boulevard at Dracaea Avenue	AM	44.3	D	46.1	D	1.8	46.1	D	1.8	45.1	D	0.8
		PM	26.0	C	27.9	C	1.9	27.9	C	1.9	26.6	C	0.6
		SUN	27.8	C	29.2	C	1.4	29.2	C	1.4	28.7	C	0.9
4	Cottonwood Avenue at Indian Street	AM	27.9	C	28.4	C	0.5	28.4	C	0.5	28.4	C	0.5
		PM	22.4	C	22.8	C	0.4	22.8	C	0.4	22.8	C	0.4
		SUN	19.9	B	20.2	C	0.3	20.2	C	0.3	20.2	C	0.3
5	Cottonwood Avenue at Perris Boulevard	AM	35.6	D	42.6	D	7.0	39.3	D	3.7	40.9	D	5.3
		PM	30.9	C	35.6	D	4.7	33.4	C	2.5	34.9	C	4.0
		SUN	34.4	C	45.4	D	11.0	40.2	D	5.8	40.5	D	6.1
6	Cottonwood Avenue at Crape Myrtle Drive	AM	65.3	F	68.0	F	2.7	68.0	F	2.7	68.0	F	2.7
		PM	18.1	C	18.4	C	0.3	18.4	C	0.3	18.4	C	0.3
		SUN	34.2	D	35.9	E	1.7	35.9	E	1.7	35.9	E	1.7
7	Cottonwood Avenue at Kitching Street	AM	30.4	C	29.0	C	-1.4	29.0	C	-1.4	29.0	C	-1.4
		PM	16.6	B	16.7	B	0.1	16.7	B	0.1	16.7	B	0.1
		SUN	17.8	B	18.1	B	0.3	18.1	B	0.3	18.1	B	0.3
8	Perris Boulevard at Bay Ave	AM	27.9	C	28.6	C	0.7	28.6	C	0.7	28.6	C	0.7
		PM	18.2	B	18.7	B	0.5	18.7	B	0.5	18.7	B	0.5
		SUN	17.2	B	17.5	B	0.3	17.5	B	0.3	17.5	B	0.3
9	Perris Boulevard at Alessandro Boulevard	AM	50.7	D	51.1	D	0.4	51.1	D	0.4	51.1	D	0.4
		PM	64.8	E	65.6	E	0.8	65.4	E	0.6	65.4	E	0.6
		SUN	38.3	D	38.8	D	0.5	38.8	D	0.5	38.8	D	0.5
D1	Perris Boulevard Driveway	AM	16.2	C	20.2	C	4.0	19.6	C	3.4	19.2	C	3.0
		PM	626.3	F	17.6	C	-608.7	17.1	C	-609.2	16.8	C	-609.5
		SUN	397.9	F	20.0	C	-377.9	19.1	C	-378.8	18.4	C	-379.5
D2	Cottonwood Avenue Driveway	AM	Church Driveway Removed		14.1	B		14.1	B		17.8	C	
		PM			11.1	B		11.1	B		13.2	B	
		SUN			12.1	B		12.1	B		14.5	B	

Queuing Analysis

The queues associated with ingress and egress movements at the Perris Boulevard driveway and at the Cottonwood Driveway were evaluated via the Simtraffic Software for the Cumulative With Project scenario. This evaluation was conducted for all driveway variations.

The Perris Boulevard driveway has been designed to align with an existing shopping center driveway on the west side of Perris Boulevard. Therefore, any potential conflicts between northbound left-turn and southbound left-turn traffic would not exist. Vehicles would be able to store in an existing two-way-left-turn lane. For other driveway alternatives, a potential raised median along Perris Boulevard and/or Cottonwood Avenue would impose limitations on queueing.

Cottonwood Avenue at the Cottonwood Avenue driveway currently has one through lane (24') striped in the eastbound direction. It is assumed that vehicles entering the project site in this direction will share the lane with through traffic, although the wide lane width provides adequate clearance for through-movement vehicles to maneuver around a turning vehicle. Furthermore, the St. Christopher Church driveway on the south side of the intersection is anticipated to be removed in future conditions as part of the church's plans for expansion.

Results of the analysis are presented in the following tables. Analysis worksheets can be found in *Appendix C*.

Summary of Queueing Analysis
Existing Geometry

	Queue Length (ft)		
	AM Peak	PM Peak	Sunday
Perris Boulevard Driveway (Southbound Left)			
Average Queue	25	20	27
95th Percentile Queue	95	54	65
Perris Boulevard Driveway (Northbound Right)			
Average Queue	1	1	8
95th Percentile Queue	7	11	78
Cottonwood Avenue Driveway (Eastbound Left)			
Average Queue	7	14	30
95th Percentile Queue	30	74	98
Cottonwood Avenue Driveway (Westbound Right)			
Average Queue	39	1	7
95th Percentile Queue	179	11	38

Summary of Queueing Analysis Alternative **1**			
	Queue Length (ft)		
	AM Peak	PM Peak	Sunday
Perris Boulevard Driveway (Southbound Left)			
Average Queue	N/A	N/A	N/A
95th Percentile Queue	N/A	N/A	N/A
Perris Boulevard Driveway (Northbound Right)			
Average Queue	3	7	Nom.
95th Percentile Queue	26	62	Nom.
Cottonwood Avenue Driveway (Eastbound Left)			
Average Queue	N/A	N/A	N/A
95th Percentile Queue	N/A	N/A	N/A
Cottonwood Avenue Driveway (Westbound Right)			
Average Queue	93	37	57
95th Percentile Queue	347	65	237

Summary of Queueing Analysis Alternative **2**			
	Queue Length (ft)		
	AM Peak	PM Peak	Sunday
Perris Boulevard Driveway (Southbound Left)			
Average Queue	17	32	36
95th Percentile Queue	44	97	74
Perris Boulevard Driveway (Northbound Right)			
Average Queue	Nom.	Nom.	1
95th Percentile Queue	Nom.	Nom.	10
Cottonwood Avenue Driveway (Eastbound Left)			
Average Queue	N/A	N/A	N/A
95th Percentile Queue	N/A	N/A	N/A
Cottonwood Avenue Driveway (Westbound Right)			
Average Queue	73	14	32
95th Percentile Queue	274	65	149

Summary of Queueing Analysis Alternative **3**			
	Queue Length (ft)		
	AM Peak	PM Peak	Sunday
Perris Boulevard Driveway (Southbound Left)			
Average Queue	N/A	N/A	N/A
95th Percentile Queue	N/A	N/A	N/A
Perris Boulevard Driveway (Northbound Right)			
Average Queue	Nom.	Nom.	Nom.
95th Percentile Queue	Nom.	Nom.	Nom.
Cottonwood Avenue Driveway (Eastbound Left)			
Average Queue	26	23	29
95th Percentile Queue	103	80	102
Cottonwood Avenue Driveway (Westbound Right)			
Average Queue	22	4	21
95th Percentile Queue	128	34	113

The results indicate that the forecasted queues can be accommodated by the existing roadway geometry within the vicinity of the site.

SITE CIRCULATION RECOMMENDATIONS

Based on the proposed site plan, shown previously on Figure 2, the project features two driveways. Currently, potential access restrictions into and out of these driveways have not yet been determined. The following discussion assesses the circulation of trucks to and from the site.

Fuel trucks and supply trucks could originate from the SR-60 Freeway and travel on Perris Boulevard, which is a designated truck route, or originate from the I-215 Freeway and travel along Alessandro Boulevard, which is a designated truck route. In both instances, Perris Boulevard would be used from either the northbound or southbound direction to approach the proposed site.

To accommodate truck access into the site from the north on Perris Boulevard, there are two options with the existing roadway geometry – a truck can make a southbound left turn into the Perris Boulevard Driveway or turn onto Cottonwood Avenue before making an eastbound left turn into the Cottonwood Avenue Driveway. However, construction of a raised median along either street will restrict truck access. These turn restrictions have been studied as Alternatives 1-3. The truck access capabilities for all study scenarios are shown on Figure 27-30.

In the Alternative 1 scenario, right-in/right-out movements would be restricted on Perris Boulevard and on Cottonwood Avenue. As a result, a truck approaching from the north can only access the site via a U-Turn at the intersection. However, a U-Turn movement for a truck would not be feasible based on the turning radius. A truck from the south would be able to access the Perris Driveway in the northbound direction via a right-in movement, but would need to return to its origin by using the Cottonwood Avenue driveway to exit.

In the Alternative 2 scenario, southbound left-turn movements along Perris Boulevard would be allowed. However, eastbound left-turn movements into the site from Cottonwood Avenue would be prohibited. This access scenario would allow trucks from north on Perris Boulevard to access the site uninhibited, and return to Perris Boulevard via a westbound right-turn movement out of the driveway. Also, trucks from the south would be able to access the site via the Perris Boulevard Driveway. However, egress trucks destined for the south would need to use the Cottonwood Avenue driveway to return to Perris Boulevard.

In Alternative 3, the Perris Boulevard is restricted to right-in/right-out movements and full movements are allowed at the Cottonwood Driveway. Like Alternative 1, a truck would not be able to access the Perris Boulevard driveway from the north. A truck from the north would be able to turn onto Cottonwood Avenue and make an eastbound left-turn into the site. A vehicle from the south can access the Perris Boulevard driveway, but would need to return to Perris Boulevard using the Cottonwood Avenue driveway.

A summary table highlighting truck access capabilities at each driveway is shown on the following page.

	Truck Access Capability			
	Existing	Alternative 1	Alternative 2	Alternative 3
Perris Driveway	Yes – Trucks from North and South	Yes – Only Trucks from South	Yes – Trucks from North and South	Yes – Only Trucks from South
Cottonwood Driveway	Yes – Trucks from North and South	No	No	Yes – Trucks from North and South

Per Level of Service analysis, the cause of deficiency at the Perris Driveway is the westbound left-turn movement. The delay at the westbound left-turn, regardless of low volume, is reported as the worst-case movement. The Cottonwood Avenue driveway, however, does not experience any excessive delays, either inbound or outbound. The delay at the Perris Driveway can be reduced by restricting left-turn movements out of the driveway during the peak hours.

From a queueing perspective, none of the alternatives experience significant queues that would cause spillback or conflicts. There is adequate room for queueing that does not inhibit other accesses from adjacent properties. Furthermore, the Church site on the south side of Cottonwood Avenue will remove its driveway as part of its envisioned expansion. As a result, conflicts between ingress/egress vehicles at the church and at the proposed project site will be inconsequential.

From an access perspective, a southbound left-turn into the site from Perris Boulevard is needed to accommodate fuel trucks from the north. Prohibiting the southbound left would require trucks to turn onto Cottonwood Avenue and use the Cottonwood Avenue driveway, given that left turns are allowed at that driveway. With a median along Perris Boulevard, a southbound truck would be forced to make a U-Turn, which is a movement that is not feasible due to physical constraints.

Based on the results of the traffic analyses and review of the truck turning templates, a recommendation can be made regarding turn restrictions at each driveway. The presence of a raised median would prevent left-turn movements exiting the site onto Perris Boulevard, which is beneficial to peak hour operations. However, a raised median with an opening would allow preserve the southbound left-turn into the site. Nevertheless, trucks would be unable to make the southbound left-turn into the site due to geometric constraints. A truck would need to turn from Perris Boulevard onto Cottonwood Avenue before entering via the Cottonwood Driveway. Therefore, an eastbound left-turn movement must be maintained along Cottonwood Avenue to maintain truck access from the north.

The driveway on Perris Boulevard is consistent with Section 9.11.080 of the Moreno Valley Municipal Code for design parameters. The distance from the driveway to the intersection of Perris Boulevard and Cottonwood Avenue exceeds 350' when measured from the centerline of Cottonwood. The driveway is located at the far northern portion of the site, and aligns with the existing driveway on the west side of Perris Boulevard. The driveway on Cottonwood Avenue has been placed as far from the intersection as possible and is within 250 feet of the intersection, per Section 9.11.080.

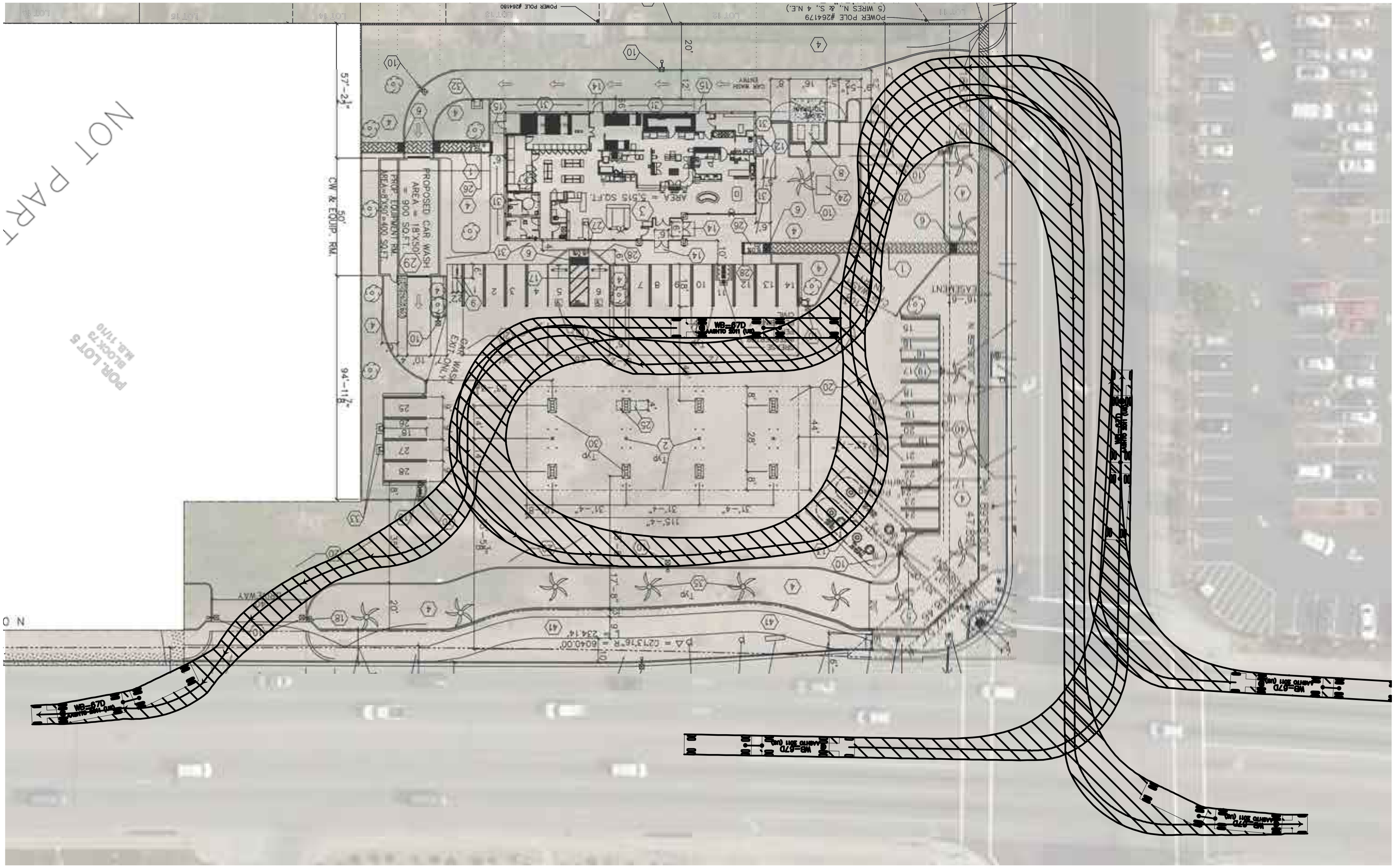
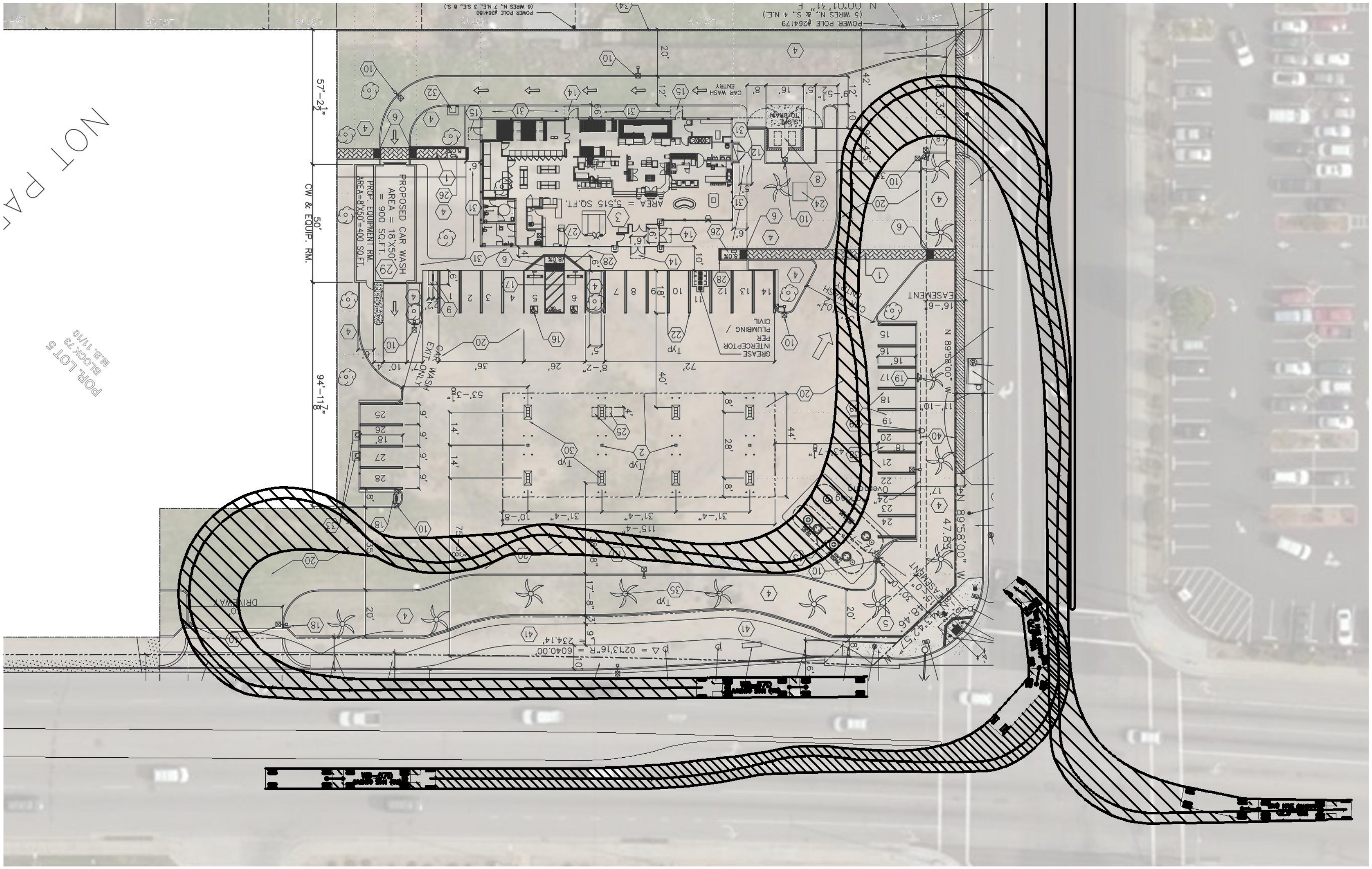


FIGURE 27
PROPOSED TRUCK TURNING TEMPLATE



NOT TO SCALE

FIGURE 28
PROPOSED TRUCK TURNING TEMPLATE –
ALTERNATIVE 1

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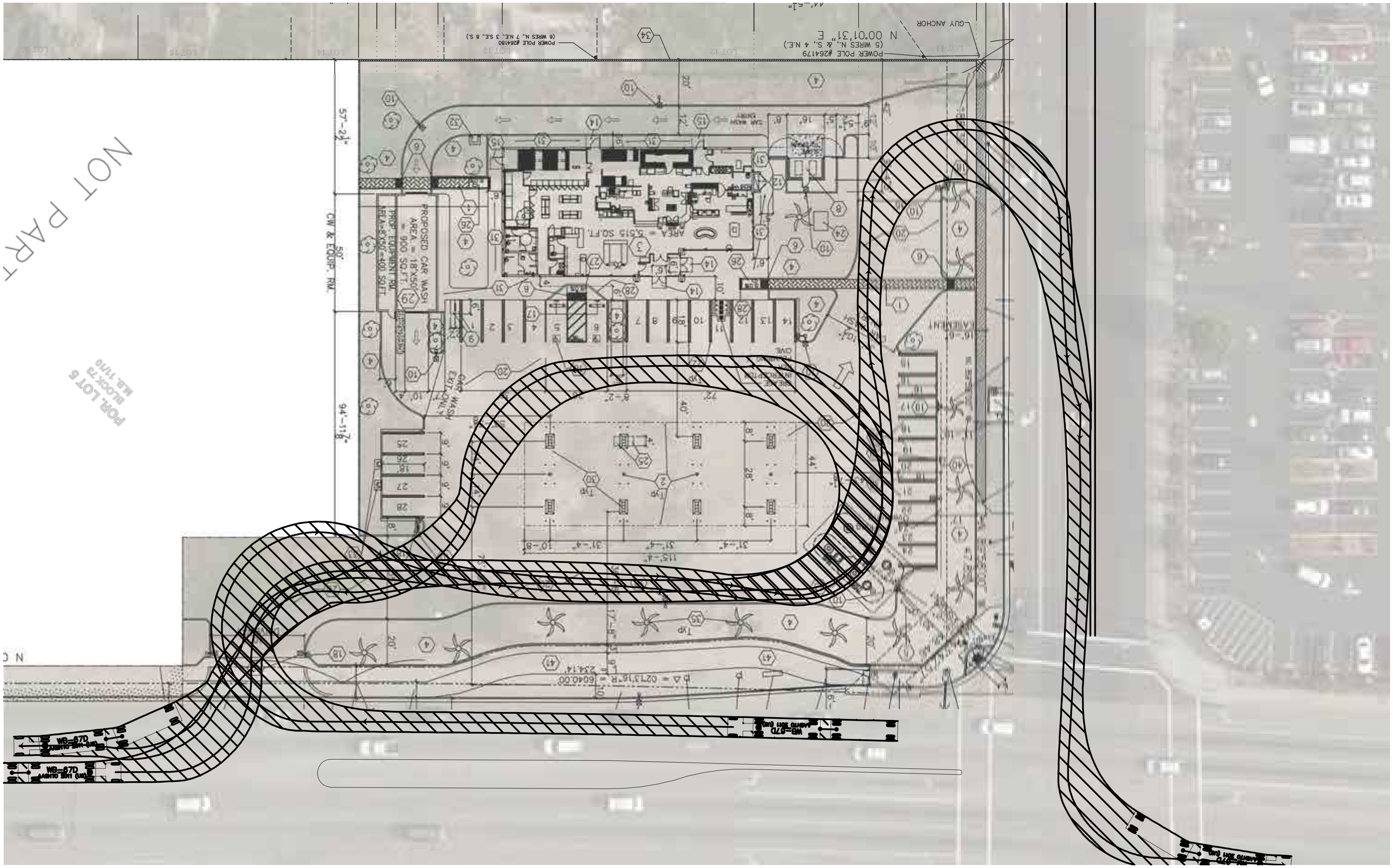


FIGURE 29
PROPOSED TRUCK TURNING TEMPLATE – ALTERNATIVE 2

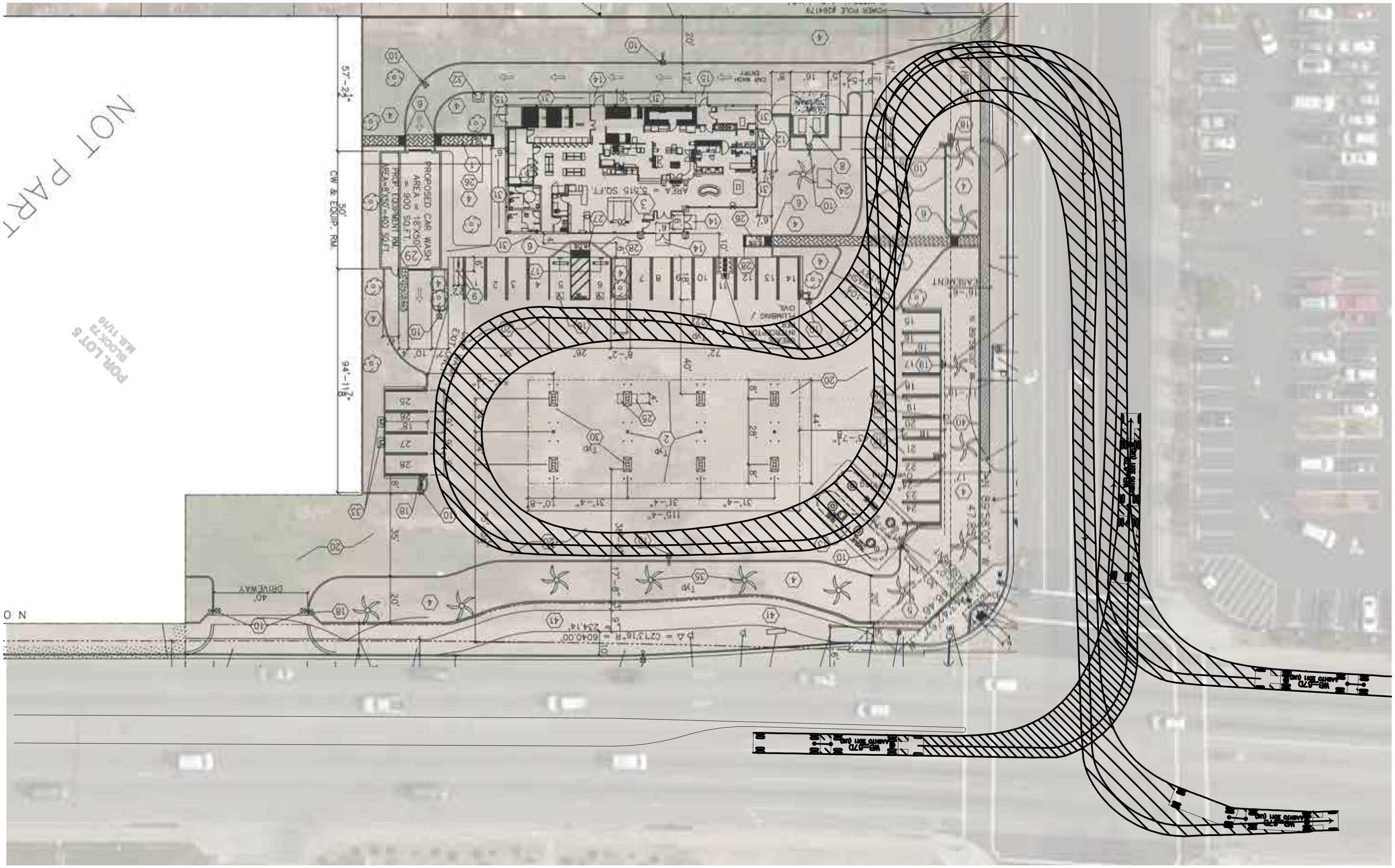


FIGURE 30
PROPOSED TRUCK TURNING TEMPLATE —
ALTERNATIVE 3

NOT TO SCALE

TRAFFIC SIGNAL WARRANTS

Traffic signal warrants, based on the California Manual on Uniform Traffic Control Devices (MUTCD), are used to determine whether or not traffic volumes on minor streets are great enough to warrant the installation of a traffic signal at an unsignalized intersection. There are two unsignalized intersections, excluding the project driveways, within the study area:

1. Perris Boulevard at Atwood Avenue
2. Cottonwood Avenue at Crape Myrtle Drive

Traffic signal warrants for the project driveways along Perris Boulevard and Cottonwood Avenue were not conducted due to the close proximity to the existing traffic signal at Perris Boulevard and Cottonwood Avenue.

The intersection of Cottonwood Avenue and Crape Myrtle Drive operates deficiently in Existing Conditions, and would continue to do so in all subsequent analysis scenarios. The intersection of Perris Boulevard and Atwood Avenue would operate deficiently in the Cumulative Without Project scenario, and would continue to do so with the addition of project traffic. The results of the traffic signal warrants indicate that minor street volumes are too low to warrant installation of a traffic signal at either intersection. Traffic signal warrant worksheets can be found in *Appendix E*.

NON-MOTORIZED SITE ACCESS

Pedestrian and bicycle counts were conducted at the intersection of Perris Boulevard and Cottonwood Avenue in September, 2015. Count sheets can be found in Appendix B. The counts indicate that low volume of pedestrian and bicycle traffic travels through the intersection on a weekday and weekend basis. The maximum number of bikes observed during any peak hour was four along Perris Boulevard. Furthermore, a maximum of thirteen pedestrians were observed along any one approach during the Sunday peak hour. Because the gas station and car wash components of the proposed project occupy a large part of the site, a heavy traffic volume from pedestrians and from bicycles is not likely. The project's donut shop component may attract pedestrians from the St. Christopher's Church at the southeast corner of Perris Boulevard and Cottonwood Avenue.

Currently, a Class II bike lane is striped along Cottonwood Avenue to the east and west of the project frontage. However, a Class II bike lane is not present in the immediate frontage. The bike lane runs along a parking lane.

The Riverside Transit Agency provides transit lines that run along the project frontage:

<u>Riverside Transit Agency Route 18</u> is a bus route that operates along Cottonwood Avenue within the project vicinity. Route 18 operates seven days a week and provides transportation services between Sunnymead Ranch and Moreno Valley College.

<u>Riverside Transit Agency Route 19</u> is a bus route that currently operates along Perris Boulevard within the project vicinity. Route 19 operates seven days a week and provides transportation between the Moreno Valley Mall and the Perris Station Transit Center to the south of the project site.

A far-side bus stop for Route 19 is located on the east side of Perris Boulevard, along the project frontage.

PROJECT IMPROVEMENTS AND MITIGATION

Based on the Cumulative With Project scenarios, four intersections were shown to operate deficiently, as well as both roadway segments along Perris Boulevard. The deficient intersections include:

- Perris Boulevard at Atwood Avenue
- Cottonwood Avenue at Crape Myrtle Drive
- Perris Boulevard at Alessandro Boulevard
- Perris Boulevard Driveway

While these intersections are deficient, the project only contributes to their existing deficiencies. The project would contribute to any improvement not included in an existing fee program on a fair-share basis. The following mitigation measures are recommended:

- Perris Boulevard at Atwood Avenue - The deficiency is a result of a small number of vehicles turning left into heavy peak hour traffic along Perris Boulevard. The intersection does not warrant a traffic signal. No mitigation measure is recommended.
- Cottonwood Avenue at Crape Myrtle Drive - The deficiency is a result of a small number of vehicles exiting a residential tract. The intersection does not warrant a traffic signal. No mitigation measure is recommended.
- Perris Boulevard at Alessandro Boulevard – Construct an additional southbound left-turn lane and an additional northbound left-turn lane.
- Perris Boulevard Driveway – The delay is a result of vehicles exiting the site. Since any queueing is restricted to the project site and delays are experienced onsite rather than on a public roadway, no offsite mitigation measures are recommended. Implementation of a westbound left-turn restriction would also reduce this delay.

On Perris Boulevard, the street is currently striped as a four-lane divided roadway with 86' of curb-to-curb width. Per the City of Moreno General Plan Roadway Network, Perris Boulevard will eventually be widened to add one lane in each direction, which will increase the daily roadway capacity to 56,300 vehicles. This lane addition can be accomplished in the 86' width, as shown on the roadway cross sections on Figure 5. With the construction of additional turn lanes at the Alessandro Boulevard intersection, the delay will improve to 48 seconds in the evening peak hour, which indicates a LOS D.

Moreover, intersections that operate at acceptable Level of Service, but experience individual lane groups (i.e. westbound left or southbound through movements) that become LOS E or LOS F with the addition of project traffic, are identified below:

- Perris Boulevard and Eucalyptus Avenue WBL (PM LOS E)
- Perris Boulevard and Alessandro Boulevard NBT (PM LOS E)
- Perris and Cottonwood Avenue EBL, WBL, WBR, SBL (Sunday LOS E-F)

Despite these intersections experiencing acceptable overall Level of Service, the following mitigation measures would help improve these lane groups:

- Perris Boulevard and Eucalyptus Avenue WBL – Perris Boulevard is planned to be widened one lane in each direction based on the General Plan Roadway Network, converting it from a 4-lane arterial to a 6-lane arterial. The additional roadway capacity would improve all lane group operations at the intersection.
- Perris Boulevard and Alessandro Boulevard NBT – Construct an additional southbound left-turn lane and an additional northbound left-turn lane. This measure was identified in the previous section, and is included in an existing fee program.
- Perris and Cottonwood Avenue EBL, WBL, WBR, SBL – Perris Boulevard is planned to be widened one lane in each direction based on the General Plan Roadway Network, converting it from a 4-lane arterial to a 6-lane arterial. The additional roadway capacity would improve all lane group operations at the intersection.

As previously mentioned, the project would contribute to improvements not found in an existing fee program on a fair-share basis.

FUNDING MECHANISMS

The Transportation Uniform Mitigation Fee (TUMF) Program, which has been developed by the Western Riverside Council of Governments (WRCOG), provides a means of funding improvement projects throughout the County of Riverside. The TUMF levies a fee on new developments in the region to contribute to the construction of transportation projects throughout the region. Fees are calculated on a per unit basis for residential uses, and on a per square foot basis for commercial and industrial uses. The fees and improvements are based on the TUMF Nexus Study, adopted by the WRCOG in 2009.

Additionally, the City of Moreno Valley's Development Impact Fee Program (DIF) provides a mechanism for funding the development of the City's General Plan circulation system. The DIF program, like the TUMF program, collects fees from developers for residential, commercial, and industrial development. A determination of the exact project contribution to the fee program should be made between the developer and the City of Moreno Valley.

FINDINGS AND CONCLUSIONS

This traffic impact study has been prepared to evaluate the project-related traffic impacts associated with the proposed development of a Yum Yum Donut Shop and Gas Station on a vacant parcel located at the northeast corner of Perris Boulevard and Cottonwood Avenue in the City of Moreno Valley, California. The project is estimated to generate 2,445 daily trips, 190 morning peak hour trips, 222 evening peak hour trips, and 312 Sunday peak trips. After applying pass-by reductions, the development is projected to generate a net of 2,445 daily trips, 72 morning peak hour trips, 98 evening peak hour trips, and 138 Sunday trips.

Existing traffic volumes for study intersections and roadways were collected in September 2015. Existing volumes, along with existing lane geometrics and traffic control at each intersection and roadway, were used in conducting peak hour Level of Service (LOS) analyses. Under Existing Conditions, all of the study intersections and roadways are currently operating at LOS D or better, with the exception of the unsignalized intersection of Cottonwood Avenue at Crape Myrtle Drive.

Project traffic was added to the Existing traffic volumes in the Existing With Project scenario. In the Existing With Project scenario, all study intersections would operate at acceptable Level of Service with the exception of the following:

- Cottonwood Avenue at Crape Myrtle Drive (AM LOS E)
- Perris Boulevard Driveway (AM LOS F, PM LOS F, Sunday LOS F)

The intersection of Cottonwood Avenue at Crape Myrtle Drive is unsignalized and is shown to already operate deficiently in Existing Conditions. The deficiency is caused by the low volumes turning from the minor street approach.

The Perris Boulevard Driveway is unsignalized. The LOS F delay would be experienced by vehicles making a westbound left-turn out of the driveway onto Perris Boulevard.
All study roadway segments would continue to operate at LOS D or better in the Existing With Project scenario.

Traffic from cumulative projects and an ambient growth of 2% per year over 5 years was added to Existing volumes to determine traffic conditions for the Cumulative Without Project scenario. The following intersections operate deficiently in the Cumulative Without Project scenario:

- Perris Boulevard at Atwood Avenue (AM LOS E, PM LOS F, Sunday LOS F)
- Cottonwood Avenue at Crape Myrtle Drive (AM LOS F)
- Perris Boulevard at Alessandro Boulevard (PM LOS E)
- Perris Boulevard Driveway (PM LOS F, Sunday LOS F)

With the exception of the Perris Boulevard at Alessandro Boulevard intersection, the deficient intersections are unsignalized. Due to the heavy traffic volumes anticipated in Opening Year 2020 as a result of growth and nearby projects, vehicles turning from minor streets onto Perris Boulevard are forecasted to encounter significant delays, regardless of their low volumes.

Moreover, both study roadway segments along Perris Boulevard are anticipated to operate deficiently in the Cumulative Without Project scenario.

With the addition of project traffic to the Cumulative Without Project scenario, the following intersections would operate at an unacceptable Level of Service:

- Perris Boulevard at Atwood Avenue (AM LOS E, PM LOS F, Sunday LOS F)
- Cottonwood Avenue at Crape Myrtle Drive (AM LOS F, Sunday LOS E)
- Perris Boulevard at Alessandro Boulevard (PM LOS E)
- Perris Boulevard Driveway (AM LOS F, PM LOS F, Sunday LOS F)

These intersections are forecasted to operate deficiently before the addition of project traffic. The deficiency at the Perris Boulevard Driveway in the Without Project scenario is caused by egress vehicles from the shopping center to the west. In the With Project scenario, the westbound approach at the driveway also operates deficiently. At the remaining intersections, the project alone does not trigger the deficiencies, but rather contributes to a less-than-significant cumulative impact.

Furthermore, the two study roadway segments along Perris Boulevard will continue to operate deficiently with the addition of project traffic.

While these intersections and roadways are deficient, the project only contributes to their existing deficiencies. The project would contribute to any improvement not included in an existing fee program on a fair-share basis. The following mitigation measures are recommended:

- Perris Boulevard at Atwood Avenue - The deficiency is a result of a small number of vehicles turning left into heavy peak hour traffic along Perris Boulevard. The intersection does not warrant a traffic signal. No mitigation measure is recommended.
- Cottonwood Avenue at Crape Myrtle Drive - The deficiency is a result of a small number of vehicles exiting a residential tract. The intersection does not warrant a traffic signal. No mitigation measure is recommended.
- Perris Boulevard at Alessandro Boulevard – Construct an additional southbound left-turn lane and an additional northbound left-turn lane.
- Perris Boulevard Driveway – The delay is a result of vehicles exiting the site. Since any queueing is restricted to the project site and delays are experienced onsite rather than on a public roadway, no offsite mitigation measures are recommended.

On Perris Boulevard, the street is currently striped as a four-lane divided roadway with 86' of curb-to-curb width. Per the City of Moreno General Plan Roadway Network, Perris Boulevard will eventually be widened to add one lane in each direction, which will increase the daily roadway capacity to 56,300 vehicles. This lane addition can be accomplished in the 86' width, and will improve roadway operations to acceptable levels. With the construction of additional turn lanes at the Alessandro Boulevard intersection, the delay will improve to 48 seconds in the evening peak hour, which indicates a LOS D.

Moreover, intersections that operate at acceptable Level of Service, but experience individual lane groups that become LOS E or LOS F with the addition of project traffic, are identified below:

- Perris Boulevard and Eucalyptus Avenue WBL (PM LOS E)
- Perris Boulevard and Alessandro Boulevard NBT (PM LOS E)
- Perris and Cottonwood Avenue EBL, WBL, WBR, SBL (Sunday LOS E-F)

Despite these intersections experiencing acceptable overall Level of Service, the following mitigation measures would help improve these lane groups:

- Perris Boulevard and Eucalyptus Avenue WBL – Perris Boulevard is planned to be widened one lane in each direction based on the General Plan Roadway Network, converting it from a 4-lane arterial to a 6-lane arterial. The additional roadway capacity would improve all lane group operations at the intersection.
- Perris Boulevard and Alessandro Boulevard NBT – Construct an additional southbound left-turn lane and an additional northbound left-turn lane. This measure was identified in the previous section, and is included in an existing fee program.
- Perris and Cottonwood Avenue EBL, WBL, WBR, SBL – Perris Boulevard is planned to be widened one lane in each direction based on the General Plan Roadway Network, converting it from a 4-lane arterial to a 6-lane arterial. The additional roadway capacity would improve all lane group operations at the intersection.

APPENDIX A

APPROVED SCOPING AGREEMENT

MORENO VALLEY

SCOPING AGREEMENT
FOR TRAFFIC ANALYSIS STUDY

Date: August 14, 2015

This letter acknowledges the City of Moreno Valley Transportation Engineering Division requirements for the traffic impact analysis of the following project.

Case No.	P15-018
Project Name:	Moreno Valley Yum Yum Donut Shop and Gas Station
Project Address:	Northeast Corner of Perris Blvd and Cottonwood Ave
Project Description:	Gas Station w/ 16 Pumps and Convenience Market/Donut Shop/Car Wash
Related Cases:	

	Consultant	Developer
Name:	Kimley-Horn and Associates, Inc.	A & S Engineering
Address:	765 The City Drive, Suite 200 Orange, CA 92868	28405 Sand Canyon Rd., Suite B Canyon Country, CA 91387
Telephone:	714-705-1362	661-250-9300

I. Background

The proposed project is located on the northeast corner of Perris Boulevard and Cottonwood Avenue. The project consists of a Gas Station w/ 5,515 SF building (Convenience Store and Donut Shop) & Car Wash. The project is anticipated to be completed in 2016. Per the City's guidelines, the opening year scenario for analysis will be 2020. The site plan is shown on **Figure 1**.

II. Trip Geographic Distribution and Assignment*

N: 40% **S:** 35% **E:** 10% **W:** 15%

***See Figure 2 for trip distribution diagram**

III. Site Trip Generation Forecast

A. ITE Trip Generation Manual (latest edition)
B. AM Peak: 7:00-9:00 AM
C. PM Peak: 4:00-6:00 PM
D. Sunday Noon: 11:00-2:00 PM
E. Intersection and link acceptable Level of Service "D" for some intersections and links and Level of Service "C" for others based upon the current City policy. (Use Highway Capacity Manual - latest edition - operations procedures; parameters per County of Riverside Traffic Impact Analysis Guidelines.)

Proposed Use Rates

Gasoline Station w/ Convenience Market & Car Wash (Fueling Position)	Daily: 152.84	AM: 11.84	PM: 13.86	Weekend: 19.46

Internal Trip Allowance: Yes ______ No __X__ Percentage ______________

Pass-by Trip Allowance: Yes __X__ No ______ Percentage __See Attached **Table 1**__

IV. Specific Project Issues to be Analyzed

A. The focus of this traffic study will be on addressing the adequacy of site access and identifying specific near-term and future circulation improvements required in the study area to maintain acceptable peak hour and daily levels of service (LOS).
B. The traffic study shall address the project traffic impacts at all study intersections listed in Section VI and provide appropriate mitigation measures if applicable.
C. Sunday traffic conditions will be analyzed to address the additional weekend traffic on the street system due to the church at the southeast corner of Perris Boulevard and Cottonwood Avenue.
D. Different site access alternatives will be analyzed to assess the construction of a raised median on Perris Boulevard and/or Cottonwood Avenue. These alternatives include:
   A. Full movements at both driveways
   B. Left in/Left out restricted at both driveways
   C. Left out restricted at Perris Driveway, Left in/Left out restricted at Cottonwood Driveway
   D. Left in/Left out restricted at Perris Driveway, Full movement at Cottonwood Driveway
E. Queueing analysis will be conducted at the two site driveways. Queuing analysis for SBL movement into driveway will take into account NBL movements into adjacent shopping center.
F. Assess non-motorized (i.e. peds, bicycles, ex.) access, document available transit/bus routes

G. Truck turning exhibits will be prepared to show potential conflicts with raised medians.

V. **Study of Horizon Years**

A. Existing (2015)
B. Existing (2015) Plus Project
C. Cumulative (Opening Year 2020) Without Project (2% annual growth and cumulative project traffic) – See **Figure 3** for Cumulative Projects within a 3.5-mile radius
D. Cumulative (Opening Year 2020) With Project

VI. **Facilities to be Studied (See Figure 4 for Study Area)**

A. Intersections
1. Perris Boulevard at Eucalyptus Avenue
2. Perris Boulevard and Atwood Avenue
3. Perris Boulevard and Dracaea Avenue
4. Cottonwood Avenue at Indian Street
5. Cottonwood Avenue at Perris Boulevard (Will include ped/bike counts)
6. Cottonwood Avenue at Crape Myrtle Drive
7. Cottonwood Avenue at Kitching Street
8. Perris Boulevard and Bay Ave
9. Perris Boulevard at Alessandro Boulevard
10. Cottonwood Avenue Driveway
11. Perris Boulevard Driveway

B. Roadway Segments
1. Perris Boulevard between Eucalyptus Avenue and Cottonwood Avenue
2. Perris Boulevard between Cottonwood Avenue and Alessandro Boulevard
3. Cottonwood Avenue between Indian Street and Perris Boulevard
4. Cottonwood Avenue between Perris Boulevard and Kitching Street

VII. Deliverables

A. Draft traffic impact study (2 copies)
B. Final traffic impact study (4 copies)

All draft and final traffic impact studies shall be delivered with the appropriate review fee to the Permit Technician, Land Development Division, Moreno Valley City Hall, 14177 Frederick Street, Moreno Valley, CA 92552. Please contact the Land Development Division at 951-413-3110 prior to the delivery of the traffic study.

If you have any questions regarding this *Scoping Agreement*, please contact Michael Lloyd at (951) 413-3146.

Recommended By:

Tim Chan
Kimley-Horn and Associates, Inc.

Approved By:

8/14/15

Michael Lloyd, P.E.
Senior Traffic Engineer

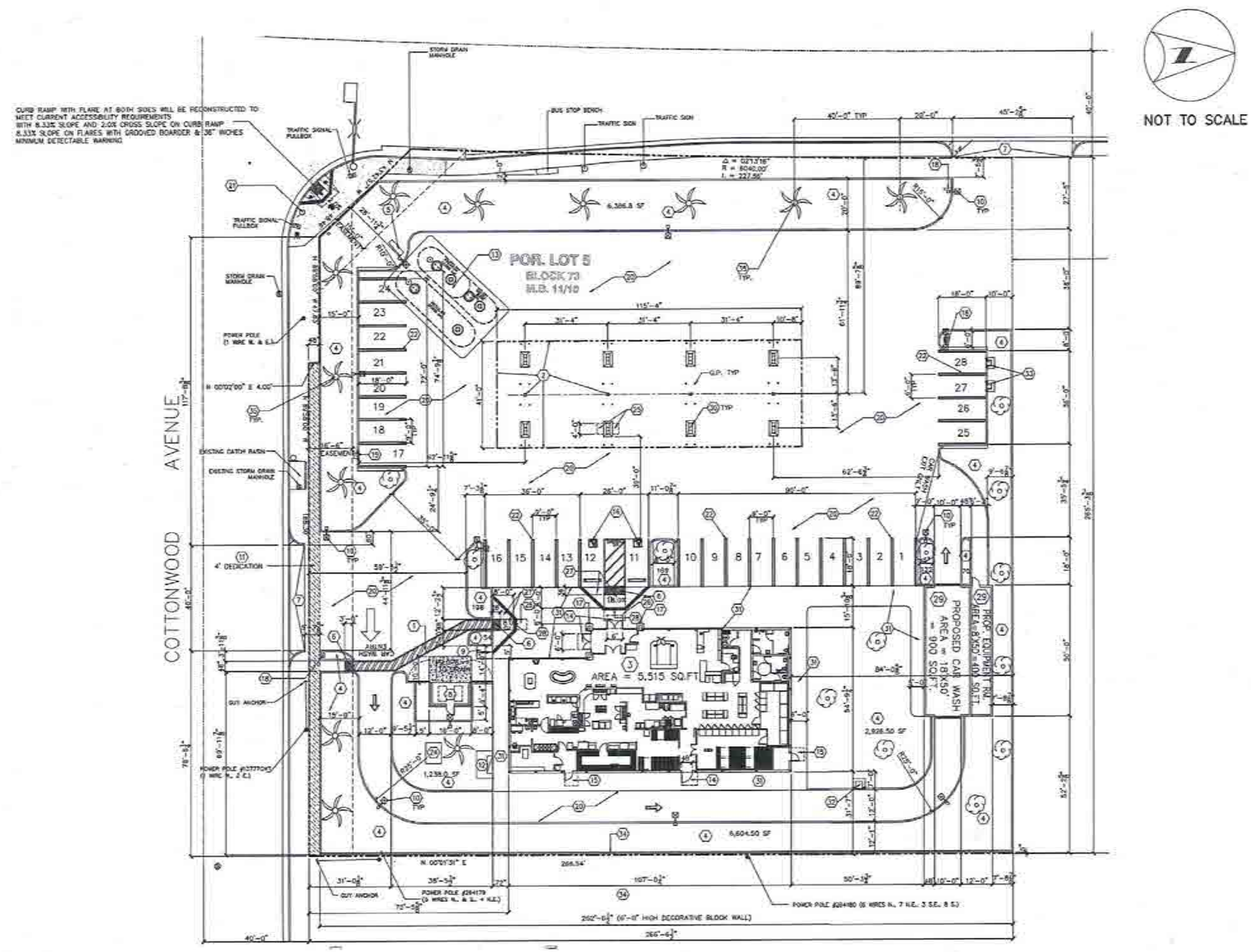


FIGURE 1
SITE PLAN

Kimley»Horn

TABLE 1
SUMMARY OF PROJECT TRIP GENERATION

Land Use	ITE Code	Unit	Trip Generation Rates [1]									
				AM Peak Hour			PM Peak Hour			Sunday Noon [3]		
			Daily	In	Out	Total	In	Out	Total	In	Out	Total
Gasoline Station w/ Conv. Mkt. & Car Wash	946	Fueling Position	152.84	6.04	5.80	11.84	7.07	6.79	13.86	9.73	9.73	19.46

Land Use	Quantity	Unit	Trip Generation Estimates									
				AM Peak Hour			PM Peak Hour			Sunday Noon		
			Daily	In	Out	Total	In	Out	Total	In	Out	Total
Gasoline Station w/ Conv. Mkt. & Car Wash	16	Fueling Position	2,445	97	93	190	113	109	222	156	156	311
- Pass-by Trips (AM 62%, PM 56%) [2]			-	-60	-58	-118	-63	-61	-124	-87	-87	-174
Total Project Trips			**2,445**	**37**	**35**	**72**	**50**	**48**	**98**	**68**	**68**	**137**

[1] *Source: Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition*
[2] *Source: ITE Trip Generation Manual - Volume 1: User's Guide and Handbook. A pass-by rate of 56% was used for Sunday trips.*
[3] *Sunday Peak Hour trips were calculated based on ITE rates for the Saturday Peak Hour of Generator.*

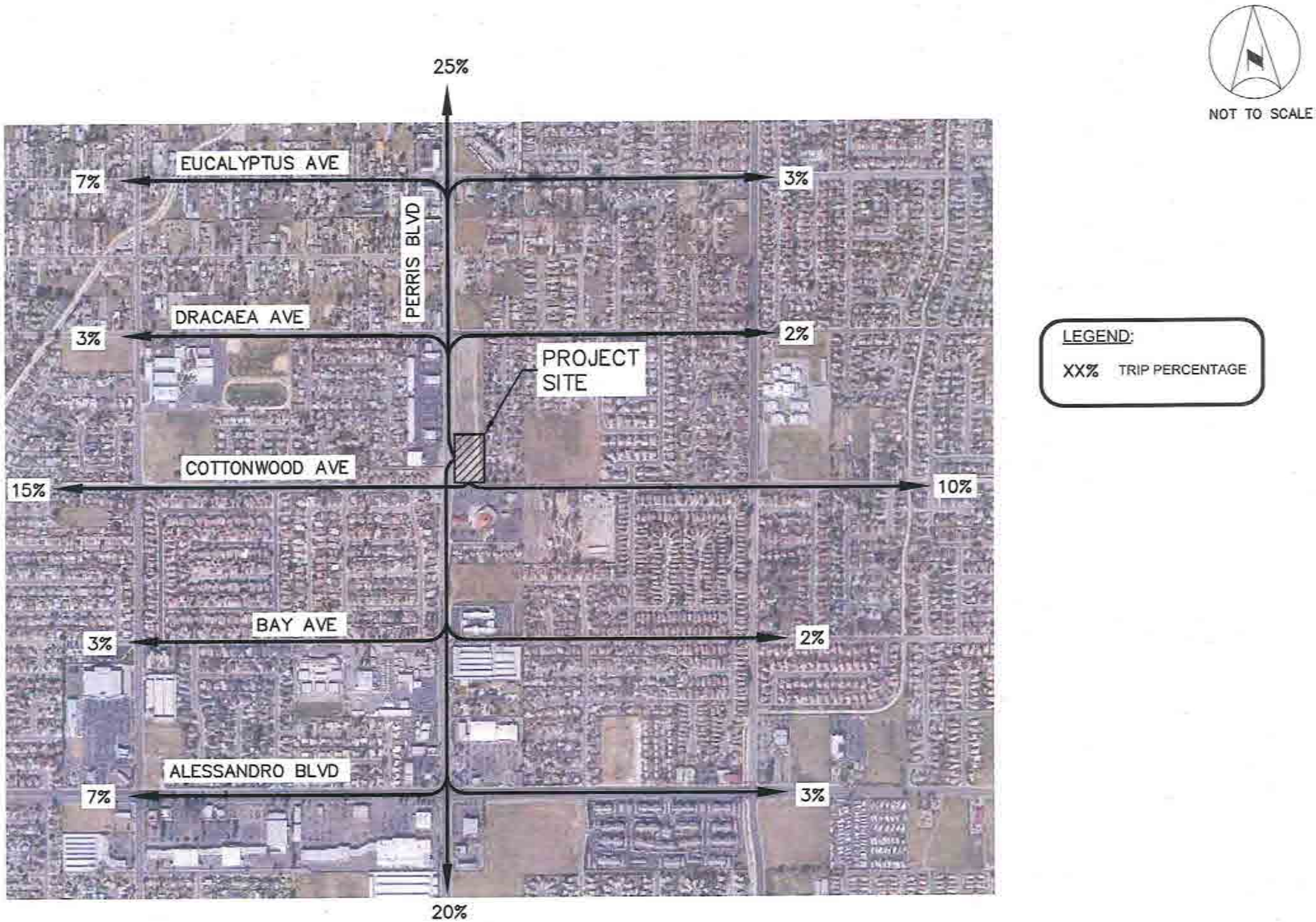


FIGURE 2
TRIP DISTRIBUTION ASSUMPTIONS

Kimley»Horn

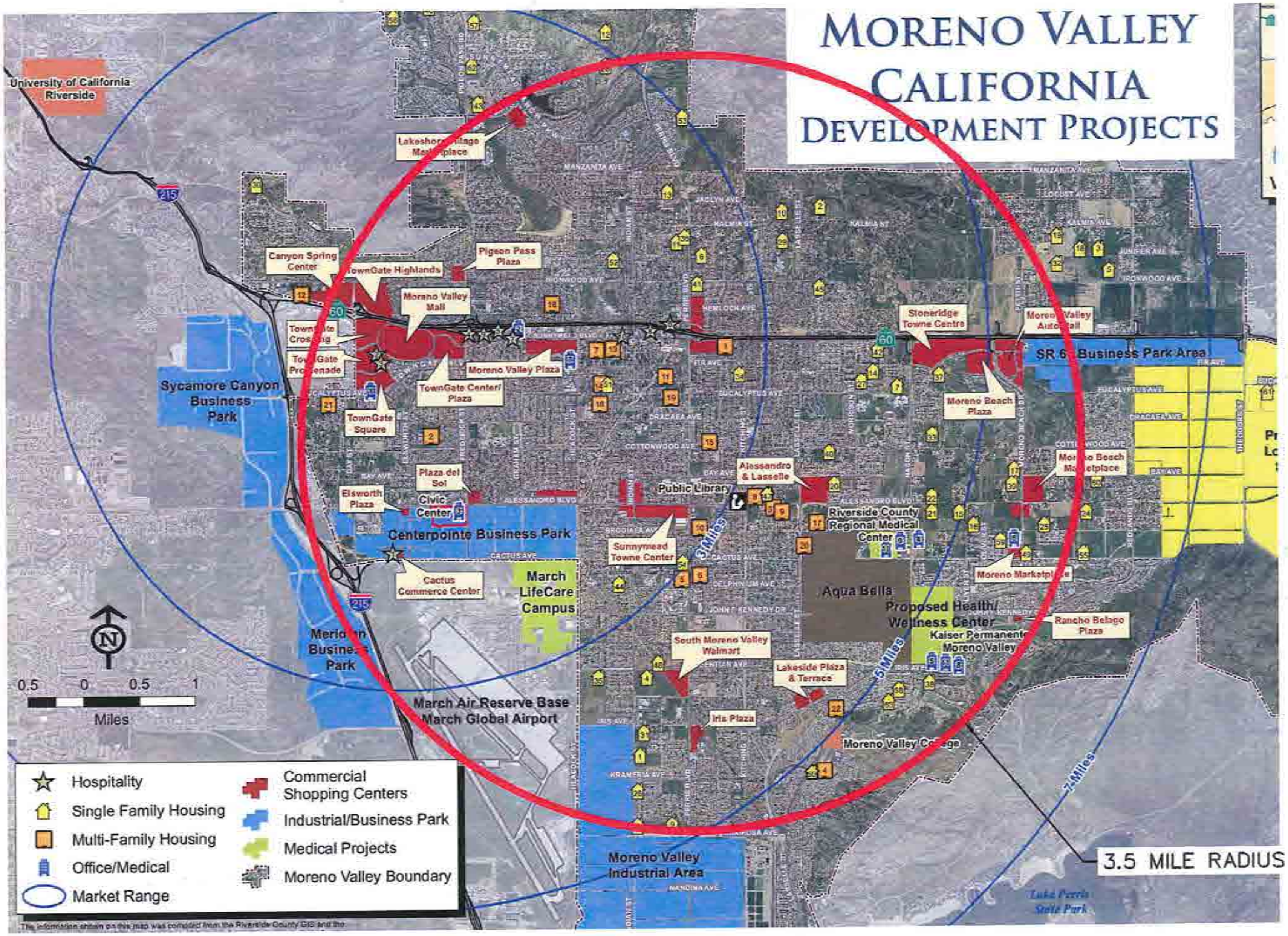


FIGURE 3
CUMULATIVE PROJECTS

Kimley»Horn

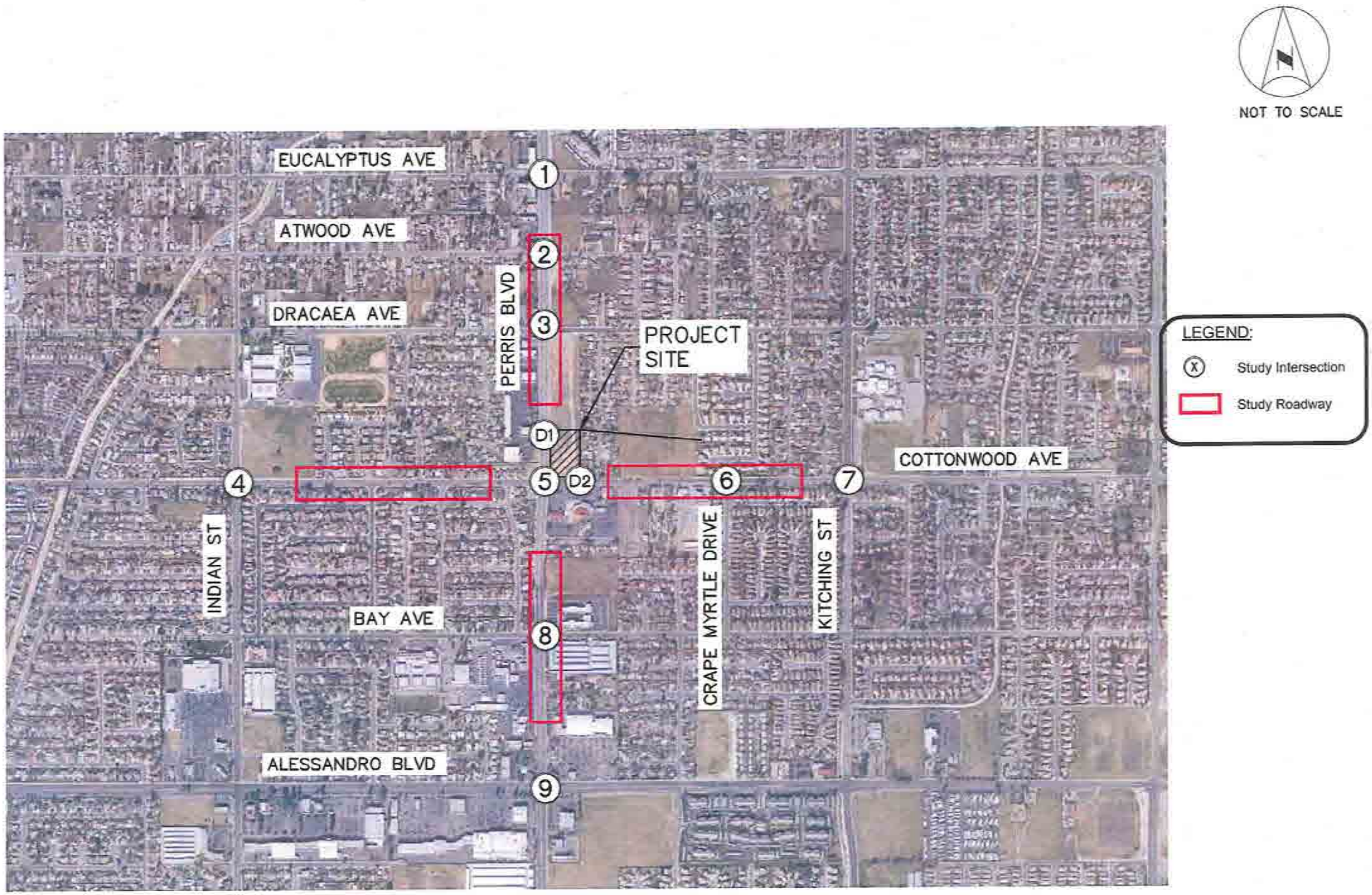


FIGURE 4
STUDY INTERSECTIONS AND ROADWAYS

Kimley»Horn

APPENDIX **B**

TRAFFIC DATA COLLECTION SHEETS

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Perris Blvd and Eucalyptus Ave , Moreno Valley

Date:	9/2/2015
Day:	Wednesday
Project #:	15-6148-001
City:	Moreno Valley

N

Perris Blvd

Eucalyptus Ave

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

CONTROL: Signalized

Southbound Approach

	Right (Lanes 1)	Thru (Lanes 2)	Left (Lanes 1)	Out
AM	26	835	70	1223
NOON	0	0	0	0
PM	56	1173	105	1005

Eastbound Approach

	Lanes	AM	NOON	PM
Out		208	0	219
Left	1	24	0	54
Thru	1	76	0	161
Right	1	52	0	63

Westbound Approach

	AM	NOON	PM	Lanes
Right	177	0	84	1
Thru	127	0	106	1
Left	82	0	46	1
Out	198	0	324	

Northbound Approach

	Out	Left (Lanes 1)	Thru (Lanes 2)	Right (Lanes 1)
AM	969	55	1022	52
NOON	0	0	0	0
PM	1282	57	867	58

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	931	1223
North Leg	NOON	0	0
North Leg	PM	1334	1005
East Leg	AM	386	198
East Leg	NOON	0	0
East Leg	PM	236	324
West Leg	AM	152	208
West Leg	NOON	0	0
West Leg	PM	278	219
South Leg	AM	1129	969
South Leg	NOON	0	0
South Leg	PM	982	1282

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	2154	0	2339
East Leg	584	0	560
West Leg	360	0	497
South Leg	2098	0	2264

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Perris Blvd and Eucalyptus Ave , Moreno Valley

Date:	9/13/2015
Day:	Sunday
Project #:	15-6148-001
City:	Moreno Valley

AM Peak Hour	
NOON Peak Hour	100 PM
PM Peak Hour	

Peak Hour Summary

CONTROL: Signalized

N

Perris Blvd

Eucalyptus Ave

Southbound Approach

	Right	Thru	Left	Out
Lanes	1	2	1	
AM	0	0	0	0
NOON	44	816	62	993
PM	0	0	0	0

Westbound Approach

	AM	NOON	PM	Lanes
Right	0	73	0	1
Thru	0	61	0	1
Left	0	29	0	1
Out	0	172	0	

Eastbound Approach

	Lanes	AM	NOON	PM
Out		0	151	0
Left	1	0	50	0
Thru	1	0	78	0
Right	1	0	31	0

Northbound Approach

	Out	Left	Thru	Right
AM	0	0	0	0
NOON	876	46	870	32
PM	0	0	0	0
Lanes		1	2	1

Count Periods	Start	End
AM		
NOON	11:00 AM	2:00 PM
PM		

Total Ins & Outs

Leg	Period	In/Out 1	In/Out 2
North Leg	AM	0	0
North Leg	NOON	922	993
North Leg	PM	0	0
East Leg	AM	0	0
East Leg	NOON	163	172
East Leg	PM	0	0
West Leg	AM	0	0
West Leg	NOON	151	159
West Leg	PM	0	0
South Leg	AM	0	0
South Leg	NOON	876	948
South Leg	PM	0	0

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	0	1915	0
East Leg	0	335	0
West Leg	0	310	0
South Leg	0	1824	0

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Perris Blvd and Atwood Ave , Moreno Valley

Date: 9/2/2015

Day: Wednesday

Project #: 15-6148-002

City: Moreno Valley

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Perris Blvd

Atwood Ave

Southbound Approach

	Right	Thru	Left	Out
Lanes	0	2	0	
AM	18	941	13	1127
NOON	0	0	0	0
PM	20	1212	43	993

Eastbound Approach

Lanes		AM	NOON	PM
	Out	53	0	57
0	Left	12	0	14
1	Thru	2	0	3
0	Right	37	0	36

Westbound Approach

	AM	NOON	PM	Lanes
Right	16	0	11	0
Thru	1	0	1	1
Left	2	0	2	0
Out	19	0	48	

Northbound Approach

	Out	Left	Thru	Right
AM	980	34	1099	4
NOON	0	0	0	0
PM	1250	36	968	2
Lanes		0	2	0

CONTROL

2-Way Stop (EB/WB)

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

Leg	Period		
North Leg	AM	972	1127
North Leg	NOON	0	0
North Leg	PM	1275	993
South Leg	AM	980	1137
South Leg	NOON	0	0
South Leg	PM	1250	1006

Leg	AM	NOON	PM
West Leg	53	0	57
West Leg	51	0	53
East Leg	19	0	14
East Leg	19	0	48

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	2099	0	2268
West Leg	104	0	110
East Leg	38	0	62
South Leg	2117	0	2256

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Perris Blvd and Atwood Ave , Moreno Valley

Date: 9/13/2015

Day: Sunday

Project #: 15-6148-002

City: Moreno Valley

AM Peak Hour	
NOON Peak Hour	100 PM
PM Peak Hour	

Peak Hour Summary

N

Perris Blvd

Atwood Ave

Southbound Approach

	Right	Through	Left	Departing
Lanes	0	2	0	
AM	0	0	0	0
NOON	17	824	34	948
PM	0	0	0	0

Eastbound Approach

	Lanes	AM	NOON	PM
Departing		0	60	0
Left	0	0	18	0
Through	1	0	4	0
Right	0	0	27	0

CONTROL

2-Way Stop (EB/WB)

Westbound Approach

	AM	NOON	PM	Lanes
Right	0	14	0	0
Through	0	6	0	1
Left	0	3	0	0
Departing	0	41	0	

Northbound Approach

	Departing	Left	Through	Right
AM	0	0	0	0
NOON	854	37	916	3
PM	0	0	0	0
Lanes		0	2	0

Count Periods	Start	End
AM		
NOON	11:00 AM	2:00 PM
PM		

Total Ins & Outs

North Leg	In	Out
AM	0	0
NOON	875	948
PM	0	0

West Leg	AM	NOON	PM
Out	0	60	0
In	0	49	0

East Leg	AM	NOON	PM
In	0	23	0
Out	0	41	0

South Leg	Out	In
AM	0	0
NOON	854	956
PM	0	0

Total Volume Per Leg

North Leg	
AM	0
NOON	1823
PM	0

West Leg	AM	NOON	PM
	0	109	0

East Leg	AM	NOON	PM
	0	64	0

South Leg	
AM	0
NOON	1810
PM	0

Attachment: Exhibit A to Resolution 2018-XX - Mitigated Negative Declaration (3224 : A GENERAL PLAN AMENDMENT, CHANGE OF ZONE,

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Perris Blvd and Dracaea Ave , Moreno Valley

Date: 9/2/2015

Day: Wednesday

Project #: 15-6148-003

City: Moreno Valley

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Perris Blvd

Dracaea Ave

N

Southbound Approach

	Right	Through	Left	Out
Lanes	1	2	1	
AM	72	872	32	1143
NOON	0	0	0	0
PM	81	1112	72	1009

Eastbound Approach

	AM	NOON	PM
Out	194	0	180

Lanes		AM	NOON	PM
0	Left	67	0	58
1	Through	70	0	92
0	Right	44	0	24

CONTROL

Signalized

Westbound Approach

	AM	NOON	PM	Lanes
Right	56	0	58	0
Through	92	0	85	1
Left	60	0	28	0
Out	126	0	206	

Northbound Approach

	Out	Left	Through	Right
AM	976	30	1020	24
NOON	0	0	0	0
PM	1164	14	893	42
Lanes		1	2	0

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	976	1143
North Leg	NOON	0	0
North Leg	PM	1265	1009
East Leg	AM	208	126
East Leg	NOON	0	0
East Leg	PM	171	206
West Leg	AM	194	181
West Leg	NOON	0	0
West Leg	PM	180	174
South Leg	AM	976	1074
South Leg	NOON	0	0
South Leg	PM	1164	949

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	2119	0	2274
East Leg	334	0	377
West Leg	375	0	354
South Leg	2050	0	2113

Attachment: Exhibit A to Resolution 2018-XX - Mitigated Negative Declaration (3224 : A GENERAL PLAN AMENDMENT, CHANGE OF ZONE,

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Perris Blvd and Dracaea Ave , Moreno Valley

Date:	9/13/2015
Day:	Sunday
Project #:	15-6148-003
City:	Moreno Valley

AM Peak Hour	
NOON Peak Hour	100 PM
PM Peak Hour	

N

Perris Blvd

Dracaea Ave

Peak Hour Summary

Southbound Approach

	Right	Through	Left	Out
Lanes	1	2	1	
AM	0	0	0	0
NOON	52	779	26	953
PM	0	0	0	0

Westbound Approach

	AM	NOON	PM	Lanes
Right	0	57	0	0
Through	0	59	0	1
Left	0	34	0	0
Out	0	132	0	

Eastbound Approach

Lanes		AM	NOON	PM
	Out	0	133	0
0	Left	0	71	0
1	Through	0	82	0
0	Right	0	24	0

Northbound Approach

	Out	Left	Through	Right
AM	0	0	0	0
NOON	837	22	825	24
PM	0	0	0	0
Lanes		1	2	0

CONTROL

Signalized

Count Periods	Start	End
AM		
NOON	11:00 AM	2:00 PM
PM		

Total Ins & Outs

North Leg

AM	0	0
NOON	857	953
PM	0	0

East Leg

AM	NOON	PM
0	150	0
0	132	0

West Leg

AM	NOON	PM
0	133	0
0	177	0

South Leg

AM	0	0
NOON	837	871
PM	0	0

Total Volume Per Leg

	North Leg	South Leg
AM	0	0
NOON	1810	1708
PM	0	0

	AM	NOON	PM
West Leg	0	310	0
East Leg	0	282	0

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Indian St and Cottonwood Ave , Moreno Valley

Date:	9/2/2015
Day:	Wednesday
Project #:	15-6148-004
City:	Moreno Valley

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Indian St / Cottonwood Ave

N

CONTROL: Signalized

Southbound Approach

	Right	Through	Left	Total (Out)
Lanes	0	2	1	
AM	47	248	53	365
NOON	0	0	0	0
PM	43	268	28	342

Eastbound Approach

	Lanes	AM	NOON	PM
Total (Out)		495	0	369
Left	1	45	0	42
Through	1	285	0	316
Right	0	125	0	147

Westbound Approach

	AM	NOON	PM	Lanes
Right	83	0	37	0
Through	355	0	246	1
Left	44	0	41	1
Total (Out)	367	0	398	

Northbound Approach

	Total (Out)	Left	Through	Right
AM	417	93	237	29
NOON	0	0	0	0
PM	456	80	263	54
Lanes		1	2	0

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	348	365
North Leg	NOON	0	0
North Leg	PM	339	342
East Leg	AM	482	367
East Leg	NOON	0	0
East Leg	PM	324	398
West Leg	AM	455	495
West Leg	NOON	0	0
West Leg	PM	505	369
South Leg	AM	359	417
South Leg	NOON	0	0
South Leg	PM	397	456

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	713	0	681
East Leg	849	0	722
West Leg	950	0	874
South Leg	776	0	853

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Indian St and Cottonwood Ave , Moreno Valley

Date:	9/13/2015
Day:	Sunday
Project #:	15-6148-004
City:	Moreno Valley

AM Peak Hour	
NOON Peak Hour	100 PM
PM Peak Hour	

N

Indian St

Cottonwood Ave

Peak Hour Summary

Southbound Approach

	Right	Through	Left	Departing
Lanes	0	2	1	
AM	0	0	0	0
NOON	20	171	20	253
PM	0	0	0	0

Eastbound Approach

	Lanes	AM	NOON	PM
Departing		0	351	0
Left	1	0	16	0
Through	1	0	195	0
Right	0	0	104	0

Westbound Approach

	AM	NOON	PM	Lanes
Right	0	24	0	0
Through	0	243	0	1
Left	0	44	0	1
Departing	0	258	0	

Northbound Approach

	Departing	Left	Through	Right
AM	0	0	0	0
NOON	319	88	213	43
PM	0	0	0	0
Lanes		1	2	0

CONTROL

Signalized

Count Periods	Start	End
AM		
NOON	11:00 AM	2:00 PM
PM		

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	0	0
North Leg	NOON	211	253
North Leg	PM	0	0
West Leg	AM	0	0
West Leg	NOON	351	315
West Leg	PM	0	0
East Leg	AM	0	0
East Leg	NOON	311	258
East Leg	PM	0	0
South Leg	AM	0	0
South Leg	NOON	319	344
South Leg	PM	0	0

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	0	464	0
West Leg	0	666	0
East Leg	0	569	0
South Leg	0	663	0

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Perris Blvd and Cottonwood Ave , Moreno Valley

Date: 9/2/2015

Day: Wednesday

Project #: 15-6148-005

City: Moreno Valley

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Perris Blvd / Cottonwood Ave

N

CONTROL

Signalized

Southbound Approach

	Lane movement 1	Lane movement 2	Lane movement 3	Out
Lanes	1	2	1	
AM	89	805	107	1079
NOON	0	0	0	0
PM	119	967	139	1000

Eastbound Approach

	AM	NOON	PM
Out	374	0	330

Lanes		AM	NOON	PM
1	Left	80	0	93
1	Through	184	0	213
1	Right	66	0	62

Westbound Approach

	AM	NOON	PM	Lanes
Right	166	0	90	1
Through	215	0	148	1
Left	53	0	29	1
Out	354	0	393	

Northbound Approach

	Out	Left	Through	Right
AM	924	70	833	63
NOON	0	0	0	0
PM	1058	63	817	41
Lanes		1	2	1

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	1001	1079
North Leg	NOON	0	0
North Leg	PM	1225	1000
West Leg	AM	374	330
West Leg	NOON	0	0
West Leg	PM	330	368
East Leg	AM	434	354
East Leg	NOON	0	0
East Leg	PM	267	393
South Leg	AM	924	966
South Leg	NOON	0	0
South Leg	PM	1058	921

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	2080	0	2225
West Leg	704	0	698
East Leg	788	0	660
South Leg	1890	0	1979

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Perris Blvd and Cottonwood Ave , Moreno Valley

Date: 9/13/2015

Day: Sunday

Project #: 15-6148-005

City: Moreno Valley

AM Peak Hour	
NOON Peak Hour	100 PM
PM Peak Hour	

N

Perris Blvd

Cottonwood Ave

Peak Hour Summary

Southbound Approach

	Lanes 1	2	1	(Out)
AM	0	0	0	0
NOON	96	650	122	976
PM	0	0	0	0

Eastbound Approach

Lanes		AM	NOON	PM
	(Out)	0	325	0
1		0	80	0
1		0	125	0
1		0	51	0

CONTROL

Signalized

Westbound Approach

	AM	NOON	PM	Lanes
	0	153	0	1
	0	157	0	1
	0	51	0	1
(Out)	0	301	0	

Northbound Approach

	(Out)			
AM	0	0	0	0
NOON	752	72	743	54
PM	0	0	0	0
Lanes		1	2	1

Count Periods	Start	End
AM		
NOON	11:00 AM	2:00 PM
PM		

Total Ins & Outs

North Leg			
AM	0	0	
NOON	868	976	
PM	0	0	

West Leg	AM	NOON	PM
	0	325	0
	0	256	0

East Leg	AM	NOON	PM
	0	361	0
	0	301	0

South Leg		
AM	0	0
NOON	752	869
PM	0	0

Total Volume Per Leg

North Leg	
AM	0
NOON	1844
PM	0

West Leg	AM	NOON	PM
	0	581	0

East Leg	AM	NOON	PM
	0	662	0

South Leg	
AM	0
NOON	1621
PM	0

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Crape Myrtle Dr and Cottonwood Ave , Moreno Valley

Date:	9/2/2015
Day:	Wednesday
Project #:	15-6148-006
City:	Moreno Valley

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

N

Crape Myrtle Dr

Cottonwood Ave

Peak Hour Summary

CONTROL

2-Way Stop (NB/SB)

Southbound Approach

	Right	Thru	Left	Out
Lanes	0	1	0	
AM	14	11	31	36
NOON	0	0	0	0
PM	10	2	6	29

Eastbound Approach

	AM	NOON	PM
Out	460	0	255

Lanes		AM	NOON	PM
0	Left	9	0	16
2	Thru	303	0	303
0	Right	12	0	50

Westbound Approach

	AM	NOON	PM	Lanes
Right	17	0	8	0
Thru	419	0	217	2
Left	33	0	14	0
Out	372	0	317	

Northbound Approach

	Out	Left	Thru	Right
AM	56	27	10	38
NOON	0	0	0	0
PM	66	28	5	8
Lanes		0	1	0

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

Leg	Period		
North Leg	AM	56	36
North Leg	NOON	0	0
North Leg	PM	18	29
East Leg	AM	469	372
East Leg	NOON	0	0
East Leg	PM	239	317
West Leg	AM	460	324
West Leg	NOON	0	0
West Leg	PM	255	369
South Leg	AM	56	75
South Leg	NOON	0	0
South Leg	PM	66	41

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	92	0	47
East Leg	841	0	556
West Leg	784	0	624
South Leg	131	0	107

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Crape Myrtle Dr and Cottonwood Ave , Moreno Valley

Date: 9/13/2015

Day: Sunday

Project #: 15-6148-006

City: Moreno Valley

AM Peak Hour	
NOON Peak Hour	100 PM
PM Peak Hour	

Peak Hour Summary

Crape Myrtle Dr / Cottonwood Ave

CONTROL: 2-Way Stop (NB/SB)

Southbound Approach

	Lanes	0	1	0	Out
AM		0	0	0	0
NOON		9	2	2	31
PM		0	0	0	0

Eastbound Approach

	AM	NOON	PM
Out	0	269	0

Lanes		AM	NOON	PM
0	Left	0	23	0
2	Through	0	258	0
0	Right	0	42	0

Westbound Approach

	AM	NOON	PM	Lanes
Right	0	4	0	0
Through	0	229	0	2
Left	0	3	0	0
Out	0	269	0	

Northbound Approach

	Out			
AM	0	0	0	0
NOON	47	31	4	9
PM	0	0	0	0
Lanes		0	1	0

Count Periods	Start	End
AM		
NOON	11:00 AM	2:00 PM
PM		

Total Ins & Outs

North Leg

AM	0	0
NOON	13	31
PM	0	0

West Leg

AM	NOON	PM
0	269	0
0	323	0

East Leg

AM	NOON	PM
0	236	0
0	269	0

South Leg

AM	0	0
NOON	47	44
PM	0	0

Total Volume Per Leg

North Leg

AM	0
NOON	44
PM	0

West Leg

AM	NOON	PM
0	592	0

East Leg

AM	NOON	PM
0	505	0

South Leg

AM	0
NOON	91
PM	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Kitching St and Cottonwood Ave , Moreno Valley

Date: 9/2/2015

Day: Wednesday

Project #: 15-6148-007

City: Moreno Valley

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	445 PM

Peak Hour Summary

Kitching St (N–S) / Cottonwood Ave (E–W)

Southbound Approach

	Lanes	AM	NOON	PM
Left turn	0	41	0	18
Through	2	201	0	261
Right turn	1	31	0	35
Northbound departure (out)		521	0	314

Westbound Approach

	Lanes	AM	NOON	PM
Right turn	0	129	0	39
Through	2	319	0	197
Left turn	1	43	0	28
Eastbound departure (out)		284	0	276

Eastbound Approach

	Lanes	AM	NOON	PM
Westbound departure (out)		459	0	243
Left turn	1	95	0	16
Through	2	226	0	224
Right turn	0	72	0	52

Northbound Approach

	Lanes	AM	NOON	PM
Southbound departure (out)		316	0	341
Left turn	1	99	0	28
Through	2	297	0	259
Right turn	0	27	0	17

CONTROL

Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	273	521
North Leg	NOON	0	0
North Leg	PM	314	314
East Leg	AM	491	284
East Leg	NOON	0	0
East Leg	PM	264	276
West Leg	AM	393	459
West Leg	NOON	0	0
West Leg	PM	292	243
South Leg	AM	423	316
South Leg	NOON	0	0
South Leg	PM	304	341

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	794	0	628
East Leg	775	0	540
West Leg	852	0	535
South Leg	739	0	645

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Kitching St and Cottonwood Ave , Moreno Valley

Date:	9/13/2015
Day:	Sunday
Project #:	15-6148-007
City:	Moreno Valley

AM Peak Hour	
NOON Peak Hour	100 PM
PM Peak Hour	

N

Kitching St

Cottonwood Ave

Peak Hour Summary

CONTROL: Signalized

Southbound Approach

	Left Turn	Through	Right Turn	Departing
Lanes	0	2	1	
AM	0	0	0	0
NOON	17	170	25	217
PM	0	0	0	0

Eastbound Approach

	AM	NOON	PM	Lanes
Departing	0	237	0	
Left Turn	0	32	0	1
Through	0	169	0	2
Right Turn	0	58	0	0

Westbound Approach

	AM	NOON	PM	Lanes
Right Turn	0	28	0	0
Through	0	189	0	2
Left Turn	0	9	0	1
Departing	0	208	0	

Northbound Approach

	Departing	Left Turn	Through	Right Turn
AM	0	0	0	0
NOON	237	31	157	14
PM	0	0	0	0
Lanes		1	2	0

Count Periods	Start	End
AM		
NOON	11:00 AM	2:00 PM
PM		

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	0	0
North Leg	NOON	212	217
North Leg	PM	0	0
East Leg	AM	0	0
East Leg	NOON	226	208
East Leg	PM	0	0
West Leg	AM	0	0
West Leg	NOON	237	259
West Leg	PM	0	0
South Leg	AM	0	0
South Leg	NOON	237	202
South Leg	PM	0	0

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	0	429	0
East Leg	0	434	0
West Leg	0	496	0
South Leg	0	439	0

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Perris Blvd and Bay Ave , Moreno Valley

Date: 9/2/2015
Day: Wednesday

Project #: 15-6148-008
City: Moreno Valley

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

N

Perris Blvd

Bay Ave

Peak Hour Summary

Southbound Approach

	Right	Through	Left	Out
Lanes	1	2	1	
AM	74	748	88	1019
NOON	0	0	0	0
PM	28	966	68	929

Westbound Approach

	AM	NOON	PM	Lanes
Right	93	0	42	0
Through	57	0	40	1
Left	40	0	19	1
Out	189	0	165	

Eastbound Approach

	Lanes	AM	NOON	PM
Out		186	0	109
Left	1	81	0	22
Through	1	47	0	47
Right	0	80	0	40

Northbound Approach

	Out	Left	Through	Right
AM	868	55	845	54
NOON	0	0	0	0
PM	1025	41	865	50
Lanes		1	2	0

CONTROL
Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	910	1019
North Leg	NOON	0	0
North Leg	PM	1062	929
East Leg	AM	190	189
East Leg	NOON	0	0
East Leg	PM	101	165
West Leg	AM	208	186
West Leg	NOON	0	0
West Leg	PM	109	109
South Leg	AM	954	868
South Leg	NOON	0	0
South Leg	PM	956	1025

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	1929	0	1991
East Leg	379	0	266
West Leg	394	0	218
South Leg	1822	0	1981

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Perris Blvd and Bay Ave , Moreno Valley

Date: 9/13/2015

Day: Sunday

Project #: 15-6148-008

City: Moreno Valley

AM Peak Hour	
NOON Peak Hour	100 PM
PM Peak Hour	

N

Perris Blvd

Bay Ave

Peak Hour Summary

Southbound Approach

Lanes	1	2	1	
AM	0	0	0	0
NOON	26	723	60	846
PM	0	0	0	0

Eastbound Approach

	AM	NOON	PM
(out)	0	87	0

Lanes	AM	NOON	PM
1	0	21	0
1	0	37	0
0	0	27	0

Westbound Approach

AM	NOON	PM	Lanes
0	59	0	0
0	31	0	1
0	24	0	1
0	132	0	

CONTROL

Signalized

Northbound Approach

AM	0	0	0	0
NOON	774	30	766	35
PM	0	0	0	0
Lanes		1	2	0

Count Periods	Start	End
AM		
NOON	11:00 AM	2:00 PM
PM		

Total Ins & Outs

North Leg

AM	0	0	
NOON	809	846	
PM	0	0	

West Leg

AM	NOON	PM
0	87	0
0	85	0

East Leg

AM	NOON	PM
0	114	0
0	132	0

South Leg

AM	0	0
NOON	774	831
PM	0	0

Total Volume Per Leg

North Leg

AM	0
NOON	1655
PM	0

West Leg

AM	NOON	PM
0	172	0

East Leg

AM	NOON	PM
0	246	0

South Leg

AM	0
NOON	1605
PM	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Perris Blvd and Alessandro Blvd , Moreno Valley

Date:	9/2/2015
Day:	Wednesday
Project #:	15-6148-009
City:	Moreno Valley

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Perris Blvd

Alessandro Blvd

CONTROL

Signalized

Southbound Approach

	Right	Through	Left	Out
Lanes	1	2	1	
AM	160	499	174	1003
NOON	0	0	0	0
PM	129	709	140	1050

Eastbound Approach

Lanes	Movement	AM	NOON	PM
	Out	1059	0	872
1	Left	171	0	402
2	Through	369	0	761
1	Right	89	0	273

Westbound Approach

Movement	AM	NOON	PM	Lanes
Right	113	0	97	0
Through	659	0	502	3
Left	132	0	168	1
Out	683	0	1007	

Northbound Approach

	Out	Left	Through	Right
AM	720	240	719	140
NOON	0	0	0	0
PM	1150	241	551	106
Lanes		1	2	1

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	833	1003
North Leg	NOON	0	0
North Leg	PM	978	1050
East Leg	AM	904	683
East Leg	NOON	0	0
East Leg	PM	767	1007
West Leg	AM	629	1059
West Leg	NOON	0	0
West Leg	PM	1436	872
South Leg	AM	1099	720
South Leg	NOON	0	0
South Leg	PM	898	1150

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	1836	0	2028
East Leg	1587	0	1774
West Leg	1688	0	2308
South Leg	1819	0	2048

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Perris Blvd and Alessandro Blvd , Moreno Valley

Date:	9/13/2015
Day:	Sunday
Project #:	15-6148-009
City:	Moreno Valley

AM Peak Hour	
NOON Peak Hour	100 PM
PM Peak Hour	

Peak Hour Summary

Perris Blvd / Alessandro Blvd

N

Southbound Approach

	Lanes 1	Lanes 2	Lanes 1	Out
AM	0	0	0	0
NOON	153	475	112	937
PM	0	0	0	0

Eastbound Approach

Lanes		AM	NOON	PM
	Out	0	797	0
1	Left	0	329	0
2	Through	0	396	0
1	Right	0	206	0

CONTROL

Signalized

Westbound Approach

	AM	NOON	PM	Lanes
U-turn	0	87	0	0
Through	0	370	0	3
Left	0	157	0	1
Out	0	576	0	

Northbound Approach

	Out	Lanes 1	Lanes 2	Lanes 1
AM	0	0	0	0
NOON	838	274	521	68
PM	0	0	0	0

Count Periods	Start	End
AM		
NOON	11:00 AM	2:00 PM
PM		

Total Ins & Outs

North Leg			
AM	0	0	
NOON	740	937	
PM	0	0	

West Leg	AM	NOON	PM
	0	797	0
	0	931	0

East Leg	AM	NOON	PM
	0	614	0
	0	576	0

South Leg		
AM	0	0
NOON	838	863
PM	0	0

Total Volume Per Leg

North Leg	
AM	0
NOON	1677
PM	0

West Leg	AM	NOON	PM
	0	1728	0

East Leg	AM	NOON	PM
	0	1190	0

South Leg	
AM	0
NOON	1701
PM	0

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Dwy 1 into Church and Cottonwood Ave , Moreno Valley

Date: 9/2/2015

Day: Wednesday

Project #: 15-6148-010

City: Moreno Valley

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

CONTROL: No Control

Southbound Approach (Dwy 1 into Church)

Lanes	0	0	0	
AM	0	0	0	0
NOON	0	0	0	0
PM	0	0	0	0

Eastbound Approach (Cottonwood Ave)

	AM	NOON	PM
(out)	452	0	267

Lanes	AM	NOON	PM
0	0	0	0
1	318	0	381
0	27	0	12

Westbound Approach

	AM	NOON	PM	Lanes
	0	0	0	0
	449	0	263	1
	9	0	0	1

	AM	NOON	PM
(in)	319	0	385

Northbound Approach

AM	36	3	0	1
NOON	0	0	0	0
PM	12	4	0	4
Lanes		0	1	0

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

North Leg

AM	0	0
NOON	0	0
PM	0	0

East Leg

AM	NOON	PM
458	0	263
319	0	385

West Leg

AM	NOON	PM
452	0	267
345	0	393

South Leg

AM	36	4
NOON	0	0
PM	12	8

Total Volume Per Leg

North Leg

AM	0
NOON	0
PM	0

East Leg

AM	NOON	PM
777	0	648

West Leg

AM	NOON	PM
797	0	660

South Leg

AM	40
NOON	0
PM	20

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Dwy 1 into Church and Cottonwood Ave , Moreno Valley

Date: 9/13/2015

Day: Sunday

Project #: 15-6148-010

City: Moreno Valley

AM Peak Hour	
NOON Peak Hour	1100 AM
PM Peak Hour	

N

Cottonwood Ave

Dwy 1 into Church

Peak Hour Summary

Southbound Approach

	Right	Through	Left	Departing
Lanes	0	0	0	
AM	0	0	0	0
NOON	0	0	0	0
PM	0	0	0	0

Eastbound Approach

	AM	NOON	PM
Departing	0	340	0

Lanes	Movement	AM	NOON	PM
0	Left	0	0	0
1	Through	0	222	0
0	Right	0	121	0

Westbound Approach

Movement	AM	NOON	PM	Lanes
Right	0	0	0	0
Through	0	293	0	1
Left	0	19	0	1
Departing	0	261	0	

CONTROL

No Control

Northbound Approach

	Departing	Left	Through	Right
AM	0	0	0	0
NOON	140	47	0	39
PM	0	0	0	0
Lanes		0	1	0

Count Periods	Start	End
AM		
NOON	11:00 AM	2:00 PM
PM		

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	0	0
North Leg	NOON	0	0
North Leg	PM	0	0
West Leg	AM	0	0
West Leg	NOON	340	343
West Leg	PM	0	0
East Leg	AM	0	0
East Leg	NOON	312	261
East Leg	PM	0	0
South Leg	AM	0	0
South Leg	NOON	140	86
South Leg	PM	0	0

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	0	0	0
West Leg	0	683	0
East Leg	0	573	0
South Leg	0	226	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Perris Blvd and Dwy 2 into Shopping Center , Moreno Valley

Date:	9/2/2015
Day:	Wednesday
Project #:	15-6148-011
City:	Moreno Valley

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Perris Blvd

Dwy 2 into Shopping Center

Southbound Approach

	Right	Through	Left	Total out
Lanes	0	2	0	
AM	3	988	0	1073
NOON	0	0	0	0
PM	34	1148	0	966

Eastbound Approach

	Lanes	AM	NOON	PM
Out		16	0	83
Left	0	0	0	11
Through	1	0	0	0
Right	0	10	0	67

Westbound Approach

	AM	NOON	PM	Lanes
Right	0	0	0	0
Through	0	0	0	0
Left	0	0	0	0
Out	0	0	0	

Northbound Approach

	Total out	Left	Through	Right
AM	998	13	1073	0
NOON	0	0	0	0
PM	1215	49	955	0
Lanes		0	2	0

CONTROL
1-Way Stop (EB)

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	991	1073
North Leg	NOON	0	0
North Leg	PM	1182	966
East Leg	AM	0	0
East Leg	NOON	0	0
East Leg	PM	0	0
West Leg	AM	10	16
West Leg	NOON	0	0
West Leg	PM	78	83
South Leg	AM	1086	998
South Leg	NOON	0	0
South Leg	PM	1004	1215

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	2064	0	2148
East Leg	0	0	0
West Leg	26	0	161
South Leg	2084	0	2219

Attachment: Exhibit A to Resolution 2018-XX - Mitigated Negative Declaration (3224 : A GENERAL PLAN AMENDMENT, CHANGE OF ZONE,

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Perris Blvd and Dwy 2 into Shopping Center , Moreno Valley

Date: 9/13/2015

Day: Sunday

Project #: 15-6148-011

City: Moreno Valley

AM Peak Hour	
NOON Peak Hour	100 PM
PM Peak Hour	

Peak Hour Summary

Perris Blvd

Dwy 2 into Shopping Center

Southbound Approach

Lanes	0	2	0	
AM	0	0	0	0
NOON	34	796	0	929
PM	0	0	0	0

Eastbound Approach

	AM	NOON	PM
(in)	0	97	0

Lanes	AM	NOON	PM
0	0	19	0
1	0	0	0
0	0	71	0

CONTROL

1-Way Stop (EB)

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
0	0	0	0
0	0	0	0

AM	NOON	PM
0	0	0

Northbound Approach

AM	0	0	0	0
NOON	867	63	910	0
PM	0	0	0	0
Lanes		0	2	0

Count Periods	Start	End
AM		
NOON	11:00 AM	2:00 PM
PM		

Total Ins & Outs

North Leg

AM	0	0	
NOON	830	929	
PM	0	0	

West Leg

AM	NOON	PM
0	97	0
0	90	0

East Leg

AM	NOON	PM
0	0	0
0	0	0

South Leg

AM	0	0
NOON	867	973
PM	0	0

Total Volume Per Leg

	North Leg	South Leg
AM	0	0
NOON	1759	1840
PM	0	0

	AM	NOON	PM
West Leg	0	187	0
East Leg	0	0	0

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Pedestrian Count Peak Hour

	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

PROJECT#: 15-6148-005
N/S Street: Perris Blvd
E/W Street: Cottonwood Ave
DATE: 9/2/2015 DAY: Wednesday
CITY: Moreno Valley

NORTH LEG

AM	1
NOON	0
PM	5

0	AM
0	NOON
4	PM

WEST LEG

AM	NOON	PM
4	0	6

1	0	5
AM	NOON	PM

EAST LEG

AM	NOON	PM
3	0	1

4	0	3
AM	NOON	PM

SOUTH LEG

AM	8
NOON	0
PM	1

0	AM
0	NOON
2	PM

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Bicycle Count Peak Hour

	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

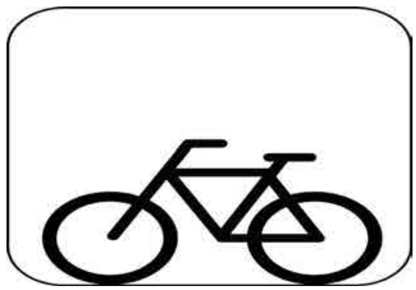
PROJECT#: 15-6148-005
N/S Street: Perris Blvd
E/W Street: Cottonwood Ave
DATE: 9/2/2015
DAY: Wednesday
CITY: Moreno Valley

NORTH LEG

AM	0	1	0
NOON	0	0	0
PM	0	3	0

WEST LEG

AM	NOON	PM
0	0	0
0	0	3
0	0	0



EAST LEG

AM	NOON	PM
0	0	0
1	0	0
0	0	0

SOUTH LEG

AM	0	2	0
NOON	0	0	0
PM	0	2	0

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-6148-005
N/S Street: Perris Blvd
E/W Street: Cottonwood Ave
DATE: 9/2/2015 DAY: Wednesday
CITY: Moreno Valley

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PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	2	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	1
7:30 AM	0	0	3	0	0	0	0	0
7:45 AM	0	0	4	0	1	2	0	1
8:00 AM	0	0	0	0	0	0	0	1
8:15 AM	0	0	2	0	0	0	1	2
8:30 AM	1	0	2	0	3	1	0	0
8:45 AM	0	1	1	0	1	2	0	0
TOTALS	1	1	14	0	5	5	1	5

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	2	0	0	1	0	0	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	2	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	0	2	0	0	1	0	0	0	0	0	3	0

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	1	0	0	0	0	0
4:15 PM	2	1	0	0	1	0	1	0
4:30 PM	1	3	0	0	2	0	1	0
4:45 PM	1	0	1	1	0	1	2	3
5:00 PM	1	0	0	1	0	0	1	3
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	2	0	0	0	0	3	0
5:45 PM	1	0	0	0	1	1	0	0
TOTALS	6	6	2	2	4	2	8	6

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	1	0	0	1	0	0	2	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0
4:30 PM	0	1	0	0	1	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	1	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	2	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	1	0	0	3	0	0	0	0
TOTALS	0	2	0	0	7	0	0	6	0	0	0	0

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Pedestrian Count Peak Hour

	Start:	End:
AM		
NOON	11:00	14:00
PM		

PROJECT#: 15-6148-005
N/S Street: Perris Blvd
E/W Street: Cottonwood Ave
DATE: 9/13/2015 DAY: Sunday
CITY: Moreno Valley

AM	0
NOON	1
PM	0

0	AM
8	NOON
0	PM

AM	NOON	PM
0	3	0

NORTH LEG

AM	NOON	PM
0	4	0

WEST LEG

EAST LEG

0	2	0
AM	NOON	PM

SOUTH LEG

0	13	0
AM	NOON	PM

AM	0
NOON	4
PM	0

0	AM
12	NOON
0	PM

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Bicycle Count Peak Hour

	Start:	End:
AM		
NOON	11:00	14:00
PM		

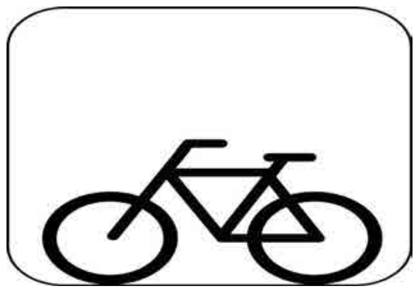
PROJECT#: 15-6148-005
N/S Street: Perris Blvd
E/W Street: Cottonwood Ave
DATE: 9/13/2015
DAY: Sunday
CITY: Moreno Valley

AM	0	0	0
NOON	0	4	0
PM	0	0	0

NORTH LEG

AM	NOON	PM
0	0	0
0	0	0
0	0	0

WEST LEG



EAST LEG

AM	NOON	PM
0	0	0
0	0	0
0	1	0

SOUTH LEG

AM	0	0	0
NOON	0	1	0
PM	0	0	0

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-6148-005
N/S Street: Perris Blvd
E/W Street: Cottonwood Ave
DATE: 9/13/2015 DAY: Sunday
CITY: Moreno Valley

N O O N

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
11:00 AM	0	0	1	5	0	0	1	1
11:15 AM	1	0	5	1	0	1	1	1
11:30 AM	0	0	5	0	0	3	0	0
11:45 AM	2	1	0	0	0	1	0	0
12:00 PM	1	0	1	0	0	0	0	0
12:15 PM	0	0	0	0	1	0	0	0
12:30 PM	0	0	0	3	1	0	0	0
12:45 PM	0	0	0	0	1	0	0	0
1:00 PM	0	2	1	0	4	1	0	0
1:15 PM	0	5	1	12	6	0	2	0
1:30 PM	1	0	2	0	0	3	0	3
1:45 PM	0	1	0	0	3	0	0	0
TOTALS	5	9	16	21	16	9	4	5

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
11:00 AM	0	1	0	1	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	1	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	1	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	1	0	0	0	0	1	0	0
1:15 PM	0	1	0	0	1	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	1	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	1	0	0	0	0	0	0	0
TOTALS	0	2	0	1	6	0	0	0	0	1	0	0

Prepared by NDS/ATD

VOLUME

Perris Blvd Bet. Eucalyptus Ave & Cottonwood Ave

Day: Wednesday
Date: 9/2/2015

City: Moreno Valley
Project #: CA15_6149_001

DAILY TOTALS	NB	SB	EB	WB	Total
	15,554	15,665	0	0	31,219

AM Period	NB		SB		EB	WB	TOTAL	
00:00	31		47				78	
00:15	17		44				61	
00:30	24		31				55	
00:45	21	93	23	145			44	238
01:00	14		33				47	
01:15	15		30				45	
01:30	25		23				48	
01:45	21	75	24	110			45	185
02:00	15		25				40	
02:15	20		23				43	
02:30	23		26				49	
02:45	33	91	25	99			58	190
03:00	45		19				64	
03:15	31		23				54	
03:30	50		25				75	
03:45	56	182	40	107			96	289
04:00	89		51				140	
04:15	92		72				164	
04:30	124		52				176	
04:45	134	439	42	217			176	656
05:00	142		63				205	
05:15	154		86				240	
05:30	116		112				228	
05:45	145	557	81	342			226	899
06:00	183		76				259	
06:15	176		129				305	
06:30	197		160				357	
06:45	221	777	147	512			368	1289
07:00	213		207				420	
07:15	278		231				509	
07:30	251		321				572	
07:45	347	1089	220	979			567	2068
08:00	249		199				448	
08:15	182		147				329	
08:30	229		186				415	
08:45	211	871	139	671			350	1542
09:00	168		193				361	
09:15	197		188				385	
09:30	194		206				400	
09:45	189	748	168	755			357	1503
10:00	204		182				386	
10:15	229		173				402	
10:30	212		173				385	
10:45	223	868	188	716			411	1584
11:00	230		175				405	
11:15	196		227				423	
11:30	220		218				438	
11:45	248	894	224	844			472	1738
TOTALS		6684		5497				12181
SPLIT %		54.9%		45.1%				39.0%

PM Period	NB		SB		EB	WB	TOTAL	
12:00	210		226				436	
12:15	261		239				500	
12:30	239		226				465	
12:45	226	936	221	912			447	1848
13:00	254		234				488	
13:15	233		231				464	
13:30	229		248				477	
13:45	268	984	209	922			477	1906
14:00	215		283				498	
14:15	271		282				553	
14:30	220		268				488	
14:45	257	963	288	1121			545	2084
15:00	267		257				524	
15:15	248		278				526	
15:30	238		239				477	
15:45	232	985	243	1017			475	2002
16:00	239		300				539	
16:15	242		267				509	
16:30	257		249				506	
16:45	251	989	264	1080			515	2069
17:00	262		317				579	
17:15	226		328				554	
17:30	229		309				538	
17:45	264	981	296	1250			560	2231
18:00	229		293				522	
18:15	197		250				447	
18:30	215		235				450	
18:45	208	849	251	1029			459	1878
19:00	200		243				443	
19:15	166		226				392	
19:30	149		231				380	
19:45	131	646	184	884			315	1530
20:00	156		200				356	
20:15	142		219				361	
20:30	150		164				314	
20:45	111	559	145	728			256	1287
21:00	147		149				296	
21:15	113		157				270	
21:30	98		134				232	
21:45	102	460	114	554			216	1014
22:00	79		114				193	
22:15	73		109				182	
22:30	101		103				204	
22:45	84	337	67	393			151	730
23:00	57		81				138	
23:15	40		72				112	
23:30	53		66				119	
23:45	31	181	59	278			90	459
TOTALS		8870		10168				19038
SPLIT %		46.6%		53.4%				61.0%

DAILY TOTALS	NB	SB	EB	WB	Total
	15,554	15,665	0	0	31,219

	NB	SB	EB	WB	TOTAL
AM Peak Hour	07:15	07:00			07:15
AM Pk Volume	1125	979			2096
Pk Hr Factor	0.811	0.762			0.916
7 - 9 Volume	1960	1650	0	0	3610
7 - 9 Peak Hour	07:15	07:00			07:15
7 - 9 Pk Volume	1125	979	0	0	2096
Pk Hr Factor	0.811	0.762	0.000	0.000	0.916

	NB	SB	EB	WB	TOTAL
PM Peak Hour	14:15	17:00			17:00
PM Pk Volume	1015	1250			2231
Pk Hr Factor	0.936	0.953			0.963
4 - 6 Volume	1970	2330	0	0	4300
4 - 6 Peak Hour	16:15	17:00			17:00
4 - 6 Pk Volume	1012	1250	0	0	2231
Pk Hr Factor	0.966	0.953	0.000	0.000	0.963

Prepared by NDS/ATD

VOLUME

Perris Blvd Bet. Cottonwood Ave & Alessandro Blvd

Day: Wednesday
Date: 9/2/2015

City: Moreno Valley
Project #: CA15_6149_002

DAILY TOTALS	NB	SB	EB	WB	Total
	13,784	13,269	0	0	27,053

AM Period	NB		SB		EB	WB	TOTAL	
00:00	28		41				69	
00:15	12		34				46	
00:30	21		22				43	
00:45	17	78	23	120			40	198
01:00	13		28				41	
01:15	17		23				40	
01:30	25		17				42	
01:45	15	70	15	83			30	153
02:00	12		16				28	
02:15	15		25				40	
02:30	21		19				40	
02:45	25	73	24	84			49	157
03:00	32		17				49	
03:15	22		18				40	
03:30	42		23				65	
03:45	47	143	37	95			84	238
04:00	64		43				107	
04:15	67		62				129	
04:30	100		46				146	
04:45	101	332	36	187			137	519
05:00	114		58				172	
05:15	114		84				198	
05:30	84		102				186	
05:45	117	429	77	321			194	750
06:00	153		77				230	
06:15	139		109				248	
06:30	153		122				275	
06:45	171	616	144	452			315	1068
07:00	186		172				358	
07:15	244		195				439	
07:30	247		254				501	
07:45	312	989	197	818			509	1807
08:00	222		175				397	
08:15	163		150				313	
08:30	217		170				387	
08:45	173	775	127	622			300	1397
09:00	170		159				329	
09:15	152		140				292	
09:30	170		174				344	
09:45	154	646	134	607			288	1253
10:00	195		158				353	
10:15	200		159				359	
10:30	194		151				345	
10:45	183	772	176	644			359	1416
11:00	222		178				400	
11:15	175		192				367	
11:30	223		187				410	
11:45	204	824	180	737			384	1561
TOTALS		5747		4770				10517
SPLIT %		54.6%		45.4%				38.9%

PM Period	NB		SB		EB	WB	TOTAL	
12:00	208		206				414	
12:15	218		210				428	
12:30	217		206				423	
12:45	172	815	237	859			409	1674
13:00	245		215				460	
13:15	208		195				403	
13:30	202		218				420	
13:45	230	885	183	811			413	1696
14:00	196		215				411	
14:15	219		240				459	
14:30	185		212				397	
14:45	286	886	241	908			527	1794
15:00	249		236				485	
15:15	219		222				441	
15:30	208		212				420	
15:45	225	901	210	880			435	1781
16:00	222		226				448	
16:15	233		229				462	
16:30	202		233				435	
16:45	238	895	211	899			449	1794
17:00	246		262				508	
17:15	226		262				488	
17:30	214		254				468	
17:45	254	940	243	1021			497	1961
18:00	218		254				472	
18:15	189		210				399	
18:30	203		187				390	
18:45	203	813	175	826			378	1639
19:00	181		200				381	
19:15	148		183				331	
19:30	139		189				328	
19:45	127	595	156	728			283	1323
20:00	126		151				277	
20:15	128		167				295	
20:30	129		139				268	
20:45	92	475	113	570			205	1045
21:00	114		127				241	
21:15	86		130				216	
21:30	85		103				188	
21:45	86	371	87	447			173	818
22:00	74		100				174	
22:15	57		97				154	
22:30	92		80				172	
22:45	80	303	54	331			134	634
23:00	55		59				114	
23:15	34		62				96	
23:30	46		53				99	
23:45	23	158	45	219			68	377
TOTALS		8037		8499				16536
SPLIT %		48.6%		51.4%				61.1%

DAILY TOTALS	NB	SB	EB	WB	Total
	13,784	13,269	0	0	27,053

	NB	SB	EB	WB	TOTAL
AM Peak Hour	07:15	07:15			07:15
AM Pk Volume	1025	821			1846
Pk Hr Factor	0.821	0.808			0.907
7 - 9 Volume	1764	1440	0	0	3204
7 - 9 Peak Hour	07:15	07:15			07:15
7 - 9 Pk Volume	1025	821	0	0	1846
Pk Hr Factor	0.821	0.808	0.000	0.000	0.907

	NB	SB	EB	WB	TOTAL
PM Peak Hour	14:45	17:00			17:00
PM Pk Volume	962	1021			1961
Pk Hr Factor	0.841	0.974			0.965
4 - 6 Volume	1835	1920	0	0	3755
4 - 6 Peak Hour	17:00	17:00			17:00
4 - 6 Pk Volume	940	1021	0	0	1961
Pk Hr Factor	0.925	0.974	0.000	0.000	0.965

Prepared by NDS/ATD

VOLUME

Cottonwood Ave Bet. Indian St & Perris Blvd

Day: Wednesday
Date: 9/2/2015

City: Moreno Valley
Project #: CA15_6149_003

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,166	4,244	8,410

AM Period	NB		SB		EB		WB		TOTAL	
00:00					6		7		13	
00:15					8		4		12	
00:30					4		6		10	
00:45					10	28	3	20	13	48
01:00					8		4		12	
01:15					3		2		5	
01:30					3		6		9	
01:45					3	17	4	16	7	33
02:00					2		5		7	
02:15					2		4		6	
02:30					1		1		2	
02:45					7	12	3	13	10	25
03:00					2		2		4	
03:15					3		3		6	
03:30					5		5		10	
03:45					6	16	4	14	10	30
04:00					7		10		17	
04:15					14		12		26	
04:30					12		15		27	
04:45					10	43	16	53	26	96
05:00					12		10		22	
05:15					17		8		25	
05:30					17		11		28	
05:45					19	65	17	46	36	111
06:00					27		16		43	
06:15					18		21		39	
06:30					35		32		67	
06:45					39	119	34	103	73	222
07:00					39		45		84	
07:15					63		62		125	
07:30					103		90		193	
07:45					70	275	103	300	173	575
08:00					42		75		117	
08:15					43		46		89	
08:30					43		55		98	
08:45					65	193	57	233	122	426
09:00					51		45		96	
09:15					42		49		91	
09:30					45		54		99	
09:45					44	182	40	188	84	370
10:00					49		53		102	
10:15					52		40		92	
10:30					49		56		105	
10:45					47	197	114	263	161	460
11:00					41		75		116	
11:15					60		79		139	
11:30					51		55		106	
11:45					57	209	49	258	106	467
TOTALS						1356		1507		2863
SPLIT %						47.4%		52.6%		34.0%

PM Period	NB		SB		EB		WB		TOTAL	
12:00					57		58		115	
12:15					66		83		149	
12:30					70		80		150	
12:45					80	273	96	317	176	590
13:00					61		70		131	
13:15					69		55		124	
13:30					61		60		121	
13:45					83	274	61	246	144	520
14:00					82		73		155	
14:15					97		104		201	
14:30					81		79		160	
14:45					61	321	85	341	146	662
15:00					62		95		157	
15:15					47		70		117	
15:30					77		56		133	
15:45					61	247	56	277	117	524
16:00					77		64		141	
16:15					68		59		127	
16:30					82		49		131	
16:45					75	302	71	243	146	545
17:00					96		89		185	
17:15					92		70		162	
17:30					100		83		183	
17:45					87	375	84	326	171	701
18:00					91		61		152	
18:15					72		62		134	
18:30					84		75		159	
18:45					93	340	69	267	162	607
19:00					72		64		136	
19:15					56		60		116	
19:30					64		63		127	
19:45					58	250	52	239	110	489
20:00					49		52		101	
20:15					38		49		87	
20:30					43		43		86	
20:45					44	174	52	196	96	370
21:00					28		51		79	
21:15					36		38		74	
21:30					29		32		61	
21:45					21	114	22	143	43	257
22:00					31		30		61	
22:15					23		16		39	
22:30					18		17		35	
22:45					25	97	20	83	45	180
23:00					13		26		39	
23:15					8		17		25	
23:30					9		8		17	
23:45					13	43	8	59	21	102
TOTALS						2810		2737		5547
SPLIT %						50.7%		49.3%		66.0%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,166	4,244	8,410

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour			07:15	07:15	07:15	PM Peak Hour			17:00	14:15	17:00
AM Pk Volume			278	330	608	PM Pk Volume			375	363	701
Pk Hr Factor			0.675	0.801	0.788	Pk Hr Factor			0.938	0.873	0.947
7 - 9 Volume	0	0	468	533	1001	4 - 6 Volume	0	0	677	569	1246
7 - 9 Peak Hour			07:15	07:15	07:15	4 - 6 Peak Hour			17:00	17:00	17:00
7 - 9 Pk Volume	0	0	278	330	608	4 - 6 Pk Volume	0	0	375	326	701
Pk Hr Factor	0.000	0.000	0.675	0.801	0.788	Pk Hr Factor	0.000	0.000	0.938	0.916	0.947

Prepared by NDS/ATD

VOLUME

Cottonwood Ave Bet. Perris Blvd & Kitching St

Day: Wednesday
Date: 9/2/2015

City: Moreno Valley
Project #: CA15_6149_004

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,283	4,011	8,294

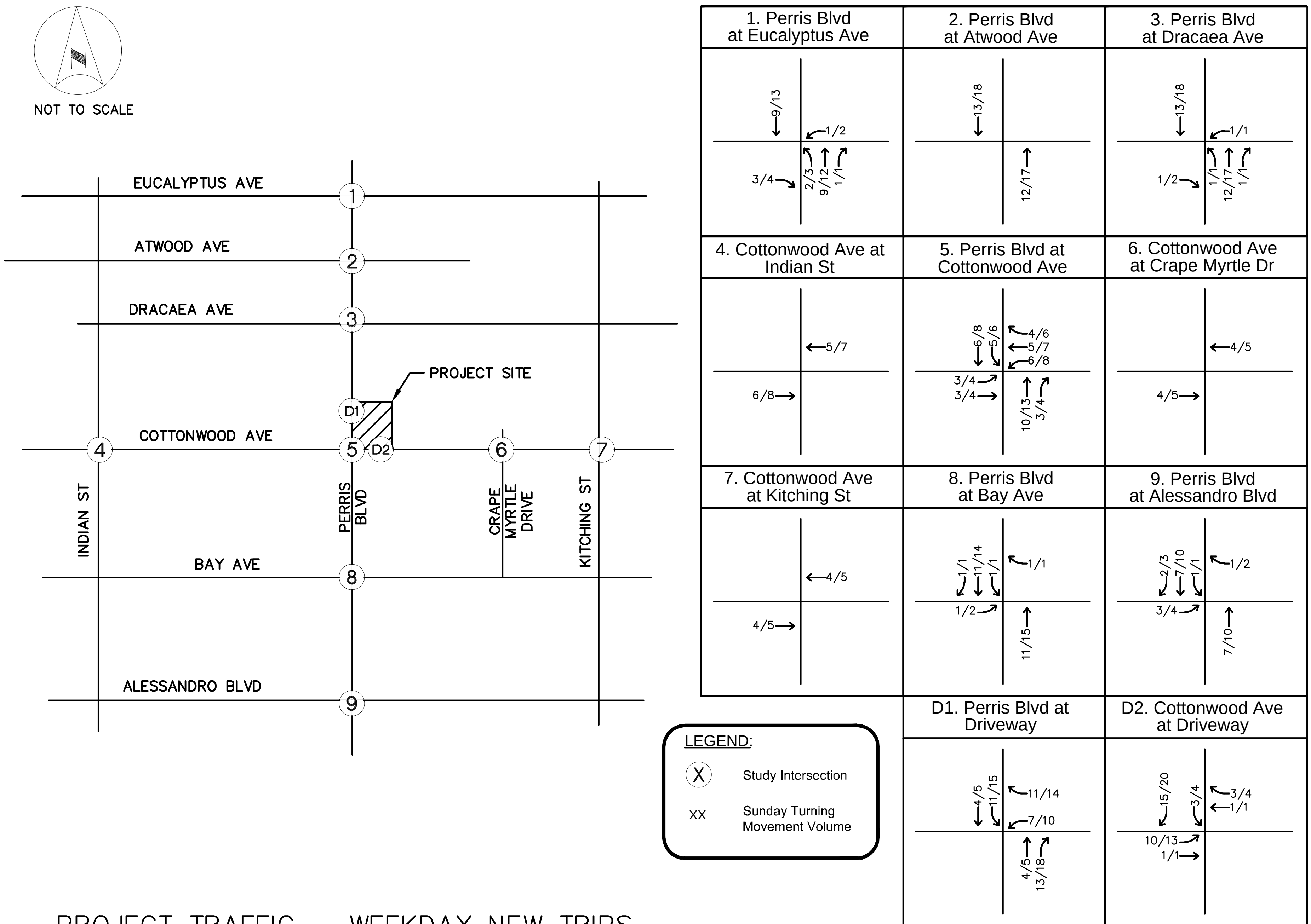
AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			7		6		13		12:00			62		60		122	
00:15			11		4		15		12:15			56		74		130	
00:30			7		3		10		12:30			61		52		113	
00:45			4	29	3	16	7	45	12:45			86	265	59	245	145	510
01:00			8		4		12		13:00			65		44		109	
01:15			2		1		3		13:15			55		40		95	
01:30			5		4		9		13:30			77		63		140	
01:45			5	20	3	12	8	32	13:45			73	270	66	213	139	483
02:00			5		3		8		14:00			82		54		136	
02:15			2		10		12		14:15			81		89		170	
02:30			2		2		4		14:30			80		63		143	
02:45			5	14	3	18	8	32	14:45			75	318	69	275	144	593
03:00			2		5		7		15:00			70		72		142	
03:15			1		8		9		15:15			68		55		123	
03:30			4		5		9		15:30			71		46		117	
03:45			5	12	10	28	15	40	15:45			57	266	50	223	107	489
04:00			1		21		22		16:00			78		68		146	
04:15			11		20		31		16:15			68		55		123	
04:30			8		16		24		16:30			67		73		140	
04:45			6	26	26	83	32	109	16:45			86	299	63	259	149	558
05:00			10		27		37		17:00			97		64		161	
05:15			3		24		27		17:15			80		47		127	
05:30			10		28		38		17:30			95		66		161	
05:45			13	36	21	100	34	136	17:45			105	377	67	244	172	621
06:00			13		33		46		18:00			87		47		134	
06:15			18		46		64		18:15			85		59		144	
06:30			33		50		83		18:30			74		57		131	
06:45			31	95	57	186	88	281	18:45			85	331	48	211	133	542
07:00			41		79		120		19:00			81		46		127	
07:15			71		84		155		19:15			58		48		106	
07:30			113		107		220		19:30			56		47		103	
07:45			70	295	144	414	214	709	19:45			70	265	45	186	115	451
08:00			48		98		146		20:00			60		45		105	
08:15			40		47		87		20:15			63		46		109	
08:30			51		67		118		20:30			52		32		84	
08:45			45	184	74	286	119	470	20:45			58	233	28	151	86	384
09:00			43		51		94		21:00			71		30		101	
09:15			35		55		90		21:15			47		36		83	
09:30			34		60		94		21:30			39		23		62	
09:45			47	159	49	215	96	374	21:45			30	187	16	105	46	292
10:00			39		51		90		22:00			38		20		58	
10:15			50		43		93		22:15			26		16		42	
10:30			54		59		113		22:30			17		12		29	
10:45			55	198	62	215	117	413	22:45			37	118	20	68	57	186
11:00			59		56		115		23:00			14		11		25	
11:15			51		60		111		23:15			11		10		21	
11:30			53		57		110		23:30			11		4		15	
11:45			73	236	53	226	126	462	23:45			14	50	7	32	21	82
TOTALS				1304		1799		3103	TOTALS				2979		2212		5191
SPLIT %				42.0%		58.0%		37.4%	SPLIT %				57.4%		42.6%		62.6%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,283	4,011	8,294

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour			07:15	07:15	07:15	PM Peak Hour			17:00	14:15	17:00
AM Pk Volume			302	433	735	PM Pk Volume			377	293	621
Pk Hr Factor			0.668	0.752	0.835	Pk Hr Factor			0.898	0.823	0.903
7 - 9 Volume	0	0	479	700	1179	4 - 6 Volume	0	0	676	503	1179
7 - 9 Peak Hour			07:15	07:15	07:15	4 - 6 Peak Hour			17:00	16:00	17:00
7 - 9 Pk Volume	0	0	302	433	735	4 - 6 Pk Volume	0	0	377	259	621
Pk Hr Factor	0.000	0.000	0.668	0.752	0.835	Pk Hr Factor	0.000	0.000	0.898	0.887	0.903

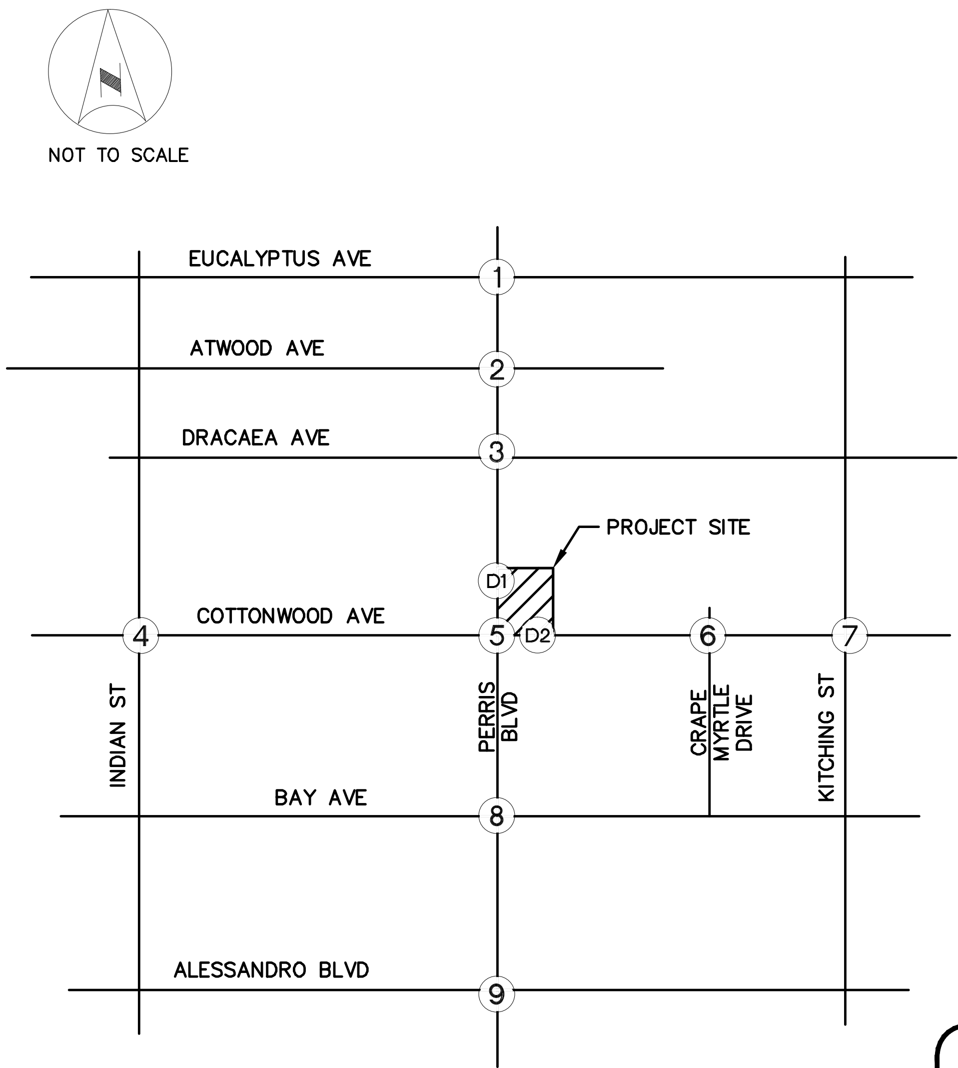
APPENDIX C

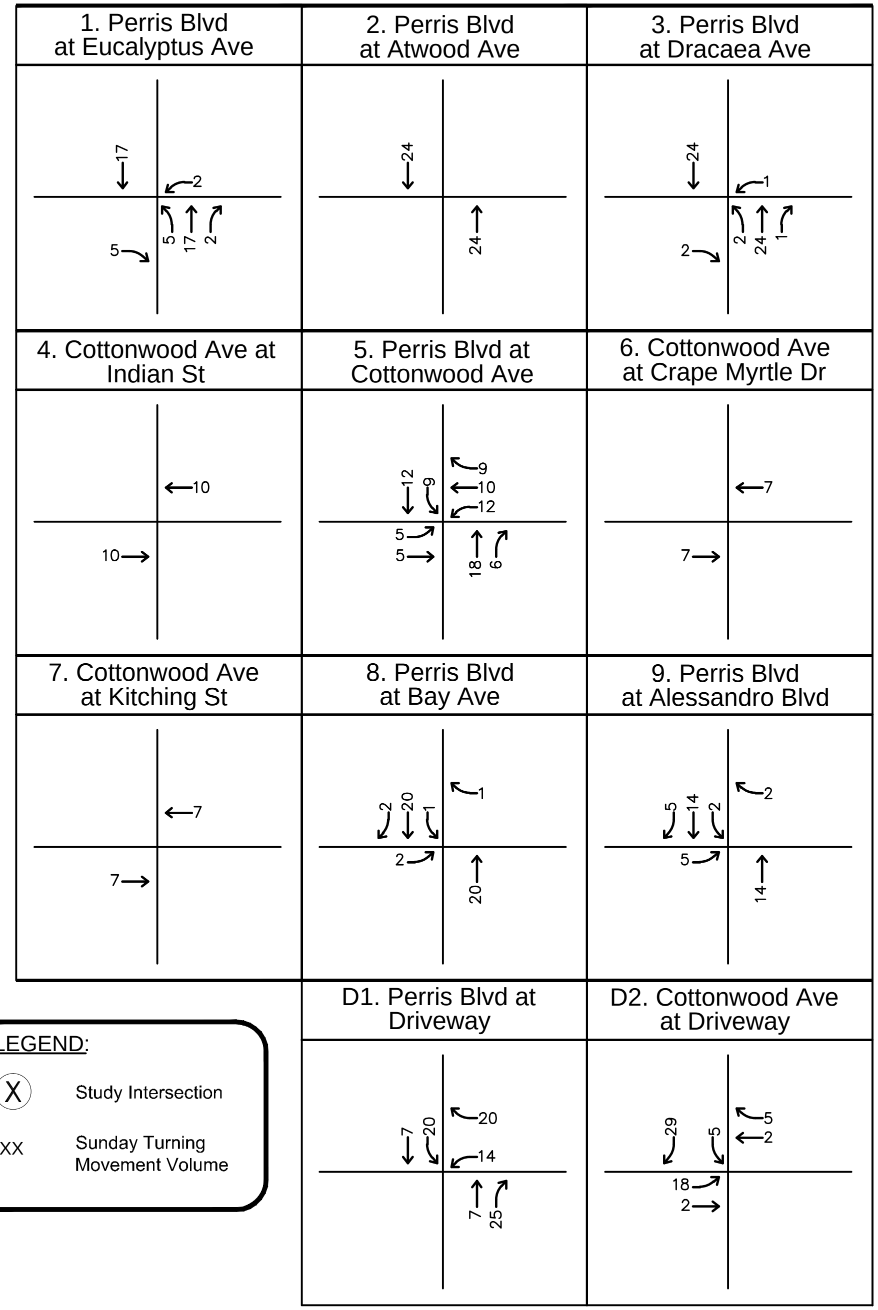
TRIP ASSIGNMENT DATA



PROJECT TRAFFIC — WEEKDAY NEW TRIPS

Kimley»Horn



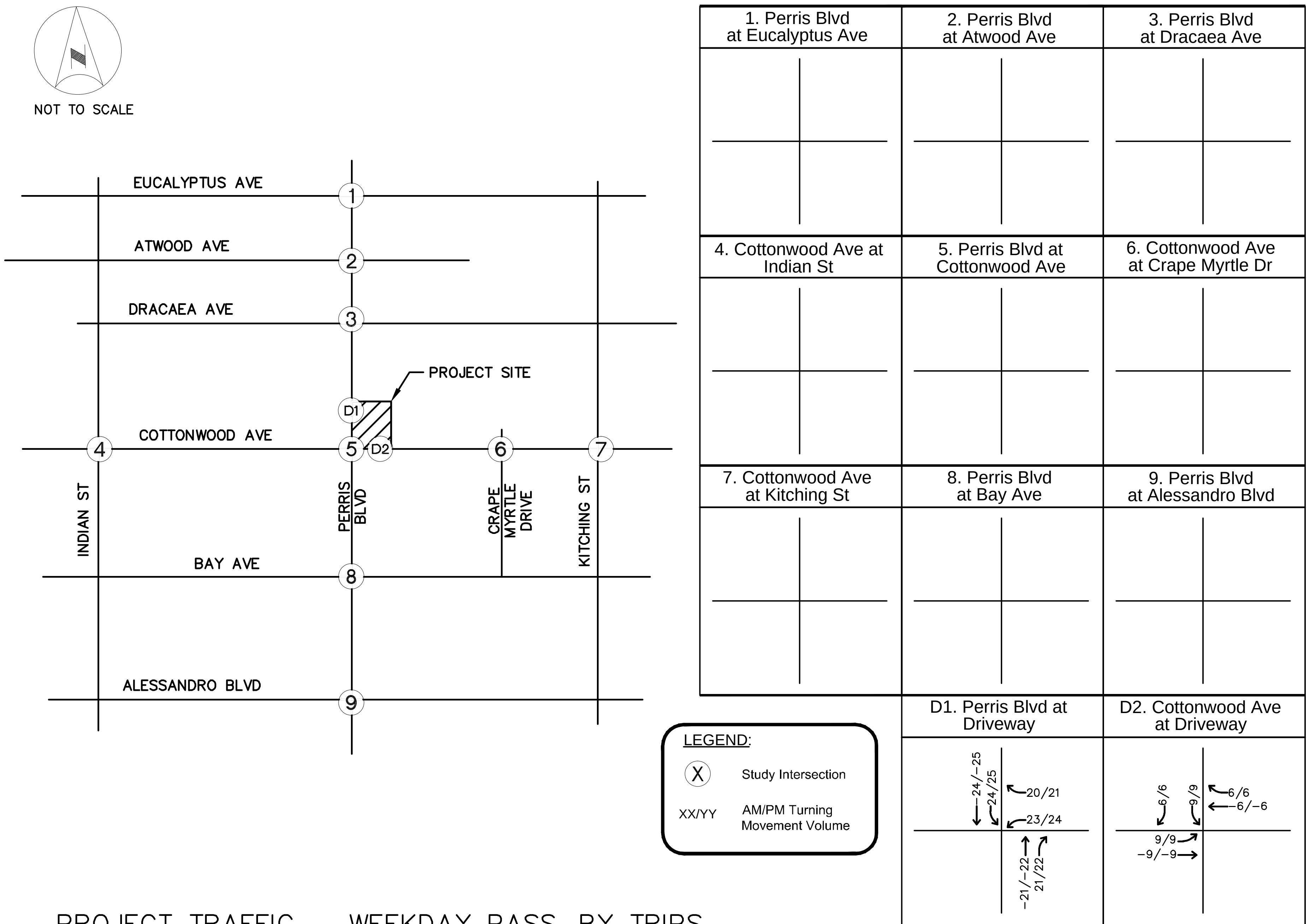


LEGEND:

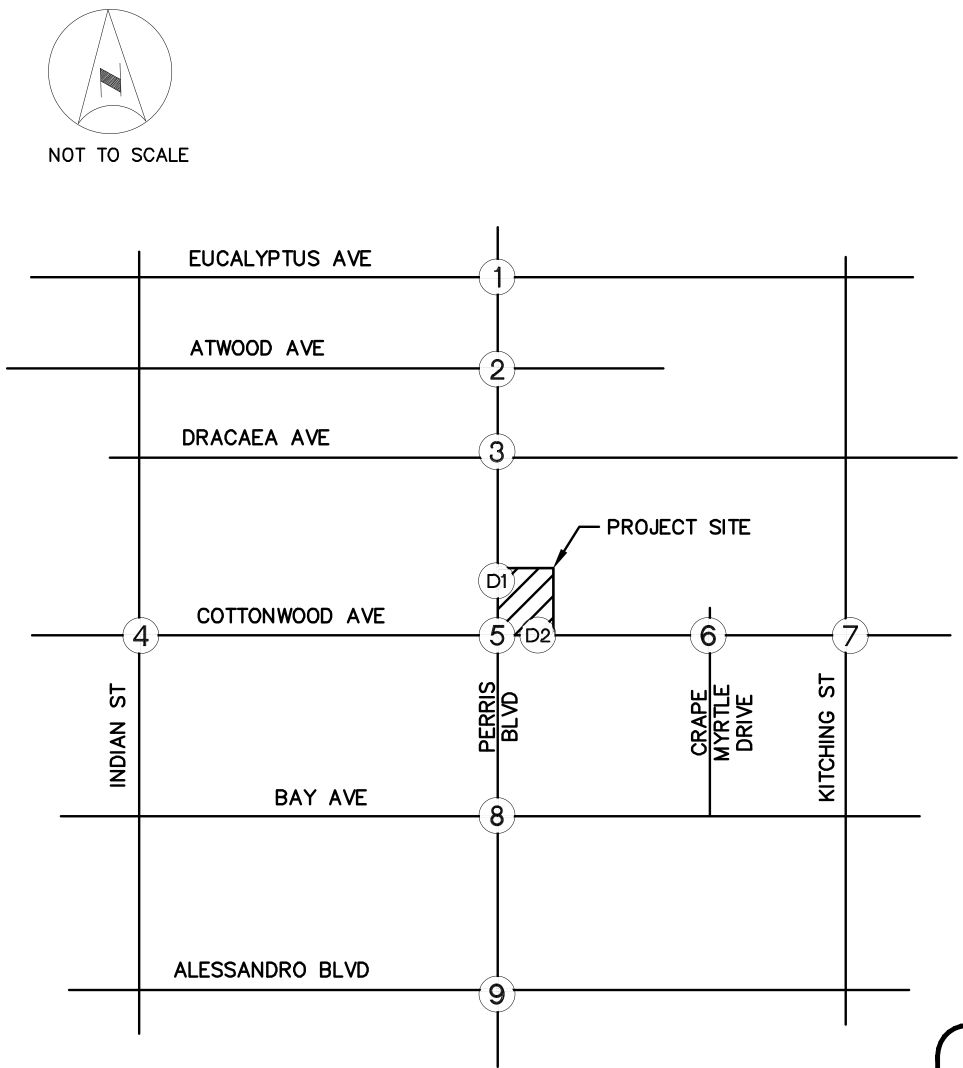
X — Study Intersection

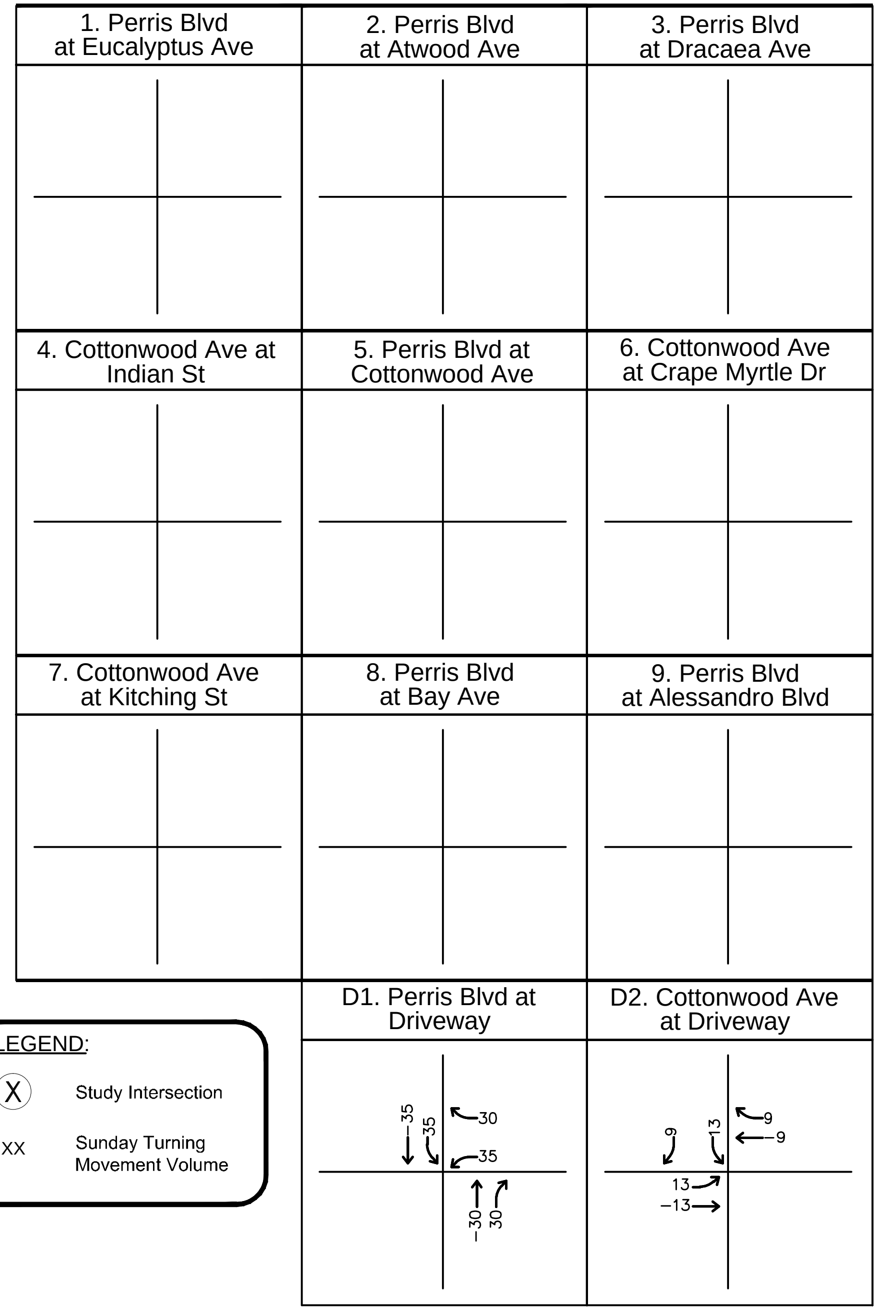
XX — Sunday Turning Movement Volume

PROJECT TRAFFIC – SUNDAY NEW TRIPS



PROJECT TRAFFIC – WEEKDAY PASS-BY TRIPS

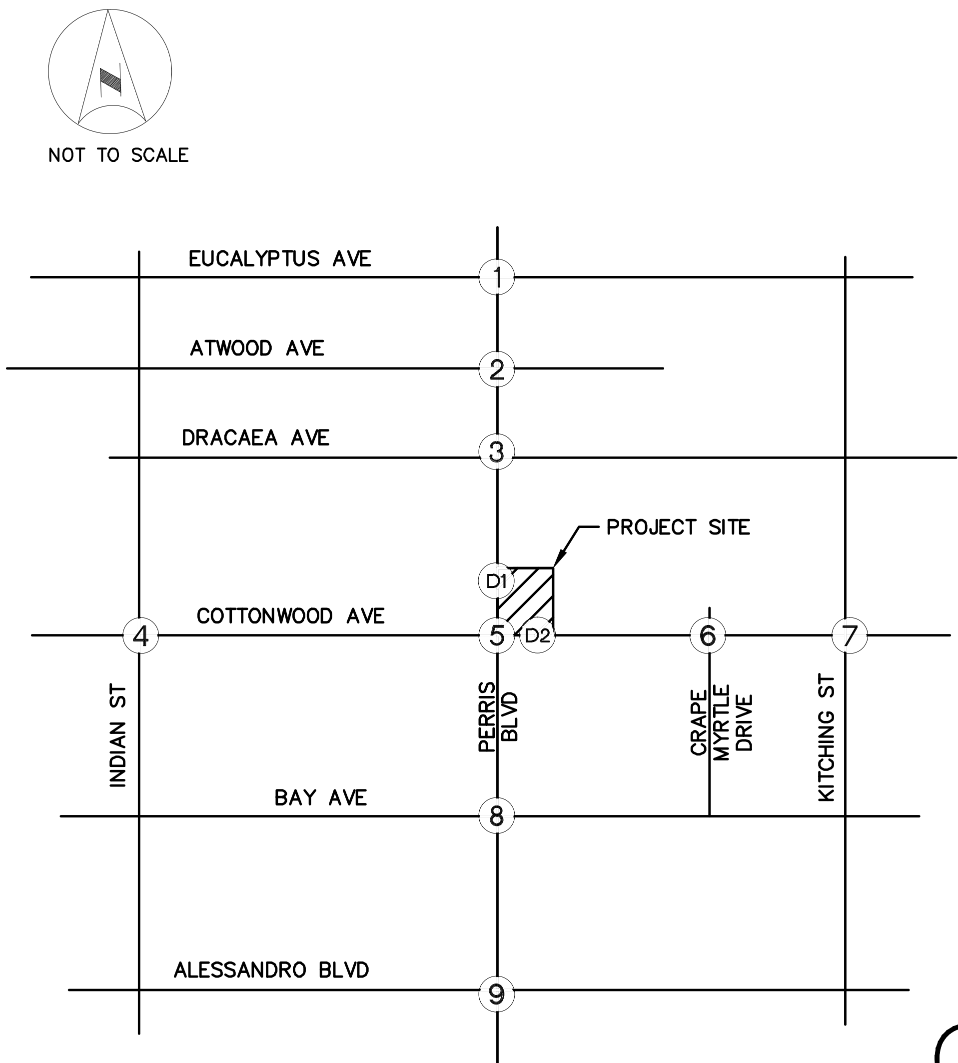


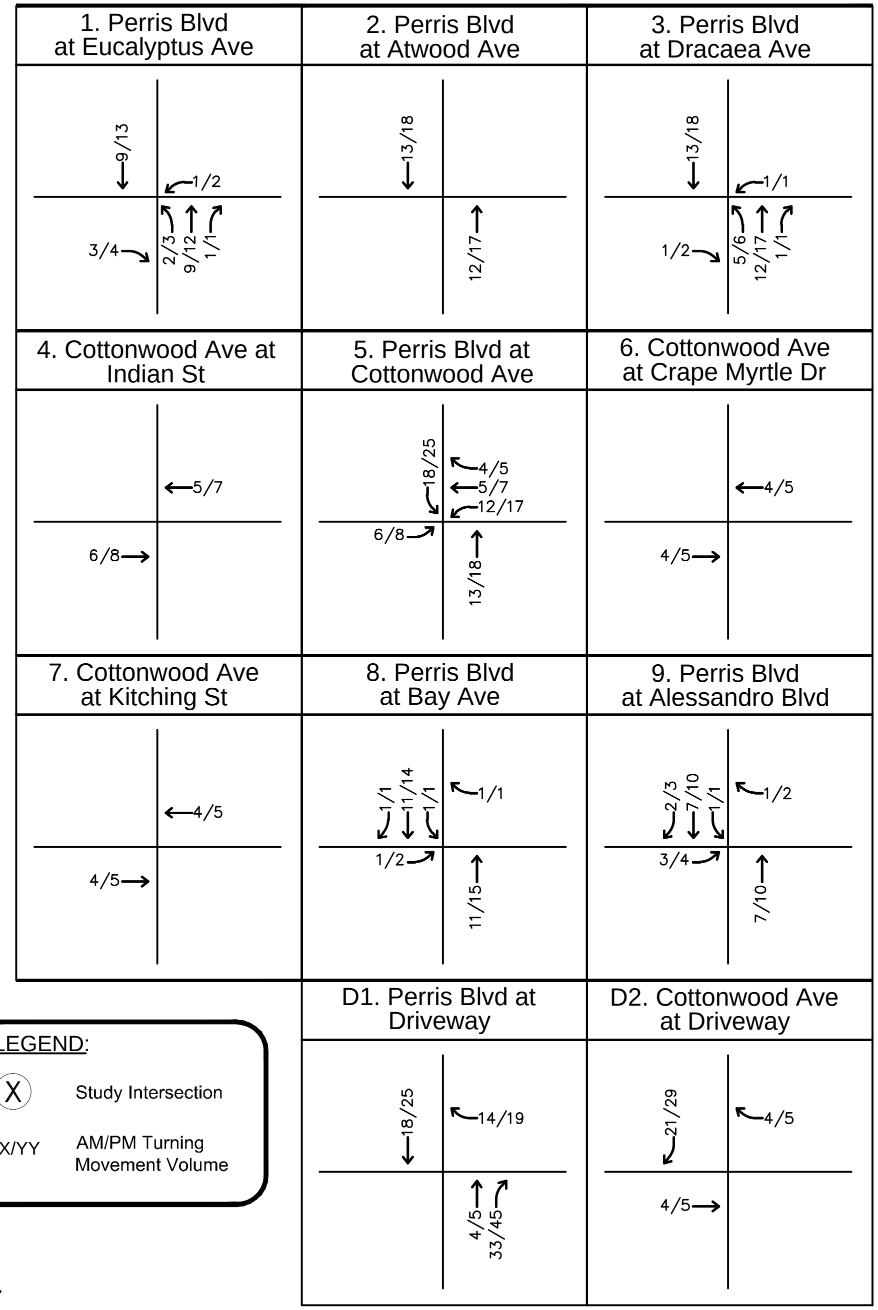


LEGEND:

X	Study Intersection
XX	Sunday Turning Movement Volume

PROJECT TRAFFIC – SUNDAY PASS-BY TRIPS





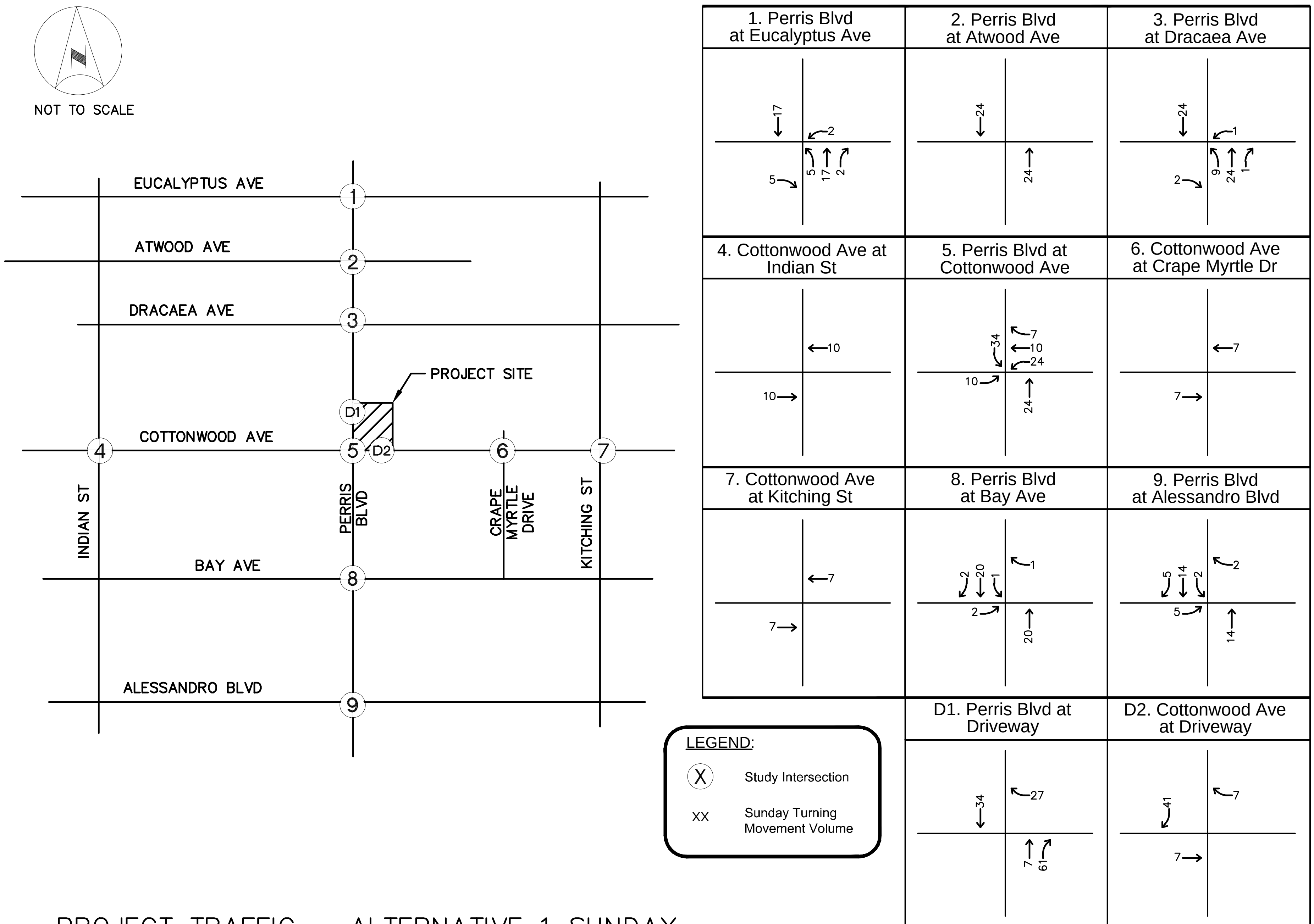
LEGEND:

X	Study Intersection
XX/YY	AM/PM Turning Movement Volume

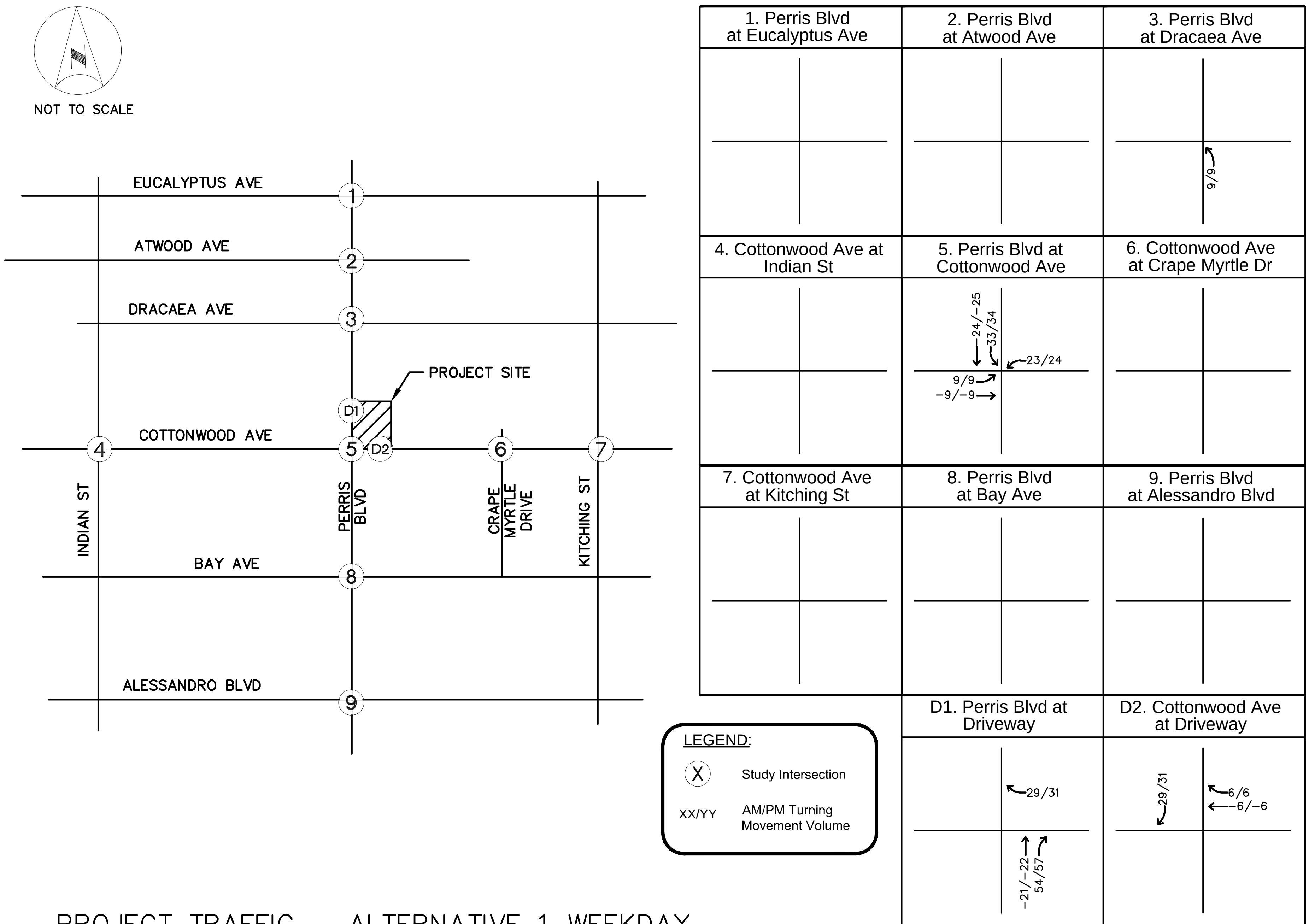
PROJECT TRAFFIC – ALTERNATIVE 1 WEEKDAY NEW TRIPS

Attachment: Exhibit A to Resolution 2018-XX - Mitigated Negative Declaration (3224 : A GENERAL PLAN

Kimley»Horn

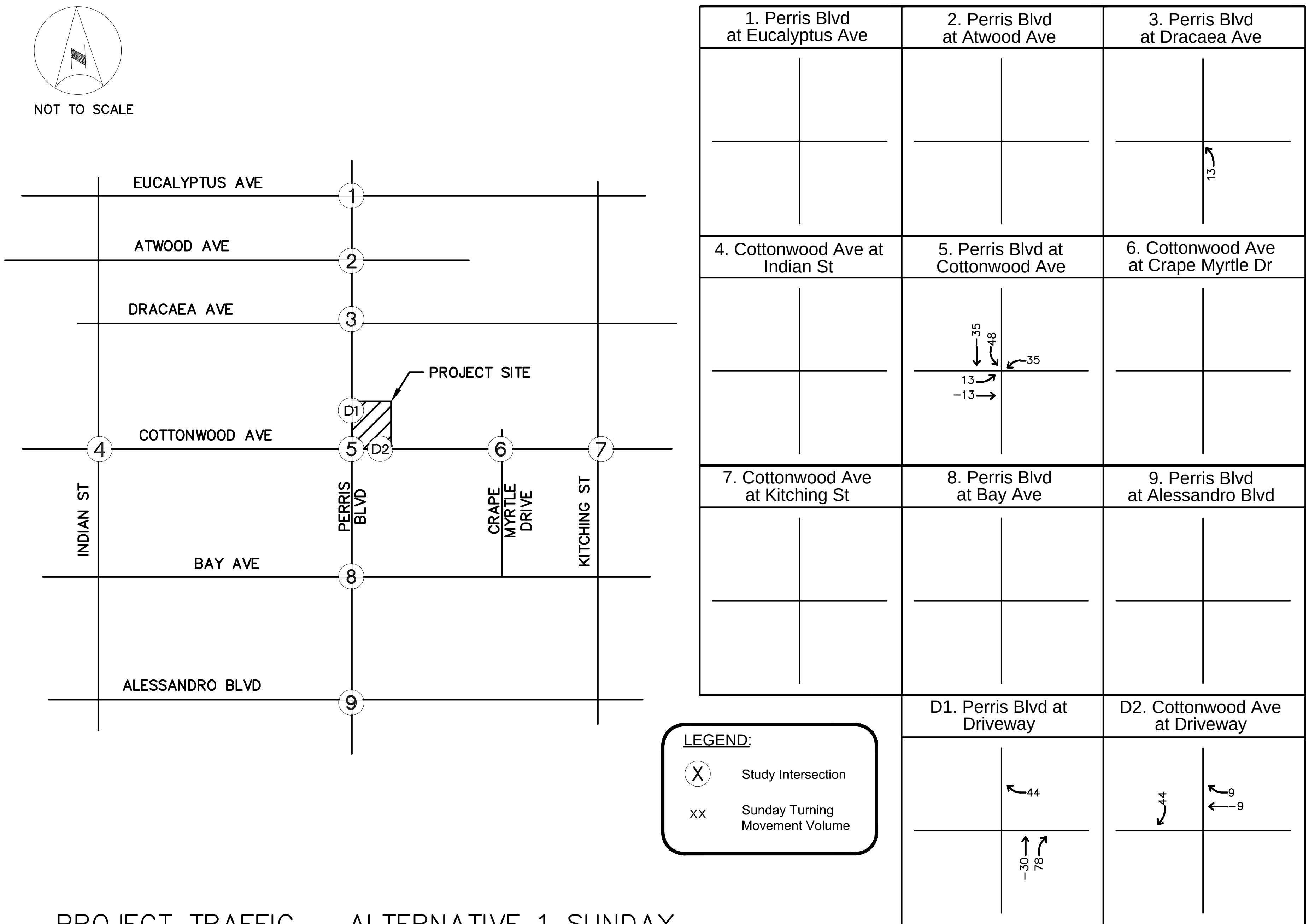


PROJECT TRAFFIC – ALTERNATIVE 1 SUNDAY NEW TRIPS



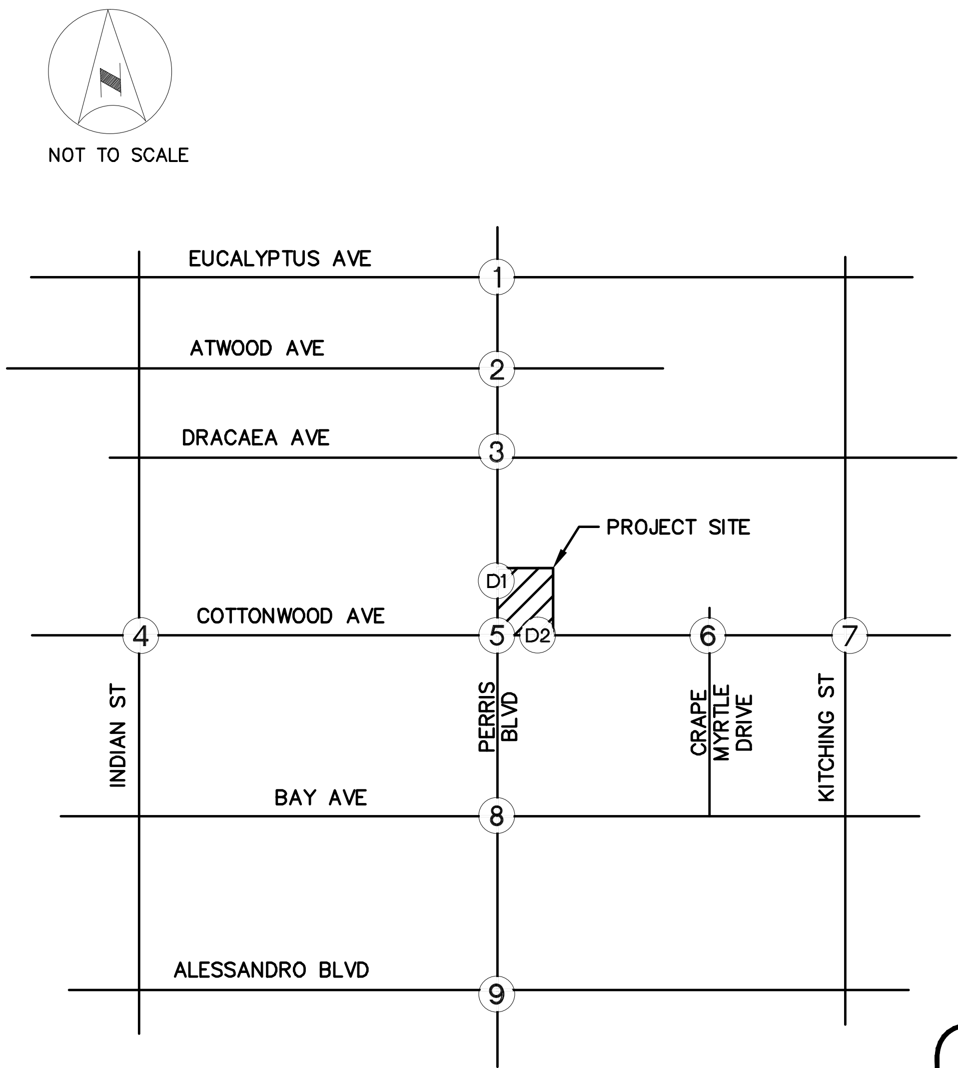
PROJECT TRAFFIC – ALTERNATIVE 1 WEEKDAY PASS-BY TRIPS

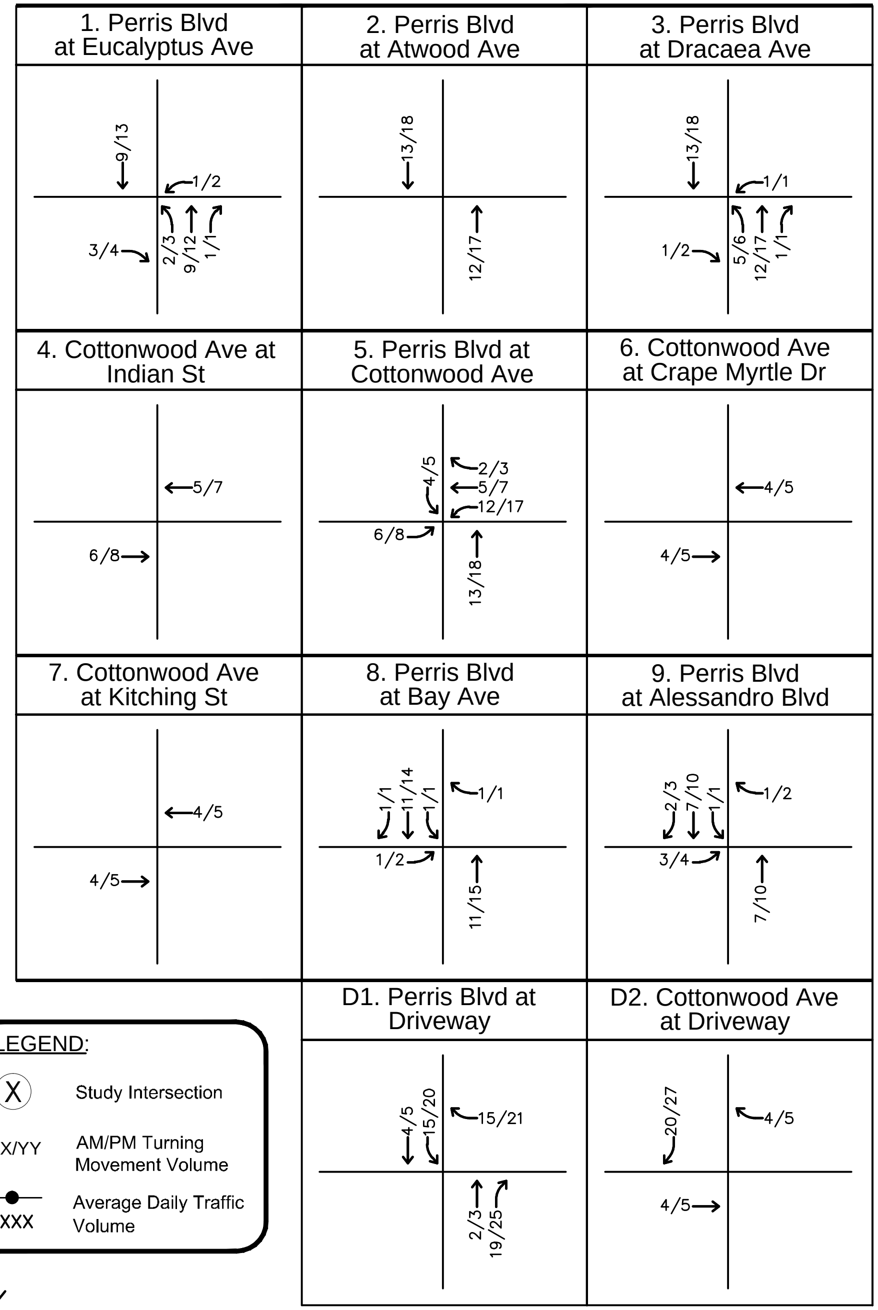
Kimley»Horn



PROJECT TRAFFIC – ALTERNATIVE 1 SUNDAY PASS–BY TRIPS

Kimley»Horn



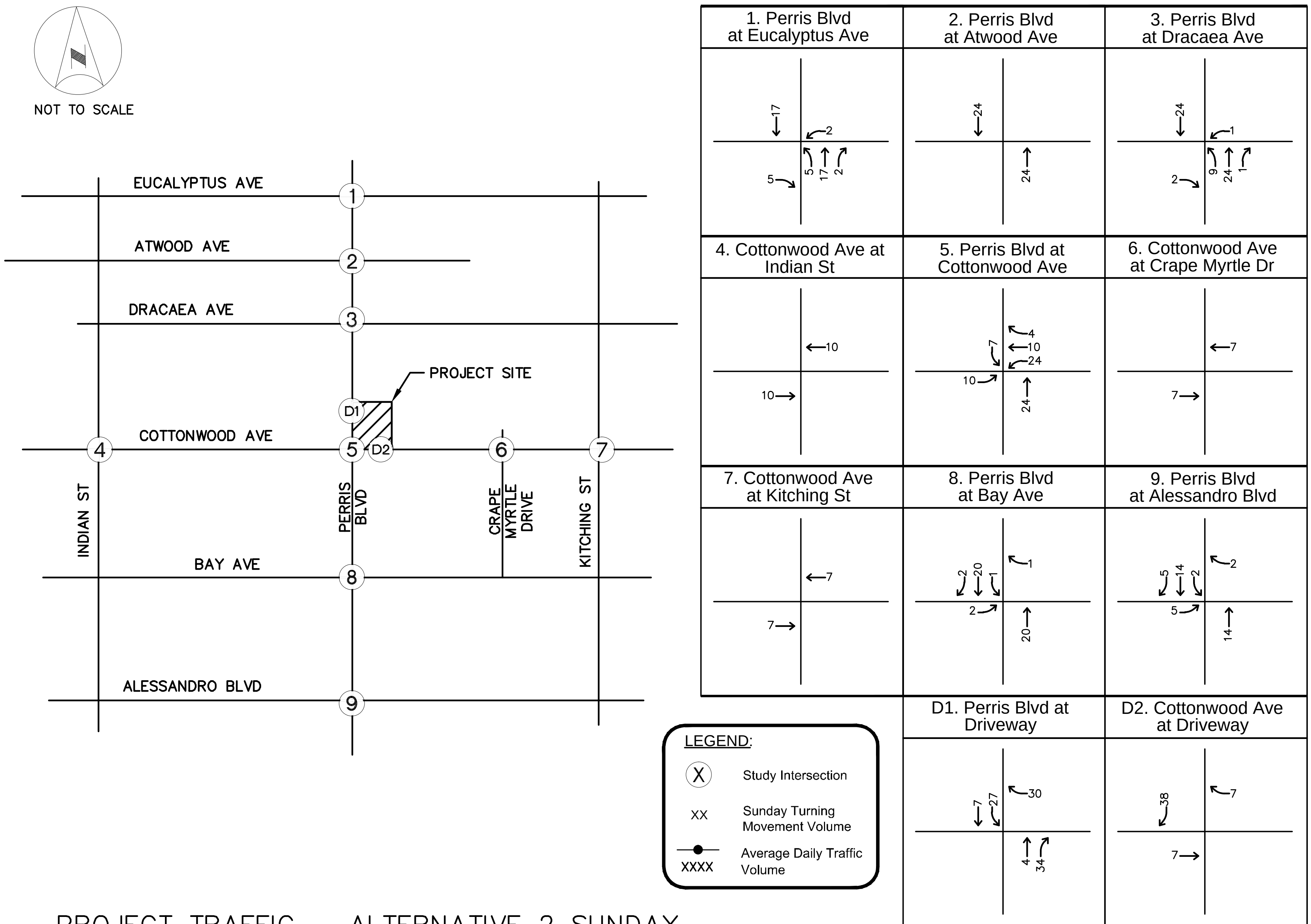


LEGEND:

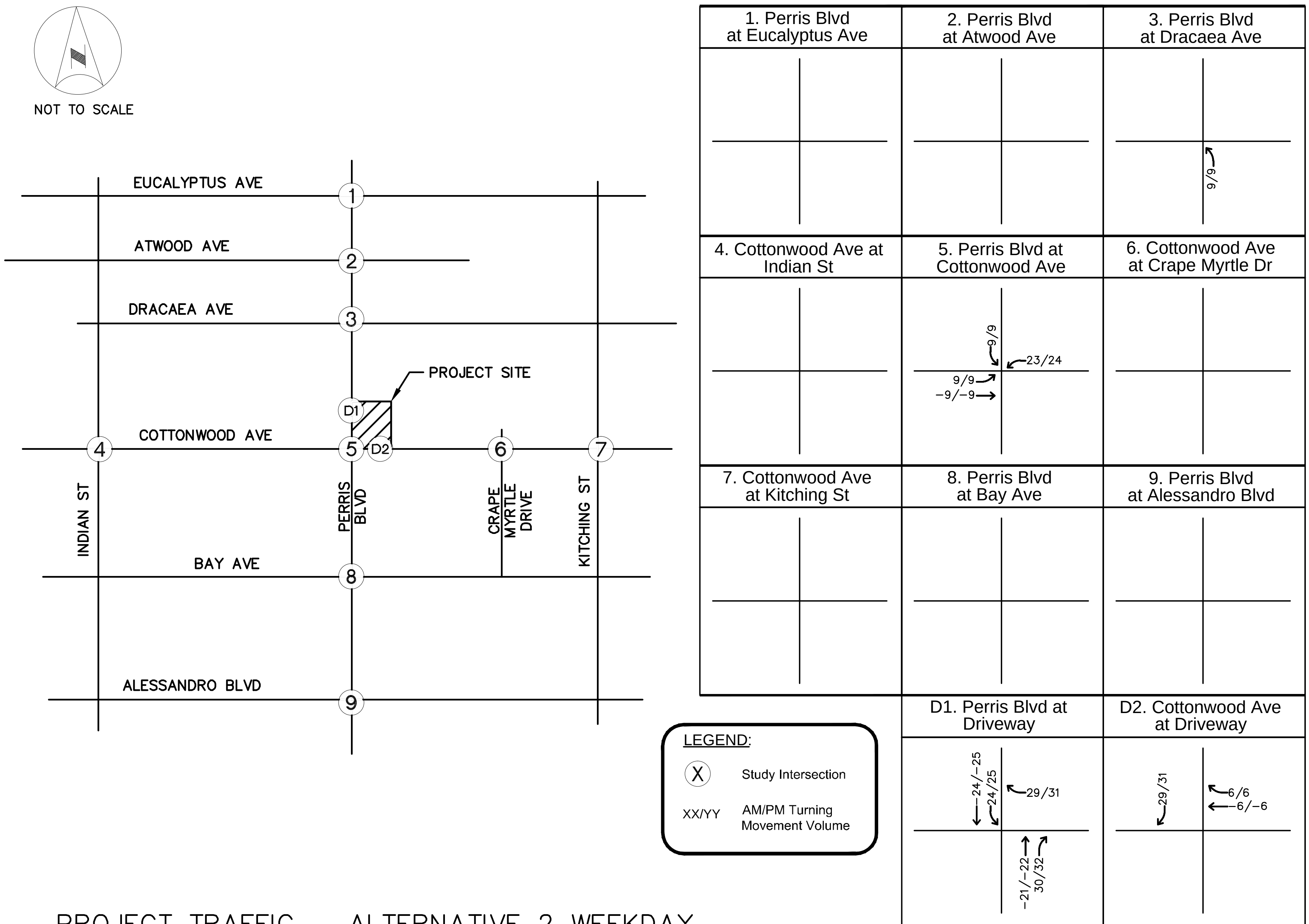
X	Study Intersection
XX/YY	AM/PM Turning Movement Volume
XXXX	Average Daily Traffic Volume

PROJECT TRAFFIC – ALTERNATIVE 2 WEEKDAY NEW TRIPS

Kimley»Horn

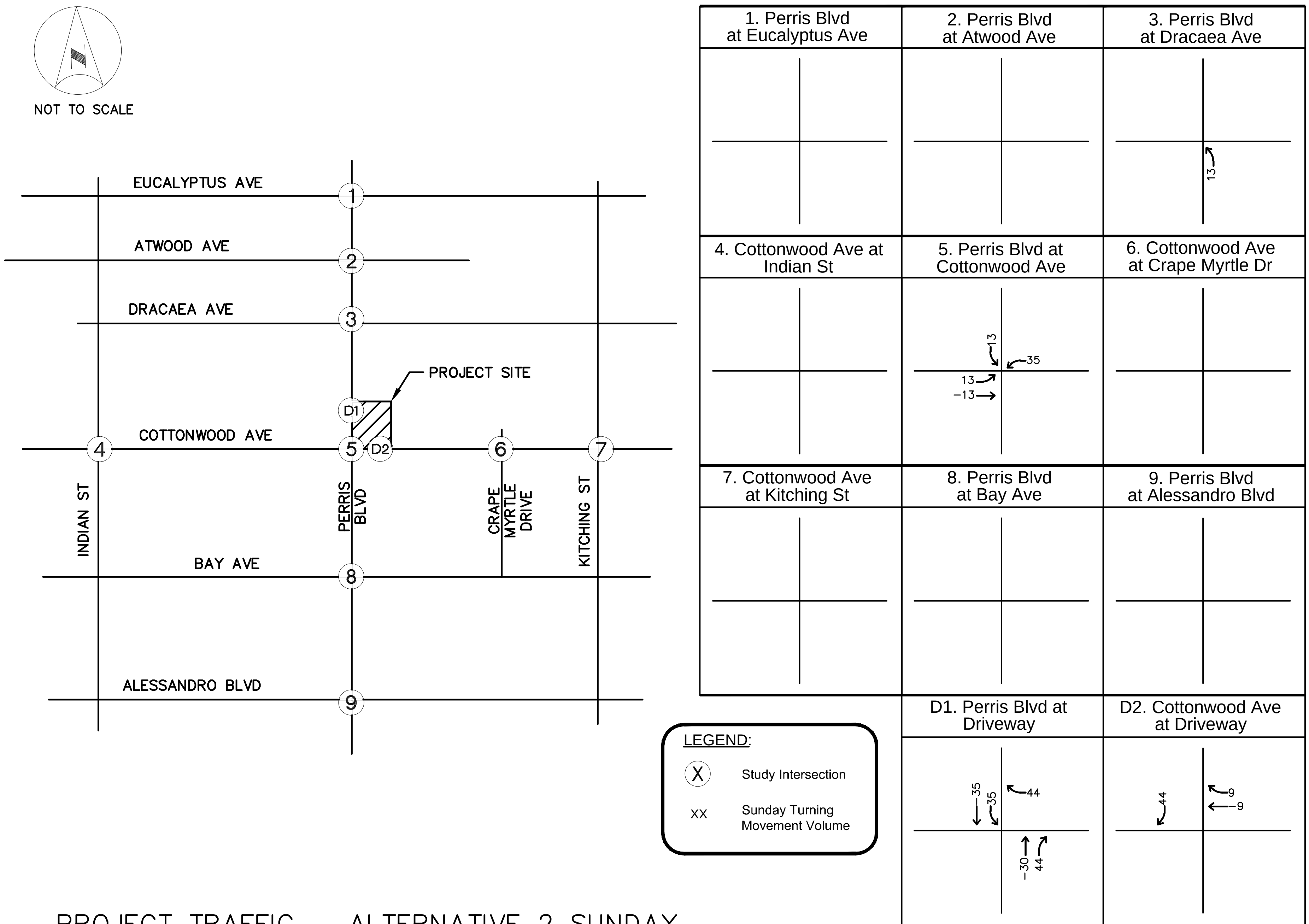


PROJECT TRAFFIC – ALTERNATIVE 2 SUNDAY NEW TRIPS



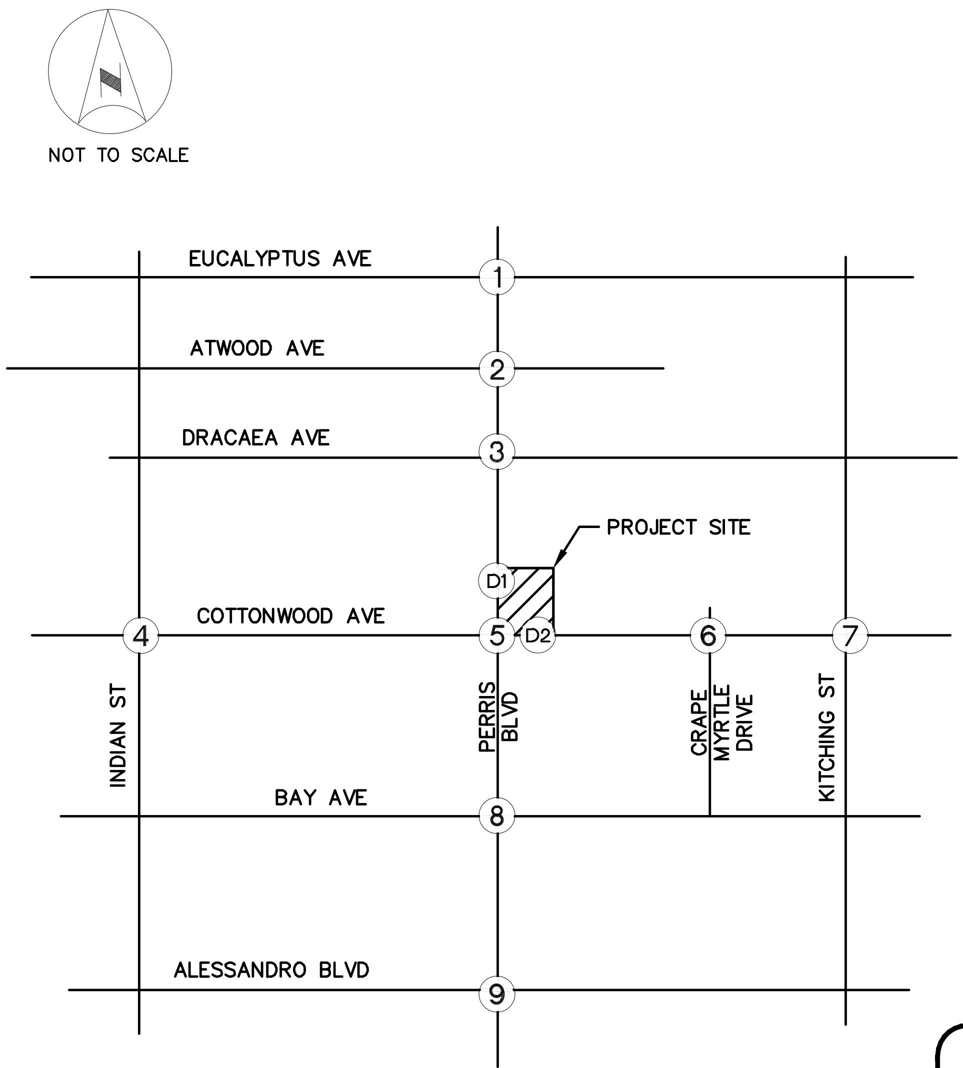
PROJECT TRAFFIC – ALTERNATIVE 2 WEEKDAY PASS-BY TRIPS

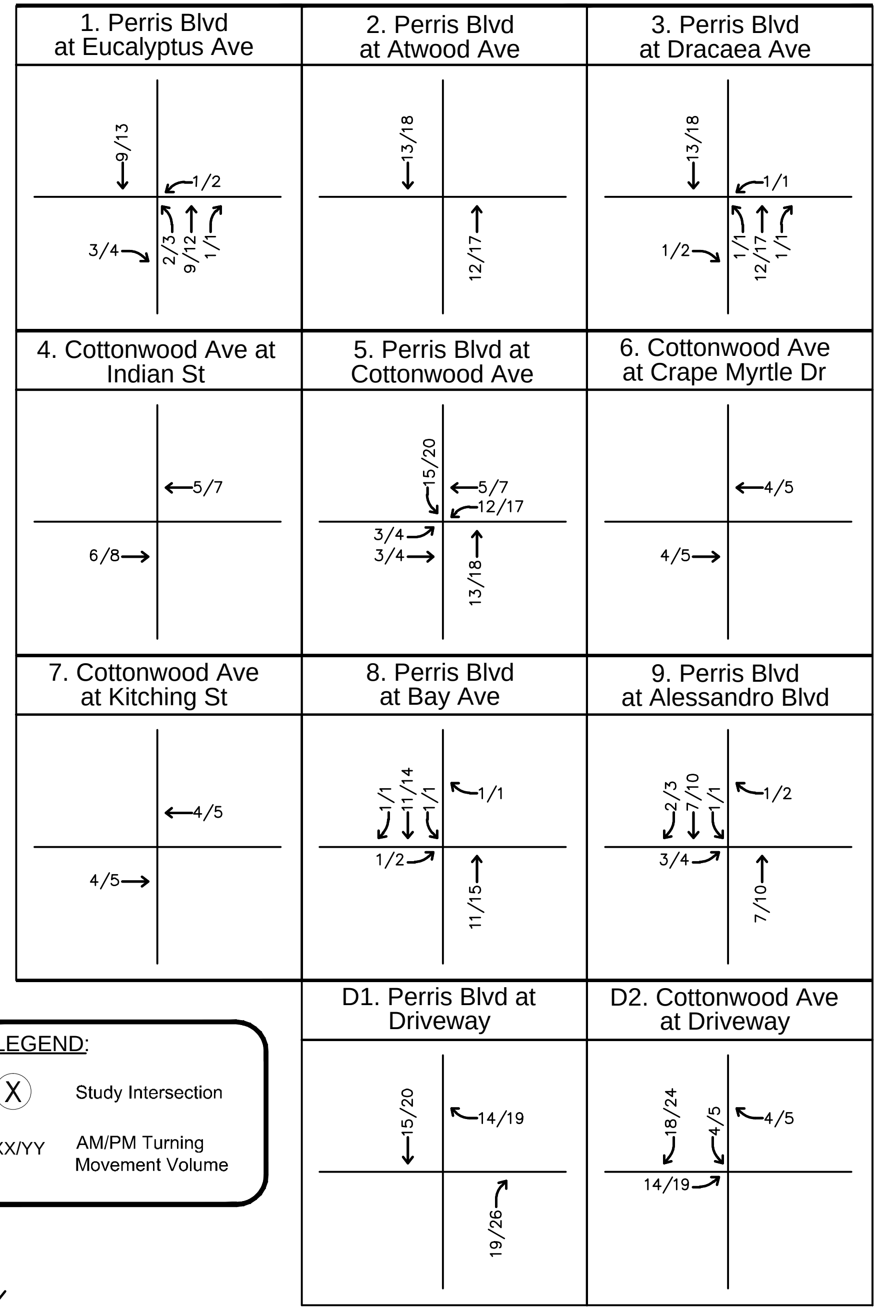
Kimley»Horn



PROJECT TRAFFIC – ALTERNATIVE 2 SUNDAY PASS–BY TRIPS

Kimley»Horn





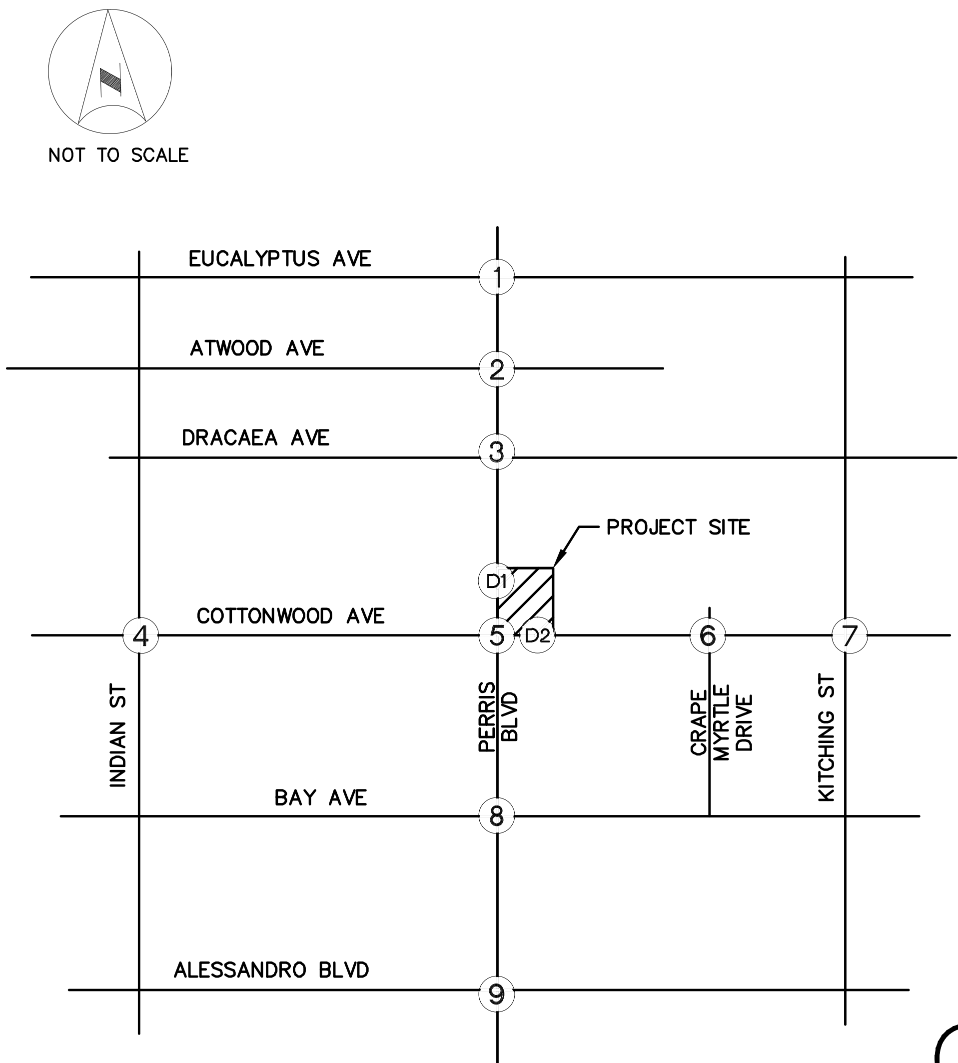
LEGEND:

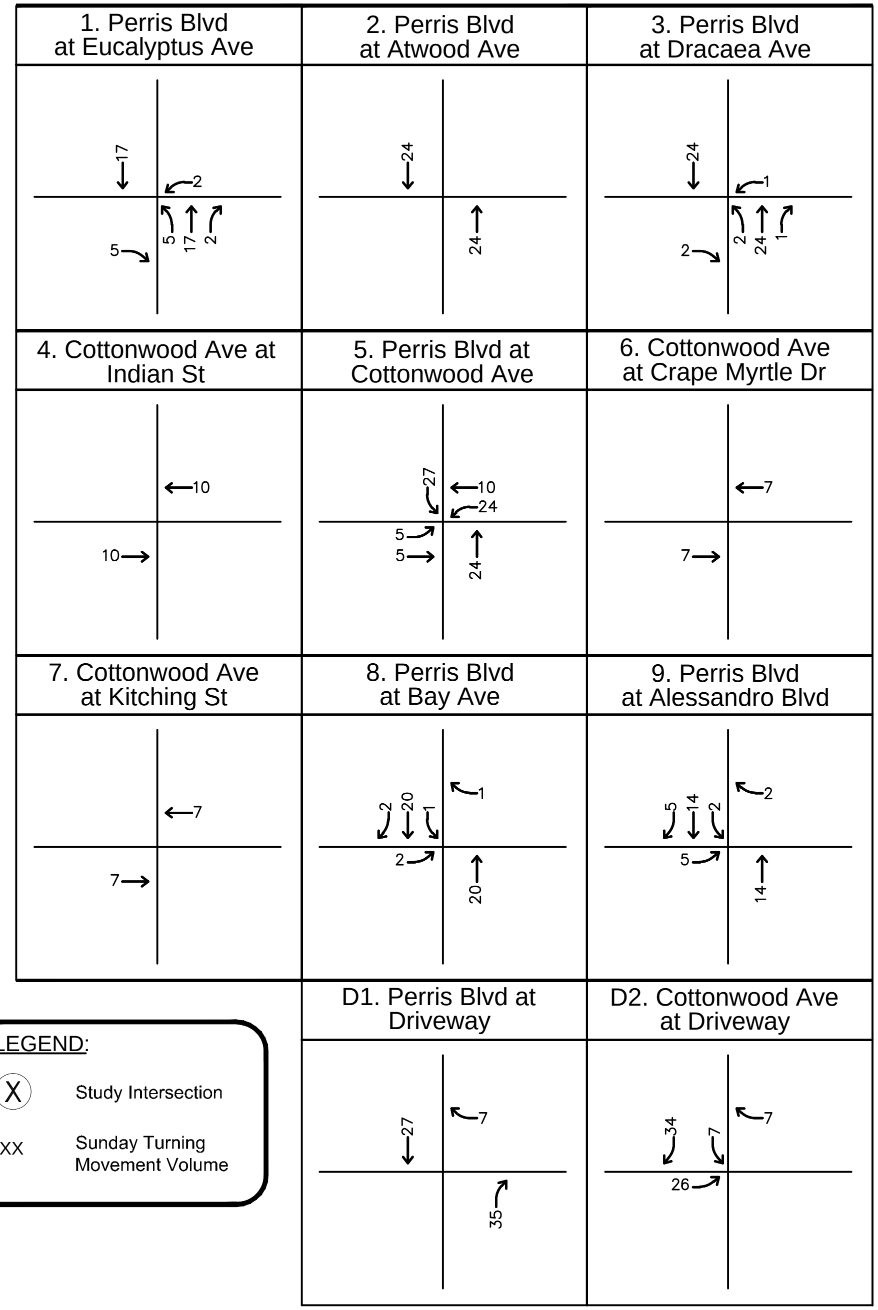
X Study Intersection

XX/YY AM/PM Turning Movement Volume

PROJECT TRAFFIC – ALTERNATIVE 3 WEEKDAY NEW TRIPS

Kimley»Horn





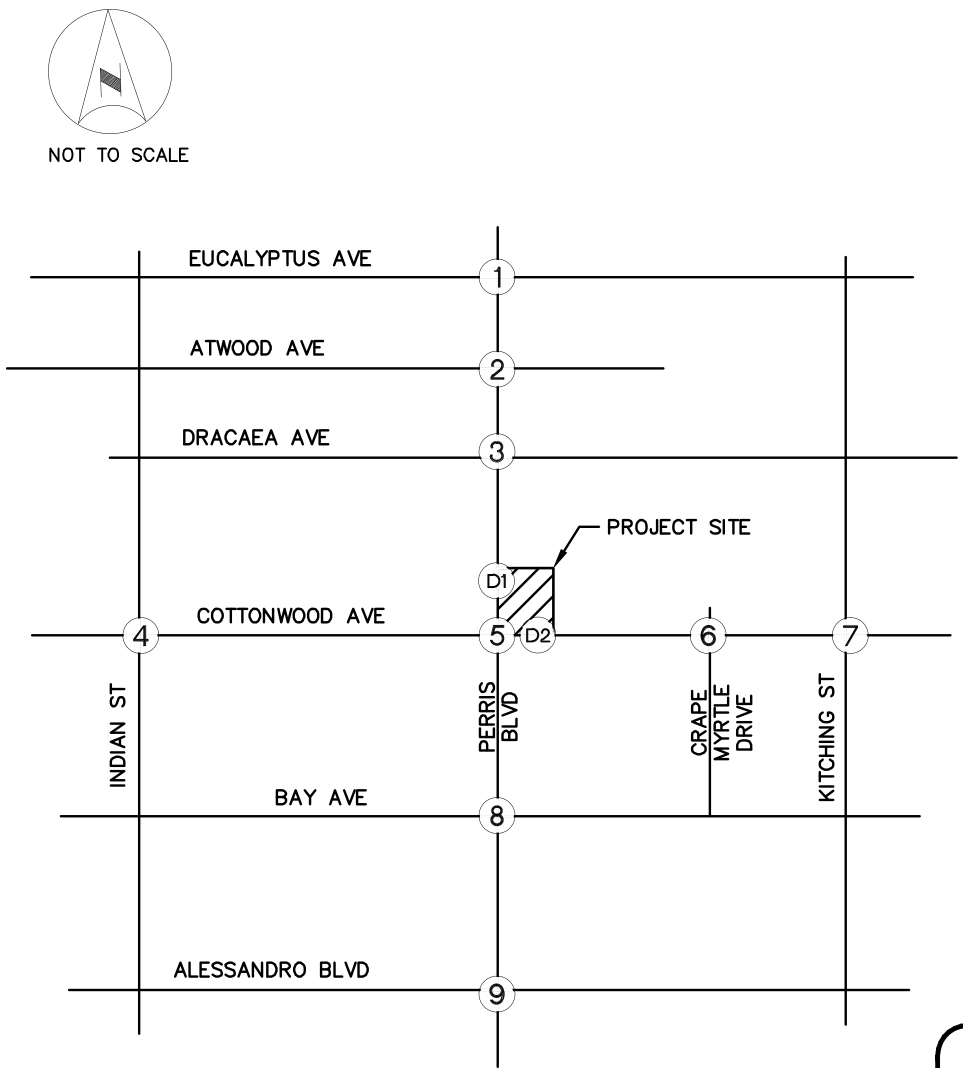
LEGEND:

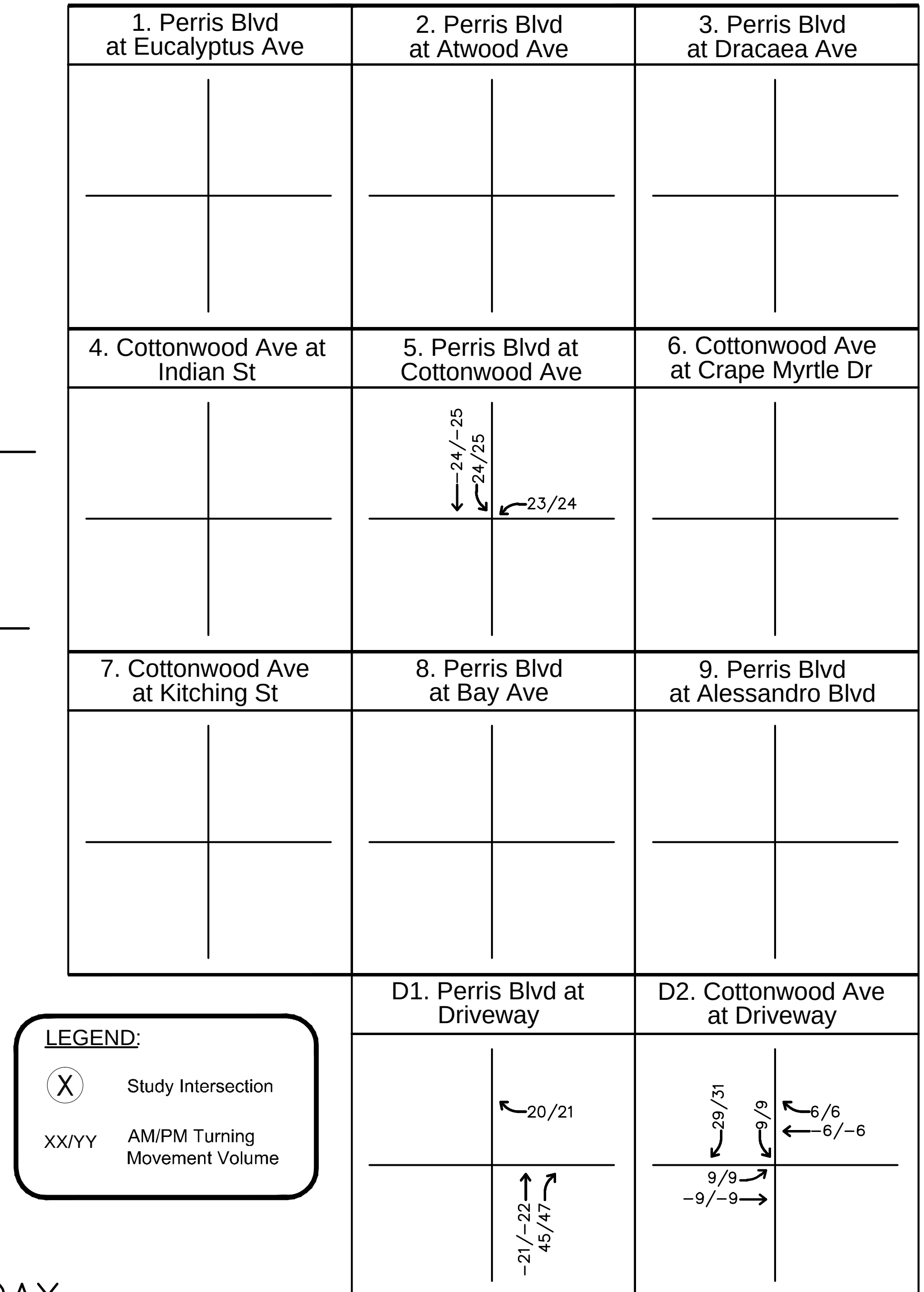
X Study Intersection

XX Sunday Turning Movement Volume

PROJECT TRAFFIC – ALTERNATIVE 3 SUNDAY NEW TRIPS

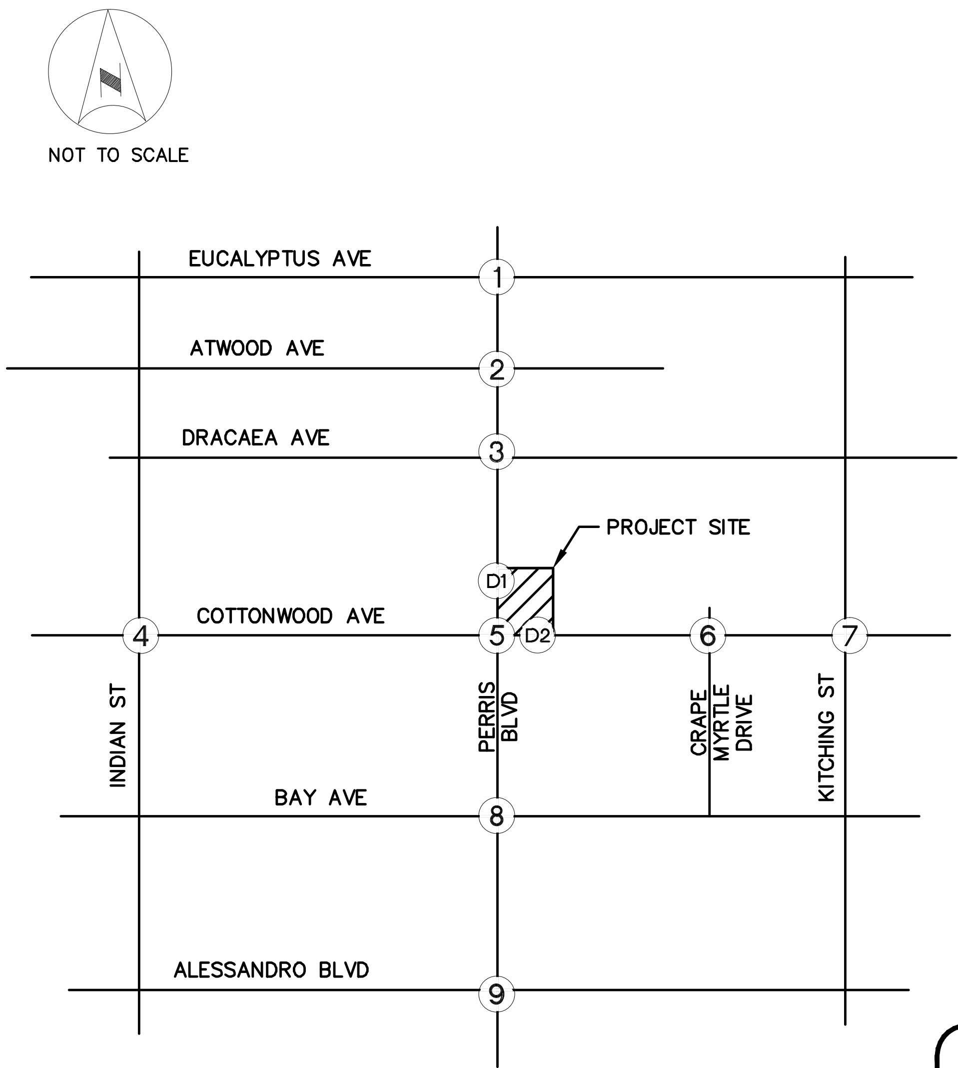
Kimley»Horn

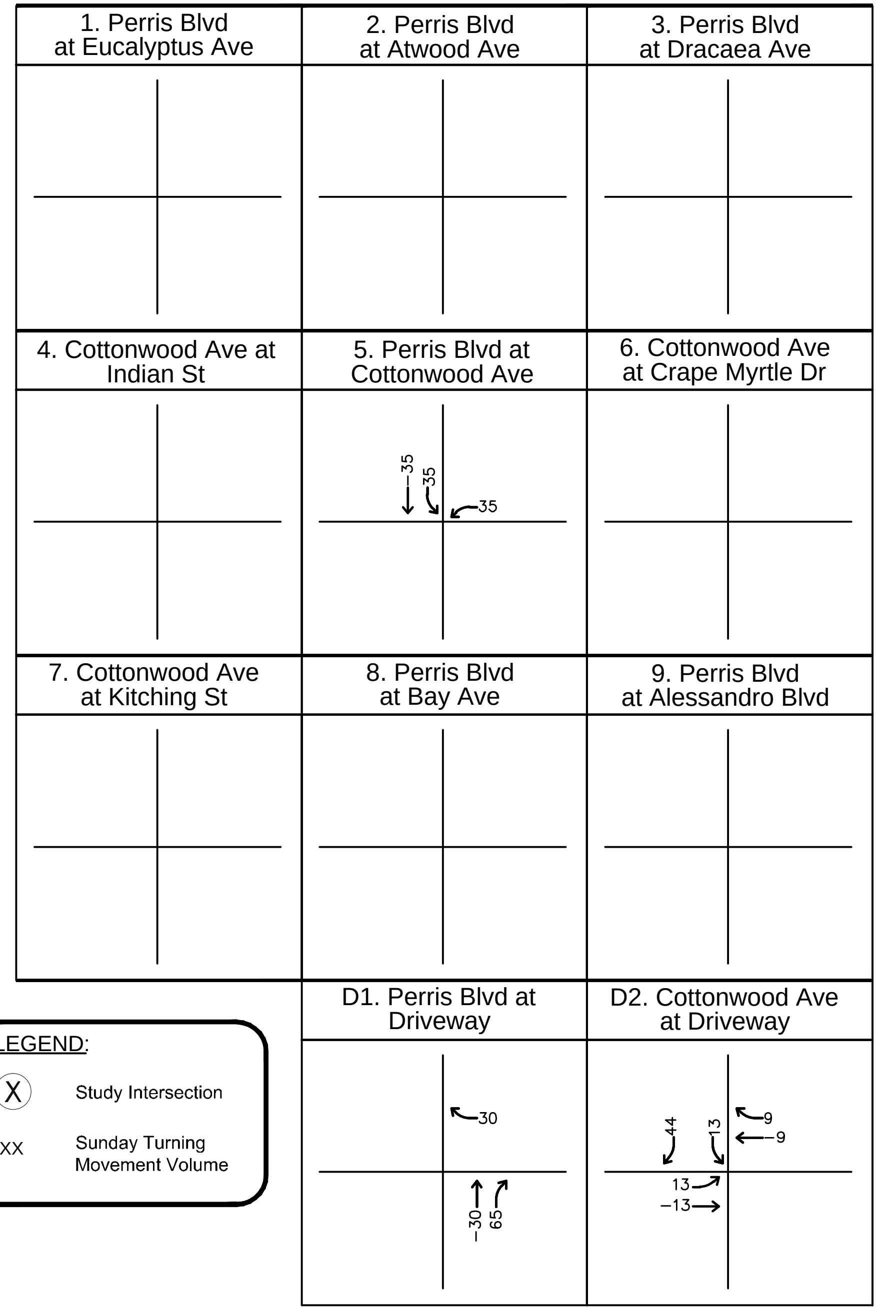




PROJECT TRAFFIC – ALTERNATIVE 3 WEEKDAY PASS–BY TRIPS

Kimley»Horn





LEGEND:

X	Study Intersection
XX	Sunday Turning Movement Volume

PROJECT TRAFFIC – ALTERNATIVE 3 SUNDAY PASS–BY TRIPS

Kimley»Horn

APPENDIX D

INTERSECTION ANALYSIS WORKSHEETS

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	76	52	82	127	177	55	1022	52	70	835	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	35	110	75	93	144	201	63	1175	60	80	949	30
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.69	0.69	0.69	0.88	0.88	0.88	0.87	0.87	0.87	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	252	215	165	329	280	136	1453	650	154	1490	666
Arrive On Green	0.05	0.14	0.14	0.09	0.18	0.18	0.08	0.41	0.41	0.09	0.42	0.42
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	35	110	75	93	144	201	63	1175	60	80	949	30
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	1.1	3.2	2.5	2.9	4.0	7.0	2.0	17.1	1.4	2.5	12.4	0.7
Cycle Q Clear(g_c), s	1.1	3.2	2.5	2.9	4.0	7.0	2.0	17.1	1.4	2.5	12.4	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	92	252	215	165	329	280	136	1453	650	154	1490	666
V/C Ratio(X)	0.38	0.44	0.35	0.56	0.44	0.72	0.46	0.81	0.09	0.52	0.64	0.05
Avail Cap(c_a), veh/h	212	510	433	212	510	433	212	1453	650	212	1490	666
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	23.2	22.9	25.4	21.5	22.7	25.8	15.2	10.6	25.5	13.4	10.0
Incr Delay (d2), s/veh	2.6	1.2	1.0	3.0	0.9	3.4	2.4	5.0	0.3	2.7	2.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.7	1.2	1.6	2.2	3.3	1.1	9.3	0.6	1.3	6.4	0.3
LnGrp Delay(d),s/veh	29.4	24.4	23.9	28.3	22.4	26.1	28.3	20.2	10.8	28.2	15.5	10.1
LnGrp LOS	C	C	C	C	C	C	C	C	B	C	B	B
Approach Vol, veh/h		220			438			1298			1059	
Approach Delay, s/veh		25.0			25.4			20.1			16.3	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	28.0	9.5	11.9	8.5	28.6	7.0	14.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.5	19.1	4.9	5.2	4.0	14.4	3.1	9.0
Green Ext Time (p_c), s	0.0	4.3	0.0	1.7	0.0	7.9	0.0	1.3

Intersection Summary			
HCM 2010 Ctrl Delay			19.9
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	67	70	44	60	92	56	30	1020	24	32	872	72
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	77	80	51	80	123	75	35	1186	28	38	1038	86
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.75	0.75	0.75	0.86	0.86	0.86	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	96	69	451	89	100	451	93	1574	37	99	1588	710
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.05	0.45	0.45	0.06	0.45	0.45
Sat Flow, veh/h	0	241	1583	0	351	1583	1774	3534	83	1774	3539	1583
Grp Volume(v), veh/h	157	0	51	203	0	75	35	594	620	38	1038	86
Grp Sat Flow(s),veh/h/ln	241	0	1583	351	0	1583	1774	1770	1848	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	1.3	0.0	0.0	2.0	1.1	15.7	15.7	1.2	12.8	1.8
Cycle Q Clear(g_c), s	16.0	0.0	1.3	16.0	0.0	2.0	1.1	15.7	15.7	1.2	12.8	1.8
Prop In Lane	0.49		1.00	0.39		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	164	0	451	190	0	451	93	788	823	99	1588	710
V/C Ratio(X)	0.96	0.00	0.11	1.07	0.00	0.17	0.38	0.75	0.75	0.38	0.65	0.12
Avail Cap(c_a), veh/h	164	0	451	190	0	451	221	788	823	221	1588	710
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.5	0.0	14.8	20.4	0.0	15.1	25.7	13.0	13.0	25.6	12.1	9.0
Incr Delay (d2), s/veh	57.1	0.0	0.1	85.4	0.0	0.2	2.5	6.6	6.3	2.4	2.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	0.6	7.4	0.0	0.9	0.6	9.0	9.4	0.6	6.7	0.8
LnGrp Delay(d),s/veh	78.6	0.0	14.9	105.8	0.0	15.2	28.2	19.6	19.3	28.0	14.2	9.4
LnGrp LOS	E		B	F		B	C	B	B	C	B	A
Approach Vol, veh/h		208			278			1249			1162	
Approach Delay, s/veh		63.0			81.3			19.7			14.3	
Approach LOS		E			F			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.1	29.0		20.0	6.9	29.2		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	25.0		16.0	7.0	25.0		16.0
Max Q Clear Time (g_c+I1), s	3.2	17.7		18.0	3.1	14.8		18.0
Green Ext Time (p_c), s	0.0	6.2		0.0	0.0	8.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.5
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	45	285	125	44	355	83	93	237	29	53	248	47
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	53	335	147	58	467	109	118	300	37	61	285	54
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.76	0.76	0.76	0.79	0.79	0.79	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	543	462	128	550	468	178	933	114	132	797	149
Arrive On Green	0.07	0.29	0.29	0.07	0.30	0.30	0.10	0.29	0.29	0.07	0.27	0.27
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3176	388	1774	2977	557
Grp Volume(v), veh/h	53	335	147	58	467	109	118	166	171	61	168	171
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1794	1774	1770	1765
Q Serve(g_s), s	1.7	9.3	4.3	1.9	14.1	3.1	3.8	4.4	4.4	2.0	4.6	4.7
Cycle Q Clear(g_c), s	1.7	9.3	4.3	1.9	14.1	3.1	3.8	4.4	4.4	2.0	4.6	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		0.32
Lane Grp Cap(c), veh/h	122	543	462	128	550	468	178	520	527	132	474	472
V/C Ratio(X)	0.44	0.62	0.32	0.45	0.85	0.23	0.66	0.32	0.32	0.46	0.35	0.36
Avail Cap(c_a), veh/h	208	592	503	208	592	503	208	520	527	208	474	472
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	18.3	16.5	26.6	19.8	15.9	25.9	16.4	16.5	26.5	17.7	17.7
Incr Delay (d2), s/veh	2.4	1.7	0.4	2.5	10.6	0.3	6.1	1.6	1.6	2.5	2.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.0	1.9	1.0	8.8	1.4	2.2	2.4	2.4	1.1	2.5	2.6
LnGrp Delay(d),s/veh	29.2	20.0	16.9	29.0	30.4	16.2	32.0	18.1	18.1	29.0	19.8	19.9
LnGrp LOS	C	B	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		535			634			455			400	
Approach Delay, s/veh		20.0			27.8			21.7			21.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	21.6	8.3	21.4	10.0	20.0	8.1	21.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	4.0	6.4	3.9	11.3	5.8	6.7	3.7	16.1
Green Ext Time (p_c), s	0.0	2.7	0.0	3.4	0.0	2.7	0.0	1.6

Intersection Summary			
HCM 2010 Ctrl Delay			23.1
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	80	184	66	53	215	166	70	833	63	107	805	89
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	100	230	82	72	291	224	85	1016	77	127	958	106
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.80	0.80	0.80	0.74	0.74	0.74	0.82	0.82	0.82	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	169	419	356	145	394	335	158	1133	507	183	1185	530
Arrive On Green	0.10	0.22	0.22	0.08	0.21	0.21	0.09	0.32	0.32	0.10	0.33	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	100	230	82	72	291	224	85	1016	77	127	958	106
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.2	6.5	2.5	2.3	8.7	7.7	2.7	16.2	2.1	4.1	14.7	2.8
Cycle Q Clear(g_c), s	3.2	6.5	2.5	2.3	8.7	7.7	2.7	16.2	2.1	4.1	14.7	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	169	419	356	145	394	335	158	1133	507	183	1185	530
V/C Ratio(X)	0.59	0.55	0.23	0.50	0.74	0.67	0.54	0.90	0.15	0.69	0.81	0.20
Avail Cap(c_a), veh/h	209	502	427	209	502	427	209	1133	507	209	1185	530
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.7	20.3	18.8	26.1	21.9	21.5	25.9	19.2	14.4	25.7	18.0	14.1
Incr Delay (d2), s/veh	3.3	1.1	0.3	2.6	4.2	2.7	2.8	11.1	0.6	8.0	6.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	3.5	1.1	1.2	4.9	3.6	1.4	9.7	1.0	2.4	8.0	1.3
LnGrp Delay(d),s/veh	29.0	21.5	19.1	28.7	26.1	24.2	28.7	30.3	15.0	33.7	24.0	14.9
LnGrp LOS	C	C	B	C	C	C	C	C	B	C	C	B
Approach Vol, veh/h		412			587			1178			1191	
Approach Delay, s/veh		22.8			25.7			29.2			24.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	23.0	8.9	17.3	9.3	23.9	9.7	16.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.1	18.2	4.3	8.5	4.7	16.7	5.2	10.7
Green Ext Time (p_c), s	0.0	0.7	0.0	2.4	0.0	2.1	0.0	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	26.1
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	95	226	72	43	319	129	99	297	27	31	201	41
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	134	318	101	63	469	190	115	345	31	42	275	56
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.71	0.71	0.71	0.68	0.68	0.68	0.86	0.86	0.86	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	180	583	496	132	533	453	172	975	87	103	757	152
Arrive On Green	0.10	0.31	0.31	0.07	0.29	0.29	0.10	0.30	0.30	0.06	0.26	0.26
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3287	294	1774	2939	590
Grp Volume(v), veh/h	134	318	101	63	469	190	115	185	191	42	164	167
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1811	1774	1770	1759
Q Serve(g_s), s	4.6	8.8	2.9	2.1	14.9	6.0	3.9	5.1	5.2	1.4	4.7	4.8
Cycle Q Clear(g_c), s	4.6	8.8	2.9	2.1	14.9	6.0	3.9	5.1	5.2	1.4	4.7	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.34
Lane Grp Cap(c), veh/h	180	583	496	132	533	453	172	525	537	103	456	453
V/C Ratio(X)	0.74	0.55	0.20	0.48	0.88	0.42	0.67	0.35	0.36	0.41	0.36	0.37
Avail Cap(c_a), veh/h	200	583	496	200	570	484	200	525	537	200	456	453
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	17.7	15.7	27.6	21.1	18.0	27.1	17.2	17.2	28.2	18.9	18.9
Incr Delay (d2), s/veh	12.7	1.1	0.2	2.6	14.1	0.6	6.7	1.9	1.8	2.6	2.2	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	4.7	1.3	1.1	9.8	2.7	2.2	2.7	2.8	0.8	2.6	2.6
LnGrp Delay(d),s/veh	39.8	18.7	15.9	30.2	35.3	18.6	33.8	19.0	19.0	30.8	21.1	21.2
LnGrp LOS	D	B	B	C	D	B	C	B	B	C	C	C
Approach Vol, veh/h		553			722			491			373	
Approach Delay, s/veh		23.3			30.4			22.5			22.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	22.4	8.6	23.5	10.0	20.0	10.3	21.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.4	7.2	4.1	10.8	5.9	6.8	6.6	16.9
Green Ext Time (p_c), s	0.0	2.6	0.0	3.5	0.0	2.7	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	25.3
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	81	47	80	40	57	93	55	845	54	88	748	74
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	109	64	108	47	67	109	59	909	58	109	923	91
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.74	0.74	0.74	0.85	0.85	0.85	0.93	0.93	0.93	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	122	206	116	101	164	134	1166	74	183	1319	590
Arrive On Green	0.10	0.20	0.20	0.07	0.16	0.16	0.08	0.35	0.35	0.10	0.37	0.37
Sat Flow, veh/h	1774	624	1053	1774	639	1040	1774	3379	216	1774	3539	1583
Grp Volume(v), veh/h	109	0	172	47	0	176	59	476	491	109	923	91
Grp Sat Flow(s),veh/h/ln	1774	0	1677	1774	0	1679	1774	1770	1825	1774	1770	1583
Q Serve(g_s), s	3.2	0.0	5.1	1.4	0.0	5.4	1.8	13.3	13.3	3.2	12.2	2.1
Cycle Q Clear(g_c), s	3.2	0.0	5.1	1.4	0.0	5.4	1.8	13.3	13.3	3.2	12.2	2.1
Prop In Lane	1.00		0.63	1.00		0.62	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	183	0	329	116	0	265	134	611	630	183	1319	590
V/C Ratio(X)	0.60	0.00	0.52	0.41	0.00	0.66	0.44	0.78	0.78	0.60	0.70	0.15
Avail Cap(c_a), veh/h	226	0	487	226	0	488	226	611	630	226	1319	590
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	0.0	19.8	24.7	0.0	21.8	24.3	16.1	16.1	23.6	14.7	11.5
Incr Delay (d2), s/veh	3.1	0.0	1.3	2.3	0.0	2.8	2.3	9.5	9.2	3.1	3.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	2.5	0.8	0.0	2.7	0.9	8.1	8.3	1.7	6.5	1.0
LnGrp Delay(d),s/veh	26.7	0.0	21.1	27.0	0.0	24.6	26.6	25.7	25.4	26.7	17.8	12.0
LnGrp LOS	C		C	C		C	C	C	C	C	B	B
Approach Vol, veh/h		281			223			1026			1123	
Approach Delay, s/veh		23.3			25.1			25.6			18.2	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	23.0	7.6	14.8	8.2	24.5	9.7	12.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	5.2	15.3	3.4	7.1	3.8	14.2	5.2	7.4
Green Ext Time (p_c), s	0.0	3.1	0.0	1.3	0.0	3.9	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	22.2
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	171	369	89	132	659	113	240	719	140	174	499	160
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	209	450	109	155	775	133	255	765	149	207	594	190
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.94	0.94	0.94	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	368	847	379	353	1028	175	278	998	447	222	887	397
Arrive On Green	0.11	0.24	0.24	0.10	0.23	0.23	0.16	0.28	0.28	0.13	0.25	0.25
Sat Flow, veh/h	3442	3539	1583	3442	4376	745	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	209	450	109	155	599	309	255	765	149	207	594	190
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1731	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.7	7.1	3.6	2.7	10.5	10.6	9.0	12.6	4.8	7.4	9.6	6.5
Cycle Q Clear(g_c), s	3.7	7.1	3.6	2.7	10.5	10.6	9.0	12.6	4.8	7.4	9.6	6.5
Prop In Lane	1.00		1.00	1.00		0.43	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	368	847	379	353	797	407	278	998	447	222	887	397
V/C Ratio(X)	0.57	0.53	0.29	0.44	0.75	0.76	0.92	0.77	0.33	0.93	0.67	0.48
Avail Cap(c_a), veh/h	377	887	397	377	850	434	278	998	447	222	887	397
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	21.2	19.8	26.9	22.7	22.7	26.5	21.0	18.2	27.6	21.5	20.4
Incr Delay (d2), s/veh	1.9	0.5	0.4	0.9	3.6	7.2	33.1	5.6	2.0	41.6	4.0	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	3.5	1.6	1.3	5.3	5.9	6.9	6.9	2.3	6.1	5.2	3.3
LnGrp Delay(d),s/veh	29.0	21.7	20.2	27.8	26.2	29.9	59.6	26.6	20.2	69.2	25.5	24.5
LnGrp LOS	C	C	C	C	C	C	E	C	C	E	C	C
Approach Vol, veh/h		768			1063			1169			991	
Approach Delay, s/veh		23.5			27.5			33.0			34.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	22.0	10.6	19.3	14.0	20.0	10.8	19.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	18.0	7.0	16.0	10.0	16.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	9.4	14.6	4.7	9.1	11.0	11.6	5.7	12.6
Green Ext Time (p_c), s	0.0	2.6	0.1	4.4	0.0	3.3	0.1	2.4

Intersection Summary		
HCM 2010 Ctrl Delay		30.1
HCM 2010 LOS		C

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	12	2	37	2	1	16	34	1099	4	13	941	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	68	68	68	87	87	87	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	3	55	3	1	24	43	1390	5	15	1069	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1890	2590	545	2044	2597	697	1090	0	0	1395	0	0
Stage 1	1109	1109	-	1478	1478	-	-	-	-	-	-	-
Stage 2	781	1481	-	566	1119	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	43	25	482	33	25	383	636	-	-	486	-	-
Stage 1	223	283	-	132	188	-	-	-	-	-	-	-
Stage 2	354	187	-	476	280	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	37	23	482	26	23	383	636	-	-	486	-	-
Mov Cap-2 Maneuver	127	102	-	92	101	-	-	-	-	-	-	-
Stage 1	208	274	-	123	175	-	-	-	-	-	-	-
Stage 2	307	174	-	404	271	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.8	20.6	0.3	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	636	-	-	267	259	486	-	-
HCM Lane V/C Ratio	0.068	-	-	0.285	0.108	0.03	-	-
HCM Control Delay (s)	11.1	-	-	23.8	20.6	12.6	-	-
HCM Lane LOS	B	-	-	C	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.1	0.4	0.1	-	-

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	9	303	12	33	419	17	27	10	38	31	11	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	70	70	70	67	67	67	64	64	64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	394	16	47	599	24	40	15	57	48	17	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	599	0	0	394	0	0	1129	1110	394	1146	1110	599
Stage 1	-	-	-	-	-	-	417	417	-	693	693	-
Stage 2	-	-	-	-	-	-	712	693	-	453	417	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	978	-	-	1165	-	-	181	209	655	176	209	502
Stage 1	-	-	-	-	-	-	613	591	-	434	445	-
Stage 2	-	-	-	-	-	-	423	445	-	586	591	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	978	-	-	1165	-	-	155	198	655	146	198	502
Mov Cap-2 Maneuver	-	-	-	-	-	-	155	198	-	146	198	-
Stage 1	-	-	-	-	-	-	605	584	-	429	427	-
Stage 2	-	-	-	-	-	-	373	427	-	515	584	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	28.2	39.5
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	265	978	-	-	1165	-	-	189
HCM Lane V/C Ratio	0.422	0.012	-	-	0.04	-	-	0.463
HCM Control Delay (s)	28.2	8.7	-	-	8.2	-	-	39.5
HCM Lane LOS	D	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	2	0	-	-	0.1	-	-	2.2

HCM 2010 TWSC
10: Driveway & Cottonwood Ave

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	318	27	9	449	0	3	0	1	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	78	78	78	50	50	50	25	25	25
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	424	36	12	576	0	6	0	2	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	576	0	0	460	0	0	1041	1041	442
Stage 1	-	-	-	-	-	-	442	442	-
Stage 2	-	-	-	-	-	-	599	599	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	997	-	-	1101	-	-	255	230	615
Stage 1	-	-	-	-	-	-	648	576	-
Stage 2	-	-	-	-	-	-	549	490	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	997	-	-	1101	-	-	252	0	615
Mov Cap-2 Maneuver	-	-	-	-	-	-	252	0	-
Stage 1	-	-	-	-	-	-	648	0	-
Stage 2	-	-	-	-	-	-	543	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	17.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	296	997	-	-	1101	-	-
HCM Lane V/C Ratio	0.027	-	-	-	0.01	-	-
HCM Control Delay (s)	17.5	0	-	-	8.3	-	-
HCM Lane LOS	C	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	10	0	0	0	13	1073	0	0	988	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	62	62	62	25	25	25	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	16	0	0	0	15	1262	0	0	1162	4

Major/Minor	Minor2						Major1			Major2		
Conflicting Flow All	1826	2457	583				1166	0	0	1262	0	0
Stage 1	1164	1164	-				-	-	-	-	-	-
Stage 2	662	1293	-				-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94				4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-				-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32				2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	68	30	456				595	-	-	547	-	-
Stage 1	259	267	-				-	-	-	-	-	-
Stage 2	475	231	-				-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	66	0	456				595	-	-	547	-	-
Mov Cap-2 Maneuver	66	0	-				-	-	-	-	-	-
Stage 1	259	0	-				-	-	-	-	-	-
Stage 2	463	0	-				-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.2	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	595	-	-	456	547	-	-
HCM Lane V/C Ratio	0.026	-	-	0.035	-	-	-
HCM Control Delay (s)	11.2	-	-	13.2	0	-	-
HCM Lane LOS	B	-	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	-	-

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	54	161	63	46	106	84	57	867	58	105	1173	56
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	64	189	74	66	151	120	59	903	60	109	1222	58
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.70	0.70	0.70	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	290	246	138	292	248	130	1420	635	174	1507	674
Arrive On Green	0.08	0.16	0.16	0.08	0.16	0.16	0.07	0.40	0.40	0.10	0.43	0.43
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	64	189	74	66	151	120	59	903	60	109	1222	58
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.1	5.7	2.5	2.1	4.4	4.1	1.9	12.3	1.4	3.5	18.1	1.3
Cycle Q Clear(g_c), s	2.1	5.7	2.5	2.1	4.4	4.1	1.9	12.3	1.4	3.5	18.1	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	136	290	246	138	292	248	130	1420	635	174	1507	674
V/C Ratio(X)	0.47	0.65	0.30	0.48	0.52	0.48	0.45	0.64	0.09	0.63	0.81	0.09
Avail Cap(c_a), veh/h	208	498	423	208	498	423	208	1420	635	208	1507	674
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	23.7	22.4	26.4	23.1	23.0	26.6	14.4	11.1	25.9	15.1	10.2
Incr Delay (d2), s/veh	2.5	2.5	0.7	2.5	1.4	1.5	2.5	2.2	0.3	4.4	4.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.1	1.1	1.1	2.4	1.9	1.0	6.3	0.7	1.9	9.8	0.6
LnGrp Delay(d),s/veh	29.0	26.2	23.1	29.0	24.6	24.5	29.1	16.6	11.4	30.3	19.9	10.5
LnGrp LOS	C	C	C	C	C	C	C	B	B	C	B	B
Approach Vol, veh/h		327			337			1022			1389	
Approach Delay, s/veh		26.0			25.4			17.0			20.3	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	28.0	8.7	13.3	8.4	29.5	8.6	13.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	5.5	14.3	4.1	7.7	3.9	20.1	4.1	6.4
Green Ext Time (p_c), s	0.0	8.0	0.0	1.6	0.0	3.5	0.0	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	20.4
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	58	92	24	28	85	58	14	893	42	72	1112	81
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	65	103	27	31	96	65	15	930	44	74	1146	84
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.96	0.96	0.96	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	86	100	438	77	178	438	46	1486	70	149	1735	776
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.03	0.43	0.43	0.08	0.49	0.49
Sat Flow, veh/h	0	362	1583	0	644	1583	1774	3441	163	1774	3539	1583
Grp Volume(v), veh/h	168	0	27	127	0	65	15	478	496	74	1146	84
Grp Sat Flow(s),veh/h/ln	362	0	1583	644	0	1583	1774	1770	1834	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.7	0.0	0.0	1.8	0.5	12.2	12.2	2.3	14.1	1.7
Cycle Q Clear(g_c), s	16.0	0.0	0.7	16.0	0.0	1.8	0.5	12.2	12.2	2.3	14.1	1.7
Prop In Lane	0.39		1.00	0.24		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	186	0	438	256	0	438	46	764	792	149	1735	776
V/C Ratio(X)	0.90	0.00	0.06	0.50	0.00	0.15	0.33	0.63	0.63	0.50	0.66	0.11
Avail Cap(c_a), veh/h	186	0	438	256	0	438	215	764	792	215	1735	776
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.3	0.0	15.4	17.2	0.0	15.8	27.7	12.8	12.8	25.3	11.1	7.9
Incr Delay (d2), s/veh	39.6	0.0	0.1	1.5	0.0	0.2	4.0	3.8	3.7	2.5	2.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	0.3	1.7	0.0	0.8	0.3	6.7	6.9	1.2	7.3	0.8
LnGrp Delay(d),s/veh	60.0	0.0	15.5	18.7	0.0	15.9	31.7	16.6	16.5	27.9	13.1	8.2
LnGrp LOS	E		B	B		B	C	B	B	C	B	A
Approach Vol, veh/h		195			192			989			1304	
Approach Delay, s/veh		53.8			17.8			16.8			13.6	
Approach LOS		D			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.9	29.0		20.0	5.5	32.4		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	25.0		16.0	7.0	25.0		16.0
Max Q Clear Time (g_c+I1), s	4.3	14.2		18.0	2.5	16.1		18.0
Green Ext Time (p_c), s	0.0	8.6		0.0	0.0	7.2		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			18.0
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	42	316	147	41	246	37	80	263	54	28	268	43
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	49	372	173	50	300	45	96	317	65	29	282	45
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.82	0.82	0.82	0.83	0.83	0.83	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	118	482	410	119	484	411	170	1022	207	80	913	144
Arrive On Green	0.07	0.26	0.26	0.07	0.26	0.26	0.10	0.35	0.35	0.05	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	2934	594	1774	3064	483
Grp Volume(v), veh/h	49	372	173	50	300	45	96	190	192	29	161	166
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1758	1774	1770	1777
Q Serve(g_s), s	1.5	10.6	5.2	1.5	8.1	1.2	3.0	4.5	4.6	0.9	4.0	4.1
Cycle Q Clear(g_c), s	1.5	10.6	5.2	1.5	8.1	1.2	3.0	4.5	4.6	0.9	4.0	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.34	1.00		0.27
Lane Grp Cap(c), veh/h	118	482	410	119	484	411	170	617	613	80	527	529
V/C Ratio(X)	0.42	0.77	0.42	0.42	0.62	0.11	0.56	0.31	0.31	0.36	0.31	0.31
Avail Cap(c_a), veh/h	218	587	499	218	587	499	218	617	613	218	527	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.6	19.6	17.6	25.6	18.6	16.1	24.7	13.6	13.6	26.4	15.5	15.5
Incr Delay (d2), s/veh	2.3	5.1	0.7	2.3	1.4	0.1	2.9	1.3	1.3	2.7	1.5	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	6.1	2.4	0.8	4.4	0.6	1.6	2.4	2.4	0.5	2.2	2.2
LnGrp Delay(d),s/veh	27.9	24.7	18.3	27.9	20.0	16.2	27.6	14.9	14.9	29.2	17.0	17.1
LnGrp LOS	C	C	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		594			395			478			356	
Approach Delay, s/veh		23.1			20.6			17.4			18.0	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	23.9	7.8	18.8	9.5	21.0	7.8	18.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	18.0	7.0	17.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	2.9	6.6	3.5	12.6	5.0	6.1	3.5	10.1
Green Ext Time (p_c), s	0.0	3.0	0.0	2.2	0.0	3.1	0.0	2.9

Intersection Summary			
HCM 2010 Ctrl Delay			20.1
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	93	213	62	29	148	90	63	817	41	139	967	119
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	109	251	73	37	190	115	67	869	44	148	1029	127
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.78	0.78	0.78	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	180	396	336	97	308	262	143	1193	534	199	1304	583
Arrive On Green	0.10	0.21	0.21	0.05	0.17	0.17	0.08	0.34	0.34	0.11	0.37	0.37
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	109	251	73	37	190	115	67	869	44	148	1029	127
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.3	6.9	2.1	1.1	5.3	3.7	2.0	12.2	1.1	4.6	14.6	3.1
Cycle Q Clear(g_c), s	3.3	6.9	2.1	1.1	5.3	3.7	2.0	12.2	1.1	4.6	14.6	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	180	396	336	97	308	262	143	1193	534	199	1304	583
V/C Ratio(X)	0.60	0.63	0.22	0.38	0.62	0.44	0.47	0.73	0.08	0.75	0.79	0.22
Avail Cap(c_a), veh/h	220	529	450	220	529	450	220	1193	534	220	1304	583
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.2	20.2	18.3	25.7	21.9	21.2	24.7	16.4	12.7	24.2	15.8	12.2
Incr Delay (d2), s/veh	3.2	1.7	0.3	2.5	2.0	1.2	2.4	3.9	0.3	11.7	4.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	3.7	1.0	0.6	2.9	1.7	1.1	6.6	0.5	2.9	7.9	1.5
LnGrp Delay(d),s/veh	27.5	21.9	18.6	28.2	23.9	22.3	27.1	20.3	13.0	35.9	20.8	13.1
LnGrp LOS	C	C	B	C	C	C	C	C	B	D	C	B
Approach Vol, veh/h		433			342			980			1304	
Approach Delay, s/veh		22.7			23.8			20.5			21.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	23.0	7.1	16.0	8.5	24.8	9.7	13.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.6	14.2	3.1	8.9	4.0	16.6	5.3	7.3
Green Ext Time (p_c), s	0.0	4.1	0.0	1.7	0.0	2.1	0.0	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	21.7
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	224	52	28	197	39	28	259	17	35	261	18
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	20	277	64	30	214	42	32	294	19	37	275	19
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.81	0.81	0.81	0.92	0.92	0.92	0.88	0.88	0.88	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	401	341	85	426	362	89	1217	78	100	1232	85
Arrive On Green	0.03	0.22	0.22	0.05	0.23	0.23	0.05	0.36	0.36	0.06	0.37	0.37
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3377	217	1774	3361	231
Grp Volume(v), veh/h	20	277	64	30	214	42	32	153	160	37	144	150
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1824	1774	1770	1822
Q Serve(g_s), s	0.5	6.8	1.7	0.8	5.0	1.0	0.9	3.0	3.1	1.0	2.8	2.8
Cycle Q Clear(g_c), s	0.5	6.8	1.7	0.8	5.0	1.0	0.9	3.0	3.1	1.0	2.8	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		0.13
Lane Grp Cap(c), veh/h	60	401	341	85	426	362	89	638	658	100	649	668
V/C Ratio(X)	0.33	0.69	0.19	0.35	0.50	0.12	0.36	0.24	0.24	0.37	0.22	0.22
Avail Cap(c_a), veh/h	249	634	539	249	634	539	249	638	658	249	649	668
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	18.1	16.0	23.0	16.8	15.3	22.9	11.2	11.2	22.7	10.9	10.9
Incr Delay (d2), s/veh	3.2	2.1	0.3	2.5	0.9	0.1	2.4	0.9	0.9	2.3	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.7	0.7	0.5	2.7	0.5	0.5	1.6	1.7	0.6	1.5	1.6
LnGrp Delay(d),s/veh	26.7	20.2	16.3	25.5	17.7	15.4	25.4	12.1	12.1	25.0	11.7	11.7
LnGrp LOS	C	C	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		361			286			345			331	
Approach Delay, s/veh		19.9			18.2			13.3			13.2	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	22.0	6.4	14.7	6.5	22.3	5.7	15.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	18.0	7.0	17.0	7.0	18.0	7.0	17.0
Max Q Clear Time (g_c+I1), s	3.0	5.1	2.8	8.8	2.9	4.8	2.5	7.0
Green Ext Time (p_c), s	0.0	2.7	0.0	1.9	0.0	2.7	0.0	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	16.1
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	47	40	19	40	42	41	865	50	68	966	28
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	25	53	45	23	48	50	44	920	53	73	1039	30
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.84	0.84	0.84	0.94	0.94	0.94	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	131	111	68	116	120	115	1348	78	161	1494	669
Arrive On Green	0.04	0.14	0.14	0.04	0.14	0.14	0.06	0.40	0.40	0.09	0.42	0.42
Sat Flow, veh/h	1774	932	791	1774	837	872	1774	3402	196	1774	3539	1583
Grp Volume(v), veh/h	25	0	98	23	0	98	44	479	494	73	1039	30
Grp Sat Flow(s),veh/h/ln	1774	0	1723	1774	0	1709	1774	1770	1828	1774	1770	1583
Q Serve(g_s), s	0.7	0.0	2.5	0.6	0.0	2.5	1.1	10.7	10.7	1.9	11.5	0.5
Cycle Q Clear(g_c), s	0.7	0.0	2.5	0.6	0.0	2.5	1.1	10.7	10.7	1.9	11.5	0.5
Prop In Lane	1.00		0.46	1.00		0.51	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	73	0	243	68	0	236	115	701	724	161	1494	669
V/C Ratio(X)	0.34	0.00	0.40	0.34	0.00	0.42	0.38	0.68	0.68	0.45	0.70	0.04
Avail Cap(c_a), veh/h	259	0	575	259	0	570	259	701	724	259	1494	669
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.4	0.0	18.8	22.5	0.0	18.9	21.5	12.0	12.0	20.7	11.3	8.2
Incr Delay (d2), s/veh	2.7	0.0	1.1	2.9	0.0	1.2	2.1	5.3	5.2	2.0	2.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.2	0.3	0.0	1.2	0.6	6.2	6.4	1.0	6.0	0.3
LnGrp Delay(d),s/veh	25.1	0.0	19.8	25.3	0.0	20.1	23.6	17.3	17.1	22.7	14.0	8.3
LnGrp LOS	C		B	C		C	C	B	B	C	B	A
Approach Vol, veh/h		123			121			1017			1142	
Approach Delay, s/veh		20.9			21.1			17.5			14.4	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	23.0	5.8	10.8	7.1	24.2	6.0	10.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	3.9	12.7	2.6	4.5	3.1	13.5	2.7	4.5
Green Ext Time (p_c), s	0.0	5.1	0.0	0.7	0.0	4.5	0.0	0.7

Intersection Summary		
HCM 2010 Ctrl Delay		16.4
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	402	761	273	168	502	97	241	551	106	140	709	129
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	428	810	290	195	584	113	265	605	116	154	779	142
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.86	0.86	0.86	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	461	898	402	317	909	173	305	1172	524	193	949	424
Arrive On Green	0.13	0.25	0.25	0.09	0.21	0.21	0.17	0.33	0.33	0.11	0.27	0.27
Sat Flow, veh/h	3442	3539	1583	3442	4292	817	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	428	810	290	195	459	238	265	605	116	154	779	142
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1719	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.2	16.5	12.5	4.1	9.2	9.4	10.9	10.3	3.9	6.3	15.4	5.4
Cycle Q Clear(g_c), s	9.2	16.5	12.5	4.1	9.2	9.4	10.9	10.3	3.9	6.3	15.4	5.4
Prop In Lane	1.00		1.00	1.00		0.48	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	461	898	402	317	718	364	305	1172	524	193	949	424
V/C Ratio(X)	0.93	0.90	0.72	0.61	0.64	0.65	0.87	0.52	0.22	0.80	0.82	0.33
Avail Cap(c_a), veh/h	461	901	403	323	727	369	309	1172	524	285	949	424
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	27.0	25.4	32.6	26.8	26.9	30.1	20.1	18.0	32.5	25.6	22.0
Incr Delay (d2), s/veh	25.1	12.2	6.2	3.4	1.9	4.0	22.2	1.6	1.0	9.4	7.9	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	9.5	6.1	2.1	4.5	4.9	7.2	5.3	1.8	3.6	8.5	2.6
LnGrp Delay(d),s/veh	57.1	39.1	31.7	36.0	28.7	30.9	52.3	21.8	19.0	41.9	33.6	24.1
LnGrp LOS	E	D	C	D	C	C	D	C	B	D	C	C
Approach Vol, veh/h		1528			892			986			1075	
Approach Delay, s/veh		42.7			30.9			29.6			33.5	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	28.7	10.9	22.9	16.8	24.0	14.0	19.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	21.0	7.0	19.0	13.0	20.0	10.0	16.0
Max Q Clear Time (g_c+I1), s	8.3	12.3	6.1	18.5	12.9	17.4	11.2	11.4
Green Ext Time (p_c), s	0.1	5.8	0.1	0.4	0.0	2.0	0.0	3.5

Intersection Summary		
HCM 2010 Ctrl Delay		35.3
HCM 2010 LOS		D

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	14	3	36	2	1	11	36	968	2	43	1212	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	58	58	58	97	97	97	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	4	46	3	2	19	41	1098	2	44	1237	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1966	2517	629	1889	2526	550	1257	0	0	1100	0	0
Stage 1	1335	1335	-	1181	1181	-	-	-	-	-	-	-
Stage 2	631	1182	-	708	1345	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	37	28	425	43	27	479	549	-	-	630	-	-
Stage 1	162	221	-	202	262	-	-	-	-	-	-	-
Stage 2	436	262	-	392	218	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	31	24	425	33	23	479	549	-	-	630	-	-
Mov Cap-2 Maneuver	107	103	-	116	99	-	-	-	-	-	-	-
Stage 1	150	206	-	187	242	-	-	-	-	-	-	-
Stage 2	385	242	-	319	203	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	29	19.2	0.4	0.4
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	549	-	-	217	278	630	-	-
HCM Lane V/C Ratio	0.074	-	-	0.313	0.087	0.07	-	-
HCM Control Delay (s)	12.1	-	-	29	19.2	11.1	-	-
HCM Lane LOS	B	-	-	D	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.3	0.3	0.2	-	-

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	16	303	50	14	217	8	28	5	8	6	2	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	88	88	88	60	60	60	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	309	51	16	247	9	47	8	13	8	3	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	247	0	0	309	0	0	628	620	309	631	620	247
Stage 1	-	-	-	-	-	-	342	342	-	278	278	-
Stage 2	-	-	-	-	-	-	286	278	-	353	342	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1319	-	-	1252	-	-	395	404	731	394	404	792
Stage 1	-	-	-	-	-	-	673	638	-	728	680	-
Stage 2	-	-	-	-	-	-	721	680	-	664	638	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1319	-	-	1252	-	-	379	394	731	373	394	792
Mov Cap-2 Maneuver	-	-	-	-	-	-	379	394	-	373	394	-
Stage 1	-	-	-	-	-	-	665	630	-	719	671	-
Stage 2	-	-	-	-	-	-	697	671	-	635	630	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.5	15.2	12.1
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	420	1319	-	-	1252	-	-	533
HCM Lane V/C Ratio	0.163	0.012	-	-	0.013	-	-	0.045
HCM Control Delay (s)	15.2	7.8	-	-	7.9	-	-	12.1
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	0.1

HCM 2010 TWSC
10: Driveway & Cottonwood Ave

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	381	12	0	263	0	4	0	4	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	81	81	81	33	33	33	25	25	25
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	419	13	0	325	0	12	0	12	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	325	0	0	432	0	0	750	750	425
Stage 1	-	-	-	-	-	-	425	425	-
Stage 2	-	-	-	-	-	-	325	325	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1235	-	-	1128	-	-	379	340	629
Stage 1	-	-	-	-	-	-	659	586	-
Stage 2	-	-	-	-	-	-	732	649	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1235	-	-	1128	-	-	379	0	629
Mov Cap-2 Maneuver	-	-	-	-	-	-	379	0	-
Stage 1	-	-	-	-	-	-	659	0	-
Stage 2	-	-	-	-	-	-	732	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	473	1235	-	-	1128	-	-
HCM Lane V/C Ratio	0.051	-	-	-	-	-	-
HCM Control Delay (s)	13	0	-	-	0	-	-
HCM Lane LOS	B	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	11	0	67	0	0	0	49	955	0	0	1148	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	25	25	25	95	95	95	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	0	93	0	0	0	52	1005	0	0	1234	37

Major/Minor	Minor2						Major1			Major2		
Conflicting Flow All	1859	2361	635				1271	0	0	1005	0	0
Stage 1	1253	1253	-				-	-	-	-	-	-
Stage 2	606	1108	-				-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94				4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-				-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32				2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	65	35	421				542	-	-	685	-	-
Stage 1	232	242	-				-	-	-	-	-	-
Stage 2	507	284	-				-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	59	0	421				542	-	-	685	-	-
Mov Cap-2 Maneuver	59	0	-				-	-	-	-	-	-
Stage 1	232	0	-				-	-	-	-	-	-
Stage 2	458	0	-				-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	34.8	0.6	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	542	-	-	226	685	-	-
HCM Lane V/C Ratio	0.095	-	-	0.479	-	-	-
HCM Control Delay (s)	12.3	-	-	34.8	0	-	-
HCM Lane LOS	B	-	-	D	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	2.4	0	-	-

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	78	31	29	61	73	46	870	32	62	816	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	56	87	34	35	73	88	51	956	35	69	907	49
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.83	0.83	0.83	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	298	253	96	258	219	126	1344	601	153	1398	626
Arrive On Green	0.08	0.16	0.16	0.05	0.14	0.14	0.07	0.38	0.38	0.09	0.40	0.40
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	56	87	34	35	73	88	51	956	35	69	907	49
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	1.5	2.1	0.9	1.0	1.8	2.5	1.4	11.5	0.7	1.8	10.4	1.0
Cycle Q Clear(g_c), s	1.5	2.1	0.9	1.0	1.8	2.5	1.4	11.5	0.7	1.8	10.4	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	134	298	253	96	258	219	126	1344	601	153	1398	626
V/C Ratio(X)	0.42	0.29	0.13	0.37	0.28	0.40	0.40	0.71	0.06	0.45	0.65	0.08
Avail Cap(c_a), veh/h	248	596	507	248	596	507	248	1344	601	248	1398	626
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.1	18.5	18.0	22.8	19.3	19.7	22.2	13.2	9.8	21.7	12.3	9.4
Incr Delay (d2), s/veh	2.1	0.5	0.2	2.3	0.6	1.2	2.1	3.2	0.2	2.1	2.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.1	0.4	0.5	0.9	1.2	0.7	6.2	0.3	1.0	5.5	0.5
LnGrp Delay(d),s/veh	24.1	19.0	18.3	25.2	19.9	20.9	24.3	16.4	10.0	23.8	14.6	9.7
LnGrp LOS	C	B	B	C	B	C	C	B	B	C	B	A
Approach Vol, veh/h		177			196			1042			1025	
Approach Delay, s/veh		20.5			21.3			16.6			15.0	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	23.0	6.7	12.0	7.6	23.8	7.8	10.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	3.8	13.5	3.0	4.1	3.4	12.4	3.5	4.5
Green Ext Time (p_c), s	0.0	4.5	0.0	0.9	0.0	5.3	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	16.6
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	71	82	24	34	59	57	22	825	24	26	779	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	82	94	28	39	68	66	26	982	29	30	906	60
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.84	0.84	0.84	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	95	76	456	88	114	456	74	1579	47	83	1609	720
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.04	0.45	0.45	0.05	0.45	0.45
Sat Flow, veh/h	0	265	1583	0	395	1583	1774	3510	104	1774	3539	1583
Grp Volume(v), veh/h	176	0	28	107	0	66	26	495	516	30	906	60
Grp Sat Flow(s),veh/h/ln	265	0	1583	395	0	1583	1774	1770	1844	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.7	0.0	0.0	1.7	0.8	11.9	11.9	0.9	10.4	1.2
Cycle Q Clear(g_c), s	16.0	0.0	0.7	16.0	0.0	1.7	0.8	11.9	11.9	0.9	10.4	1.2
Prop In Lane	0.47		1.00	0.36		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	171	0	456	202	0	456	74	796	829	83	1609	720
V/C Ratio(X)	1.03	0.00	0.06	0.53	0.00	0.14	0.35	0.62	0.62	0.36	0.56	0.08
Avail Cap(c_a), veh/h	171	0	456	202	0	456	223	796	829	223	1609	720
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	0.0	14.4	16.4	0.0	14.7	25.9	11.7	11.7	25.7	11.1	8.6
Incr Delay (d2), s/veh	76.3	0.0	0.1	2.6	0.0	0.1	2.8	3.6	3.5	2.6	1.4	0.2
Initial Q Delay(d3),s/veh	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	0.3	1.4	0.0	0.8	0.4	6.6	6.8	0.5	5.4	0.6
LnGrp Delay(d),s/veh	97.7	0.0	14.4	19.0	0.0	14.9	28.7	15.3	15.2	28.3	12.5	8.8
LnGrp LOS	F		B	B		B	C	B	B	C	B	A
Approach Vol, veh/h		204			173			1037			996	
Approach Delay, s/veh		86.3			17.4			15.6			12.8	
Approach LOS		F			B			B			B	
Timer	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	29.0		20.0	6.3	29.3		20.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	7.0	25.0		16.0	7.0	25.0		16.0				
Max Q Clear Time (g_c+I1), s	2.9	13.9		18.0	2.8	12.4		18.0				
Green Ext Time (p_c), s	0.0	8.1		0.0	0.0	9.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			20.6									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	195	104	44	243	24	88	213	43	20	171	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	21	250	133	52	289	29	91	220	44	22	184	22
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.78	0.78	0.78	0.84	0.84	0.84	0.97	0.97	0.97	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	383	325	126	449	382	173	1132	222	65	1028	121
Arrive On Green	0.04	0.21	0.21	0.07	0.24	0.24	0.10	0.38	0.38	0.04	0.32	0.32
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	2950	580	1774	3189	377
Grp Volume(v), veh/h	21	250	133	52	289	29	91	130	134	22	101	105
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1760	1774	1770	1796
Q Serve(g_s), s	0.6	6.5	3.8	1.5	7.3	0.7	2.6	2.6	2.7	0.6	2.2	2.2
Cycle Q Clear(g_c), s	0.6	6.5	3.8	1.5	7.3	0.7	2.6	2.6	2.7	0.6	2.2	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.33	1.00		0.21
Lane Grp Cap(c), veh/h	62	383	325	126	449	382	173	679	675	65	571	579
V/C Ratio(X)	0.34	0.65	0.41	0.41	0.64	0.08	0.52	0.19	0.20	0.34	0.18	0.18
Avail Cap(c_a), veh/h	236	601	511	236	601	511	269	679	675	236	571	579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.8	19.2	18.2	23.4	18.0	15.5	22.6	10.8	10.8	24.8	12.8	12.9
Incr Delay (d2), s/veh	3.1	1.9	0.8	2.2	1.5	0.1	2.4	0.6	0.7	3.0	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.5	1.7	0.8	4.0	0.3	1.4	1.4	1.4	0.4	1.1	1.2
LnGrp Delay(d),s/veh	28.0	21.1	19.0	25.6	19.5	15.5	25.1	11.4	11.5	27.8	13.5	13.5
LnGrp LOS	C	C	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		404			370			355			228	
Approach Delay, s/veh		20.8			20.1			15.0			14.9	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.9	24.2	7.7	14.8	9.2	21.0	5.9	16.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	18.0	7.0	17.0	8.0	17.0	7.0	17.0
Max Q Clear Time (g_c+I1), s	2.6	4.7	3.5	8.5	4.6	4.2	2.6	9.3
Green Ext Time (p_c), s	0.0	2.2	0.0	2.3	0.1	2.1	0.0	2.2

Intersection Summary			
HCM 2010 Ctrl Delay			18.1
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	80	125	51	51	157	153	72	743	54	122	650	96
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	101	158	65	89	275	268	79	816	59	140	747	110
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.79	0.79	0.79	0.57	0.57	0.57	0.91	0.91	0.91	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	171	418	355	162	408	347	153	1083	484	190	1156	517
Arrive On Green	0.10	0.22	0.22	0.09	0.22	0.22	0.09	0.31	0.31	0.11	0.33	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	101	158	65	89	275	268	79	816	59	140	747	110
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.2	4.2	2.0	2.8	8.0	9.4	2.5	12.2	1.6	4.5	10.6	3.0
Cycle Q Clear(g_c), s	3.2	4.2	2.0	2.8	8.0	9.4	2.5	12.2	1.6	4.5	10.6	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	171	418	355	162	408	347	153	1083	484	190	1156	517
V/C Ratio(X)	0.59	0.38	0.18	0.55	0.67	0.77	0.52	0.75	0.12	0.74	0.65	0.21
Avail Cap(c_a), veh/h	211	506	431	211	506	431	211	1083	484	241	1156	517
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	19.4	18.5	25.6	21.0	21.6	25.7	18.4	14.7	25.5	16.9	14.3
Incr Delay (d2), s/veh	3.3	0.6	0.2	2.9	2.5	6.7	2.7	4.9	0.5	8.5	2.8	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.2	0.9	1.5	4.3	4.7	1.3	6.6	0.8	2.7	5.6	1.4
LnGrp Delay(d),s/veh	28.7	19.9	18.7	28.5	23.6	28.3	28.4	23.3	15.2	34.0	19.7	15.3
LnGrp LOS	C	B	B	C	C	C	C	C	B	C	B	B
Approach Vol, veh/h		324			632			954			997	
Approach Delay, s/veh		22.4			26.3			23.2			21.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	22.0	9.4	17.2	9.1	23.2	9.7	16.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	18.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.5	14.2	4.8	6.2	4.5	12.6	5.2	11.4
Green Ext Time (p_c), s	0.0	3.0	0.0	2.5	0.0	4.7	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	23.1
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	32	169	58	9	189	28	31	157	14	25	170	17
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	57	302	104	13	278	41	37	187	17	29	195	20
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.56	0.56	0.56	0.68	0.68	0.68	0.84	0.84	0.84	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	135	515	438	41	416	354	99	1123	101	82	1077	109
Arrive On Green	0.08	0.28	0.28	0.02	0.22	0.22	0.06	0.34	0.34	0.05	0.33	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3284	296	1774	3245	329
Grp Volume(v), veh/h	57	302	104	13	278	41	37	100	104	29	105	110
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1811	1774	1770	1805
Q Serve(g_s), s	1.6	7.2	2.6	0.4	7.0	1.1	1.0	2.0	2.1	0.8	2.2	2.2
Cycle Q Clear(g_c), s	1.6	7.2	2.6	0.4	7.0	1.1	1.0	2.0	2.1	0.8	2.2	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.18
Lane Grp Cap(c), veh/h	135	515	438	41	416	354	99	605	619	82	588	599
V/C Ratio(X)	0.42	0.59	0.24	0.32	0.67	0.12	0.37	0.17	0.17	0.35	0.18	0.18
Avail Cap(c_a), veh/h	243	655	557	243	655	557	243	605	619	243	588	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	16.0	14.3	24.6	18.1	15.8	23.3	11.8	11.8	23.7	12.1	12.2
Incr Delay (d2), s/veh	2.1	1.1	0.3	4.4	1.9	0.1	2.3	0.6	0.6	2.6	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	3.8	1.2	0.2	3.8	0.5	0.6	1.1	1.1	0.5	1.2	1.2
LnGrp Delay(d),s/veh	24.7	17.1	14.6	29.0	20.0	16.0	25.6	12.3	12.4	26.2	12.8	12.8
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		463			332			241			244	
Approach Delay, s/veh		17.5			19.8			14.4			14.4	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	21.5	5.2	18.2	6.9	21.0	7.9	15.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	18.0	7.0	17.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	2.8	4.1	2.4	9.2	3.0	4.2	3.6	9.0
Green Ext Time (p_c), s	0.0	1.8	0.0	2.4	0.0	1.8	0.0	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	16.9
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	37	27	24	31	59	30	766	35	60	723	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	25	44	32	31	40	77	31	798	36	67	812	29
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.77	0.77	0.77	0.96	0.96	0.96	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	138	100	88	83	160	88	1361	61	153	1527	683
Arrive On Green	0.04	0.14	0.14	0.05	0.15	0.15	0.05	0.39	0.39	0.09	0.43	0.43
Sat Flow, veh/h	1774	1004	730	1774	571	1098	1774	3449	156	1774	3539	1583
Grp Volume(v), veh/h	25	0	76	31	0	117	31	409	425	67	812	29
Grp Sat Flow(s),veh/h/ln	1774	0	1734	1774	0	1669	1774	1770	1835	1774	1770	1583
Q Serve(g_s), s	0.7	0.0	1.9	0.8	0.0	3.1	0.8	8.8	8.8	1.7	8.1	0.5
Cycle Q Clear(g_c), s	0.7	0.0	1.9	0.8	0.0	3.1	0.8	8.8	8.8	1.7	8.1	0.5
Prop In Lane	1.00		0.42	1.00		0.66	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	73	0	238	88	0	243	88	698	724	153	1527	683
V/C Ratio(X)	0.34	0.00	0.32	0.35	0.00	0.48	0.35	0.59	0.59	0.44	0.53	0.04
Avail Cap(c_a), veh/h	258	0	576	258	0	555	258	698	724	258	1527	683
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.4	0.0	18.7	22.1	0.0	18.9	22.1	11.5	11.5	20.9	10.1	7.9
Incr Delay (d2), s/veh	2.7	0.0	0.8	2.4	0.0	1.5	2.4	3.6	3.5	2.0	1.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.0	0.5	0.0	1.5	0.5	4.9	5.1	0.9	4.2	0.2
LnGrp Delay(d),s/veh	25.2	0.0	19.5	24.6	0.0	20.4	24.6	15.1	14.9	22.9	11.4	8.0
LnGrp LOS	C		B	C		C	C	B	B	C	B	A
Approach Vol, veh/h		101			148			865			908	
Approach Delay, s/veh		20.9			21.3			15.3			12.2	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	23.0	6.4	10.6	6.4	24.8	6.0	11.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	3.7	10.8	2.8	3.9	2.8	10.1	2.7	5.1
Green Ext Time (p_c), s	0.0	5.7	0.0	0.8	0.0	6.0	0.0	0.7

Intersection Summary		
HCM 2010 Ctrl Delay		14.6
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	329	396	206	157	370	87	274	521	68	112	475	153
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	366	440	229	183	430	101	301	573	75	122	516	166
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.86	0.86	0.86	0.91	0.91	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	415	732	328	350	780	178	344	1260	564	167	906	405
Arrive On Green	0.12	0.21	0.21	0.10	0.19	0.19	0.19	0.36	0.36	0.09	0.26	0.26
Sat Flow, veh/h	3442	3539	1583	3442	4142	944	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	366	440	229	183	350	181	301	573	75	122	516	166
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1696	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	6.9	7.5	8.9	3.3	6.2	6.5	10.9	8.3	2.1	4.4	8.4	5.8
Cycle Q Clear(g_c), s	6.9	7.5	8.9	3.3	6.2	6.5	10.9	8.3	2.1	4.4	8.4	5.8
Prop In Lane	1.00		1.00	1.00		0.56	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	415	732	328	350	638	319	344	1260	564	167	906	405
V/C Ratio(X)	0.88	0.60	0.70	0.52	0.55	0.57	0.87	0.45	0.13	0.73	0.57	0.41
Avail Cap(c_a), veh/h	415	853	382	415	817	409	347	1260	564	267	906	405
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.7	23.8	24.4	28.3	24.4	24.5	26.0	16.4	14.5	29.2	21.5	20.5
Incr Delay (d2), s/veh	19.4	0.9	4.6	1.2	0.7	1.6	20.9	1.2	0.5	6.0	2.6	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	3.8	4.3	1.6	2.9	3.2	7.4	4.2	1.0	2.4	4.4	2.9
LnGrp Delay(d),s/veh	48.2	24.7	29.0	29.5	25.1	26.1	46.9	17.6	14.9	35.2	24.1	23.6
LnGrp LOS	D	C	C	C	C	C	D	B	B	D	C	C
Approach Vol, veh/h		1035			714			949			804	
Approach Delay, s/veh		34.0			26.5			26.7			25.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	27.6	10.8	17.7	16.9	21.0	12.0	16.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	20.0	8.0	16.0	13.0	17.0	8.0	16.0
Max Q Clear Time (g_c+I1), s	6.4	10.3	5.3	10.9	12.9	10.4	8.9	8.5
Green Ext Time (p_c), s	0.1	5.2	0.1	2.8	0.0	3.9	0.0	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	28.6
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	4	27	3	6	14	37	916	3	34	824	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	72	72	72	89	89	89	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	6	42	4	8	19	46	1132	4	39	947	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1697	2262	483	1780	2270	568	967	0	0	1136	0	0
Stage 1	1035	1035	-	1225	1225	-	-	-	-	-	-	-
Stage 2	662	1227	-	555	1045	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	60	40	530	52	40	466	708	-	-	611	-	-
Stage 1	248	307	-	190	249	-	-	-	-	-	-	-
Stage 2	417	249	-	484	304	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	49	35	530	42	35	466	708	-	-	611	-	-
Mov Cap-2 Maneuver	145	121	-	126	124	-	-	-	-	-	-	-
Stage 1	232	287	-	178	233	-	-	-	-	-	-	-
Stage 2	360	233	-	409	285	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	27.4	23.6	0.4	0.4
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	708	-	-	235	225	611	-	-
HCM Lane V/C Ratio	0.065	-	-	0.321	0.142	0.064	-	-
HCM Control Delay (s)	10.4	-	-	27.4	23.6	11.3	-	-
HCM Lane LOS	B	-	-	D	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.3	0.5	0.2	-	-

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	23	258	42	3	229	4	31	4	9	2	2	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	58	58	58	79	79	79	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	453	74	5	395	7	39	5	11	3	3	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	395	0	0	453	0	0	947	938	453	947	938	395
Stage 1	-	-	-	-	-	-	533	533	-	405	405	-
Stage 2	-	-	-	-	-	-	414	405	-	542	533	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1164	-	-	1108	-	-	241	264	607	241	264	654
Stage 1	-	-	-	-	-	-	531	525	-	622	598	-
Stage 2	-	-	-	-	-	-	616	598	-	525	525	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1164	-	-	1108	-	-	227	254	607	226	254	654
Mov Cap-2 Maneuver	-	-	-	-	-	-	227	254	-	226	254	-
Stage 1	-	-	-	-	-	-	513	507	-	601	595	-
Stage 2	-	-	-	-	-	-	597	595	-	492	507	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	22.3	13.9
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	263	1164	-	-	1108	-	-	426
HCM Lane V/C Ratio	0.212	0.035	-	-	0.005	-	-	0.047
HCM Control Delay (s)	22.3	8.2	-	-	8.3	-	-	13.9
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0	-	-	0.1

HCM 2010 TWSC
10: Driveway & Cottonwood Ave

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	222	121	19	293	0	47	0	39	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	81	81	81	52	52	52	25	25	25
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	288	157	23	362	0	90	0	75	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	362	0	0	445	0	0	776	776	367
Stage 1	-	-	-	-	-	-	367	367	-
Stage 2	-	-	-	-	-	-	409	409	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1197	-	-	1115	-	-	366	328	678
Stage 1	-	-	-	-	-	-	701	622	-
Stage 2	-	-	-	-	-	-	671	596	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1197	-	-	1115	-	-	358	0	678
Mov Cap-2 Maneuver	-	-	-	-	-	-	358	0	-
Stage 1	-	-	-	-	-	-	701	0	-
Stage 2	-	-	-	-	-	-	657	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	17.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	455	1197	-	-	1115	-	-
HCM Lane V/C Ratio	0.363	-	-	-	0.021	-	-
HCM Control Delay (s)	17.4	0	-	-	8.3	-	-
HCM Lane LOS	C	A	-	-	A	-	-
HCM 95th %tile Q(veh)	1.6	0	-	-	0.1	-	-

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	19	0	71	0	0	0	63	910	0	0	796	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	25	25	25	82	82	82	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	0	89	0	0	0	77	1110	0	0	926	40

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1654	2208	483	965	0	0	1110	0	0
Stage 1	945	945	-	-	-	-	-	-	-
Stage 2	709	1263	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	89	44	530	709	-	-	625	-	-
Stage 1	338	339	-	-	-	-	-	-	-
Stage 2	449	239	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	79	0	530	709	-	-	625	-	-
Mov Cap-2 Maneuver	79	0	-	-	-	-	-	-	-
Stage 1	338	0	-	-	-	-	-	-	-
Stage 2	400	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	32.6	0.7	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	709	-	-	240	625	-	-
HCM Lane V/C Ratio	0.108	-	-	0.469	-	-	-
HCM Control Delay (s)	10.7	-	-	32.6	0	-	-
HCM Lane LOS	B	-	-	D	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	2.3	0	-	-

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	76	55	83	127	177	57	1031	53	70	844	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	35	110	80	94	144	201	66	1185	61	80	959	30
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.69	0.69	0.69	0.88	0.88	0.88	0.87	0.87	0.87	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	252	214	166	330	280	140	1452	650	154	1482	663
Arrive On Green	0.05	0.14	0.14	0.09	0.18	0.18	0.08	0.41	0.41	0.09	0.42	0.42
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	35	110	80	94	144	201	66	1185	61	80	959	30
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	1.1	3.2	2.7	3.0	4.0	7.0	2.1	17.4	1.4	2.5	12.6	0.7
Cycle Q Clear(g_c), s	1.1	3.2	2.7	3.0	4.0	7.0	2.1	17.4	1.4	2.5	12.6	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	92	252	214	166	330	280	140	1452	650	154	1482	663
V/C Ratio(X)	0.38	0.44	0.37	0.57	0.44	0.72	0.47	0.82	0.09	0.52	0.65	0.05
Avail Cap(c_a), veh/h	212	510	433	212	510	433	212	1452	650	212	1482	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	23.2	23.0	25.4	21.5	22.7	25.8	15.3	10.6	25.5	13.6	10.1
Incr Delay (d2), s/veh	2.6	1.2	1.1	3.0	0.9	3.4	2.5	5.2	0.3	2.7	2.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.7	1.2	1.6	2.2	3.3	1.1	9.4	0.7	1.3	6.6	0.3
LnGrp Delay(d),s/veh	29.4	24.4	24.1	28.4	22.4	26.1	28.2	20.5	10.9	28.2	15.7	10.2
LnGrp LOS	C	C	C	C	C	C	C	C	B	C	B	B
Approach Vol, veh/h		225			439			1312			1069	
Approach Delay, s/veh		25.1			25.4			20.4			16.5	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	28.0	9.5	11.9	8.6	28.5	7.0	14.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.5	19.4	5.0	5.2	4.1	14.6	3.1	9.0
Green Ext Time (p_c), s	0.0	4.1	0.0	1.7	0.0	7.8	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	20.1
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	67	70	45	61	92	56	31	1032	25	32	885	72
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	77	80	52	81	123	75	36	1200	29	38	1054	86
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.75	0.75	0.75	0.86	0.86	0.86	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	96	69	451	90	99	451	95	1573	38	99	1584	709
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.05	0.45	0.45	0.06	0.45	0.45
Sat Flow, veh/h	0	241	1583	0	347	1583	1774	3532	85	1774	3539	1583
Grp Volume(v), veh/h	157	0	52	204	0	75	36	601	628	38	1054	86
Grp Sat Flow(s),veh/h/ln	241	0	1583	347	0	1583	1774	1770	1848	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	1.4	0.0	0.0	2.0	1.1	16.0	16.0	1.2	13.2	1.8
Cycle Q Clear(g_c), s	16.0	0.0	1.4	16.0	0.0	2.0	1.1	16.0	16.0	1.2	13.2	1.8
Prop In Lane	0.49		1.00	0.40		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	164	0	451	189	0	451	95	788	823	99	1584	709
V/C Ratio(X)	0.96	0.00	0.12	1.08	0.00	0.17	0.38	0.76	0.76	0.38	0.67	0.12
Avail Cap(c_a), veh/h	164	0	451	189	0	451	221	788	823	221	1584	709
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.5	0.0	14.8	20.4	0.0	15.1	25.7	13.1	13.1	25.6	12.2	9.1
Incr Delay (d2), s/veh	57.1	0.0	0.1	88.9	0.0	0.2	2.5	6.9	6.6	2.4	2.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	0.6	7.5	0.0	0.9	0.6	9.2	9.5	0.6	6.8	0.8
LnGrp Delay(d),s/veh	78.6	0.0	14.9	109.3	0.0	15.2	28.1	20.0	19.7	28.0	14.4	9.4
LnGrp LOS	E		B	F		B	C	B	B	C	B	A
Approach Vol, veh/h		209			279			1265			1178	
Approach Delay, s/veh		62.8			84.0			20.1			14.5	
Approach LOS		E			F			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.1	29.0		20.0	7.0	29.1		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	25.0		16.0	7.0	25.0		16.0
Max Q Clear Time (g_c+I1), s	3.2	18.0		18.0	3.1	15.2		18.0
Green Ext Time (p_c), s	0.0	6.0		0.0	0.0	8.2		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		27.0
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	45	291	125	44	360	83	93	237	29	53	248	47
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	53	342	147	58	474	109	118	300	37	61	285	54
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.76	0.76	0.76	0.79	0.79	0.79	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	121	547	465	128	554	471	178	930	114	132	795	149
Arrive On Green	0.07	0.29	0.29	0.07	0.30	0.30	0.10	0.29	0.29	0.07	0.27	0.27
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3176	388	1774	2977	557
Grp Volume(v), veh/h	53	342	147	58	474	109	118	166	171	61	168	171
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1794	1774	1770	1765
Q Serve(g_s), s	1.7	9.5	4.3	1.9	14.4	3.1	3.8	4.4	4.5	2.0	4.6	4.7
Cycle Q Clear(g_c), s	1.7	9.5	4.3	1.9	14.4	3.1	3.8	4.4	4.5	2.0	4.6	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		0.32
Lane Grp Cap(c), veh/h	121	547	465	128	554	471	178	518	525	132	472	471
V/C Ratio(X)	0.44	0.63	0.32	0.45	0.86	0.23	0.66	0.32	0.33	0.46	0.36	0.36
Avail Cap(c_a), veh/h	207	590	502	207	590	502	207	518	525	207	472	471
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	18.3	16.5	26.7	19.8	15.9	26.0	16.5	16.6	26.6	17.8	17.8
Incr Delay (d2), s/veh	2.5	1.9	0.4	2.5	11.3	0.2	6.2	1.6	1.6	2.5	2.1	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.1	1.9	1.0	9.1	1.4	2.2	2.4	2.4	1.1	2.5	2.6
LnGrp Delay(d),s/veh	29.3	20.2	16.9	29.1	31.2	16.1	32.2	18.2	18.2	29.1	19.9	20.0
LnGrp LOS	C	C	B	C	C	B	C	B	B	C	B	C
Approach Vol, veh/h		542			641			455			400	
Approach Delay, s/veh		20.2			28.4			21.8			21.3	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	21.6	8.3	21.6	10.0	20.0	8.1	21.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	4.0	6.5	3.9	11.5	5.8	6.7	3.7	16.4
Green Ext Time (p_c), s	0.0	2.7	0.0	3.4	0.0	2.7	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	23.4
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑↑	↱	↰	↑↑	↱
Volume (veh/h)	83	187	66	59	220	170	70	843	66	112	811	89
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	104	234	82	80	297	230	85	1028	80	133	965	106
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.80	0.80	0.80	0.74	0.74	0.74	0.82	0.82	0.82	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	171	417	354	153	398	338	157	1125	503	185	1181	528
Arrive On Green	0.10	0.22	0.22	0.09	0.21	0.21	0.09	0.32	0.32	0.10	0.33	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	104	234	82	80	297	230	85	1028	80	133	965	106
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.4	6.7	2.5	2.6	8.9	8.0	2.7	16.7	2.2	4.3	14.9	2.9
Cycle Q Clear(g_c), s	3.4	6.7	2.5	2.6	8.9	8.0	2.7	16.7	2.2	4.3	14.9	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	171	417	354	153	398	338	157	1125	503	185	1181	528
V/C Ratio(X)	0.61	0.56	0.23	0.52	0.75	0.68	0.54	0.91	0.16	0.72	0.82	0.20
Avail Cap(c_a), veh/h	208	499	424	208	499	424	208	1125	503	208	1181	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.9	20.6	19.0	26.1	22.0	21.6	26.1	19.6	14.6	25.9	18.2	14.2
Incr Delay (d2), s/veh	3.5	1.2	0.3	2.8	4.7	3.1	2.9	12.7	0.7	10.0	6.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	3.5	1.1	1.4	5.1	3.7	1.5	10.1	1.0	2.6	8.3	1.4
LnGrp Delay(d),s/veh	29.4	21.8	19.3	28.9	26.6	24.7	28.9	32.3	15.3	36.0	24.6	15.1
LnGrp LOS	C	C	B	C	C	C	C	C	B	D	C	B
Approach Vol, veh/h		420			607			1193			1204	
Approach Delay, s/veh		23.2			26.2			30.9			25.0	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	23.0	9.1	17.4	9.3	23.9	9.8	16.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.3	18.7	4.6	8.7	4.7	16.9	5.4	10.9
Green Ext Time (p_c), s	0.0	0.3	0.0	2.4	0.0	1.9	0.0	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	27.1
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	95	230	72	43	323	129	99	297	27	31	201	41
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	134	324	101	63	475	190	115	345	31	42	275	56
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.71	0.71	0.71	0.68	0.68	0.68	0.86	0.86	0.86	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	180	585	497	132	535	455	172	973	87	103	756	152
Arrive On Green	0.10	0.31	0.31	0.07	0.29	0.29	0.10	0.30	0.30	0.06	0.26	0.26
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3287	294	1774	2939	590
Grp Volume(v), veh/h	134	324	101	63	475	190	115	185	191	42	164	167
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1811	1774	1770	1759
Q Serve(g_s), s	4.6	9.0	2.9	2.1	15.2	6.0	3.9	5.1	5.2	1.4	4.7	4.9
Cycle Q Clear(g_c), s	4.6	9.0	2.9	2.1	15.2	6.0	3.9	5.1	5.2	1.4	4.7	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.34
Lane Grp Cap(c), veh/h	180	585	497	132	535	455	172	524	536	103	455	452
V/C Ratio(X)	0.74	0.55	0.20	0.48	0.89	0.42	0.67	0.35	0.36	0.41	0.36	0.37
Avail Cap(c_a), veh/h	200	585	497	200	569	483	200	524	536	200	455	452
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.2	17.7	15.6	27.6	21.2	18.0	27.1	17.2	17.2	28.3	18.9	19.0
Incr Delay (d2), s/veh	12.8	1.1	0.2	2.6	15.2	0.6	6.7	1.9	1.8	2.6	2.2	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	4.8	1.3	1.1	10.0	2.7	2.2	2.7	2.8	0.8	2.6	2.7
LnGrp Delay(d),s/veh	39.9	18.9	15.8	30.3	36.4	18.6	33.9	19.1	19.1	30.8	21.1	21.3
LnGrp LOS	D	B	B	C	D	B	C	B	B	C	C	C
Approach Vol, veh/h		559			728			491			373	
Approach Delay, s/veh		23.4			31.2			22.5			22.3	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	22.4	8.6	23.5	10.0	20.0	10.3	21.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.4	7.2	4.1	11.0	5.9	6.9	6.6	17.2
Green Ext Time (p_c), s	0.0	2.6	0.0	3.4	0.0	2.7	0.0	0.7

Intersection Summary			
HCM 2010 Ctrl Delay			25.6
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	82	47	80	40	57	94	55	856	54	89	759	75
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	111	64	108	47	67	111	59	920	58	110	937	93
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.74	0.74	0.74	0.85	0.85	0.85	0.93	0.93	0.93	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	184	123	208	116	100	166	134	1164	73	183	1317	589
Arrive On Green	0.10	0.20	0.20	0.07	0.16	0.16	0.08	0.34	0.34	0.10	0.37	0.37
Sat Flow, veh/h	1774	624	1053	1774	632	1046	1774	3382	213	1774	3539	1583
Grp Volume(v), veh/h	111	0	172	47	0	178	59	481	497	110	937	93
Grp Sat Flow(s),veh/h/ln	1774	0	1677	1774	0	1678	1774	1770	1825	1774	1770	1583
Q Serve(g_s), s	3.3	0.0	5.1	1.4	0.0	5.5	1.8	13.5	13.5	3.3	12.5	2.2
Cycle Q Clear(g_c), s	3.3	0.0	5.1	1.4	0.0	5.5	1.8	13.5	13.5	3.3	12.5	2.2
Prop In Lane	1.00		0.63	1.00		0.62	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	184	0	331	116	0	267	134	609	628	183	1317	589
V/C Ratio(X)	0.60	0.00	0.52	0.41	0.00	0.67	0.44	0.79	0.79	0.60	0.71	0.16
Avail Cap(c_a), veh/h	225	0	486	225	0	486	225	609	628	225	1317	589
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.7	0.0	19.8	24.8	0.0	21.8	24.4	16.3	16.3	23.7	14.8	11.6
Incr Delay (d2), s/veh	3.2	0.0	1.3	2.3	0.0	2.9	2.3	10.1	9.8	3.1	3.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	2.5	0.8	0.0	2.7	0.9	8.3	8.5	1.7	6.6	1.0
LnGrp Delay(d),s/veh	26.8	0.0	21.1	27.1	0.0	24.7	26.7	26.4	26.1	26.8	18.1	12.1
LnGrp LOS	C		C	C		C	C	C	C	C	B	B
Approach Vol, veh/h		283			225			1037			1140	
Approach Delay, s/veh		23.3			25.2			26.3			18.5	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	23.0	7.6	14.9	8.2	24.5	9.7	12.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	5.3	15.5	3.4	7.1	3.8	14.5	5.3	7.5
Green Ext Time (p_c), s	0.0	2.9	0.0	1.3	0.0	3.7	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	22.5
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	174	369	89	132	659	114	240	726	140	175	506	162
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	212	450	109	155	775	134	255	772	149	208	602	193
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.94	0.94	0.94	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	369	848	379	353	1027	176	278	998	446	222	887	397
Arrive On Green	0.11	0.24	0.24	0.10	0.24	0.24	0.16	0.28	0.28	0.13	0.25	0.25
Sat Flow, veh/h	3442	3539	1583	3442	4371	750	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	212	450	109	155	600	309	255	772	149	208	602	193
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1730	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.7	7.1	3.6	2.7	10.5	10.6	9.0	12.8	4.8	7.4	9.8	6.6
Cycle Q Clear(g_c), s	3.7	7.1	3.6	2.7	10.5	10.6	9.0	12.8	4.8	7.4	9.8	6.6
Prop In Lane	1.00		1.00	1.00		0.43	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	369	848	379	353	797	407	278	998	446	222	887	397
V/C Ratio(X)	0.58	0.53	0.29	0.44	0.75	0.76	0.92	0.77	0.33	0.94	0.68	0.49
Avail Cap(c_a), veh/h	377	887	397	377	850	434	278	998	446	222	887	397
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	21.2	19.8	26.9	22.7	22.7	26.5	21.1	18.2	27.7	21.6	20.4
Incr Delay (d2), s/veh	2.0	0.5	0.4	0.9	3.6	7.2	33.2	5.8	2.0	42.8	4.2	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	3.5	1.6	1.3	5.3	5.9	7.0	7.0	2.3	6.2	5.3	3.4
LnGrp Delay(d),s/veh	29.2	21.7	20.2	27.8	26.3	30.0	59.7	26.9	20.2	70.4	25.8	24.6
LnGrp LOS	C	C	C	C	C	C	E	C	C	E	C	C
Approach Vol, veh/h		771			1064			1176			1003	
Approach Delay, s/veh		23.5			27.6			33.1			34.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	22.0	10.6	19.3	14.0	20.0	10.8	19.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	18.0	7.0	16.0	10.0	16.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	9.4	14.8	4.7	9.1	11.0	11.8	5.7	12.6
Green Ext Time (p_c), s	0.0	2.5	0.1	4.4	0.0	3.2	0.1	2.4

Intersection Summary		
HCM 2010 Ctrl Delay		30.2
HCM 2010 LOS		C

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	12	2	37	2	1	16	34	1111	4	13	954	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	68	68	68	87	87	87	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	3	55	3	1	24	43	1405	5	15	1084	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1913	2620	552	2066	2627	705	1105	0	0	1410	0	0
Stage 1	1124	1124	-	1493	1493	-	-	-	-	-	-	-
Stage 2	789	1496	-	573	1134	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	41	24	477	31	23	379	628	-	-	480	-	-
Stage 1	219	279	-	129	185	-	-	-	-	-	-	-
Stage 2	350	184	-	472	276	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	35	22	477	25	21	379	628	-	-	480	-	-
Mov Cap-2 Maneuver	124	99	-	90	98	-	-	-	-	-	-	-
Stage 1	204	270	-	120	172	-	-	-	-	-	-	-
Stage 2	303	171	-	400	267	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.3	20.8	0.3	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	628	-	-	262	255	480	-	-
HCM Lane V/C Ratio	0.068	-	-	0.291	0.11	0.031	-	-
HCM Control Delay (s)	11.2	-	-	24.3	20.8	12.7	-	-
HCM Lane LOS	B	-	-	C	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.2	0.4	0.1	-	-

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	9	307	12	33	423	17	27	10	38	31	11	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	70	70	70	67	67	67	64	64	64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	399	16	47	604	24	40	15	57	48	17	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	604	0	0	399	0	0	1140	1121	399	1157	1121	604
Stage 1	-	-	-	-	-	-	422	422	-	699	699	-
Stage 2	-	-	-	-	-	-	718	699	-	458	422	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	974	-	-	1160	-	-	178	206	651	173	206	498
Stage 1	-	-	-	-	-	-	609	588	-	430	442	-
Stage 2	-	-	-	-	-	-	420	442	-	583	588	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	974	-	-	1160	-	-	152	195	651	143	195	498
Mov Cap-2 Maneuver	-	-	-	-	-	-	152	195	-	143	195	-
Stage 1	-	-	-	-	-	-	601	581	-	425	424	-
Stage 2	-	-	-	-	-	-	370	424	-	512	581	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	28.8	40.5
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	261	974	-	-	1160	-	-	186
HCM Lane V/C Ratio	0.429	0.012	-	-	0.041	-	-	0.47
HCM Control Delay (s)	28.8	8.7	-	-	8.2	-	-	40.5
HCM Lane LOS	D	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	2	0	-	-	0.1	-	-	2.3

HCM 2010 TWSC
10: Driveway & Cottonwood Ave

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	19	310	27	9	444	9	3	0	1	12	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	78	78	78	50	50	50	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	413	36	12	569	12	6	0	2	13	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	581	0	0	449	0	0	1091	1086	431	1081	1098	575
Stage 1	-	-	-	-	-	-	482	482	-	598	598	-
Stage 2	-	-	-	-	-	-	609	604	-	483	500	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	993	-	-	1111	-	-	192	216	624	195	213	518
Stage 1	-	-	-	-	-	-	565	553	-	489	491	-
Stage 2	-	-	-	-	-	-	482	488	-	565	543	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	993	-	-	1111	-	-	177	206	624	188	204	518
Mov Cap-2 Maneuver	-	-	-	-	-	-	177	206	-	188	204	-
Stage 1	-	-	-	-	-	-	546	534	-	472	486	-
Stage 2	-	-	-	-	-	-	456	483	-	544	525	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.2	22.3	17.8
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	216	993	-	-	1111	-	-	316
HCM Lane V/C Ratio	0.037	0.026	-	-	0.01	-	-	0.114
HCM Control Delay (s)	22.3	8.7	0	-	8.3	-	-	17.8
HCM Lane LOS	C	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.4

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	10	30	0	31	13	1056	34	35	968	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	62	62	62	92	92	92	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	16	33	0	34	15	1242	40	41	1139	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1875	2536	571	1945	2518	641	1142	0	0	1282	0	0
Stage 1	1223	1223	-	1293	1293	-	-	-	-	-	-	-
Stage 2	652	1313	-	652	1225	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	44	27	464	39	28	417	608	-	-	537	-	-
Stage 1	190	250	-	172	231	-	-	-	-	-	-	-
Stage 2	423	226	-	423	249	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	37	24	464	35	25	417	608	-	-	537	-	-
Mov Cap-2 Maneuver	37	24	-	35	25	-	-	-	-	-	-	-
Stage 1	185	231	-	168	225	-	-	-	-	-	-	-
Stage 2	379	220	-	377	230	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13	224.4	0.1	0.4
HCM LOS	B	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	608	-	-	464	65	537	-	-
HCM Lane V/C Ratio	0.025	-	-	0.035	1.02	0.077	-	-
HCM Control Delay (s)	11.1	-	-	13	224.4	12.3	-	-
HCM Lane LOS	B	-	-	B	F	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	5.1	0.2	-	-

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	54	161	67	48	106	84	60	879	59	105	1186	56
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	64	189	79	69	151	120	62	916	61	109	1235	58
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.70	0.70	0.70	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	290	246	141	296	251	133	1416	634	173	1496	669
Arrive On Green	0.08	0.16	0.16	0.08	0.16	0.16	0.08	0.40	0.40	0.10	0.42	0.42
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	64	189	79	69	151	120	62	916	61	109	1235	58
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.1	5.7	2.7	2.2	4.5	4.1	2.0	12.6	1.4	3.5	18.6	1.3
Cycle Q Clear(g_c), s	2.1	5.7	2.7	2.2	4.5	4.1	2.0	12.6	1.4	3.5	18.6	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	136	290	246	141	296	251	133	1416	634	173	1496	669
V/C Ratio(X)	0.47	0.65	0.32	0.49	0.51	0.48	0.46	0.65	0.10	0.63	0.83	0.09
Avail Cap(c_a), veh/h	207	497	422	207	497	422	207	1416	634	207	1496	669
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	23.8	22.5	26.4	23.1	23.0	26.6	14.6	11.2	26.0	15.4	10.4
Incr Delay (d2), s/veh	2.5	2.5	0.7	2.6	1.4	1.4	2.5	2.3	0.3	4.4	5.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.1	1.2	1.2	2.4	1.9	1.1	6.6	0.7	1.9	10.0	0.6
LnGrp Delay(d),s/veh	29.1	26.3	23.2	29.0	24.5	24.4	29.1	16.9	11.5	30.4	20.7	10.6
LnGrp LOS	C	C	C	C	C	C	C	B	B	C	C	B
Approach Vol, veh/h		332			340			1039			1402	
Approach Delay, s/veh		26.1			25.3			17.3			21.0	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	28.0	8.8	13.3	8.5	29.4	8.6	13.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	5.5	14.6	4.2	7.7	4.0	20.6	4.1	6.5
Green Ext Time (p_c), s	0.0	7.9	0.0	1.6	0.0	3.1	0.0	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	20.8
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	58	92	26	29	85	58	15	910	43	72	1130	81
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	65	103	29	33	96	65	16	948	45	74	1165	84
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.96	0.96	0.96	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	86	100	438	78	170	438	49	1486	71	149	1730	774
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.03	0.43	0.43	0.08	0.49	0.49
Sat Flow, veh/h	0	362	1583	0	614	1583	1774	3440	163	1774	3539	1583
Grp Volume(v), veh/h	168	0	29	129	0	65	16	488	505	74	1165	84
Grp Sat Flow(s),veh/h/ln	362	0	1583	614	0	1583	1774	1770	1834	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.8	0.0	0.0	1.8	0.5	12.5	12.5	2.3	14.5	1.7
Cycle Q Clear(g_c), s	16.0	0.0	0.8	16.0	0.0	1.8	0.5	12.5	12.5	2.3	14.5	1.7
Prop In Lane	0.39		1.00	0.26		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	186	0	438	248	0	438	49	764	792	149	1730	774
V/C Ratio(X)	0.90	0.00	0.07	0.52	0.00	0.15	0.33	0.64	0.64	0.50	0.67	0.11
Avail Cap(c_a), veh/h	186	0	438	248	0	438	215	764	792	215	1730	774
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.3	0.0	15.4	17.3	0.0	15.8	27.6	12.9	12.9	25.3	11.3	8.0
Incr Delay (d2), s/veh	39.6	0.0	0.1	1.9	0.0	0.2	3.9	4.0	3.9	2.5	2.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	0.3	1.7	0.0	0.8	0.3	7.0	7.2	1.2	7.5	0.8
LnGrp Delay(d),s/veh	60.0	0.0	15.5	19.2	0.0	15.9	31.5	16.9	16.8	27.9	13.4	8.3
LnGrp LOS	E		B	B		B	C	B	B	C	B	A
Approach Vol, veh/h		197			194			1009			1323	
Approach Delay, s/veh		53.4			18.1			17.1			13.9	
Approach LOS		D			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.9	29.0		20.0	5.6	32.3		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	25.0		16.0	7.0	25.0		16.0
Max Q Clear Time (g_c+I1), s	4.3	14.5		18.0	2.5	16.5		18.0
Green Ext Time (p_c), s	0.0	8.4		0.0	0.0	7.0		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		18.2
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	42	324	147	41	253	37	80	263	54	28	268	43
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	49	381	173	50	309	45	96	317	65	29	282	45
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.82	0.82	0.82	0.83	0.83	0.83	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	117	488	415	119	490	417	170	1017	206	80	908	143
Arrive On Green	0.07	0.26	0.26	0.07	0.26	0.26	0.10	0.35	0.35	0.05	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	2934	594	1774	3064	483
Grp Volume(v), veh/h	49	381	173	50	309	45	96	190	192	29	161	166
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1758	1774	1770	1777
Q Serve(g_s), s	1.5	10.9	5.2	1.6	8.4	1.2	3.0	4.5	4.6	0.9	4.1	4.1
Cycle Q Clear(g_c), s	1.5	10.9	5.2	1.6	8.4	1.2	3.0	4.5	4.6	0.9	4.1	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.34	1.00		0.27
Lane Grp Cap(c), veh/h	117	488	415	119	490	417	170	614	610	80	524	527
V/C Ratio(X)	0.42	0.78	0.42	0.42	0.63	0.11	0.57	0.31	0.32	0.36	0.31	0.31
Avail Cap(c_a), veh/h	216	584	497	216	584	497	216	614	610	216	524	527
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.7	19.6	17.5	25.7	18.7	16.0	24.8	13.7	13.7	26.6	15.6	15.7
Incr Delay (d2), s/veh	2.4	5.6	0.7	2.4	1.6	0.1	2.9	1.3	1.4	2.7	1.5	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	6.4	2.4	0.8	4.5	0.6	1.6	2.4	2.4	0.5	2.2	2.3
LnGrp Delay(d),s/veh	28.1	25.2	18.2	28.0	20.3	16.1	27.8	15.0	15.1	29.3	17.2	17.2
LnGrp LOS	C	C	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		603			404			478			356	
Approach Delay, s/veh		23.5			20.8			17.6			18.2	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	23.9	7.8	19.0	9.5	21.0	7.8	19.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	18.0	7.0	17.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	2.9	6.6	3.6	12.9	5.0	6.1	3.5	10.4
Green Ext Time (p_c), s	0.0	3.0	0.0	2.2	0.0	3.1	0.0	2.9

Intersection Summary	
HCM 2010 Ctrl Delay	20.3
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	97	217	62	37	155	96	63	830	45	145	975	119
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	114	255	73	47	199	123	67	883	48	154	1037	127
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.78	0.78	0.78	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	387	329	114	316	269	143	1182	529	199	1295	579
Arrive On Green	0.10	0.21	0.21	0.06	0.17	0.17	0.08	0.33	0.33	0.11	0.37	0.37
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	114	255	73	47	199	123	67	883	48	154	1037	127
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.5	7.1	2.2	1.4	5.6	4.0	2.1	12.6	1.2	4.8	14.9	3.1
Cycle Q Clear(g_c), s	3.5	7.1	2.2	1.4	5.6	4.0	2.1	12.6	1.2	4.8	14.9	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	182	387	329	114	316	269	143	1182	529	199	1295	579
V/C Ratio(X)	0.63	0.66	0.22	0.41	0.63	0.46	0.47	0.75	0.09	0.77	0.80	0.22
Avail Cap(c_a), veh/h	218	524	445	218	524	445	218	1182	529	218	1295	579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	20.7	18.7	25.6	22.0	21.3	25.0	16.8	13.0	24.5	16.2	12.4
Incr Delay (d2), s/veh	4.0	1.9	0.3	2.3	2.1	1.2	2.4	4.3	0.3	14.5	5.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	3.9	1.0	0.8	3.1	1.8	1.1	6.8	0.6	3.2	8.2	1.5
LnGrp Delay(d),s/veh	28.5	22.6	19.0	27.9	24.0	22.5	27.4	21.1	13.3	39.1	21.4	13.3
LnGrp LOS	C	C	B	C	C	C	C	C	B	D	C	B
Approach Vol, veh/h		442			369			998			1318	
Approach Delay, s/veh		23.5			24.0			21.2			22.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	23.0	7.7	15.8	8.6	24.8	9.8	13.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.8	14.6	3.4	9.1	4.1	16.9	5.5	7.6
Green Ext Time (p_c), s	0.0	3.8	0.0	1.8	0.0	1.8	0.0	2.0

Intersection Summary			
HCM 2010 Ctrl Delay			22.5
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	229	52	28	202	39	28	259	17	35	261	18
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	20	283	64	30	220	42	32	294	19	37	275	19
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.81	0.81	0.81	0.92	0.92	0.92	0.88	0.88	0.88	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	406	345	85	432	367	89	1212	78	100	1227	84
Arrive On Green	0.03	0.22	0.22	0.05	0.23	0.23	0.05	0.36	0.36	0.06	0.36	0.36
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3377	217	1774	3361	231
Grp Volume(v), veh/h	20	283	64	30	220	42	32	153	160	37	144	150
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1824	1774	1770	1822
Q Serve(g_s), s	0.6	7.0	1.7	0.8	5.2	1.0	0.9	3.1	3.1	1.0	2.8	2.9
Cycle Q Clear(g_c), s	0.6	7.0	1.7	0.8	5.2	1.0	0.9	3.1	3.1	1.0	2.8	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		0.13
Lane Grp Cap(c), veh/h	60	406	345	85	432	367	89	635	655	100	646	665
V/C Ratio(X)	0.33	0.70	0.19	0.35	0.51	0.11	0.36	0.24	0.24	0.37	0.22	0.23
Avail Cap(c_a), veh/h	248	631	537	248	631	537	248	635	655	248	646	665
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.7	18.1	16.0	23.1	16.8	15.2	23.0	11.3	11.3	22.8	11.0	11.0
Incr Delay (d2), s/veh	3.2	2.2	0.3	2.5	0.9	0.1	2.4	0.9	0.9	2.3	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.9	0.7	0.5	2.7	0.5	0.5	1.6	1.7	0.6	1.5	1.6
LnGrp Delay(d),s/veh	26.8	20.2	16.2	25.6	17.7	15.3	25.5	12.2	12.2	25.1	11.8	11.8
LnGrp LOS	C	C	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		367			292			345			331	
Approach Delay, s/veh		19.9			18.2			13.4			13.3	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	22.0	6.4	14.9	6.5	22.3	5.7	15.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	18.0	7.0	17.0	7.0	18.0	7.0	17.0
Max Q Clear Time (g_c+I1), s	3.0	5.1	2.8	9.0	2.9	4.9	2.6	7.2
Green Ext Time (p_c), s	0.0	2.7	0.0	1.9	0.0	2.7	0.0	2.2

Intersection Summary			
HCM 2010 Ctrl Delay			16.2
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	47	40	19	40	43	41	880	50	69	980	29
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	27	53	45	23	48	51	44	936	53	74	1054	31
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.84	0.84	0.84	0.94	0.94	0.94	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	78	134	113	68	114	121	115	1344	76	162	1491	667
Arrive On Green	0.04	0.14	0.14	0.04	0.14	0.14	0.06	0.39	0.39	0.09	0.42	0.42
Sat Flow, veh/h	1774	932	791	1774	828	880	1774	3405	193	1774	3539	1583
Grp Volume(v), veh/h	27	0	98	23	0	99	44	486	503	74	1054	31
Grp Sat Flow(s),veh/h/ln	1774	0	1723	1774	0	1708	1774	1770	1829	1774	1770	1583
Q Serve(g_s), s	0.7	0.0	2.5	0.6	0.0	2.6	1.1	11.0	11.0	1.9	11.8	0.6
Cycle Q Clear(g_c), s	0.7	0.0	2.5	0.6	0.0	2.6	1.1	11.0	11.0	1.9	11.8	0.6
Prop In Lane	1.00		0.46	1.00		0.52	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	78	0	247	68	0	235	115	698	722	162	1491	667
V/C Ratio(X)	0.35	0.00	0.40	0.34	0.00	0.42	0.38	0.70	0.70	0.46	0.71	0.05
Avail Cap(c_a), veh/h	258	0	573	258	0	567	258	698	722	258	1491	667
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.3	0.0	18.7	22.5	0.0	19.0	21.6	12.2	12.2	20.7	11.5	8.2
Incr Delay (d2), s/veh	2.6	0.0	1.0	2.9	0.0	1.2	2.1	5.7	5.5	2.0	2.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.2	0.3	0.0	1.3	0.6	6.4	6.5	1.0	6.3	0.3
LnGrp Delay(d),s/veh	24.9	0.0	19.8	25.4	0.0	20.2	23.7	17.8	17.7	22.7	14.3	8.4
LnGrp LOS	C		B	C		C	C	B	B	C	B	A
Approach Vol, veh/h		125			122			1033			1159	
Approach Delay, s/veh		20.9			21.2			18.0			14.7	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	23.0	5.9	10.9	7.1	24.3	6.1	10.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	3.9	13.0	2.6	4.5	3.1	13.8	2.7	4.6
Green Ext Time (p_c), s	0.0	4.9	0.0	0.7	0.0	4.3	0.0	0.7

Intersection Summary		
HCM 2010 Ctrl Delay		16.7
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	406	761	273	168	502	99	241	561	106	141	719	132
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	432	810	290	195	584	115	265	616	116	155	790	145
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.86	0.86	0.86	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	461	898	402	317	906	175	305	1170	523	194	949	424
Arrive On Green	0.13	0.25	0.25	0.09	0.21	0.21	0.17	0.33	0.33	0.11	0.27	0.27
Sat Flow, veh/h	3442	3539	1583	3442	4278	828	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	432	810	290	195	461	238	265	616	116	155	790	145
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1717	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.3	16.5	12.5	4.1	9.2	9.5	10.9	10.5	3.9	6.4	15.7	5.5
Cycle Q Clear(g_c), s	9.3	16.5	12.5	4.1	9.2	9.5	10.9	10.5	3.9	6.4	15.7	5.5
Prop In Lane	1.00		1.00	1.00		0.48	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	461	898	402	317	718	364	305	1170	523	194	949	424
V/C Ratio(X)	0.94	0.90	0.72	0.61	0.64	0.66	0.87	0.53	0.22	0.80	0.83	0.34
Avail Cap(c_a), veh/h	461	901	403	323	727	368	309	1170	523	285	949	424
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	27.0	25.4	32.6	26.8	26.9	30.1	20.2	18.0	32.4	25.7	22.0
Incr Delay (d2), s/veh	26.8	12.2	6.2	3.4	1.9	4.1	22.2	1.7	1.0	9.6	8.5	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	9.5	6.1	2.1	4.5	4.9	7.2	5.4	1.8	3.6	8.8	2.7
LnGrp Delay(d),s/veh	58.8	39.1	31.7	36.0	28.7	31.0	52.3	21.9	19.0	42.0	34.2	24.2
LnGrp LOS	E	D	C	D	C	C	D	C	B	D	C	C
Approach Vol, veh/h		1532			894			997			1090	
Approach Delay, s/veh		43.3			30.9			29.7			34.0	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	28.7	10.9	22.9	16.8	24.0	14.0	19.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	21.0	7.0	19.0	13.0	20.0	10.0	16.0
Max Q Clear Time (g_c+I1), s	8.4	12.5	6.1	18.5	12.9	17.7	11.3	11.5
Green Ext Time (p_c), s	0.1	5.7	0.1	0.4	0.0	1.8	0.0	3.4

Intersection Summary	
HCM 2010 Ctrl Delay	35.6
HCM 2010 LOS	D

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	14	3	36	2	1	11	36	985	2	43	1230	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	58	58	58	97	97	97	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	4	46	3	2	19	41	1117	2	44	1255	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1994	2554	638	1917	2563	560	1276	0	0	1119	0	0
Stage 1	1353	1353	-	1200	1200	-	-	-	-	-	-	-
Stage 2	641	1201	-	717	1363	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	36	26	419	41	26	472	540	-	-	620	-	-
Stage 1	158	216	-	196	256	-	-	-	-	-	-	-
Stage 2	430	256	-	387	214	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	30	22	419	32	22	472	540	-	-	620	-	-
Mov Cap-2 Maneuver	104	100	-	113	96	-	-	-	-	-	-	-
Stage 1	146	201	-	181	237	-	-	-	-	-	-	-
Stage 2	379	237	-	314	199	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	29.8	19.5	0.4	0.4
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	540	-	-	212	272	620	-	-
HCM Lane V/C Ratio	0.076	-	-	0.321	0.089	0.071	-	-
HCM Control Delay (s)	12.2	-	-	29.8	19.5	11.2	-	-
HCM Lane LOS	B	-	-	D	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.3	0.3	0.2	-	-

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	16	308	50	14	222	8	28	5	8	6	2	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	88	88	88	60	60	60	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	314	51	16	252	9	47	8	13	8	3	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	252	0	0	314	0	0	639	631	314	642	631	252
Stage 1	-	-	-	-	-	-	347	347	-	284	284	-
Stage 2	-	-	-	-	-	-	292	284	-	358	347	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1313	-	-	1246	-	-	389	398	726	387	398	787
Stage 1	-	-	-	-	-	-	669	635	-	723	676	-
Stage 2	-	-	-	-	-	-	716	676	-	660	635	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1313	-	-	1246	-	-	373	388	726	367	388	787
Mov Cap-2 Maneuver	-	-	-	-	-	-	373	388	-	367	388	-
Stage 1	-	-	-	-	-	-	661	627	-	714	667	-
Stage 2	-	-	-	-	-	-	692	667	-	631	627	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.5	15.4	12.2
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	414	1313	-	-	1246	-	-	526
HCM Lane V/C Ratio	0.165	0.012	-	-	0.013	-	-	0.046
HCM Control Delay (s)	15.4	7.8	-	-	7.9	-	-	12.2
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	0.1

HCM 2010 TWSC
10: Driveway & Cottonwood Ave

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	22	373	12	0	258	10	4	0	4	13	0	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	81	81	81	33	33	33	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	410	13	0	319	12	12	0	12	14	0	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	331	0	0	423	0	0	804	796	416	796	796	325
Stage 1	-	-	-	-	-	-	465	465	-	325	325	-
Stage 2	-	-	-	-	-	-	339	331	-	471	471	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1228	-	-	1136	-	-	301	320	637	305	320	716
Stage 1	-	-	-	-	-	-	578	563	-	687	649	-
Stage 2	-	-	-	-	-	-	676	645	-	573	560	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1228	-	-	1136	-	-	283	312	637	293	312	716
Mov Cap-2 Maneuver	-	-	-	-	-	-	283	312	-	293	312	-
Stage 1	-	-	-	-	-	-	563	548	-	669	649	-
Stage 2	-	-	-	-	-	-	649	645	-	547	545	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	14.8	13.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	392	1228	-	-	1136	-	-	483
HCM Lane V/C Ratio	0.062	0.02	-	-	-	-	-	0.088
HCM Control Delay (s)	14.8	8	0	-	0	-	-	13.2
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.3

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	10.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	11	0	67	34	0	35	49	938	40	40	1128	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	92	92	92	95	95	95	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	0	93	37	0	38	52	987	42	43	1213	37

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1914	2450	625	1804	2447	515	1249	0	0	1029	0	0
Stage 1	1317	1317	-	1112	1112	-	-	-	-	-	-	-
Stage 2	597	1133	-	692	1335	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	41	31	428	50	31	505	553	-	-	671	-	-
Stage 1	166	225	-	223	282	-	-	-	-	-	-	-
Stage 2	456	276	-	400	221	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	33	26	428	~ 35	26	505	553	-	-	671	-	-
Mov Cap-2 Maneuver	33	26	-	~ 35	26	-	-	-	-	-	-	-
Stage 1	150	211	-	202	255	-	-	-	-	-	-	-
Stage 2	382	250	-	293	207	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	65.9	260	0.6	0.4
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	553	-	-	159	66	671	-	-
HCM Lane V/C Ratio	0.093	-	-	0.681	1.136	0.064	-	-
HCM Control Delay (s)	12.2	-	-	65.9	260	10.7	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	4	5.9	0.2	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	78	36	31	61	73	51	887	34	62	833	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	56	87	40	37	73	88	56	975	37	69	926	49
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.83	0.83	0.83	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	294	250	100	258	219	134	1344	601	153	1382	618
Arrive On Green	0.08	0.16	0.16	0.06	0.14	0.14	0.08	0.38	0.38	0.09	0.39	0.39
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	56	87	40	37	73	88	56	975	37	69	926	49
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	1.5	2.1	1.1	1.0	1.8	2.5	1.5	11.8	0.7	1.8	10.8	1.0
Cycle Q Clear(g_c), s	1.5	2.1	1.1	1.0	1.8	2.5	1.5	11.8	0.7	1.8	10.8	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	134	294	250	100	258	219	134	1344	601	153	1382	618
V/C Ratio(X)	0.42	0.30	0.16	0.37	0.28	0.40	0.42	0.73	0.06	0.45	0.67	0.08
Avail Cap(c_a), veh/h	248	596	506	248	596	506	248	1344	601	248	1382	618
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.1	18.6	18.2	22.8	19.3	19.7	22.1	13.3	9.9	21.7	12.6	9.6
Incr Delay (d2), s/veh	2.1	0.6	0.3	2.3	0.6	1.2	2.1	3.4	0.2	2.1	2.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.1	0.5	0.6	0.9	1.2	0.8	6.3	0.4	1.0	5.6	0.5
LnGrp Delay(d),s/veh	24.1	19.2	18.5	25.0	19.9	20.8	24.1	16.7	10.0	23.8	15.2	9.8
LnGrp LOS	C	B	B	C	B	C	C	B	B	C	B	A
Approach Vol, veh/h		183			198			1068			1044	
Approach Delay, s/veh		20.5			21.3			16.9			15.5	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	23.0	6.8	11.9	7.8	23.5	7.8	10.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	3.8	13.8	3.0	4.1	3.5	12.8	3.5	4.5
Green Ext Time (p_c), s	0.0	4.3	0.0	0.9	0.0	5.1	0.0	0.9

Intersection Summary			
HCM 2010 Ctrl Delay			16.9
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	71	82	26	35	59	57	24	849	25	26	803	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	82	94	30	40	68	66	29	1011	30	30	934	60
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.84	0.84	0.84	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	95	76	456	89	111	456	81	1578	47	83	1596	714
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.05	0.45	0.45	0.05	0.45	0.45
Sat Flow, veh/h	0	265	1583	0	386	1583	1774	3510	104	1774	3539	1583
Grp Volume(v), veh/h	176	0	30	108	0	66	29	510	531	30	934	60
Grp Sat Flow(s),veh/h/ln	265	0	1583	386	0	1583	1774	1770	1844	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.8	0.0	0.0	1.7	0.9	12.4	12.4	0.9	10.9	1.2
Cycle Q Clear(g_c), s	16.0	0.0	0.8	16.0	0.0	1.7	0.9	12.4	12.4	0.9	10.9	1.2
Prop In Lane	0.47		1.00	0.37		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	171	0	456	200	0	456	81	796	829	83	1596	714
V/C Ratio(X)	1.03	0.00	0.07	0.54	0.00	0.14	0.36	0.64	0.64	0.36	0.59	0.08
Avail Cap(c_a), veh/h	171	0	456	200	0	456	223	796	829	223	1596	714
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	0.0	14.4	16.4	0.0	14.7	25.7	11.8	11.8	25.7	11.4	8.7
Incr Delay (d2), s/veh	76.3	0.0	0.1	2.9	0.0	0.1	2.7	3.9	3.8	2.6	1.6	0.2
Initial Q Delay(d3),s/veh	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	0.3	1.4	0.0	0.8	0.5	6.8	7.1	0.5	5.7	0.6
LnGrp Delay(d),s/veh	97.7	0.0	14.4	19.3	0.0	14.9	28.4	15.8	15.6	28.3	13.0	8.9
LnGrp LOS	F		B	B		B	C	B	B	C	B	A
Approach Vol, veh/h		206			174			1070			1024	
Approach Delay, s/veh		85.6			17.6			16.0			13.2	
Approach LOS		F			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.6	29.0		20.0	6.5	29.1		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	25.0		16.0	7.0	25.0		16.0
Max Q Clear Time (g_c+I1), s	2.9	14.4		18.0	2.9	12.9		18.0
Green Ext Time (p_c), s	0.0	8.0		0.0	0.0	8.9		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		20.8
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	205	104	44	253	24	88	213	43	20	171	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	21	263	133	52	301	29	91	220	44	22	184	22
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.78	0.78	0.78	0.84	0.84	0.84	0.97	0.97	0.97	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	394	335	125	460	391	173	1122	221	65	1019	120
Arrive On Green	0.04	0.21	0.21	0.07	0.25	0.25	0.10	0.38	0.38	0.04	0.32	0.32
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	2950	580	1774	3189	377
Grp Volume(v), veh/h	21	263	133	52	301	29	91	130	134	22	101	105
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1760	1774	1770	1796
Q Serve(g_s), s	0.6	6.9	3.8	1.5	7.7	0.7	2.6	2.6	2.7	0.6	2.2	2.2
Cycle Q Clear(g_c), s	0.6	6.9	3.8	1.5	7.7	0.7	2.6	2.6	2.7	0.6	2.2	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.33	1.00		0.21
Lane Grp Cap(c), veh/h	62	394	335	125	460	391	173	673	670	65	566	574
V/C Ratio(X)	0.34	0.67	0.40	0.42	0.65	0.07	0.53	0.19	0.20	0.34	0.18	0.18
Avail Cap(c_a), veh/h	233	595	506	233	595	506	267	673	670	233	566	574
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	19.2	18.0	23.7	18.0	15.4	22.8	11.0	11.0	25.0	13.1	13.1
Incr Delay (d2), s/veh	3.1	1.9	0.8	2.2	1.6	0.1	2.5	0.6	0.7	3.1	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.7	1.7	0.8	4.1	0.3	1.4	1.4	1.4	0.4	1.2	1.2
LnGrp Delay(d),s/veh	28.2	21.2	18.8	25.9	19.6	15.4	25.3	11.7	11.7	28.1	13.7	13.8
LnGrp LOS	C	C	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		417			382			355			228	
Approach Delay, s/veh		20.8			20.2			15.2			15.1	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.9	24.2	7.8	15.3	9.2	21.0	5.9	17.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	18.0	7.0	17.0	8.0	17.0	7.0	17.0
Max Q Clear Time (g_c+I1), s	2.6	4.7	3.5	8.9	4.6	4.2	2.6	9.7
Green Ext Time (p_c), s	0.0	2.2	0.0	2.4	0.1	2.1	0.0	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	18.2
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	85	130	51	63	167	162	72	761	60	131	662	96
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	108	165	65	111	293	284	79	836	66	151	761	110
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.79	0.79	0.79	0.57	0.57	0.57	0.91	0.91	0.91	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	173	420	357	175	422	358	152	1065	477	191	1143	511
Arrive On Green	0.10	0.23	0.23	0.10	0.23	0.23	0.09	0.30	0.30	0.11	0.32	0.32
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	108	165	65	111	293	284	79	836	66	151	761	110
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.5	4.5	2.0	3.6	8.6	10.1	2.5	12.9	1.8	5.0	11.1	3.0
Cycle Q Clear(g_c), s	3.5	4.5	2.0	3.6	8.6	10.1	2.5	12.9	1.8	5.0	11.1	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	173	420	357	175	422	358	152	1065	477	191	1143	511
V/C Ratio(X)	0.62	0.39	0.18	0.63	0.70	0.79	0.52	0.78	0.14	0.79	0.67	0.22
Avail Cap(c_a), veh/h	208	498	424	208	498	424	208	1065	477	237	1143	511
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.9	19.7	18.7	25.9	21.2	21.8	26.2	19.1	15.2	26.0	17.5	14.7
Incr Delay (d2), s/veh	4.2	0.6	0.2	4.7	3.4	8.5	2.7	5.8	0.6	13.4	3.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	2.4	0.9	2.0	4.8	5.2	1.4	7.1	0.9	3.1	5.9	1.4
LnGrp Delay(d),s/veh	30.1	20.3	19.0	30.6	24.6	30.3	28.9	24.9	15.9	39.5	20.5	15.7
LnGrp LOS	C	C	B	C	C	C	C	C	B	D	C	B
Approach Vol, veh/h		338			688			981			1022	
Approach Delay, s/veh		23.2			27.9			24.6			22.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	22.0	9.9	17.5	9.1	23.3	9.8	17.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	18.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	7.0	14.9	5.6	6.5	4.5	13.1	5.5	12.1
Green Ext Time (p_c), s	0.0	2.5	0.0	2.6	0.0	4.5	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	24.6
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	32	176	58	9	196	28	31	157	14	25	170	17
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	57	314	104	13	288	41	37	187	17	29	195	20
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.56	0.56	0.56	0.68	0.68	0.68	0.84	0.84	0.84	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	524	445	41	426	362	99	1114	100	82	1070	109
Arrive On Green	0.08	0.28	0.28	0.02	0.23	0.23	0.06	0.34	0.34	0.05	0.33	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3284	296	1774	3245	329
Grp Volume(v), veh/h	57	314	104	13	288	41	37	100	104	29	105	110
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1811	1774	1770	1805
Q Serve(g_s), s	1.6	7.5	2.6	0.4	7.3	1.1	1.0	2.0	2.1	0.8	2.2	2.2
Cycle Q Clear(g_c), s	1.6	7.5	2.6	0.4	7.3	1.1	1.0	2.0	2.1	0.8	2.2	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.18
Lane Grp Cap(c), veh/h	134	524	445	41	426	362	99	600	614	82	583	595
V/C Ratio(X)	0.42	0.60	0.23	0.32	0.68	0.11	0.37	0.17	0.17	0.35	0.18	0.18
Avail Cap(c_a), veh/h	241	650	553	241	650	553	241	600	614	241	583	595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.8	16.0	14.3	24.8	18.2	15.8	23.5	11.9	11.9	23.9	12.3	12.3
Incr Delay (d2), s/veh	2.1	1.1	0.3	4.4	1.9	0.1	2.3	0.6	0.6	2.6	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	4.0	1.2	0.2	3.9	0.5	0.6	1.1	1.1	0.5	1.2	1.2
LnGrp Delay(d),s/veh	24.9	17.1	14.5	29.2	20.0	15.9	25.8	12.5	12.5	26.4	13.0	13.0
LnGrp LOS	C	B	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		475			342			241			244	
Approach Delay, s/veh		17.5			19.9			14.6			14.6	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	21.5	5.2	18.5	6.9	21.0	7.9	15.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	18.0	7.0	17.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	2.8	4.1	2.4	9.5	3.0	4.2	3.6	9.3
Green Ext Time (p_c), s	0.0	1.8	0.0	2.5	0.0	1.8	0.0	2.5

Intersection Summary			
HCM 2010 Ctrl Delay			17.0
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	23	37	27	24	31	60	30	786	35	61	743	28
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	27	44	32	31	40	78	31	819	36	69	835	31
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.77	0.77	0.77	0.96	0.96	0.96	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	78	138	100	88	81	158	88	1360	60	155	1529	684
Arrive On Green	0.04	0.14	0.14	0.05	0.14	0.14	0.05	0.39	0.39	0.09	0.43	0.43
Sat Flow, veh/h	1774	1004	730	1774	565	1103	1774	3454	152	1774	3539	1583
Grp Volume(v), veh/h	27	0	76	31	0	118	31	420	435	69	835	31
Grp Sat Flow(s),veh/h/ln	1774	0	1734	1774	0	1668	1774	1770	1836	1774	1770	1583
Q Serve(g_s), s	0.7	0.0	1.9	0.8	0.0	3.1	0.8	9.1	9.1	1.8	8.5	0.5
Cycle Q Clear(g_c), s	0.7	0.0	1.9	0.8	0.0	3.1	0.8	9.1	9.1	1.8	8.5	0.5
Prop In Lane	1.00		0.42	1.00		0.66	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	78	0	239	88	0	238	88	697	723	155	1529	684
V/C Ratio(X)	0.35	0.00	0.32	0.35	0.00	0.50	0.35	0.60	0.60	0.44	0.55	0.05
Avail Cap(c_a), veh/h	257	0	575	257	0	553	257	697	723	257	1529	684
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.4	0.0	18.8	22.2	0.0	19.1	22.2	11.6	11.6	20.9	10.2	7.9
Incr Delay (d2), s/veh	2.6	0.0	0.8	2.4	0.0	1.6	2.4	3.8	3.7	2.0	1.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.0	0.5	0.0	1.5	0.5	5.2	5.3	0.9	4.4	0.3
LnGrp Delay(d),s/veh	25.0	0.0	19.5	24.6	0.0	20.7	24.6	15.4	15.3	22.9	11.6	8.1
LnGrp LOS	C		B	C		C	C	B	B	C	B	A
Approach Vol, veh/h		103			149			886			935	
Approach Delay, s/veh		21.0			21.5			15.7			12.3	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	23.0	6.4	10.6	6.4	24.8	6.1	10.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	3.8	11.1	2.8	3.9	2.8	10.5	2.7	5.1
Green Ext Time (p_c), s	0.0	5.6	0.0	0.8	0.0	6.0	0.0	0.7

Intersection Summary		
HCM 2010 Ctrl Delay		14.8
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	334	396	206	157	370	89	274	535	68	114	489	158
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	371	440	229	183	430	103	301	588	75	124	532	172
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.86	0.86	0.86	0.91	0.91	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	415	732	328	350	777	180	344	1258	563	168	906	405
Arrive On Green	0.12	0.21	0.21	0.10	0.19	0.19	0.19	0.36	0.36	0.09	0.26	0.26
Sat Flow, veh/h	3442	3539	1583	3442	4125	958	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	371	440	229	183	351	182	301	588	75	124	532	172
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1694	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	7.1	7.5	8.9	3.3	6.2	6.5	10.9	8.5	2.1	4.5	8.7	6.0
Cycle Q Clear(g_c), s	7.1	7.5	8.9	3.3	6.2	6.5	10.9	8.5	2.1	4.5	8.7	6.0
Prop In Lane	1.00		1.00	1.00		0.57	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	415	732	328	350	638	319	344	1258	563	168	906	405
V/C Ratio(X)	0.89	0.60	0.70	0.52	0.55	0.57	0.87	0.47	0.13	0.74	0.59	0.42
Avail Cap(c_a), veh/h	415	853	382	415	817	408	347	1258	563	267	906	405
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.8	23.8	24.4	28.3	24.4	24.5	26.0	16.5	14.5	29.2	21.6	20.6
Incr Delay (d2), s/veh	21.2	0.9	4.6	1.2	0.7	1.6	20.9	1.2	0.5	6.2	2.8	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	3.8	4.3	1.6	3.0	3.2	7.4	4.4	1.0	2.5	4.6	3.0
LnGrp Delay(d),s/veh	50.0	24.7	29.0	29.5	25.1	26.1	46.9	17.8	15.0	35.4	24.4	23.8
LnGrp LOS	D	C	C	C	C	C	D	B	B	D	C	C
Approach Vol, veh/h		1040			716			964			828	
Approach Delay, s/veh		34.7			26.5			26.7			25.9	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	27.6	10.8	17.7	16.9	21.0	12.0	16.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	20.0	8.0	16.0	13.0	17.0	8.0	16.0
Max Q Clear Time (g_c+I1), s	6.5	10.5	5.3	10.9	12.9	10.7	9.1	8.5
Green Ext Time (p_c), s	0.1	5.2	0.1	2.8	0.0	3.8	0.0	3.8

Intersection Summary		
HCM 2010 Ctrl Delay		28.8
HCM 2010 LOS		C

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	4	27	3	6	14	37	940	3	34	848	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	72	72	72	89	89	89	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	6	42	4	8	19	46	1162	4	39	975	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1740	2320	497	1824	2327	583	994	0	0	1166	0	0
Stage 1	1063	1063	-	1255	1255	-	-	-	-	-	-	-
Stage 2	677	1257	-	569	1072	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	56	37	519	48	37	456	692	-	-	595	-	-
Stage 1	238	298	-	182	241	-	-	-	-	-	-	-
Stage 2	409	241	-	474	295	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	46	32	519	38	32	456	692	-	-	595	-	-
Mov Cap-2 Maneuver	139	116	-	120	118	-	-	-	-	-	-	-
Stage 1	222	278	-	170	225	-	-	-	-	-	-	-
Stage 2	352	225	-	398	276	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	28.5	24.5	0.4	0.4
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	692	-	-	227	216	595	-	-
HCM Lane V/C Ratio	0.066	-	-	0.332	0.148	0.066	-	-
HCM Control Delay (s)	10.6	-	-	28.5	24.5	11.5	-	-
HCM Lane LOS	B	-	-	D	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.4	0.5	0.2	-	-

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	23	265	42	3	236	4	31	4	9	2	2	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	58	58	58	79	79	79	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	465	74	5	407	7	39	5	11	3	3	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	407	0	0	465	0	0	972	963	465	971	963	407
Stage 1	-	-	-	-	-	-	546	546	-	417	417	-
Stage 2	-	-	-	-	-	-	426	417	-	554	546	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1152	-	-	1096	-	-	232	256	597	232	256	644
Stage 1	-	-	-	-	-	-	522	518	-	613	591	-
Stage 2	-	-	-	-	-	-	606	591	-	517	518	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1152	-	-	1096	-	-	218	246	597	217	246	644
Mov Cap-2 Maneuver	-	-	-	-	-	-	218	246	-	217	246	-
Stage 1	-	-	-	-	-	-	504	500	-	592	588	-
Stage 2	-	-	-	-	-	-	587	588	-	485	500	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	23.1	14.1
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	254	1152	-	-	1096	-	-	415
HCM Lane V/C Ratio	0.219	0.035	-	-	0.005	-	-	0.048
HCM Control Delay (s)	23.1	8.2	-	-	8.3	-	-	14.1
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	31	211	121	19	286	14	47	0	39	18	0	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	81	81	81	52	52	52	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	274	157	23	353	17	90	0	75	20	0	41

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	370	0	0	431	0	0	862	850	353	880	921	362
Stage 1	-	-	-	-	-	-	433	433	-	409	409	-
Stage 2	-	-	-	-	-	-	429	417	-	471	512	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1189	-	-	1129	-	-	275	298	691	268	270	683
Stage 1	-	-	-	-	-	-	601	582	-	619	596	-
Stage 2	-	-	-	-	-	-	604	591	-	573	536	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1189	-	-	1129	-	-	246	279	691	227	253	683
Mov Cap-2 Maneuver	-	-	-	-	-	-	246	279	-	227	253	-
Stage 1	-	-	-	-	-	-	574	556	-	591	584	-
Stage 2	-	-	-	-	-	-	556	579	-	488	512	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.5	24.5	15.2
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	347	1189	-	-	1129	-	-	415
HCM Lane V/C Ratio	0.477	0.034	-	-	0.021	-	-	0.147
HCM Control Delay (s)	24.5	8.1	0	-	8.3	-	-	15.2
HCM Lane LOS	C	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	2.5	0.1	-	-	0.1	-	-	0.5

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	26

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	19	0	71	49	0	50	63	887	55	55	768	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	92	92	92	82	82	82	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	0	89	53	0	54	77	1082	67	64	893	40

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1736	2343	466	1843	2329	574	933	0	0	1149	0	0
Stage 1	1041	1041	-	1269	1269	-	-	-	-	-	-	-
Stage 2	695	1302	-	574	1060	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	56	36	543	~ 46	37	462	729	-	-	604	-	-
Stage 1	246	305	-	178	238	-	-	-	-	-	-	-
Stage 2	399	229	-	471	299	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	42	29	543	~ 33	30	462	729	-	-	604	-	-
Mov Cap-2 Maneuver	42	29	-	~ 33	30	-	-	-	-	-	-	-
Stage 1	220	273	-	159	213	-	-	-	-	-	-	-
Stage 2	315	205	-	352	267	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	74.3	$ 498.3	0.7	0.7
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	729	-	-	154	62	604	-	-
HCM Lane V/C Ratio	0.105	-	-	0.731	1.736	0.106	-	-
HCM Control Delay (s)	10.5	-	-	74.3	$ 498.3	11.7	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0.4	-	-	4.4	9.8	0.4	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	39	92	59	111	158	199	61	1385	65	78	1125	32
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	57	133	86	126	180	226	70	1592	75	89	1278	36
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.69	0.69	0.69	0.88	0.88	0.88	0.87	0.87	0.87	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	276	235	145	315	268	117	1813	811	127	1833	820
Arrive On Green	0.06	0.15	0.15	0.08	0.17	0.17	0.07	0.51	0.51	0.07	0.52	0.52
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	57	133	86	126	180	226	70	1592	75	89	1278	36
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.7	5.6	4.2	6.0	7.6	11.9	3.3	34.3	2.1	4.2	23.4	1.0
Cycle Q Clear(g_c), s	2.7	5.6	4.2	6.0	7.6	11.9	3.3	34.3	2.1	4.2	23.4	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	107	276	235	145	315	268	117	1813	811	127	1833	820
V/C Ratio(X)	0.53	0.48	0.37	0.87	0.57	0.84	0.60	0.88	0.09	0.70	0.70	0.04
Avail Cap(c_a), veh/h	145	347	295	145	347	295	165	1813	811	145	1833	820
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	33.6	32.9	39.0	32.8	34.6	39.0	18.6	10.7	39.0	15.6	10.2
Incr Delay (d2), s/veh	4.0	1.3	1.0	39.9	1.9	18.3	4.8	6.4	0.2	12.0	2.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.0	1.9	4.5	4.1	6.5	1.8	18.2	1.0	2.5	11.9	0.4
LnGrp Delay(d),s/veh	43.2	34.9	33.9	78.9	34.7	52.8	43.8	25.0	11.0	51.0	17.9	10.3
LnGrp LOS	D	C	C	E	C	D	D	C	B	D	B	B
Approach Vol, veh/h		276			532			1737			1403	
Approach Delay, s/veh		36.3			52.9			25.1			19.8	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	48.0	11.0	16.7	9.7	48.5	9.2	18.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	44.0	7.0	16.0	8.0	43.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.2	36.3	8.0	7.6	5.3	25.4	4.7	13.9
Green Ext Time (p_c), s	0.0	7.3	0.0	1.8	0.0	15.8	0.0	0.6

Intersection Summary		
HCM 2010 Ctrl Delay		27.7
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	74	77	49	66	102	62	33	1390	26	35	1188	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	85	89	56	88	136	83	38	1616	30	42	1414	94
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.75	0.75	0.75	0.86	0.86	0.86	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	58	379	75	72	379	94	1863	35	101	1868	836
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.05	0.52	0.52	0.06	0.53	0.53
Sat Flow, veh/h	0	243	1583	0	299	1583	1774	3555	66	1774	3539	1583
Grp Volume(v), veh/h	174	0	56	224	0	83	38	803	843	42	1414	94
Grp Sat Flow(s),veh/h/ln	243	0	1583	299	0	1583	1774	1770	1851	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	1.9	0.0	0.0	2.8	1.4	26.4	26.6	1.5	21.0	2.0
Cycle Q Clear(g_c), s	16.0	0.0	1.9	16.0	0.0	2.8	1.4	26.4	26.6	1.5	21.0	2.0
Prop In Lane	0.49		1.00	0.39		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	138	0	379	147	0	379	94	927	970	101	1868	836
V/C Ratio(X)	1.26	0.00	0.15	1.53	0.00	0.22	0.40	0.87	0.87	0.42	0.76	0.11
Avail Cap(c_a), veh/h	138	0	379	147	0	379	186	927	970	186	1868	836
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	0.0	20.0	26.2	0.0	20.4	30.6	13.9	13.9	30.4	12.4	7.9
Incr Delay (d2), s/veh	161.5	0.0	0.2	268.5	0.0	0.3	2.8	10.7	10.4	2.7	2.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	0.0	0.8	13.6	0.0	1.2	0.7	15.5	16.2	0.8	10.8	0.9
LnGrp Delay(d),s/veh	188.6	0.0	20.2	294.7	0.0	20.7	33.4	24.5	24.3	33.2	15.3	8.2
LnGrp LOS	F		C	F		C	C	C	C	C	B	A
Approach Vol, veh/h		230			307			1684			1550	
Approach Delay, s/veh		147.6			220.6			24.6			15.4	
Approach LOS		F			F			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.8	39.0		20.0	7.5	39.2		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	35.0		16.0	7.0	35.0		16.0
Max Q Clear Time (g_c+I1), s	3.5	28.6		18.0	3.4	23.0		18.0
Green Ext Time (p_c), s	0.0	6.2		0.0	0.0	11.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	44.3
HCM 2010 LOS	D

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	327	138	49	407	92	103	330	32	59	408	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	59	385	162	64	536	121	130	418	41	68	469	60
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.76	0.76	0.76	0.79	0.79	0.79	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	567	482	134	574	488	180	920	90	139	819	104
Arrive On Green	0.07	0.30	0.30	0.08	0.31	0.31	0.10	0.28	0.28	0.08	0.26	0.26
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3258	318	1774	3159	402
Grp Volume(v), veh/h	59	385	162	64	536	121	130	226	233	68	262	267
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1807	1774	1770	1792
Q Serve(g_s), s	2.0	11.2	4.9	2.1	17.3	3.5	4.4	6.5	6.6	2.3	7.9	8.0
Cycle Q Clear(g_c), s	2.0	11.2	4.9	2.1	17.3	3.5	4.4	6.5	6.6	2.3	7.9	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		0.22
Lane Grp Cap(c), veh/h	128	567	482	134	574	488	180	500	510	139	459	465
V/C Ratio(X)	0.46	0.68	0.34	0.48	0.93	0.25	0.72	0.45	0.46	0.49	0.57	0.58
Avail Cap(c_a), veh/h	201	574	488	201	574	488	201	500	510	201	459	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	18.8	16.6	27.3	20.7	16.0	26.9	18.2	18.2	27.3	19.9	19.9
Incr Delay (d2), s/veh	2.6	3.2	0.4	2.6	22.7	0.3	10.8	2.9	2.9	2.7	5.1	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	6.2	2.2	1.1	12.4	1.6	2.7	3.5	3.6	1.2	4.5	4.6
LnGrp Delay(d),s/veh	30.0	22.0	17.0	30.0	43.4	16.3	37.6	21.2	21.2	29.9	24.9	25.0
LnGrp LOS	C	C	B	C	D	B	D	C	C	C	C	C
Approach Vol, veh/h		606			721			589			597	
Approach Delay, s/veh		21.4			37.7			24.8			25.5	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	21.4	8.7	22.8	10.2	20.0	8.5	23.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	4.3	8.6	4.1	13.2	6.4	10.0	4.0	19.3
Green Ext Time (p_c), s	0.0	3.4	0.0	3.1	0.0	2.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	27.9
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	88	204	75	69	243	205	79	1162	74	124	1108	98
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	110	255	94	93	328	277	96	1417	90	148	1319	117
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.80	0.80	0.80	0.74	0.74	0.74	0.82	0.82	0.82	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	380	323	125	366	311	126	1581	707	178	1685	754
Arrive On Green	0.08	0.20	0.20	0.07	0.20	0.20	0.07	0.45	0.45	0.10	0.48	0.48
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	110	255	94	93	328	277	96	1417	90	148	1319	117
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.5	11.3	4.5	4.6	15.4	15.3	4.8	33.1	3.0	7.3	27.9	3.7
Cycle Q Clear(g_c), s	5.5	11.3	4.5	4.6	15.4	15.3	4.8	33.1	3.0	7.3	27.9	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	138	380	323	125	366	311	126	1581	707	178	1685	754
V/C Ratio(X)	0.80	0.67	0.29	0.74	0.90	0.89	0.76	0.90	0.13	0.83	0.78	0.16
Avail Cap(c_a), veh/h	139	380	323	139	374	318	139	1581	707	178	1685	754
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.6	32.9	30.2	40.8	35.1	35.1	40.9	22.9	14.5	39.5	19.6	13.3
Incr Delay (d2), s/veh	26.6	4.6	0.5	17.6	23.0	25.0	20.0	8.4	0.4	26.8	3.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	6.3	2.0	2.9	10.3	8.8	3.0	18.0	1.4	4.9	14.4	1.7
LnGrp Delay(d),s/veh	67.2	37.5	30.7	58.4	58.1	60.0	60.9	31.2	14.9	66.3	23.3	13.7
LnGrp LOS	E	D	C	E	E	E	E	C	B	E	C	B
Approach Vol, veh/h		459			698			1603			1584	
Approach Delay, s/veh		43.2			58.9			32.1			26.6	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	44.0	10.3	22.3	10.4	46.6	11.0	21.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	40.0	7.0	18.0	7.0	42.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	9.3	35.1	6.6	13.3	6.8	29.9	7.5	17.4
Green Ext Time (p_c), s	0.0	4.7	0.0	2.0	0.0	11.0	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	35.6
HCM 2010 LOS	D

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	105	259	79	47	361	142	109	347	30	34	281	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	148	365	111	69	531	209	127	403	35	47	385	62
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.71	0.71	0.71	0.68	0.68	0.68	0.86	0.86	0.86	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	186	604	514	137	553	470	174	944	82	110	765	122
Arrive On Green	0.10	0.32	0.32	0.08	0.30	0.30	0.10	0.29	0.29	0.06	0.25	0.25
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3297	285	1774	3058	489
Grp Volume(v), veh/h	148	365	111	69	531	209	127	215	223	47	222	225
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1812	1774	1770	1777
Q Serve(g_s), s	5.2	10.5	3.3	2.4	17.9	6.8	4.4	6.3	6.4	1.6	6.9	7.0
Cycle Q Clear(g_c), s	5.2	10.5	3.3	2.4	17.9	6.8	4.4	6.3	6.4	1.6	6.9	7.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.27
Lane Grp Cap(c), veh/h	186	604	514	137	553	470	174	506	519	110	443	444
V/C Ratio(X)	0.80	0.60	0.22	0.50	0.96	0.44	0.73	0.43	0.43	0.43	0.50	0.51
Avail Cap(c_a), veh/h	194	604	514	194	553	470	194	506	519	194	443	444
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.0	18.2	15.7	28.3	22.1	18.2	28.0	18.6	18.6	28.9	20.6	20.6
Incr Delay (d2), s/veh	19.7	1.7	0.2	2.8	28.3	0.7	11.7	2.6	2.6	2.6	4.0	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	5.7	1.5	1.3	13.5	3.0	2.8	3.4	3.5	0.9	3.8	3.9
LnGrp Delay(d),s/veh	47.7	19.9	15.9	31.2	50.4	18.9	39.7	21.2	21.2	31.5	24.6	24.7
LnGrp LOS	D	B	B	C	D	B	D	C	C	C	C	C
Approach Vol, veh/h		624			809			565			494	
Approach Delay, s/veh		25.7			40.6			25.3			25.3	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	22.3	8.9	24.7	10.3	20.0	10.7	23.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.6	8.4	4.4	12.5	6.4	9.0	7.2	19.9
Green Ext Time (p_c), s	0.0	3.0	0.0	3.3	0.0	2.8	0.0	0.0

Intersection Summary			
HCM 2010 Ctrl Delay			30.4
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	89	52	88	44	63	103	61	1182	60	97	1057	82
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	120	70	119	52	74	121	66	1271	65	120	1305	101
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.74	0.74	0.74	0.85	0.85	0.85	0.93	0.93	0.93	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	163	115	195	114	100	164	130	1454	74	163	1569	702
Arrive On Green	0.09	0.19	0.19	0.06	0.16	0.16	0.07	0.42	0.42	0.09	0.44	0.44
Sat Flow, veh/h	1774	621	1056	1774	637	1042	1774	3426	175	1774	3539	1583
Grp Volume(v), veh/h	120	0	189	52	0	195	66	656	680	120	1305	101
Grp Sat Flow(s),veh/h/ln	1774	0	1676	1774	0	1679	1774	1770	1832	1774	1770	1583
Q Serve(g_s), s	4.5	0.0	7.1	1.9	0.0	7.6	2.4	23.1	23.2	4.5	22.2	2.6
Cycle Q Clear(g_c), s	4.5	0.0	7.1	1.9	0.0	7.6	2.4	23.1	23.2	4.5	22.2	2.6
Prop In Lane	1.00		0.63	1.00		0.62	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	163	0	310	114	0	264	130	751	778	163	1569	702
V/C Ratio(X)	0.74	0.00	0.61	0.46	0.00	0.74	0.51	0.87	0.87	0.74	0.83	0.14
Avail Cap(c_a), veh/h	182	0	393	182	0	393	182	751	778	182	1569	702
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.2	0.0	25.6	30.8	0.0	27.4	30.5	18.0	18.0	30.2	16.8	11.3
Incr Delay (d2), s/veh	12.9	0.0	1.9	2.8	0.0	4.0	3.1	13.3	13.1	12.9	5.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	3.4	1.0	0.0	3.8	1.3	14.1	14.6	2.8	11.8	1.2
LnGrp Delay(d),s/veh	43.1	0.0	27.5	33.6	0.0	31.4	33.5	31.3	31.1	43.1	22.1	11.7
LnGrp LOS	D		C	C		C	C	C	C	D	C	B
Approach Vol, veh/h		309			247			1402			1526	
Approach Delay, s/veh		33.6			31.9			31.3			23.1	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	33.0	8.4	16.6	9.0	34.3	10.3	14.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	29.0	7.0	16.0	7.0	29.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.5	25.2	3.9	9.1	4.4	24.2	6.5	9.6
Green Ext Time (p_c), s	0.0	3.5	0.0	1.3	0.0	4.5	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	27.9
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	203	458	100	205	891	244	267	910	211	238	677	237
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	248	559	122	241	1048	287	284	968	224	283	806	282
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.94	0.94	0.94	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	321	887	397	331	1007	275	308	991	443	284	944	422
Arrive On Green	0.09	0.25	0.25	0.10	0.25	0.25	0.17	0.28	0.28	0.16	0.27	0.27
Sat Flow, veh/h	3442	3539	1583	3442	3974	1087	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	248	559	122	241	894	441	284	968	224	283	806	282
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1671	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.3	10.5	4.7	5.1	19.0	19.0	11.8	20.3	8.9	12.0	16.2	11.9
Cycle Q Clear(g_c), s	5.3	10.5	4.7	5.1	19.0	19.0	11.8	20.3	8.9	12.0	16.2	11.9
Prop In Lane	1.00		1.00	1.00		0.65	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	321	887	397	331	859	423	308	991	443	284	944	422
V/C Ratio(X)	0.77	0.63	0.31	0.73	1.04	1.04	0.92	0.98	0.51	1.00	0.85	0.67
Avail Cap(c_a), veh/h	321	887	397	413	859	423	308	991	443	284	944	422
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.2	25.0	22.8	32.9	28.0	28.0	30.5	26.8	22.6	31.5	26.1	24.5
Incr Delay (d2), s/veh	11.0	1.4	0.4	4.9	41.9	55.0	32.2	23.5	4.1	52.5	9.7	8.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	5.3	2.1	2.6	13.8	15.2	8.5	13.1	4.4	10.0	9.1	6.1
LnGrp Delay(d),s/veh	44.2	26.5	23.3	37.8	69.9	83.0	62.7	50.3	26.7	84.0	35.8	32.7
LnGrp LOS	D	C	C	D	F	F	E	D	C	F	D	C
Approach Vol, veh/h		929			1576			1476			1371	
Approach Delay, s/veh		30.8			68.7			49.1			45.1	
Approach LOS		C			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	25.0	11.2	22.8	17.0	24.0	11.0	23.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	21.0	9.0	17.0	13.0	20.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	14.0	22.3	7.1	12.5	13.8	18.2	7.3	21.0
Green Ext Time (p_c), s	0.0	0.0	0.1	3.7	0.0	1.6	0.0	0.0

Intersection Summary			
HCM 2010 Ctrl Delay			50.7
HCM 2010 LOS			D

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	13	2	41	2	1	18	38	1477	4	14	1264	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	68	68	68	87	87	87	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	3	61	3	1	26	48	1867	5	16	1436	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2511	3449	730	2717	3457	936	1459	0	0	1873	0	0
Stage 1	1480	1480	-	1966	1966	-	-	-	-	-	-	-
Stage 2	1031	1969	-	751	1491	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 14	7	365	10	7	266	459	-	-	317	-	-
Stage 1	132	188	-	65	107	-	-	-	-	-	-	-
Stage 2	249	107	-	369	185	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 11	6	365	7	6	266	459	-	-	317	-	-
Mov Cap-2 Maneuver	70	53	-	45	53	-	-	-	-	-	-	-
Stage 1	118	179	-	58	96	-	-	-	-	-	-	-
Stage 2	198	96	-	287	176	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	46.4	32.8	0.3	0.2
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	459	-	-	167	160	317	-	-
HCM Lane V/C Ratio	0.105	-	-	0.5	0.193	0.05	-	-
HCM Control Delay (s)	13.8	-	-	46.4	32.8	17	-	-
HCM Lane LOS	B	-	-	E	D	C	-	-
HCM 95th %tile Q(veh)	0.3	-	-	2.4	0.7	0.2	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	346	13	36	472	19	30	11	42	34	12	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	70	70	70	67	67	67	64	64	64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	449	17	51	674	27	45	16	63	53	19	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	674	0	0	449	0	0	1273	1252	449	1292	1252	674
Stage 1	-	-	-	-	-	-	475	475	-	777	777	-
Stage 2	-	-	-	-	-	-	798	777	-	515	475	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	917	-	-	1111	-	-	144	172	610	140	172	455
Stage 1	-	-	-	-	-	-	570	557	-	390	407	-
Stage 2	-	-	-	-	-	-	380	407	-	543	557	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	917	-	-	1111	-	-	119	162	610	111	162	455
Mov Cap-2 Maneuver	-	-	-	-	-	-	119	162	-	111	162	-
Stage 1	-	-	-	-	-	-	562	549	-	384	388	-
Stage 2	-	-	-	-	-	-	327	388	-	466	549	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	43	65.3
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	213	917	-	-	1111	-	-	148
HCM Lane V/C Ratio	0.582	0.014	-	-	0.046	-	-	0.644
HCM Control Delay (s)	43	9	-	-	8.4	-	-	65.3
HCM Lane LOS	E	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	3.2	0	-	-	0.1	-	-	3.5

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	11	0	0	0	14	1449	0	0	1316	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	62	62	62	92	92	92	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	18	0	0	0	16	1705	0	0	1548	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2435	3288	776	2512	3290	852	1552	0	0	1705	0	0
Stage 1	1550	1550	-	1738	1738	-	-	-	-	-	-	-
Stage 2	885	1738	-	774	1552	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	16	9	340	14	9	303	423	-	-	369	-	-
Stage 1	119	173	-	90	140	-	-	-	-	-	-	-
Stage 2	306	140	-	357	173	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	16	9	340	13	9	303	423	-	-	369	-	-
Mov Cap-2 Maneuver	16	9	-	13	9	-	-	-	-	-	-	-
Stage 1	114	173	-	87	135	-	-	-	-	-	-	-
Stage 2	294	135	-	338	173	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.2	0	0.1	0
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	423	-	-	340	-	369	-	-
HCM Lane V/C Ratio	0.039	-	-	0.052	-	-	-	-
HCM Control Delay (s)	13.9	-	-	16.2	0	0	-	-
HCM Lane LOS	B	-	-	C	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	-	0	-	-

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑↑	↱	↰	↑↑	↱
Volume (veh/h)	68	199	72	67	131	95	65	1268	88	121	1617	75
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	80	234	85	96	187	136	68	1321	92	126	1684	78
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.70	0.70	0.70	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	124	293	249	131	301	256	116	1743	780	157	1825	816
Arrive On Green	0.07	0.16	0.16	0.07	0.16	0.16	0.07	0.49	0.49	0.09	0.52	0.52
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	80	234	85	96	187	136	68	1321	92	126	1684	78
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.7	10.3	4.1	4.5	8.0	6.7	3.2	25.8	2.7	5.9	37.5	2.1
Cycle Q Clear(g_c), s	3.7	10.3	4.1	4.5	8.0	6.7	3.2	25.8	2.7	5.9	37.5	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	124	293	249	131	301	256	116	1743	780	157	1825	816
V/C Ratio(X)	0.65	0.80	0.34	0.74	0.62	0.53	0.58	0.76	0.12	0.80	0.92	0.10
Avail Cap(c_a), veh/h	146	349	297	146	349	297	146	1743	780	187	1825	816
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.7	34.6	32.0	38.7	33.3	32.8	38.7	17.5	11.7	38.1	19.1	10.5
Incr Delay (d2), s/veh	7.5	10.4	0.8	15.8	2.6	1.7	4.6	3.1	0.3	18.6	9.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	6.2	1.8	2.8	4.3	3.1	1.7	13.2	1.2	3.7	20.6	1.0
LnGrp Delay(d),s/veh	46.1	45.1	32.8	54.5	36.0	34.5	43.3	20.7	12.0	56.7	28.4	10.8
LnGrp LOS	D	D	C	D	D	C	D	C	B	E	C	B
Approach Vol, veh/h		399			419			1481			1888	
Approach Delay, s/veh		42.7			39.7			21.2			29.5	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	46.0	10.3	17.4	9.6	48.0	9.9	17.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	42.0	7.0	16.0	7.0	44.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	7.9	27.8	6.5	12.3	5.2	39.5	5.7	10.0
Green Ext Time (p_c), s	0.0	13.2	0.0	1.1	0.0	4.3	0.0	1.6

Intersection Summary		
HCM 2010 Ctrl Delay		28.9
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	64	102	26	31	94	64	15	1323	46	79	1568	89
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	72	115	29	35	106	72	16	1378	48	81	1616	92
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.96	0.96	0.96	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	92	400	71	160	400	48	1653	58	149	1878	840
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.03	0.47	0.47	0.08	0.53	0.53
Sat Flow, veh/h	0	364	1583	0	633	1583	1774	3490	121	1774	3539	1583
Grp Volume(v), veh/h	187	0	29	141	0	72	16	698	728	81	1616	92
Grp Sat Flow(s),veh/h/ln	364	0	1583	633	0	1583	1774	1770	1841	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.9	0.0	0.0	2.3	0.6	21.7	21.8	2.8	25.0	1.8
Cycle Q Clear(g_c), s	16.0	0.0	0.9	16.0	0.0	2.3	0.6	21.7	21.8	2.8	25.0	1.8
Prop In Lane	0.39		1.00	0.25		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	171	0	400	231	0	400	48	838	872	149	1878	840
V/C Ratio(X)	1.09	0.00	0.07	0.61	0.00	0.18	0.33	0.83	0.83	0.54	0.86	0.11
Avail Cap(c_a), veh/h	171	0	400	231	0	400	196	838	872	196	1878	840
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.9	0.0	18.0	20.0	0.0	18.5	30.2	14.5	14.5	27.8	12.8	7.4
Incr Delay (d2), s/veh	96.5	0.0	0.1	4.6	0.0	0.2	4.0	9.5	9.3	3.1	5.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	0.0	0.4	2.3	0.0	1.0	0.3	12.7	13.2	1.5	13.3	0.9
LnGrp Delay(d),s/veh	120.4	0.0	18.1	24.6	0.0	18.7	34.2	23.9	23.8	30.9	18.3	7.7
LnGrp LOS	F		B	C		B	C	C	C	C	B	A
Approach Vol, veh/h		216			213			1442			1789	
Approach Delay, s/veh		106.6			22.6			24.0			18.3	
Approach LOS		F			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.3	34.0		20.0	5.7	37.6		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	30.0		16.0	7.0	30.0		16.0
Max Q Clear Time (g_c+I1), s	4.8	23.8		18.0	2.6	27.0		18.0
Green Ext Time (p_c), s	0.0	5.9		0.0	0.0	2.9		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.0
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	376	162	45	296	41	88	438	60	31	374	47
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	54	442	191	55	361	50	106	528	72	33	394	49
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.82	0.82	0.82	0.83	0.83	0.83	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	124	539	458	125	540	459	173	1000	136	88	860	106
Arrive On Green	0.07	0.29	0.29	0.07	0.29	0.29	0.10	0.32	0.32	0.05	0.27	0.27
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3132	426	1774	3171	392
Grp Volume(v), veh/h	54	442	191	55	361	50	106	298	302	33	219	224
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1788	1774	1770	1794
Q Serve(g_s), s	1.7	13.0	5.8	1.8	10.1	1.4	3.4	8.1	8.2	1.1	6.1	6.1
Cycle Q Clear(g_c), s	1.7	13.0	5.8	1.8	10.1	1.4	3.4	8.1	8.2	1.1	6.1	6.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.22
Lane Grp Cap(c), veh/h	124	539	458	125	540	459	173	565	571	88	480	487
V/C Ratio(X)	0.44	0.82	0.42	0.44	0.67	0.11	0.61	0.53	0.53	0.38	0.46	0.46
Avail Cap(c_a), veh/h	211	600	510	211	600	510	211	565	571	211	480	487
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.3	19.5	16.9	26.3	18.4	15.4	25.5	16.4	16.4	27.1	17.9	17.9
Incr Delay (d2), s/veh	2.4	8.1	0.6	2.4	2.5	0.1	3.5	3.5	3.5	2.6	3.1	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	7.8	2.6	0.9	5.5	0.6	1.8	4.5	4.6	0.6	3.3	3.5
LnGrp Delay(d),s/veh	28.7	27.7	17.5	28.7	20.9	15.5	29.1	19.9	19.9	29.8	21.0	21.0
LnGrp LOS	C	C	B	C	C	B	C	B	B	C	C	C
Approach Vol, veh/h		687			466			706			476	
Approach Delay, s/veh		24.9			21.3			21.3			21.6	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	22.8	8.2	21.1	9.8	20.0	8.1	21.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	10.2	3.8	15.0	5.4	8.1	3.7	12.1
Green Ext Time (p_c), s	0.0	3.0	0.0	2.0	0.0	3.7	0.0	3.1

Intersection Summary	
HCM 2010 Ctrl Delay	22.4
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	103	241	72	44	166	112	74	1226	59	176	1385	131
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	121	284	85	56	213	144	79	1304	63	187	1473	139
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.78	0.78	0.78	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	153	347	295	113	306	260	133	1490	667	210	1645	736
Arrive On Green	0.09	0.19	0.19	0.06	0.16	0.16	0.07	0.42	0.42	0.12	0.46	0.46
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	121	284	85	56	213	144	79	1304	63	187	1473	139
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.1	11.1	3.5	2.3	8.2	6.4	3.3	25.7	1.8	7.9	29.0	3.9
Cycle Q Clear(g_c), s	5.1	11.1	3.5	2.3	8.2	6.4	3.3	25.7	1.8	7.9	29.0	3.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	153	347	295	113	306	260	133	1490	667	210	1645	736
V/C Ratio(X)	0.79	0.82	0.29	0.49	0.70	0.55	0.60	0.88	0.09	0.89	0.90	0.19
Avail Cap(c_a), veh/h	163	392	333	163	392	333	163	1490	667	210	1645	736
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	29.7	26.6	34.4	30.0	29.2	34.1	20.2	13.3	33.0	18.7	11.9
Incr Delay (d2), s/veh	21.8	11.6	0.5	3.3	3.7	1.8	4.2	7.5	0.3	34.0	8.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	6.8	1.6	1.2	4.5	2.9	1.8	14.0	0.8	5.8	15.9	1.8
LnGrp Delay(d),s/veh	55.9	41.3	27.1	37.7	33.7	31.1	38.3	27.6	13.5	67.1	26.7	12.5
LnGrp LOS	E	D	C	D	C	C	D	C	B	E	C	B
Approach Vol, veh/h		490			413			1446			1799	
Approach Delay, s/veh		42.5			33.3			27.6			29.8	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	36.0	8.9	18.2	9.7	39.3	10.5	16.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	32.0	7.0	16.0	7.0	34.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	9.9	27.7	4.3	13.1	5.3	31.0	7.1	10.2
Green Ext Time (p_c), s	0.0	4.1	0.0	1.0	0.0	2.9	0.0	1.8

Intersection Summary		
HCM 2010 Ctrl Delay		30.9
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	259	57	31	230	43	31	355	19	39	322	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	22	320	70	34	250	47	35	403	22	41	339	21
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.81	0.81	0.81	0.92	0.92	0.92	0.88	0.88	0.88	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	456	387	94	485	412	96	1095	60	108	1110	68
Arrive On Green	0.04	0.24	0.24	0.05	0.26	0.26	0.05	0.32	0.32	0.06	0.33	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3414	186	1774	3387	209
Grp Volume(v), veh/h	22	320	70	34	250	47	35	208	217	41	176	184
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1830	1774	1770	1826
Q Serve(g_s), s	0.6	7.8	1.7	0.9	5.7	1.1	0.9	4.5	4.5	1.1	3.7	3.7
Cycle Q Clear(g_c), s	0.6	7.8	1.7	0.9	5.7	1.1	0.9	4.5	4.5	1.1	3.7	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		0.11
Lane Grp Cap(c), veh/h	65	456	387	94	485	412	96	568	587	108	580	599
V/C Ratio(X)	0.34	0.70	0.18	0.36	0.52	0.11	0.37	0.37	0.37	0.38	0.30	0.31
Avail Cap(c_a), veh/h	249	710	603	249	710	603	249	568	587	249	580	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	17.2	14.9	22.8	15.7	14.1	22.8	13.0	13.0	22.5	12.5	12.5
Incr Delay (d2), s/veh	3.0	2.0	0.2	2.4	0.8	0.1	2.3	1.8	1.8	2.2	1.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.3	0.8	0.5	3.0	0.5	0.5	2.5	2.6	0.6	2.0	2.1
LnGrp Delay(d),s/veh	26.4	19.2	15.1	25.2	16.6	14.2	25.1	14.9	14.8	24.7	13.9	13.8
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		412			331			460			401	
Approach Delay, s/veh		18.9			17.1			15.6			15.0	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	20.0	6.6	16.2	6.7	20.3	5.8	17.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	6.5	2.9	9.8	2.9	5.7	2.6	7.7
Green Ext Time (p_c), s	0.0	3.0	0.0	2.4	0.0	3.2	0.0	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	16.6
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	52	44	21	44	46	45	1298	55	75	1400	31
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	27	59	50	25	52	55	48	1381	59	81	1505	33
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.84	0.84	0.84	0.94	0.94	0.94	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	74	101	86	69	88	93	111	1810	77	147	1924	861
Arrive On Green	0.04	0.11	0.11	0.04	0.11	0.11	0.06	0.52	0.52	0.08	0.54	0.54
Sat Flow, veh/h	1774	933	790	1774	830	878	1774	3459	148	1774	3539	1583
Grp Volume(v), veh/h	27	0	109	25	0	107	48	705	735	81	1505	33
Grp Sat Flow(s),veh/h/ln	1774	0	1723	1774	0	1708	1774	1770	1837	1774	1770	1583
Q Serve(g_s), s	1.0	0.0	3.9	0.9	0.0	3.9	1.7	20.5	20.7	2.9	21.9	0.6
Cycle Q Clear(g_c), s	1.0	0.0	3.9	0.9	0.0	3.9	1.7	20.5	20.7	2.9	21.9	0.6
Prop In Lane	1.00		0.46	1.00		0.51	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	74	0	187	69	0	182	111	926	961	147	1924	861
V/C Ratio(X)	0.37	0.00	0.58	0.36	0.00	0.59	0.43	0.76	0.76	0.55	0.78	0.04
Avail Cap(c_a), veh/h	191	0	424	191	0	420	191	926	961	191	1924	861
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	27.6	30.4	0.0	27.7	29.4	12.3	12.3	28.6	11.8	6.9
Incr Delay (d2), s/veh	3.0	0.0	2.8	3.1	0.0	3.0	2.7	5.9	5.8	3.2	3.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	2.0	0.5	0.0	2.0	0.9	11.3	11.7	1.5	11.3	0.3
LnGrp Delay(d),s/veh	33.3	0.0	30.4	33.6	0.0	30.7	32.0	18.2	18.1	31.9	15.0	7.0
LnGrp LOS	C		C	C		C	C	B	B	C	B	A
Approach Vol, veh/h		136			132			1488			1619	
Approach Delay, s/veh		31.0			31.2			18.6			15.7	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	38.0	6.5	11.1	8.1	39.3	6.7	10.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	34.0	7.0	16.0	7.0	34.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.9	22.7	2.9	5.9	3.7	23.9	3.0	5.9
Green Ext Time (p_c), s	0.0	10.4	0.0	0.8	0.0	9.3	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	18.2
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	504	1029	305	260	658	216	270	782	193	309	945	159
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	536	1095	324	302	765	251	297	859	212	340	1038	175
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.86	0.86	0.86	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	590	1062	475	313	834	271	290	933	417	355	1062	475
Arrive On Green	0.17	0.30	0.30	0.09	0.22	0.22	0.16	0.26	0.26	0.20	0.30	0.30
Sat Flow, veh/h	3442	3539	1583	3442	3800	1235	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	536	1095	324	302	682	334	297	859	212	340	1038	175
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1645	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	16.8	33.0	19.8	9.6	21.6	21.9	18.0	26.0	12.5	20.9	32.0	9.6
Cycle Q Clear(g_c), s	16.8	33.0	19.8	9.6	21.6	21.9	18.0	26.0	12.5	20.9	32.0	9.6
Prop In Lane	1.00		1.00	1.00		0.75	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	590	1062	475	313	744	361	290	933	417	355	1062	475
V/C Ratio(X)	0.91	1.03	0.68	0.97	0.92	0.93	1.02	0.92	0.51	0.96	0.98	0.37
Avail Cap(c_a), veh/h	594	1062	475	313	744	361	290	933	417	355	1062	475
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.7	38.5	33.9	49.8	41.9	42.1	46.0	39.4	34.4	43.5	38.1	30.3
Incr Delay (d2), s/veh	17.8	36.0	4.0	41.4	16.1	29.4	58.9	15.6	4.4	36.8	22.7	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	21.4	9.2	6.4	11.8	12.9	13.5	14.7	6.0	13.8	18.9	4.5
LnGrp Delay(d),s/veh	62.6	74.5	37.9	91.2	58.0	71.4	104.9	55.0	38.8	80.3	60.9	32.5
LnGrp LOS	E	F	D	F	E	E	F	D	D	F	E	C
Approach Vol, veh/h		1955			1318			1368			1553	
Approach Delay, s/veh		65.1			69.0			63.3			61.9	
Approach LOS		E			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	33.0	14.0	37.0	22.0	37.0	22.9	28.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	29.0	10.0	33.0	18.0	33.0	19.0	24.0
Max Q Clear Time (g_c+I1), s	22.9	28.0	11.6	35.0	20.0	34.0	18.8	23.9
Green Ext Time (p_c), s	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.1

Intersection Summary		
HCM 2010 Ctrl Delay		64.8
HCM 2010 LOS		E

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	63	101	36	50	81	84	53	1169	54	71	1117	58
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	70	112	40	60	98	101	58	1285	59	79	1241	64
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.83	0.83	0.83	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	222	188	129	210	178	126	1652	739	149	1697	759
Arrive On Green	0.08	0.12	0.12	0.07	0.11	0.11	0.07	0.47	0.47	0.08	0.48	0.48
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	70	112	40	60	98	101	58	1285	59	79	1241	64
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.3	3.5	1.4	2.0	3.1	3.8	1.9	18.9	1.3	2.7	17.5	1.4
Cycle Q Clear(g_c), s	2.3	3.5	1.4	2.0	3.1	3.8	1.9	18.9	1.3	2.7	17.5	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	140	222	188	129	210	178	126	1652	739	149	1697	759
V/C Ratio(X)	0.50	0.51	0.21	0.47	0.47	0.57	0.46	0.78	0.08	0.53	0.73	0.08
Avail Cap(c_a), veh/h	200	480	408	200	480	408	200	1652	739	200	1697	759
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	25.6	24.7	27.6	25.8	26.1	27.7	13.9	9.2	27.3	13.0	8.8
Incr Delay (d2), s/veh	2.7	1.8	0.6	2.6	1.6	2.8	2.6	3.7	0.2	2.9	2.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.9	0.6	1.1	1.7	1.8	1.0	9.9	0.6	1.4	9.1	0.6
LnGrp Delay(d),s/veh	30.2	27.4	25.3	30.2	27.4	28.9	30.3	17.5	9.4	30.2	15.8	9.0
LnGrp LOS	C	C	C	C	C	C	C	B	A	C	B	A
Approach Vol, veh/h		222			259			1402			1384	
Approach Delay, s/veh		27.9			28.7			17.7			16.3	
Approach LOS		C			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	33.0	8.5	11.4	8.4	33.8	8.9	11.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	7.0	29.0	7.0	16.0	7.0	29.0	7.0	16.0				
Max Q Clear Time (g_c+I1), s	4.7	20.9	4.0	5.5	3.9	19.5	4.3	5.8				
Green Ext Time (p_c), s	0.0	7.3	0.0	1.1	0.0	8.5	0.0	1.1				
Intersection Summary												
HCM 2010 Ctrl Delay			18.7									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	78	91	26	38	65	63	24	1141	26	29	1096	57
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	90	105	30	44	75	72	29	1358	31	34	1274	66
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.84	0.84	0.84	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	94	77	453	88	111	453	81	1583	36	91	1605	718
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.05	0.45	0.45	0.05	0.45	0.45
Sat Flow, veh/h	0	270	1583	0	387	1583	1774	3537	81	1774	3539	1583
Grp Volume(v), veh/h	195	0	30	119	0	72	29	679	710	34	1274	66
Grp Sat Flow(s),veh/h/ln	270	0	1583	387	0	1583	1774	1770	1849	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.8	0.0	0.0	1.9	0.9	19.2	19.3	1.0	17.2	1.3
Cycle Q Clear(g_c), s	16.0	0.0	0.8	16.0	0.0	1.9	0.9	19.2	19.3	1.0	17.2	1.3
Prop In Lane	0.46		1.00	0.37		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	171	0	453	199	0	453	81	792	827	91	1605	718
V/C Ratio(X)	1.14	0.00	0.07	0.60	0.00	0.16	0.36	0.86	0.86	0.37	0.79	0.09
Avail Cap(c_a), veh/h	171	0	453	199	0	453	222	792	827	222	1605	718
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	0.0	14.5	16.6	0.0	14.9	25.9	13.8	13.8	25.6	13.0	8.7
Incr Delay (d2), s/veh	110.5	0.0	0.1	4.8	0.0	0.2	2.7	11.6	11.2	2.5	4.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	0.0	0.3	1.7	0.0	0.8	0.5	11.8	12.2	0.6	9.2	0.6
LnGrp Delay(d),s/veh	131.8	0.0	14.6	21.5	0.0	15.1	28.6	25.4	25.1	28.1	17.2	9.0
LnGrp LOS	F		B	C		B	C	C	C	C	B	A
Approach Vol, veh/h		225			191			1418			1374	
Approach Delay, s/veh		116.1			19.1			25.3			17.1	
Approach LOS		F			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.9	29.0		20.0	6.5	29.3		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	25.0		16.0	7.0	25.0		16.0
Max Q Clear Time (g_c+I1), s	3.0	21.3		18.0	2.9	19.2		18.0
Green Ext Time (p_c), s	0.0	3.5		0.0	0.0	5.4		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		27.8
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	261	115	49	315	26	97	278	47	22	239	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	23	335	147	58	375	31	100	287	48	24	257	24
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.78	0.78	0.78	0.84	0.84	0.84	0.97	0.97	0.97	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	459	390	131	527	448	174	1091	180	69	982	91
Arrive On Green	0.04	0.25	0.25	0.07	0.28	0.28	0.10	0.36	0.36	0.04	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3041	503	1774	3275	303
Grp Volume(v), veh/h	23	335	147	58	375	31	100	166	169	24	138	143
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1774	1774	1770	1809
Q Serve(g_s), s	0.7	9.4	4.4	1.8	10.3	0.8	3.1	3.8	3.8	0.7	3.4	3.4
Cycle Q Clear(g_c), s	0.7	9.4	4.4	1.8	10.3	0.8	3.1	3.8	3.8	0.7	3.4	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.28	1.00		0.17
Lane Grp Cap(c), veh/h	67	459	390	131	527	448	174	635	637	69	530	542
V/C Ratio(X)	0.35	0.73	0.38	0.44	0.71	0.07	0.58	0.26	0.27	0.35	0.26	0.26
Avail Cap(c_a), veh/h	219	591	503	219	591	503	219	635	637	219	530	542
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.6	19.6	17.8	25.1	18.3	14.9	24.5	12.9	12.9	26.6	15.1	15.1
Incr Delay (d2), s/veh	3.1	3.3	0.6	2.3	3.5	0.1	3.0	1.0	1.0	3.0	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	5.2	2.0	1.0	5.7	0.4	1.6	2.0	2.1	0.4	1.8	1.9
LnGrp Delay(d),s/veh	29.7	23.0	18.4	27.5	21.8	14.9	27.4	13.9	13.9	29.5	16.3	16.3
LnGrp LOS	C	C	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		505			464			435			305	
Approach Delay, s/veh		21.9			22.0			17.0			17.3	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	24.3	8.2	18.0	9.6	21.0	6.1	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	18.0	7.0	17.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	2.7	5.8	3.8	11.4	5.1	5.4	2.7	12.3
Green Ext Time (p_c), s	0.0	2.7	0.0	2.6	0.0	2.7	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	19.9
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	88	153	65	71	190	189	87	1030	75	154	936	106
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	111	194	82	125	333	332	96	1132	82	177	1076	122
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.79	0.79	0.79	0.57	0.57	0.57	0.91	0.91	0.91	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	150	394	335	157	401	341	144	1286	575	215	1427	639
Arrive On Green	0.08	0.21	0.21	0.09	0.22	0.22	0.08	0.36	0.36	0.12	0.40	0.40
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	111	194	82	125	333	332	96	1132	82	177	1076	122
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.5	6.8	3.2	5.1	12.7	15.5	3.9	22.2	2.6	7.2	19.4	3.7
Cycle Q Clear(g_c), s	4.5	6.8	3.2	5.1	12.7	15.5	3.9	22.2	2.6	7.2	19.4	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	150	394	335	157	401	341	144	1286	575	215	1427	639
V/C Ratio(X)	0.74	0.49	0.25	0.79	0.83	0.97	0.67	0.88	0.14	0.82	0.75	0.19
Avail Cap(c_a), veh/h	167	401	341	167	401	341	167	1286	575	215	1427	639
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.2	25.8	24.4	33.2	27.8	28.9	33.1	22.1	15.9	31.9	19.0	14.3
Incr Delay (d2), s/veh	14.3	1.0	0.4	21.6	13.6	41.5	7.9	8.8	0.5	22.2	3.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	3.6	1.4	3.4	8.0	10.7	2.2	12.4	1.2	4.9	10.2	1.7
LnGrp Delay(d),s/veh	47.5	26.7	24.7	54.8	41.5	70.4	41.0	31.0	16.4	54.0	22.7	15.0
LnGrp LOS	D	C	C	D	D	E	D	C	B	D	C	B
Approach Vol, veh/h		387			790			1310			1375	
Approach Delay, s/veh		32.3			55.8			30.8			26.1	
Approach LOS		C			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	31.0	10.6	19.7	10.0	34.0	10.3	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	27.0	7.0	16.0	7.0	29.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	9.2	24.2	7.1	8.8	5.9	21.4	6.5	17.5
Green Ext Time (p_c), s	0.0	2.5	0.0	2.6	0.0	6.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.4
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	214	64	10	238	31	34	206	15	28	223	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	62	382	114	15	350	46	40	245	18	32	256	22
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.56	0.56	0.56	0.68	0.68	0.68	0.84	0.84	0.84	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	587	499	46	488	415	104	1035	76	88	991	85
Arrive On Green	0.08	0.31	0.31	0.03	0.26	0.26	0.06	0.31	0.31	0.05	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3345	244	1774	3301	282
Grp Volume(v), veh/h	62	382	114	15	350	46	40	129	134	32	136	142
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1820	1774	1770	1813
Q Serve(g_s), s	1.8	9.4	2.8	0.4	9.1	1.2	1.2	2.9	2.9	0.9	3.1	3.2
Cycle Q Clear(g_c), s	1.8	9.4	2.8	0.4	9.1	1.2	1.2	2.9	2.9	0.9	3.1	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		0.16
Lane Grp Cap(c), veh/h	140	587	499	46	488	415	104	547	563	88	531	544
V/C Ratio(X)	0.44	0.65	0.23	0.32	0.72	0.11	0.38	0.24	0.24	0.36	0.26	0.26
Avail Cap(c_a), veh/h	233	664	564	233	664	564	233	547	563	233	531	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	15.7	13.5	25.5	17.9	14.9	24.2	13.7	13.7	24.5	14.1	14.2
Incr Delay (d2), s/veh	2.2	1.9	0.2	4.0	2.4	0.1	2.3	1.0	1.0	2.5	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.1	1.3	0.3	5.0	0.5	0.6	1.5	1.6	0.5	1.7	1.7
LnGrp Delay(d),s/veh	25.6	17.6	13.7	29.4	20.2	15.1	26.5	14.7	14.7	27.0	15.3	15.3
LnGrp LOS	C	B	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		558			411			303			310	
Approach Delay, s/veh		17.7			20.0			16.3			16.5	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	20.5	5.4	20.8	7.1	20.0	8.2	18.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	2.9	4.9	2.4	11.4	3.2	5.2	3.8	11.1
Green Ext Time (p_c), s	0.0	2.2	0.0	2.8	0.0	2.2	0.0	2.9

Intersection Summary		
HCM 2010 Ctrl Delay		17.8
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	23	41	30	26	34	65	33	1084	39	66	1048	29
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	27	48	35	34	44	84	34	1129	41	74	1178	33
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.77	0.77	0.77	0.96	0.96	0.96	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	76	126	92	92	77	147	92	1539	56	154	1687	755
Arrive On Green	0.04	0.13	0.13	0.05	0.13	0.13	0.05	0.44	0.44	0.09	0.48	0.48
Sat Flow, veh/h	1774	1003	731	1774	574	1096	1774	3484	126	1774	3539	1583
Grp Volume(v), veh/h	27	0	83	34	0	128	34	573	597	74	1178	33
Grp Sat Flow(s),veh/h/ln	1774	0	1734	1774	0	1669	1774	1770	1840	1774	1770	1583
Q Serve(g_s), s	0.8	0.0	2.4	1.0	0.0	3.9	1.0	14.5	14.5	2.2	14.2	0.6
Cycle Q Clear(g_c), s	0.8	0.0	2.4	1.0	0.0	3.9	1.0	14.5	14.5	2.2	14.2	0.6
Prop In Lane	1.00		0.42	1.00		0.66	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	76	0	217	92	0	224	92	782	813	154	1687	755
V/C Ratio(X)	0.35	0.00	0.38	0.37	0.00	0.57	0.37	0.73	0.73	0.48	0.70	0.04
Avail Cap(c_a), veh/h	229	0	511	229	0	492	229	782	813	229	1687	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.3	0.0	21.8	24.9	0.0	22.1	24.9	12.5	12.5	23.6	11.1	7.6
Incr Delay (d2), s/veh	2.7	0.0	1.1	2.5	0.0	2.3	2.5	6.0	5.8	2.3	2.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.2	0.6	0.0	1.9	0.6	8.3	8.6	1.1	7.4	0.3
LnGrp Delay(d),s/veh	28.0	0.0	22.9	27.4	0.0	24.4	27.4	18.6	18.3	26.0	13.6	7.7
LnGrp LOS	C		C	C		C	C	B	B	C	B	A
Approach Vol, veh/h		110			162			1204			1285	
Approach Delay, s/veh		24.2			25.0			18.7			14.1	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	28.0	6.8	10.8	6.8	29.9	6.3	11.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.2	16.5	3.0	4.4	3.0	16.2	2.8	5.9
Green Ext Time (p_c), s	0.0	6.5	0.0	0.8	0.0	6.8	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	17.2
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	370	519	232	239	489	177	308	725	140	209	679	178
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	411	577	258	278	569	206	338	797	154	227	738	193
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.86	0.86	0.86	0.91	0.91	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	435	765	342	360	722	255	375	1157	517	266	940	420
Arrive On Green	0.13	0.22	0.22	0.10	0.19	0.19	0.21	0.33	0.33	0.15	0.27	0.27
Sat Flow, veh/h	3442	3539	1583	3442	3712	1310	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	411	577	258	278	518	257	338	797	154	227	738	193
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1632	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.4	12.1	12.1	6.2	11.5	11.9	14.7	15.5	5.7	9.9	15.3	8.1
Cycle Q Clear(g_c), s	9.4	12.1	12.1	6.2	11.5	11.9	14.7	15.5	5.7	9.9	15.3	8.1
Prop In Lane	1.00		1.00	1.00		0.80	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	435	765	342	360	660	317	375	1157	517	266	940	420
V/C Ratio(X)	0.94	0.75	0.75	0.77	0.79	0.81	0.90	0.69	0.30	0.85	0.79	0.46
Avail Cap(c_a), veh/h	435	765	342	392	686	330	381	1157	517	292	940	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	29.0	29.0	34.5	30.3	30.4	30.4	23.1	19.9	32.8	27.0	24.3
Incr Delay (d2), s/veh	29.5	4.3	9.1	8.5	5.8	13.5	23.6	3.4	1.5	19.8	6.6	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	6.3	6.1	3.4	5.9	6.5	9.6	8.1	2.7	6.3	8.3	3.9
LnGrp Delay(d),s/veh	63.8	33.3	38.1	43.0	36.1	43.9	54.0	26.5	21.3	52.6	33.5	27.9
LnGrp LOS	E	C	D	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		1246			1053			1289			1158	
Approach Delay, s/veh		44.4			39.8			33.1			36.3	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	29.9	12.3	21.1	20.7	25.0	14.0	19.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	25.0	9.0	17.0	17.0	21.0	10.0	16.0
Max Q Clear Time (g_c+I1), s	11.9	17.5	8.2	14.1	16.7	17.3	11.4	13.9
Green Ext Time (p_c), s	0.1	5.6	0.1	2.2	0.0	3.0	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	38.3
HCM 2010 LOS	D

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	15	3	40	2	1	12	40	1406	2	47	1678	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	58	58	58	97	97	97	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	4	51	3	2	21	45	1594	2	48	1712	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2708	3506	867	2640	3517	798	1735	0	0	1597	0	0
Stage 1	1819	1819	-	1686	1686	-	-	-	-	-	-	-
Stage 2	889	1687	-	954	1831	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 10	6	296	11	6	329	359	-	-	406	-	-
Stage 1	80	127	-	98	149	-	-	-	-	-	-	-
Stage 2	304	148	-	278	126	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 7	5	296	7	5	329	359	-	-	406	-	-
Mov Cap-2 Maneuver	50	45	-	53	42	-	-	-	-	-	-	-
Stage 1	70	112	-	86	130	-	-	-	-	-	-	-
Stage 2	246	129	-	196	111	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	79.7	33.3	0.5	0.4
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	359	-	-	116	153	406	-	-
HCM Lane V/C Ratio	0.126	-	-	0.641	0.169	0.118	-	-
HCM Control Delay (s)	16.5	-	-	79.7	33.3	15.1	-	-
HCM Lane LOS	C	-	-	F	D	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-	3.3	0.6	0.4	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	378	55	15	252	9	31	6	9	7	2	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	88	88	88	60	60	60	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	386	56	17	286	10	52	10	15	9	3	15
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	286	0	0	386	0	0	751	742	386	755	742	286
Stage 1	-	-	-	-	-	-	422	422	-	320	320	-
Stage 2	-	-	-	-	-	-	329	320	-	435	422	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1276	-	-	1172	-	-	327	344	662	325	344	753
Stage 1	-	-	-	-	-	-	609	588	-	692	652	-
Stage 2	-	-	-	-	-	-	684	652	-	600	588	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1276	-	-	1172	-	-	312	334	662	304	334	753
Mov Cap-2 Maneuver	-	-	-	-	-	-	312	334	-	304	334	-
Stage 1	-	-	-	-	-	-	600	580	-	682	643	-
Stage 2	-	-	-	-	-	-	658	643	-	568	580	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.4	18.1	13.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	351	1276	-	-	1172	-	-	458
HCM Lane V/C Ratio	0.218	0.014	-	-	0.015	-	-	0.058
HCM Control Delay (s)	18.1	7.9	-	-	8.1	-	-	13.3
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.8	0	-	-	0	-	-	0.2

HCM 2010 TWSC
10: Cottonwood Ave & Driveway

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	464	318	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	81	81	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	510	393	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	393	0	-	0	903	393
Stage 1	-	-	-	-	393	-
Stage 2	-	-	-	-	510	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1166	-	-	-	308	656
Stage 1	-	-	-	-	682	-
Stage 2	-	-	-	-	603	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1166	-	-	-	308	656
Mov Cap-2 Maneuver	-	-	-	-	308	-
Stage 1	-	-	-	-	682	-
Stage 2	-	-	-	-	603	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1166	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	22.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	12	0	74	0	0	0	54	1391	0	0	1608	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	92	92	92	95	95	95	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	0	103	0	0	0	57	1464	0	0	1729	41

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2595	3327	885	2443	3348	732	1770	0	0	1464	0	0
Stage 1	1749	1749	-	1578	1578	-	-	-	-	-	-	-
Stage 2	846	1578	-	865	1770	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 12	8	288	16	8	364	348	-	-	457	-	-
Stage 1	89	138	-	114	168	-	-	-	-	-	-	-
Stage 2	323	168	-	315	135	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 10	7	288	9	7	364	348	-	-	457	-	-
Mov Cap-2 Maneuver	~ 10	7	-	9	7	-	-	-	-	-	-	-
Stage 1	74	138	-	95	140	-	-	-	-	-	-	-
Stage 2	270	140	-	203	135	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 626.3	0	0.6	0
HCM LOS	F	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	348	-	-	59	-	457	-	-
HCM Lane V/C Ratio	0.163	-	-	2.024	-	-	-	-
HCM Control Delay (s)	17.4	-	-	$ 626.3	0	0	-	-
HCM Lane LOS	C	-	-	F	A	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	11.5	-	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	63	101	36	50	81	84	53	1169	54	71	1117	58
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	70	112	40	60	98	101	58	1285	59	79	1241	64
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.83	0.83	0.83	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	222	188	129	210	178	126	1652	739	149	1697	759
Arrive On Green	0.08	0.12	0.12	0.07	0.11	0.11	0.07	0.47	0.47	0.08	0.48	0.48
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	70	112	40	60	98	101	58	1285	59	79	1241	64
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.3	3.5	1.4	2.0	3.1	3.8	1.9	18.9	1.3	2.7	17.5	1.4
Cycle Q Clear(g_c), s	2.3	3.5	1.4	2.0	3.1	3.8	1.9	18.9	1.3	2.7	17.5	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	140	222	188	129	210	178	126	1652	739	149	1697	759
V/C Ratio(X)	0.50	0.51	0.21	0.47	0.47	0.57	0.46	0.78	0.08	0.53	0.73	0.08
Avail Cap(c_a), veh/h	200	480	408	200	480	408	200	1652	739	200	1697	759
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	25.6	24.7	27.6	25.8	26.1	27.7	13.9	9.2	27.3	13.0	8.8
Incr Delay (d2), s/veh	2.7	1.8	0.6	2.6	1.6	2.8	2.6	3.7	0.2	2.9	2.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.9	0.6	1.1	1.7	1.8	1.0	9.9	0.6	1.4	9.1	0.6
LnGrp Delay(d),s/veh	30.2	27.4	25.3	30.2	27.4	28.9	30.3	17.5	9.4	30.2	15.8	9.0
LnGrp LOS	C	C	C	C	C	C	C	B	A	C	B	A
Approach Vol, veh/h		222			259			1402			1384	
Approach Delay, s/veh		27.9			28.7			17.7			16.3	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	33.0	8.5	11.4	8.4	33.8	8.9	11.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	29.0	7.0	16.0	7.0	29.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.7	20.9	4.0	5.5	3.9	19.5	4.3	5.8
Green Ext Time (p_c), s	0.0	7.3	0.0	1.1	0.0	8.5	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	18.7
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	78	91	26	38	65	63	24	1141	26	29	1096	57
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	90	105	30	44	75	72	29	1358	31	34	1274	66
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.84	0.84	0.84	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	94	77	453	88	111	453	81	1583	36	91	1605	718
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.05	0.45	0.45	0.05	0.45	0.45
Sat Flow, veh/h	0	270	1583	0	387	1583	1774	3537	81	1774	3539	1583
Grp Volume(v), veh/h	195	0	30	119	0	72	29	679	710	34	1274	66
Grp Sat Flow(s),veh/h/ln	270	0	1583	387	0	1583	1774	1770	1849	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.8	0.0	0.0	1.9	0.9	19.2	19.3	1.0	17.2	1.3
Cycle Q Clear(g_c), s	16.0	0.0	0.8	16.0	0.0	1.9	0.9	19.2	19.3	1.0	17.2	1.3
Prop In Lane	0.46		1.00	0.37		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	171	0	453	199	0	453	81	792	827	91	1605	718
V/C Ratio(X)	1.14	0.00	0.07	0.60	0.00	0.16	0.36	0.86	0.86	0.37	0.79	0.09
Avail Cap(c_a), veh/h	171	0	453	199	0	453	222	792	827	222	1605	718
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	0.0	14.5	16.6	0.0	14.9	25.9	13.8	13.8	25.6	13.0	8.7
Incr Delay (d2), s/veh	110.5	0.0	0.1	4.8	0.0	0.2	2.7	11.6	11.2	2.5	4.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	0.0	0.3	1.7	0.0	0.8	0.5	11.8	12.2	0.6	9.2	0.6
LnGrp Delay(d),s/veh	131.8	0.0	14.6	21.5	0.0	15.1	28.6	25.4	25.1	28.1	17.2	9.0
LnGrp LOS	F		B	C		B	C	C	C	C	B	A
Approach Vol, veh/h		225			191			1418			1374	
Approach Delay, s/veh		116.1			19.1			25.3			17.1	
Approach LOS		F			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.9	29.0		20.0	6.5	29.3		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	25.0		16.0	7.0	25.0		16.0
Max Q Clear Time (g_c+I1), s	3.0	21.3		18.0	2.9	19.2		18.0
Green Ext Time (p_c), s	0.0	3.5		0.0	0.0	5.4		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			27.8
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑↱		↰	↑↱	
Volume (veh/h)	18	261	115	49	315	26	97	278	47	22	239	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	23	335	147	58	375	31	100	287	48	24	257	24
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.78	0.78	0.78	0.84	0.84	0.84	0.97	0.97	0.97	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	459	390	131	527	448	174	1091	180	69	982	91
Arrive On Green	0.04	0.25	0.25	0.07	0.28	0.28	0.10	0.36	0.36	0.04	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3041	503	1774	3275	303
Grp Volume(v), veh/h	23	335	147	58	375	31	100	166	169	24	138	143
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1774	1774	1770	1809
Q Serve(g_s), s	0.7	9.4	4.4	1.8	10.3	0.8	3.1	3.8	3.8	0.7	3.4	3.4
Cycle Q Clear(g_c), s	0.7	9.4	4.4	1.8	10.3	0.8	3.1	3.8	3.8	0.7	3.4	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.28	1.00		0.17
Lane Grp Cap(c), veh/h	67	459	390	131	527	448	174	635	637	69	530	542
V/C Ratio(X)	0.35	0.73	0.38	0.44	0.71	0.07	0.58	0.26	0.27	0.35	0.26	0.26
Avail Cap(c_a), veh/h	219	591	503	219	591	503	219	635	637	219	530	542
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.6	19.6	17.8	25.1	18.3	14.9	24.5	12.9	12.9	26.6	15.1	15.1
Incr Delay (d2), s/veh	3.1	3.3	0.6	2.3	3.5	0.1	3.0	1.0	1.0	3.0	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	5.2	2.0	1.0	5.7	0.4	1.6	2.0	2.1	0.4	1.8	1.9
LnGrp Delay(d),s/veh	29.7	23.0	18.4	27.5	21.8	14.9	27.4	13.9	13.9	29.5	16.3	16.3
LnGrp LOS	C	C	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		505			464			435			305	
Approach Delay, s/veh		21.9			22.0			17.0			17.3	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	24.3	8.2	18.0	9.6	21.0	6.1	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	18.0	7.0	17.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	2.7	5.8	3.8	11.4	5.1	5.4	2.7	12.3
Green Ext Time (p_c), s	0.0	2.7	0.0	2.6	0.0	2.7	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	19.9
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	88	153	65	71	190	189	87	1030	75	154	936	106
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	111	194	82	125	333	332	96	1132	82	177	1076	122
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.79	0.79	0.79	0.57	0.57	0.57	0.91	0.91	0.91	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	150	394	335	157	401	341	144	1286	575	215	1427	639
Arrive On Green	0.08	0.21	0.21	0.09	0.22	0.22	0.08	0.36	0.36	0.12	0.40	0.40
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	111	194	82	125	333	332	96	1132	82	177	1076	122
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.5	6.8	3.2	5.1	12.7	15.5	3.9	22.2	2.6	7.2	19.4	3.7
Cycle Q Clear(g_c), s	4.5	6.8	3.2	5.1	12.7	15.5	3.9	22.2	2.6	7.2	19.4	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	150	394	335	157	401	341	144	1286	575	215	1427	639
V/C Ratio(X)	0.74	0.49	0.25	0.79	0.83	0.97	0.67	0.88	0.14	0.82	0.75	0.19
Avail Cap(c_a), veh/h	167	401	341	167	401	341	167	1286	575	215	1427	639
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.2	25.8	24.4	33.2	27.8	28.9	33.1	22.1	15.9	31.9	19.0	14.3
Incr Delay (d2), s/veh	14.3	1.0	0.4	21.6	13.6	41.5	7.9	8.8	0.5	22.2	3.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	3.6	1.4	3.4	8.0	10.7	2.2	12.4	1.2	4.9	10.2	1.7
LnGrp Delay(d),s/veh	47.5	26.7	24.7	54.8	41.5	70.4	41.0	31.0	16.4	54.0	22.7	15.0
LnGrp LOS	D	C	C	D	D	E	D	C	B	D	C	B
Approach Vol, veh/h		387			790			1310			1375	
Approach Delay, s/veh		32.3			55.8			30.8			26.1	
Approach LOS		C			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	31.0	10.6	19.7	10.0	34.0	10.3	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	27.0	7.0	16.0	7.0	29.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	9.2	24.2	7.1	8.8	5.9	21.4	6.5	17.5
Green Ext Time (p_c), s	0.0	2.5	0.0	2.6	0.0	6.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.4
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑↑↱		↰	↑↑↱	
Volume (veh/h)	35	214	64	10	238	31	34	206	15	28	223	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	62	382	114	15	350	46	40	245	18	32	256	22
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.56	0.56	0.56	0.68	0.68	0.68	0.84	0.84	0.84	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	587	499	46	488	415	104	1035	76	88	991	85
Arrive On Green	0.08	0.31	0.31	0.03	0.26	0.26	0.06	0.31	0.31	0.05	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3345	244	1774	3301	282
Grp Volume(v), veh/h	62	382	114	15	350	46	40	129	134	32	136	142
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1820	1774	1770	1813
Q Serve(g_s), s	1.8	9.4	2.8	0.4	9.1	1.2	1.2	2.9	2.9	0.9	3.1	3.2
Cycle Q Clear(g_c), s	1.8	9.4	2.8	0.4	9.1	1.2	1.2	2.9	2.9	0.9	3.1	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		0.16
Lane Grp Cap(c), veh/h	140	587	499	46	488	415	104	547	563	88	531	544
V/C Ratio(X)	0.44	0.65	0.23	0.32	0.72	0.11	0.38	0.24	0.24	0.36	0.26	0.26
Avail Cap(c_a), veh/h	233	664	564	233	664	564	233	547	563	233	531	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	15.7	13.5	25.5	17.9	14.9	24.2	13.7	13.7	24.5	14.1	14.2
Incr Delay (d2), s/veh	2.2	1.9	0.2	4.0	2.4	0.1	2.3	1.0	1.0	2.5	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.1	1.3	0.3	5.0	0.5	0.6	1.5	1.6	0.5	1.7	1.7
LnGrp Delay(d),s/veh	25.6	17.6	13.7	29.4	20.2	15.1	26.5	14.7	14.7	27.0	15.3	15.3
LnGrp LOS	C	B	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		558			411			303			310	
Approach Delay, s/veh		17.7			20.0			16.3			16.5	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	20.5	5.4	20.8	7.1	20.0	8.2	18.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	2.9	4.9	2.4	11.4	3.2	5.2	3.8	11.1
Green Ext Time (p_c), s	0.0	2.2	0.0	2.8	0.0	2.2	0.0	2.9

Intersection Summary	
HCM 2010 Ctrl Delay	17.8
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↱		↰	↑↑↱		↰	↑↑	↱
Volume (veh/h)	23	41	30	26	34	65	33	1084	39	66	1048	29
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	27	48	35	34	44	84	34	1129	41	74	1178	33
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.77	0.77	0.77	0.96	0.96	0.96	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	76	126	92	92	77	147	92	1539	56	154	1687	755
Arrive On Green	0.04	0.13	0.13	0.05	0.13	0.13	0.05	0.44	0.44	0.09	0.48	0.48
Sat Flow, veh/h	1774	1003	731	1774	574	1096	1774	3484	126	1774	3539	1583
Grp Volume(v), veh/h	27	0	83	34	0	128	34	573	597	74	1178	33
Grp Sat Flow(s),veh/h/ln	1774	0	1734	1774	0	1669	1774	1770	1840	1774	1770	1583
Q Serve(g_s), s	0.8	0.0	2.4	1.0	0.0	3.9	1.0	14.5	14.5	2.2	14.2	0.6
Cycle Q Clear(g_c), s	0.8	0.0	2.4	1.0	0.0	3.9	1.0	14.5	14.5	2.2	14.2	0.6
Prop In Lane	1.00		0.42	1.00		0.66	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	76	0	217	92	0	224	92	782	813	154	1687	755
V/C Ratio(X)	0.35	0.00	0.38	0.37	0.00	0.57	0.37	0.73	0.73	0.48	0.70	0.04
Avail Cap(c_a), veh/h	229	0	511	229	0	492	229	782	813	229	1687	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.3	0.0	21.8	24.9	0.0	22.1	24.9	12.5	12.5	23.6	11.1	7.6
Incr Delay (d2), s/veh	2.7	0.0	1.1	2.5	0.0	2.3	2.5	6.0	5.8	2.3	2.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.2	0.6	0.0	1.9	0.6	8.3	8.6	1.1	7.4	0.3
LnGrp Delay(d),s/veh	28.0	0.0	22.9	27.4	0.0	24.4	27.4	18.6	18.3	26.0	13.6	7.7
LnGrp LOS	C		C	C		C	C	B	B	C	B	A
Approach Vol, veh/h		110			162			1204			1285	
Approach Delay, s/veh		24.2			25.0			18.7			14.1	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	28.0	6.8	10.8	6.8	29.9	6.3	11.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.2	16.5	3.0	4.4	3.0	16.2	2.8	5.9
Green Ext Time (p_c), s	0.0	6.5	0.0	0.8	0.0	6.8	0.0	0.8

Intersection Summary		
HCM 2010 Ctrl Delay		17.2
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	370	519	232	239	489	177	308	725	140	209	679	178
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	411	577	258	278	569	206	338	797	154	227	738	193
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.86	0.86	0.86	0.91	0.91	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	435	765	342	360	722	255	375	1157	517	266	940	420
Arrive On Green	0.13	0.22	0.22	0.10	0.19	0.19	0.21	0.33	0.33	0.15	0.27	0.27
Sat Flow, veh/h	3442	3539	1583	3442	3712	1310	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	411	577	258	278	518	257	338	797	154	227	738	193
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1632	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.4	12.1	12.1	6.2	11.5	11.9	14.7	15.5	5.7	9.9	15.3	8.1
Cycle Q Clear(g_c), s	9.4	12.1	12.1	6.2	11.5	11.9	14.7	15.5	5.7	9.9	15.3	8.1
Prop In Lane	1.00		1.00	1.00		0.80	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	435	765	342	360	660	317	375	1157	517	266	940	420
V/C Ratio(X)	0.94	0.75	0.75	0.77	0.79	0.81	0.90	0.69	0.30	0.85	0.79	0.46
Avail Cap(c_a), veh/h	435	765	342	392	686	330	381	1157	517	292	940	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	29.0	29.0	34.5	30.3	30.4	30.4	23.1	19.9	32.8	27.0	24.3
Incr Delay (d2), s/veh	29.5	4.3	9.1	8.5	5.8	13.5	23.6	3.4	1.5	19.8	6.6	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	6.3	6.1	3.4	5.9	6.5	9.6	8.1	2.7	6.3	8.3	3.9
LnGrp Delay(d),s/veh	63.8	33.3	38.1	43.0	36.1	43.9	54.0	26.5	21.3	52.6	33.5	27.9
LnGrp LOS	E	C	D	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		1246			1053			1289			1158	
Approach Delay, s/veh		44.4			39.8			33.1			36.3	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	29.9	12.3	21.1	20.7	25.0	14.0	19.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	25.0	9.0	17.0	17.0	21.0	10.0	16.0
Max Q Clear Time (g_c+I1), s	11.9	17.5	8.2	14.1	16.7	17.3	11.4	13.9
Green Ext Time (p_c), s	0.1	5.6	0.1	2.2	0.0	3.0	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	38.3
HCM 2010 LOS	D

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection												
Int Delay, s/veh	2.7											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	4	30	3	7	15	41	1241	3	38	1146	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	72	72	72	89	89	89	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	6	46	4	10	21	51	1534	4	44	1317	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2289	3055	670	2386	3063	769	1339	0	0	1538	0	0
Stage 1	1416	1416	-	1637	1637	-	-	-	-	-	-	-
Stage 2	873	1639	-	749	1426	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 21	12	399	18	12	344	511	-	-	428	-	-
Stage 1	144	202	-	105	157	-	-	-	-	-	-	-
Stage 2	311	157	-	370	199	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 15	10	399	13	10	344	511	-	-	428	-	-
Mov Cap-2 Maneuver	79	62	-	66	66	-	-	-	-	-	-	-
Stage 1	130	181	-	95	141	-	-	-	-	-	-	-
Stage 2	245	141	-	284	179	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	65.2	43.3	0.4	0.5
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	511	-	-	137	128	428	-	-
HCM Lane V/C Ratio	0.099	-	-	0.606	0.271	0.102	-	-
HCM Control Delay (s)	12.8	-	-	65.2	43.3	14.4	-	-
HCM Lane LOS	B	-	-	F	E	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	3.1	1	0.3	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	25	336	46	3	282	4	34	4	10	2	2	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	58	58	58	79	79	79	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	44	589	81	5	486	7	43	5	13	3	3	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	486	0	0	589	0	0	1183	1174	589	1183	1174	486
Stage 1	-	-	-	-	-	-	677	677	-	497	497	-
Stage 2	-	-	-	-	-	-	506	497	-	686	677	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1077	-	-	986	-	-	166	192	508	166	192	581
Stage 1	-	-	-	-	-	-	443	452	-	555	545	-
Stage 2	-	-	-	-	-	-	549	545	-	438	452	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1077	-	-	986	-	-	154	183	508	153	183	581
Mov Cap-2 Maneuver	-	-	-	-	-	-	154	183	-	153	183	-
Stage 1	-	-	-	-	-	-	425	434	-	532	542	-
Stage 2	-	-	-	-	-	-	529	542	-	405	434	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	34.2	16.3
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	183	1077	-	-	986	-	-	340
HCM Lane V/C Ratio	0.332	0.041	-	-	0.005	-	-	0.063
HCM Control Delay (s)	34.2	8.5	-	-	8.7	-	-	16.3
HCM Lane LOS	D	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.4	0.1	-	-	0	-	-	0.2

HCM 2010 TWSC
10: Cottonwood Ave & Driveway

Intersection						
Int Delay, s/veh	0					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	294	376	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	77	77	81	81	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	382	464	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	464	0	-	0	846	464
Stage 1	-	-	-	-	464	-
Stage 2	-	-	-	-	382	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1097	-	-	-	333	598
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	690	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1097	-	-	-	333	598
Mov Cap-2 Maneuver	-	-	-	-	333	-
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	690	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1097	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	16.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	21	0	78	0	0	0	70	1235	0	0	1116	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	92	92	92	82	82	82	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	0	98	0	0	0	85	1506	0	0	1298	44

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2244	2997	671	2326	3019	753	1342	0	0	1506	0	0
Stage 1	1320	1320	-	1677	1677	-	-	-	-	-	-	-
Stage 2	924	1677	-	649	1342	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 23	13	399	20	13	352	509	-	-	441	-	-
Stage 1	166	225	-	99	150	-	-	-	-	-	-	-
Stage 2	290	150	-	425	219	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 20	11	399	13	11	352	509	-	-	441	-	-
Mov Cap-2 Maneuver	~ 20	11	-	13	11	-	-	-	-	-	-	-
Stage 1	138	225	-	82	125	-	-	-	-	-	-	-
Stage 2	242	125	-	321	219	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 397.9	0	0.7	0
HCM LOS	F	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	509	-	-	79	-	441	-	-
HCM Lane V/C Ratio	0.168	-	-	1.566	-	-	-	-
HCM Control Delay (s)	13.5	-	-	$ 397.9	0	0	-	-
HCM Lane LOS	B	-	-	F	A	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	10.2	-	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	39	92	62	112	158	199	63	1394	66	78	1134	32
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	57	133	90	127	180	226	72	1602	76	89	1289	36
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.69	0.69	0.69	0.88	0.88	0.88	0.87	0.87	0.87	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	276	235	145	315	268	119	1813	811	127	1830	819
Arrive On Green	0.06	0.15	0.15	0.08	0.17	0.17	0.07	0.51	0.51	0.07	0.52	0.52
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	57	133	90	127	180	226	72	1602	76	89	1289	36
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.7	5.6	4.4	6.1	7.6	11.9	3.4	34.6	2.1	4.2	23.8	1.0
Cycle Q Clear(g_c), s	2.7	5.6	4.4	6.1	7.6	11.9	3.4	34.6	2.1	4.2	23.8	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	107	276	235	145	315	268	119	1813	811	127	1830	819
V/C Ratio(X)	0.53	0.48	0.38	0.88	0.57	0.84	0.61	0.88	0.09	0.70	0.70	0.04
Avail Cap(c_a), veh/h	145	347	295	145	347	295	145	1813	811	145	1830	819
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	33.6	33.0	39.0	32.8	34.6	39.0	18.7	10.7	39.0	15.8	10.2
Incr Delay (d2), s/veh	4.0	1.3	1.0	41.4	1.8	18.2	4.9	6.7	0.2	12.0	2.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.0	2.0	4.6	4.1	6.5	1.8	18.4	1.0	2.5	12.0	0.4
LnGrp Delay(d),s/veh	43.2	34.9	34.1	80.5	34.7	52.8	43.9	25.4	11.0	51.0	18.1	10.3
LnGrp LOS	D	C	C	F	C	D	D	C	B	D	B	B
Approach Vol, veh/h		280			533			1750			1414	
Approach Delay, s/veh		36.3			53.3			25.5			19.9	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	48.0	11.0	16.7	9.7	48.4	9.2	18.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	44.0	7.0	16.0	7.0	44.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.2	36.6	8.1	7.6	5.4	25.8	4.7	13.9
Green Ext Time (p_c), s	0.0	7.0	0.0	1.8	0.0	16.3	0.0	0.6

Intersection Summary		
HCM 2010 Ctrl Delay		28.0
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	74	77	50	67	102	62	34	1402	27	35	1201	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	85	89	57	89	136	83	40	1630	31	42	1430	94
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.75	0.75	0.75	0.86	0.86	0.86	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	58	379	75	70	379	97	1862	35	101	1861	833
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.05	0.52	0.52	0.06	0.53	0.53
Sat Flow, veh/h	0	243	1583	0	294	1583	1774	3553	67	1774	3539	1583
Grp Volume(v), veh/h	174	0	57	225	0	83	40	811	850	42	1430	94
Grp Sat Flow(s),veh/h/ln	243	0	1583	294	0	1583	1774	1770	1851	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	1.9	0.0	0.0	2.8	1.5	26.9	27.0	1.5	21.5	2.0
Cycle Q Clear(g_c), s	16.0	0.0	1.9	16.0	0.0	2.8	1.5	26.9	27.0	1.5	21.5	2.0
Prop In Lane	0.49		1.00	0.40		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	138	0	379	146	0	379	97	927	970	101	1861	833
V/C Ratio(X)	1.26	0.00	0.15	1.55	0.00	0.22	0.41	0.87	0.88	0.42	0.77	0.11
Avail Cap(c_a), veh/h	138	0	379	146	0	379	186	927	970	186	1861	833
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	0.0	20.0	26.3	0.0	20.4	30.5	14.0	14.0	30.4	12.6	8.0
Incr Delay (d2), s/veh	161.5	0.0	0.2	276.7	0.0	0.3	2.8	11.2	11.0	2.7	3.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	0.0	0.8	13.8	0.0	1.2	0.8	15.7	16.4	0.8	11.1	0.9
LnGrp Delay(d),s/veh	188.6	0.0	20.2	302.9	0.0	20.7	33.3	25.2	25.0	33.2	15.7	8.3
LnGrp LOS	F		C	F		C	C	C	C	C	B	A
Approach Vol, veh/h		231			308			1701			1566	
Approach Delay, s/veh		147.0			226.9			25.3			15.7	
Approach LOS		F			F			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.8	39.0		20.0	7.7	39.1		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	35.0		16.0	7.0	35.0		16.0
Max Q Clear Time (g_c+I1), s	3.5	29.0		18.0	3.5	23.5		18.0
Green Ext Time (p_c), s	0.0	5.7		0.0	0.0	10.8		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			45.1
HCM 2010 LOS			D

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	333	138	49	412	92	103	330	32	59	408	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	59	392	162	64	542	121	130	418	41	68	469	60
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.76	0.76	0.76	0.79	0.79	0.79	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	567	482	134	574	488	180	920	90	139	819	104
Arrive On Green	0.07	0.30	0.30	0.08	0.31	0.31	0.10	0.28	0.28	0.08	0.26	0.26
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3258	318	1774	3159	402
Grp Volume(v), veh/h	59	392	162	64	542	121	130	226	233	68	262	267
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1807	1774	1770	1792
Q Serve(g_s), s	2.0	11.4	4.9	2.1	17.5	3.5	4.4	6.5	6.6	2.3	7.9	8.0
Cycle Q Clear(g_c), s	2.0	11.4	4.9	2.1	17.5	3.5	4.4	6.5	6.6	2.3	7.9	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		0.22
Lane Grp Cap(c), veh/h	128	567	482	134	574	488	180	500	510	139	459	465
V/C Ratio(X)	0.46	0.69	0.34	0.48	0.94	0.25	0.72	0.45	0.46	0.49	0.57	0.58
Avail Cap(c_a), veh/h	201	574	488	201	574	488	201	500	510	201	459	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	18.9	16.6	27.3	20.8	16.0	26.9	18.2	18.2	27.3	19.9	19.9
Incr Delay (d2), s/veh	2.6	3.5	0.4	2.6	24.6	0.3	10.8	2.9	2.9	2.7	5.1	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	6.4	2.2	1.1	12.8	1.6	2.7	3.5	3.6	1.2	4.5	4.6
LnGrp Delay(d),s/veh	30.0	22.4	17.0	30.0	45.5	16.3	37.6	21.2	21.2	29.9	24.9	25.0
LnGrp LOS	C	C	B	C	D	B	D	C	C	C	C	C
Approach Vol, veh/h		613			727			589			597	
Approach Delay, s/veh		21.7			39.3			24.8			25.5	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	21.4	8.7	22.8	10.2	20.0	8.5	23.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	4.3	8.6	4.1	13.4	6.4	10.0	4.0	19.5
Green Ext Time (p_c), s	0.0	3.4	0.0	3.0	0.0	2.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	28.4
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑↑	↱	↰	↑↑	↱
Volume (veh/h)	91	207	75	75	248	209	79	1172	77	129	1114	98
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	114	259	94	101	335	282	96	1429	94	154	1326	117
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.80	0.80	0.80	0.74	0.74	0.74	0.82	0.82	0.82	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	381	324	128	370	315	126	1575	705	178	1679	751
Arrive On Green	0.08	0.20	0.20	0.07	0.20	0.20	0.07	0.45	0.45	0.10	0.47	0.47
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	114	259	94	101	335	282	96	1429	94	154	1326	117
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.7	11.5	4.5	5.0	15.8	15.6	4.8	33.8	3.1	7.7	28.3	3.8
Cycle Q Clear(g_c), s	5.7	11.5	4.5	5.0	15.8	15.6	4.8	33.8	3.1	7.7	28.3	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	138	381	324	128	370	315	126	1575	705	178	1679	751
V/C Ratio(X)	0.82	0.68	0.29	0.79	0.90	0.90	0.76	0.91	0.13	0.87	0.79	0.16
Avail Cap(c_a), veh/h	138	381	324	138	373	317	138	1575	705	178	1679	751
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	33.0	30.2	41.0	35.2	35.1	41.0	23.2	14.7	39.8	19.8	13.4
Incr Delay (d2), s/veh	31.7	4.8	0.5	24.5	24.6	26.1	20.3	9.1	0.4	33.5	3.9	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	6.4	2.0	3.3	10.6	9.1	3.1	18.5	1.5	5.4	14.7	1.7
LnGrp Delay(d),s/veh	72.6	37.8	30.7	65.5	59.8	61.2	61.3	32.4	15.1	73.3	23.7	13.8
LnGrp LOS	E	D	C	E	E	E	E	C	B	E	C	B
Approach Vol, veh/h		467			718			1619			1597	
Approach Delay, s/veh		44.9			61.2			33.1			27.8	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	44.0	10.5	22.4	10.4	46.6	11.0	21.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	40.0	7.0	18.0	7.0	42.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	9.7	35.8	7.0	13.5	6.8	30.3	7.7	17.8
Green Ext Time (p_c), s	0.0	4.0	0.0	1.9	0.0	10.7	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	37.0
HCM 2010 LOS	D

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑↱		↰	↑↱	
Volume (veh/h)	105	263	79	47	365	142	109	347	30	34	281	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	148	370	111	69	537	209	127	403	35	47	385	62
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.71	0.71	0.71	0.68	0.68	0.68	0.86	0.86	0.86	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	647	550	133	595	505	166	931	81	107	763	122
Arrive On Green	0.10	0.35	0.35	0.07	0.32	0.32	0.09	0.28	0.28	0.06	0.25	0.25
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3297	285	1774	3058	489
Grp Volume(v), veh/h	148	370	111	69	537	209	127	215	223	47	222	225
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1812	1774	1770	1777
Q Serve(g_s), s	5.6	11.0	3.4	2.5	18.8	7.1	4.8	6.8	6.8	1.7	7.3	7.4
Cycle Q Clear(g_c), s	5.6	11.0	3.4	2.5	18.8	7.1	4.8	6.8	6.8	1.7	7.3	7.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.27
Lane Grp Cap(c), veh/h	182	647	550	133	595	505	166	500	512	107	442	443
V/C Ratio(X)	0.81	0.57	0.20	0.52	0.90	0.41	0.77	0.43	0.43	0.44	0.50	0.51
Avail Cap(c_a), veh/h	182	647	550	182	629	535	182	500	512	182	442	443
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.9	18.1	15.6	30.3	22.2	18.2	30.1	20.0	20.0	30.9	21.9	22.0
Incr Delay (d2), s/veh	23.5	1.2	0.2	3.1	15.9	0.5	16.1	2.7	2.7	2.8	4.0	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	5.9	1.5	1.4	12.2	3.1	3.1	3.7	3.8	0.9	4.1	4.1
LnGrp Delay(d),s/veh	53.4	19.3	15.8	33.4	38.1	18.7	46.3	22.7	22.7	33.7	26.0	26.1
LnGrp LOS	D	B	B	C	D	B	D	C	C	C	C	C
Approach Vol, veh/h		629			815			565			494	
Approach Delay, s/veh		26.7			32.7			28.0			26.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	23.2	9.1	27.6	10.4	21.0	11.0	25.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	23.0	7.0	17.0	7.0	23.0
Max Q Clear Time (g_c+I1), s	3.7	8.8	4.5	13.0	6.8	9.4	7.6	20.8
Green Ext Time (p_c), s	0.0	3.1	0.0	4.5	0.0	3.0	0.0	1.0

Intersection Summary		
HCM 2010 Ctrl Delay		29.0
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	52	88	44	63	104	61	1193	60	98	1068	83
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	122	70	119	52	74	122	66	1283	65	121	1319	102
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.74	0.74	0.74	0.85	0.85	0.85	0.93	0.93	0.93	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	164	115	196	114	100	165	130	1453	74	163	1567	701
Arrive On Green	0.09	0.19	0.19	0.06	0.16	0.16	0.07	0.42	0.42	0.09	0.44	0.44
Sat Flow, veh/h	1774	621	1056	1774	634	1045	1774	3428	173	1774	3539	1583
Grp Volume(v), veh/h	122	0	189	52	0	196	66	661	687	121	1319	102
Grp Sat Flow(s),veh/h/ln	1774	0	1676	1774	0	1678	1774	1770	1832	1774	1770	1583
Q Serve(g_s), s	4.6	0.0	7.1	1.9	0.0	7.6	2.5	23.5	23.6	4.5	22.6	2.6
Cycle Q Clear(g_c), s	4.6	0.0	7.1	1.9	0.0	7.6	2.5	23.5	23.6	4.5	22.6	2.6
Prop In Lane	1.00		0.63	1.00		0.62	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	164	0	312	114	0	265	130	750	777	163	1567	701
V/C Ratio(X)	0.75	0.00	0.61	0.46	0.00	0.74	0.51	0.88	0.88	0.74	0.84	0.15
Avail Cap(c_a), veh/h	182	0	392	182	0	393	182	750	777	182	1567	701
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	25.5	30.9	0.0	27.5	30.5	18.1	18.2	30.3	16.9	11.4
Incr Delay (d2), s/veh	14.0	0.0	1.9	2.8	0.0	4.0	3.1	14.1	13.9	13.5	5.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	3.4	1.0	0.0	3.8	1.3	14.3	14.8	2.8	12.2	1.2
LnGrp Delay(d),s/veh	44.2	0.0	27.4	33.7	0.0	31.5	33.6	32.3	32.1	43.7	22.6	11.8
LnGrp LOS	D		C	C		C	C	C	C	D	C	B
Approach Vol, veh/h		311			248			1414			1542	
Approach Delay, s/veh		34.0			32.0			32.2			23.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	33.0	8.4	16.7	9.0	34.3	10.3	14.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	29.0	7.0	16.0	7.0	29.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.5	25.6	3.9	9.1	4.5	24.6	6.6	9.6
Green Ext Time (p_c), s	0.0	3.2	0.0	1.3	0.0	4.1	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	28.6
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	206	458	100	205	891	245	267	917	211	239	684	239
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	251	559	122	241	1048	288	284	976	224	285	814	285
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.94	0.94	0.94	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	301	861	385	325	993	273	322	1018	455	310	995	445
Arrive On Green	0.09	0.24	0.24	0.09	0.25	0.25	0.18	0.29	0.29	0.17	0.28	0.28
Sat Flow, veh/h	3442	3539	1583	3442	3970	1090	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	251	559	122	241	895	441	284	976	224	285	814	285
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1670	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.7	11.4	5.1	5.5	20.0	20.0	12.5	21.7	9.4	12.6	17.2	12.6
Cycle Q Clear(g_c), s	5.7	11.4	5.1	5.5	20.0	20.0	12.5	21.7	9.4	12.6	17.2	12.6
Prop In Lane	1.00		1.00	1.00		0.65	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	301	861	385	325	848	418	322	1018	455	310	995	445
V/C Ratio(X)	0.83	0.65	0.32	0.74	1.06	1.06	0.88	0.96	0.49	0.92	0.82	0.64
Avail Cap(c_a), veh/h	301	861	385	387	848	418	333	1018	455	310	995	445
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.9	27.2	24.8	35.3	30.0	30.0	31.9	28.0	23.7	32.4	26.8	25.2
Incr Delay (d2), s/veh	17.9	1.7	0.5	6.2	46.7	59.7	22.7	19.9	3.8	30.8	7.5	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	5.7	2.2	2.9	14.8	16.1	8.1	13.4	4.6	8.8	9.4	6.4
LnGrp Delay(d),s/veh	53.8	28.9	25.3	41.5	76.7	89.7	54.6	48.0	27.4	63.3	34.3	32.1
LnGrp LOS	D	C	C	D	F	F	D	D	C	E	C	C
Approach Vol, veh/h		932			1577			1484			1384	
Approach Delay, s/veh		35.1			75.0			46.1			39.8	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	27.0	11.5	23.5	18.5	26.5	11.0	24.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	23.0	9.0	18.0	15.0	22.0	7.0	20.0
Max Q Clear Time (g_c+I1), s	14.6	23.7	7.5	13.4	14.5	19.2	7.7	22.0
Green Ext Time (p_c), s	0.0	0.0	0.1	3.8	0.0	2.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	51.1
HCM 2010 LOS	D

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	13	2	41	2	1	18	38	1489	4	14	1277	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	68	68	68	87	87	87	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	3	61	3	1	26	48	1883	5	16	1451	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2532	3478	737	2740	3487	944	1474	0	0	1888	0	0
Stage 1	1494	1494	-	1981	1981	-	-	-	-	-	-	-
Stage 2	1038	1984	-	759	1506	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 14	6	361	9	6	263	453	-	-	313	-	-
Stage 1	129	185	-	63	106	-	-	-	-	-	-	-
Stage 2	247	105	-	365	182	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 11	5	361	6	5	263	453	-	-	313	-	-
Mov Cap-2 Maneuver	69	51	-	43	52	-	-	-	-	-	-	-
Stage 1	115	176	-	56	95	-	-	-	-	-	-	-
Stage 2	196	94	-	283	173	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	47.8	33.5	0.3	0.2
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	453	-	-	164	157	313	-	-
HCM Lane V/C Ratio	0.106	-	-	0.51	0.197	0.051	-	-
HCM Control Delay (s)	13.9	-	-	47.8	33.5	17.1	-	-
HCM Lane LOS	B	-	-	E	D	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-	2.5	0.7	0.2	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s   +: Computation Not Defined   *: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	8.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	350	13	36	476	19	30	11	42	34	12	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	70	70	70	67	67	67	64	64	64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	455	17	51	680	27	45	16	63	53	19	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	680	0	0	455	0	0	1285	1264	455	1303	1264	680
Stage 1	-	-	-	-	-	-	481	481	-	783	783	-
Stage 2	-	-	-	-	-	-	804	783	-	520	481	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	912	-	-	1106	-	-	142	169	605	138	169	451
Stage 1	-	-	-	-	-	-	566	554	-	387	404	-
Stage 2	-	-	-	-	-	-	377	404	-	539	554	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	912	-	-	1106	-	-	117	159	605	109	159	451
Mov Cap-2 Maneuver	-	-	-	-	-	-	117	159	-	109	159	-
Stage 1	-	-	-	-	-	-	558	546	-	381	385	-
Stage 2	-	-	-	-	-	-	324	385	-	462	546	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	44.2	68
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	210	912	-	-	1106	-	-	145
HCM Lane V/C Ratio	0.59	0.014	-	-	0.046	-	-	0.657
HCM Control Delay (s)	44.2	9	-	-	8.4	-	-	68
HCM Lane LOS	E	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	3.3	0	-	-	0.1	-	-	3.6

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	19	354	529	9	12	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	78	78	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	472	678	12	13	23

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	690	0	-	0	1207	684
Stage 1	-	-	-	-	684	-
Stage 2	-	-	-	-	523	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	905	-	-	-	203	449
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	595	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	905	-	-	-	195	449
Mov Cap-2 Maneuver	-	-	-	-	195	-
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	573	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	18.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	905	-	-	-	305
HCM Lane V/C Ratio	0.028	-	-	-	0.118
HCM Control Delay (s)	9.1	0	-	-	18.4
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	25.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	11	30	0	31	14	1432	34	35	1296	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	62	62	62	92	92	92	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	18	33	0	34	16	1685	40	41	1525	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2484	3367	764	2583	3349	862	1528	0	0	1725	0	0
Stage 1	1609	1609	-	1738	1738	-	-	-	-	-	-	-
Stage 2	875	1758	-	845	1611	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	15	8	346	~ 13	8	298	432	-	-	362	-	-
Stage 1	109	162	-	90	140	-	-	-	-	-	-	-
Stage 2	310	137	-	324	162	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	12	7	346	~ 11	7	298	432	-	-	362	-	-
Mov Cap-2 Maneuver	12	7	-	~ 11	7	-	-	-	-	-	-	-
Stage 1	105	144	-	87	135	-	-	-	-	-	-	-
Stage 2	265	132	-	273	144	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16	$ 1275.4	0.1	0.4
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	432	-	-	346	22	362	-	-
HCM Lane V/C Ratio	0.038	-	-	0.051	3.014	0.114	-	-
HCM Control Delay (s)	13.7	-	-	16	$ 1275.4	16.2	-	-
HCM Lane LOS	B	-	-	C	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	8.5	0.4	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	68	199	76	69	131	95	68	1280	89	121	1630	75
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	80	234	89	99	187	136	71	1333	93	126	1698	78
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.70	0.70	0.70	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	124	293	249	131	302	256	118	1743	780	157	1821	815
Arrive On Green	0.07	0.16	0.16	0.07	0.16	0.16	0.07	0.49	0.49	0.09	0.51	0.51
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	80	234	89	99	187	136	71	1333	93	126	1698	78
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.8	10.3	4.3	4.7	8.0	6.7	3.3	26.2	2.7	6.0	38.3	2.2
Cycle Q Clear(g_c), s	3.8	10.3	4.3	4.7	8.0	6.7	3.3	26.2	2.7	6.0	38.3	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	124	293	249	131	302	256	118	1743	780	157	1821	815
V/C Ratio(X)	0.65	0.80	0.36	0.75	0.62	0.53	0.60	0.76	0.12	0.80	0.93	0.10
Avail Cap(c_a), veh/h	145	349	296	145	349	296	145	1743	780	187	1821	815
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.8	34.7	32.2	38.8	33.4	32.8	38.8	17.7	11.7	38.2	19.4	10.6
Incr Delay (d2), s/veh	7.6	10.5	0.9	18.0	2.6	1.7	4.8	3.3	0.3	18.6	10.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	6.2	1.9	2.9	4.3	3.1	1.8	13.6	1.2	3.7	21.2	1.0
LnGrp Delay(d),s/veh	46.3	45.2	33.0	56.8	36.0	34.5	43.6	20.9	12.0	56.9	29.6	10.8
LnGrp LOS	D	D	C	E	D	C	D	C	B	E	C	B
Approach Vol, veh/h		403			422			1497			1902	
Approach Delay, s/veh		42.7			40.4			21.4			30.6	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	46.1	10.3	17.5	9.7	48.0	10.0	17.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	42.0	7.0	16.0	7.0	44.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	8.0	28.2	6.7	12.3	5.3	40.3	5.8	10.0
Green Ext Time (p_c), s	0.0	12.9	0.0	1.1	0.0	3.6	0.0	1.6

Intersection Summary		
HCM 2010 Ctrl Delay		29.5
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	64	102	28	32	94	64	16	1340	47	79	1586	89
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	72	115	31	36	106	72	17	1396	49	81	1635	92
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.96	0.96	0.96	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	92	400	71	157	400	51	1653	58	149	1873	838
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.03	0.47	0.47	0.08	0.53	0.53
Sat Flow, veh/h	0	364	1583	0	619	1583	1774	3488	122	1774	3539	1583
Grp Volume(v), veh/h	187	0	31	142	0	72	17	707	738	81	1635	92
Grp Sat Flow(s),veh/h/ln	364	0	1583	619	0	1583	1774	1770	1841	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.9	0.0	0.0	2.3	0.6	22.2	22.3	2.8	25.6	1.8
Cycle Q Clear(g_c), s	16.0	0.0	0.9	16.0	0.0	2.3	0.6	22.2	22.3	2.8	25.6	1.8
Prop In Lane	0.39		1.00	0.25		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	171	0	400	228	0	400	51	838	872	149	1873	838
V/C Ratio(X)	1.09	0.00	0.08	0.62	0.00	0.18	0.34	0.84	0.85	0.54	0.87	0.11
Avail Cap(c_a), veh/h	171	0	400	228	0	400	196	838	872	196	1873	838
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.9	0.0	18.0	20.0	0.0	18.5	30.2	14.6	14.6	27.8	13.0	7.4
Incr Delay (d2), s/veh	96.5	0.0	0.1	5.2	0.0	0.2	3.8	10.1	9.9	3.1	6.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	0.0	0.4	2.3	0.0	1.0	0.3	13.0	13.7	1.5	13.8	0.9
LnGrp Delay(d),s/veh	120.4	0.0	18.1	25.2	0.0	18.7	34.0	24.7	24.5	30.9	19.0	7.7
LnGrp LOS	F		B	C		B	C	C	C	C	B	A
Approach Vol, veh/h		218			214			1462			1808	
Approach Delay, s/veh		105.8			23.0			24.7			19.0	
Approach LOS		F			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.3	34.0		20.0	5.8	37.5		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	30.0		16.0	7.0	30.0		16.0
Max Q Clear Time (g_c+I1), s	4.8	24.3		18.0	2.6	27.6		18.0
Green Ext Time (p_c), s	0.0	5.5		0.0	0.0	2.3		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			26.6
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	384	162	45	303	41	88	438	60	31	374	47
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	54	452	191	55	370	50	106	528	72	33	394	49
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.82	0.82	0.82	0.83	0.83	0.83	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	123	544	463	125	546	464	173	996	135	88	856	106
Arrive On Green	0.07	0.29	0.29	0.07	0.29	0.29	0.10	0.32	0.32	0.05	0.27	0.27
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3132	426	1774	3171	392
Grp Volume(v), veh/h	54	452	191	55	370	50	106	298	302	33	219	224
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1788	1774	1770	1794
Q Serve(g_s), s	1.7	13.4	5.8	1.8	10.4	1.4	3.4	8.2	8.2	1.1	6.1	6.2
Cycle Q Clear(g_c), s	1.7	13.4	5.8	1.8	10.4	1.4	3.4	8.2	8.2	1.1	6.1	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.22
Lane Grp Cap(c), veh/h	123	544	463	125	546	464	173	563	568	88	478	484
V/C Ratio(X)	0.44	0.83	0.41	0.44	0.68	0.11	0.61	0.53	0.53	0.38	0.46	0.46
Avail Cap(c_a), veh/h	210	597	508	210	597	508	210	563	568	210	478	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	19.6	16.9	26.4	18.5	15.3	25.7	16.6	16.6	27.3	18.0	18.1
Incr Delay (d2), s/veh	2.4	9.0	0.6	2.4	2.7	0.1	3.6	3.5	3.5	2.6	3.1	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	8.3	2.6	0.9	5.8	0.6	1.8	4.5	4.6	0.6	3.4	3.5
LnGrp Delay(d),s/veh	28.9	28.6	17.5	28.9	21.2	15.4	29.3	20.1	20.1	29.9	21.2	21.2
LnGrp LOS	C	C	B	C	C	B	C	C	C	C	C	C
Approach Vol, veh/h		697			475			706			476	
Approach Delay, s/veh		25.5			21.5			21.5			21.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	22.8	8.2	21.3	9.8	20.0	8.1	21.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	10.2	3.8	15.4	5.4	8.2	3.7	12.4
Green Ext Time (p_c), s	0.0	2.9	0.0	1.9	0.0	3.7	0.0	3.1

Intersection Summary			
HCM 2010 Ctrl Delay			22.8
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	107	245	72	52	173	118	74	1239	63	182	1393	131
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	126	288	85	67	222	151	79	1318	67	194	1482	139
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.78	0.78	0.78	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	158	349	297	123	312	265	132	1477	661	208	1629	729
Arrive On Green	0.09	0.19	0.19	0.07	0.17	0.17	0.07	0.42	0.42	0.12	0.46	0.46
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	126	288	85	67	222	151	79	1318	67	194	1482	139
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.3	11.4	3.5	2.8	8.6	6.7	3.3	26.5	2.0	8.3	29.8	4.0
Cycle Q Clear(g_c), s	5.3	11.4	3.5	2.8	8.6	6.7	3.3	26.5	2.0	8.3	29.8	4.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	158	349	297	123	312	265	132	1477	661	208	1629	729
V/C Ratio(X)	0.80	0.83	0.29	0.54	0.71	0.57	0.60	0.89	0.10	0.93	0.91	0.19
Avail Cap(c_a), veh/h	162	389	330	162	389	330	162	1477	661	208	1629	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.2	30.0	26.8	34.5	30.2	29.4	34.4	20.7	13.6	33.5	19.2	12.2
Incr Delay (d2), s/veh	23.2	12.5	0.5	3.7	4.5	1.9	4.3	8.6	0.3	43.6	9.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	7.1	1.6	1.5	4.8	3.1	1.8	14.6	0.9	6.6	16.5	1.8
LnGrp Delay(d),s/veh	57.4	42.4	27.3	38.2	34.7	31.3	38.7	29.3	13.9	77.1	28.3	12.8
LnGrp LOS	E	D	C	D	C	C	D	C	B	E	C	B
Approach Vol, veh/h		499			440			1464			1815	
Approach Delay, s/veh		43.6			34.1			29.1			32.3	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	36.0	9.3	18.4	9.7	39.3	10.8	16.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	32.0	7.0	16.0	7.0	34.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	10.3	28.5	4.8	13.4	5.3	31.8	7.3	10.6
Green Ext Time (p_c), s	0.0	3.4	0.0	1.0	0.0	2.1	0.0	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	32.7
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	264	57	31	235	43	31	355	19	39	322	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	22	326	70	34	255	47	35	403	22	41	339	21
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.81	0.81	0.81	0.92	0.92	0.92	0.88	0.88	0.88	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	461	392	93	491	417	96	1091	59	108	1105	68
Arrive On Green	0.04	0.25	0.25	0.05	0.26	0.26	0.05	0.32	0.32	0.06	0.33	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3414	186	1774	3387	209
Grp Volume(v), veh/h	22	326	70	34	255	47	35	208	217	41	176	184
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1830	1774	1770	1826
Q Serve(g_s), s	0.6	8.0	1.7	0.9	5.9	1.1	1.0	4.5	4.6	1.1	3.7	3.8
Cycle Q Clear(g_c), s	0.6	8.0	1.7	0.9	5.9	1.1	1.0	4.5	4.6	1.1	3.7	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		0.11
Lane Grp Cap(c), veh/h	65	461	392	93	491	417	96	565	585	108	578	596
V/C Ratio(X)	0.34	0.71	0.18	0.36	0.52	0.11	0.37	0.37	0.37	0.38	0.31	0.31
Avail Cap(c_a), veh/h	248	707	601	248	707	601	248	565	585	248	578	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	17.2	14.8	22.9	15.7	14.0	22.9	13.1	13.2	22.6	12.6	12.6
Incr Delay (d2), s/veh	3.0	2.0	0.2	2.4	0.9	0.1	2.3	1.8	1.8	2.2	1.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.3	0.8	0.5	3.1	0.5	0.5	2.5	2.6	0.6	2.0	2.1
LnGrp Delay(d),s/veh	26.5	19.2	15.0	25.3	16.6	14.1	25.2	15.0	15.0	24.8	14.0	14.0
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		418			336			460			401	
Approach Delay, s/veh		18.9			17.1			15.7			15.1	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	20.0	6.6	16.4	6.7	20.3	5.8	17.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	6.6	2.9	10.0	3.0	5.8	2.6	7.9
Green Ext Time (p_c), s	0.0	3.0	0.0	2.4	0.0	3.2	0.0	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	16.7
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	26	52	44	21	44	47	45	1313	55	76	1414	32
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	30	59	50	25	52	56	48	1397	59	82	1520	34
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.84	0.84	0.84	0.94	0.94	0.94	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	104	88	69	87	94	111	1803	76	147	1917	858
Arrive On Green	0.04	0.11	0.11	0.04	0.11	0.11	0.06	0.52	0.52	0.08	0.54	0.54
Sat Flow, veh/h	1774	933	790	1774	822	885	1774	3461	146	1774	3539	1583
Grp Volume(v), veh/h	30	0	109	25	0	108	48	713	743	82	1520	34
Grp Sat Flow(s),veh/h/ln	1774	0	1723	1774	0	1707	1774	1770	1837	1774	1770	1583
Q Serve(g_s), s	1.1	0.0	3.9	0.9	0.0	3.9	1.7	21.1	21.2	2.9	22.5	0.7
Cycle Q Clear(g_c), s	1.1	0.0	3.9	0.9	0.0	3.9	1.7	21.1	21.2	2.9	22.5	0.7
Prop In Lane	1.00		0.46	1.00		0.52	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	80	0	193	69	0	181	111	922	957	147	1917	858
V/C Ratio(X)	0.38	0.00	0.57	0.36	0.00	0.60	0.43	0.77	0.78	0.56	0.79	0.04
Avail Cap(c_a), veh/h	190	0	422	190	0	418	190	922	957	190	1917	858
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	27.5	30.6	0.0	27.8	29.5	12.5	12.6	28.8	12.0	7.0
Incr Delay (d2), s/veh	2.9	0.0	2.6	3.1	0.0	3.1	2.7	6.3	6.1	3.3	3.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	2.0	0.5	0.0	2.0	0.9	11.7	12.2	1.5	11.7	0.3
LnGrp Delay(d),s/veh	33.2	0.0	30.1	33.7	0.0	31.0	32.2	18.8	18.7	32.0	15.5	7.1
LnGrp LOS	C		C	C		C	C	B	B	C	B	A
Approach Vol, veh/h		139			133			1504			1636	
Approach Delay, s/veh		30.7			31.5			19.2			16.1	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	38.0	6.6	11.3	8.1	39.3	6.9	10.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	34.0	7.0	16.0	7.0	34.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.9	23.2	2.9	5.9	3.7	24.5	3.1	5.9
Green Ext Time (p_c), s	0.0	10.0	0.0	0.8	0.0	8.8	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	18.7
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	508	1029	305	260	658	218	270	792	193	310	955	162
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	540	1095	324	302	765	253	297	870	212	341	1049	178
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.86	0.86	0.86	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	563	1062	475	313	862	282	290	933	417	355	1062	475
Arrive On Green	0.16	0.30	0.30	0.09	0.23	0.23	0.16	0.26	0.26	0.20	0.30	0.30
Sat Flow, veh/h	3442	3539	1583	3442	3792	1242	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	540	1095	324	302	683	335	297	870	212	341	1049	178
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1644	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	17.1	33.0	19.8	9.6	21.5	21.7	18.0	26.4	12.5	20.9	32.4	9.8
Cycle Q Clear(g_c), s	17.1	33.0	19.8	9.6	21.5	21.7	18.0	26.4	12.5	20.9	32.4	9.8
Prop In Lane	1.00		1.00	1.00		0.76	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	563	1062	475	313	770	374	290	933	417	355	1062	475
V/C Ratio(X)	0.96	1.03	0.68	0.97	0.89	0.90	1.02	0.93	0.51	0.96	0.99	0.37
Avail Cap(c_a), veh/h	563	1062	475	313	770	374	290	933	417	355	1062	475
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	38.5	33.9	49.8	41.1	41.2	46.0	39.5	34.4	43.6	38.3	30.4
Incr Delay (d2), s/veh	27.8	36.0	4.0	41.4	12.1	23.3	58.9	17.1	4.4	37.5	24.9	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	21.4	9.2	6.4	11.4	12.3	13.5	15.1	6.0	13.9	19.5	4.5
LnGrp Delay(d),s/veh	73.5	74.5	37.9	91.2	53.3	64.5	104.9	56.6	38.8	81.0	63.2	32.6
LnGrp LOS	E	F	D	F	D	E	F	E	D	F	E	C
Approach Vol, veh/h		1959			1320			1379			1568	
Approach Delay, s/veh		68.1			64.8			64.3			63.6	
Approach LOS		E			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	33.0	14.0	37.0	22.0	37.0	22.0	29.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	29.0	10.0	33.0	18.0	33.0	18.0	25.0
Max Q Clear Time (g_c+I1), s	22.9	28.4	11.6	35.0	20.0	34.4	19.1	23.7
Green Ext Time (p_c), s	0.0	0.6	0.0	0.0	0.0	0.0	0.0	1.2

Intersection Summary			
HCM 2010 Ctrl Delay			65.4
HCM 2010 LOS			E

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	15	3	40	2	1	12	40	1423	2	47	1696	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	58	58	58	97	97	97	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	4	51	3	2	21	45	1614	2	48	1731	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2736	3545	877	2669	3555	808	1753	0	0	1616	0	0
Stage 1	1838	1838	-	1706	1706	-	-	-	-	-	-	-
Stage 2	898	1707	-	963	1849	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 10	6	292	11	6	324	353	-	-	399	-	-
Stage 1	78	125	-	95	145	-	-	-	-	-	-	-
Stage 2	301	145	-	274	123	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 7	5	292	7	5	324	353	-	-	399	-	-
Mov Cap-2 Maneuver	48	44	-	51	40	-	-	-	-	-	-	-
Stage 1	68	110	-	83	127	-	-	-	-	-	-	-
Stage 2	243	127	-	192	108	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	85.3	34.4	0.5	0.4
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	353	-	-	112	148	399	-	-
HCM Lane V/C Ratio	0.129	-	-	0.664	0.175	0.12	-	-
HCM Control Delay (s)	16.7	-	-	85.3	34.4	15.3	-	-
HCM Lane LOS	C	-	-	F	D	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-	3.4	0.6	0.4	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	383	55	15	257	9	31	6	9	7	2	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	88	88	88	60	60	60	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	391	56	17	292	10	52	10	15	9	3	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	292	0	0	391	0	0	763	754	391	766	754	292
Stage 1	-	-	-	-	-	-	428	428	-	326	326	-
Stage 2	-	-	-	-	-	-	335	326	-	440	428	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1270	-	-	1168	-	-	321	338	658	320	338	747
Stage 1	-	-	-	-	-	-	605	585	-	687	648	-
Stage 2	-	-	-	-	-	-	679	648	-	596	585	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1270	-	-	1168	-	-	306	328	658	299	328	747
Mov Cap-2 Maneuver	-	-	-	-	-	-	306	328	-	299	328	-
Stage 1	-	-	-	-	-	-	596	577	-	677	639	-
Stage 2	-	-	-	-	-	-	653	639	-	564	577	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.4	18.4	13.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	345	1270	-	-	1168	-	-	452
HCM Lane V/C Ratio	0.222	0.014	-	-	0.015	-	-	0.059
HCM Control Delay (s)	18.4	7.9	-	-	8.1	-	-	13.5
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.8	0	-	-	0	-	-	0.2

HCM 2010 TWSC
10: Cottonwood Ave & Driveway

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	22	456	313	10	13	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	81	81	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	501	386	12	14	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	399	0	-	0	942	393
Stage 1	-	-	-	-	393	-
Stage 2	-	-	-	-	549	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1160	-	-	-	292	656
Stage 1	-	-	-	-	682	-
Stage 2	-	-	-	-	579	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1160	-	-	-	284	656
Mov Cap-2 Maneuver	-	-	-	-	284	-
Stage 1	-	-	-	-	682	-
Stage 2	-	-	-	-	562	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	13.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1160	-	-	-	457
HCM Lane V/C Ratio	0.021	-	-	-	0.093
HCM Control Delay (s)	8.2	0	-	-	13.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	81.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	12	0	74	34	0	35	54	1374	40	40	1588	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	92	92	92	95	95	95	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	0	103	37	0	38	57	1446	42	43	1708	41

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2651	3416	874	2521	3415	744	1748	0	0	1488	0	0
Stage 1	1814	1814	-	1581	1581	-	-	-	-	-	-	-
Stage 2	837	1602	-	940	1834	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 11	7	293	~ 14	7	357	355	-	-	448	-	-
Stage 1	81	128	-	114	167	-	-	-	-	-	-	-
Stage 2	327	163	-	283	125	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 8	5	293	~ 7	5	357	355	-	-	448	-	-
Mov Cap-2 Maneuver	~ 8	5	-	~ 7	5	-	-	-	-	-	-	-
Stage 1	68	116	-	96	140	-	-	-	-	-	-	-
Stage 2	245	137	-	166	113	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 832.3	$ 2499.9	0.6	0.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	355	-	-	49	14	448	-	-
HCM Lane V/C Ratio	0.16	-	-	2.438	5.357	0.096	-	-
HCM Control Delay (s)	17.1	-	-	$ 832.3	$ 2499.9	13.9	-	-
HCM Lane LOS	C	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0.6	-	-	12.4	10.3	0.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	4	30	3	7	15	41	1265	3	38	1170	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	72	72	72	89	89	89	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	6	46	4	10	21	51	1563	4	44	1345	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2331	3112	683	2430	3121	784	1367	0	0	1567	0	0
Stage 1	1443	1443	-	1667	1667	-	-	-	-	-	-	-
Stage 2	888	1669	-	763	1454	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 20	11	392	17	11	336	498	-	-	417	-	-
Stage 1	139	196	-	100	152	-	-	-	-	-	-	-
Stage 2	305	151	-	363	193	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 14	9	392	12	~ 9	336	498	-	-	417	-	-
Mov Cap-2 Maneuver	75	59	-	63	63	-	-	-	-	-	-	-
Stage 1	125	175	-	90	136	-	-	-	-	-	-	-
Stage 2	238	136	-	276	173	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	71.1	45.4	0.4	0.5
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	498	-	-	131	123	417	-	-
HCM Lane V/C Ratio	0.102	-	-	0.634	0.282	0.105	-	-
HCM Control Delay (s)	13	-	-	71.1	45.4	14.6	-	-
HCM Lane LOS	B	-	-	F	E	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	3.3	1.1	0.3	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	25	343	46	3	289	4	34	4	10	2	2	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	58	58	58	79	79	79	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	44	602	81	5	498	7	43	5	13	3	3	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	498	0	0	602	0	0	1207	1198	602	1207	1198	498
Stage 1	-	-	-	-	-	-	689	689	-	509	509	-
Stage 2	-	-	-	-	-	-	518	509	-	698	689	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1066	-	-	975	-	-	160	186	500	160	186	572
Stage 1	-	-	-	-	-	-	436	446	-	547	538	-
Stage 2	-	-	-	-	-	-	541	538	-	431	446	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1066	-	-	975	-	-	148	177	500	147	177	572
Mov Cap-2 Maneuver	-	-	-	-	-	-	148	177	-	147	177	-
Stage 1	-	-	-	-	-	-	418	428	-	524	535	-
Stage 2	-	-	-	-	-	-	521	535	-	398	428	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	35.9	16.7
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	176	1066	-	-	975	-	-	330
HCM Lane V/C Ratio	0.345	0.041	-	-	0.005	-	-	0.065
HCM Control Delay (s)	35.9	8.5	-	-	8.7	-	-	16.7
HCM Lane LOS	E	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.4	0.1	-	-	0	-	-	0.2

Intersection						
Int Delay, s/veh	1.3					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	31	283	369	14	18	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	77	77	81	81	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	40	368	456	17	20	41

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	473	0	-	0	912	464
Stage 1	-	-	-	-	464	-
Stage 2	-	-	-	-	448	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1089	-	-	-	304	598
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	644	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1089	-	-	-	290	598
Mov Cap-2 Maneuver	-	-	-	-	290	-
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	614	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	14.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1089	-	-	-	446
HCM Lane V/C Ratio	0.037	-	-	-	0.136
HCM Control Delay (s)	8.4	0	-	-	14.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Intersection	
Int Delay, s/veh	117.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	21	0	78	49	0	50	70	1212	55	55	1088	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	92	92	92	82	82	82	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	0	98	53	0	54	85	1478	67	64	1265	44

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2325	3131	655	2442	3119	773	1309	0	0	1545	0	0
Stage 1	1415	1415	-	1682	1682	-	-	-	-	-	-	-
Stage 2	910	1716	-	760	1437	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 20	11	409	~ 16	11	342	524	-	-	426	-	-
Stage 1	144	202	-	98	149	-	-	-	-	-	-	-
Stage 2	296	143	-	364	197	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 13	8	409	~ 9	8	342	524	-	-	426	-	-
Mov Cap-2 Maneuver	~ 13	8	-	~ 9	8	-	-	-	-	-	-	-
Stage 1	121	172	-	82	125	-	-	-	-	-	-	-
Stage 2	209	120	-	236	167	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 733	$ 2664	0.7	0.7
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	524	-	-	55	18	426	-	-
HCM Lane V/C Ratio	0.163	-	-	2.25	5.978	0.15	-	-
HCM Control Delay (s)	13.2	-	-	$ 733	$ 2664	14.9	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0.6	-	-	12.4	14.1	0.5	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	63	101	41	52	81	84	58	1186	56	71	1134	58
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	70	112	46	63	98	101	64	1303	62	79	1260	64
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.83	0.83	0.83	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	218	185	133	210	178	134	1652	739	149	1683	753
Arrive On Green	0.08	0.12	0.12	0.07	0.11	0.11	0.08	0.47	0.47	0.08	0.48	0.48
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	70	112	46	63	98	101	64	1303	62	79	1260	64
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.3	3.5	1.6	2.1	3.1	3.8	2.1	19.3	1.3	2.7	18.0	1.4
Cycle Q Clear(g_c), s	2.3	3.5	1.6	2.1	3.1	3.8	2.1	19.3	1.3	2.7	18.0	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	140	218	185	133	210	178	134	1652	739	149	1683	753
V/C Ratio(X)	0.50	0.51	0.25	0.48	0.47	0.57	0.48	0.79	0.08	0.53	0.75	0.09
Avail Cap(c_a), veh/h	200	480	408	200	480	408	200	1652	739	200	1683	753
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	25.8	24.9	27.6	25.8	26.1	27.5	14.0	9.2	27.3	13.3	8.9
Incr Delay (d2), s/veh	2.7	1.9	0.7	2.6	1.6	2.8	2.6	3.9	0.2	2.9	3.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.9	0.7	1.1	1.7	1.8	1.1	10.1	0.6	1.4	9.5	0.6
LnGrp Delay(d),s/veh	30.2	27.6	25.6	30.2	27.4	28.9	30.2	17.9	9.4	30.2	16.4	9.1
LnGrp LOS	C	C	C	C	C	C	C	B	A	C	B	A
Approach Vol, veh/h		228			262			1429			1403	
Approach Delay, s/veh		28.0			28.7			18.1			16.8	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	33.0	8.6	11.3	8.7	33.5	8.9	11.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	29.0	7.0	16.0	7.0	29.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.7	21.3	4.1	5.5	4.1	20.0	4.3	5.8
Green Ext Time (p_c), s	0.0	7.0	0.0	1.1	0.0	8.1	0.0	1.1

Intersection Summary		
HCM 2010 Ctrl Delay		19.1
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	78	91	28	39	65	63	26	1165	27	29	1120	57
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	90	105	32	45	75	72	31	1387	32	34	1302	66
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.84	0.84	0.84	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	94	77	453	89	109	453	85	1582	36	91	1596	714
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.05	0.45	0.45	0.05	0.45	0.45
Sat Flow, veh/h	0	270	1583	0	379	1583	1774	3536	82	1774	3539	1583
Grp Volume(v), veh/h	195	0	32	120	0	72	31	693	726	34	1302	66
Grp Sat Flow(s),veh/h/ln	270	0	1583	379	0	1583	1774	1770	1848	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.8	0.0	0.0	1.9	0.9	19.9	19.9	1.0	17.9	1.3
Cycle Q Clear(g_c), s	16.0	0.0	0.8	16.0	0.0	1.9	0.9	19.9	19.9	1.0	17.9	1.3
Prop In Lane	0.46		1.00	0.37		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	171	0	453	197	0	453	85	792	827	91	1596	714
V/C Ratio(X)	1.14	0.00	0.07	0.61	0.00	0.16	0.37	0.88	0.88	0.37	0.82	0.09
Avail Cap(c_a), veh/h	171	0	453	197	0	453	222	792	827	222	1596	714
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	0.0	14.5	16.7	0.0	14.9	25.8	14.0	14.0	25.6	13.3	8.8
Incr Delay (d2), s/veh	110.5	0.0	0.1	5.3	0.0	0.2	2.6	13.0	12.7	2.5	4.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	0.0	0.4	1.7	0.0	0.8	0.5	12.5	13.0	0.6	9.5	0.6
LnGrp Delay(d),s/veh	131.8	0.0	14.6	22.0	0.0	15.1	28.4	27.0	26.7	28.1	18.0	9.0
LnGrp LOS	F		B	C		B	C	C	C	C	B	A
Approach Vol, veh/h		227			192			1450			1402	
Approach Delay, s/veh		115.3			19.4			26.9			17.9	
Approach LOS		F			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.9	29.0		20.0	6.7	29.2		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	25.0		16.0	7.0	25.0		16.0
Max Q Clear Time (g_c+I1), s	3.0	21.9		18.0	2.9	19.9		18.0
Green Ext Time (p_c), s	0.0	2.9		0.0	0.0	4.8		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			28.7
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	271	115	49	325	26	97	278	47	22	239	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	23	347	147	58	387	31	100	287	48	24	257	24
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.78	0.78	0.78	0.84	0.84	0.84	0.97	0.97	0.97	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	468	398	131	535	455	173	1084	179	69	975	90
Arrive On Green	0.04	0.25	0.25	0.07	0.29	0.29	0.10	0.36	0.36	0.04	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3041	503	1774	3275	303
Grp Volume(v), veh/h	23	347	147	58	387	31	100	166	169	24	138	143
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1774	1774	1770	1809
Q Serve(g_s), s	0.7	9.8	4.4	1.8	10.7	0.8	3.1	3.8	3.9	0.8	3.4	3.4
Cycle Q Clear(g_c), s	0.7	9.8	4.4	1.8	10.7	0.8	3.1	3.8	3.9	0.8	3.4	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.28	1.00		0.17
Lane Grp Cap(c), veh/h	66	468	398	131	535	455	173	630	632	69	527	538
V/C Ratio(X)	0.35	0.74	0.37	0.44	0.72	0.07	0.58	0.26	0.27	0.35	0.26	0.27
Avail Cap(c_a), veh/h	217	587	499	217	587	499	217	630	632	217	527	538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	19.7	17.7	25.3	18.3	14.8	24.7	13.1	13.1	26.7	15.3	15.3
Incr Delay (d2), s/veh	3.1	3.8	0.6	2.3	4.0	0.1	3.0	1.0	1.0	3.0	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	5.5	2.0	1.0	6.1	0.4	1.6	2.0	2.1	0.4	1.8	1.9
LnGrp Delay(d),s/veh	29.9	23.5	18.2	27.7	22.3	14.9	27.7	14.1	14.1	29.7	16.5	16.5
LnGrp LOS	C	C	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		517			476			435			305	
Approach Delay, s/veh		22.3			22.5			17.2			17.5	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	24.4	8.2	18.3	9.6	21.0	6.1	20.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	18.0	7.0	17.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	2.8	5.9	3.8	11.8	5.1	5.4	2.7	12.7
Green Ext Time (p_c), s	0.0	2.7	0.0	2.5	0.0	2.7	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	20.2
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	93	158	65	83	200	198	87	1048	81	163	948	106
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	118	200	82	146	351	347	96	1152	89	187	1090	122
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.79	0.79	0.79	0.57	0.57	0.57	0.91	0.91	0.91	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	149	366	311	178	397	338	137	1333	596	223	1503	672
Arrive On Green	0.08	0.20	0.20	0.10	0.21	0.21	0.08	0.38	0.38	0.13	0.42	0.42
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	118	200	82	146	351	347	96	1152	89	187	1090	122
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.2	7.7	3.5	6.4	14.6	17.0	4.2	24.0	3.0	8.2	20.4	3.8
Cycle Q Clear(g_c), s	5.2	7.7	3.5	6.4	14.6	17.0	4.2	24.0	3.0	8.2	20.4	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	149	366	311	178	397	338	137	1333	596	223	1503	672
V/C Ratio(X)	0.79	0.55	0.26	0.82	0.88	1.03	0.70	0.86	0.15	0.84	0.73	0.18
Avail Cap(c_a), veh/h	156	374	318	178	397	338	156	1333	596	223	1503	672
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	28.8	27.1	35.1	30.4	31.3	35.9	23.0	16.4	34.1	19.1	14.3
Incr Delay (d2), s/veh	23.2	1.6	0.4	25.1	20.2	56.1	11.2	7.7	0.5	23.8	3.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	4.1	1.6	4.4	9.7	12.6	2.5	13.1	1.4	5.5	10.5	1.8
LnGrp Delay(d),s/veh	59.0	30.4	27.6	60.3	50.6	87.4	47.1	30.6	16.9	57.9	22.1	14.9
LnGrp LOS	E	C	C	E	D	F	D	C	B	E	C	B
Approach Vol, veh/h		400			844			1337			1399	
Approach Delay, s/veh		38.2			67.4			30.9			26.3	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	34.0	12.0	19.7	10.2	37.8	10.7	21.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	30.0	8.0	16.0	7.0	33.0	7.0	17.0
Max Q Clear Time (g_c+I1), s	10.2	26.0	8.4	9.7	6.2	22.4	7.2	19.0
Green Ext Time (p_c), s	0.0	3.7	0.0	2.5	0.0	9.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	37.7
HCM 2010 LOS	D

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	221	64	10	245	31	34	206	15	28	223	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	62	395	114	15	360	46	40	245	18	32	256	22
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.56	0.56	0.56	0.68	0.68	0.68	0.84	0.84	0.84	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	594	505	46	497	422	104	1028	75	88	984	84
Arrive On Green	0.08	0.32	0.32	0.03	0.27	0.27	0.06	0.31	0.31	0.05	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3345	244	1774	3301	282
Grp Volume(v), veh/h	62	395	114	15	360	46	40	129	134	32	136	142
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1820	1774	1770	1813
Q Serve(g_s), s	1.8	9.8	2.8	0.4	9.4	1.2	1.2	2.9	3.0	0.9	3.1	3.2
Cycle Q Clear(g_c), s	1.8	9.8	2.8	0.4	9.4	1.2	1.2	2.9	3.0	0.9	3.1	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		0.16
Lane Grp Cap(c), veh/h	140	594	505	46	497	422	104	544	559	88	527	540
V/C Ratio(X)	0.44	0.66	0.23	0.32	0.72	0.11	0.38	0.24	0.24	0.36	0.26	0.26
Avail Cap(c_a), veh/h	231	659	560	231	659	560	231	544	559	231	527	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	15.8	13.4	25.7	17.9	14.9	24.3	13.9	13.9	24.7	14.3	14.3
Incr Delay (d2), s/veh	2.2	2.2	0.2	4.0	2.7	0.1	2.3	1.0	1.0	2.5	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.4	1.3	0.3	5.2	0.5	0.6	1.6	1.6	0.5	1.7	1.8
LnGrp Delay(d),s/veh	25.8	18.0	13.6	29.6	20.6	15.0	26.7	14.9	14.9	27.2	15.5	15.5
LnGrp LOS	C	B	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		571			421			303			310	
Approach Delay, s/veh		18.0			20.3			16.5			16.7	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	20.5	5.4	21.1	7.1	20.0	8.2	18.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	2.9	5.0	2.4	11.8	3.2	5.2	3.8	11.4
Green Ext Time (p_c), s	0.0	2.2	0.0	2.8	0.0	2.2	0.0	2.9

Intersection Summary			
HCM 2010 Ctrl Delay			18.1
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	25	41	30	26	34	66	33	1104	39	67	1068	31
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	29	48	35	34	44	86	34	1150	41	75	1200	35
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.77	0.77	0.77	0.96	0.96	0.96	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	81	126	92	92	74	145	92	1539	55	155	1688	755
Arrive On Green	0.05	0.13	0.13	0.05	0.13	0.13	0.05	0.44	0.44	0.09	0.48	0.48
Sat Flow, veh/h	1774	1003	731	1774	565	1103	1774	3486	124	1774	3539	1583
Grp Volume(v), veh/h	29	0	83	34	0	130	34	584	607	75	1200	35
Grp Sat Flow(s),veh/h/ln	1774	0	1734	1774	0	1668	1774	1770	1841	1774	1770	1583
Q Serve(g_s), s	0.9	0.0	2.4	1.0	0.0	4.0	1.0	14.9	15.0	2.2	14.6	0.6
Cycle Q Clear(g_c), s	0.9	0.0	2.4	1.0	0.0	4.0	1.0	14.9	15.0	2.2	14.6	0.6
Prop In Lane	1.00		0.42	1.00		0.66	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	81	0	217	92	0	219	92	781	812	155	1688	755
V/C Ratio(X)	0.36	0.00	0.38	0.37	0.00	0.59	0.37	0.75	0.75	0.48	0.71	0.05
Avail Cap(c_a), veh/h	228	0	510	228	0	491	228	781	812	228	1688	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.2	0.0	21.8	24.9	0.0	22.2	24.9	12.7	12.7	23.6	11.3	7.6
Incr Delay (d2), s/veh	2.7	0.0	1.1	2.5	0.0	2.5	2.5	6.4	6.2	2.3	2.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.2	0.6	0.0	2.0	0.6	8.5	8.8	1.2	7.6	0.3
LnGrp Delay(d),s/veh	27.8	0.0	22.9	27.4	0.0	24.8	27.4	19.1	18.9	26.0	13.8	7.7
LnGrp LOS	C		C	C		C	C	B	B	C	B	A
Approach Vol, veh/h		112			164			1225			1310	
Approach Delay, s/veh		24.2			25.3			19.2			14.4	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	28.0	6.8	10.8	6.8	29.9	6.5	11.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.2	17.0	3.0	4.4	3.0	16.6	2.9	6.0
Green Ext Time (p_c), s	0.0	6.2	0.0	0.8	0.0	6.5	0.0	0.8

Intersection Summary		
HCM 2010 Ctrl Delay		17.5
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	375	519	232	239	489	179	308	739	140	211	693	183
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	417	577	258	278	569	208	338	812	154	229	753	199
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.86	0.86	0.86	0.91	0.91	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	435	765	342	360	720	257	375	1153	516	268	939	420
Arrive On Green	0.13	0.22	0.22	0.10	0.19	0.19	0.21	0.33	0.33	0.15	0.27	0.27
Sat Flow, veh/h	3442	3539	1583	3442	3701	1319	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	417	577	258	278	520	257	338	812	154	229	753	199
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1630	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.5	12.1	12.1	6.2	11.5	11.9	14.7	15.9	5.7	10.0	15.7	8.4
Cycle Q Clear(g_c), s	9.5	12.1	12.1	6.2	11.5	11.9	14.7	15.9	5.7	10.0	15.7	8.4
Prop In Lane	1.00		1.00	1.00		0.81	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	435	765	342	360	660	317	375	1153	516	268	939	420
V/C Ratio(X)	0.96	0.75	0.75	0.77	0.79	0.81	0.90	0.70	0.30	0.85	0.80	0.47
Avail Cap(c_a), veh/h	435	765	342	392	686	330	381	1153	516	292	939	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	29.0	29.0	34.5	30.3	30.5	30.4	23.3	19.9	32.7	27.1	24.4
Incr Delay (d2), s/veh	32.6	4.3	9.1	8.5	5.9	13.7	23.6	3.6	1.5	20.1	7.2	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	6.3	6.1	3.4	6.0	6.6	9.6	8.4	2.7	6.4	8.6	4.1
LnGrp Delay(d),s/veh	66.9	33.3	38.1	43.0	36.2	44.1	54.0	27.0	21.4	52.8	34.3	28.2
LnGrp LOS	E	C	D	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		1252			1055			1304			1181	
Approach Delay, s/veh		45.5			39.9			33.3			36.8	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	29.8	12.3	21.1	20.7	25.0	14.0	19.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	25.0	9.0	17.0	17.0	21.0	10.0	16.0
Max Q Clear Time (g_c+I1), s	12.0	17.9	8.2	14.1	16.7	17.7	11.5	13.9
Green Ext Time (p_c), s	0.1	5.4	0.1	2.2	0.0	2.7	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	38.8
HCM 2010 LOS	D

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	39	92	62	112	158	199	63	1394	66	78	1134	32
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	57	133	90	127	180	226	72	1602	76	89	1289	36
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.69	0.69	0.69	0.88	0.88	0.88	0.87	0.87	0.87	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	276	235	145	315	268	119	1813	811	127	1830	819
Arrive On Green	0.06	0.15	0.15	0.08	0.17	0.17	0.07	0.51	0.51	0.07	0.52	0.52
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	57	133	90	127	180	226	72	1602	76	89	1289	36
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.7	5.6	4.4	6.1	7.6	11.9	3.4	34.6	2.1	4.2	23.8	1.0
Cycle Q Clear(g_c), s	2.7	5.6	4.4	6.1	7.6	11.9	3.4	34.6	2.1	4.2	23.8	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	107	276	235	145	315	268	119	1813	811	127	1830	819
V/C Ratio(X)	0.53	0.48	0.38	0.88	0.57	0.84	0.61	0.88	0.09	0.70	0.70	0.04
Avail Cap(c_a), veh/h	145	347	295	145	347	295	145	1813	811	145	1830	819
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	33.6	33.0	39.0	32.8	34.6	39.0	18.7	10.7	39.0	15.8	10.2
Incr Delay (d2), s/veh	4.0	1.3	1.0	41.4	1.8	18.2	4.9	6.7	0.2	12.0	2.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.0	2.0	4.6	4.1	6.5	1.8	18.4	1.0	2.5	12.0	0.4
LnGrp Delay(d),s/veh	43.2	34.9	34.1	80.5	34.7	52.8	43.9	25.4	11.0	51.0	18.1	10.3
LnGrp LOS	D	C	C	F	C	D	D	C	B	D	B	B
Approach Vol, veh/h		280			533			1750			1414	
Approach Delay, s/veh		36.3			53.3			25.5			19.9	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	48.0	11.0	16.7	9.7	48.4	9.2	18.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	44.0	7.0	16.0	7.0	44.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.2	36.6	8.1	7.6	5.4	25.8	4.7	13.9
Green Ext Time (p_c), s	0.0	7.0	0.0	1.8	0.0	16.3	0.0	0.6

Intersection Summary		
HCM 2010 Ctrl Delay		28.0
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	74	77	50	67	102	62	47	1402	27	35	1201	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	85	89	57	89	136	83	55	1630	31	42	1430	94
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.75	0.75	0.75	0.86	0.86	0.86	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	58	375	74	68	375	118	1878	36	100	1835	821
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.07	0.53	0.53	0.06	0.52	0.52
Sat Flow, veh/h	0	243	1583	0	289	1583	1774	3553	67	1774	3539	1583
Grp Volume(v), veh/h	174	0	57	225	0	83	55	811	850	42	1430	94
Grp Sat Flow(s),veh/h/ln	243	0	1583	289	0	1583	1774	1770	1851	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	1.9	0.0	0.0	2.8	2.0	26.9	27.0	1.5	22.0	2.1
Cycle Q Clear(g_c), s	16.0	0.0	1.9	16.0	0.0	2.8	2.0	26.9	27.0	1.5	22.0	2.1
Prop In Lane	0.49		1.00	0.40		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	137	0	375	143	0	375	118	936	979	100	1835	821
V/C Ratio(X)	1.27	0.00	0.15	1.58	0.00	0.22	0.46	0.87	0.87	0.42	0.78	0.11
Avail Cap(c_a), veh/h	137	0	375	143	0	375	184	936	979	184	1835	821
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	0.0	20.4	26.7	0.0	20.7	30.3	13.8	13.9	30.8	13.1	8.3
Incr Delay (d2), s/veh	167.0	0.0	0.2	289.8	0.0	0.3	2.8	10.6	10.4	2.8	3.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	0.0	0.9	14.1	0.0	1.3	1.1	15.8	16.5	0.8	11.6	1.0
LnGrp Delay(d),s/veh	194.5	0.0	20.6	316.5	0.0	21.0	33.2	24.4	24.3	33.5	16.5	8.6
LnGrp LOS	F		C	F		C	C	C	C	C	B	A
Approach Vol, veh/h		231			308			1716			1566	
Approach Delay, s/veh		151.6			236.9			24.6			16.5	
Approach LOS		F			F			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.8	39.7		20.0	8.5	39.0		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	35.0		16.0	7.0	35.0		16.0
Max Q Clear Time (g_c+I1), s	3.5	29.0		18.0	4.0	24.0		18.0
Green Ext Time (p_c), s	0.0	5.7		0.0	0.0	10.3		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		46.1
HCM 2010 LOS		D

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	333	138	49	412	92	103	330	32	59	408	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	59	392	162	64	542	121	130	418	41	68	469	60
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.76	0.76	0.76	0.79	0.79	0.79	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	567	482	134	574	488	180	920	90	139	819	104
Arrive On Green	0.07	0.30	0.30	0.08	0.31	0.31	0.10	0.28	0.28	0.08	0.26	0.26
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3258	318	1774	3159	402
Grp Volume(v), veh/h	59	392	162	64	542	121	130	226	233	68	262	267
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1807	1774	1770	1792
Q Serve(g_s), s	2.0	11.4	4.9	2.1	17.5	3.5	4.4	6.5	6.6	2.3	7.9	8.0
Cycle Q Clear(g_c), s	2.0	11.4	4.9	2.1	17.5	3.5	4.4	6.5	6.6	2.3	7.9	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		0.22
Lane Grp Cap(c), veh/h	128	567	482	134	574	488	180	500	510	139	459	465
V/C Ratio(X)	0.46	0.69	0.34	0.48	0.94	0.25	0.72	0.45	0.46	0.49	0.57	0.58
Avail Cap(c_a), veh/h	201	574	488	201	574	488	201	500	510	201	459	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	18.9	16.6	27.3	20.8	16.0	26.9	18.2	18.2	27.3	19.9	19.9
Incr Delay (d2), s/veh	2.6	3.5	0.4	2.6	24.6	0.3	10.8	2.9	2.9	2.7	5.1	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	6.4	2.2	1.1	12.8	1.6	2.7	3.5	3.6	1.2	4.5	4.6
LnGrp Delay(d),s/veh	30.0	22.4	17.0	30.0	45.5	16.3	37.6	21.2	21.2	29.9	24.9	25.0
LnGrp LOS	C	C	B	C	D	B	D	C	C	C	C	C
Approach Vol, veh/h		613			727			589			597	
Approach Delay, s/veh		21.7			39.3			24.8			25.5	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	21.4	8.7	22.8	10.2	20.0	8.5	23.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	4.3	8.6	4.1	13.4	6.4	10.0	4.0	19.5
Green Ext Time (p_c), s	0.0	3.4	0.0	3.0	0.0	2.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	28.4
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	103	195	75	104	248	209	79	1175	74	175	1084	98
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	129	244	94	141	335	282	96	1433	90	208	1290	117
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.80	0.80	0.80	0.74	0.74	0.74	0.82	0.82	0.82	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	331	281	158	352	299	125	1534	686	217	1716	768
Arrive On Green	0.08	0.18	0.18	0.09	0.19	0.19	0.07	0.43	0.43	0.12	0.48	0.48
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	129	244	94	141	335	282	96	1433	90	208	1290	117
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	6.5	11.2	4.7	7.1	16.0	15.8	4.8	34.7	3.1	10.5	26.6	3.7
Cycle Q Clear(g_c), s	6.5	11.2	4.7	7.1	16.0	15.8	4.8	34.7	3.1	10.5	26.6	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	138	331	281	158	352	299	125	1534	686	217	1716	768
V/C Ratio(X)	0.93	0.74	0.33	0.89	0.95	0.94	0.77	0.93	0.13	0.96	0.75	0.15
Avail Cap(c_a), veh/h	138	331	281	158	352	299	138	1534	686	217	1716	768
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.3	35.0	32.3	40.6	36.1	36.0	41.1	24.3	15.3	39.3	18.8	12.9
Incr Delay (d2), s/veh	57.1	8.3	0.7	42.5	35.5	37.1	20.5	11.9	0.4	49.5	3.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	6.5	2.1	5.3	11.7	10.0	3.1	19.5	1.4	8.1	13.6	1.7
LnGrp Delay(d),s/veh	98.3	43.4	33.0	83.1	71.6	73.1	61.6	36.2	15.7	88.8	21.9	13.3
LnGrp LOS	F	D	C	F	E	E	E	D	B	F	C	B
Approach Vol, veh/h		467			758			1619			1615	
Approach Delay, s/veh		56.5			74.3			36.6			29.9	
Approach LOS		E			E			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	43.0	12.0	20.0	10.4	47.6	11.0	21.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	11.0	39.0	8.0	16.0	7.0	43.0	7.0	17.0				
Max Q Clear Time (g_c+I1), s	12.5	36.7	9.1	13.2	6.8	28.6	8.5	18.0				
Green Ext Time (p_c), s	0.0	2.2	0.0	1.3	0.0	12.9	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			42.6									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	105	263	79	47	365	142	109	347	30	34	281	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	148	370	111	69	537	209	127	403	35	47	385	62
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.71	0.71	0.71	0.68	0.68	0.68	0.86	0.86	0.86	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	647	550	133	595	505	166	931	81	107	763	122
Arrive On Green	0.10	0.35	0.35	0.07	0.32	0.32	0.09	0.28	0.28	0.06	0.25	0.25
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3297	285	1774	3058	489
Grp Volume(v), veh/h	148	370	111	69	537	209	127	215	223	47	222	225
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1812	1774	1770	1777
Q Serve(g_s), s	5.6	11.0	3.4	2.5	18.8	7.1	4.8	6.8	6.8	1.7	7.3	7.4
Cycle Q Clear(g_c), s	5.6	11.0	3.4	2.5	18.8	7.1	4.8	6.8	6.8	1.7	7.3	7.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.27
Lane Grp Cap(c), veh/h	182	647	550	133	595	505	166	500	512	107	442	443
V/C Ratio(X)	0.81	0.57	0.20	0.52	0.90	0.41	0.77	0.43	0.43	0.44	0.50	0.51
Avail Cap(c_a), veh/h	182	647	550	182	629	535	182	500	512	182	442	443
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.9	18.1	15.6	30.3	22.2	18.2	30.1	20.0	20.0	30.9	21.9	22.0
Incr Delay (d2), s/veh	23.5	1.2	0.2	3.1	15.9	0.5	16.1	2.7	2.7	2.8	4.0	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	5.9	1.5	1.4	12.2	3.1	3.1	3.7	3.8	0.9	4.1	4.1
LnGrp Delay(d),s/veh	53.4	19.3	15.8	33.4	38.1	18.7	46.3	22.7	22.7	33.7	26.0	26.1
LnGrp LOS	D	B	B	C	D	B	D	C	C	C	C	C
Approach Vol, veh/h		629			815			565			494	
Approach Delay, s/veh		26.7			32.7			28.0			26.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	23.2	9.1	27.6	10.4	21.0	11.0	25.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	23.0	7.0	17.0	7.0	23.0
Max Q Clear Time (g_c+I1), s	3.7	8.8	4.5	13.0	6.8	9.4	7.6	20.8
Green Ext Time (p_c), s	0.0	3.1	0.0	4.5	0.0	3.0	0.0	1.0

Intersection Summary			
HCM 2010 Ctrl Delay			29.0
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	52	88	44	63	104	61	1193	60	98	1068	83
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	122	70	119	52	74	122	66	1283	65	121	1319	102
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.74	0.74	0.74	0.85	0.85	0.85	0.93	0.93	0.93	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	164	115	196	114	100	165	130	1453	74	163	1567	701
Arrive On Green	0.09	0.19	0.19	0.06	0.16	0.16	0.07	0.42	0.42	0.09	0.44	0.44
Sat Flow, veh/h	1774	621	1056	1774	634	1045	1774	3428	173	1774	3539	1583
Grp Volume(v), veh/h	122	0	189	52	0	196	66	661	687	121	1319	102
Grp Sat Flow(s),veh/h/ln	1774	0	1676	1774	0	1678	1774	1770	1832	1774	1770	1583
Q Serve(g_s), s	4.6	0.0	7.1	1.9	0.0	7.6	2.5	23.5	23.6	4.5	22.6	2.6
Cycle Q Clear(g_c), s	4.6	0.0	7.1	1.9	0.0	7.6	2.5	23.5	23.6	4.5	22.6	2.6
Prop In Lane	1.00		0.63	1.00		0.62	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	164	0	312	114	0	265	130	750	777	163	1567	701
V/C Ratio(X)	0.75	0.00	0.61	0.46	0.00	0.74	0.51	0.88	0.88	0.74	0.84	0.15
Avail Cap(c_a), veh/h	182	0	392	182	0	393	182	750	777	182	1567	701
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	25.5	30.9	0.0	27.5	30.5	18.1	18.2	30.3	16.9	11.4
Incr Delay (d2), s/veh	14.0	0.0	1.9	2.8	0.0	4.0	3.1	14.1	13.9	13.5	5.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	3.4	1.0	0.0	3.8	1.3	14.3	14.8	2.8	12.2	1.2
LnGrp Delay(d),s/veh	44.2	0.0	27.4	33.7	0.0	31.5	33.6	32.3	32.1	43.7	22.6	11.8
LnGrp LOS	D		C	C		C	C	C	C	D	C	B
Approach Vol, veh/h		311			248			1414			1542	
Approach Delay, s/veh		34.0			32.0			32.2			23.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	33.0	8.4	16.7	9.0	34.3	10.3	14.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	29.0	7.0	16.0	7.0	29.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.5	25.6	3.9	9.1	4.5	24.6	6.6	9.6
Green Ext Time (p_c), s	0.0	3.2	0.0	1.3	0.0	4.1	0.0	1.2

Intersection Summary		
HCM 2010 Ctrl Delay		28.6
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	206	458	100	205	891	245	267	917	211	239	684	239
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	251	559	122	241	1048	288	284	976	224	285	814	285
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.94	0.94	0.94	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	301	861	385	325	993	273	322	1018	455	310	995	445
Arrive On Green	0.09	0.24	0.24	0.09	0.25	0.25	0.18	0.29	0.29	0.17	0.28	0.28
Sat Flow, veh/h	3442	3539	1583	3442	3970	1090	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	251	559	122	241	895	441	284	976	224	285	814	285
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1670	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.7	11.4	5.1	5.5	20.0	20.0	12.5	21.7	9.4	12.6	17.2	12.6
Cycle Q Clear(g_c), s	5.7	11.4	5.1	5.5	20.0	20.0	12.5	21.7	9.4	12.6	17.2	12.6
Prop In Lane	1.00		1.00	1.00		0.65	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	301	861	385	325	848	418	322	1018	455	310	995	445
V/C Ratio(X)	0.83	0.65	0.32	0.74	1.06	1.06	0.88	0.96	0.49	0.92	0.82	0.64
Avail Cap(c_a), veh/h	301	861	385	387	848	418	333	1018	455	310	995	445
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.9	27.2	24.8	35.3	30.0	30.0	31.9	28.0	23.7	32.4	26.8	25.2
Incr Delay (d2), s/veh	17.9	1.7	0.5	6.2	46.7	59.7	22.7	19.9	3.8	30.8	7.5	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	5.7	2.2	2.9	14.8	16.1	8.1	13.4	4.6	8.8	9.4	6.4
LnGrp Delay(d),s/veh	53.8	28.9	25.3	41.5	76.7	89.7	54.6	48.0	27.4	63.3	34.3	32.1
LnGrp LOS	D	C	C	D	F	F	D	D	C	E	C	C
Approach Vol, veh/h		932			1577			1484			1384	
Approach Delay, s/veh		35.1			75.0			46.1			39.8	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	27.0	11.5	23.5	18.5	26.5	11.0	24.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	23.0	9.0	18.0	15.0	22.0	7.0	20.0
Max Q Clear Time (g_c+I1), s	14.6	23.7	7.5	13.4	14.5	19.2	7.7	22.0
Green Ext Time (p_c), s	0.0	0.0	0.1	3.8	0.0	2.5	0.0	0.0

Intersection Summary			
HCM 2010 Ctrl Delay			51.1
HCM 2010 LOS			D

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	13	2	41	2	1	18	38	1489	4	14	1277	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	68	68	68	87	87	87	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	3	61	3	1	26	48	1883	5	16	1451	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2532	3478	737	2740	3487	944	1474	0	0	1888	0	0
Stage 1	1494	1494	-	1981	1981	-	-	-	-	-	-	-
Stage 2	1038	1984	-	759	1506	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 14	6	361	9	6	263	453	-	-	313	-	-
Stage 1	129	185	-	63	106	-	-	-	-	-	-	-
Stage 2	247	105	-	365	182	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 11	5	361	6	5	263	453	-	-	313	-	-
Mov Cap-2 Maneuver	69	51	-	43	52	-	-	-	-	-	-	-
Stage 1	115	176	-	56	95	-	-	-	-	-	-	-
Stage 2	196	94	-	283	173	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	47.8	33.5	0.3	0.2
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	453	-	-	164	157	313	-	-
HCM Lane V/C Ratio	0.106	-	-	0.51	0.197	0.051	-	-
HCM Control Delay (s)	13.9	-	-	47.8	33.5	17.1	-	-
HCM Lane LOS	B	-	-	E	D	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-	2.5	0.7	0.2	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s   +: Computation Not Defined   *: All major volume in platoon

Intersection	
Int Delay, s/veh	8.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	350	13	36	476	19	30	11	42	34	12	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	70	70	70	67	67	67	64	64	64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	455	17	51	680	27	45	16	63	53	19	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	680	0	0	455	0	0	1285	1264	455	1303	1264	680
Stage 1	-	-	-	-	-	-	481	481	-	783	783	-
Stage 2	-	-	-	-	-	-	804	783	-	520	481	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	912	-	-	1106	-	-	142	169	605	138	169	451
Stage 1	-	-	-	-	-	-	566	554	-	387	404	-
Stage 2	-	-	-	-	-	-	377	404	-	539	554	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	912	-	-	1106	-	-	117	159	605	109	159	451
Mov Cap-2 Maneuver	-	-	-	-	-	-	117	159	-	109	159	-
Stage 1	-	-	-	-	-	-	558	546	-	381	385	-
Stage 2	-	-	-	-	-	-	324	385	-	462	546	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	44.2	68
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	210	912	-	-	1106	-	-	145
HCM Lane V/C Ratio	0.59	0.014	-	-	0.046	-	-	0.657
HCM Control Delay (s)	44.2	9	-	-	8.4	-	-	68
HCM Lane LOS	E	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	3.3	0	-	-	0.1	-	-	3.6

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	366	528	10	0	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	78	78	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	488	677	13	0	54

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	690	0	-	0	1171	683
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	488	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	905	-	-	-	213	449
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	617	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	905	-	-	-	213	449
Mov Cap-2 Maneuver	-	-	-	-	213	-
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	617	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	905	-	-	-	449
HCM Lane V/C Ratio	-	-	-	-	0.121
HCM Control Delay (s)	0	-	-	-	14.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	11	0	0	43	14	1432	87	0	1334	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	62	62	62	92	92	92	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	18	0	0	47	16	1685	102	0	1569	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2446	3391	786	2554	3342	894	1573	0	0	1787	0	0
Stage 1	1571	1571	-	1769	1769	-	-	-	-	-	-	-
Stage 2	875	1820	-	785	1573	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	16	7	335	13	8	284	415	-	-	343	-	-
Stage 1	115	169	-	86	135	-	-	-	-	-	-	-
Stage 2	310	127	-	352	169	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	13	7	335	12	8	284	415	-	-	343	-	-
Mov Cap-2 Maneuver	13	7	-	12	8	-	-	-	-	-	-	-
Stage 1	111	169	-	83	130	-	-	-	-	-	-	-
Stage 2	249	122	-	333	169	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.3	20.2	0.1	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	415	-	-	335	284	343	-	-
HCM Lane V/C Ratio	0.04	-	-	0.053	0.165	-	-	-
HCM Control Delay (s)	14	-	-	16.3	20.2	0	-	-
HCM Lane LOS	B	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.6	0	-	-

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	68	199	76	69	131	95	68	1280	89	121	1630	75
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	80	234	89	99	187	136	71	1333	93	126	1698	78
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.70	0.70	0.70	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	124	293	249	131	302	256	118	1743	780	157	1821	815
Arrive On Green	0.07	0.16	0.16	0.07	0.16	0.16	0.07	0.49	0.49	0.09	0.51	0.51
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	80	234	89	99	187	136	71	1333	93	126	1698	78
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.8	10.3	4.3	4.7	8.0	6.7	3.3	26.2	2.7	6.0	38.3	2.2
Cycle Q Clear(g_c), s	3.8	10.3	4.3	4.7	8.0	6.7	3.3	26.2	2.7	6.0	38.3	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	124	293	249	131	302	256	118	1743	780	157	1821	815
V/C Ratio(X)	0.65	0.80	0.36	0.75	0.62	0.53	0.60	0.76	0.12	0.80	0.93	0.10
Avail Cap(c_a), veh/h	145	349	296	145	349	296	145	1743	780	187	1821	815
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.8	34.7	32.2	38.8	33.4	32.8	38.8	17.7	11.7	38.2	19.4	10.6
Incr Delay (d2), s/veh	7.6	10.5	0.9	18.0	2.6	1.7	4.8	3.3	0.3	18.6	10.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	6.2	1.9	2.9	4.3	3.1	1.8	13.6	1.2	3.7	21.2	1.0
LnGrp Delay(d),s/veh	46.3	45.2	33.0	56.8	36.0	34.5	43.6	20.9	12.0	56.9	29.6	10.8
LnGrp LOS	D	D	C	E	D	C	D	C	B	E	C	B
Approach Vol, veh/h		403			422			1497			1902	
Approach Delay, s/veh		42.7			40.4			21.4			30.6	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	46.1	10.3	17.5	9.7	48.0	10.0	17.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	42.0	7.0	16.0	7.0	44.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	8.0	28.2	6.7	12.3	5.3	40.3	5.8	10.0
Green Ext Time (p_c), s	0.0	12.9	0.0	1.1	0.0	3.6	0.0	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	29.5
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	64	102	28	32	94	64	30	1340	47	79	1586	89
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	72	115	31	36	106	72	31	1396	49	81	1635	92
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.96	0.96	0.96	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	92	400	71	157	400	82	1653	58	149	1810	810
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.05	0.47	0.47	0.08	0.51	0.51
Sat Flow, veh/h	0	364	1583	0	619	1583	1774	3488	122	1774	3539	1583
Grp Volume(v), veh/h	187	0	31	142	0	72	31	707	738	81	1635	92
Grp Sat Flow(s),veh/h/ln	364	0	1583	619	0	1583	1774	1770	1841	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.9	0.0	0.0	2.3	1.1	22.2	22.3	2.8	26.6	1.9
Cycle Q Clear(g_c), s	16.0	0.0	0.9	16.0	0.0	2.3	1.1	22.2	22.3	2.8	26.6	1.9
Prop In Lane	0.39		1.00	0.25		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	171	0	400	228	0	400	82	838	872	149	1810	810
V/C Ratio(X)	1.09	0.00	0.08	0.62	0.00	0.18	0.38	0.84	0.85	0.54	0.90	0.11
Avail Cap(c_a), veh/h	171	0	400	228	0	400	196	838	872	196	1810	810
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.9	0.0	18.0	20.0	0.0	18.5	29.3	14.6	14.6	27.8	14.1	8.0
Incr Delay (d2), s/veh	96.5	0.0	0.1	5.2	0.0	0.2	2.8	10.1	9.9	3.1	7.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	0.0	0.4	2.3	0.0	1.0	0.6	13.0	13.7	1.5	14.7	0.9
LnGrp Delay(d),s/veh	120.4	0.0	18.1	25.2	0.0	18.7	32.1	24.7	24.5	30.9	21.9	8.3
LnGrp LOS	F		B	C		B	C	C	C	C	C	A
Approach Vol, veh/h		218			214			1476			1808	
Approach Delay, s/veh		105.8			23.0			24.8			21.6	
Approach LOS		F			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.3	34.0		20.0	6.9	36.4		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	30.0		16.0	7.0	30.0		16.0
Max Q Clear Time (g_c+I1), s	4.8	24.3		18.0	3.1	28.6		18.0
Green Ext Time (p_c), s	0.0	5.5		0.0	0.0	1.4		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			27.9
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	384	162	45	303	41	88	438	60	31	374	47
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	54	452	191	55	370	50	106	528	72	33	394	49
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.82	0.82	0.82	0.83	0.83	0.83	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	123	544	463	125	546	464	173	996	135	88	856	106
Arrive On Green	0.07	0.29	0.29	0.07	0.29	0.29	0.10	0.32	0.32	0.05	0.27	0.27
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3132	426	1774	3171	392
Grp Volume(v), veh/h	54	452	191	55	370	50	106	298	302	33	219	224
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1788	1774	1770	1794
Q Serve(g_s), s	1.7	13.4	5.8	1.8	10.4	1.4	3.4	8.2	8.2	1.1	6.1	6.2
Cycle Q Clear(g_c), s	1.7	13.4	5.8	1.8	10.4	1.4	3.4	8.2	8.2	1.1	6.1	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.22
Lane Grp Cap(c), veh/h	123	544	463	125	546	464	173	563	568	88	478	484
V/C Ratio(X)	0.44	0.83	0.41	0.44	0.68	0.11	0.61	0.53	0.53	0.38	0.46	0.46
Avail Cap(c_a), veh/h	210	597	508	210	597	508	210	563	568	210	478	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	19.6	16.9	26.4	18.5	15.3	25.7	16.6	16.6	27.3	18.0	18.1
Incr Delay (d2), s/veh	2.4	9.0	0.6	2.4	2.7	0.1	3.6	3.5	3.5	2.6	3.1	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	8.3	2.6	0.9	5.8	0.6	1.8	4.5	4.6	0.6	3.4	3.5
LnGrp Delay(d),s/veh	28.9	28.6	17.5	28.9	21.2	15.4	29.3	20.1	20.1	29.9	21.2	21.2
LnGrp LOS	C	C	B	C	C	B	C	C	C	C	C	C
Approach Vol, veh/h		697			475			706			476	
Approach Delay, s/veh		25.5			21.5			21.5			21.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	22.8	8.2	21.3	9.8	20.0	8.1	21.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	10.2	3.8	15.4	5.4	8.2	3.7	12.4
Green Ext Time (p_c), s	0.0	2.9	0.0	1.9	0.0	3.7	0.0	3.1

Intersection Summary			
HCM 2010 Ctrl Delay			22.8
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	120	232	72	85	173	117	74	1244	59	235	1360	131
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	141	273	85	109	222	150	79	1323	63	250	1447	139
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.78	0.78	0.78	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	161	325	277	137	301	256	120	1484	664	261	1765	790
Arrive On Green	0.09	0.17	0.17	0.08	0.16	0.16	0.07	0.42	0.42	0.15	0.50	0.50
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	141	273	85	109	222	150	79	1323	63	250	1447	139
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	6.9	12.5	4.1	5.3	10.0	7.7	3.8	30.6	2.1	12.3	30.6	4.3
Cycle Q Clear(g_c), s	6.9	12.5	4.1	5.3	10.0	7.7	3.8	30.6	2.1	12.3	30.6	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	161	325	277	137	301	256	120	1484	664	261	1765	790
V/C Ratio(X)	0.88	0.84	0.31	0.79	0.74	0.59	0.66	0.89	0.09	0.96	0.82	0.18
Avail Cap(c_a), veh/h	161	359	305	141	338	287	141	1484	664	261	1765	790
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	35.2	31.8	40.0	35.2	34.3	40.1	23.8	15.5	37.3	18.8	12.2
Incr Delay (d2), s/veh	38.1	14.9	0.6	25.7	7.4	2.5	8.4	8.5	0.3	43.7	4.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	7.8	1.9	3.6	5.7	3.6	2.2	16.6	1.0	9.2	16.0	2.0
LnGrp Delay(d),s/veh	77.7	50.1	32.4	65.7	42.6	36.8	48.6	32.2	15.8	81.0	23.2	12.6
LnGrp LOS	E	D	C	E	D	D	D	C	B	F	C	B
Approach Vol, veh/h		499			481			1465			1836	
Approach Delay, s/veh		54.9			46.0			32.4			30.2	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	41.0	10.8	19.4	10.0	48.0	12.0	18.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	37.0	7.0	17.0	7.0	43.0	8.0	16.0
Max Q Clear Time (g_c+I1), s	14.3	32.6	7.3	14.5	5.8	32.6	8.9	12.0
Green Ext Time (p_c), s	0.0	4.2	0.0	0.9	0.0	9.6	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	35.6
HCM 2010 LOS	D

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	264	57	31	235	43	31	355	19	39	322	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	22	326	70	34	255	47	35	403	22	41	339	21
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.81	0.81	0.81	0.92	0.92	0.92	0.88	0.88	0.88	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	461	392	93	491	417	96	1091	59	108	1105	68
Arrive On Green	0.04	0.25	0.25	0.05	0.26	0.26	0.05	0.32	0.32	0.06	0.33	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3414	186	1774	3387	209
Grp Volume(v), veh/h	22	326	70	34	255	47	35	208	217	41	176	184
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1830	1774	1770	1826
Q Serve(g_s), s	0.6	8.0	1.7	0.9	5.9	1.1	1.0	4.5	4.6	1.1	3.7	3.8
Cycle Q Clear(g_c), s	0.6	8.0	1.7	0.9	5.9	1.1	1.0	4.5	4.6	1.1	3.7	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		0.11
Lane Grp Cap(c), veh/h	65	461	392	93	491	417	96	565	585	108	578	596
V/C Ratio(X)	0.34	0.71	0.18	0.36	0.52	0.11	0.37	0.37	0.37	0.38	0.31	0.31
Avail Cap(c_a), veh/h	248	707	601	248	707	601	248	565	585	248	578	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	17.2	14.8	22.9	15.7	14.0	22.9	13.1	13.2	22.6	12.6	12.6
Incr Delay (d2), s/veh	3.0	2.0	0.2	2.4	0.9	0.1	2.3	1.8	1.8	2.2	1.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.3	0.8	0.5	3.1	0.5	0.5	2.5	2.6	0.6	2.0	2.1
LnGrp Delay(d),s/veh	26.5	19.2	15.0	25.3	16.6	14.1	25.2	15.0	15.0	24.8	14.0	14.0
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		418			336			460			401	
Approach Delay, s/veh		18.9			17.1			15.7			15.1	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	20.0	6.6	16.4	6.7	20.3	5.8	17.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	6.6	2.9	10.0	3.0	5.8	2.6	7.9
Green Ext Time (p_c), s	0.0	3.0	0.0	2.4	0.0	3.2	0.0	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	16.7
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	26	52	44	21	44	47	45	1313	55	76	1414	32
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	30	59	50	25	52	56	48	1397	59	82	1520	34
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.84	0.84	0.84	0.94	0.94	0.94	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	104	88	69	87	94	111	1803	76	147	1917	858
Arrive On Green	0.04	0.11	0.11	0.04	0.11	0.11	0.06	0.52	0.52	0.08	0.54	0.54
Sat Flow, veh/h	1774	933	790	1774	822	885	1774	3461	146	1774	3539	1583
Grp Volume(v), veh/h	30	0	109	25	0	108	48	713	743	82	1520	34
Grp Sat Flow(s),veh/h/ln	1774	0	1723	1774	0	1707	1774	1770	1837	1774	1770	1583
Q Serve(g_s), s	1.1	0.0	3.9	0.9	0.0	3.9	1.7	21.1	21.2	2.9	22.5	0.7
Cycle Q Clear(g_c), s	1.1	0.0	3.9	0.9	0.0	3.9	1.7	21.1	21.2	2.9	22.5	0.7
Prop In Lane	1.00		0.46	1.00		0.52	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	80	0	193	69	0	181	111	922	957	147	1917	858
V/C Ratio(X)	0.38	0.00	0.57	0.36	0.00	0.60	0.43	0.77	0.78	0.56	0.79	0.04
Avail Cap(c_a), veh/h	190	0	422	190	0	418	190	922	957	190	1917	858
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	27.5	30.6	0.0	27.8	29.5	12.5	12.6	28.8	12.0	7.0
Incr Delay (d2), s/veh	2.9	0.0	2.6	3.1	0.0	3.1	2.7	6.3	6.1	3.3	3.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	2.0	0.5	0.0	2.0	0.9	11.7	12.2	1.5	11.7	0.3
LnGrp Delay(d),s/veh	33.2	0.0	30.1	33.7	0.0	31.0	32.2	18.8	18.7	32.0	15.5	7.1
LnGrp LOS	C		C	C		C	C	B	B	C	B	A
Approach Vol, veh/h		139			133			1504			1636	
Approach Delay, s/veh		30.7			31.5			19.2			16.1	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	38.0	6.6	11.3	8.1	39.3	6.9	10.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	34.0	7.0	16.0	7.0	34.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.9	23.2	2.9	5.9	3.7	24.5	3.1	5.9
Green Ext Time (p_c), s	0.0	10.0	0.0	0.8	0.0	8.8	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	18.7
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	508	1029	305	260	658	218	270	792	193	310	955	162
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	540	1095	324	302	765	253	297	870	212	341	1049	178
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.86	0.86	0.86	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	593	1062	475	313	829	271	290	933	417	355	1062	475
Arrive On Green	0.17	0.30	0.30	0.09	0.22	0.22	0.16	0.26	0.26	0.20	0.30	0.30
Sat Flow, veh/h	3442	3539	1583	3442	3792	1242	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	540	1095	324	302	683	335	297	870	212	341	1049	178
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1644	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	16.9	33.0	19.8	9.6	21.7	22.0	18.0	26.4	12.5	20.9	32.4	9.8
Cycle Q Clear(g_c), s	16.9	33.0	19.8	9.6	21.7	22.0	18.0	26.4	12.5	20.9	32.4	9.8
Prop In Lane	1.00		1.00	1.00		0.76	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	593	1062	475	313	741	359	290	933	417	355	1062	475
V/C Ratio(X)	0.91	1.03	0.68	0.97	0.92	0.93	1.02	0.93	0.51	0.96	0.99	0.37
Avail Cap(c_a), veh/h	594	1062	475	313	741	359	290	933	417	355	1062	475
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.7	38.5	33.9	49.8	42.1	42.2	46.0	39.5	34.4	43.6	38.3	30.4
Incr Delay (d2), s/veh	18.2	36.0	4.0	41.4	17.0	30.7	58.9	17.1	4.4	37.5	24.9	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.5	21.4	9.2	6.4	11.9	13.0	13.5	15.1	6.0	13.9	19.5	4.5
LnGrp Delay(d),s/veh	62.9	74.5	37.9	91.2	59.0	72.8	104.9	56.6	38.8	81.0	63.2	32.6
LnGrp LOS	E	F	D	F	E	E	F	E	D	F	E	C
Approach Vol, veh/h		1959			1320			1379			1568	
Approach Delay, s/veh		65.2			69.9			64.3			63.6	
Approach LOS		E			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	33.0	14.0	37.0	22.0	37.0	23.0	28.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	29.0	10.0	33.0	18.0	33.0	19.0	24.0
Max Q Clear Time (g_c+I1), s	22.9	28.4	11.6	35.0	20.0	34.4	18.9	24.0
Green Ext Time (p_c), s	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	65.6
HCM 2010 LOS	E

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	15	3	40	2	1	12	40	1423	2	47	1696	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	58	58	58	97	97	97	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	4	51	3	2	21	45	1614	2	48	1731	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2736	3545	877	2669	3555	808	1753	0	0	1616	0	0
Stage 1	1838	1838	-	1706	1706	-	-	-	-	-	-	-
Stage 2	898	1707	-	963	1849	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 10	6	292	11	6	324	353	-	-	399	-	-
Stage 1	78	125	-	95	145	-	-	-	-	-	-	-
Stage 2	301	145	-	274	123	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 7	5	292	7	5	324	353	-	-	399	-	-
Mov Cap-2 Maneuver	48	44	-	51	40	-	-	-	-	-	-	-
Stage 1	68	110	-	83	127	-	-	-	-	-	-	-
Stage 2	243	127	-	192	108	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	85.3	34.4	0.5	0.4
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	353	-	-	112	148	399	-	-
HCM Lane V/C Ratio	0.129	-	-	0.664	0.175	0.12	-	-
HCM Control Delay (s)	16.7	-	-	85.3	34.4	15.3	-	-
HCM Lane LOS	C	-	-	F	D	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-	3.4	0.6	0.4	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	383	55	15	257	9	31	6	9	7	2	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	88	88	88	60	60	60	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	391	56	17	292	10	52	10	15	9	3	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	292	0	0	391	0	0	763	754	391	766	754	292
Stage 1	-	-	-	-	-	-	428	428	-	326	326	-
Stage 2	-	-	-	-	-	-	335	326	-	440	428	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1270	-	-	1168	-	-	321	338	658	320	338	747
Stage 1	-	-	-	-	-	-	605	585	-	687	648	-
Stage 2	-	-	-	-	-	-	679	648	-	596	585	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1270	-	-	1168	-	-	306	328	658	299	328	747
Mov Cap-2 Maneuver	-	-	-	-	-	-	306	328	-	299	328	-
Stage 1	-	-	-	-	-	-	596	577	-	677	639	-
Stage 2	-	-	-	-	-	-	653	639	-	564	577	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.4	18.4	13.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	345	1270	-	-	1168	-	-	452
HCM Lane V/C Ratio	0.222	0.014	-	-	0.015	-	-	0.059
HCM Control Delay (s)	18.4	7.9	-	-	8.1	-	-	13.5
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.8	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	469	312	11	0	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	81	81	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	515	385	14	0	65

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	399	0	-	0	907	392
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	515	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1160	-	-	-	306	657
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	600	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1160	-	-	-	306	657
Mov Cap-2 Maneuver	-	-	-	-	306	-
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	600	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1160	-	-	-	657
HCM Lane V/C Ratio	-	-	-	-	0.099
HCM Control Delay (s)	0	-	-	-	11.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	24.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	12	0	74	0	0	50	54	1374	102	0	1633	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	92	92	92	95	95	95	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	0	103	0	0	54	57	1446	107	0	1756	41

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2613	3443	898	2492	3411	777	1797	0	0	1554	0	0
Stage 1	1776	1776	-	1614	1614	-	-	-	-	-	-	-
Stage 2	837	1667	-	878	1797	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 12	7	282	15	7	340	340	-	-	422	-	-
Stage 1	86	134	-	108	161	-	-	-	-	-	-	-
Stage 2	327	152	-	309	131	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 9	6	282	8	6	340	340	-	-	422	-	-
Mov Cap-2 Maneuver	~ 9	6	-	8	6	-	-	-	-	-	-	-
Stage 1	72	134	-	90	134	-	-	-	-	-	-	-
Stage 2	229	127	-	196	131	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 719.5	17.6	0.6	0
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	340	-	-	54	340	422	-	-
HCM Lane V/C Ratio	0.167	-	-	2.212	0.16	-	-	-
HCM Control Delay (s)	17.7	-	-	$ 719.5	17.6	0	-	-
HCM Lane LOS	C	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	11.9	0.6	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑↑	↱	↰	↑↑	↱
Volume (veh/h)	63	101	41	52	81	84	58	1186	56	71	1134	58
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	70	112	46	63	98	101	64	1303	62	79	1260	64
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.83	0.83	0.83	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	218	185	133	210	178	134	1652	739	149	1683	753
Arrive On Green	0.08	0.12	0.12	0.07	0.11	0.11	0.08	0.47	0.47	0.08	0.48	0.48
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	70	112	46	63	98	101	64	1303	62	79	1260	64
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.3	3.5	1.6	2.1	3.1	3.8	2.1	19.3	1.3	2.7	18.0	1.4
Cycle Q Clear(g_c), s	2.3	3.5	1.6	2.1	3.1	3.8	2.1	19.3	1.3	2.7	18.0	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	140	218	185	133	210	178	134	1652	739	149	1683	753
V/C Ratio(X)	0.50	0.51	0.25	0.48	0.47	0.57	0.48	0.79	0.08	0.53	0.75	0.09
Avail Cap(c_a), veh/h	200	480	408	200	480	408	200	1652	739	200	1683	753
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	25.8	24.9	27.6	25.8	26.1	27.5	14.0	9.2	27.3	13.3	8.9
Incr Delay (d2), s/veh	2.7	1.9	0.7	2.6	1.6	2.8	2.6	3.9	0.2	2.9	3.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.9	0.7	1.1	1.7	1.8	1.1	10.1	0.6	1.4	9.5	0.6
LnGrp Delay(d),s/veh	30.2	27.6	25.6	30.2	27.4	28.9	30.2	17.9	9.4	30.2	16.4	9.1
LnGrp LOS	C	C	C	C	C	C	C	B	A	C	B	A
Approach Vol, veh/h		228			262			1429			1403	
Approach Delay, s/veh		28.0			28.7			18.1			16.8	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	33.0	8.6	11.3	8.7	33.5	8.9	11.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	29.0	7.0	16.0	7.0	29.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.7	21.3	4.1	5.5	4.1	20.0	4.3	5.8
Green Ext Time (p_c), s	0.0	7.0	0.0	1.1	0.0	8.1	0.0	1.1

Intersection Summary			
HCM 2010 Ctrl Delay			19.1
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	78	91	28	39	65	63	46	1165	27	29	1120	57
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	90	105	32	45	75	72	55	1387	32	34	1302	66
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.84	0.84	0.84	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	76	444	87	106	444	127	1621	37	91	1550	694
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.07	0.46	0.46	0.05	0.44	0.44
Sat Flow, veh/h	0	270	1583	0	379	1583	1774	3536	82	1774	3539	1583
Grp Volume(v), veh/h	195	0	32	120	0	72	55	693	726	34	1302	66
Grp Sat Flow(s),veh/h/ln	270	0	1583	379	0	1583	1774	1770	1848	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.8	0.0	0.0	2.0	1.7	19.9	20.0	1.1	18.7	1.4
Cycle Q Clear(g_c), s	16.0	0.0	0.8	16.0	0.0	2.0	1.7	19.9	20.0	1.1	18.7	1.4
Prop In Lane	0.46		1.00	0.37		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	168	0	444	193	0	444	127	811	847	91	1550	694
V/C Ratio(X)	1.16	0.00	0.07	0.62	0.00	0.16	0.43	0.86	0.86	0.38	0.84	0.10
Avail Cap(c_a), veh/h	168	0	444	193	0	444	218	811	847	218	1550	694
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	0.0	15.1	17.2	0.0	15.5	25.4	13.8	13.8	26.2	14.3	9.4
Incr Delay (d2), s/veh	119.8	0.0	0.1	6.0	0.0	0.2	2.3	11.2	10.9	2.6	5.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	0.0	0.4	1.8	0.0	0.9	0.9	12.2	12.6	0.6	10.3	0.7
LnGrp Delay(d),s/veh	141.6	0.0	15.2	23.2	0.0	15.7	27.7	25.0	24.6	28.7	19.9	9.7
LnGrp LOS	F		B	C		B	C	C	C	C	B	A
Approach Vol, veh/h		227			192			1474			1402	
Approach Delay, s/veh		123.8			20.4			24.9			19.6	
Approach LOS		F			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.9	30.2		20.0	8.1	29.0		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	25.0		16.0	7.0	25.0		16.0
Max Q Clear Time (g_c+I1), s	3.1	22.0		18.0	3.7	20.7		18.0
Green Ext Time (p_c), s	0.0	2.9		0.0	0.0	4.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	29.2
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	271	115	49	325	26	97	278	47	22	239	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	23	347	147	58	387	31	100	287	48	24	257	24
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.78	0.78	0.78	0.84	0.84	0.84	0.97	0.97	0.97	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	468	398	131	535	455	173	1084	179	69	975	90
Arrive On Green	0.04	0.25	0.25	0.07	0.29	0.29	0.10	0.36	0.36	0.04	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3041	503	1774	3275	303
Grp Volume(v), veh/h	23	347	147	58	387	31	100	166	169	24	138	143
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1774	1774	1770	1809
Q Serve(g_s), s	0.7	9.8	4.4	1.8	10.7	0.8	3.1	3.8	3.9	0.8	3.4	3.4
Cycle Q Clear(g_c), s	0.7	9.8	4.4	1.8	10.7	0.8	3.1	3.8	3.9	0.8	3.4	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.28	1.00		0.17
Lane Grp Cap(c), veh/h	66	468	398	131	535	455	173	630	632	69	527	538
V/C Ratio(X)	0.35	0.74	0.37	0.44	0.72	0.07	0.58	0.26	0.27	0.35	0.26	0.27
Avail Cap(c_a), veh/h	217	587	499	217	587	499	217	630	632	217	527	538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	19.7	17.7	25.3	18.3	14.8	24.7	13.1	13.1	26.7	15.3	15.3
Incr Delay (d2), s/veh	3.1	3.8	0.6	2.3	4.0	0.1	3.0	1.0	1.0	3.0	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	5.5	2.0	1.0	6.1	0.4	1.6	2.0	2.1	0.4	1.8	1.9
LnGrp Delay(d),s/veh	29.9	23.5	18.2	27.7	22.3	14.9	27.7	14.1	14.1	29.7	16.5	16.5
LnGrp LOS	C	C	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		517			476			435			305	
Approach Delay, s/veh		22.3			22.5			17.2			17.5	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	24.4	8.2	18.3	9.6	21.0	6.1	20.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	18.0	7.0	17.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	2.8	5.9	3.8	11.8	5.1	5.4	2.7	12.7
Green Ext Time (p_c), s	0.0	2.7	0.0	2.5	0.0	2.7	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	20.2
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	111	140	65	130	200	196	87	1054	75	236	901	106
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	141	177	82	228	351	344	96	1158	82	271	1036	122
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.79	0.79	0.79	0.57	0.57	0.57	0.91	0.91	0.91	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	158	331	281	237	414	352	125	1258	563	276	1559	697
Arrive On Green	0.09	0.18	0.18	0.13	0.22	0.22	0.07	0.36	0.36	0.16	0.44	0.44
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	141	177	82	228	351	344	96	1158	82	271	1036	122
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	7.1	7.8	4.0	11.5	16.3	19.4	4.8	28.2	3.2	13.7	20.8	4.2
Cycle Q Clear(g_c), s	7.1	7.8	4.0	11.5	16.3	19.4	4.8	28.2	3.2	13.7	20.8	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	158	331	281	237	414	352	125	1258	563	276	1559	697
V/C Ratio(X)	0.89	0.53	0.29	0.96	0.85	0.98	0.77	0.92	0.15	0.98	0.66	0.17
Avail Cap(c_a), veh/h	158	331	281	237	414	352	177	1258	563	276	1559	697
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.6	33.6	32.1	38.8	33.5	34.8	41.1	27.8	19.7	37.9	19.9	15.3
Incr Delay (d2), s/veh	42.5	1.7	0.6	48.3	15.1	41.9	11.8	12.3	0.5	49.0	2.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	4.1	1.8	8.8	10.1	12.6	2.8	15.8	1.5	10.5	10.6	1.9
LnGrp Delay(d),s/veh	83.1	35.3	32.7	87.1	48.7	76.6	52.9	40.1	20.3	86.9	22.2	15.8
LnGrp LOS	F	D	C	F	D	E	D	D	C	F	C	B
Approach Vol, veh/h		400			923			1336			1429	
Approach Delay, s/veh		51.6			68.6			39.8			33.9	
Approach LOS		D			E			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	36.0	16.0	20.0	10.4	43.6	12.0	24.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	32.0	12.0	16.0	9.0	37.0	8.0	20.0
Max Q Clear Time (g_c+I1), s	15.7	30.2	13.5	9.8	6.8	22.8	9.1	21.4
Green Ext Time (p_c), s	0.0	1.7	0.0	2.4	0.0	11.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	45.4
HCM 2010 LOS	D

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	221	64	10	245	31	34	206	15	28	223	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	62	395	114	15	360	46	40	245	18	32	256	22
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.56	0.56	0.56	0.68	0.68	0.68	0.84	0.84	0.84	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	594	505	46	497	422	104	1028	75	88	984	84
Arrive On Green	0.08	0.32	0.32	0.03	0.27	0.27	0.06	0.31	0.31	0.05	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3345	244	1774	3301	282
Grp Volume(v), veh/h	62	395	114	15	360	46	40	129	134	32	136	142
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1820	1774	1770	1813
Q Serve(g_s), s	1.8	9.8	2.8	0.4	9.4	1.2	1.2	2.9	3.0	0.9	3.1	3.2
Cycle Q Clear(g_c), s	1.8	9.8	2.8	0.4	9.4	1.2	1.2	2.9	3.0	0.9	3.1	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		0.16
Lane Grp Cap(c), veh/h	140	594	505	46	497	422	104	544	559	88	527	540
V/C Ratio(X)	0.44	0.66	0.23	0.32	0.72	0.11	0.38	0.24	0.24	0.36	0.26	0.26
Avail Cap(c_a), veh/h	231	659	560	231	659	560	231	544	559	231	527	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	15.8	13.4	25.7	17.9	14.9	24.3	13.9	13.9	24.7	14.3	14.3
Incr Delay (d2), s/veh	2.2	2.2	0.2	4.0	2.7	0.1	2.3	1.0	1.0	2.5	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.4	1.3	0.3	5.2	0.5	0.6	1.6	1.6	0.5	1.7	1.8
LnGrp Delay(d),s/veh	25.8	18.0	13.6	29.6	20.6	15.0	26.7	14.9	14.9	27.2	15.5	15.5
LnGrp LOS	C	B	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		571			421			303			310	
Approach Delay, s/veh		18.0			20.3			16.5			16.7	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	20.5	5.4	21.1	7.1	20.0	8.2	18.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	2.9	5.0	2.4	11.8	3.2	5.2	3.8	11.4
Green Ext Time (p_c), s	0.0	2.2	0.0	2.8	0.0	2.2	0.0	2.9

Intersection Summary		
HCM 2010 Ctrl Delay		18.1
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	25	41	30	26	34	66	33	1104	39	67	1068	31
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	29	48	35	34	44	86	34	1150	41	75	1200	35
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.77	0.77	0.77	0.96	0.96	0.96	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	81	126	92	92	74	145	92	1539	55	155	1688	755
Arrive On Green	0.05	0.13	0.13	0.05	0.13	0.13	0.05	0.44	0.44	0.09	0.48	0.48
Sat Flow, veh/h	1774	1003	731	1774	565	1103	1774	3486	124	1774	3539	1583
Grp Volume(v), veh/h	29	0	83	34	0	130	34	584	607	75	1200	35
Grp Sat Flow(s),veh/h/ln	1774	0	1734	1774	0	1668	1774	1770	1841	1774	1770	1583
Q Serve(g_s), s	0.9	0.0	2.4	1.0	0.0	4.0	1.0	14.9	15.0	2.2	14.6	0.6
Cycle Q Clear(g_c), s	0.9	0.0	2.4	1.0	0.0	4.0	1.0	14.9	15.0	2.2	14.6	0.6
Prop In Lane	1.00		0.42	1.00		0.66	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	81	0	217	92	0	219	92	781	812	155	1688	755
V/C Ratio(X)	0.36	0.00	0.38	0.37	0.00	0.59	0.37	0.75	0.75	0.48	0.71	0.05
Avail Cap(c_a), veh/h	228	0	510	228	0	491	228	781	812	228	1688	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.2	0.0	21.8	24.9	0.0	22.2	24.9	12.7	12.7	23.6	11.3	7.6
Incr Delay (d2), s/veh	2.7	0.0	1.1	2.5	0.0	2.5	2.5	6.4	6.2	2.3	2.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.2	0.6	0.0	2.0	0.6	8.5	8.8	1.2	7.6	0.3
LnGrp Delay(d),s/veh	27.8	0.0	22.9	27.4	0.0	24.8	27.4	19.1	18.9	26.0	13.8	7.7
LnGrp LOS	C		C	C		C	C	B	B	C	B	A
Approach Vol, veh/h		112			164			1225			1310	
Approach Delay, s/veh		24.2			25.3			19.2			14.4	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	28.0	6.8	10.8	6.8	29.9	6.5	11.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.2	17.0	3.0	4.4	3.0	16.6	2.9	6.0
Green Ext Time (p_c), s	0.0	6.2	0.0	0.8	0.0	6.5	0.0	0.8

Intersection Summary		
HCM 2010 Ctrl Delay		17.5
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	375	519	232	239	489	179	308	739	140	211	693	183
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	417	577	258	278	569	208	338	812	154	229	753	199
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.86	0.86	0.86	0.91	0.91	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	435	765	342	360	720	257	375	1153	516	268	939	420
Arrive On Green	0.13	0.22	0.22	0.10	0.19	0.19	0.21	0.33	0.33	0.15	0.27	0.27
Sat Flow, veh/h	3442	3539	1583	3442	3701	1319	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	417	577	258	278	520	257	338	812	154	229	753	199
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1630	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.5	12.1	12.1	6.2	11.5	11.9	14.7	15.9	5.7	10.0	15.7	8.4
Cycle Q Clear(g_c), s	9.5	12.1	12.1	6.2	11.5	11.9	14.7	15.9	5.7	10.0	15.7	8.4
Prop In Lane	1.00		1.00	1.00		0.81	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	435	765	342	360	660	317	375	1153	516	268	939	420
V/C Ratio(X)	0.96	0.75	0.75	0.77	0.79	0.81	0.90	0.70	0.30	0.85	0.80	0.47
Avail Cap(c_a), veh/h	435	765	342	392	686	330	381	1153	516	292	939	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	29.0	29.0	34.5	30.3	30.5	30.4	23.3	19.9	32.7	27.1	24.4
Incr Delay (d2), s/veh	32.6	4.3	9.1	8.5	5.9	13.7	23.6	3.6	1.5	20.1	7.2	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	6.3	6.1	3.4	6.0	6.6	9.6	8.4	2.7	6.4	8.6	4.1
LnGrp Delay(d),s/veh	66.9	33.3	38.1	43.0	36.2	44.1	54.0	27.0	21.4	52.8	34.3	28.2
LnGrp LOS	E	C	D	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		1252			1055			1304			1181	
Approach Delay, s/veh		45.5			39.9			33.3			36.8	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	29.8	12.3	21.1	20.7	25.0	14.0	19.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	25.0	9.0	17.0	17.0	21.0	10.0	16.0
Max Q Clear Time (g_c+I1), s	12.0	17.9	8.2	14.1	16.7	17.7	11.5	13.9
Green Ext Time (p_c), s	0.1	5.4	0.1	2.2	0.0	2.7	0.0	1.5

Intersection Summary			
HCM 2010 Ctrl Delay			38.8
HCM 2010 LOS			D

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	4	30	3	7	15	41	1265	3	38	1170	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	72	72	72	89	89	89	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	6	46	4	10	21	51	1563	4	44	1345	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2331	3112	683	2430	3121	784	1367	0	0	1567	0	0
Stage 1	1443	1443	-	1667	1667	-	-	-	-	-	-	-
Stage 2	888	1669	-	763	1454	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 20	11	392	17	11	336	498	-	-	417	-	-
Stage 1	139	196	-	100	152	-	-	-	-	-	-	-
Stage 2	305	151	-	363	193	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 14	9	392	12	~ 9	336	498	-	-	417	-	-
Mov Cap-2 Maneuver	75	59	-	63	63	-	-	-	-	-	-	-
Stage 1	125	175	-	90	136	-	-	-	-	-	-	-
Stage 2	238	136	-	276	173	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	71.1	45.4	0.4	0.5
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	498	-	-	131	123	417	-	-
HCM Lane V/C Ratio	0.102	-	-	0.634	0.282	0.105	-	-
HCM Control Delay (s)	13	-	-	71.1	45.4	14.6	-	-
HCM Lane LOS	B	-	-	F	E	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	3.3	1.1	0.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	25	343	46	3	289	4	34	4	10	2	2	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	58	58	58	79	79	79	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	44	602	81	5	498	7	43	5	13	3	3	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	498	0	0	602	0	0	1207	1198	602	1207	1198	498
Stage 1	-	-	-	-	-	-	689	689	-	509	509	-
Stage 2	-	-	-	-	-	-	518	509	-	698	689	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1066	-	-	975	-	-	160	186	500	160	186	572
Stage 1	-	-	-	-	-	-	436	446	-	547	538	-
Stage 2	-	-	-	-	-	-	541	538	-	431	446	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1066	-	-	975	-	-	148	177	500	147	177	572
Mov Cap-2 Maneuver	-	-	-	-	-	-	148	177	-	147	177	-
Stage 1	-	-	-	-	-	-	418	428	-	524	535	-
Stage 2	-	-	-	-	-	-	521	535	-	398	428	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	35.9	16.7
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	176	1066	-	-	975	-	-	330
HCM Lane V/C Ratio	0.345	0.041	-	-	0.005	-	-	0.065
HCM Control Delay (s)	35.9	8.5	-	-	8.7	-	-	16.7
HCM Lane LOS	E	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.4	0.1	-	-	0	-	-	0.2

HCM 2010 TWSC
10: Cottonwood Ave & Driveway

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	301	367	16	0	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	77	77	81	81	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	391	453	20	0	92

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	473	0	-	0	854	463
Stage 1	-	-	-	-	463	-
Stage 2	-	-	-	-	391	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1089	-	-	-	329	599
Stage 1	-	-	-	-	634	-
Stage 2	-	-	-	-	683	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1089	-	-	-	329	599
Mov Cap-2 Maneuver	-	-	-	-	329	-
Stage 1	-	-	-	-	634	-
Stage 2	-	-	-	-	683	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1089	-	-	-	599
HCM Lane V/C Ratio	-	-	-	-	0.154
HCM Control Delay (s)	0	-	-	-	12.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.5

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	26

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	21	0	78	0	0	71	70	1212	139	0	1150	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	92	92	92	82	82	82	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	0	98	0	0	77	85	1478	170	0	1337	44

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2269	3177	691	2403	3115	824	1381	0	0	1648	0	0
Stage 1	1359	1359	-	1734	1734	-	-	-	-	-	-	-
Stage 2	910	1818	-	669	1381	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 22	10	387	17	11	316	492	-	-	388	-	-
Stage 1	157	215	-	91	141	-	-	-	-	-	-	-
Stage 2	296	128	-	413	210	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 14	8	387	11	9	316	492	-	-	388	-	-
Mov Cap-2 Maneuver	~ 14	8	-	11	9	-	-	-	-	-	-	-
Stage 1	130	215	-	75	117	-	-	-	-	-	-	-
Stage 2	185	106	-	309	210	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 675.2	20	0.7	0
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	492	-	-	58	316	388	-	-
HCM Lane V/C Ratio	0.174	-	-	2.134	0.244	-	-	-
HCM Control Delay (s)	13.8	-	-	$ 675.2	20	0	-	-
HCM Lane LOS	B	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	12.1	0.9	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑↑	↱	↰	↑↑	↱
Volume (veh/h)	39	92	62	112	158	199	63	1394	66	78	1134	32
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	57	133	90	127	180	226	72	1602	76	89	1289	36
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.69	0.69	0.69	0.88	0.88	0.88	0.87	0.87	0.87	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	276	235	145	315	268	119	1813	811	127	1830	819
Arrive On Green	0.06	0.15	0.15	0.08	0.17	0.17	0.07	0.51	0.51	0.07	0.52	0.52
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	57	133	90	127	180	226	72	1602	76	89	1289	36
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.7	5.6	4.4	6.1	7.6	11.9	3.4	34.6	2.1	4.2	23.8	1.0
Cycle Q Clear(g_c), s	2.7	5.6	4.4	6.1	7.6	11.9	3.4	34.6	2.1	4.2	23.8	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	107	276	235	145	315	268	119	1813	811	127	1830	819
V/C Ratio(X)	0.53	0.48	0.38	0.88	0.57	0.84	0.61	0.88	0.09	0.70	0.70	0.04
Avail Cap(c_a), veh/h	145	347	295	145	347	295	145	1813	811	145	1830	819
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	33.6	33.0	39.0	32.8	34.6	39.0	18.7	10.7	39.0	15.8	10.2
Incr Delay (d2), s/veh	4.0	1.3	1.0	41.4	1.8	18.2	4.9	6.7	0.2	12.0	2.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.0	2.0	4.6	4.1	6.5	1.8	18.4	1.0	2.5	12.0	0.4
LnGrp Delay(d),s/veh	43.2	34.9	34.1	80.5	34.7	52.8	43.9	25.4	11.0	51.0	18.1	10.3
LnGrp LOS	D	C	C	F	C	D	D	C	B	D	B	B
Approach Vol, veh/h		280			533			1750			1414	
Approach Delay, s/veh		36.3			53.3			25.5			19.9	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	48.0	11.0	16.7	9.7	48.4	9.2	18.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	44.0	7.0	16.0	7.0	44.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.2	36.6	8.1	7.6	5.4	25.8	4.7	13.9
Green Ext Time (p_c), s	0.0	7.0	0.0	1.8	0.0	16.3	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	28.0
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	74	77	50	67	102	62	47	1402	27	35	1201	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	85	89	57	89	136	83	55	1630	31	42	1430	94
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.75	0.75	0.75	0.86	0.86	0.86	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	58	375	74	68	375	118	1878	36	100	1835	821
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.07	0.53	0.53	0.06	0.52	0.52
Sat Flow, veh/h	0	243	1583	0	289	1583	1774	3553	67	1774	3539	1583
Grp Volume(v), veh/h	174	0	57	225	0	83	55	811	850	42	1430	94
Grp Sat Flow(s),veh/h/ln	243	0	1583	289	0	1583	1774	1770	1851	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	1.9	0.0	0.0	2.8	2.0	26.9	27.0	1.5	22.0	2.1
Cycle Q Clear(g_c), s	16.0	0.0	1.9	16.0	0.0	2.8	2.0	26.9	27.0	1.5	22.0	2.1
Prop In Lane	0.49		1.00	0.40		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	137	0	375	143	0	375	118	936	979	100	1835	821
V/C Ratio(X)	1.27	0.00	0.15	1.58	0.00	0.22	0.46	0.87	0.87	0.42	0.78	0.11
Avail Cap(c_a), veh/h	137	0	375	143	0	375	184	936	979	184	1835	821
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	0.0	20.4	26.7	0.0	20.7	30.3	13.8	13.9	30.8	13.1	8.3
Incr Delay (d2), s/veh	167.0	0.0	0.2	289.8	0.0	0.3	2.8	10.6	10.4	2.8	3.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	0.0	0.9	14.1	0.0	1.3	1.1	15.8	16.5	0.8	11.6	1.0
LnGrp Delay(d),s/veh	194.5	0.0	20.6	316.5	0.0	21.0	33.2	24.4	24.3	33.5	16.5	8.6
LnGrp LOS	F		C	F		C	C	C	C	C	B	A
Approach Vol, veh/h		231			308			1716			1566	
Approach Delay, s/veh		151.6			236.9			24.6			16.5	
Approach LOS		F			F			C			B	
Timer	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.8	39.7		20.0	8.5	39.0		20.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	7.0	35.0		16.0	7.0	35.0		16.0				
Max Q Clear Time (g_c+I1), s	3.5	29.0		18.0	4.0	24.0		18.0				
Green Ext Time (p_c), s	0.0	5.7		0.0	0.0	10.3		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			46.1									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	333	138	49	412	92	103	330	32	59	408	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	59	392	162	64	542	121	130	418	41	68	469	60
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.76	0.76	0.76	0.79	0.79	0.79	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	567	482	134	574	488	180	920	90	139	819	104
Arrive On Green	0.07	0.30	0.30	0.08	0.31	0.31	0.10	0.28	0.28	0.08	0.26	0.26
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3258	318	1774	3159	402
Grp Volume(v), veh/h	59	392	162	64	542	121	130	226	233	68	262	267
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1807	1774	1770	1792
Q Serve(g_s), s	2.0	11.4	4.9	2.1	17.5	3.5	4.4	6.5	6.6	2.3	7.9	8.0
Cycle Q Clear(g_c), s	2.0	11.4	4.9	2.1	17.5	3.5	4.4	6.5	6.6	2.3	7.9	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		0.22
Lane Grp Cap(c), veh/h	128	567	482	134	574	488	180	500	510	139	459	465
V/C Ratio(X)	0.46	0.69	0.34	0.48	0.94	0.25	0.72	0.45	0.46	0.49	0.57	0.58
Avail Cap(c_a), veh/h	201	574	488	201	574	488	201	500	510	201	459	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	18.9	16.6	27.3	20.8	16.0	26.9	18.2	18.2	27.3	19.9	19.9
Incr Delay (d2), s/veh	2.6	3.5	0.4	2.6	24.6	0.3	10.8	2.9	2.9	2.7	5.1	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	6.4	2.2	1.1	12.8	1.6	2.7	3.5	3.6	1.2	4.5	4.6
LnGrp Delay(d),s/veh	30.0	22.4	17.0	30.0	45.5	16.3	37.6	21.2	21.2	29.9	24.9	25.0
LnGrp LOS	C	C	B	C	D	B	D	C	C	C	C	C
Approach Vol, veh/h		613			727			589			597	
Approach Delay, s/veh		21.7			39.3			24.8			25.5	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	21.4	8.7	22.8	10.2	20.0	8.5	23.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	4.3	8.6	4.1	13.4	6.4	10.0	4.0	19.5
Green Ext Time (p_c), s	0.0	3.4	0.0	3.0	0.0	2.9	0.0	0.0

Intersection Summary			
HCM 2010 Ctrl Delay			28.4
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	103	195	75	104	248	207	79	1175	74	137	1108	98
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	129	244	94	141	335	280	96	1433	90	163	1319	117
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.80	0.80	0.80	0.74	0.74	0.74	0.82	0.82	0.82	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	350	298	158	371	315	126	1575	704	178	1679	751
Arrive On Green	0.08	0.19	0.19	0.09	0.20	0.20	0.07	0.44	0.44	0.10	0.47	0.47
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	129	244	94	141	335	280	96	1433	90	163	1319	117
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	6.5	11.0	4.6	7.1	15.8	15.5	4.8	34.0	3.0	8.2	28.1	3.8
Cycle Q Clear(g_c), s	6.5	11.0	4.6	7.1	15.8	15.5	4.8	34.0	3.0	8.2	28.1	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	138	350	298	158	371	315	126	1575	704	178	1679	751
V/C Ratio(X)	0.93	0.70	0.32	0.89	0.90	0.89	0.76	0.91	0.13	0.92	0.79	0.16
Avail Cap(c_a), veh/h	138	352	299	158	373	317	138	1575	704	178	1679	751
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.2	34.1	31.5	40.5	35.2	35.0	41.0	23.3	14.7	40.1	19.8	13.4
Incr Delay (d2), s/veh	56.7	5.9	0.6	42.2	24.4	24.8	20.4	9.4	0.4	44.7	3.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	6.2	2.1	5.3	10.6	8.9	3.1	18.6	1.4	6.2	14.4	1.7
LnGrp Delay(d),s/veh	98.0	40.0	32.1	82.8	59.6	59.8	61.4	32.7	15.1	84.7	23.6	13.9
LnGrp LOS	F	D	C	F	E	E	E	C	B	F	C	B
Approach Vol, veh/h		467			756			1619			1599	
Approach Delay, s/veh		54.4			64.0			33.4			29.1	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	44.0	12.0	20.9	10.4	46.6	11.0	21.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	40.0	8.0	17.0	7.0	42.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	10.2	36.0	9.1	13.0	6.8	30.1	8.5	17.8
Green Ext Time (p_c), s	0.0	3.9	0.0	1.7	0.0	10.9	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	39.3
HCM 2010 LOS	D

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	105	263	79	47	365	142	109	347	30	34	281	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	148	370	111	69	537	209	127	403	35	47	385	62
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.71	0.71	0.71	0.68	0.68	0.68	0.86	0.86	0.86	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	647	550	133	595	505	166	931	81	107	763	122
Arrive On Green	0.10	0.35	0.35	0.07	0.32	0.32	0.09	0.28	0.28	0.06	0.25	0.25
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3297	285	1774	3058	489
Grp Volume(v), veh/h	148	370	111	69	537	209	127	215	223	47	222	225
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1812	1774	1770	1777
Q Serve(g_s), s	5.6	11.0	3.4	2.5	18.8	7.1	4.8	6.8	6.8	1.7	7.3	7.4
Cycle Q Clear(g_c), s	5.6	11.0	3.4	2.5	18.8	7.1	4.8	6.8	6.8	1.7	7.3	7.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.27
Lane Grp Cap(c), veh/h	182	647	550	133	595	505	166	500	512	107	442	443
V/C Ratio(X)	0.81	0.57	0.20	0.52	0.90	0.41	0.77	0.43	0.43	0.44	0.50	0.51
Avail Cap(c_a), veh/h	182	647	550	182	629	535	182	500	512	182	442	443
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.9	18.1	15.6	30.3	22.2	18.2	30.1	20.0	20.0	30.9	21.9	22.0
Incr Delay (d2), s/veh	23.5	1.2	0.2	3.1	15.9	0.5	16.1	2.7	2.7	2.8	4.0	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	5.9	1.5	1.4	12.2	3.1	3.1	3.7	3.8	0.9	4.1	4.1
LnGrp Delay(d),s/veh	53.4	19.3	15.8	33.4	38.1	18.7	46.3	22.7	22.7	33.7	26.0	26.1
LnGrp LOS	D	B	B	C	D	B	D	C	C	C	C	C
Approach Vol, veh/h		629			815			565			494	
Approach Delay, s/veh		26.7			32.7			28.0			26.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	23.2	9.1	27.6	10.4	21.0	11.0	25.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	23.0	7.0	17.0	7.0	23.0
Max Q Clear Time (g_c+I1), s	3.7	8.8	4.5	13.0	6.8	9.4	7.6	20.8
Green Ext Time (p_c), s	0.0	3.1	0.0	4.5	0.0	3.0	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	29.0
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	52	88	44	63	104	61	1193	60	98	1068	83
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	122	70	119	52	74	122	66	1283	65	121	1319	102
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.74	0.74	0.74	0.85	0.85	0.85	0.93	0.93	0.93	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	164	115	196	114	100	165	130	1453	74	163	1567	701
Arrive On Green	0.09	0.19	0.19	0.06	0.16	0.16	0.07	0.42	0.42	0.09	0.44	0.44
Sat Flow, veh/h	1774	621	1056	1774	634	1045	1774	3428	173	1774	3539	1583
Grp Volume(v), veh/h	122	0	189	52	0	196	66	661	687	121	1319	102
Grp Sat Flow(s),veh/h/ln	1774	0	1676	1774	0	1678	1774	1770	1832	1774	1770	1583
Q Serve(g_s), s	4.6	0.0	7.1	1.9	0.0	7.6	2.5	23.5	23.6	4.5	22.6	2.6
Cycle Q Clear(g_c), s	4.6	0.0	7.1	1.9	0.0	7.6	2.5	23.5	23.6	4.5	22.6	2.6
Prop In Lane	1.00		0.63	1.00		0.62	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	164	0	312	114	0	265	130	750	777	163	1567	701
V/C Ratio(X)	0.75	0.00	0.61	0.46	0.00	0.74	0.51	0.88	0.88	0.74	0.84	0.15
Avail Cap(c_a), veh/h	182	0	392	182	0	393	182	750	777	182	1567	701
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	25.5	30.9	0.0	27.5	30.5	18.1	18.2	30.3	16.9	11.4
Incr Delay (d2), s/veh	14.0	0.0	1.9	2.8	0.0	4.0	3.1	14.1	13.9	13.5	5.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	3.4	1.0	0.0	3.8	1.3	14.3	14.8	2.8	12.2	1.2
LnGrp Delay(d),s/veh	44.2	0.0	27.4	33.7	0.0	31.5	33.6	32.3	32.1	43.7	22.6	11.8
LnGrp LOS	D		C	C		C	C	C	C	D	C	B
Approach Vol, veh/h		311			248			1414			1542	
Approach Delay, s/veh		34.0			32.0			32.2			23.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	33.0	8.4	16.7	9.0	34.3	10.3	14.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	29.0	7.0	16.0	7.0	29.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.5	25.6	3.9	9.1	4.5	24.6	6.6	9.6
Green Ext Time (p_c), s	0.0	3.2	0.0	1.3	0.0	4.1	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	28.6
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	206	458	100	205	891	245	267	917	211	239	684	239
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	251	559	122	241	1048	288	284	976	224	285	814	285
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.94	0.94	0.94	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	301	861	385	325	993	273	322	1018	455	310	995	445
Arrive On Green	0.09	0.24	0.24	0.09	0.25	0.25	0.18	0.29	0.29	0.17	0.28	0.28
Sat Flow, veh/h	3442	3539	1583	3442	3970	1090	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	251	559	122	241	895	441	284	976	224	285	814	285
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1670	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.7	11.4	5.1	5.5	20.0	20.0	12.5	21.7	9.4	12.6	17.2	12.6
Cycle Q Clear(g_c), s	5.7	11.4	5.1	5.5	20.0	20.0	12.5	21.7	9.4	12.6	17.2	12.6
Prop In Lane	1.00		1.00	1.00		0.65	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	301	861	385	325	848	418	322	1018	455	310	995	445
V/C Ratio(X)	0.83	0.65	0.32	0.74	1.06	1.06	0.88	0.96	0.49	0.92	0.82	0.64
Avail Cap(c_a), veh/h	301	861	385	387	848	418	333	1018	455	310	995	445
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.9	27.2	24.8	35.3	30.0	30.0	31.9	28.0	23.7	32.4	26.8	25.2
Incr Delay (d2), s/veh	17.9	1.7	0.5	6.2	46.7	59.7	22.7	19.9	3.8	30.8	7.5	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	5.7	2.2	2.9	14.8	16.1	8.1	13.4	4.6	8.8	9.4	6.4
LnGrp Delay(d),s/veh	53.8	28.9	25.3	41.5	76.7	89.7	54.6	48.0	27.4	63.3	34.3	32.1
LnGrp LOS	D	C	C	D	F	F	D	D	C	E	C	C
Approach Vol, veh/h		932			1577			1484			1384	
Approach Delay, s/veh		35.1			75.0			46.1			39.8	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	27.0	11.5	23.5	18.5	26.5	11.0	24.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	23.0	9.0	18.0	15.0	22.0	7.0	20.0
Max Q Clear Time (g_c+I1), s	14.6	23.7	7.5	13.4	14.5	19.2	7.7	22.0
Green Ext Time (p_c), s	0.0	0.0	0.1	3.8	0.0	2.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	51.1
HCM 2010 LOS	D

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	13	2	41	2	1	18	38	1489	4	14	1277	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	68	68	68	87	87	87	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	3	61	3	1	26	48	1883	5	16	1451	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2532	3478	737	2740	3487	944	1474	0	0	1888	0	0
Stage 1	1494	1494	-	1981	1981	-	-	-	-	-	-	-
Stage 2	1038	1984	-	759	1506	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 14	6	361	9	6	263	453	-	-	313	-	-
Stage 1	129	185	-	63	106	-	-	-	-	-	-	-
Stage 2	247	105	-	365	182	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 11	5	361	6	5	263	453	-	-	313	-	-
Mov Cap-2 Maneuver	69	51	-	43	52	-	-	-	-	-	-	-
Stage 1	115	176	-	56	95	-	-	-	-	-	-	-
Stage 2	196	94	-	283	173	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	47.8	33.5	0.3	0.2
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	453	-	-	164	157	313	-	-
HCM Lane V/C Ratio	0.106	-	-	0.51	0.197	0.051	-	-
HCM Control Delay (s)	13.9	-	-	47.8	33.5	17.1	-	-
HCM Lane LOS	B	-	-	E	D	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-	2.5	0.7	0.2	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s   +: Computation Not Defined   *: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	8.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	350	13	36	476	19	30	11	42	34	12	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	70	70	70	67	67	67	64	64	64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	455	17	51	680	27	45	16	63	53	19	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	680	0	0	455	0	0	1285	1264	455	1303	1264	680
Stage 1	-	-	-	-	-	-	481	481	-	783	783	-
Stage 2	-	-	-	-	-	-	804	783	-	520	481	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	912	-	-	1106	-	-	142	169	605	138	169	451
Stage 1	-	-	-	-	-	-	566	554	-	387	404	-
Stage 2	-	-	-	-	-	-	377	404	-	539	554	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	912	-	-	1106	-	-	117	159	605	109	159	451
Mov Cap-2 Maneuver	-	-	-	-	-	-	117	159	-	109	159	-
Stage 1	-	-	-	-	-	-	558	546	-	381	385	-
Stage 2	-	-	-	-	-	-	324	385	-	462	546	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	44.2	68
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	210	912	-	-	1106	-	-	145
HCM Lane V/C Ratio	0.59	0.014	-	-	0.046	-	-	0.657
HCM Control Delay (s)	44.2	9	-	-	8.4	-	-	68
HCM Lane LOS	E	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	3.3	0	-	-	0.1	-	-	3.6

HCM 2010 TWSC
10: Cottonwood Ave & Driveway

Intersection						
Int Delay, s/veh	0.6					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	366	528	10	0	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	78	78	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	488	677	13	0	53

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	690	0	-	0	1171	683
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	488	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	905	-	-	-	213	449
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	617	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	905	-	-	-	213	449
Mov Cap-2 Maneuver	-	-	-	-	213	-
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	617	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	905	-	-	-	449
HCM Lane V/C Ratio	-	-	-	-	0.119
HCM Control Delay (s)	0	-	-	-	14.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	11	0	0	44	14	1430	49	39	1296	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	62	62	62	92	92	92	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	18	0	0	48	16	1682	58	46	1525	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2492	3391	764	2598	3364	870	1528	0	0	1740	0	0
Stage 1	1618	1618	-	1744	1744	-	-	-	-	-	-	-
Stage 2	874	1773	-	854	1620	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	15	7	346	12	8	295	432	-	-	358	-	-
Stage 1	108	161	-	90	139	-	-	-	-	-	-	-
Stage 2	311	134	-	320	160	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	11	6	346	10	7	295	432	-	-	358	-	-
Mov Cap-2 Maneuver	11	6	-	10	7	-	-	-	-	-	-	-
Stage 1	104	140	-	87	134	-	-	-	-	-	-	-
Stage 2	251	129	-	265	139	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16	19.6	0.1	0.5
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	432	-	-	346	295	358	-	-
HCM Lane V/C Ratio	0.038	-	-	0.051	0.162	0.128	-	-
HCM Control Delay (s)	13.7	-	-	16	19.6	16.5	-	-
HCM Lane LOS	B	-	-	C	C	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.6	0.4	-	-

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	68	199	76	69	131	95	68	1280	89	121	1630	75
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	80	234	89	99	187	136	71	1333	93	126	1698	78
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.70	0.70	0.70	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	124	293	249	131	302	256	118	1743	780	157	1821	815
Arrive On Green	0.07	0.16	0.16	0.07	0.16	0.16	0.07	0.49	0.49	0.09	0.51	0.51
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	80	234	89	99	187	136	71	1333	93	126	1698	78
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.8	10.3	4.3	4.7	8.0	6.7	3.3	26.2	2.7	6.0	38.3	2.2
Cycle Q Clear(g_c), s	3.8	10.3	4.3	4.7	8.0	6.7	3.3	26.2	2.7	6.0	38.3	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	124	293	249	131	302	256	118	1743	780	157	1821	815
V/C Ratio(X)	0.65	0.80	0.36	0.75	0.62	0.53	0.60	0.76	0.12	0.80	0.93	0.10
Avail Cap(c_a), veh/h	145	349	296	145	349	296	145	1743	780	187	1821	815
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.8	34.7	32.2	38.8	33.4	32.8	38.8	17.7	11.7	38.2	19.4	10.6
Incr Delay (d2), s/veh	7.6	10.5	0.9	18.0	2.6	1.7	4.8	3.3	0.3	18.6	10.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	6.2	1.9	2.9	4.3	3.1	1.8	13.6	1.2	3.7	21.2	1.0
LnGrp Delay(d),s/veh	46.3	45.2	33.0	56.8	36.0	34.5	43.6	20.9	12.0	56.9	29.6	10.8
LnGrp LOS	D	D	C	E	D	C	D	C	B	E	C	B
Approach Vol, veh/h		403			422			1497			1902	
Approach Delay, s/veh		42.7			40.4			21.4			30.6	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	46.1	10.3	17.5	9.7	48.0	10.0	17.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	42.0	7.0	16.0	7.0	44.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	8.0	28.2	6.7	12.3	5.3	40.3	5.8	10.0
Green Ext Time (p_c), s	0.0	12.9	0.0	1.1	0.0	3.6	0.0	1.6

Intersection Summary			
HCM 2010 Ctrl Delay			29.5
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	64	102	28	32	94	64	30	1340	47	79	1586	89
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	72	115	31	36	106	72	31	1396	49	81	1635	92
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.96	0.96	0.96	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	92	400	71	157	400	82	1653	58	149	1810	810
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.05	0.47	0.47	0.08	0.51	0.51
Sat Flow, veh/h	0	364	1583	0	619	1583	1774	3488	122	1774	3539	1583
Grp Volume(v), veh/h	187	0	31	142	0	72	31	707	738	81	1635	92
Grp Sat Flow(s),veh/h/ln	364	0	1583	619	0	1583	1774	1770	1841	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.9	0.0	0.0	2.3	1.1	22.2	22.3	2.8	26.6	1.9
Cycle Q Clear(g_c), s	16.0	0.0	0.9	16.0	0.0	2.3	1.1	22.2	22.3	2.8	26.6	1.9
Prop In Lane	0.39		1.00	0.25		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	171	0	400	228	0	400	82	838	872	149	1810	810
V/C Ratio(X)	1.09	0.00	0.08	0.62	0.00	0.18	0.38	0.84	0.85	0.54	0.90	0.11
Avail Cap(c_a), veh/h	171	0	400	228	0	400	196	838	872	196	1810	810
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.9	0.0	18.0	20.0	0.0	18.5	29.3	14.6	14.6	27.8	14.1	8.0
Incr Delay (d2), s/veh	96.5	0.0	0.1	5.2	0.0	0.2	2.8	10.1	9.9	3.1	7.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	0.0	0.4	2.3	0.0	1.0	0.6	13.0	13.7	1.5	14.7	0.9
LnGrp Delay(d),s/veh	120.4	0.0	18.1	25.2	0.0	18.7	32.1	24.7	24.5	30.9	21.9	8.3
LnGrp LOS	F		B	C		B	C	C	C	C	C	A
Approach Vol, veh/h		218			214			1476			1808	
Approach Delay, s/veh		105.8			23.0			24.8			21.6	
Approach LOS		F			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.3	34.0		20.0	6.9	36.4		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	30.0		16.0	7.0	30.0		16.0
Max Q Clear Time (g_c+I1), s	4.8	24.3		18.0	3.1	28.6		18.0
Green Ext Time (p_c), s	0.0	5.5		0.0	0.0	1.4		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			27.9
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	384	162	45	303	41	88	438	60	31	374	47
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	54	452	191	55	370	50	106	528	72	33	394	49
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.82	0.82	0.82	0.83	0.83	0.83	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	123	544	463	125	546	464	173	996	135	88	856	106
Arrive On Green	0.07	0.29	0.29	0.07	0.29	0.29	0.10	0.32	0.32	0.05	0.27	0.27
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3132	426	1774	3171	392
Grp Volume(v), veh/h	54	452	191	55	370	50	106	298	302	33	219	224
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1788	1774	1770	1794
Q Serve(g_s), s	1.7	13.4	5.8	1.8	10.4	1.4	3.4	8.2	8.2	1.1	6.1	6.2
Cycle Q Clear(g_c), s	1.7	13.4	5.8	1.8	10.4	1.4	3.4	8.2	8.2	1.1	6.1	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.22
Lane Grp Cap(c), veh/h	123	544	463	125	546	464	173	563	568	88	478	484
V/C Ratio(X)	0.44	0.83	0.41	0.44	0.68	0.11	0.61	0.53	0.53	0.38	0.46	0.46
Avail Cap(c_a), veh/h	210	597	508	210	597	508	210	563	568	210	478	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	19.6	16.9	26.4	18.5	15.3	25.7	16.6	16.6	27.3	18.0	18.1
Incr Delay (d2), s/veh	2.4	9.0	0.6	2.4	2.7	0.1	3.6	3.5	3.5	2.6	3.1	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	8.3	2.6	0.9	5.8	0.6	1.8	4.5	4.6	0.6	3.4	3.5
LnGrp Delay(d),s/veh	28.9	28.6	17.5	28.9	21.2	15.4	29.3	20.1	20.1	29.9	21.2	21.2
LnGrp LOS	C	C	B	C	C	B	C	C	C	C	C	C
Approach Vol, veh/h		697			475			706			476	
Approach Delay, s/veh		25.5			21.5			21.5			21.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	22.8	8.2	21.3	9.8	20.0	8.1	21.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	10.2	3.8	15.4	5.4	8.2	3.7	12.4
Green Ext Time (p_c), s	0.0	2.9	0.0	1.9	0.0	3.7	0.0	3.1

Intersection Summary	
HCM 2010 Ctrl Delay	22.8
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	120	232	72	85	173	115	74	1244	59	190	1385	131
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	141	273	85	109	222	147	79	1323	63	202	1473	139
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.78	0.78	0.78	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	161	326	277	137	300	255	121	1530	685	236	1761	788
Arrive On Green	0.09	0.17	0.17	0.08	0.16	0.16	0.07	0.43	0.43	0.13	0.50	0.50
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	141	273	85	109	222	147	79	1323	63	202	1473	139
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	6.9	12.5	4.1	5.3	10.0	7.5	3.8	29.8	2.1	9.8	31.5	4.2
Cycle Q Clear(g_c), s	6.9	12.5	4.1	5.3	10.0	7.5	3.8	29.8	2.1	9.8	31.5	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	161	326	277	137	300	255	121	1530	685	236	1761	788
V/C Ratio(X)	0.87	0.84	0.31	0.79	0.74	0.58	0.65	0.86	0.09	0.85	0.84	0.18
Avail Cap(c_a), veh/h	161	360	306	141	339	288	141	1530	685	242	1761	788
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.4	35.0	31.6	39.9	35.1	34.1	39.9	22.6	14.7	37.3	19.0	12.2
Incr Delay (d2), s/veh	37.2	14.7	0.6	25.5	7.3	2.2	8.3	6.8	0.3	24.1	4.9	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	7.7	1.9	3.6	5.7	3.5	2.1	16.0	1.0	6.4	16.3	2.0
LnGrp Delay(d),s/veh	76.7	49.8	32.2	65.4	42.4	36.3	48.2	29.4	15.0	61.4	23.9	12.6
LnGrp LOS	E	D	C	E	D	D	D	C	B	E	C	B
Approach Vol, veh/h		499			478			1465			1814	
Approach Delay, s/veh		54.4			45.8			29.8			27.2	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	42.0	10.8	19.4	10.0	47.7	12.0	18.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	38.0	7.0	17.0	7.0	43.0	8.0	16.0
Max Q Clear Time (g_c+I1), s	11.8	31.8	7.3	14.5	5.8	33.5	8.9	12.0
Green Ext Time (p_c), s	0.0	5.9	0.0	0.9	0.0	8.9	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	33.4
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	264	57	31	235	43	31	355	19	39	322	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	22	326	70	34	255	47	35	403	22	41	339	21
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.81	0.81	0.81	0.92	0.92	0.92	0.88	0.88	0.88	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	461	392	93	491	417	96	1091	59	108	1105	68
Arrive On Green	0.04	0.25	0.25	0.05	0.26	0.26	0.05	0.32	0.32	0.06	0.33	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3414	186	1774	3387	209
Grp Volume(v), veh/h	22	326	70	34	255	47	35	208	217	41	176	184
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1830	1774	1770	1826
Q Serve(g_s), s	0.6	8.0	1.7	0.9	5.9	1.1	1.0	4.5	4.6	1.1	3.7	3.8
Cycle Q Clear(g_c), s	0.6	8.0	1.7	0.9	5.9	1.1	1.0	4.5	4.6	1.1	3.7	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		0.11
Lane Grp Cap(c), veh/h	65	461	392	93	491	417	96	565	585	108	578	596
V/C Ratio(X)	0.34	0.71	0.18	0.36	0.52	0.11	0.37	0.37	0.37	0.38	0.31	0.31
Avail Cap(c_a), veh/h	248	707	601	248	707	601	248	565	585	248	578	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	17.2	14.8	22.9	15.7	14.0	22.9	13.1	13.2	22.6	12.6	12.6
Incr Delay (d2), s/veh	3.0	2.0	0.2	2.4	0.9	0.1	2.3	1.8	1.8	2.2	1.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.3	0.8	0.5	3.1	0.5	0.5	2.5	2.6	0.6	2.0	2.1
LnGrp Delay(d),s/veh	26.5	19.2	15.0	25.3	16.6	14.1	25.2	15.0	15.0	24.8	14.0	14.0
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		418			336			460			401	
Approach Delay, s/veh		18.9			17.1			15.7			15.1	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	20.0	6.6	16.4	6.7	20.3	5.8	17.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	6.6	2.9	10.0	3.0	5.8	2.6	7.9
Green Ext Time (p_c), s	0.0	3.0	0.0	2.4	0.0	3.2	0.0	2.7

Intersection Summary			
HCM 2010 Ctrl Delay			16.7
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	26	52	44	21	44	47	45	1313	55	76	1414	32
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	30	59	50	25	52	56	48	1397	59	82	1520	34
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.84	0.84	0.84	0.94	0.94	0.94	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	104	88	69	87	94	111	1803	76	147	1917	858
Arrive On Green	0.04	0.11	0.11	0.04	0.11	0.11	0.06	0.52	0.52	0.08	0.54	0.54
Sat Flow, veh/h	1774	933	790	1774	822	885	1774	3461	146	1774	3539	1583
Grp Volume(v), veh/h	30	0	109	25	0	108	48	713	743	82	1520	34
Grp Sat Flow(s),veh/h/ln	1774	0	1723	1774	0	1707	1774	1770	1837	1774	1770	1583
Q Serve(g_s), s	1.1	0.0	3.9	0.9	0.0	3.9	1.7	21.1	21.2	2.9	22.5	0.7
Cycle Q Clear(g_c), s	1.1	0.0	3.9	0.9	0.0	3.9	1.7	21.1	21.2	2.9	22.5	0.7
Prop In Lane	1.00		0.46	1.00		0.52	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	80	0	193	69	0	181	111	922	957	147	1917	858
V/C Ratio(X)	0.38	0.00	0.57	0.36	0.00	0.60	0.43	0.77	0.78	0.56	0.79	0.04
Avail Cap(c_a), veh/h	190	0	422	190	0	418	190	922	957	190	1917	858
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	27.5	30.6	0.0	27.8	29.5	12.5	12.6	28.8	12.0	7.0
Incr Delay (d2), s/veh	2.9	0.0	2.6	3.1	0.0	3.1	2.7	6.3	6.1	3.3	3.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	2.0	0.5	0.0	2.0	0.9	11.7	12.2	1.5	11.7	0.3
LnGrp Delay(d),s/veh	33.2	0.0	30.1	33.7	0.0	31.0	32.2	18.8	18.7	32.0	15.5	7.1
LnGrp LOS	C		C	C		C	C	B	B	C	B	A
Approach Vol, veh/h		139			133			1504			1636	
Approach Delay, s/veh		30.7			31.5			19.2			16.1	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	38.0	6.6	11.3	8.1	39.3	6.9	10.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	34.0	7.0	16.0	7.0	34.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.9	23.2	2.9	5.9	3.7	24.5	3.1	5.9
Green Ext Time (p_c), s	0.0	10.0	0.0	0.8	0.0	8.8	0.0	0.8

Intersection Summary			
HCM 2010 Ctrl Delay			18.7
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	508	1029	305	260	658	218	270	792	193	310	955	162
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	540	1095	324	302	765	253	297	870	212	341	1049	178
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.86	0.86	0.86	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	563	1062	475	313	862	282	290	933	417	355	1062	475
Arrive On Green	0.16	0.30	0.30	0.09	0.23	0.23	0.16	0.26	0.26	0.20	0.30	0.30
Sat Flow, veh/h	3442	3539	1583	3442	3792	1242	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	540	1095	324	302	683	335	297	870	212	341	1049	178
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1644	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	17.1	33.0	19.8	9.6	21.5	21.7	18.0	26.4	12.5	20.9	32.4	9.8
Cycle Q Clear(g_c), s	17.1	33.0	19.8	9.6	21.5	21.7	18.0	26.4	12.5	20.9	32.4	9.8
Prop In Lane	1.00		1.00	1.00		0.76	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	563	1062	475	313	770	374	290	933	417	355	1062	475
V/C Ratio(X)	0.96	1.03	0.68	0.97	0.89	0.90	1.02	0.93	0.51	0.96	0.99	0.37
Avail Cap(c_a), veh/h	563	1062	475	313	770	374	290	933	417	355	1062	475
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	38.5	33.9	49.8	41.1	41.2	46.0	39.5	34.4	43.6	38.3	30.4
Incr Delay (d2), s/veh	27.8	36.0	4.0	41.4	12.1	23.3	58.9	17.1	4.4	37.5	24.9	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	21.4	9.2	6.4	11.4	12.3	13.5	15.1	6.0	13.9	19.5	4.5
LnGrp Delay(d),s/veh	73.5	74.5	37.9	91.2	53.3	64.5	104.9	56.6	38.8	81.0	63.2	32.6
LnGrp LOS	E	F	D	F	D	E	F	E	D	F	E	C
Approach Vol, veh/h		1959			1320			1379			1568	
Approach Delay, s/veh		68.1			64.8			64.3			63.6	
Approach LOS		E			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	33.0	14.0	37.0	22.0	37.0	22.0	29.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	29.0	10.0	33.0	18.0	33.0	18.0	25.0
Max Q Clear Time (g_c+I1), s	22.9	28.4	11.6	35.0	20.0	34.4	19.1	23.7
Green Ext Time (p_c), s	0.0	0.6	0.0	0.0	0.0	0.0	0.0	1.2

Intersection Summary		
HCM 2010 Ctrl Delay		65.4
HCM 2010 LOS		E

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	15	3	40	2	1	12	40	1423	2	47	1696	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	58	58	58	97	97	97	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	4	51	3	2	21	45	1614	2	48	1731	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2736	3545	877	2669	3555	808	1753	0	0	1616	0	0
Stage 1	1838	1838	-	1706	1706	-	-	-	-	-	-	-
Stage 2	898	1707	-	963	1849	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 10	6	292	11	6	324	353	-	-	399	-	-
Stage 1	78	125	-	95	145	-	-	-	-	-	-	-
Stage 2	301	145	-	274	123	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 7	5	292	7	5	324	353	-	-	399	-	-
Mov Cap-2 Maneuver	48	44	-	51	40	-	-	-	-	-	-	-
Stage 1	68	110	-	83	127	-	-	-	-	-	-	-
Stage 2	243	127	-	192	108	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	85.3	34.4	0.5	0.4
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	353	-	-	112	148	399	-	-
HCM Lane V/C Ratio	0.129	-	-	0.664	0.175	0.12	-	-
HCM Control Delay (s)	16.7	-	-	85.3	34.4	15.3	-	-
HCM Lane LOS	C	-	-	F	D	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-	3.4	0.6	0.4	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	383	55	15	257	9	31	6	9	7	2	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	88	88	88	60	60	60	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	391	56	17	292	10	52	10	15	9	3	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	292	0	0	391	0	0	763	754	391	766	754	292
Stage 1	-	-	-	-	-	-	428	428	-	326	326	-
Stage 2	-	-	-	-	-	-	335	326	-	440	428	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1270	-	-	1168	-	-	321	338	658	320	338	747
Stage 1	-	-	-	-	-	-	605	585	-	687	648	-
Stage 2	-	-	-	-	-	-	679	648	-	596	585	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1270	-	-	1168	-	-	306	328	658	299	328	747
Mov Cap-2 Maneuver	-	-	-	-	-	-	306	328	-	299	328	-
Stage 1	-	-	-	-	-	-	596	577	-	677	639	-
Stage 2	-	-	-	-	-	-	653	639	-	564	577	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.4	18.4	13.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	345	1270	-	-	1168	-	-	452
HCM Lane V/C Ratio	0.222	0.014	-	-	0.015	-	-	0.059
HCM Control Delay (s)	18.4	7.9	-	-	8.1	-	-	13.5
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.8	0	-	-	0	-	-	0.2

HCM 2010 TWSC
10: Cottonwood Ave & Driveway

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	469	312	11	0	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	81	81	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	515	385	14	0	63

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	399	0	-	0	907	392
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	515	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1160	-	-	-	306	657
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	600	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1160	-	-	-	306	657
Mov Cap-2 Maneuver	-	-	-	-	306	-
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	600	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1160	-	-	-	657
HCM Lane V/C Ratio	-	-	-	-	0.096
HCM Control Delay (s)	0	-	-	-	11.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	33.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	12	0	74	0	0	52	54	1372	57	45	1588	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	92	92	92	95	95	95	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	0	103	0	0	57	57	1444	60	48	1708	41

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2661	3443	874	2539	3433	752	1748	0	0	1504	0	0
Stage 1	1825	1825	-	1588	1588	-	-	-	-	-	-	-
Stage 2	836	1618	-	951	1845	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 11	7	293	14	7	353	355	-	-	441	-	-
Stage 1	80	127	-	113	166	-	-	-	-	-	-	-
Stage 2	328	161	-	279	124	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 7	5	293	7	5	353	355	-	-	441	-	-
Mov Cap-2 Maneuver	~ 7	5	-	7	5	-	-	-	-	-	-	-
Stage 1	67	113	-	95	139	-	-	-	-	-	-	-
Stage 2	231	135	-	161	111	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 971.4	17.1	0.6	0.4
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	355	-	-	44	353	441	-	-
HCM Lane V/C Ratio	0.16	-	-	2.715	0.16	0.11	-	-
HCM Control Delay (s)	17.1	-	-	$ 971.4	17.1	14.2	-	-
HCM Lane LOS	C	-	-	F	C	B	-	-
HCM 95th %tile Q(veh)	0.6	-	-	12.9	0.6	0.4	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	63	101	41	52	81	84	58	1186	56	71	1134	58
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	70	112	46	63	98	101	64	1303	62	79	1260	64
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.83	0.83	0.83	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	218	185	133	210	178	134	1652	739	149	1683	753
Arrive On Green	0.08	0.12	0.12	0.07	0.11	0.11	0.08	0.47	0.47	0.08	0.48	0.48
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	70	112	46	63	98	101	64	1303	62	79	1260	64
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.3	3.5	1.6	2.1	3.1	3.8	2.1	19.3	1.3	2.7	18.0	1.4
Cycle Q Clear(g_c), s	2.3	3.5	1.6	2.1	3.1	3.8	2.1	19.3	1.3	2.7	18.0	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	140	218	185	133	210	178	134	1652	739	149	1683	753
V/C Ratio(X)	0.50	0.51	0.25	0.48	0.47	0.57	0.48	0.79	0.08	0.53	0.75	0.09
Avail Cap(c_a), veh/h	200	480	408	200	480	408	200	1652	739	200	1683	753
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	25.8	24.9	27.6	25.8	26.1	27.5	14.0	9.2	27.3	13.3	8.9
Incr Delay (d2), s/veh	2.7	1.9	0.7	2.6	1.6	2.8	2.6	3.9	0.2	2.9	3.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.9	0.7	1.1	1.7	1.8	1.1	10.1	0.6	1.4	9.5	0.6
LnGrp Delay(d),s/veh	30.2	27.6	25.6	30.2	27.4	28.9	30.2	17.9	9.4	30.2	16.4	9.1
LnGrp LOS	C	C	C	C	C	C	C	B	A	C	B	A
Approach Vol, veh/h		228			262			1429			1403	
Approach Delay, s/veh		28.0			28.7			18.1			16.8	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	33.0	8.6	11.3	8.7	33.5	8.9	11.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	29.0	7.0	16.0	7.0	29.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.7	21.3	4.1	5.5	4.1	20.0	4.3	5.8
Green Ext Time (p_c), s	0.0	7.0	0.0	1.1	0.0	8.1	0.0	1.1

Intersection Summary		
HCM 2010 Ctrl Delay		19.1
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	78	91	28	39	65	63	46	1165	27	29	1120	57
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	90	105	32	45	75	72	55	1387	32	34	1302	66
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.84	0.84	0.84	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	76	444	87	106	444	127	1621	37	91	1550	694
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.07	0.46	0.46	0.05	0.44	0.44
Sat Flow, veh/h	0	270	1583	0	379	1583	1774	3536	82	1774	3539	1583
Grp Volume(v), veh/h	195	0	32	120	0	72	55	693	726	34	1302	66
Grp Sat Flow(s),veh/h/ln	270	0	1583	379	0	1583	1774	1770	1848	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.8	0.0	0.0	2.0	1.7	19.9	20.0	1.1	18.7	1.4
Cycle Q Clear(g_c), s	16.0	0.0	0.8	16.0	0.0	2.0	1.7	19.9	20.0	1.1	18.7	1.4
Prop In Lane	0.46		1.00	0.37		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	168	0	444	193	0	444	127	811	847	91	1550	694
V/C Ratio(X)	1.16	0.00	0.07	0.62	0.00	0.16	0.43	0.86	0.86	0.38	0.84	0.10
Avail Cap(c_a), veh/h	168	0	444	193	0	444	218	811	847	218	1550	694
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	0.0	15.1	17.2	0.0	15.5	25.4	13.8	13.8	26.2	14.3	9.4
Incr Delay (d2), s/veh	119.8	0.0	0.1	6.0	0.0	0.2	2.3	11.2	10.9	2.6	5.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	0.0	0.4	1.8	0.0	0.9	0.9	12.2	12.6	0.6	10.3	0.7
LnGrp Delay(d),s/veh	141.6	0.0	15.2	23.2	0.0	15.7	27.7	25.0	24.6	28.7	19.9	9.7
LnGrp LOS	F		B	C		B	C	C	C	C	B	A
Approach Vol, veh/h		227			192			1474			1402	
Approach Delay, s/veh		123.8			20.4			24.9			19.6	
Approach LOS		F			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.9	30.2		20.0	8.1	29.0		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	25.0		16.0	7.0	25.0		16.0
Max Q Clear Time (g_c+I1), s	3.1	22.0		18.0	3.7	20.7		18.0
Green Ext Time (p_c), s	0.0	2.9		0.0	0.0	4.1		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			29.2
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	271	115	49	325	26	97	278	47	22	239	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	23	347	147	58	387	31	100	287	48	24	257	24
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.78	0.78	0.78	0.84	0.84	0.84	0.97	0.97	0.97	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	468	398	131	535	455	173	1084	179	69	975	90
Arrive On Green	0.04	0.25	0.25	0.07	0.29	0.29	0.10	0.36	0.36	0.04	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3041	503	1774	3275	303
Grp Volume(v), veh/h	23	347	147	58	387	31	100	166	169	24	138	143
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1774	1774	1770	1809
Q Serve(g_s), s	0.7	9.8	4.4	1.8	10.7	0.8	3.1	3.8	3.9	0.8	3.4	3.4
Cycle Q Clear(g_c), s	0.7	9.8	4.4	1.8	10.7	0.8	3.1	3.8	3.9	0.8	3.4	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.28	1.00		0.17
Lane Grp Cap(c), veh/h	66	468	398	131	535	455	173	630	632	69	527	538
V/C Ratio(X)	0.35	0.74	0.37	0.44	0.72	0.07	0.58	0.26	0.27	0.35	0.26	0.27
Avail Cap(c_a), veh/h	217	587	499	217	587	499	217	630	632	217	527	538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	19.7	17.7	25.3	18.3	14.8	24.7	13.1	13.1	26.7	15.3	15.3
Incr Delay (d2), s/veh	3.1	3.8	0.6	2.3	4.0	0.1	3.0	1.0	1.0	3.0	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	5.5	2.0	1.0	6.1	0.4	1.6	2.0	2.1	0.4	1.8	1.9
LnGrp Delay(d),s/veh	29.9	23.5	18.2	27.7	22.3	14.9	27.7	14.1	14.1	29.7	16.5	16.5
LnGrp LOS	C	C	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		517			476			435			305	
Approach Delay, s/veh		22.3			22.5			17.2			17.5	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	24.4	8.2	18.3	9.6	21.0	6.1	20.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	18.0	7.0	17.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	2.8	5.9	3.8	11.8	5.1	5.4	2.7	12.7
Green Ext Time (p_c), s	0.0	2.7	0.0	2.5	0.0	2.7	0.0	2.3

Intersection Summary		
HCM 2010 Ctrl Delay		20.2
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	111	140	65	130	200	193	87	1054	75	174	936	106
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	141	177	82	228	351	339	96	1158	82	200	1076	122
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.79	0.79	0.79	0.57	0.57	0.57	0.91	0.91	0.91	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	173	327	278	258	416	354	126	1305	584	234	1520	680
Arrive On Green	0.10	0.18	0.18	0.15	0.22	0.22	0.07	0.37	0.37	0.13	0.43	0.43
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	141	177	82	228	351	339	96	1158	82	200	1076	122
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	7.0	7.7	4.0	11.3	16.1	18.9	4.8	27.5	3.1	9.9	22.3	4.3
Cycle Q Clear(g_c), s	7.0	7.7	4.0	11.3	16.1	18.9	4.8	27.5	3.1	9.9	22.3	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	173	327	278	258	416	354	126	1305	584	234	1520	680
V/C Ratio(X)	0.82	0.54	0.30	0.88	0.84	0.96	0.76	0.89	0.14	0.86	0.71	0.18
Avail Cap(c_a), veh/h	178	333	283	258	416	354	139	1305	584	238	1520	680
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	33.6	32.1	37.5	33.3	34.3	40.8	26.5	18.8	38.0	20.9	15.8
Incr Delay (d2), s/veh	24.2	1.7	0.6	28.4	14.6	36.8	19.9	9.2	0.5	24.7	2.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	4.1	1.8	7.5	10.0	11.9	3.0	15.0	1.4	6.4	11.4	2.0
LnGrp Delay(d),s/veh	63.8	35.3	32.7	65.9	47.8	71.2	60.8	35.7	19.3	62.8	23.7	16.4
LnGrp LOS	E	D	C	E	D	E	E	D	B	E	C	B
Approach Vol, veh/h		400			918			1336			1398	
Approach Delay, s/veh		44.8			60.9			36.5			28.7	
Approach LOS		D			E			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.8	37.0	17.0	19.7	10.4	42.4	12.7	24.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	33.0	13.0	16.0	7.0	38.0	9.0	20.0
Max Q Clear Time (g_c+I1), s	11.9	29.5	13.3	9.7	6.8	24.3	9.0	20.9
Green Ext Time (p_c), s	0.0	3.2	0.0	2.4	0.0	11.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	40.2
HCM 2010 LOS	D

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	221	64	10	245	31	34	206	15	28	223	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	62	395	114	15	360	46	40	245	18	32	256	22
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.56	0.56	0.56	0.68	0.68	0.68	0.84	0.84	0.84	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	594	505	46	497	422	104	1028	75	88	984	84
Arrive On Green	0.08	0.32	0.32	0.03	0.27	0.27	0.06	0.31	0.31	0.05	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3345	244	1774	3301	282
Grp Volume(v), veh/h	62	395	114	15	360	46	40	129	134	32	136	142
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1820	1774	1770	1813
Q Serve(g_s), s	1.8	9.8	2.8	0.4	9.4	1.2	1.2	2.9	3.0	0.9	3.1	3.2
Cycle Q Clear(g_c), s	1.8	9.8	2.8	0.4	9.4	1.2	1.2	2.9	3.0	0.9	3.1	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		0.16
Lane Grp Cap(c), veh/h	140	594	505	46	497	422	104	544	559	88	527	540
V/C Ratio(X)	0.44	0.66	0.23	0.32	0.72	0.11	0.38	0.24	0.24	0.36	0.26	0.26
Avail Cap(c_a), veh/h	231	659	560	231	659	560	231	544	559	231	527	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	15.8	13.4	25.7	17.9	14.9	24.3	13.9	13.9	24.7	14.3	14.3
Incr Delay (d2), s/veh	2.2	2.2	0.2	4.0	2.7	0.1	2.3	1.0	1.0	2.5	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.4	1.3	0.3	5.2	0.5	0.6	1.6	1.6	0.5	1.7	1.8
LnGrp Delay(d),s/veh	25.8	18.0	13.6	29.6	20.6	15.0	26.7	14.9	14.9	27.2	15.5	15.5
LnGrp LOS	C	B	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		571			421			303			310	
Approach Delay, s/veh		18.0			20.3			16.5			16.7	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	20.5	5.4	21.1	7.1	20.0	8.2	18.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	2.9	5.0	2.4	11.8	3.2	5.2	3.8	11.4
Green Ext Time (p_c), s	0.0	2.2	0.0	2.8	0.0	2.2	0.0	2.9

Intersection Summary			
HCM 2010 Ctrl Delay			18.1
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	25	41	30	26	34	66	33	1104	39	67	1068	31
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	29	48	35	34	44	86	34	1150	41	75	1200	35
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.77	0.77	0.77	0.96	0.96	0.96	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	81	126	92	92	74	145	92	1539	55	155	1688	755
Arrive On Green	0.05	0.13	0.13	0.05	0.13	0.13	0.05	0.44	0.44	0.09	0.48	0.48
Sat Flow, veh/h	1774	1003	731	1774	565	1103	1774	3486	124	1774	3539	1583
Grp Volume(v), veh/h	29	0	83	34	0	130	34	584	607	75	1200	35
Grp Sat Flow(s),veh/h/ln	1774	0	1734	1774	0	1668	1774	1770	1841	1774	1770	1583
Q Serve(g_s), s	0.9	0.0	2.4	1.0	0.0	4.0	1.0	14.9	15.0	2.2	14.6	0.6
Cycle Q Clear(g_c), s	0.9	0.0	2.4	1.0	0.0	4.0	1.0	14.9	15.0	2.2	14.6	0.6
Prop In Lane	1.00		0.42	1.00		0.66	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	81	0	217	92	0	219	92	781	812	155	1688	755
V/C Ratio(X)	0.36	0.00	0.38	0.37	0.00	0.59	0.37	0.75	0.75	0.48	0.71	0.05
Avail Cap(c_a), veh/h	228	0	510	228	0	491	228	781	812	228	1688	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.2	0.0	21.8	24.9	0.0	22.2	24.9	12.7	12.7	23.6	11.3	7.6
Incr Delay (d2), s/veh	2.7	0.0	1.1	2.5	0.0	2.5	2.5	6.4	6.2	2.3	2.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.2	0.6	0.0	2.0	0.6	8.5	8.8	1.2	7.6	0.3
LnGrp Delay(d),s/veh	27.8	0.0	22.9	27.4	0.0	24.8	27.4	19.1	18.9	26.0	13.8	7.7
LnGrp LOS	C		C	C		C	C	B	B	C	B	A
Approach Vol, veh/h		112			164			1225			1310	
Approach Delay, s/veh		24.2			25.3			19.2			14.4	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	28.0	6.8	10.8	6.8	29.9	6.5	11.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.2	17.0	3.0	4.4	3.0	16.6	2.9	6.0
Green Ext Time (p_c), s	0.0	6.2	0.0	0.8	0.0	6.5	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	17.5
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	375	519	232	239	489	179	308	739	140	211	693	183
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	417	577	258	278	569	208	338	812	154	229	753	199
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.86	0.86	0.86	0.91	0.91	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	435	765	342	360	720	257	375	1153	516	268	939	420
Arrive On Green	0.13	0.22	0.22	0.10	0.19	0.19	0.21	0.33	0.33	0.15	0.27	0.27
Sat Flow, veh/h	3442	3539	1583	3442	3701	1319	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	417	577	258	278	520	257	338	812	154	229	753	199
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1630	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.5	12.1	12.1	6.2	11.5	11.9	14.7	15.9	5.7	10.0	15.7	8.4
Cycle Q Clear(g_c), s	9.5	12.1	12.1	6.2	11.5	11.9	14.7	15.9	5.7	10.0	15.7	8.4
Prop In Lane	1.00		1.00	1.00		0.81	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	435	765	342	360	660	317	375	1153	516	268	939	420
V/C Ratio(X)	0.96	0.75	0.75	0.77	0.79	0.81	0.90	0.70	0.30	0.85	0.80	0.47
Avail Cap(c_a), veh/h	435	765	342	392	686	330	381	1153	516	292	939	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	29.0	29.0	34.5	30.3	30.5	30.4	23.3	19.9	32.7	27.1	24.4
Incr Delay (d2), s/veh	32.6	4.3	9.1	8.5	5.9	13.7	23.6	3.6	1.5	20.1	7.2	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	6.3	6.1	3.4	6.0	6.6	9.6	8.4	2.7	6.4	8.6	4.1
LnGrp Delay(d),s/veh	66.9	33.3	38.1	43.0	36.2	44.1	54.0	27.0	21.4	52.8	34.3	28.2
LnGrp LOS	E	C	D	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		1252			1055			1304			1181	
Approach Delay, s/veh		45.5			39.9			33.3			36.8	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	29.8	12.3	21.1	20.7	25.0	14.0	19.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	25.0	9.0	17.0	17.0	21.0	10.0	16.0
Max Q Clear Time (g_c+I1), s	12.0	17.9	8.2	14.1	16.7	17.7	11.5	13.9
Green Ext Time (p_c), s	0.1	5.4	0.1	2.2	0.0	2.7	0.0	1.5

Intersection Summary			
HCM 2010 Ctrl Delay			38.8
HCM 2010 LOS			D

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	4	30	3	7	15	41	1265	3	38	1170	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	72	72	72	89	89	89	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	6	46	4	10	21	51	1563	4	44	1345	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2331	3112	683	2430	3121	784	1367	0	0	1567	0	0
Stage 1	1443	1443	-	1667	1667	-	-	-	-	-	-	-
Stage 2	888	1669	-	763	1454	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 20	11	392	17	11	336	498	-	-	417	-	-
Stage 1	139	196	-	100	152	-	-	-	-	-	-	-
Stage 2	305	151	-	363	193	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 14	9	392	12	~ 9	336	498	-	-	417	-	-
Mov Cap-2 Maneuver	75	59	-	63	63	-	-	-	-	-	-	-
Stage 1	125	175	-	90	136	-	-	-	-	-	-	-
Stage 2	238	136	-	276	173	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	71.1	45.4	0.4	0.5
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	498	-	-	131	123	417	-	-
HCM Lane V/C Ratio	0.102	-	-	0.634	0.282	0.105	-	-
HCM Control Delay (s)	13	-	-	71.1	45.4	14.6	-	-
HCM Lane LOS	B	-	-	F	E	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	3.3	1.1	0.3	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s   +: Computation Not Defined   *: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	25	343	46	3	289	4	34	4	10	2	2	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	58	58	58	79	79	79	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	44	602	81	5	498	7	43	5	13	3	3	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	498	0	0	602	0	0	1207	1198	602	1207	1198	498
Stage 1	-	-	-	-	-	-	689	689	-	509	509	-
Stage 2	-	-	-	-	-	-	518	509	-	698	689	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1066	-	-	975	-	-	160	186	500	160	186	572
Stage 1	-	-	-	-	-	-	436	446	-	547	538	-
Stage 2	-	-	-	-	-	-	541	538	-	431	446	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1066	-	-	975	-	-	148	177	500	147	177	572
Mov Cap-2 Maneuver	-	-	-	-	-	-	148	177	-	147	177	-
Stage 1	-	-	-	-	-	-	418	428	-	524	535	-
Stage 2	-	-	-	-	-	-	521	535	-	398	428	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	35.9	16.7
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	176	1066	-	-	975	-	-	330
HCM Lane V/C Ratio	0.345	0.041	-	-	0.005	-	-	0.065
HCM Control Delay (s)	35.9	8.5	-	-	8.7	-	-	16.7
HCM Lane LOS	E	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.4	0.1	-	-	0	-	-	0.2

HCM 2010 TWSC
10: Cottonwood Ave & Driveway

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	301	367	16	0	82
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	77	77	81	81	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	391	453	20	0	89

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	473	0	-	0	854	463
Stage 1	-	-	-	-	463	-
Stage 2	-	-	-	-	391	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1089	-	-	-	329	599
Stage 1	-	-	-	-	634	-
Stage 2	-	-	-	-	683	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1089	-	-	-	329	599
Mov Cap-2 Maneuver	-	-	-	-	329	-
Stage 1	-	-	-	-	634	-
Stage 2	-	-	-	-	683	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1089	-	-	-	599
HCM Lane V/C Ratio	-	-	-	-	0.149
HCM Control Delay (s)	0	-	-	-	12.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.5

Intersection	
Int Delay, s/veh	36.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	21	0	78	0	0	74	70	1209	78	62	1088	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	92	92	92	82	82	82	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	0	98	0	0	80	85	1474	95	72	1265	44

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2339	3171	655	2470	3146	785	1309	0	0	1570	0	0
Stage 1	1431	1431	-	1693	1693	-	-	-	-	-	-	-
Stage 2	908	1740	-	777	1453	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 19	10	409	15	11	336	524	-	-	416	-	-
Stage 1	141	198	-	97	147	-	-	-	-	-	-	-
Stage 2	296	140	-	356	194	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 11	7	409	9	8	336	524	-	-	416	-	-
Mov Cap-2 Maneuver	~ 11	7	-	9	8	-	-	-	-	-	-	-
Stage 1	118	164	-	81	123	-	-	-	-	-	-	-
Stage 2	189	117	-	224	160	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 924.1	19.1	0.7	0.8
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	524	-	-	47	336	416	-	-
HCM Lane V/C Ratio	0.163	-	-	2.633	0.239	0.173	-	-
HCM Control Delay (s)	13.2	-	-	$ 924.1	19.1	15.5	-	-
HCM Lane LOS	B	-	-	F	C	C	-	-
HCM 95th %tile Q(veh)	0.6	-	-	13.1	0.9	0.6	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s   +: Computation Not Defined   *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	39	92	62	112	158	199	63	1394	66	78	1134	32
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	57	133	90	127	180	226	72	1602	76	89	1289	36
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.69	0.69	0.69	0.88	0.88	0.88	0.87	0.87	0.87	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	276	235	145	315	268	119	1813	811	127	1830	819
Arrive On Green	0.06	0.15	0.15	0.08	0.17	0.17	0.07	0.51	0.51	0.07	0.52	0.52
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	57	133	90	127	180	226	72	1602	76	89	1289	36
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.7	5.6	4.4	6.1	7.6	11.9	3.4	34.6	2.1	4.2	23.8	1.0
Cycle Q Clear(g_c), s	2.7	5.6	4.4	6.1	7.6	11.9	3.4	34.6	2.1	4.2	23.8	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	107	276	235	145	315	268	119	1813	811	127	1830	819
V/C Ratio(X)	0.53	0.48	0.38	0.88	0.57	0.84	0.61	0.88	0.09	0.70	0.70	0.04
Avail Cap(c_a), veh/h	145	347	295	145	347	295	145	1813	811	145	1830	819
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	33.6	33.0	39.0	32.8	34.6	39.0	18.7	10.7	39.0	15.8	10.2
Incr Delay (d2), s/veh	4.0	1.3	1.0	41.4	1.8	18.2	4.9	6.7	0.2	12.0	2.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.0	2.0	4.6	4.1	6.5	1.8	18.4	1.0	2.5	12.0	0.4
LnGrp Delay(d),s/veh	43.2	34.9	34.1	80.5	34.7	52.8	43.9	25.4	11.0	51.0	18.1	10.3
LnGrp LOS	D	C	C	F	C	D	D	C	B	D	B	B
Approach Vol, veh/h		280			533			1750			1414	
Approach Delay, s/veh		36.3			53.3			25.5			19.9	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	48.0	11.0	16.7	9.7	48.4	9.2	18.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	44.0	7.0	16.0	7.0	44.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.2	36.6	8.1	7.6	5.4	25.8	4.7	13.9
Green Ext Time (p_c), s	0.0	7.0	0.0	1.8	0.0	16.3	0.0	0.6

Intersection Summary		
HCM 2010 Ctrl Delay		28.0
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	74	77	50	67	102	62	34	1402	27	35	1201	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	85	89	57	89	136	83	40	1630	31	42	1430	94
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.75	0.75	0.75	0.86	0.86	0.86	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	58	379	75	70	379	97	1862	35	101	1861	833
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.05	0.52	0.52	0.06	0.53	0.53
Sat Flow, veh/h	0	243	1583	0	294	1583	1774	3553	67	1774	3539	1583
Grp Volume(v), veh/h	174	0	57	225	0	83	40	811	850	42	1430	94
Grp Sat Flow(s),veh/h/ln	243	0	1583	294	0	1583	1774	1770	1851	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	1.9	0.0	0.0	2.8	1.5	26.9	27.0	1.5	21.5	2.0
Cycle Q Clear(g_c), s	16.0	0.0	1.9	16.0	0.0	2.8	1.5	26.9	27.0	1.5	21.5	2.0
Prop In Lane	0.49		1.00	0.40		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	138	0	379	146	0	379	97	927	970	101	1861	833
V/C Ratio(X)	1.26	0.00	0.15	1.55	0.00	0.22	0.41	0.87	0.88	0.42	0.77	0.11
Avail Cap(c_a), veh/h	138	0	379	146	0	379	186	927	970	186	1861	833
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	0.0	20.0	26.3	0.0	20.4	30.5	14.0	14.0	30.4	12.6	8.0
Incr Delay (d2), s/veh	161.5	0.0	0.2	276.7	0.0	0.3	2.8	11.2	11.0	2.7	3.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	0.0	0.8	13.8	0.0	1.2	0.8	15.7	16.4	0.8	11.1	0.9
LnGrp Delay(d),s/veh	188.6	0.0	20.2	302.9	0.0	20.7	33.3	25.2	25.0	33.2	15.7	8.3
LnGrp LOS	F		C	F		C	C	C	C	C	B	A
Approach Vol, veh/h		231			308			1701			1566	
Approach Delay, s/veh		147.0			226.9			25.3			15.7	
Approach LOS		F			F			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.8	39.0		20.0	7.7	39.1		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	35.0		16.0	7.0	35.0		16.0
Max Q Clear Time (g_c+I1), s	3.5	29.0		18.0	3.5	23.5		18.0
Green Ext Time (p_c), s	0.0	5.7		0.0	0.0	10.8		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			45.1
HCM 2010 LOS			D

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	333	138	49	412	92	103	330	32	59	408	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	59	392	162	64	542	121	130	418	41	68	469	60
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.76	0.76	0.76	0.79	0.79	0.79	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	567	482	134	574	488	180	920	90	139	819	104
Arrive On Green	0.07	0.30	0.30	0.08	0.31	0.31	0.10	0.28	0.28	0.08	0.26	0.26
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3258	318	1774	3159	402
Grp Volume(v), veh/h	59	392	162	64	542	121	130	226	233	68	262	267
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1807	1774	1770	1792
Q Serve(g_s), s	2.0	11.4	4.9	2.1	17.5	3.5	4.4	6.5	6.6	2.3	7.9	8.0
Cycle Q Clear(g_c), s	2.0	11.4	4.9	2.1	17.5	3.5	4.4	6.5	6.6	2.3	7.9	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		0.22
Lane Grp Cap(c), veh/h	128	567	482	134	574	488	180	500	510	139	459	465
V/C Ratio(X)	0.46	0.69	0.34	0.48	0.94	0.25	0.72	0.45	0.46	0.49	0.57	0.58
Avail Cap(c_a), veh/h	201	574	488	201	574	488	201	500	510	201	459	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	18.9	16.6	27.3	20.8	16.0	26.9	18.2	18.2	27.3	19.9	19.9
Incr Delay (d2), s/veh	2.6	3.5	0.4	2.6	24.6	0.3	10.8	2.9	2.9	2.7	5.1	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	6.4	2.2	1.1	12.8	1.6	2.7	3.5	3.6	1.2	4.5	4.6
LnGrp Delay(d),s/veh	30.0	22.4	17.0	30.0	45.5	16.3	37.6	21.2	21.2	29.9	24.9	25.0
LnGrp LOS	C	C	B	C	D	B	D	C	C	C	C	C
Approach Vol, veh/h		613			727			589			597	
Approach Delay, s/veh		21.7			39.3			24.8			25.5	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	21.4	8.7	22.8	10.2	20.0	8.5	23.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	4.3	8.6	4.1	13.4	6.4	10.0	4.0	19.5
Green Ext Time (p_c), s	0.0	3.4	0.0	3.0	0.0	2.9	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		28.4
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	91	207	75	104	248	205	79	1175	74	163	1084	98
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	114	259	94	141	335	277	96	1433	90	194	1290	117
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.80	0.80	0.80	0.74	0.74	0.74	0.82	0.82	0.82	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	331	281	158	352	299	125	1573	704	197	1716	768
Arrive On Green	0.08	0.18	0.18	0.09	0.19	0.19	0.07	0.44	0.44	0.11	0.48	0.48
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	114	259	94	141	335	277	96	1433	90	194	1290	117
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.7	12.0	4.7	7.1	16.0	15.5	4.8	34.0	3.0	9.8	26.6	3.7
Cycle Q Clear(g_c), s	5.7	12.0	4.7	7.1	16.0	15.5	4.8	34.0	3.0	9.8	26.6	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	138	331	281	158	352	299	125	1573	704	197	1716	768
V/C Ratio(X)	0.83	0.78	0.33	0.89	0.95	0.93	0.77	0.91	0.13	0.98	0.75	0.15
Avail Cap(c_a), veh/h	138	331	281	158	352	299	138	1573	704	197	1716	768
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.9	35.3	32.3	40.6	36.1	35.9	41.1	23.3	14.7	39.9	18.8	12.9
Incr Delay (d2), s/veh	32.0	11.5	0.7	42.5	35.5	33.3	20.5	9.5	0.4	59.3	3.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	7.2	2.1	5.3	11.7	9.5	3.1	18.6	1.4	8.0	13.6	1.7
LnGrp Delay(d),s/veh	72.9	46.8	33.0	83.1	71.6	69.2	61.6	32.8	15.1	99.3	21.9	13.3
LnGrp LOS	E	D	C	F	E	E	E	C	B	F	C	B
Approach Vol, veh/h		467			753			1619			1601	
Approach Delay, s/veh		50.4			72.9			33.5			30.6	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	44.0	12.0	20.0	10.4	47.6	11.0	21.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	40.0	8.0	16.0	7.0	43.0	7.0	17.0
Max Q Clear Time (g_c+I1), s	11.8	36.0	9.1	14.0	6.8	28.6	7.7	18.0
Green Ext Time (p_c), s	0.0	3.8	0.0	1.0	0.0	12.9	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		40.9
HCM 2010 LOS		D

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	105	263	79	47	365	142	109	347	30	34	281	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	148	370	111	69	537	209	127	403	35	47	385	62
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.71	0.71	0.71	0.68	0.68	0.68	0.86	0.86	0.86	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	647	550	133	595	505	166	931	81	107	763	122
Arrive On Green	0.10	0.35	0.35	0.07	0.32	0.32	0.09	0.28	0.28	0.06	0.25	0.25
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3297	285	1774	3058	489
Grp Volume(v), veh/h	148	370	111	69	537	209	127	215	223	47	222	225
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1812	1774	1770	1777
Q Serve(g_s), s	5.6	11.0	3.4	2.5	18.8	7.1	4.8	6.8	6.8	1.7	7.3	7.4
Cycle Q Clear(g_c), s	5.6	11.0	3.4	2.5	18.8	7.1	4.8	6.8	6.8	1.7	7.3	7.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.27
Lane Grp Cap(c), veh/h	182	647	550	133	595	505	166	500	512	107	442	443
V/C Ratio(X)	0.81	0.57	0.20	0.52	0.90	0.41	0.77	0.43	0.43	0.44	0.50	0.51
Avail Cap(c_a), veh/h	182	647	550	182	629	535	182	500	512	182	442	443
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.9	18.1	15.6	30.3	22.2	18.2	30.1	20.0	20.0	30.9	21.9	22.0
Incr Delay (d2), s/veh	23.5	1.2	0.2	3.1	15.9	0.5	16.1	2.7	2.7	2.8	4.0	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	5.9	1.5	1.4	12.2	3.1	3.1	3.7	3.8	0.9	4.1	4.1
LnGrp Delay(d),s/veh	53.4	19.3	15.8	33.4	38.1	18.7	46.3	22.7	22.7	33.7	26.0	26.1
LnGrp LOS	D	B	B	C	D	B	D	C	C	C	C	C
Approach Vol, veh/h		629			815			565			494	
Approach Delay, s/veh		26.7			32.7			28.0			26.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	23.2	9.1	27.6	10.4	21.0	11.0	25.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	23.0	7.0	17.0	7.0	23.0
Max Q Clear Time (g_c+I1), s	3.7	8.8	4.5	13.0	6.8	9.4	7.6	20.8
Green Ext Time (p_c), s	0.0	3.1	0.0	4.5	0.0	3.0	0.0	1.0

Intersection Summary			
HCM 2010 Ctrl Delay			29.0
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	52	88	44	63	104	61	1193	60	98	1068	83
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	122	70	119	52	74	122	66	1283	65	121	1319	102
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.74	0.74	0.74	0.85	0.85	0.85	0.93	0.93	0.93	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	164	115	196	114	100	165	130	1453	74	163	1567	701
Arrive On Green	0.09	0.19	0.19	0.06	0.16	0.16	0.07	0.42	0.42	0.09	0.44	0.44
Sat Flow, veh/h	1774	621	1056	1774	634	1045	1774	3428	173	1774	3539	1583
Grp Volume(v), veh/h	122	0	189	52	0	196	66	661	687	121	1319	102
Grp Sat Flow(s),veh/h/ln	1774	0	1676	1774	0	1678	1774	1770	1832	1774	1770	1583
Q Serve(g_s), s	4.6	0.0	7.1	1.9	0.0	7.6	2.5	23.5	23.6	4.5	22.6	2.6
Cycle Q Clear(g_c), s	4.6	0.0	7.1	1.9	0.0	7.6	2.5	23.5	23.6	4.5	22.6	2.6
Prop In Lane	1.00		0.63	1.00		0.62	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	164	0	312	114	0	265	130	750	777	163	1567	701
V/C Ratio(X)	0.75	0.00	0.61	0.46	0.00	0.74	0.51	0.88	0.88	0.74	0.84	0.15
Avail Cap(c_a), veh/h	182	0	392	182	0	393	182	750	777	182	1567	701
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	25.5	30.9	0.0	27.5	30.5	18.1	18.2	30.3	16.9	11.4
Incr Delay (d2), s/veh	14.0	0.0	1.9	2.8	0.0	4.0	3.1	14.1	13.9	13.5	5.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	3.4	1.0	0.0	3.8	1.3	14.3	14.8	2.8	12.2	1.2
LnGrp Delay(d),s/veh	44.2	0.0	27.4	33.7	0.0	31.5	33.6	32.3	32.1	43.7	22.6	11.8
LnGrp LOS	D		C	C		C	C	C	C	D	C	B
Approach Vol, veh/h		311			248			1414			1542	
Approach Delay, s/veh		34.0			32.0			32.2			23.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	33.0	8.4	16.7	9.0	34.3	10.3	14.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	29.0	7.0	16.0	7.0	29.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.5	25.6	3.9	9.1	4.5	24.6	6.6	9.6
Green Ext Time (p_c), s	0.0	3.2	0.0	1.3	0.0	4.1	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	28.6
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	206	458	100	205	891	245	267	917	211	239	684	239
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	251	559	122	241	1048	288	284	976	224	285	814	285
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.94	0.94	0.94	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	301	861	385	325	993	273	322	1018	455	310	995	445
Arrive On Green	0.09	0.24	0.24	0.09	0.25	0.25	0.18	0.29	0.29	0.17	0.28	0.28
Sat Flow, veh/h	3442	3539	1583	3442	3970	1090	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	251	559	122	241	895	441	284	976	224	285	814	285
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1670	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.7	11.4	5.1	5.5	20.0	20.0	12.5	21.7	9.4	12.6	17.2	12.6
Cycle Q Clear(g_c), s	5.7	11.4	5.1	5.5	20.0	20.0	12.5	21.7	9.4	12.6	17.2	12.6
Prop In Lane	1.00		1.00	1.00		0.65	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	301	861	385	325	848	418	322	1018	455	310	995	445
V/C Ratio(X)	0.83	0.65	0.32	0.74	1.06	1.06	0.88	0.96	0.49	0.92	0.82	0.64
Avail Cap(c_a), veh/h	301	861	385	387	848	418	333	1018	455	310	995	445
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.9	27.2	24.8	35.3	30.0	30.0	31.9	28.0	23.7	32.4	26.8	25.2
Incr Delay (d2), s/veh	17.9	1.7	0.5	6.2	46.7	59.7	22.7	19.9	3.8	30.8	7.5	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	5.7	2.2	2.9	14.8	16.1	8.1	13.4	4.6	8.8	9.4	6.4
LnGrp Delay(d),s/veh	53.8	28.9	25.3	41.5	76.7	89.7	54.6	48.0	27.4	63.3	34.3	32.1
LnGrp LOS	D	C	C	D	F	F	D	D	C	E	C	C
Approach Vol, veh/h		932			1577			1484			1384	
Approach Delay, s/veh		35.1			75.0			46.1			39.8	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	27.0	11.5	23.5	18.5	26.5	11.0	24.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	23.0	9.0	18.0	15.0	22.0	7.0	20.0
Max Q Clear Time (g_c+I1), s	14.6	23.7	7.5	13.4	14.5	19.2	7.7	22.0
Green Ext Time (p_c), s	0.0	0.0	0.1	3.8	0.0	2.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	51.1
HCM 2010 LOS	D

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	13	2	41	2	1	18	38	1489	4	14	1277	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	68	68	68	87	87	87	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	3	61	3	1	26	48	1883	5	16	1451	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2532	3478	737	2740	3487	944	1474	0	0	1888	0	0
Stage 1	1494	1494	-	1981	1981	-	-	-	-	-	-	-
Stage 2	1038	1984	-	759	1506	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 14	6	361	9	6	263	453	-	-	313	-	-
Stage 1	129	185	-	63	106	-	-	-	-	-	-	-
Stage 2	247	105	-	365	182	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 11	5	361	6	5	263	453	-	-	313	-	-
Mov Cap-2 Maneuver	69	51	-	43	52	-	-	-	-	-	-	-
Stage 1	115	176	-	56	95	-	-	-	-	-	-	-
Stage 2	196	94	-	283	173	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	47.8	33.5	0.3	0.2
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	453	-	-	164	157	313	-	-
HCM Lane V/C Ratio	0.106	-	-	0.51	0.197	0.051	-	-
HCM Control Delay (s)	13.9	-	-	47.8	33.5	17.1	-	-
HCM Lane LOS	B	-	-	E	D	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-	2.5	0.7	0.2	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	8.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	350	13	36	476	19	30	11	42	34	12	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	70	70	70	67	67	67	64	64	64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	455	17	51	680	27	45	16	63	53	19	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	680	0	0	455	0	0	1285	1264	455	1303	1264	680
Stage 1	-	-	-	-	-	-	481	481	-	783	783	-
Stage 2	-	-	-	-	-	-	804	783	-	520	481	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	912	-	-	1106	-	-	142	169	605	138	169	451
Stage 1	-	-	-	-	-	-	566	554	-	387	404	-
Stage 2	-	-	-	-	-	-	377	404	-	539	554	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	912	-	-	1106	-	-	117	159	605	109	159	451
Mov Cap-2 Maneuver	-	-	-	-	-	-	117	159	-	109	159	-
Stage 1	-	-	-	-	-	-	558	546	-	381	385	-
Stage 2	-	-	-	-	-	-	324	385	-	462	546	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	44.2	68
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	210	912	-	-	1106	-	-	145
HCM Lane V/C Ratio	0.59	0.014	-	-	0.046	-	-	0.657
HCM Control Delay (s)	44.2	9	-	-	8.4	-	-	68
HCM Lane LOS	E	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	3.3	0	-	-	0.1	-	-	3.6

HCM 2010 TWSC
10: Cottonwood Ave & Driveway

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	23	353	528	10	13	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	78	78	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	31	471	677	13	14	51

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	690	0	-	0	1215	683
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	532	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	905	-	-	-	200	449
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	589	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	905	-	-	-	191	449
Mov Cap-2 Maneuver	-	-	-	-	191	-
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	562	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	17.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	905	-	-	-	347
HCM Lane V/C Ratio	0.034	-	-	-	0.188
HCM Control Delay (s)	9.1	0	-	-	17.8
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	11	0	0	34	14	1428	64	0	1331	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	62	62	62	92	92	92	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	18	0	0	37	16	1680	75	0	1566	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2441	3356	785	2534	3320	878	1569	0	0	1755	0	0
Stage 1	1568	1568	-	1751	1751	-	-	-	-	-	-	-
Stage 2	873	1788	-	783	1569	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	16	8	336	14	8	291	417	-	-	353	-	-
Stage 1	116	170	-	89	138	-	-	-	-	-	-	-
Stage 2	311	132	-	353	170	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	14	8	336	13	8	291	417	-	-	353	-	-
Mov Cap-2 Maneuver	14	8	-	13	8	-	-	-	-	-	-	-
Stage 1	112	170	-	86	133	-	-	-	-	-	-	-
Stage 2	261	127	-	334	170	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.3	19.2	0.1	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	417	-	-	336	291	353	-	-
HCM Lane V/C Ratio	0.039	-	-	0.053	0.127	-	-	-
HCM Control Delay (s)	14	-	-	16.3	19.2	0	-	-
HCM Lane LOS	B	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.4	0	-	-

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	68	199	76	69	131	95	68	1280	89	121	1630	75
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	80	234	89	99	187	136	71	1333	93	126	1698	78
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.70	0.70	0.70	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	124	293	249	131	302	256	118	1743	780	157	1821	815
Arrive On Green	0.07	0.16	0.16	0.07	0.16	0.16	0.07	0.49	0.49	0.09	0.51	0.51
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	80	234	89	99	187	136	71	1333	93	126	1698	78
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.8	10.3	4.3	4.7	8.0	6.7	3.3	26.2	2.7	6.0	38.3	2.2
Cycle Q Clear(g_c), s	3.8	10.3	4.3	4.7	8.0	6.7	3.3	26.2	2.7	6.0	38.3	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	124	293	249	131	302	256	118	1743	780	157	1821	815
V/C Ratio(X)	0.65	0.80	0.36	0.75	0.62	0.53	0.60	0.76	0.12	0.80	0.93	0.10
Avail Cap(c_a), veh/h	145	349	296	145	349	296	145	1743	780	187	1821	815
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.8	34.7	32.2	38.8	33.4	32.8	38.8	17.7	11.7	38.2	19.4	10.6
Incr Delay (d2), s/veh	7.6	10.5	0.9	18.0	2.6	1.7	4.8	3.3	0.3	18.6	10.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	6.2	1.9	2.9	4.3	3.1	1.8	13.6	1.2	3.7	21.2	1.0
LnGrp Delay(d),s/veh	46.3	45.2	33.0	56.8	36.0	34.5	43.6	20.9	12.0	56.9	29.6	10.8
LnGrp LOS	D	D	C	E	D	C	D	C	B	E	C	B
Approach Vol, veh/h		403			422			1497			1902	
Approach Delay, s/veh		42.7			40.4			21.4			30.6	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	46.1	10.3	17.5	9.7	48.0	10.0	17.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	42.0	7.0	16.0	7.0	44.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	8.0	28.2	6.7	12.3	5.3	40.3	5.8	10.0
Green Ext Time (p_c), s	0.0	12.9	0.0	1.1	0.0	3.6	0.0	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	29.5
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	64	102	28	32	94	64	16	1340	47	79	1586	89
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	72	115	31	36	106	72	17	1396	49	81	1635	92
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.96	0.96	0.96	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	92	400	71	157	400	51	1653	58	149	1873	838
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.03	0.47	0.47	0.08	0.53	0.53
Sat Flow, veh/h	0	364	1583	0	619	1583	1774	3488	122	1774	3539	1583
Grp Volume(v), veh/h	187	0	31	142	0	72	17	707	738	81	1635	92
Grp Sat Flow(s),veh/h/ln	364	0	1583	619	0	1583	1774	1770	1841	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.9	0.0	0.0	2.3	0.6	22.2	22.3	2.8	25.6	1.8
Cycle Q Clear(g_c), s	16.0	0.0	0.9	16.0	0.0	2.3	0.6	22.2	22.3	2.8	25.6	1.8
Prop In Lane	0.39		1.00	0.25		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	171	0	400	228	0	400	51	838	872	149	1873	838
V/C Ratio(X)	1.09	0.00	0.08	0.62	0.00	0.18	0.34	0.84	0.85	0.54	0.87	0.11
Avail Cap(c_a), veh/h	171	0	400	228	0	400	196	838	872	196	1873	838
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.9	0.0	18.0	20.0	0.0	18.5	30.2	14.6	14.6	27.8	13.0	7.4
Incr Delay (d2), s/veh	96.5	0.0	0.1	5.2	0.0	0.2	3.8	10.1	9.9	3.1	6.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	0.0	0.4	2.3	0.0	1.0	0.3	13.0	13.7	1.5	13.8	0.9
LnGrp Delay(d),s/veh	120.4	0.0	18.1	25.2	0.0	18.7	34.0	24.7	24.5	30.9	19.0	7.7
LnGrp LOS	F		B	C		B	C	C	C	C	B	A
Approach Vol, veh/h		218			214			1462			1808	
Approach Delay, s/veh		105.8			23.0			24.7			19.0	
Approach LOS		F			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.3	34.0		20.0	5.8	37.5		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	30.0		16.0	7.0	30.0		16.0
Max Q Clear Time (g_c+I1), s	4.8	24.3		18.0	2.6	27.6		18.0
Green Ext Time (p_c), s	0.0	5.5		0.0	0.0	2.3		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			26.6
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	384	162	45	303	41	88	438	60	31	374	47
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	54	452	191	55	370	50	106	528	72	33	394	49
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.82	0.82	0.82	0.83	0.83	0.83	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	123	544	463	125	546	464	173	996	135	88	856	106
Arrive On Green	0.07	0.29	0.29	0.07	0.29	0.29	0.10	0.32	0.32	0.05	0.27	0.27
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3132	426	1774	3171	392
Grp Volume(v), veh/h	54	452	191	55	370	50	106	298	302	33	219	224
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1788	1774	1770	1794
Q Serve(g_s), s	1.7	13.4	5.8	1.8	10.4	1.4	3.4	8.2	8.2	1.1	6.1	6.2
Cycle Q Clear(g_c), s	1.7	13.4	5.8	1.8	10.4	1.4	3.4	8.2	8.2	1.1	6.1	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.22
Lane Grp Cap(c), veh/h	123	544	463	125	546	464	173	563	568	88	478	484
V/C Ratio(X)	0.44	0.83	0.41	0.44	0.68	0.11	0.61	0.53	0.53	0.38	0.46	0.46
Avail Cap(c_a), veh/h	210	597	508	210	597	508	210	563	568	210	478	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	19.6	16.9	26.4	18.5	15.3	25.7	16.6	16.6	27.3	18.0	18.1
Incr Delay (d2), s/veh	2.4	9.0	0.6	2.4	2.7	0.1	3.6	3.5	3.5	2.6	3.1	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	8.3	2.6	0.9	5.8	0.6	1.8	4.5	4.6	0.6	3.4	3.5
LnGrp Delay(d),s/veh	28.9	28.6	17.5	28.9	21.2	15.4	29.3	20.1	20.1	29.9	21.2	21.2
LnGrp LOS	C	C	B	C	C	B	C	C	C	C	C	C
Approach Vol, veh/h		697			475			706			476	
Approach Delay, s/veh		25.5			21.5			21.5			21.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	22.8	8.2	21.3	9.8	20.0	8.1	21.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	10.2	3.8	15.4	5.4	8.2	3.7	12.4
Green Ext Time (p_c), s	0.0	2.9	0.0	1.9	0.0	3.7	0.0	3.1

Intersection Summary		
HCM 2010 Ctrl Delay		22.8
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	107	245	72	85	173	112	74	1244	59	221	1360	131
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	126	288	85	109	222	144	79	1323	63	235	1447	139
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.78	0.78	0.78	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	156	335	285	137	315	268	120	1474	659	260	1753	784
Arrive On Green	0.09	0.18	0.18	0.08	0.17	0.17	0.07	0.42	0.42	0.15	0.50	0.50
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	126	288	85	109	222	144	79	1323	63	235	1447	139
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	6.2	13.3	4.1	5.4	10.0	7.4	3.9	30.9	2.1	11.6	31.0	4.3
Cycle Q Clear(g_c), s	6.2	13.3	4.1	5.4	10.0	7.4	3.9	30.9	2.1	11.6	31.0	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	156	335	285	137	315	268	120	1474	659	260	1753	784
V/C Ratio(X)	0.81	0.86	0.30	0.79	0.71	0.54	0.66	0.90	0.10	0.91	0.83	0.18
Avail Cap(c_a), veh/h	160	356	303	140	335	285	140	1474	659	260	1753	784
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.8	35.3	31.6	40.3	34.8	33.7	40.4	24.2	15.8	37.3	19.1	12.4
Incr Delay (d2), s/veh	24.9	17.9	0.6	26.0	6.1	1.7	8.7	9.0	0.3	32.2	4.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	8.5	1.9	3.6	5.7	3.4	2.2	16.9	1.0	8.0	16.2	2.0
LnGrp Delay(d),s/veh	64.7	53.3	32.2	66.3	41.0	35.5	49.2	33.1	16.0	69.5	23.7	12.9
LnGrp LOS	E	D	C	E	D	D	D	C	B	E	C	B
Approach Vol, veh/h		499			475			1465			1821	
Approach Delay, s/veh		52.6			45.1			33.2			28.8	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	41.0	10.9	20.0	10.0	48.0	11.8	19.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	37.0	7.0	17.0	7.0	43.0	8.0	16.0
Max Q Clear Time (g_c+I1), s	13.6	32.9	7.4	15.3	5.9	33.0	8.2	12.0
Green Ext Time (p_c), s	0.0	3.9	0.0	0.7	0.0	9.2	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	34.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	264	57	31	235	43	31	355	19	39	322	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	22	326	70	34	255	47	35	403	22	41	339	21
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.81	0.81	0.81	0.92	0.92	0.92	0.88	0.88	0.88	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	461	392	93	491	417	96	1091	59	108	1105	68
Arrive On Green	0.04	0.25	0.25	0.05	0.26	0.26	0.05	0.32	0.32	0.06	0.33	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3414	186	1774	3387	209
Grp Volume(v), veh/h	22	326	70	34	255	47	35	208	217	41	176	184
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1830	1774	1770	1826
Q Serve(g_s), s	0.6	8.0	1.7	0.9	5.9	1.1	1.0	4.5	4.6	1.1	3.7	3.8
Cycle Q Clear(g_c), s	0.6	8.0	1.7	0.9	5.9	1.1	1.0	4.5	4.6	1.1	3.7	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		0.11
Lane Grp Cap(c), veh/h	65	461	392	93	491	417	96	565	585	108	578	596
V/C Ratio(X)	0.34	0.71	0.18	0.36	0.52	0.11	0.37	0.37	0.37	0.38	0.31	0.31
Avail Cap(c_a), veh/h	248	707	601	248	707	601	248	565	585	248	578	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	17.2	14.8	22.9	15.7	14.0	22.9	13.1	13.2	22.6	12.6	12.6
Incr Delay (d2), s/veh	3.0	2.0	0.2	2.4	0.9	0.1	2.3	1.8	1.8	2.2	1.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.3	0.8	0.5	3.1	0.5	0.5	2.5	2.6	0.6	2.0	2.1
LnGrp Delay(d),s/veh	26.5	19.2	15.0	25.3	16.6	14.1	25.2	15.0	15.0	24.8	14.0	14.0
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		418			336			460			401	
Approach Delay, s/veh		18.9			17.1			15.7			15.1	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	20.0	6.6	16.4	6.7	20.3	5.8	17.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	6.6	2.9	10.0	3.0	5.8	2.6	7.9
Green Ext Time (p_c), s	0.0	3.0	0.0	2.4	0.0	3.2	0.0	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	16.7
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	26	52	44	21	44	47	45	1313	55	76	1414	32
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	30	59	50	25	52	56	48	1397	59	82	1520	34
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.84	0.84	0.84	0.94	0.94	0.94	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	104	88	69	87	94	111	1803	76	147	1917	858
Arrive On Green	0.04	0.11	0.11	0.04	0.11	0.11	0.06	0.52	0.52	0.08	0.54	0.54
Sat Flow, veh/h	1774	933	790	1774	822	885	1774	3461	146	1774	3539	1583
Grp Volume(v), veh/h	30	0	109	25	0	108	48	713	743	82	1520	34
Grp Sat Flow(s),veh/h/ln	1774	0	1723	1774	0	1707	1774	1770	1837	1774	1770	1583
Q Serve(g_s), s	1.1	0.0	3.9	0.9	0.0	3.9	1.7	21.1	21.2	2.9	22.5	0.7
Cycle Q Clear(g_c), s	1.1	0.0	3.9	0.9	0.0	3.9	1.7	21.1	21.2	2.9	22.5	0.7
Prop In Lane	1.00		0.46	1.00		0.52	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	80	0	193	69	0	181	111	922	957	147	1917	858
V/C Ratio(X)	0.38	0.00	0.57	0.36	0.00	0.60	0.43	0.77	0.78	0.56	0.79	0.04
Avail Cap(c_a), veh/h	190	0	422	190	0	418	190	922	957	190	1917	858
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	27.5	30.6	0.0	27.8	29.5	12.5	12.6	28.8	12.0	7.0
Incr Delay (d2), s/veh	2.9	0.0	2.6	3.1	0.0	3.1	2.7	6.3	6.1	3.3	3.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	2.0	0.5	0.0	2.0	0.9	11.7	12.2	1.5	11.7	0.3
LnGrp Delay(d),s/veh	33.2	0.0	30.1	33.7	0.0	31.0	32.2	18.8	18.7	32.0	15.5	7.1
LnGrp LOS	C		C	C		C	C	B	B	C	B	A
Approach Vol, veh/h		139			133			1504			1636	
Approach Delay, s/veh		30.7			31.5			19.2			16.1	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	38.0	6.6	11.3	8.1	39.3	6.9	10.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	34.0	7.0	16.0	7.0	34.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.9	23.2	2.9	5.9	3.7	24.5	3.1	5.9
Green Ext Time (p_c), s	0.0	10.0	0.0	0.8	0.0	8.8	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	18.7
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	508	1029	305	260	658	218	270	792	193	310	955	162
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	540	1095	324	302	765	253	297	870	212	341	1049	178
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.86	0.86	0.86	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	563	1062	475	313	862	282	290	933	417	355	1062	475
Arrive On Green	0.16	0.30	0.30	0.09	0.23	0.23	0.16	0.26	0.26	0.20	0.30	0.30
Sat Flow, veh/h	3442	3539	1583	3442	3792	1242	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	540	1095	324	302	683	335	297	870	212	341	1049	178
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1644	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	17.1	33.0	19.8	9.6	21.5	21.7	18.0	26.4	12.5	20.9	32.4	9.8
Cycle Q Clear(g_c), s	17.1	33.0	19.8	9.6	21.5	21.7	18.0	26.4	12.5	20.9	32.4	9.8
Prop In Lane	1.00		1.00	1.00		0.76	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	563	1062	475	313	770	374	290	933	417	355	1062	475
V/C Ratio(X)	0.96	1.03	0.68	0.97	0.89	0.90	1.02	0.93	0.51	0.96	0.99	0.37
Avail Cap(c_a), veh/h	563	1062	475	313	770	374	290	933	417	355	1062	475
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	38.5	33.9	49.8	41.1	41.2	46.0	39.5	34.4	43.6	38.3	30.4
Incr Delay (d2), s/veh	27.8	36.0	4.0	41.4	12.1	23.3	58.9	17.1	4.4	37.5	24.9	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	21.4	9.2	6.4	11.4	12.3	13.5	15.1	6.0	13.9	19.5	4.5
LnGrp Delay(d),s/veh	73.5	74.5	37.9	91.2	53.3	64.5	104.9	56.6	38.8	81.0	63.2	32.6
LnGrp LOS	E	F	D	F	D	E	F	E	D	F	E	C
Approach Vol, veh/h		1959			1320			1379			1568	
Approach Delay, s/veh		68.1			64.8			64.3			63.6	
Approach LOS		E			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	33.0	14.0	37.0	22.0	37.0	22.0	29.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	29.0	10.0	33.0	18.0	33.0	18.0	25.0
Max Q Clear Time (g_c+I1), s	22.9	28.4	11.6	35.0	20.0	34.4	19.1	23.7
Green Ext Time (p_c), s	0.0	0.6	0.0	0.0	0.0	0.0	0.0	1.2

Intersection Summary		
HCM 2010 Ctrl Delay		65.4
HCM 2010 LOS		E

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	15	3	40	2	1	12	40	1423	2	47	1696	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	58	58	58	97	97	97	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	4	51	3	2	21	45	1614	2	48	1731	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2736	3545	877	2669	3555	808	1753	0	0	1616	0	0
Stage 1	1838	1838	-	1706	1706	-	-	-	-	-	-	-
Stage 2	898	1707	-	963	1849	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 10	6	292	11	6	324	353	-	-	399	-	-
Stage 1	78	125	-	95	145	-	-	-	-	-	-	-
Stage 2	301	145	-	274	123	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 7	5	292	7	5	324	353	-	-	399	-	-
Mov Cap-2 Maneuver	48	44	-	51	40	-	-	-	-	-	-	-
Stage 1	68	110	-	83	127	-	-	-	-	-	-	-
Stage 2	243	127	-	192	108	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	85.3	34.4	0.5	0.4
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	353	-	-	112	148	399	-	-
HCM Lane V/C Ratio	0.129	-	-	0.664	0.175	0.12	-	-
HCM Control Delay (s)	16.7	-	-	85.3	34.4	15.3	-	-
HCM Lane LOS	C	-	-	F	D	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-	3.4	0.6	0.4	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection												
Int Delay, s/veh	2.3											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	383	55	15	257	9	31	6	9	7	2	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	88	88	88	60	60	60	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	391	56	17	292	10	52	10	15	9	3	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	292	0	0	391	0	0	763	754	391	766	754	292
Stage 1	-	-	-	-	-	-	428	428	-	326	326	-
Stage 2	-	-	-	-	-	-	335	326	-	440	428	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1270	-	-	1168	-	-	321	338	658	320	338	747
Stage 1	-	-	-	-	-	-	605	585	-	687	648	-
Stage 2	-	-	-	-	-	-	679	648	-	596	585	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1270	-	-	1168	-	-	306	328	658	299	328	747
Mov Cap-2 Maneuver	-	-	-	-	-	-	306	328	-	299	328	-
Stage 1	-	-	-	-	-	-	596	577	-	677	639	-
Stage 2	-	-	-	-	-	-	653	639	-	564	577	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.4	18.4	13.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	345	1270	-	-	1168	-	-	452
HCM Lane V/C Ratio	0.222	0.014	-	-	0.015	-	-	0.059
HCM Control Delay (s)	18.4	7.9	-	-	8.1	-	-	13.5
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.8	0	-	-	0	-	-	0.2

HCM 2010 TWSC
10: Cottonwood Ave & Driveway

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	28	455	312	11	14	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	81	81	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	31	500	385	14	15	60

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	399	0	-	0	954	392
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	562	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1160	-	-	-	287	657
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	571	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1160	-	-	-	276	657
Mov Cap-2 Maneuver	-	-	-	-	276	-
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	550	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	13.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1160	-	-	-	513
HCM Lane V/C Ratio	0.027	-	-	-	0.146
HCM Control Delay (s)	8.2	0	-	-	13.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	24.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	12	0	74	0	0	40	54	1369	73	0	1628	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	92	92	92	95	95	95	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	0	103	0	0	43	57	1441	77	0	1751	41

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2605	3403	896	2468	3384	759	1791	0	0	1518	0	0
Stage 1	1771	1771	-	1593	1593	-	-	-	-	-	-	-
Stage 2	834	1632	-	875	1791	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 12	7	283	15	7	349	342	-	-	436	-	-
Stage 1	86	135	-	112	165	-	-	-	-	-	-	-
Stage 2	329	158	-	310	132	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 9	6	283	8	6	349	342	-	-	436	-	-
Mov Cap-2 Maneuver	~ 9	6	-	8	6	-	-	-	-	-	-	-
Stage 1	72	135	-	93	138	-	-	-	-	-	-	-
Stage 2	240	132	-	197	132	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 719.5	16.8	0.6	0
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	342	-	-	54	349	436	-	-
HCM Lane V/C Ratio	0.166	-	-	2.212	0.125	-	-	-
HCM Control Delay (s)	17.6	-	-	$ 719.5	16.8	0	-	-
HCM Lane LOS	C	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	11.9	0.4	0	-	-

Notes
~: Volume exceeds capacity $: Delay exceeds 300s   +: Computation Not Defined   *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	63	101	41	52	81	84	58	1186	56	71	1134	58
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	70	112	46	63	98	101	64	1303	62	79	1260	64
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.83	0.83	0.83	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	218	185	133	210	178	134	1652	739	149	1683	753
Arrive On Green	0.08	0.12	0.12	0.07	0.11	0.11	0.08	0.47	0.47	0.08	0.48	0.48
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	70	112	46	63	98	101	64	1303	62	79	1260	64
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.3	3.5	1.6	2.1	3.1	3.8	2.1	19.3	1.3	2.7	18.0	1.4
Cycle Q Clear(g_c), s	2.3	3.5	1.6	2.1	3.1	3.8	2.1	19.3	1.3	2.7	18.0	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	140	218	185	133	210	178	134	1652	739	149	1683	753
V/C Ratio(X)	0.50	0.51	0.25	0.48	0.47	0.57	0.48	0.79	0.08	0.53	0.75	0.09
Avail Cap(c_a), veh/h	200	480	408	200	480	408	200	1652	739	200	1683	753
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	25.8	24.9	27.6	25.8	26.1	27.5	14.0	9.2	27.3	13.3	8.9
Incr Delay (d2), s/veh	2.7	1.9	0.7	2.6	1.6	2.8	2.6	3.9	0.2	2.9	3.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.9	0.7	1.1	1.7	1.8	1.1	10.1	0.6	1.4	9.5	0.6
LnGrp Delay(d),s/veh	30.2	27.6	25.6	30.2	27.4	28.9	30.2	17.9	9.4	30.2	16.4	9.1
LnGrp LOS	C	C	C	C	C	C	C	B	A	C	B	A
Approach Vol, veh/h		228			262			1429			1403	
Approach Delay, s/veh		28.0			28.7			18.1			16.8	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	33.0	8.6	11.3	8.7	33.5	8.9	11.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	29.0	7.0	16.0	7.0	29.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.7	21.3	4.1	5.5	4.1	20.0	4.3	5.8
Green Ext Time (p_c), s	0.0	7.0	0.0	1.1	0.0	8.1	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	19.1
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	78	91	28	39	65	63	26	1165	27	29	1120	57
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	90	105	32	45	75	72	31	1387	32	34	1302	66
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.84	0.84	0.84	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	94	77	453	89	109	453	85	1582	36	91	1596	714
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.05	0.45	0.45	0.05	0.45	0.45
Sat Flow, veh/h	0	270	1583	0	379	1583	1774	3536	82	1774	3539	1583
Grp Volume(v), veh/h	195	0	32	120	0	72	31	693	726	34	1302	66
Grp Sat Flow(s),veh/h/ln	270	0	1583	379	0	1583	1774	1770	1848	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.8	0.0	0.0	1.9	0.9	19.9	19.9	1.0	17.9	1.3
Cycle Q Clear(g_c), s	16.0	0.0	0.8	16.0	0.0	1.9	0.9	19.9	19.9	1.0	17.9	1.3
Prop In Lane	0.46		1.00	0.37		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	171	0	453	197	0	453	85	792	827	91	1596	714
V/C Ratio(X)	1.14	0.00	0.07	0.61	0.00	0.16	0.37	0.88	0.88	0.37	0.82	0.09
Avail Cap(c_a), veh/h	171	0	453	197	0	453	222	792	827	222	1596	714
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	0.0	14.5	16.7	0.0	14.9	25.8	14.0	14.0	25.6	13.3	8.8
Incr Delay (d2), s/veh	110.5	0.0	0.1	5.3	0.0	0.2	2.6	13.0	12.7	2.5	4.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	0.0	0.4	1.7	0.0	0.8	0.5	12.5	13.0	0.6	9.5	0.6
LnGrp Delay(d),s/veh	131.8	0.0	14.6	22.0	0.0	15.1	28.4	27.0	26.7	28.1	18.0	9.0
LnGrp LOS	F		B	C		B	C	C	C	C	B	A
Approach Vol, veh/h		227			192			1450			1402	
Approach Delay, s/veh		115.3			19.4			26.9			17.9	
Approach LOS		F			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.9	29.0		20.0	6.7	29.2		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	25.0		16.0	7.0	25.0		16.0
Max Q Clear Time (g_c+I1), s	3.0	21.9		18.0	2.9	19.9		18.0
Green Ext Time (p_c), s	0.0	2.9		0.0	0.0	4.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	28.7
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	271	115	49	325	26	97	278	47	22	239	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	23	347	147	58	387	31	100	287	48	24	257	24
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.78	0.78	0.78	0.84	0.84	0.84	0.97	0.97	0.97	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	468	398	131	535	455	173	1084	179	69	975	90
Arrive On Green	0.04	0.25	0.25	0.07	0.29	0.29	0.10	0.36	0.36	0.04	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3041	503	1774	3275	303
Grp Volume(v), veh/h	23	347	147	58	387	31	100	166	169	24	138	143
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1774	1774	1770	1809
Q Serve(g_s), s	0.7	9.8	4.4	1.8	10.7	0.8	3.1	3.8	3.9	0.8	3.4	3.4
Cycle Q Clear(g_c), s	0.7	9.8	4.4	1.8	10.7	0.8	3.1	3.8	3.9	0.8	3.4	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.28	1.00		0.17
Lane Grp Cap(c), veh/h	66	468	398	131	535	455	173	630	632	69	527	538
V/C Ratio(X)	0.35	0.74	0.37	0.44	0.72	0.07	0.58	0.26	0.27	0.35	0.26	0.27
Avail Cap(c_a), veh/h	217	587	499	217	587	499	217	630	632	217	527	538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	19.7	17.7	25.3	18.3	14.8	24.7	13.1	13.1	26.7	15.3	15.3
Incr Delay (d2), s/veh	3.1	3.8	0.6	2.3	4.0	0.1	3.0	1.0	1.0	3.0	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	5.5	2.0	1.0	6.1	0.4	1.6	2.0	2.1	0.4	1.8	1.9
LnGrp Delay(d),s/veh	29.9	23.5	18.2	27.7	22.3	14.9	27.7	14.1	14.1	29.7	16.5	16.5
LnGrp LOS	C	C	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		517			476			435			305	
Approach Delay, s/veh		22.3			22.5			17.2			17.5	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	24.4	8.2	18.3	9.6	21.0	6.1	20.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	18.0	7.0	17.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	2.8	5.9	3.8	11.8	5.1	5.4	2.7	12.7
Green Ext Time (p_c), s	0.0	2.7	0.0	2.5	0.0	2.7	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	20.2
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	93	158	65	130	200	189	87	1054	75	216	901	106
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	118	200	82	228	351	332	96	1158	82	248	1036	122
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.79	0.79	0.79	0.57	0.57	0.57	0.91	0.91	0.91	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	147	314	267	259	431	366	127	1233	552	279	1537	688
Arrive On Green	0.08	0.17	0.17	0.15	0.23	0.23	0.07	0.35	0.35	0.16	0.43	0.43
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	118	200	82	228	351	332	96	1158	82	248	1036	122
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.8	8.9	4.0	11.2	15.9	18.1	4.7	28.2	3.2	12.2	20.8	4.2
Cycle Q Clear(g_c), s	5.8	8.9	4.0	11.2	15.9	18.1	4.7	28.2	3.2	12.2	20.8	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	147	314	267	259	431	366	127	1233	552	279	1537	688
V/C Ratio(X)	0.80	0.64	0.31	0.88	0.81	0.91	0.76	0.94	0.15	0.89	0.67	0.18
Avail Cap(c_a), veh/h	160	335	285	259	440	374	199	1233	552	279	1537	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.1	34.5	32.5	37.2	32.4	33.3	40.6	28.1	19.9	36.7	20.1	15.4
Incr Delay (d2), s/veh	23.1	3.6	0.6	27.4	11.1	24.7	8.9	14.7	0.6	27.4	2.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	4.9	1.8	7.5	9.5	10.4	2.6	16.2	1.5	8.1	10.6	1.9
LnGrp Delay(d),s/veh	63.1	38.1	33.1	64.6	43.5	58.0	49.5	42.7	20.5	64.1	22.5	16.0
LnGrp LOS	E	D	C	E	D	E	D	D	C	E	C	B
Approach Vol, veh/h		400			911			1336			1406	
Approach Delay, s/veh		44.5			54.0			41.9			29.3	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	35.0	17.0	19.0	10.3	42.7	11.4	24.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	31.0	13.0	16.0	10.0	35.0	8.0	21.0
Max Q Clear Time (g_c+I1), s	14.2	30.2	13.2	10.9	6.7	22.8	7.8	20.1
Green Ext Time (p_c), s	0.0	0.8	0.0	2.1	0.1	10.0	0.0	0.4

Intersection Summary		
HCM 2010 Ctrl Delay		40.5
HCM 2010 LOS		D

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	221	64	10	245	31	34	206	15	28	223	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	62	395	114	15	360	46	40	245	18	32	256	22
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.56	0.56	0.56	0.68	0.68	0.68	0.84	0.84	0.84	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	594	505	46	497	422	104	1028	75	88	984	84
Arrive On Green	0.08	0.32	0.32	0.03	0.27	0.27	0.06	0.31	0.31	0.05	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3345	244	1774	3301	282
Grp Volume(v), veh/h	62	395	114	15	360	46	40	129	134	32	136	142
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1820	1774	1770	1813
Q Serve(g_s), s	1.8	9.8	2.8	0.4	9.4	1.2	1.2	2.9	3.0	0.9	3.1	3.2
Cycle Q Clear(g_c), s	1.8	9.8	2.8	0.4	9.4	1.2	1.2	2.9	3.0	0.9	3.1	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		0.16
Lane Grp Cap(c), veh/h	140	594	505	46	497	422	104	544	559	88	527	540
V/C Ratio(X)	0.44	0.66	0.23	0.32	0.72	0.11	0.38	0.24	0.24	0.36	0.26	0.26
Avail Cap(c_a), veh/h	231	659	560	231	659	560	231	544	559	231	527	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	15.8	13.4	25.7	17.9	14.9	24.3	13.9	13.9	24.7	14.3	14.3
Incr Delay (d2), s/veh	2.2	2.2	0.2	4.0	2.7	0.1	2.3	1.0	1.0	2.5	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.4	1.3	0.3	5.2	0.5	0.6	1.6	1.6	0.5	1.7	1.8
LnGrp Delay(d),s/veh	25.8	18.0	13.6	29.6	20.6	15.0	26.7	14.9	14.9	27.2	15.5	15.5
LnGrp LOS	C	B	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		571			421			303			310	
Approach Delay, s/veh		18.0			20.3			16.5			16.7	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	20.5	5.4	21.1	7.1	20.0	8.2	18.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	2.9	5.0	2.4	11.8	3.2	5.2	3.8	11.4
Green Ext Time (p_c), s	0.0	2.2	0.0	2.8	0.0	2.2	0.0	2.9

Intersection Summary			
HCM 2010 Ctrl Delay			18.1
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	25	41	30	26	34	66	33	1104	39	67	1068	31
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	29	48	35	34	44	86	34	1150	41	75	1200	35
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.77	0.77	0.77	0.96	0.96	0.96	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	81	126	92	92	74	145	92	1539	55	155	1688	755
Arrive On Green	0.05	0.13	0.13	0.05	0.13	0.13	0.05	0.44	0.44	0.09	0.48	0.48
Sat Flow, veh/h	1774	1003	731	1774	565	1103	1774	3486	124	1774	3539	1583
Grp Volume(v), veh/h	29	0	83	34	0	130	34	584	607	75	1200	35
Grp Sat Flow(s),veh/h/ln	1774	0	1734	1774	0	1668	1774	1770	1841	1774	1770	1583
Q Serve(g_s), s	0.9	0.0	2.4	1.0	0.0	4.0	1.0	14.9	15.0	2.2	14.6	0.6
Cycle Q Clear(g_c), s	0.9	0.0	2.4	1.0	0.0	4.0	1.0	14.9	15.0	2.2	14.6	0.6
Prop In Lane	1.00		0.42	1.00		0.66	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	81	0	217	92	0	219	92	781	812	155	1688	755
V/C Ratio(X)	0.36	0.00	0.38	0.37	0.00	0.59	0.37	0.75	0.75	0.48	0.71	0.05
Avail Cap(c_a), veh/h	228	0	510	228	0	491	228	781	812	228	1688	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.2	0.0	21.8	24.9	0.0	22.2	24.9	12.7	12.7	23.6	11.3	7.6
Incr Delay (d2), s/veh	2.7	0.0	1.1	2.5	0.0	2.5	2.5	6.4	6.2	2.3	2.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.2	0.6	0.0	2.0	0.6	8.5	8.8	1.2	7.6	0.3
LnGrp Delay(d),s/veh	27.8	0.0	22.9	27.4	0.0	24.8	27.4	19.1	18.9	26.0	13.8	7.7
LnGrp LOS	C		C	C		C	C	B	B	C	B	A
Approach Vol, veh/h		112			164			1225			1310	
Approach Delay, s/veh		24.2			25.3			19.2			14.4	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	28.0	6.8	10.8	6.8	29.9	6.5	11.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.2	17.0	3.0	4.4	3.0	16.6	2.9	6.0
Green Ext Time (p_c), s	0.0	6.2	0.0	0.8	0.0	6.5	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	17.5
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	375	519	232	239	489	179	308	739	140	211	693	183
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	417	577	258	278	569	208	338	812	154	229	753	199
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.86	0.86	0.86	0.91	0.91	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	435	765	342	360	720	257	375	1153	516	268	939	420
Arrive On Green	0.13	0.22	0.22	0.10	0.19	0.19	0.21	0.33	0.33	0.15	0.27	0.27
Sat Flow, veh/h	3442	3539	1583	3442	3701	1319	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	417	577	258	278	520	257	338	812	154	229	753	199
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1630	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.5	12.1	12.1	6.2	11.5	11.9	14.7	15.9	5.7	10.0	15.7	8.4
Cycle Q Clear(g_c), s	9.5	12.1	12.1	6.2	11.5	11.9	14.7	15.9	5.7	10.0	15.7	8.4
Prop In Lane	1.00		1.00	1.00		0.81	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	435	765	342	360	660	317	375	1153	516	268	939	420
V/C Ratio(X)	0.96	0.75	0.75	0.77	0.79	0.81	0.90	0.70	0.30	0.85	0.80	0.47
Avail Cap(c_a), veh/h	435	765	342	392	686	330	381	1153	516	292	939	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	29.0	29.0	34.5	30.3	30.5	30.4	23.3	19.9	32.7	27.1	24.4
Incr Delay (d2), s/veh	32.6	4.3	9.1	8.5	5.9	13.7	23.6	3.6	1.5	20.1	7.2	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	6.3	6.1	3.4	6.0	6.6	9.6	8.4	2.7	6.4	8.6	4.1
LnGrp Delay(d),s/veh	66.9	33.3	38.1	43.0	36.2	44.1	54.0	27.0	21.4	52.8	34.3	28.2
LnGrp LOS	E	C	D	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		1252			1055			1304			1181	
Approach Delay, s/veh		45.5			39.9			33.3			36.8	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	29.8	12.3	21.1	20.7	25.0	14.0	19.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	25.0	9.0	17.0	17.0	21.0	10.0	16.0
Max Q Clear Time (g_c+I1), s	12.0	17.9	8.2	14.1	16.7	17.7	11.5	13.9
Green Ext Time (p_c), s	0.1	5.4	0.1	2.2	0.0	2.7	0.0	1.5

Intersection Summary			
HCM 2010 Ctrl Delay			38.8
HCM 2010 LOS			D

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	4	30	3	7	15	41	1265	3	38	1170	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	72	72	72	89	89	89	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	6	46	4	10	21	51	1563	4	44	1345	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2331	3112	683	2430	3121	784	1367	0	0	1567	0	0
Stage 1	1443	1443	-	1667	1667	-	-	-	-	-	-	-
Stage 2	888	1669	-	763	1454	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 20	11	392	17	11	336	498	-	-	417	-	-
Stage 1	139	196	-	100	152	-	-	-	-	-	-	-
Stage 2	305	151	-	363	193	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 14	9	392	12	~ 9	336	498	-	-	417	-	-
Mov Cap-2 Maneuver	75	59	-	63	63	-	-	-	-	-	-	-
Stage 1	125	175	-	90	136	-	-	-	-	-	-	-
Stage 2	238	136	-	276	173	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	71.1	45.4	0.4	0.5
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	498	-	-	131	123	417	-	-
HCM Lane V/C Ratio	0.102	-	-	0.634	0.282	0.105	-	-
HCM Control Delay (s)	13	-	-	71.1	45.4	14.6	-	-
HCM Lane LOS	B	-	-	F	E	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	3.3	1.1	0.3	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	25	343	46	3	289	4	34	4	10	2	2	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	58	58	58	79	79	79	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	44	602	81	5	498	7	43	5	13	3	3	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	498	0	0	602	0	0	1207	1198	602	1207	1198	498
Stage 1	-	-	-	-	-	-	689	689	-	509	509	-
Stage 2	-	-	-	-	-	-	518	509	-	698	689	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1066	-	-	975	-	-	160	186	500	160	186	572
Stage 1	-	-	-	-	-	-	436	446	-	547	538	-
Stage 2	-	-	-	-	-	-	541	538	-	431	446	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1066	-	-	975	-	-	148	177	500	147	177	572
Mov Cap-2 Maneuver	-	-	-	-	-	-	148	177	-	147	177	-
Stage 1	-	-	-	-	-	-	418	428	-	524	535	-
Stage 2	-	-	-	-	-	-	521	535	-	398	428	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	35.9	16.7
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	176	1066	-	-	975	-	-	330
HCM Lane V/C Ratio	0.345	0.041	-	-	0.005	-	-	0.065
HCM Control Delay (s)	35.9	8.5	-	-	8.7	-	-	16.7
HCM Lane LOS	E	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.4	0.1	-	-	0	-	-	0.2

HCM 2010 TWSC
10: Cottonwood Ave & Driveway

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	39	281	367	16	20	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	77	77	81	81	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	365	453	20	22	85

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	473	0	-	0	929	463
Stage 1	-	-	-	-	463	-
Stage 2	-	-	-	-	466	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1089	-	-	-	297	599
Stage 1	-	-	-	-	634	-
Stage 2	-	-	-	-	632	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1089	-	-	-	279	599
Mov Cap-2 Maneuver	-	-	-	-	279	-
Stage 1	-	-	-	-	634	-
Stage 2	-	-	-	-	595	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	14.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1089	-	-	-	485
HCM Lane V/C Ratio	0.047	-	-	-	0.22
HCM Control Delay (s)	8.5	0	-	-	14.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	22.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	21	0	78	0	0	57	70	1205	100	0	1143	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	92	92	92	82	82	82	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	0	98	0	0	62	85	1470	122	0	1329	44

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2256	3113	687	2366	3074	796	1373	0	0	1591	0	0
Stage 1	1351	1351	-	1701	1701	-	-	-	-	-	-	-
Stage 2	905	1762	-	665	1373	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 22	11	389	18	12	330	496	-	-	408	-	-
Stage 1	158	217	-	95	146	-	-	-	-	-	-	-
Stage 2	298	136	-	416	212	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 16	9	389	12	10	330	496	-	-	408	-	-
Mov Cap-2 Maneuver	~ 16	9	-	12	10	-	-	-	-	-	-	-
Stage 1	131	217	-	79	121	-	-	-	-	-	-	-
Stage 2	201	113	-	312	212	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 561.8	18.4	0.7	0
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	496	-	-	65	330	408	-	-
HCM Lane V/C Ratio	0.172	-	-	1.904	0.188	-	-	-
HCM Control Delay (s)	13.8	-	-	$ 561.8	18.4	0	-	-
HCM Lane LOS	B	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	11.4	0.7	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Queuing and Blocking Report
Cumulative WP AM

2/8/2016

Intersection: 10: Cottonwood Ave

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	181	264	70
Average Queue (ft)	7	39	21
95th Queue (ft)	30	179	50
Link Distance (ft)	163	1161	109
Upstream Blk Time (%)	1		
Queuing Penalty (veh)	5		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: Perris Blvd & Driveway

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	52	151	53	56	21	224	463	205
Average Queue (ft)	14	65	13	2	1	25	42	18
95th Queue (ft)	42	142	42	19	7	95	210	102
Link Distance (ft)	116	136		291	291		450	450
Upstream Blk Time (%)		12					0	
Queuing Penalty (veh)		0					0	
Storage Bay Dist (ft)			100			200		
Storage Blk Time (%)							2	
Queuing Penalty (veh)							1	

Zone Summary

Zone wide Queuing Penalty: 6

Queuing and Blocking Report
Cumulaitve WP PM

2/8/2016

Intersection: 10: Cottonwood Ave & Driveway

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	159	31	75
Average Queue (ft)	14	1	19
95th Queue (ft)	74	11	46
Link Distance (ft)	161	1162	58
Upstream Blk Time (%)	0		0
Queuing Penalty (veh)	0		0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: Perris Blvd & Driveway

Movement	EB	WB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	TR	L	T	TR
Maximum Queue (ft)	180	151	71	22	54	465	341
Average Queue (ft)	129	132	29	1	20	148	79
95th Queue (ft)	159	173	63	11	54	344	262
Link Distance (ft)	116	136		291		450	450
Upstream Blk Time (%)	90	90				0	
Queuing Penalty (veh)	0	0				0	
Storage Bay Dist (ft)			100		200		
Storage Blk Time (%)						7	
Queuing Penalty (veh)						3	

Zone Summary

Zone wide Queuing Penalty: 3

Queuing and Blocking Report
Cumulative WP Sunday

2/8/2016

Intersection: 10: Cottonwood Ave & Driveway

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	138	91	51
Average Queue (ft)	30	7	22
95th Queue (ft)	98	38	42
Link Distance (ft)	159	1163	26
Upstream Blk Time (%)			8
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: Perris Blvd & Driveway

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	151	151	125	308	299	94	257	216
Average Queue (ft)	77	146	53	17	8	27	34	17
95th Queue (ft)	140	180	99	122	78	65	160	101
Link Distance (ft)	116	136		291	291		450	450
Upstream Blk Time (%)	33	93		0	0			
Queuing Penalty (veh)	0	0		1	1			
Storage Bay Dist (ft)			100			200		
Storage Blk Time (%)			6				1	
Queuing Penalty (veh)			45				1	

Zone Summary

Zone wide Queuing Penalty: 48

Queuing and Blocking Report
Cumulative WP Alternative 1 AM

2/8/2016

Intersection: 10: Cottonwood Ave & Driveway

Movement	WB	SB
Directions Served	TR	LR
Maximum Queue (ft)	500	67
Average Queue (ft)	93	24
95th Queue (ft)	347	50
Link Distance (ft)	1161	109
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Perris Blvd & Driveway

Movement	EB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	T	TR	T	TR
Maximum Queue (ft)	50	74	31	50	76	286	211
Average Queue (ft)	8	31	8	2	3	88	29
95th Queue (ft)	31	55	29	17	26	234	134
Link Distance (ft)	116	136		291	291	450	450
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			100				
Storage Blk Time (%)						2	
Queuing Penalty (veh)						0	

Zone Summary

Zone wide Queuing Penalty: 0

Queuing and Blocking Report
Cumulaitve WP Alternative 1 PM 2/8/2016

Intersection: 10: Cottonwood Ave & Driveway

Movement	WB	SB
Directions Served	TR	LR
Maximum Queue (ft)	320	75
Average Queue (ft)	34	37
95th Queue (ft)	172	65
Link Distance (ft)	1162	58
Upstream Blk Time (%)		9
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Perris Blvd & Driveway

Movement	EB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	T	TR	T	TR
Maximum Queue (ft)	132	105	123	161	180	484	491
Average Queue (ft)	104	37	40	6	7	260	191
95th Queue (ft)	165	74	86	54	62	497	425
Link Distance (ft)	116	136		291	291	450	450
Upstream Blk Time (%)	60					4	3
Queuing Penalty (veh)	0					0	0
Storage Bay Dist (ft)			100				
Storage Blk Time (%)			4			21	
Queuing Penalty (veh)			27			0	

Zone Summary

Zone wide Queuing Penalty: 27

Queuing and Blocking Report
Cumulative WP Alternative 1 Sunday

2/8/2016

Intersection: 10: Cottonwood Ave & Driveway

Movement	WB	SB
Directions Served	TR	LR
Maximum Queue (ft)	372	60
Average Queue (ft)	57	33
95th Queue (ft)	237	50
Link Distance (ft)	1163	26
Upstream Blk Time (%)		27
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Perris Blvd & Driveway

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	T	TR
Maximum Queue (ft)	140	72	72	502	465
Average Queue (ft)	84	27	35	99	70
95th Queue (ft)	154	53	66	371	308
Link Distance (ft)	116	136		450	450
Upstream Blk Time (%)	37			2	1
Queuing Penalty (veh)	0			0	0
Storage Bay Dist (ft)			100		
Storage Blk Time (%)				12	
Queuing Penalty (veh)				0	

Zone Summary

Zone wide Queuing Penalty: 0

Queuing and Blocking Report
Cumulative WP Alternative 2 AM

2/8/2016

Intersection: 10: Cottonwood Ave & Driveway

Movement	WB	SB
Directions Served	TR	LR
Maximum Queue (ft)	465	124
Average Queue (ft)	73	38
95th Queue (ft)	274	90
Link Distance (ft)	1161	109
Upstream Blk Time (%)		9
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Perris Blvd & Driveway

Movement	EB	WB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	L	T	TR
Maximum Queue (ft)	30	74	55	55	54	252	241
Average Queue (ft)	11	29	12	2	17	37	24
95th Queue (ft)	34	59	38	19	44	146	121
Link Distance (ft)	116	136		291		450	450
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			100		200		
Storage Blk Time (%)						1	
Queuing Penalty (veh)						0	

Zone Summary

Zone wide Queuing Penalty: 0

Queuing and Blocking Report
Cumulaitve WP Alternative 2 PM

2/8/2016

Intersection: 10: Cottonwood Ave & Driveway

Movement	WB	SB
Directions Served	TR	LR
Maximum Queue (ft)	116	75
Average Queue (ft)	14	30
95th Queue (ft)	65	57
Link Distance (ft)	1162	58
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Perris Blvd & Driveway

Movement	EB	WB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	L	T	TR
Maximum Queue (ft)	169	54	102	224	358	313
Average Queue (ft)	123	33	38	32	89	50
95th Queue (ft)	149	60	84	97	264	202
Link Distance (ft)	116	136			450	450
Upstream Blk Time (%)	97					
Queuing Penalty (veh)	0					
Storage Bay Dist (ft)			100	200		
Storage Blk Time (%)			3		2	
Queuing Penalty (veh)			23		1	

Zone Summary

Zone wide Queuing Penalty: 24

Queuing and Blocking Report
Cumulative WP Alternative 2 Sunday

2/8/2016

Intersection: 10: Cottonwood Ave & Driveway

Movement	WB	SB
Directions Served	TR	LR
Maximum Queue (ft)	258	51
Average Queue (ft)	32	31
95th Queue (ft)	149	48
Link Distance (ft)	1163	26
Upstream Blk Time (%)		22
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Perris Blvd & Driveway

Movement	EB	WB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	TR	L	T	TR
Maximum Queue (ft)	156	122	96	22	76	182	21
Average Queue (ft)	88	38	36	1	36	14	1
95th Queue (ft)	151	76	72	10	74	90	7
Link Distance (ft)	116	136		291		450	450
Upstream Blk Time (%)	32	0					
Queuing Penalty (veh)	0	0					
Storage Bay Dist (ft)			100		200		
Storage Blk Time (%)			0			0	
Queuing Penalty (veh)			0			0	

Zone Summary

Zone wide Queuing Penalty: 0

Queuing and Blocking Report
Cumulative WP Alternative 3 AM

2/8/2016

Intersection: 10: Cottonwood Ave & Driveway

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	164	261	73
Average Queue (ft)	26	22	25
95th Queue (ft)	103	128	59
Link Distance (ft)	163	1161	109
Upstream Blk Time (%)	1		
Queuing Penalty (veh)	4		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: Perris Blvd & Driveway

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	T	TR
Maximum Queue (ft)	94	71	31	285	238
Average Queue (ft)	17	24	9	62	41
95th Queue (ft)	61	54	31	227	170
Link Distance (ft)	116	136		1114	1114
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)				2	
Queuing Penalty (veh)				0	

Zone Summary

Zone wide Queuing Penalty: 4

Queuing and Blocking Report
Cumulaitve WP Alternative 3 PM

2/8/2016

Intersection: 10: Cottonwood Ave & Driveway

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	162	94	52
Average Queue (ft)	23	4	29
95th Queue (ft)	80	34	55
Link Distance (ft)	161	1162	58
Upstream Blk Time (%)	0		0
Queuing Penalty (veh)	0		0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: Perris Blvd & Driveway

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	T	TR
Maximum Queue (ft)	180	115	72	489	484
Average Queue (ft)	116	31	36	248	186
95th Queue (ft)	158	76	71	520	480
Link Distance (ft)	116	136		450	450
Upstream Blk Time (%)	55			7	3
Queuing Penalty (veh)	0			0	0
Storage Bay Dist (ft)			100		
Storage Blk Time (%)				21	
Queuing Penalty (veh)				0	

Zone Summary

Zone wide Queuing Penalty: 0

Queuing and Blocking Report
Cumulative WP Alternative 3 Sunday

2/8/2016

Intersection: 10: Cottonwood Ave & Driveway

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	160	205	51
Average Queue (ft)	29	21	31
95th Queue (ft)	102	113	46
Link Distance (ft)	159	1163	26
Upstream Blk Time (%)	0		22
Queuing Penalty (veh)	0		0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: Perris Blvd & Driveway

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	T	TR
Maximum Queue (ft)	180	72	72	152	142
Average Queue (ft)	79	35	37	15	10
95th Queue (ft)	148	58	62	85	63
Link Distance (ft)	116	136		1114	1114
Upstream Blk Time (%)	30				
Queuing Penalty (veh)	0				
Storage Bay Dist (ft)			100		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Zone Summary

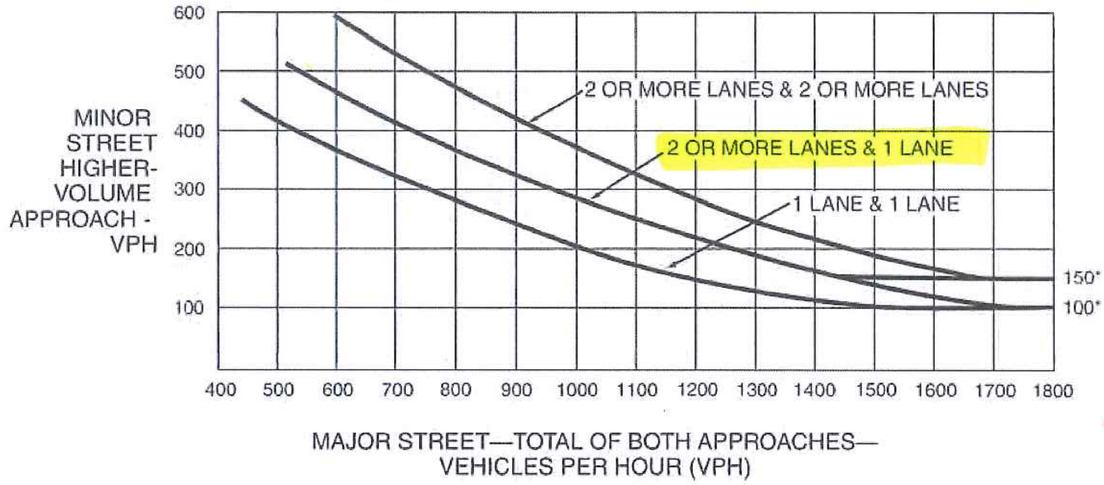
Zone wide Queuing Penalty: 0

APPENDIX E

SIGNAL WARRANT WORKSHEETS

Perris/Atwood

Figure 4C-3. Warrant 3, Peak Hour



* Not warrented

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

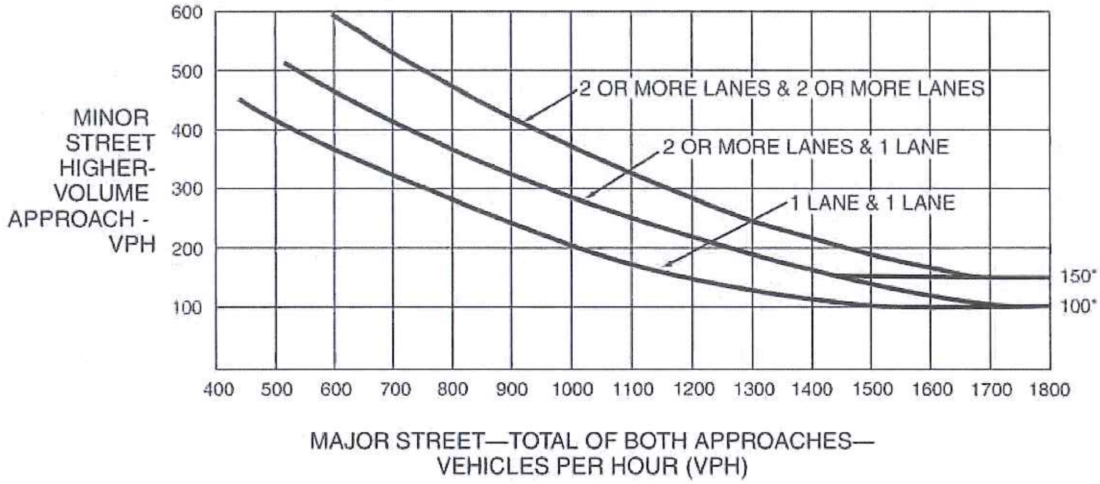
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Cottonwood / Crepe Myrtle

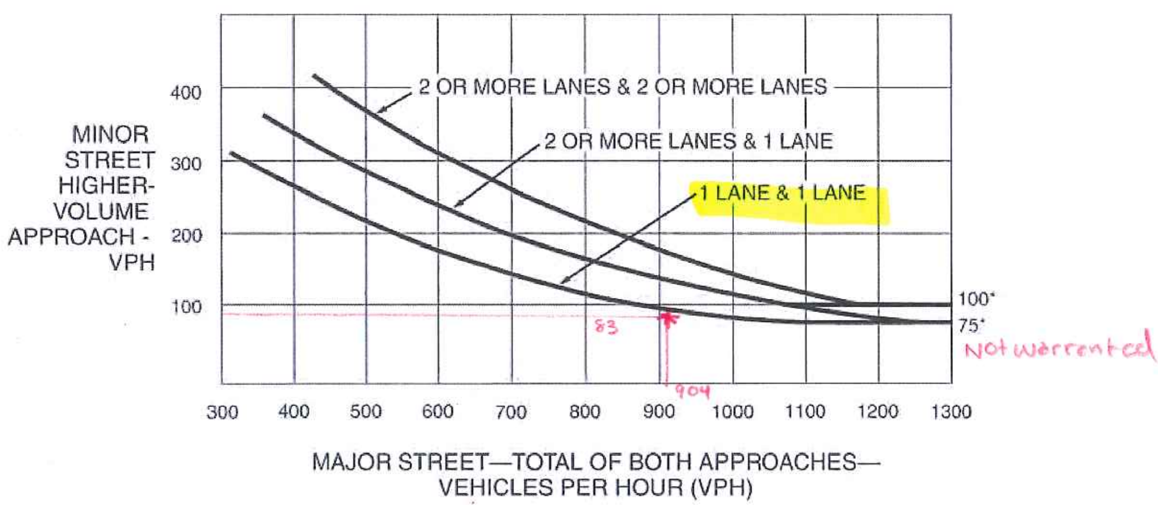
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

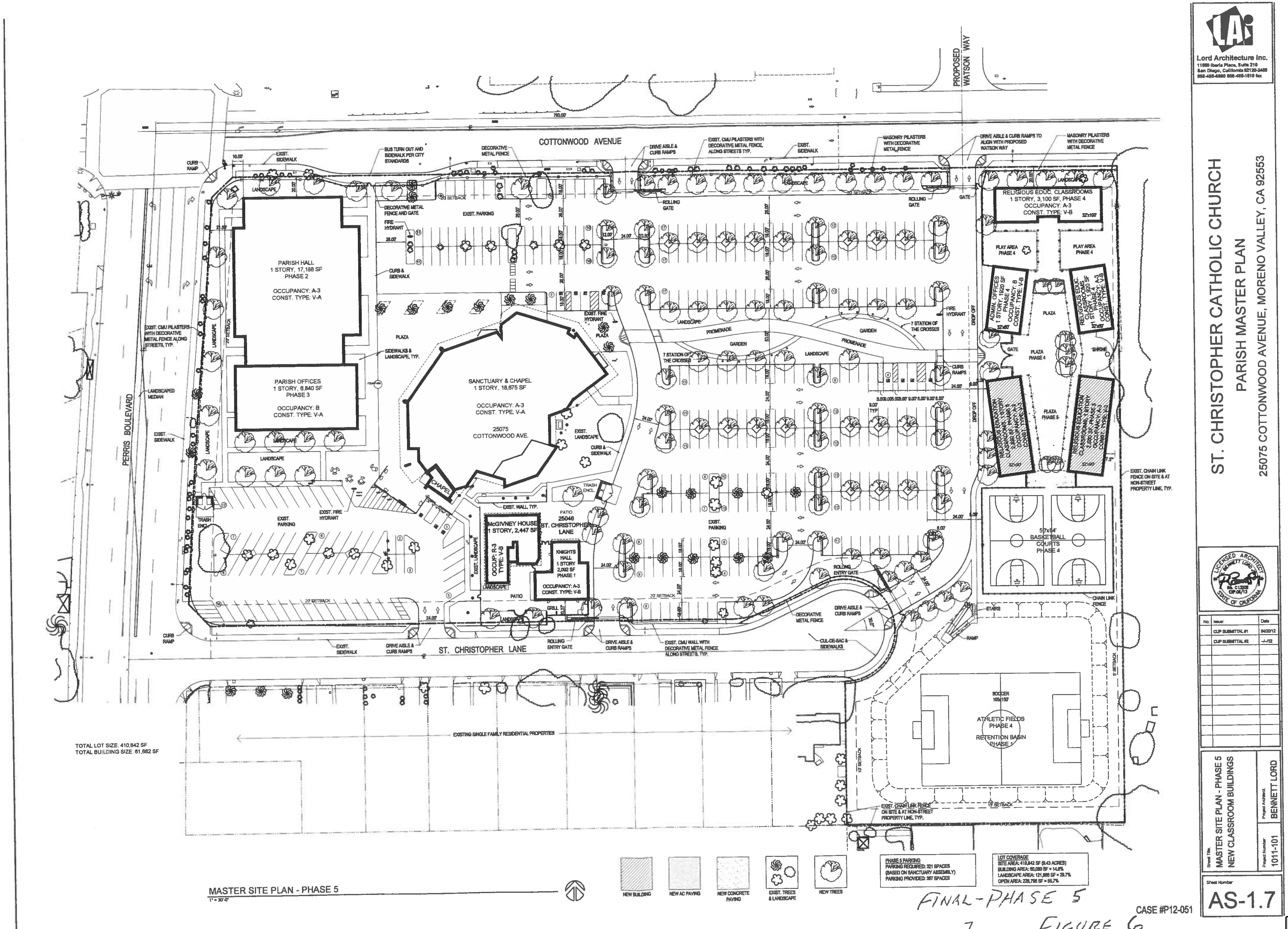
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

APPENDIX F

ADDITIONAL INFORMATION



Attachment: Exhibit A to Resolution 2018-XX - Mitigated Negative Declaration (3224 : A GENERAL PLAN AMENDMENT, CHANGE OF ZONE,

By using the new Sanctuary size of 18.675 K from Figure 2, and by adding 3.2 K of additional assembly area because of the increased size of the new Parish Hall as discussed under Phase 2, Figure 3, the Total additional Sunday Peak Hour traffic due to the Master Plan, was determined as shown in Table 2

Table 2

St. Christopher Church Master Plan Sunday Peak Hour Traffic Generation

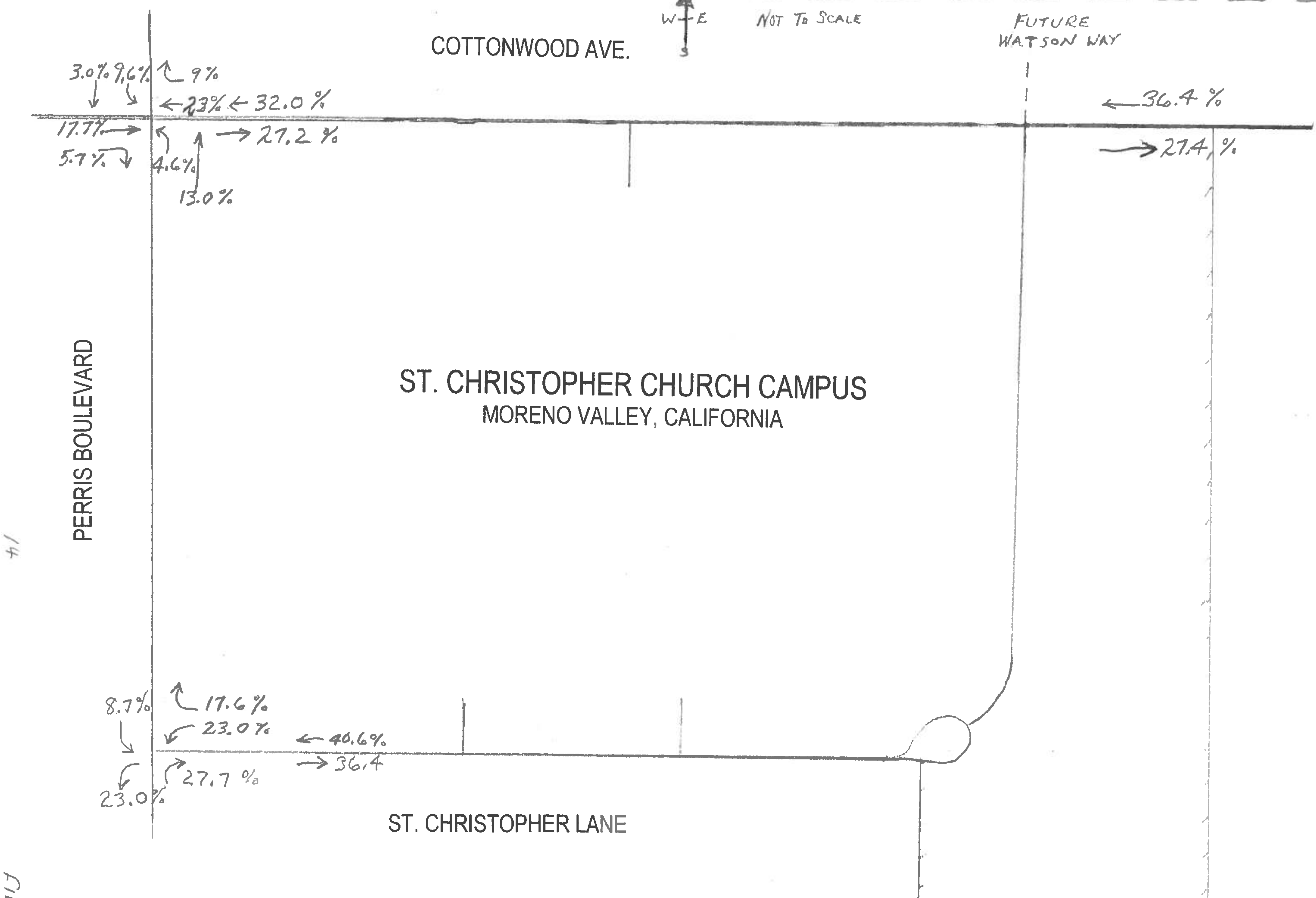
	Size	Rate / K		Peak Hour Vehicles	
		INBOUND	OUTBOUND	INBOUND	OUTBOUND
Improved Sanctuary	18.675 K				
New Parish Hall	9.400 K*				
Assembly Area					
Total =	28.075 K	16.87 K	17.68 K	474	496
Combined Master Plan Plus Existing Vehicles				474	496
Existing Peak Hour Vehicles				418	438
Vehicles added by Master Plan				56	58

*Old Parish Hall = 6200 K

Note that the Parish Master Plan will add 56 inbound and 58 outbound new, Sunday peak hour trips to the existing ones counted and shown on Figure 7.

Project Traffic Distribution And Assignment

Before starting on this study, this consultant, in a meeting with the City of Moreno Valley, Transportation Engineer, agreed that the volumes of the existing Sunday peak hour traffic counts would be used to estimate the future Sunday peak hour Master Plan distribution of new, forecasted, peak hour trips. Therefore, the peak hour volumes of Figure 7 were used for this future trip distribution. Figure 8 shows those trip distribution percentages on the various streets and intersections while Figure 9 shows the new trips, generated by the Master Plan, assigned to the streets and future driveways of the church campus.

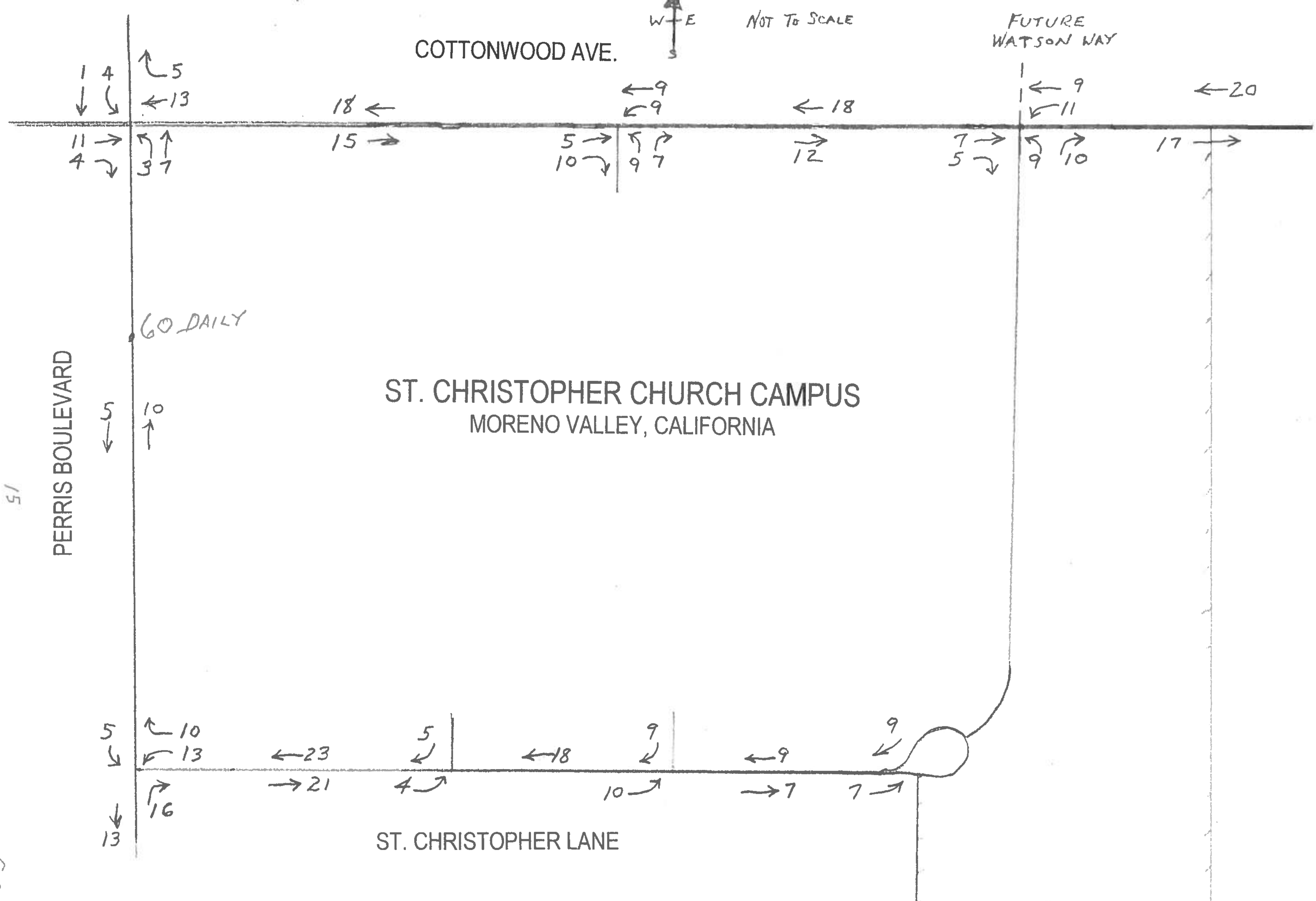


ESTIMATED DISTRIBUTION OF MASTER PLAN TRAFFIC
SUNDAY, SEPTEMBER 9, 2012 1:15 PM to 2:15 PM
FROM EXISTING = 418 INBOUND & 438 OUTBOUND TRIPS

FIG. 8

14

FIG. 8



ASSIGNMENT OF SUNDAY PEAK HOUR MASTER PLAN TRAFFIC

NEW MASTER PLAN AFTER PHASE 5
ADDS 56 TRIPS INBOUND - 58 TRIPS OUT BOUND

FIG. 9

Kimley»Horn

February 27, 2017

Ahmad Ghaderi
A & S Engineering, Inc.
28405 Sand Canyon Rd., Suite "B"
Canyon Country, CA 91387

Subject: *Planning Case No. PA15-0030 Supplemental Traffic Assessment*

Dear Mr. Ghaderi:

This memorandum has been prepared to supplement the Traffic Impact Study, dated April 2016, for the Yum Yum Donut Shop and Gas Station with Car Wash Project ("the Project") at the northeast corner of Perris Boulevard and Cottonwood Avenue. The project application was previously submitted to City of Moreno Valley staff and included plans to develop this particular land use.

At the time the traffic study was prepared, the Project was a standalone component to an overall larger site. There are currently no immediate plans to develop the remainder of the property, which extends to the north and encompasses the adjacent northerly parcel. However, the applicant is requesting a zone change from the current Office Commercial (OC) zoning to Community Commercial (CC) zoning. At the request of City staff, this memorandum will assess the implications of this zone change on the current proposed land use, as well as on the remainder of the undeveloped site. This memorandum will discuss permitted uses under each zoning category, per the City of Moreno Valley Municipal Code, and will also provide a general trip generation characteristics of various land uses permitted within each zoning category for informational purposes.

DISCUSSION

Per Section 9.02.020 of the City of Moreno Valley Municipal Code, the permitted uses for each zoning district type are indicated. The Project is currently in compliance with both the existing OC and proposed CC zoning districts. Both zoning districts permit the development of automobile service stations with accessory uses, including convenience stores and car washes. Therefore, a zone change would not cause the Project to deviate from a permitted use.

There are no defined plans to develop the remaining portion of the site at this time. While the OC and CC zoning types districts permit similar uses, such as sit-down restaurants, medical clinics, hotels, and various stores, there are several additional uses that would be permitted only within a CC zone. For instance, fast-food with drive-through establishments are not allowed within an OC zone. The following section provides a trip generation comparison for various permitted uses.

TRIP GENERATION ASSESSMENT

A trip generation comparison has been prepared to provide, for informational purposes, the trip generating potential of various land use types within each district. Trip generation estimates are based on the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 9th Edition* (2012) and are shown in Table 1.

TABLE 1
COMPARISON OF TRIP GENERATION RATES

Land Use	ITE Code	Unit	Trip Generation Rates [1]						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Office Commercial (OC) District									
Gasoline Station w/ Conv. Mkt. & Car Wash	946	Fueling Position	152.84	6.038	5.802	11.84	7.069	6.791	13.86
Medical-Dental Office Building	720	KSF	36.13	1.888	0.502	2.39	1.000	2.570	3.57
High-Turnover (Sit-Down) Restaurant	932	KSF	127.15	5.946	4.865	10.81	5.910	3.940	9.85
Community Commercial (CC) District									
Fast-Food Restaurant w/ Drive-Through	934	KSF	496.12	23.164	22.256	45.42	16.978	15.672	32.65
Shopping Center	820	KSF	42.70	0.595	0.365	0.96	1.781	1.929	3.71
Apparel Store	876	KSF	66.40	0.800	0.200	1.00	1.915	1.915	3.83

[1] Source: Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition

The trip generation rates in Table 1 show a general picture of possible land uses to be developed on the vacant site. A gas station, which is permitted under both uses, generates a large amount of traffic; locations with up to 12 or 16 fueling positions is commonplace. A fast-food with drive-through restaurant, which would be exclusive to the CC district and which would have a generally small building footprint, would generate a similar or lower amount of traffic to a gas station. For instance, in a case where a fast-food restaurant is 3,000 square-feet, a gas station with twelve pumps would generate significantly more traffic on a daily and peak hour basis.

A full assessment would not be detailed without a planned development in mind. However, looking at and comparing the higher-generating land uses permitted under both zoning district shows similarities in trip generating potential.

FINDINGS AND CONCLUSIONS

The Project falls within a permitted use in both the existing OC and proposed CC zoning designations. The previously prepared traffic study would be consistent with the General Plan, and no new impacts are anticipated outside of what was analyzed.

The zone change from an OC to a CC district would provide greater options for the development of the remaining areas. However, there are numerous commercial land uses that are common amongst permitted uses in both zoning designations. Due to the uncertainty in defining land uses for the undeveloped portions of the site, traffic conditions should be assessed on an individual basis when subsequent project applications are submitted to the City.

Appendix C

Cultural Resources Survey Report

HELIX Environmental Planning

Yum Yum Donuts Project

CULTURAL RESOURCES SURVEY REPORT

October 2017 | ASE-01

Stacie Wilson
Senior Archaeologist

Prepared for:

A & S Engineering
28405 Sand Canyon Road, Suite "B"
Canyon Country, CA 91387

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

Yum Yum Donuts Project

CULTURAL RESOURCES SURVEY REPORT FOR THE PROPOSED YUM YUM DONUTS PROJECT, CITY OF MORENO VALLEY, RIVERSIDE COUNTY, CALIFORNIA

Prepared for:

A & S Engineering
28405 Sand Canyon Road, Suite "B"
Canyon Country, CA 91387

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

October 2017 | ASE-01

National Archaeological Database Information

Authors:	Stacie Wilson
Firm:	HELIX Environmental Planning, Inc.
Client/Project:	A & S Engineering / Yum Yum Donuts Project
Report Date:	October 2017
Report Title:	Cultural Resources Survey Report for the Proposed Yum Yum Donuts Project, City of Moreno Valley, Riverside County, California
Type of Study:	Cultural Resources Survey
New Sites:	None
Updated Sites:	None
USGS Quad:	Sunnymead 7.5' Quadrangle
Acreage:	3.77 acres
Key Words:	Riverside County; Moreno Valley; Sunnymead; Perris Boulevard; no resources

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EXECUTIVE SUMMARY

HELIX Environmental Planning, Inc. (HELIX) was contracted by A & S Engineering to conduct a cultural resources study for the Yum Yum Donuts Project (project) in the City of Moreno Valley, California. A cultural resources study including a records search, Sacred Lands File search, Native American outreach, a review of historic aerial photographs and maps, and a field survey was completed. This report details the methods and results of the cultural resources study and has been prepared to comply with the California Environmental Quality Act (CEQA).

The records search conducted at the Eastern Information Center (EIC) indicated that 11 previous cultural resources studies have been conducted within one mile of the project area, none of which occurred within the project site. The records search results also indicated that a total of 6 cultural resources have been previously recorded within one mile of the project area; however, no sites have been recorded within the project site.

The field investigations included intensive pedestrian survey of the study area by a HELIX archaeologist and a Native American monitor on September 27, 2017. The survey did not result in the identification of any cultural material within the study area. As such, no impacts to cultural resources are anticipated. However, the project site was covered by fill material, and the original ground surface could not be observed. Additionally, the project site is located within alluvial soils, where there is a potential for buried cultural resources. Based on this, it is recommended that an archaeological and Native American monitoring program be implemented if grading or other ground disturbing activities (i.e., trenching for utilities) are to occur below the current layer of fill. The monitoring program would include attendance by the archaeologist and Native American monitor at a preconstruction meeting with the grading contractor and the presence of archaeological and Native American monitors during initial ground disturbing activities on site. Both archaeological and Native American monitors would have the authority to temporarily halt or redirect grading and other ground-disturbing activity in the event that cultural resources are encountered. If significant cultural material is encountered, the monitors will coordinate with the applicant and City staff to develop and implement appropriate mitigation measures.

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1.0 INTRODUCTION

1.1 PROJECT LOCATION AND DESCRIPTION

The Yum Yum Donuts Project (project) is located in the City of Moreno Valley (City) in northwestern Riverside County (Figure 1, *Regional Location*). The project is located northeast of March Air Force Base and northwest of Perris Reservoir within Section 8 of Township 3 South, Range 3 West, on the U.S. Geological Survey (USGS) 7.5' Sunnymead quadrangle (Figure 2, *Project Vicinity [USGS Topography]*). The 5.77-acre project area is located within Assessor Parcel Number (APN) 479-140-023 and 479-140-024, and is bordered by Perris Boulevard to the west and Cottonwood Avenue to the south (Figure 3, *Project Vicinity [Aerial Photograph]*). The project proposes to develop the property for commercial uses. A car wash, a convenience store, two office buildings, and a steel canopy are proposed within the study area. In addition, two underground storage tanks would be installed in the southeast corner of the project site.

1.2 REGULATORY FRAMEWORK

Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance. The California Environmental Quality Act (CEQA), Public Resources Code 21084.1 and CEQA Guidelines, California Code of Regulations Title 14 Section 15064.5 discuss significant cultural resources as "historical resources," and defines them as:

- resource(s) listed or determined eligible by the State Historical Resources Commission for listing in the California Register of Historical Resources (CRHR) (14 CCR Section 15064.5[a][1])
- resource(s) either listed in the NRHP [National Register of Historic Places] or in a "local register of historical resources" or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, unless "the preponderance of evidence demonstrates that it is not historically or culturally significant" (14 CCR Section 15064.5[a][2])
- resources determined by the Lead Agency to meet the criteria for listing on the CRHR (14 CCR Section 15064.5[a][3])

For listing in the CRHR, a historical resource must be significant at the local, state, or national level under one or more of the following four criteria:

A. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;

B. It is associated with the lives of persons important to local, California, or national history;

C. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values;

D. It has yielded or has the potential to yield information important to the prehistory or history of the local area, California, or the nation.

Under 14 CCR Section 15064.5(a)(4), a resource may also be considered a “historical resource” for the purposes of CEQA at the discretion of the lead agency.

All resources that are eligible for listing in the CRHR must have integrity, which is the authenticity of a historical resource’s physical identity evidenced by the survival of characteristics that existed during the resource’s period of significance. Resources, therefore, must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. In an archaeological deposit, integrity is assessed with reference to the preservation of material constituents and their culturally and historically meaningful spatial relationships. A resource must also be judged with reference to the particular criteria under which it is proposed for nomination.

California State Assembly Bill 52 (AB 52) revised PRC Section 21074 to include Tribal Cultural Resources (TCRs) as an area of CEQA environmental impact analysis. Further, per new PRC Section 21080.3, a CEQA lead agency must consult with any California Native American tribe that requests consultation and that is traditionally and culturally affiliated with the geographic area of a proposed project to identify resources of cultural or spiritual value to the tribe, even if such resources are already eligible as historical resources as a result of cultural resources studies.

1.2.1 City of Moreno Valley General Plan

The City’s General Plan (2006) includes the following objective and related policies regarding cultural and historical resources as part of the Conservation Element (City of Moreno Valley 2006: 9-37):

Objective 7.6: Identify and preserve Moreno Valley’s unique historical and archaeological resources for future generations.

Policies

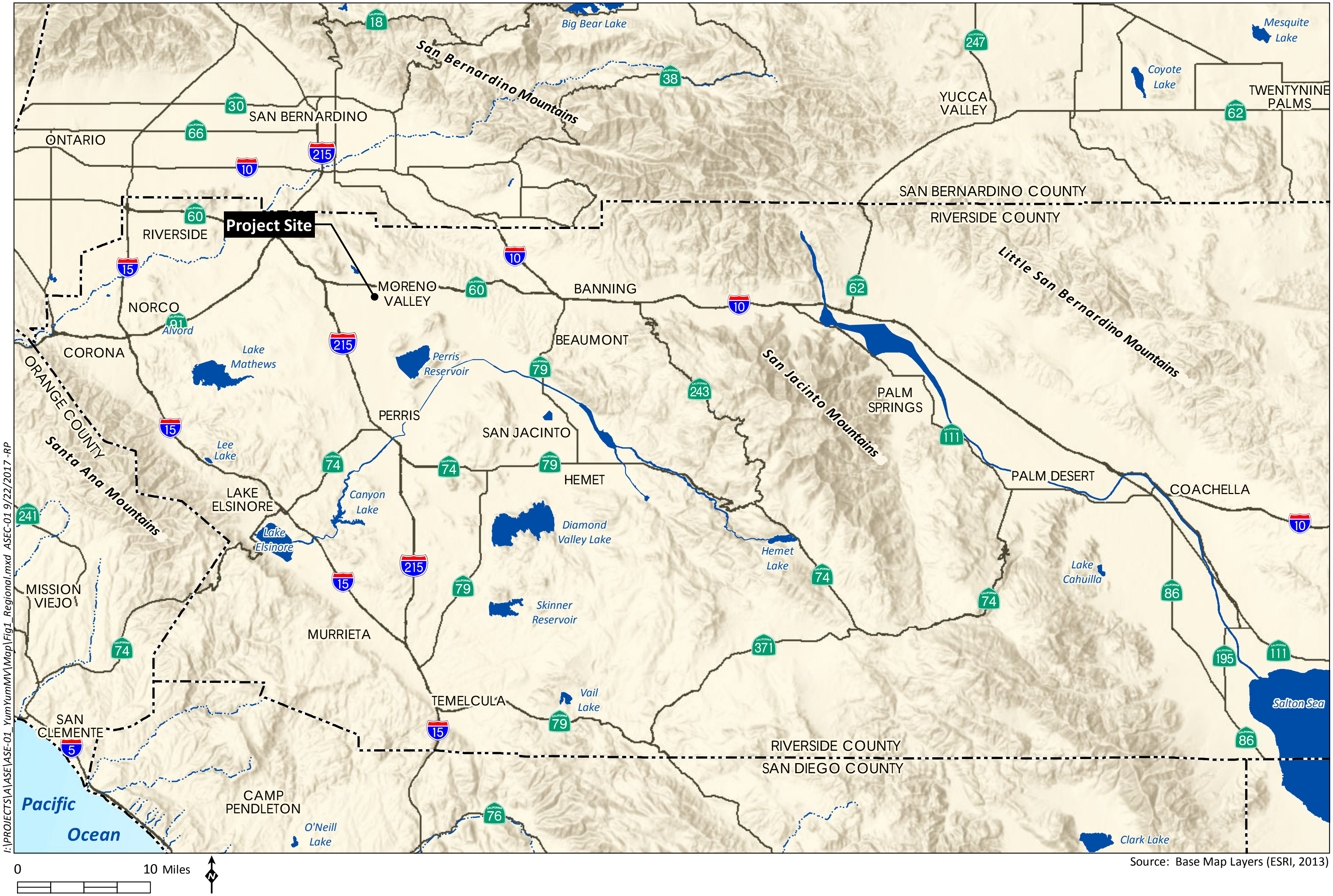
7.6.1: Historical, cultural and archaeological resources shall be located and preserved, or mitigated consistent with their intrinsic value.

7.6.2: Implement appropriate mitigation measures to conserve cultural resources that are uncovered during excavation and construction activities.

7.6.3: Minimize damage to the integrity of historic structures when they are altered.

7.6.4: Encourage restoration and adaptive reuse of historical buildings worthy of preservation.

7.6.5: Encourage documentation of historic buildings when such buildings must be demolished.



Source: Base Map Layers (ESRI, 2013)

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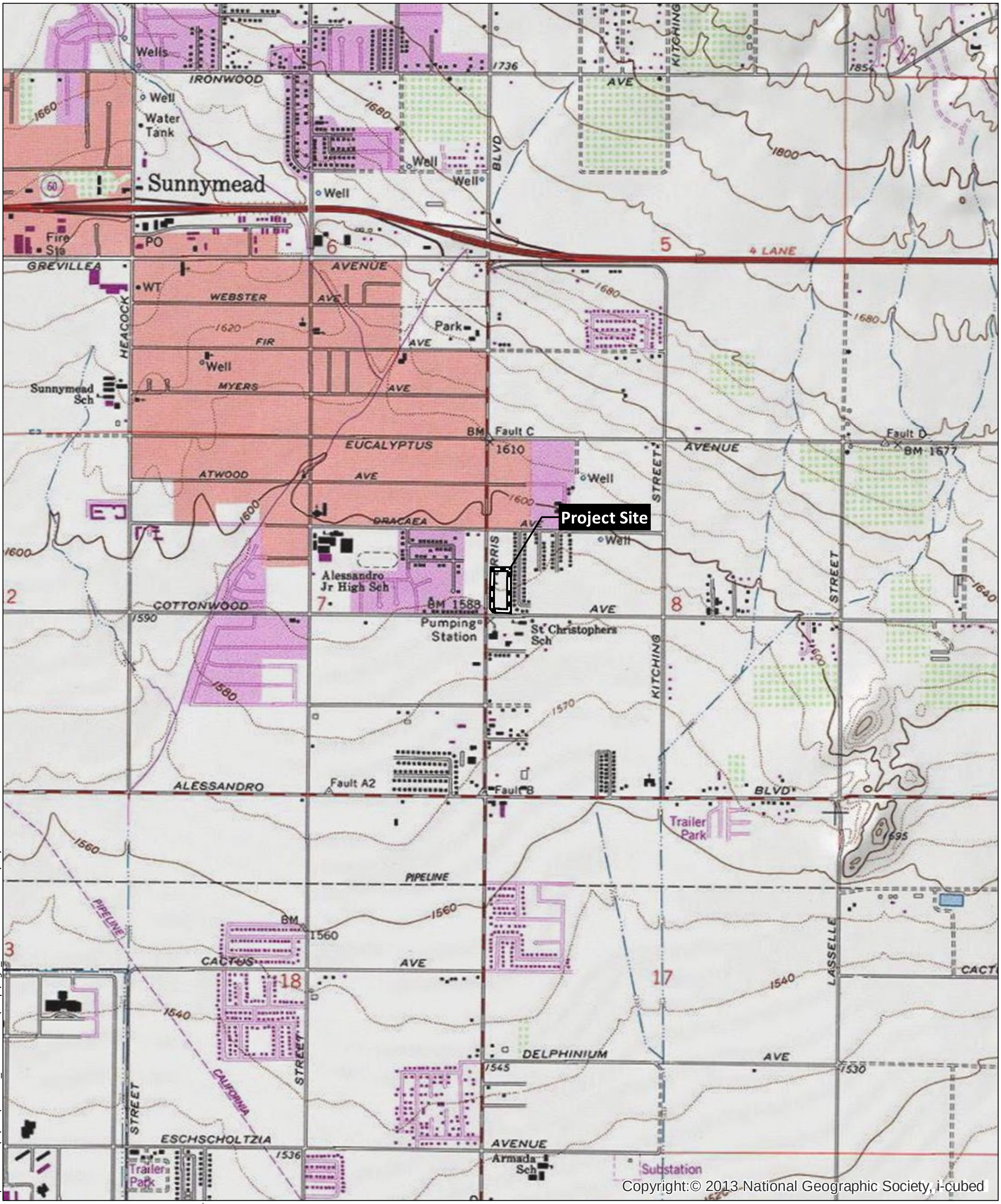
HELIX
Environmental Planning

Regional Location

Figure 1

Yum Yum Donuts



Source: Base Map Layers (SanGIS, 2016)

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HELIX Environmental Planning

Project Vicinity (USGS Topography)

Figure 2

Yum Yum Donuts

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0 50 Feet

N

Source: Base Map Layers (SanGIS, 2016)

HELIX
Environmental Planning

Project Vicinity (Aerial Photograph)

Figure 3

1.3 PROJECT PERSONNEL

Stacie Wilson, M.S., RPA, conducted the field survey and is the primary author of this technical report. Christina Mills of the Soboba Band of Luiseño Indians was present for the pedestrian survey. Senior technical review was provided by Mary Robbins-Wade, M.A., RPA. Resumes for key project personnel are presented in Appendix A.

2.0 PROJECT SETTING

2.1 NATURAL SETTING

The project area is in the Moreno Valley in the foothills of northwestern Riverside County. The Badlands and the San Bernardino and San Jacinto mountains lie to the east, the Santa Ana Mountains lie to the west, and the Box Spring Mountains are to the north. The climate of western Riverside County is characterized as semi-arid environment with low humidity and rainfall. Almost all rainfall occurs in the winter, but the region can also experience rare, intense summer thunderstorms. Wind is also a strong feature of this climatic regime, with dry winds in excess of 25 miles per hour in the late winter and early spring (National Oceanic and Atmospheric Administration [NOAA] 2014). Average monthly temperatures range from a December low of 53.6 degrees Fahrenheit (°F) to an August high of 79.0°F, and the average yearly rainfall is 9.97 inches (Weather Currents 2017). The property parcel is flat with an elevation of 1,590 feet above mean sea level (amsl). Various drainages in the vicinity would have made fresh water easily accessible to native populations living in the area.

Geologically, the project area is underlain by young alluvium in the southeastern portion of the study area and very old alluvium in the remainder of the project site (Morton and Matti 2001). The very old alluvium forms widespread deposits north and south of Moreno Valley, while the young alluvium is extensively developed in eastern Moreno Valley. The nearby hills south and west of the Valley are Mesozoic granitic formations, and the Badlands to the east are of undivided Pliocene nonmarine formations (Morton et al. 1999). Three soil series are mapped for the project site: Hanford coarse sandy loam (2 to 8 percent slopes), Pachappa fine sandy loam (2 to 8 percent slopes, eroded), and Ramona sandy loam (2 to 5 percent slopes, eroded). The Ramona sandy loam is found on the northern portion of the project site, Pachappa fine sandy loam is within the central portion, and Hanford coarse sandy loam is found in the southwestern area (Web Soil Survey n.d.). All three of the soil series are granite-derived alluviums found in alluvial fans and terraces that generally support wild oats, ripgut brome, soft chess, filaree, foxtail, mustard, and coast live oak (Bowman 1973). Native grassland species and coast live oak would have been used by native populations for food, medicine, tools, and ceremonial and other uses (Bean and Shipek 1978; Christenson 1990; Hedges and Beresford 1986). Many of the animal species living within these communities (such as rabbits, deer, small mammals, and birds) would have been used by native inhabitants as well.

2.2 CULTURAL SETTING

2.2.1 Prehistoric Period

Proposed dates for the earliest human occupation in California vary from around 20,000 years ago (Bada and Schroeder 1974; Carter 1957, 1978, 1980) to 10,000 years ago. Carter (1957, 1978, 1980), Minshall (1976) and others (e.g., Childers 1974; Davis 1968, 1973) have long argued for the presence of Pleistocene humans in California. However, these sites identified as "early man" are all controversial. The material from the sites is generally considered nonartifactual, and the investigative methodology is often questioned (Moratto 1984).

In southern California, three major time periods are commonly recognized for the prehistoric period: Early Prehistoric, Archaic, and Late Prehistoric. The best example of Early Prehistoric Period archaeological evidence in Southern California is in the San Dieguito complex of San Diego County, dating to over 9,000 years ago (Warren 1967; Warren et al. 2004). The San Dieguito Tradition is thought by most researchers to have an emphasis on big game hunting and coastal resources (Warren 1967). The material culture of the San Dieguito complex consists primarily of scrapers, scraper planes, choppers, large blades, and large projectile points. In some areas of California, the Early Prehistoric Period is often referred to as the Paleo-Indian period and is associated with the last Ice Age occurring during the Terminal Pleistocene (pre-10,000 years ago) and the Early Holocene, beginning circa 10,000 years ago (Erlandson 1994, 1997).

The Archaic Period, or Millingstone Horizon (Wallace 1955), dates from 7,000-8,600 to 1,300-3,000 years ago and is generally consistent with the Topanga complex of Los Angeles and the La Jolla complex of San Diego (Warren et al. 2004). The Millingstone Horizon is also referred to as the Encinitas Tradition (Warren 1968). The Encinitas tradition is generally "recognized by millingstone assemblages in shell middens, often near sloughs and lagoons" (Moratto 1984:147). According to Wallace, "a changeover from hunting to the collection of seed foods is clearly reflected in the archaeological record for the period between 6000 and 3000 B.C. The importance of seeds in the diet of the prehistoric peoples can be seen in the numbers of food-grinding implements present at their settlements" (Wallace 1978:28). Basin metates, manos, discoidals, a small number of Pinto series and Elko series points, and flexed burials are also characteristic. Most of the archaeological evidence for Archaic Period occupation in southern California is derived from sites located in near-coastal valleys, and around estuaries that are present along the San Diego coast (Warren et al. 2004). In the vicinity of the project, Archaic Period occupation is represented by a few diagnostic artifacts and one radiocarbon date of circa 2,200 years before present (B.P.) identified during archaeological excavations conducted for the Perris Reservoir project in Perris Valley (Bettinger 1974).

The Late Prehistoric period in southern California is characterized by the incursion of Uto-Aztecan - speaking people who occupied large portions of the Great Basin and an area stretching from southern Arizona and northwest and central Mexico into Nevada, Oregon, and Idaho (Miller 1986). The expansion of the Takic group into southern California is unrefined, but several scholars have hypothesized as to when and how the so-called "Uto Aztecan wedge" occurred. Sutton (2009) argues that the Takic group expanded into southern California from the San Joaquin Valley about 3,500 years ago. According to Moratto (1984), the Takic expansion into southern California occurred ca. 3,200 to 3,500 years ago. Golla (2007) suggests Uto-Aztecan speakers expanded into southern California at approximately 2,000 years ago. While the exact chronology of Takic-speaking groups' immigration to southern California remains uncertain, it is generally accepted that Native American population figures in the region substantially increased in the Late Prehistoric Period. In addition, the Late Prehistoric Period is marked by evidence of a number of new tool technologies and subsistence shifts in the archaeological record and is characterized by intensification of social, political, and technological systems. The changes include the production of pottery and the use of the bow and arrow for hunting instead of atlatl and dart, a reduction of shellfish gathering in some areas, an increase in the storage of foodstuffs such as acorns, and new traits such as the cremation of the dead (Gallegos 2002; McDonald and Eighmey 2004). After approximately A.D. 1600 a change occurred in settlement and subsistence patterns, and land use intensified in the San Jacinto and Perris valleys, which was reflected into the ethnohistoric period (Bean et al. 1991; Wilke 1974).

2.2.2 Ethnohistory

While some ethnographers place the area of the project site in the traditional territory of the Luiseño people (see Kroeber 1925: Plate 57), others show it as within traditional Cahuilla territory (see Bean 1978; Bean and Shipek 1978). Most probably, this is a transitional area between the two related cultural groups. The Cahuilla and Luiseño are Takic-speaking people of the Uto-Aztecan linguistic stock (Bean and Vane 1979; Miller 1986). Kroeber and others have previously referred to these Takic-speaking people of the Uto-Aztecan linguistic stock as members of the Shoshonean language family (Kroeber 1925). While, some dispute the use of this terminology (e.g., Miller 1986), it is still commonly used to refer to these groups.

2.2.2.1 Cahuilla

The Cahuilla term *ʔiviʔlyuʔatum* (or *īvīatim*) refers to those who speak the Cahuilla language and is also a recognition of a commonly shared cultural tradition (Bean 1972; Strong 1929). Prehistorically, the Cahuilla territory was topographically diverse, occupying elevations from 11,000 feet in the San Bernardino Mountains to below sea level at the Salton Sea (Bean 1978). The Cahuilla are thought to have been in part distinguished from other Shoshonean groups (the Luiseño, Serrano, and Gabrielino) by mountain ranges and plains, but they are known to have interacted regularly with these and other groups through trade, intermarriage, ritual, and war. Cahuilla villages were commonly situated within canyons extending into mountain ranges or on nearby alluvial fans, typically near sources of water and food (Bean 1978; Bean et al. 1991). The diverse habitat of the Cahuilla enabled a wide variety of plant and animal species to be used for food, goods manufacture, and medicine (Bean 1978).

2.2.2.2 Luiseño

The Late Prehistoric period is represented by the San Luis Rey complex in northern San Diego County and portions of Riverside County. The term Luiseño is derived from the Mission San Luis Rey and since Spanish-Mexican colonial times has been used in reference to those Takic-speaking people associated with the mission. The San Luis Rey (SLR) complex is divided into two phases: SLR I and SLR II. Elements of the SLR complex include small, triangular, pressure-flaked projectile points (generally Cottonwood series, but Desert Side-notched series also occurs); milling implements: mortars and pestles, manos and metates, and bedrock milling features; bone awls; Olivella shell beads; other stone and shell ornaments; and cremations (Meighan 1954; Moratto 1984; True et al. 1974). The later SLR II complex also includes several elements not found in the SLR I complex: "pottery vessels, cremation urns, red and black pictographs, and such nonaboriginal items as metal knives and glass beads" (Meighan 1954:223). SLR I was originally thought to date from A.D. 1400 to A.D. 1750, with SLR II dating between A.D. 1750 and A.D. 1850 (Meighan 1954). However, that division was based on the assumption that the Luiseño did not practice pottery manufacture until just prior to the arrival of the Spanish. The chronology has since been revised due to evidence that pottery may have been introduced to the Luiseño by their southern neighbors, the Kumeyaay, circa A.D. 1200-1600 (True et al. 1974).

2.2.3 Historical Background

Southern California's historic period began in September 1542 when Juan Rodriguez Cabrillo landed on Santa Catalina Island as part of his exploration expedition up the coast north of "New Spain." Although the impact of this initial contact did not usher in instant changes in the region, it marks the opening of the area to new contact, colonialism, and cultural shifts.

2.2.3.1 Spanish Period

During the mid-18th century, Spain escalated its involvement in California from exploration to colonization (Weber 1992). In 1769, a Spanish expedition headed by Gaspar de Portolá and Junípero Serra traveled north from San Diego seeking suitable locations to establish military presidios and religious missions in order to extend the Spanish Empire into Alta California. The Presidio of San Diego and Mission San Diego de Alcalá were established in 1769 followed by the Presidio of Monterey and Mission San Carlos Borromeo de Carmelo in 1770 in northern California. The missions and presidios stood, literally and figuratively, as symbols of Spanish colonialism, importing new systems of labor, demographics, settlement, and economies to the area. Agriculture and animal husbandry were the main pursuits of the Missions.

The first documented Spanish contact in what is now Riverside County was by Spanish military captain Juan Bautista de Anza who led expeditions in 1774 and 1775 from Sonora to Monterey (Bolton 1930). Anza embarked on the initial expedition to explore a land route northward through California from Sonora, with the second expedition bringing settlers across the land route to strengthen the colonization of San Francisco (Rolle 1963). Anza's route led from the San Jacinto Mountains northwest through the San Jacinto Valley, which was named "San José" by Anza. Little documentation exists of Anza's route being used after the two expeditions, although it was likely used to bring Spanish supplies into the newly colonized Alta California (Lech 2004). In 1781, the Spanish government closed the route due to uprisings by the Yuman Indians. However, by that time, the missions were established and self-sufficient; thus, the need for Spanish supplies from Sonora had begun to diminish.

Although Riverside County proved to be too far inland to include any missions within its limits, Missions San Juan Capistrano and San Luis Rey de Francia, established in 1776 and 1798 respectively, claimed a large part of southwestern Riverside County. Due to the inland geographical location of the Cahuilla territory, the Spanish missions did not have as direct an effect on them as it did on the Luiseño who lived along the coast (Bean 1978). On the coast, the Luiseño were moved into the Mission environment where living conditions and diseases promoted the decline of the Luiseño population (Bean and Shipek 1978). However, throughout the Spanish Period, the influence of the Spanish progressively spread further from the coast and into the inland areas of southern California as Missions San Luis Rey and San Gabriel extended their influence into the surrounding regions and used the lands for grazing cattle and other animals.

In the 1810s, ranchos and mission outposts, called *asistencias*, were established near the project area, increasing the amount of Spanish contact in the region. An asistencia was established in Pala in 1818 and in San Bernardino in 1819. Additionally, Rancho San Jacinto was established for cattle grazing in the San Jacinto Valley (Bean and Vane 1980; Brigandi 1999). In 1820, Father Payeras, a senior mission official, promoted the idea that the San Bernardino and Pala *asistencias* be developed into full missions in order to establish an inland mission system (Lech 2004). However, Mexico won its independence from Spain in 1821, bringing an end to the Spanish Period in California.

2.2.3.2 Mexican Period

Although Mexico gained its independence from Spain in 1821, Spanish patterns of culture and influence remained for a time. The missions continued to operate as they had in the past, and laws governing the distribution of land were also retained in the 1820s. Following secularization of the missions in 1834, large ranchos were granted to prominent and well-connected individuals, ushering in the Rancho Era, with the society making a transition from one dominated by the church and the military to a more civilian population, with people living on ranchos or in pueblos. With the numerous new ranchos in private hands, cattle ranching expanded and prevailed over agricultural activities.

In order to obtain a rancho, an applicant submitted a petition containing personal information and a land description and map (*diseño*). In 1835, Jose Antonio Estudillo of San Diego submitted a petition for the San Jacinto Rancho. Although Estudillo's petition was for four square leagues (approximately 30,000 acres), in 1842 he was granted close to the maximum size allowed of 11 square leagues (Lech 2004; State Lands Commission 1982). In 1845, Estudillo's son-in-law, Miguel de Pedrorena filed a petition for half of the San Jacinto Viejo Rancho and a small additional portion of land two miles to the northeast in the hills east of Lamb Canyon (Lech 2004). This portion, the northern half of the San Jacinto Viejo Rancho, became known as the San Jacinto Nuevo y Potrero Rancho, and is where the project is located.

During the Mexican period, the Cahuilla were increasingly influenced by Mexican culture. Some of the Cahuilla acquired Spanish names, learned Spanish, and adopted forms of Spanish subsistence, such as raising cattle, agriculture, and wage labor (Ward 1967; Bean 1978). Many Cahuilla worked seasonally for the Mexicans, traveling to and from their villages (Bean 1978).

2.2.3.3 American Period

American governance began in 1848, when Mexico signed the Treaty of Guadalupe Hidalgo, ceding California to the United States at the conclusion of the Mexican–American War.

California's acquisition by the United States substantially increased the growth of the population in California. The California gold rush, the end of the Civil War, and the passage of the Homestead Act implementing the United States' manifest destiny to occupy and exploit the North American continent brought many people to California after 1848. While the American system required that the newly acquired land be surveyed prior to settlement, the Treaty of Guadalupe Hidalgo bound the United States to honor the land claims of Mexican citizens who were granted ownership of ranchos by the Mexican government (Lech 2004). The Land Act of 1851 established a board of commissioners to review land grant claims, and land patents for the land grants were issued from 1876 to 1893. The San Jacinto Nuevo y Potrero Rancho land grant was patented in 1883 to Miguel Pedrorena, Maria Antonia Estudillo Pedrorena, Isabel Pedrorena, and Helena Pedrorena.

Initially southern California was divided into only two counties: Los Angeles and San Diego. In 1853, San Bernardino County was added, placing what is now Riverside County primarily within San Diego County and partially within San Bernardino County.

Southern California was developed by Americans and other immigrants who migrated to the western frontier in pursuit of gold and other mining, agriculture, trade, and land speculation (Lech 2004). This population growth of southern California during the early years of the American Period brought a need for mail and freight travel. In 1857, John Butterfield was awarded a six-year contract to transport mail twice a week between St. Louis, Missouri, and San Francisco, California (Helmich 2008). The Butterfield Stage Route used the same trail as the Sonora (or Southern Emigrant) Trail from Yuma through Warner Springs and Temecula, and then up through Temescal Valley to Chino, and then to Los Angeles. By the mid-nineteenth century, the Southern Emigrant Trail ran through western Riverside County in a similar alignment to the current I-15 freeway. The Butterfield Overland Stage route went through a major stop called "Alamos," the Spanish word for cottonwoods, in Murrieta. Another branch of the Southern Emigrant Trail veered northward from Temecula to Box Springs near present-day Moreno Valley, roughly following the present-day route of I-215 (Lech 2004).

Local mail routes within southern California were also developed beginning in the 1850s, such as the line begun in 1852 by Phineas Banning between Los Angeles and San Diego (Stott 1968). In 1868, Tomlinson & Co. briefly operated a daily mail route from Tucson, Arizona to Los Angeles via San Diego and San Bernardino (Stott 1968), although after only four months the company had lost $12,000 and discontinued service (Mills 1957). In 1867, the U.S. Mail Company sent weekly stages that ran between San Diego and San Bernardino.

While stagecoaches were successful at transporting gold, people, and mail, the need for a railroad to California was imperative. In the 1850s, surveys were initiated by the federal government to determine a railroad route to the Pacific coast (Lech 2004). Although the first transcontinental railroad was completed in 1869 to northern California, in the 1870s the Southern Pacific Railroad Company, incorporated in 1865 and consolidated in 1870, began to construct a southern route that would traverse the state (Fickewirth 1992). In the early 1880s, the California Southern Railway, a subsidiary of the Atchison, Topeka and Santa Fe Railway (Santa Fe), was completed and allowed for travel through the Cajon Pass to Barstow to a junction of the Atlantic and Pacific Railroad and down to San Diego through western Riverside County. In 1887, Santa Fe officials consolidated their family of railroads in southern California, forming the California Central Railway. Although the California Southern remained an individual subsidiary at that time, it consolidated with the California Central Railway and the Redondo Beach Railway two years later 1889. The resulting corporation was the Southern California Railway Company, wholly owned by Santa Fe (Price 1988). In 1906 all of lines of Southern California Railway Company were deeded to the Atchison, Topeka and Santa Fe Railway Company.

The project area and the surrounding region developed along with the railroad. The trains were used to transport settlers into the area, creating a period of agricultural and land development, ultimately resulting in the establishment of Riverside County in 1893, formed from portions of San Bernardino and San Diego counties. Moreno Valley, which consisted of small, unincorporated communities, got its name from Frank E. Brown ("Moreno" in Spanish), who formed the Bear Valley Land and Water Company in 1883. Brown built a dam at Bear Valley and provided water to the Perris and Moreno communities until 1899, when he lost a legal suit, and thereby water rights, to the City of Redlands. This litigation and a period of natural drought devastated the local farming communities, forcing families to either move or abandon their homes in favor of better irrigated areas. The few who remained turned to "the dry farming of hay, grain, and grapes" (City of Moreno Valley, n.d.).

The community was revived in 1918, with the construction of March Field in anticipation of America's entry into World War I. It began as a temporary base for training fighter pilots but was established as a permanent base and flight training school in the late 1920s. This led to a population boom in the Moreno Valley, with the Base supporting up to 85,000 troops at a time. The establishment of the Riverside International Raceway in 1958 and the Lake Perris Recreation Area in 1973 led to further population increases until the unincorporated communities of Moreno, Edgemont, and Sunnymead were combined into the City of Moreno Valley in 1984 (City of Moreno Valley, n.d.).

3.0 ARCHIVAL RESEARCH AND CONTACT PROGRAM

3.1 RECORDS SEARCH

HELIX conducted a record search of the California Historical Resources Information System (CHRIS) at the Eastern Information Center (EIC) on September 25, 2017. The records search covered a one-mile radius around the project area and included archaeological and historical resources, locations and citations for previous cultural resources studies, and a review of the state Office of Historic Preservation (OHP) historic properties directory. The records search summary and map are included as Appendix A (Confidential Appendices, bound separately).

3.1.1 Previous Surveys

The records search results identified 11 previous cultural resource studies within the record search limits, none of which occurred within the project area (Table 1, *Previous Studies within One Mile of the Project Area*). Six of the studies were cultural resource inventories, record searches, or site visits; the remaining studies include an archaeological survey, a historical resource investigation, an architectural evaluation, and an environmental impact report. Only two of the studies, a historical resources investigation (Alexandrowicz 2006) and the California Living Moreno Valley Project (Hogan et al. 2011) identified resources within the search radius.

Table 1
PREVIOUS STUDIES WITHIN ONE MILE OF THE PROJECT AREA

Report Title	Author, Date	Report Type	Results
Environmental Impact Evaluation: Archaeology of Brodiaea Avenue, Pl 984, Water Systems Addition, Riverside County, California	Weaver, 1975	Environmental Impact Report	None in search radius
Cultural Resource Report on Tracts 12608, 12606-2 and 11410 Located in the Sunnymead Area, Riverside County, California	Scientific Resource Surveys, Inc., 1983	Cultural Resources Report	None
Cultural Resources Inventory for the City of Moreno Valley, Riverside County, California	McCarthy, 1987	Cultural Resources Inventory	None in search radius
Cultural Resource Assessment for AT&T Wireless Facility 950-031-029a Located at 24899 Alessandro Boulevard, City of Moreno Valley, Riverside County, California	Kyle, 2004	Cultural Resource Assessment	None
An Architectural Evaluation of Structures Located within Assessor Parcel Numbers 482-090-009-0, -010-0, and 033-0, within the City of Moreno Valley, Riverside County, California	McKenna et al., 2004	Architectural Evaluation	None

Table 1 (cont.)
PREVIOUS STUDIES WITHIN ONE MILE OF THE PROJECT AREA

Report Title	Author, Date	Report Type	Results
An Archaeological Survey for the Alessandro Plaza Project, City of Moreno Valley, County of Riverside, California	Rosenberg and Smith, 2005	Archaeological Survey	None
An Historical Resources Identification Investigation of the Alessandro Pointe Project, Tract 34681, 25817 Alessandro Boulevard, City of Moreno Valley, Riverside County, California	Alexandrowicz, 2006	Historical Resources Investigation	P-33-015454
Letter Report: Cultural Resources Records Search and Site Visit for Royal Street Telecommunications, LLC Candidate LA2356b (Sunnymead Plaza), 24903 Sunnymead Boulevard, Moreno Valley, Riverside County, California	Bonner and Aislin-Kay, 2007	Record Search and Site Visit	None
Cultural Resources Search and Site Visit Results for T-Mobile USA Candidate IE24173-B	Bonner et al., 2011	Cultural Resources Search and Site Visit	None
Letter Report: Cultural Resources Records Search and Site Visit Results for T-Mobile USA Candidate IE24899-H (A Storage Place)	Bonner and Williams, 2011	Record Search and Site Visit	None
California Living Moreno Valley Project	Hogan et al., 2011	Unknown	P-33-007280, 33-007284, and 33-007289

3.1.2 Previously Recorded Sites

The EIC has a record of six previously recorded cultural resources within a one-mile radius of the project, but none have been recorded within the project area (Table 2, *Previously Recorded Resources within One Mile of the Project Area*). Two of the resources, P-33-007279 and 33-007280, are within a half mile of the project. All of the resources are historic, including five historic addresses of private residences displaying vernacular architecture and dating to between ca. 1880 and ca. 1920. The sixth resource, P-33-015454, is a historic site consisting of the remains of two private residences and associated structures and trash scatters.

Table 2
PREVIOUSLY RECORDED RESOURCES WITHIN ONE MILE OF THE PROJECT AREA

Resource Number (P-37-#)	Resource Number (CA-RIV-#)	Description	Recorder, Date
007276	7276	Vernacular ranch house built ca. 1920	Warner, 1983
007279	7279	Vernacular ranch house built in 1896, home of Moreno Valley pioneer D.C. Hield	Warner, 1983
007280	7280	Historic Rosa More House, vernacular ranch house built ca. 1880	Warner, 1983
007284	7284	Vernacular wood framed house built ca. 1915	Warner, 1983
007289	7289	Vernacular ranch house built ca. 1915	Warner, 1983
015454	8149	Historic site consisting of the remains of two early to mid-20th Century residences with associated trash scatters	Alexandrowicz, 2006

3.1.3 Other Archival Research

Various additional archival sources were also consulted, including historic topographic maps and aerial imagery. The purpose of this research was to identify historic structures and land use in the area.

One building appears in the northwest corner of the project area on the 1901 USGS 30’ Elsinore quadrangle, along with several roads in street grids and other buildings in the vicinity. The community of “Armada” is indicated two blocks south of the project site. On the 1942 (Department of the Army 15' Perris quadrangle) and 1953 (USGS 7.5' Perris quadrangle) historic topographic maps, several more buildings are shown in the project vicinity, as well as community structures, such as schools. Additionally, Cottonwood Avenue, running east-west along the southern border of the project site, is named. No buildings or structures are shown within the project site on historic topographic maps from 1942 (Department of the Army 15' Perris quadrangle), 1953 (USGS 7.5' Perris quadrangle), and historic aerial photographs available at historicaerials.com from 1966, 1967, and 1978 (NETR Online 2017). On the 1996 aerial photograph, the housing development located directly to the east of the project site is in place, and Perris Boulevard, located adjacent to the project on the west, is shown as a two-lane road. By 1997, aerial photographs show Perris Boulevard has being expanded into a four-lane road, and the project area looks as if grading had occurred, possibly with fill placed within the area prior to the grading.

3.2 NATIVE AMERICAN CONTACT PROGRAM

HELIX contacted the Native American Heritage Commission (NAHC) on September 25, 2017 for a Sacred Lands File search and list of Native American contacts for the project area. The NAHC indicated in a response dated September 27, 2017 that no known sacred lands or Native American cultural resources are within the project area. Letters were sent on October 2, 2017 to Native American representatives and interested parties identified by the NAHC. Two responses have been received to date. The Pala Band of Mission Indians responded on October 4, 2017, that the project is not within the boundaries of the territory that the tribe considers its Traditional Use Area and defers to the wishes of Tribes in closer proximity to the project area. The San Manuel Band of Mission Indians responded on October 5, 2017, that proposed project area is within the Serrano ancestral territory and as such, is of interest to the Tribe. However, due to the nature and location of the proposed project, they do not have any concerns with the project's implementation, as planned, at this time. If any additional responses are received, they will be forwarded to City staff. Native American correspondence is included as Appendix C (Confidential Appendices, bound separately).

4.0 METHODS

4.1 SURVEY METHODOLOGY

A pedestrian survey of the project site was conducted on September 28, 2017 by HELIX senior archaeologist Stacie Wilson and Native American monitor, Christine Mills from the Soboba Band of Luiseño Indians. The project area was walked in transects spaced approximately 15 meters (m) apart.

Visibility was excellent for the project area (Plates 1 and 2). It was observed that fill had been overlain on the entirety of project site except for the eastern edge of the site along the property line next to the adjacent private residences. Based on the berm present along the east side of the project area, it is estimated that the fill is approximately three to four feet in height (Plate 3). The fill dirt contained gravel, asphalt chunks, and modern clay pipe fragments. The project area was devoid of vegetation except for a few small weeds.


Plate 1. Overview of the project area from northeast corner, view to the south.

Plate 2. Overview of the project area from northwest corner, view to the south.

Plate 3. Overview of the berm located along the eastern border of project area, view to the south.

5.0 RESULTS

No cultural material was observed within the archaeological survey area; however, as noted above, the project area is overlain by fill soils with modern asphalt and debris intermixed.

6.0 SUMMARY AND MANAGEMENT RECOMMENDATIONS

A study was undertaken to identify cultural resources that are present in the Yum Yum Donuts Project Area and to determine the effects of the project on historical resources. The cultural resources survey did not identify any cultural resources within the project area; therefore, no impacts to cultural resources are anticipated. However, the project site was covered by fill material and the original ground surface could not be observed. Additionally, the project site is located within alluvial soils, where there is a potential for buried cultural resources. Based on this, it is recommended that an archaeological and Native American monitoring program be implemented if grading or other ground disturbing activities (i.e., trenching for utilities) are to occur below the current layer of fill. The monitoring program would include attendance by the archaeologist and Native American monitor at a preconstruction meeting with the grading contractor and the presence of archaeological and Native American monitors during initial ground disturbing activities on site. Both archaeological and Native American monitors would have the authority to temporarily halt or redirect grading and other ground-disturbing activity in the event that cultural resources are encountered. If significant cultural material is encountered, the monitors will coordinate with the applicant and City staff to develop and implement appropriate mitigation measures.

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Appendix A

Resume

Stacie Wilson, RPA

Senior Archaeologist

HELIX Environmental Planning

Summary of Qualifications

Ms. Wilson has been professionally involved in cultural resources management for 14 years. She has served as principal investigator on numerous cultural resources management projects, and regularly coordinates with local, state, and federal agencies and Native American tribal representatives. She is skilled in project management, archaeological inventories and excavation, and report documentation and has broad experience on private, municipal, federal, utility, and renewable energy projects. She also is proficient at creating, organizing, and analyzing GIS data; technical skills include ArcGIS 10.4, Spatial Analyst, Geostatistical Analyst, and working with large datasets. Ms. Wilson is detail oriented and has strong organizational and coordination capabilities.

Selected Project Experience

The Lakes - Unit 4B & Unit 6 (2017). Senior Archaeologist for an approximately 130-acre construction monitoring project in Rancho Santa Fe. Provided cultural resources consultation support, arranged for archaeological and Native American monitors, and provided project status updates to the County. Work performed for Lennar Homes of California, with the County of San Diego as the lead agency.

El Cuervo Del Sur Phase II Mitigation Support (2016 - 2017). Principal Investigator for a cultural resources study for the El Cuervo Del Sur restoration site. Conducted as part of an as-needed contract with the City of San Diego, Transportation & Storm Water Department, the project proposed the creation of approximately 1.4 acres of wetland habitat. Duties included conducting background research, reviewing previous cultural resource surveys, conducting Native American outreach, and preparing reports. Work performed for the City of San Diego.

Emerald Drive Planned Residential Development Project (2016). Principal Investigator for a cultural resources study for a proposed residential development. Conducted as part of an as-needed contract with the City of Vista, the project proposed the subdivision of a 6.9-acre parcel into 27 single family detached lots. Duties included conducting background research, overseeing field survey and recording of cultural resources, Native American outreach and coordination, and report preparation. Work performed for the City of Vista.

Coastal Reliability Project (2016). Project Archaeologist and field director for a cultural resource survey of eight miles of transmission line located within

Education

Master of Science, Applied Geographical Information Science, Northern Arizona University, 2008

Bachelor of Arts, Anthropology, University of California, San Diego, 2001

Bachelor of Science, Biological Psychology, University of California, San Diego, 2001

Registrations/ Certifications

Register of Professional Archaeologists, 2016

Professional Affiliations

Society for California Archaeology

Society for American Archaeology

Stacie Wilson, RPA

Senior Archaeologist

the cities of San Diego and Del Mar. The project involved the reconfiguration, removal, and conversion of transmission lines. Duties included the oversight of pedestrian archaeological and historic architecture surveys and documentation of 45 cultural resources. Work performed for SDG&E, with California Public Utilities Commission as the lead agency.

Terramar Area Coastal Improvement Project (2015 - 2016). Task Lead for a cultural resources study of the Terramar Area Coastal Improvement Project. The project proposed to enhance the City of Carlsbad's Terramar community by improving safety, traffic, and coastal access by constructing new sidewalks and walking paths, creating more parking, improving road conditions, and building a buffer for bicyclists. Duties included oversight of the cultural resources records search, field survey, and archaeological documentation for the project. Work performed for the City of Carlsbad

County of San Diego Department of Parks and Recreation As-Needed Consulting Services (2012 - 2016). Cultural Resources Task Lead and Principal Investigator for as-needed CEQA and NEPA support. Duties included coordination of archaeological monitors, site assessments, survey, California Department of Parks and Recreation (DPR) documentation, and reporting efforts.

San Diego Gas & Electric (SDG&E) As-Needed Services (2011 - 2016). Cultural Resources Project Manager and Principal Investigator for cultural resources as-needed services for SDG&E pole replacement, operation and maintenance, transmission line planning, and other projects in San Diego and Imperial counties on private, local agency, and federal lands. Activities included task coordination and management of field survey, monitoring, and archaeological documentation for project task orders.

Otay Truck Route (2013 - 2014). Task Lead for a cultural resources study for the Otay Truck Route project. The Otay Truck Route fronts a portion of the U.S./Mexico international border in the Otay Mesa community of the City of San Diego. Duties included conducting an archaeological survey of approximately 18.4 acres, recording prehistoric and archaeological sites, and reporting efforts that included a Historic Property Survey Report, Archaeological Survey Report, and City of San Diego Archaeological Resource Report Form. The project proponent was the City of San Diego, with local assistance funding from the FHWA. The City of San Diego was the lead agency for CEQA compliance and (via delegated authority from the FHWA) Caltrans was the lead agency for NEPA.

Blythe and Palen Solar Power Projects (2009 - 2014). Field Archaeologist and GIS analyst for concentrated solar electric-generating facilities proposed on approximately 2,000-acre and 7,000-acre sites on U.S. Bureau of Land Management land in eastern Riverside County. The projects, under a fast-track American Recovery and Reinvestment Act of 2009 funding schedule, use parabolic trough solar thermal technology to produce electrical power using a steam turbine generator fed from a solar steam generator. Work included extensive resource and project GIS data management. Work performed for Solar Millennium, LCC, with the U.S. Bureau of Land Management as the lead agency.

Appendix D

Preliminary Hydrology Report

PRELIMINARY HYDROLOGY REPORT

For

YUM YUM MORENO VALLEY

NEC PERRIS BOULEVARD AND COTTONWOOD AVENUE

MORENO VALLEY, CA

Prepared For:

YUM YUM DONUT

18830 SAN JOSE AVENUE

INDUSTRY, CA. 91748

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November 2017

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Appendices

1.0 Scope

Hydrologic calculations to evaluate surface runoff associated with 2- and 100-year hypothetical design storm frequency from the tributary drainage areas were performed based on the latest *Riverside County Flood Control and Water Conservation District* rational method. Hydrologic parameters used in the analysis, such as rainfall and soil classification are presented in the *Riverside County Hydrology Manual* (Hydrology Manual).

2.0 Project Description

2.1. Existing Conditions

The subject property is located at NEC of Cottonwood Avenue and Perris Boulevard in Moreno Valley, California. The existing site is a portion of an existing lot, Lot 5, that is approximately 3.77 acres. The site is approximately 1.61 acres and is the southern portion of Lot 5. It is an existing vacant lot and it is bounded by a vacant lot to the north, a residential development to the east, Perris Boulevard to the west, and Cottonwood Avenue to the south. The existing site is relatively flat and sheet flows in a generally southeasterly direction towards Cottonwood Avenue.

2.2. Proposed Conditions

The proposed project will include a gas station with a one-story mini-mart and a drive-thru, fuel dispenser area with overhead canopy, and a surface parking lot area.

Site has underlying soil with low infiltration rates per soil report. Therefore, the site is proposing a vegetated bioretention area along the western, eastern, and southern perimeter of the site.

3.0 Hydrology

3.1 Methodology

The hydrologic calculations to determine the 2-year and 100-year peak flow rates were performed using the criteria in the *Riverside County Flood Control District and Riverside County Hydrology Manual*. The Rational Method is an empirical computation procedure for developing a peak runoff rate (discharge) for storms of a specific recurrence interval. Rational Method equations are based on the assumption that the peak flow rate is directly proportional to the drainage area, rainfall intensity, and a loss rate coefficient, which describes the effects of land use and soil type. The Rational Method flow rates were computed by generating a hydrologic "link-node" model, which divides the area into drainage subareas. Please see Appendix A for hydrology calculations.

3.2 Areas

Hydrology Maps are included in Appendix C of this report delineating the drainage subareas. Areas are provided in the maps in both square feet (SF) and acres (AC). AC units are used in the rational method calculations. Hydrology Maps are provided in Appendix C of this report.

3.3 Soil

When making estimates of storm water runoff it is assumed that infiltration is a loss for the storm event under consideration. The major affecting infiltration is the nature of the soil itself. The site is underlain by soil with slow infiltration rates. Therefore, Soil Type C was selected for the hydrology analysis.

3.4 Time of Concentration

The Time of Concentration (T_c) is the time required for runoff to flow from the most remote part of the drainage area to the point of interest. The T_c (minutes) is based on slope and runoff coefficient and it was obtained using the nomograph in Plate D-3 of the Hydrology Manual, and it is included in Appendix B of this report for reference.

3.5 Rainfall Intensity

The rainfall intensity is the rainfall in inches per hour (in/hr) for a duration equal to the T_c for a selected storm frequency. Intensity is dependent on precipitation and T_c. The time-averaged rainfall intensity for the 2- and 100-year storm event were obtained from the precipitation intensity curves using the regression equation in Plate D-4.1 of the Hydrology Manual. The regression equations determine the precipitation intensities corresponding to the time of concentrations and selected design frequency. Calculations of intensities are provided as part of the hydrology calculations and included in Appendix A.

3.6 Hydrology

The peak rate runoff flow of the proposed site increases due to increase in impervious areas including roofs, drive aisles, and sidewalks. The existing and proposed flows were calculated using the Rational Method based on the site conditions discussed in Sections 2.1 and 2.2, respectively.

3.6.1 Existing Hydrology

The entire existing site sheet flows in a generally southerly direction towards the south side of the property. Runoff from the site eventually sheet flows onto Cottonwood Avenue to the south of the property. The existing flow for the different storm frequencies is outlined in Table 1 below.

Table 1 – Summary of Existing Flow

Subarea		Area	
	100-year	(sf)	(ac)
Area 1	3.65	75,175	1.73
Total	3.65	75,175	1.73

3.6.2 Proposed Hydrology

The proposed project site has been subdivided into subareas for runoff of storm water based on drainage patterns including ridge lines and low/confluence points. The drainage patterns include the roof surface runoff and ground surface runoff areas. Each subarea and the discharge point of each subarea is identified in the Proposed Hydrology Map. Flow for each subarea is outlined in Table 2 below:

Table 2 – Summary of Proposed Flows

Subarea		Area	
	100-year	(sf)	(ac)
Area 1	1.75	25,032	0.57
Area 2	2.50	34,536	0.79
Area 3	0.76	10,578	0.24
Total	5.01	70,146	1.6

4.0 Conclusion

The overall drainage patterns in the proposed condition are similar to the existing condition in terms of the overall drainage direction. However, the proposed drainage patterns are divided into subareas as shown on the attached Hydrology Map – Proposed Condition. The subareas account for the ridges in the roof areas as well as the ground surfaces including the drive aisles, parking spaces, and landscape areas.

Due to increase in impervious areas, the proposed site generates more flow than the existing condition. Table 3 below summarizes the flows of the existing and proposed site.

Table 3 - Pre- and Post-Construction Flows

Storm Event	Existing Q (CFS)	Proposed Q (CFS)
100-yr	3.65	5.01

This site's runoff is mitigated by proposing a storm drain system that includes vegetated bioretention basins.

Appendix A – Hydrology Calculations

HYDROLOGY CALCULATIONS
CORNER OF PERRIS BOULEVARD AND COTTONWOOD AVENUE

EXISTING AREA

Q = CIA

Where Q = proposed peak flows, cfs
A = total area, acres
C = coefficient of runoff
I = rainfall intensity (in/hr) corresponding to the time of concentration

A = 75,175 sf = 1.73 acres

Soil Group = C (Plate C-1.17)

T_c = 13.0 min (Plate D-3) T_c = duration, min

I_{100} = 2.58 in/hr (Plate D-4.1)

C_{100} = 0.82 in/hr (Plate D-5.3)

Q_{100} = 3.65 cfs

HYDROLOGY CALCULATIONS
CORNER OF PERRIS BOULEVARD AND COTTONWOOD AVENUE

AREA-1

Q = CIA		Where	Q = proposed peak flows, cfs
			A = total area, acres
A = 25,032 sf = 0.57 acres			C = coefficient of runoff
			I = rainfall intensity (in/hr) corresponding to the time of concentration
Soil Group = C	(Plate C-1.17)		
T_c = 7.4 min	(Plate D-3)		T_c = duration, min
I_{100} = 3.42 in/hr	(Plate D-4.1)		
C_{100} = 0.89 in/hr	(Plate D-5.3)		
Q_{100} = 1.75 cfs			

HYDROLOGY CALCULATIONS
CORNER OF PERRIS BOULEVARD AND COTTONWOOD AVENUE

AREA-2

Q = CIA			Where	Q = proposed peak flows, cfs
				A = total area, acres
A =	34,536 sf	= 0.79 acres		C = coefficient of runoff
				I = rainfall intensity (in/hr) corresponding to the time of concentration
Soil Group =	C	(Plate C-1.17)		
T_c =	4.9 min	(Plate D-3)		T_c = duration, min
I_{100} =	3.54 in/hr	(Plate D-4.1)		
C_{100} =	0.89 in/hr	(Plate D-5.3)		
Q_{100} =	2.50 cfs			

HYDROLOGY CALCULATIONS
CORNER OF PERRIS BOULEVARD AND COTTONWOOD AVENUE

AREA-3

Q = CIA				Where	Q = proposed peak flows, cfs
					A = total area, acres
A =	10,578 sf	=	0.24 acres		C = coefficient of runoff
					I = rainfall intensity (in/hr) corresponding to the time of concentration
Soil Group =	C	(Plate C-1.17)			
T_c =	4.8 min	(Plate D-3)			T_c = duration, min
I_{100} =	3.51 in/hr	(Plate D-4.1)			
C_{100} =	0.89 in/hr	(Plate D-5.3)			
Q_{100} =	0.76 cfs				

HYDROLOGY CALCULATIONS
67670 CAREY ROAD, CATHEDRAL CITY

Proposed

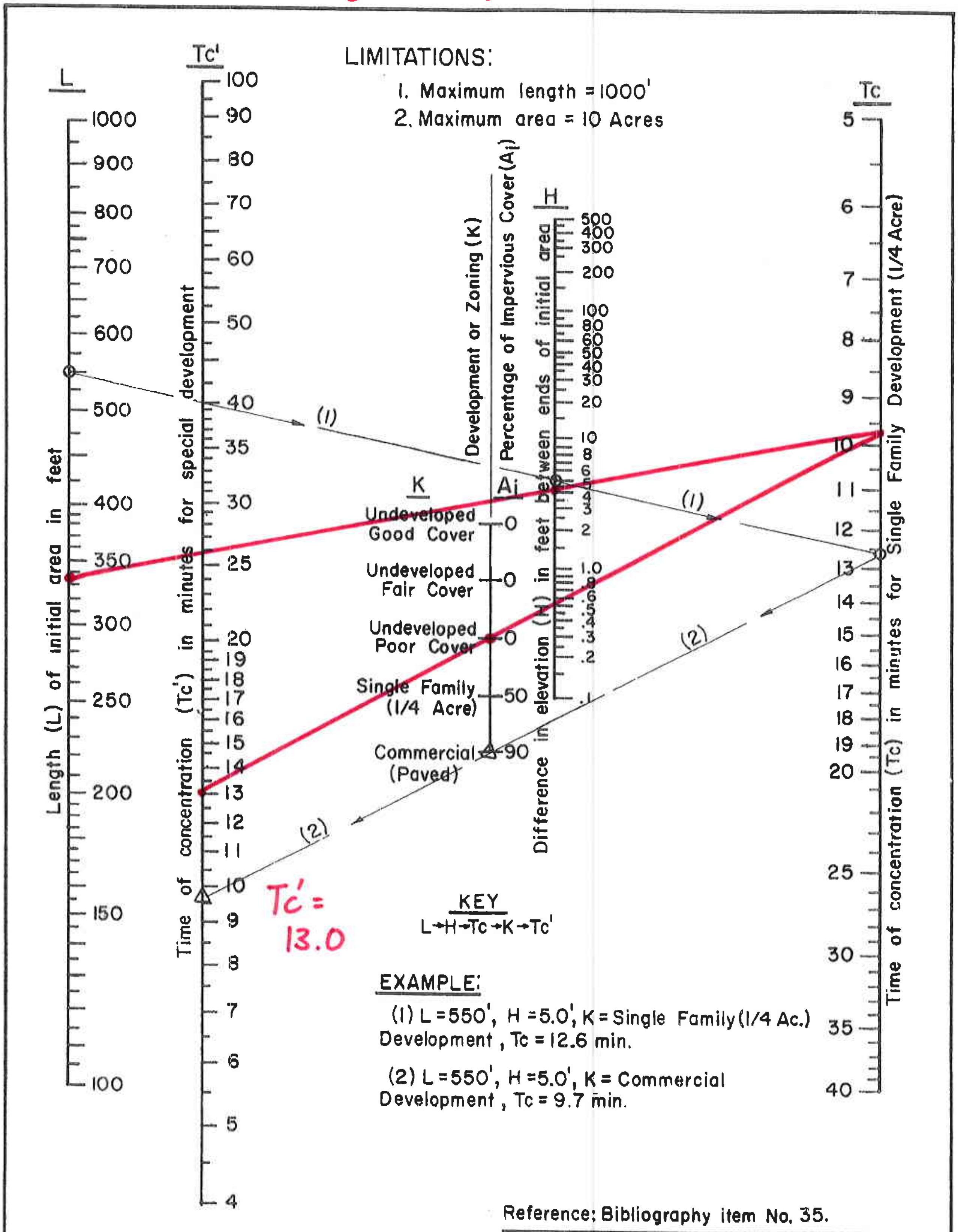
Subarea	Area		
	100-year	(sf)	(ac)
Area 1	1.75	25,032	0.57
Area 2	2.50	34,536	0.79
Area 3	0.76	10,578	0.24
Total	5.01	70,146	1.61

Existing

Area	Area		
	100-year	(sf)	(ac)
Area 1	3.65	75,175	1.73

Appendix B – Reference Figures and Tables

EXISTING AREA



RCFC & WCD

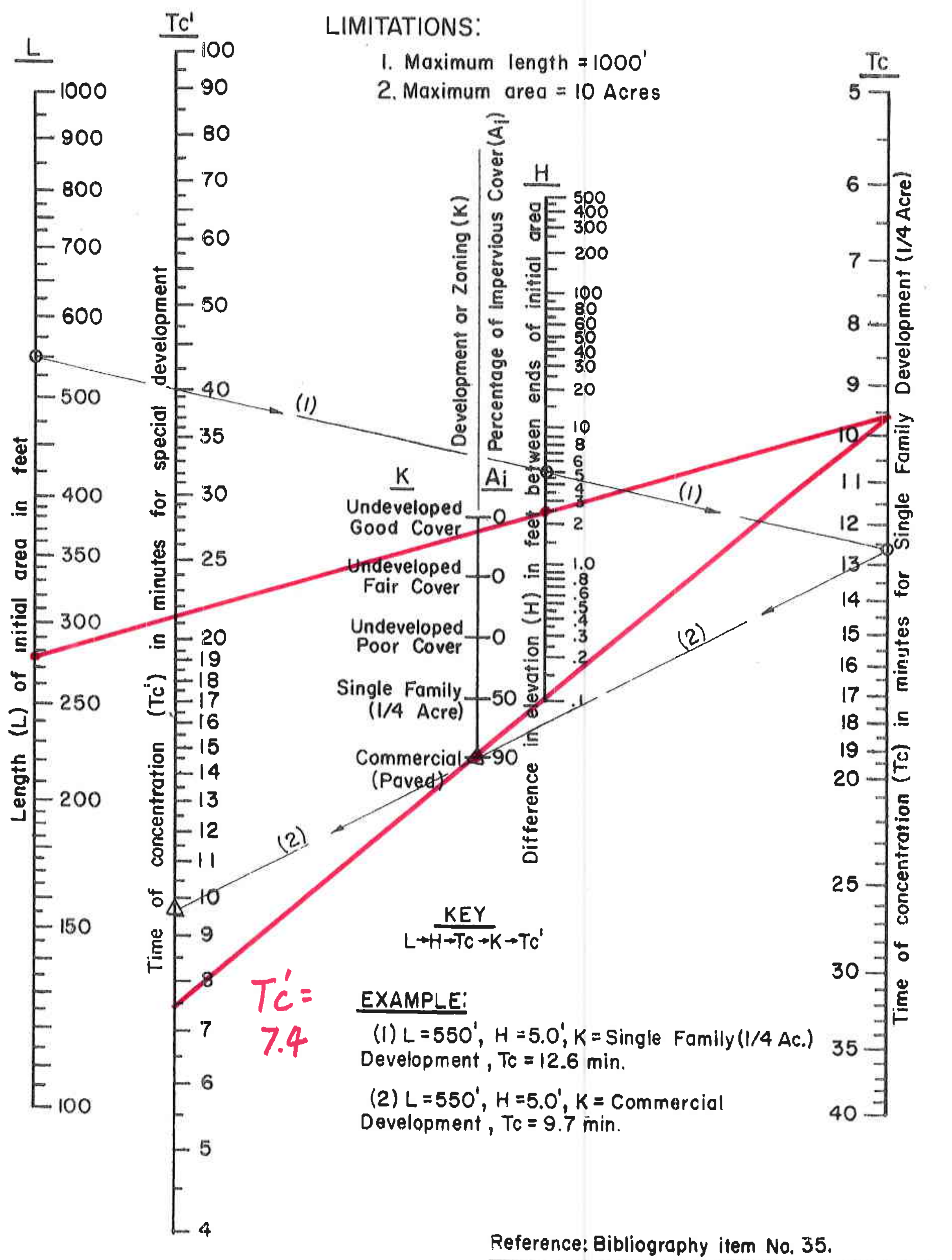
HYDROLOGY MANUAL

TIME OF CONCENTRATION

FOR INITIAL SUBAREA

PLATE D-3

AREA 1

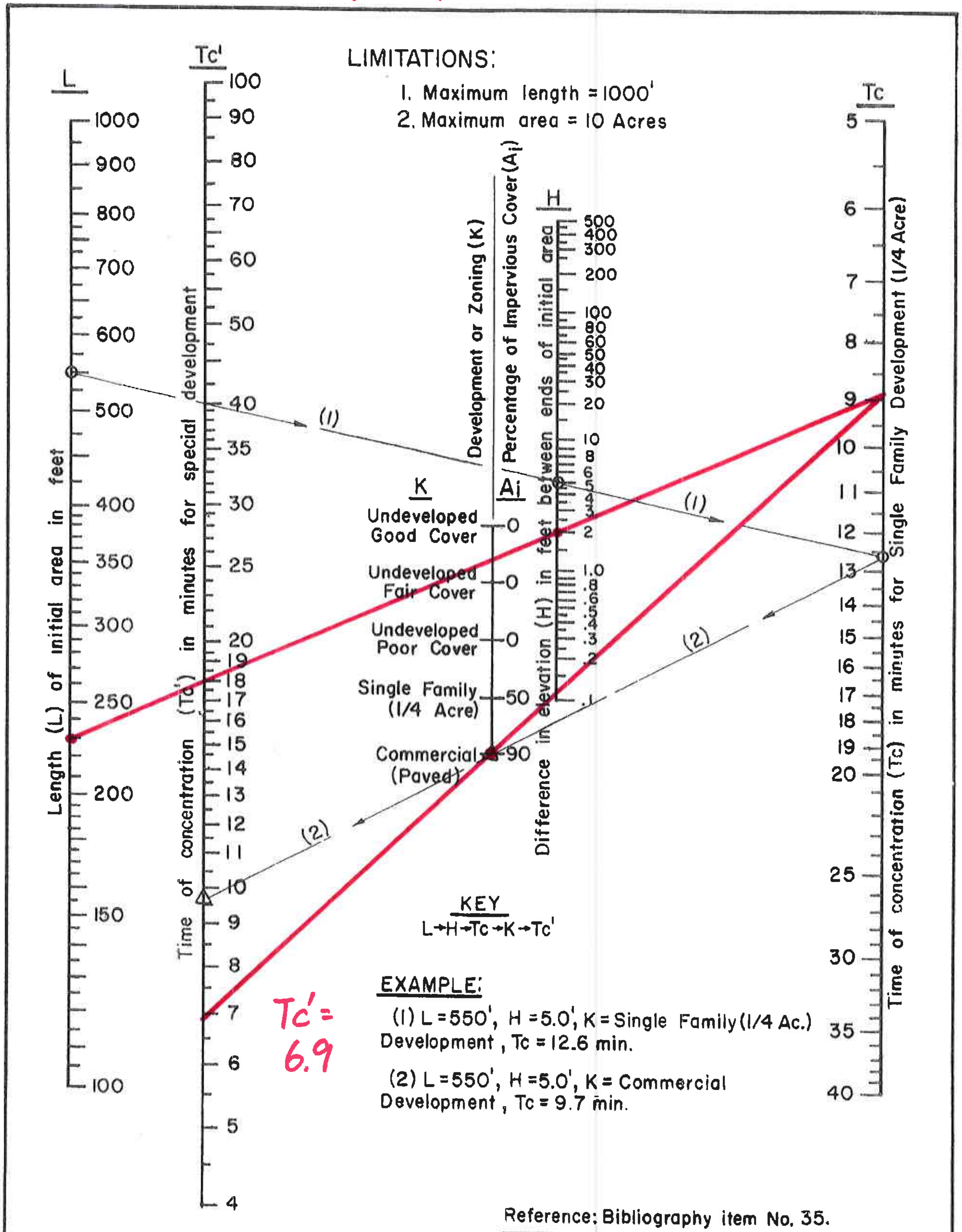


RCFC & WCD
HYDROLOGY MANUAL

TIME OF CONCENTRATION FOR INITIAL SUBAREA

PLATE D-3

AREA 2

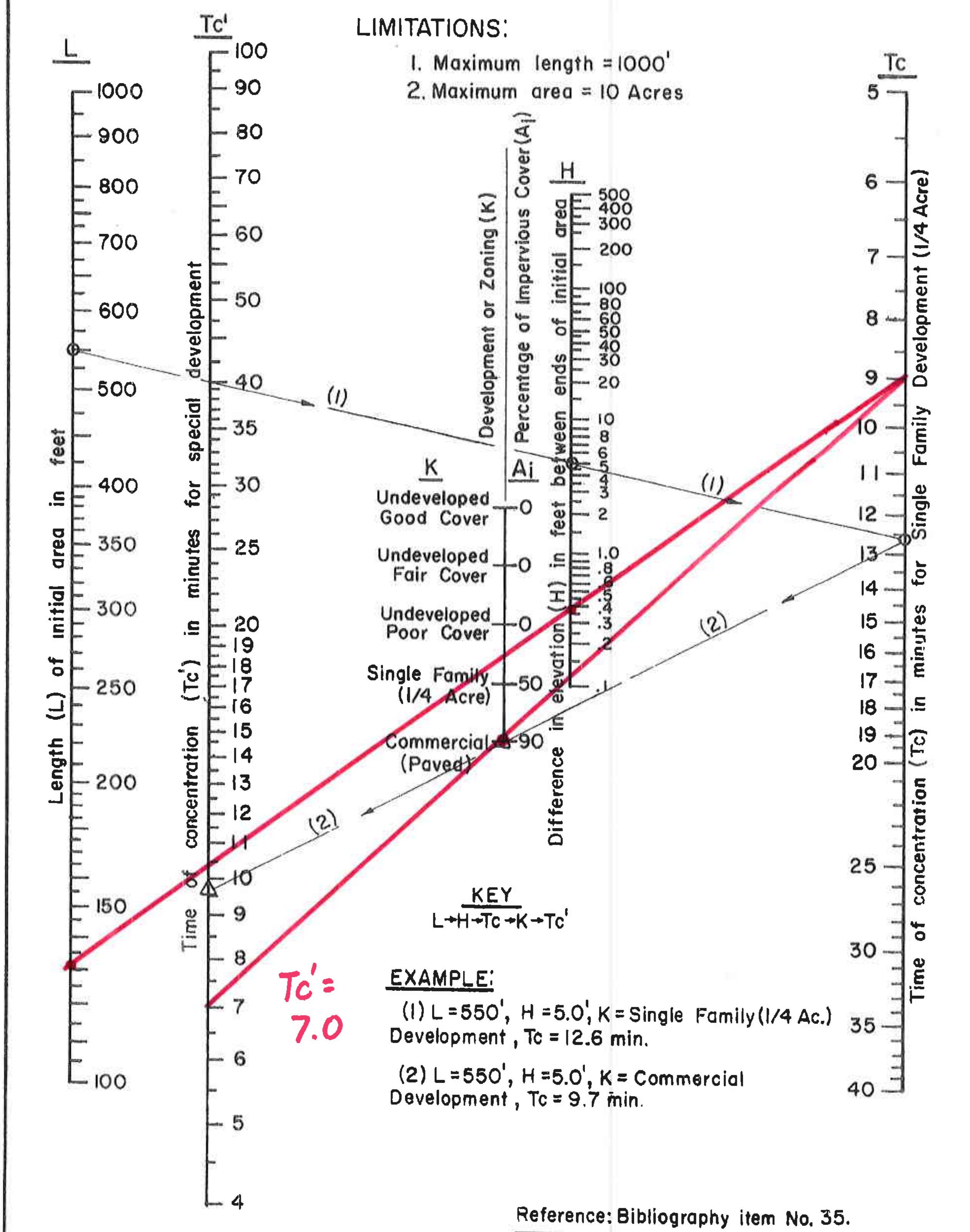


RCFC & WCD
HYDROLOGY MANUAL

TIME OF CONCENTRATION FOR INITIAL SUBAREA

PLATE D-3

AREA 3



RCFC & WCD
HYDROLOGY MANUAL

TIME OF CONCENTRATION FOR INITIAL SUBAREA

PLATE D-3

Appendix E

Noise Mitigation Analysis

Noise Mitigation Analysis for The Proposed Yum Yum Donuts Car Wash City of Moreno Valley, California

Project #0110.0026.001.0001
February 14, 2018

Prepared For:

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Landrum & Brown
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NOISE MITIGATION ANALYSIS FOR THE PROPOSED YUM YUM DONUTS CAR WASH CITY OF MORENO VALLEY

1.0 INTRODUCTION

A car wash is being proposed at the northeast corner of Perris Boulevard and Cottonwood Avenue in Moreno Valley, as shown in Exhibit 1. The car wash will be "self-serve" and is planned to be open 24 hours per day. The purpose of this report is to determine whether the noise levels from the proposed car wash will be consistent with the Noise Ordinance adopted by the City of Moreno Valley. The project calls for the addition of a tunnel-type car wash. The developer is planning to design and construct this car wash very similar to an existing car wash facility located in the City of San Diego. This report presents the results of the car wash noise measurements at the existing San Diego car wash, and determines whether that design is acceptable for the planned Yum Yum Donuts car wash in Moreno Valley.

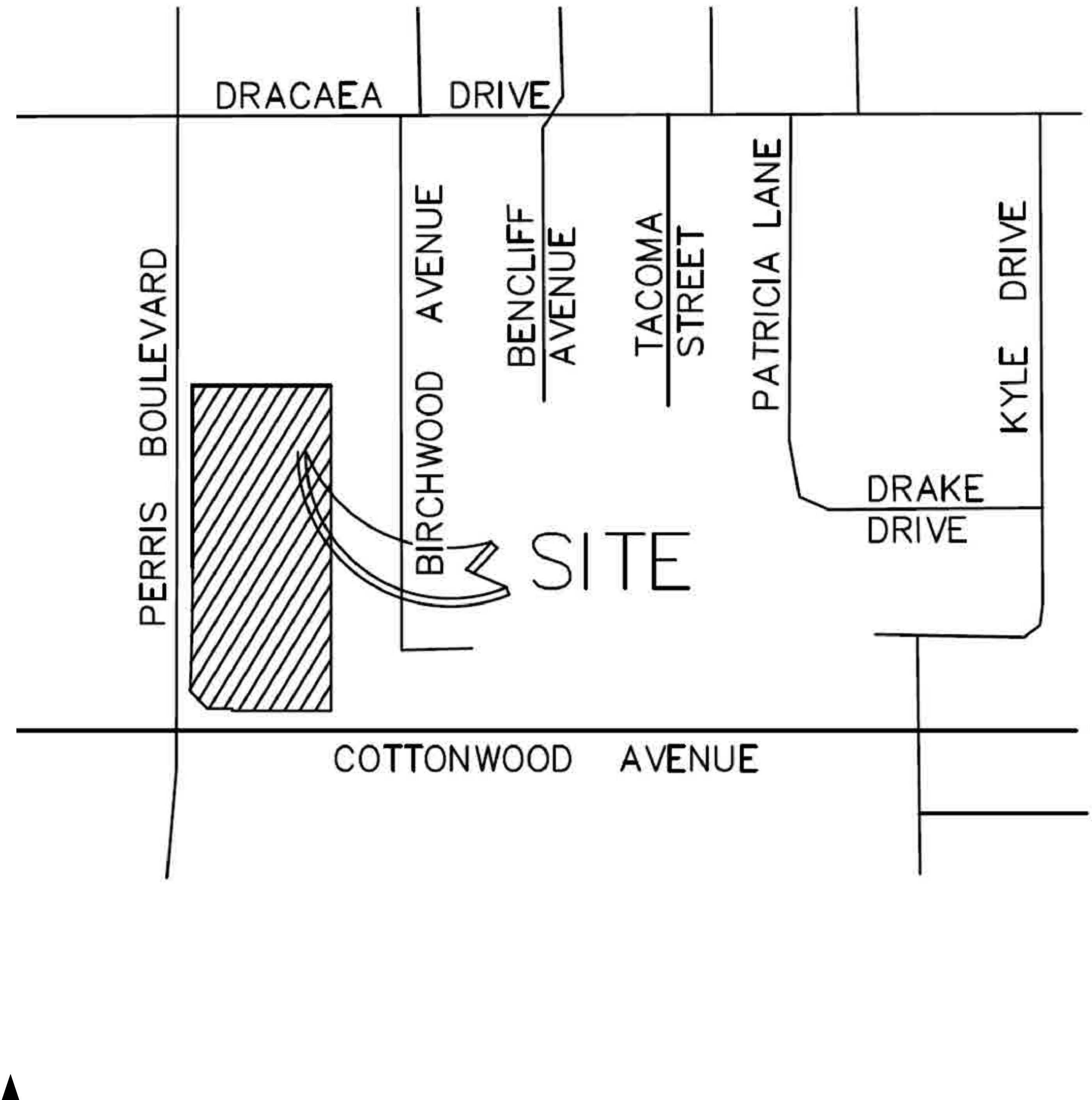
The site plan is shown in Exhibit 2. The nearest residences are located directly to the east. Other residential areas are located much farther from the facility. The potential noise impacts on the nearest residential area are addressed in this report, and any required mitigation measures are identified.

2.0 BACKGROUND INFORMATION ON NOISE

Sound is technically described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquakes. In terms of human response to noise, a sound 10 dB higher than another is judged to be twice as loud; and 20 dB higher four times as loud; and so forth. Everyday sounds normally range from 30 dB (very quiet) to 100 dB (very loud).

Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. Community noise levels are measured in terms of the "A-weighted decibel" abbreviated dBA. Exhibit 3 provides examples of various noises and their typical A-weighted noise level.

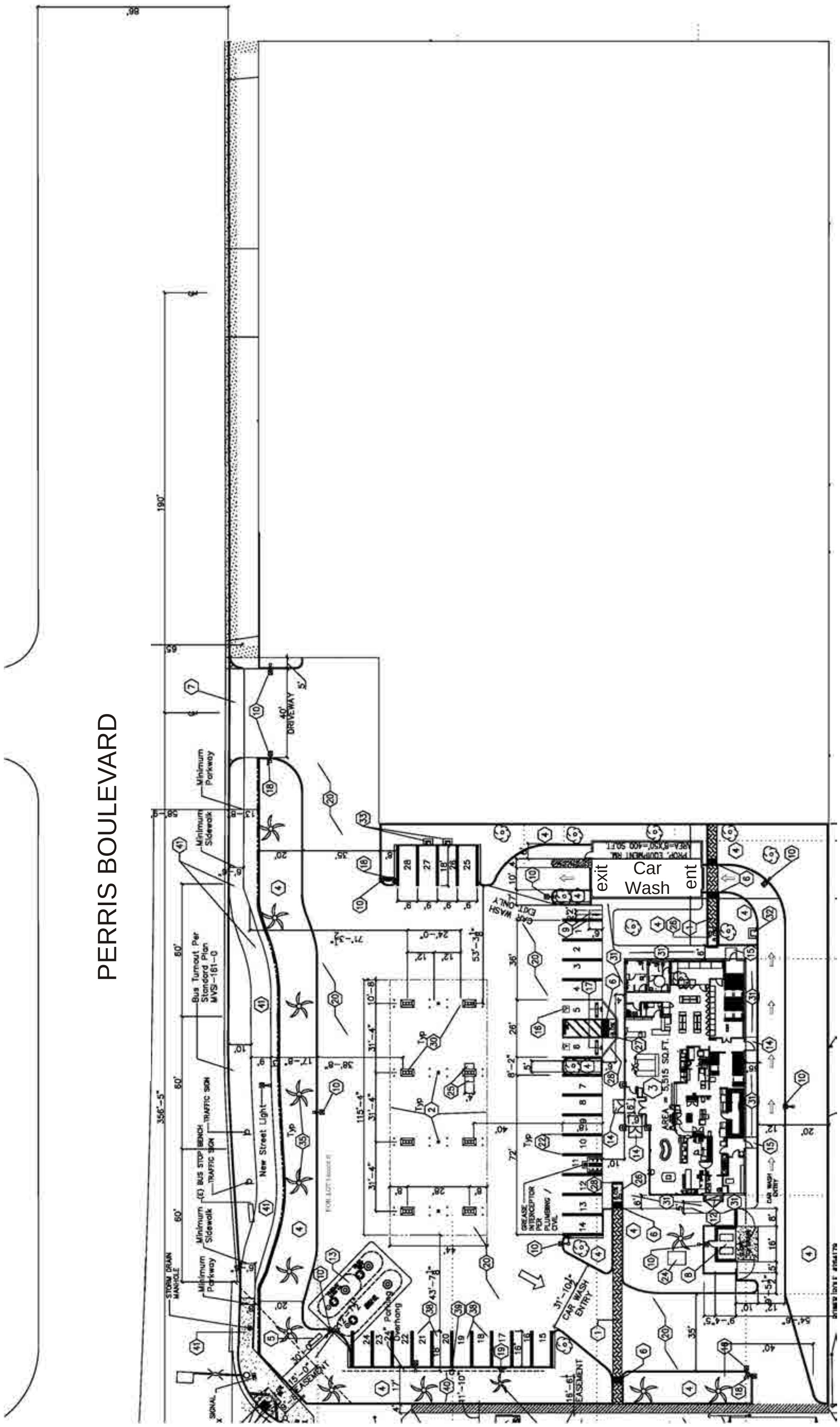
Two commonly used metrics to describe fluctuating noise levels are Leq and Lmax. These metrics are described below. The noise level limits set forth in the City's Noise Ordinance are specified in terms of these metrics.



N

Exhibit 1

Vicinity Map



Residential Area

COTTONWOOD AVENUE

N

Exhibit 2
Site Plan

dBA	Outdoor	Indoor
0 dBA	threshold of hearing (0 dBA)	
20	rustling of leaves (20 dBA)	whispering at 5 feet (20 dBA)
40	quiet residential area (40 dBA)	refrigerator (50 dBA)
60	air-conditioner at 100 feet (60 dBA) car at 25 feet at 65 mph (77 dBA)	sewing machine (60 dBA) normal conversation (60 to 65 dBA) dishwasher (55-70 dBA) living room music or TV (70 -75 dBA)
80	diesel truck at 50 feet at 40 mph (84 dBA) propeller airplane flyover at 1000 feet (88 dBA) motorcycle at 25 feet (90 dBA) lawnmower (96 dBA) backhoe at 50 feet (75-95 dBA)	garbage disposal (80 dBA) ringing telephone (80 dBA) vacuum cleaner (60-85 dBA) shouted conversation (90 dBA)
100	snowmobile (100 dBA) pile driver at 50 feet (90-105 dBA) car horn (110 dBA) rock concert (110 dBA) leaf blower (110 dBA)	baby crying on shoulder (110 dBA)
120	ambulance siren (120 dBA) stock car races (130 dBA) jackhammer (130 dBA)	
140		

Sources: League for the Hard Of Hearing, www.lhh.org
Handbook of Noise Control, McGraw Hill, Edited by Cyril Harris, 1979
Measurements by Landrum & Brown

Exhibit 3

Typical A-Weighted Sound Levels

Leq is the sound level corresponding to a steady-state sound level that would contain the same total energy as the time-varying signal over a given sample period. Leq is the “energy” average noise level during the time period of the sample. It is the energy average of all the events and background noise levels that occur during that time period.

Lmax is the loudest sound level measured during the time period of the sample.

Sound levels decrease as a function of distance from the source as a result of wave divergence, atmospheric absorption and ground attenuation. As the sound wave travels away from the source, the sound energy is dispersed over a greater area, thereby dispersing the sound power of the wave. Intervening topography or sound walls can also have a substantial effect on the effective perceived noise levels.

Noise has been defined as unwanted sound and it is known to have several adverse effects on people. From these known effects of noise, criteria have been established to help protect the public health and safety and prevent disruption of certain human activities. These criteria are based on such known impacts of noise on people as hearing loss, speech interference, sleep interference, physiological responses and annoyance. Each of these potential noise impacts on people are briefly discussed in the following narratives:

HEARING LOSS is not a concern in community noise situations of this type. The potential for noise induced hearing loss is more commonly associated with occupational noise exposures in heavy industry or very noisy work environments. Noise levels in neighborhoods, even in very noisy airport environs, are not sufficiently loud to cause hearing loss.

SPEECH INTERFERENCE is one of the primary concerns in environmental noise problems. Normal conversational speech is in the range of 60 to 65 dBA, and any noise in this range or louder may interfere with speech. There are specific methods of describing speech interference as a function of distance between speaker and listener and voice level.

SLEEP INTERFERENCE is a major noise concern for traffic noise. Sleep disturbance studies have identified interior noise levels that have the potential to cause sleep disturbance. Note that sleep disturbance does not necessarily mean awakening from sleep, but can refer to altering the pattern and stages of sleep.

PHYSIOLOGICAL RESPONSES are those measurable effects of noise on people that are realized as changes in pulse rate, blood pressure, etc. While such effects can be induced and observed, the extent is not known to which these physiological responses cause harm or are signs of harm.

ANNOYANCE is the most difficult of all noise responses to describe. Annoyance is a very individual characteristic and can vary widely from person to person. What one person considers tolerable can be quite unbearable to another of equal hearing capability.

3.0 MORENO VALLEY NOISE ORDINANCE STANDARDS

Noise ordinances are designed to protect adjacent noise-sensitive land uses from non-transportation related noise sources operating on private property (e.g., manufacturing facilities, music, and mechanical equipment). Many communities have developed noise ordinances to control these types of non-transportation related noise.

The City's noise level limits for car wash noise are shown in Section 9.10.140 of the City's Noise Ordinance. These standards are given in terms of maximum allowable noise levels. Higher noise levels are permitted during the daytime hours (8 a.m. to 10 p.m.) than are during nighttime hours (10 p.m. to 8 a.m.). The City of Moreno Valley Noise Ordinance levels are contained in Table 1, and they show the acceptable levels at outdoor residential land uses during each time period. The Lmax criterion applies to the highest noise level experienced at the receptor site.

Table 1
CITY OF MORENO VALLEY
EXTERIOR NOISE ORDINANCE STANDARDS

		NOISE LEVEL NOT TO BE EXCEEDED	
LAND USE	NOISE METRIC	Daytime 8 a.m. to 10 p.m.	Nighttime 10 p.m. to 8 a.m.
Residential	Lmax	60 dBA	55 dBA

As the car wash is expected to operate 24 hours a day, the projected noise levels will be compared to the nighttime criteria, since meeting the nighttime criteria ensures that the daytime criteria will also be met. The City's Noise Ordinance does not contain any indoor noise standards. Therefore, compliance with the nighttime Lmax exterior standard in the Noise Ordinance is addressed.

4.0 PROJECTED CAR WASH NOISE LEVELS

The projected noise levels from the planned Yum Yum Donuts car wash are based on the measured noise levels at the existing Arco car wash facility at 3170 Carmel Valley Road in San Diego. This car wash is equipped with automatic doors at both the entrance and exit ends, and these doors are essential in reducing the noise levels from the car wash facility when they are closed. The noise levels at this facility were measured on August 12, 2016. Measurements were performed on-axis with the tunnel at a distance of 25 feet from the entrance end with both car wash doors closed. The measurements at this location were used to determine the noise levels at the nearest noise-sensitive receptors at the Moreno Valley site. The measurement site is shown in Exhibit 4. The car wash operations of interest (wash cycle, rinse cycle, and dry cycle) were measured. Truck passes in the parking lot passes were not able to be excluded from the measurements, and were edited out of the data in order to assess the car wash noise levels alone.

The sound level meter used for the measurements was a Brüel and Kjær Model 2236 sound level meter. This meter conforms to American National Standards Institute (ANSI) Type 1 specifications. The meter and calibrator are laboratory calibrated and certified annually with calibration traceable to the National Institute of Standards and Technology (NIST). The meter was field calibrated before and after the measurement period using a Brüel and Kjær Model 4231 acoustical calibrator. The measured Lmax was 65.7 dBA at a distance of 25 feet from the entrance end of the tunnel with the car wash doors closed.

Based upon the measured car wash source noise data and the proposed site plan, the noise level was calculated for the nearest observer at the adjacent residential area, at a distance of 57 feet from the entrance end of the tunnel. The resulting unmitigated noise level at the residential area is 58.5 dBA. This noise level would exceed the nighttime noise standard of 55 dBA. The developer plans to construct a 6-foot high masonry wall at the east property line. The wall will need to wrap around the northeast corner of the project and extend westward to the car wash tunnel. The required barrier location is shown in Exhibit 5. With this noise barrier, the resulting projected noise level is shown below in Table 2.

Table 2
PROJECTED NOISE LEVELS (dBA)

Location	**Projected Noise Level (Lmax)**	Comparison To Noise Level Limit
With Yum Yum Donuts car wash designed like existing Arco facility and 6.0'-high noise barrier		
Nearest Residence	**49.4**	Meets Ordinance

N

- Measurement Location

Exhibit 4

Existing Car Wash Measurement Locations

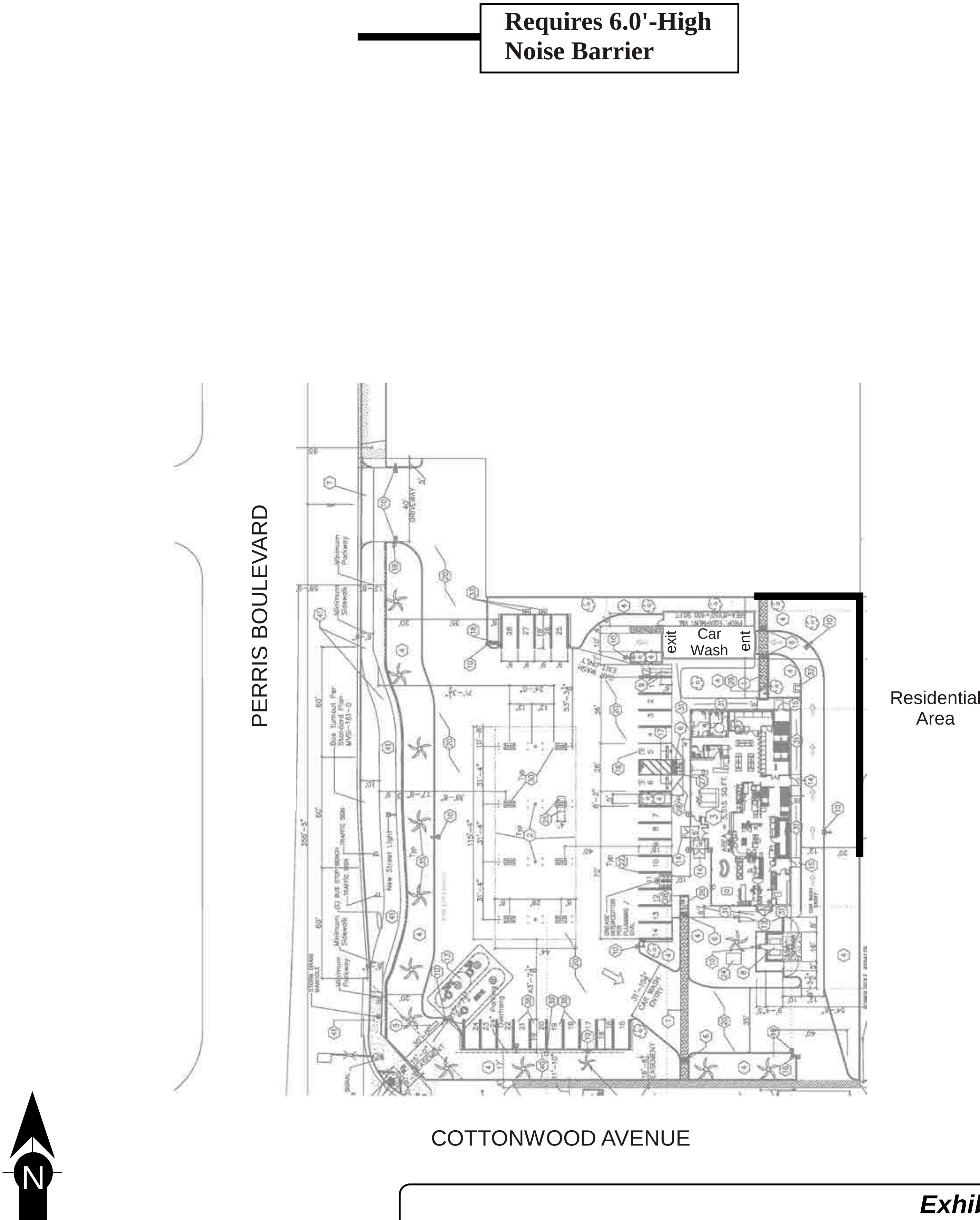


Exhibit 5

Required Noise Barrier

The projected Lmax at the nearest residential receiver from the proposed car wash is 49.4 dBA. This meets the City's nighttime exterior Noise Ordinance limit of 55 dBA. The results of the analysis indicate that with the car wash designed like the existing Arco facility, the Lmax noise levels at all the nearest residential areas are projected to meet the daytime and nighttime Noise Ordinance limits. The proposed car wash must be designed, constructed, and operated the same as the existing Arco car wash in order for the noise level limits to be met. This includes such items as equipment types and locations, door types and configuration, and operational parameters such as when the doors open and close.

6.0 DESIGN MEASURES

Calculations have shown that with the car wash designed and operated like the existing Arco facility, the project will meet the City's daytime and nighttime Noise Ordinance limits. <u>The following design items must be adhered to in order for the noise level limits to be met.</u>

- The car wash equipment shall be the same as that used at the Arco facility, and placed in the same locations within the tunnel as at the Arco facility.

- The building design (walls and roof) shall be the same materials as used at the Arco facility.

- The roll-up doors shall be the same type, and shall be installed the same as the Arco facility.

- Both the entrance end and exit end doors need to be in the closed position when a car is being washed and dried.

- A noise barrier shall be constructed that meets or exceeds the barrier shown in Exhibit 5.

- The noise barrier must have a surface density of at least 3.5 pounds per square foot, and shall have no openings or gaps. The wall may be constructed of stud and stucco, 3/8-inch plate glass, 5/8-inch Plexiglas, any masonry material, or a combination of these materials.

With these design measures in place, the noise levels at the nearest homes will meet the City's daytime and nighttime Noise Ordinance limits.

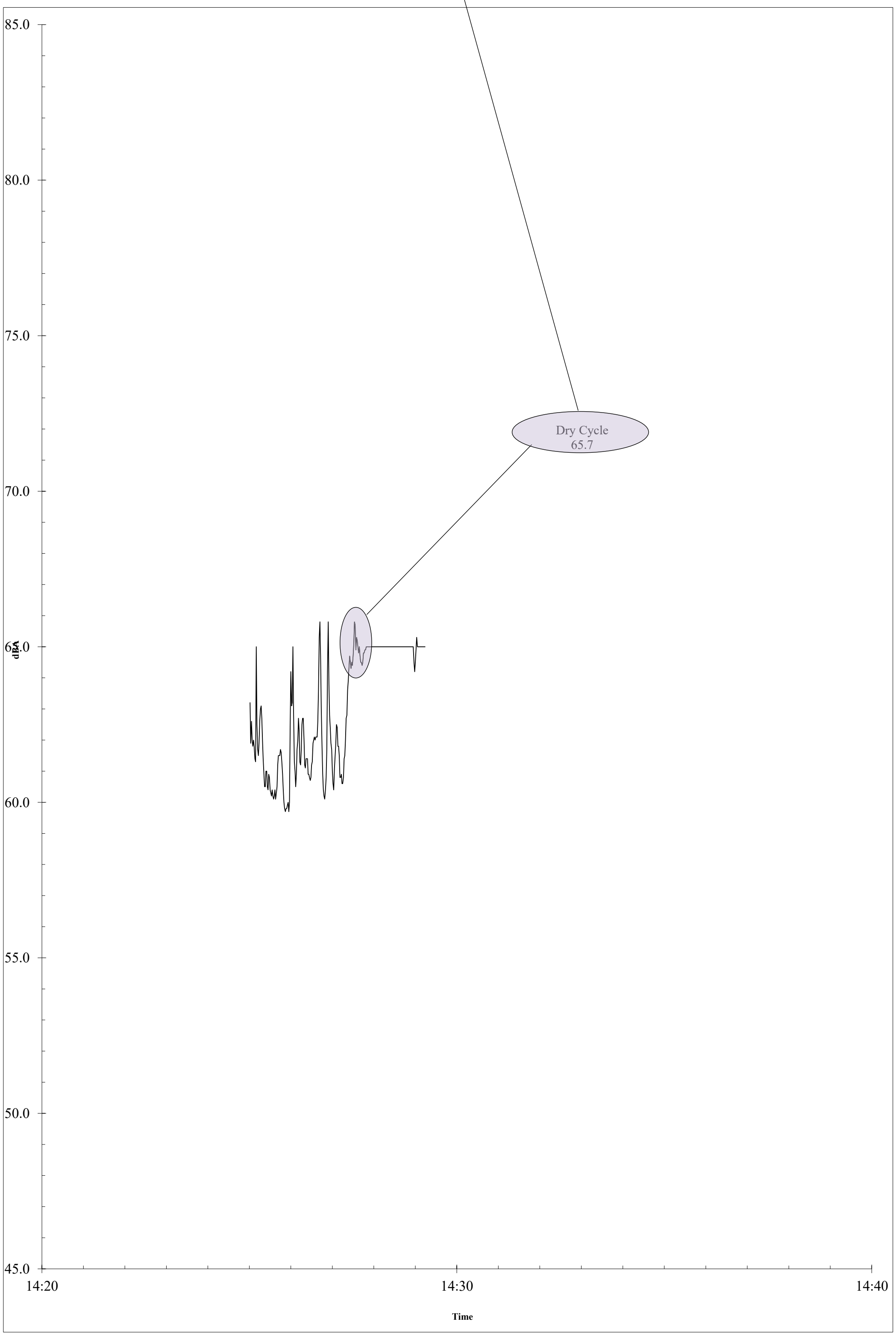
APPENDIX

Calculation Spreadsheets

Arco Car Wash
3170 Carmel Valley Road
San Diego
25' from Entrance End, Doors Closed
8-12-16

ref at 25' Distance, On-Axis

	Metric	Level	at 57'	
	LEQ	63.0		
Night STD = 55	Lmax	65.7	58.5	no wall
	L1.7	65.3		
	L8.3	65.0		
	L25	#NUM!		
	L50	62.7		
	L90	60.4		
	Lmin	59.7		



Source: Arco Car Wash SD, Entrance End, Door Closed
Reference Frequency (Hz): 500

Nighttime Lmax Standard
55

Residential property to the east

Source Height	Source Elevation	Source Level	Reference Distance	Source to Barrier	Barrier Height	Barrier Elevation	Barrier to Receiver	Receiver Height	Receiver Elevation	Barrier Reduction	**Lmax (dBA)**
8	0	65.7	25	57	0.0	0	1	5	0	0.000	58.4
8	0	65.7	25	57	**6.0** planned	0	1	5	0	9.139	49.2

PEN16-0086, PEN16-0087, PEN16-0088 (Yum Yum Donuts Moreno Valley Project)

Mitigation Monitoring and Reporting Program

Introduction

This Mitigation Monitoring and Reporting Program has been prepared for the use in implementing mitigation for the Mitigated Negative Declaration (MND) for the Yum Yum Donuts Moreno Valley Project (PEN16-0086, PEN16-0087, PEN16-0088). The program has been prepared in compliance with State law and the MND prepared for the project.

The California Environmental Quality Act (CEQA) requires adoption of a reporting or monitoring program for those measures places on a project to mitigated or avoid adverse effects on the environment (Public Resources Code Section 21081.6). The law states that the reporting or monitoring program shall be designed to ensure compliance during project implementation.

The monitoring program contains the following elements:

1. The mitigation measures are recorded with the action and procedure necessary to ensure compliance. In some instances, one action may be used to verify implementation of several mitigation measures.

2. A procedure for compliance and verification has been outlined for each action necessary. This procedure designates who will take action, what action will be taken and when, and to whom and when compliance will be reported.

3. The program has been designed to be flexible. As monitoring progresses, changes to compliance procedures may be necessary based upon recommendations by those responsible for the program. As changes are made, new monitoring compliance procedures are records will be developed and incorporated into the program.

Mitigation Monitoring and Responsibilities

As the Lead Agency, the City of Moreno Valley is responsible for ensuring full compliance with the mitigation measures adopted for the proposed project. The City will monitor and report on all mitigation activities. Mitigation measures will be implemented at different stages of development throughout the project. In this regards, the responsibilities for implementation have been assigned to the Applicant, Contractor, or a combination thereof. If during the course of project implementation, any of the mitigation measures identified herein cannot be successfully implemented, the City shall be immediately informed, and the City will then inform any affected responsible agencies. The City, in conjunction with any affected responsible agencies, will then determine if modification to the project is required and/or whether alternative mitigation is appropriate.

Mitigation Monitoring and Reporting Program Checklist

Project: Yum Yum Donuts Moreno Valley (PEN16-0086, PEN16-0087, PEN16-0088)

Applicant: A & S Engineering, 28405 Sand Canyon Road, Suite “B”, Canyon Country, CA 91387

Date: July 9, 2018

Mitigation Measure No./ Implementation Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
Cultural Resources						
CR-1: Prior to the issuance of a grading permit, the Developer shall retain a professional archaeologist to conduct monitoring of all mass grading and trenching activities. The Project Archaeologist shall have the authority to temporarily redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project Archaeologist, in consultation with the Consulting Tribe(s), the contractor, and the City, shall develop a Cultural Resources Management Plan (CRMP) in consultation pursuant to the definition in AB52 to address the details, timing and responsibility of all archaeological and cultural activities that will occur on the project site. A consulting tribe is defined as a tribe that initiated the AB 52 tribal consultation process for the Project, has not opted out of the AB52 consultation process, and has completed AB 52 consultation with the City as provided for in Cal Pub Res Code Section	City of Moreno Valley	Ongoing during construction	Prior to Certificate of Occupancy	Review of construction documents and on-site inspection		Withhold Certificate of Occupancy

Mitigation Measure No./ Implementation Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
21080.3.2(b)(1) of AB52. Details in the Plan shall include: a. Project grading and development scheduling; b. The Project archeologist and the Consulting Tribes(s) as defined in CR-1 shall attend the pre-grading meeting with the City, the construction manager and any contractors and will conduct a mandatory Cultural Resources Worker Sensitivity Training to those in attendance. The Training will include a brief review of the cultural sensitivity of the Project and the surrounding area; what resources could potentially be identified during earthmoving activities; the requirements of the monitoring program; the protocols that apply in the event inadvertent discoveries of cultural resources are identified, including who to contact and appropriate avoidance measures until the find(s) can be properly evaluated; and any other appropriate protocols. All new construction personnel that will conduct earthwork or grading activities that begin work on the Project following the initial Training must take the Cultural Sensitivity Training prior to beginning work and the Project archaeologist and Consulting Tribe(s) shall make						

Mitigation Measure No./ Implementation Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
themselves available to provide the training on an as-needed basis; The protocols and stipulations that the contractor, City, Consulting Tribe(s) and Project archaeologist will follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resource deposits that shall be subject to a cultural resources evaluation.						
CR-2: Prior to the issuance of a grading permit, the Developer shall secure agreements with the Soboba Band of Luiseño Indians for tribal monitoring. The Developer is also required to provide a minimum of 30 days advance notice to the tribes of all mass grading and trenching activities. The Native American Tribal Representatives shall have the authority to temporarily halt and redirect earth moving activities in the affected area in the event that suspected archaeological resources are unearthed. If the Native American Tribal Representatives suspect that an archaeological resource may have been unearthed, the Project Archaeologist or the Tribal Representatives shall immediately redirect grading operations in a 100-foot radius around the find to allow identification and evaluation of the suspected resource. In consultation with the Native American Tribal Representatives, the Project Archaeologist shall evaluate the suspected resource and make a determination of	City of Moreno Valley	Prior to and ongoing during construction	Prior to issuance of Grading Permit	Review of construction documents and on-site inspection		Withhold Grading Permit/Certificate of Occupancy

Mitigation Measure No./ Implementation Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
significance pursuant to California Public Resources Code Section 21083.2.						
CR-3: In the event that Native American cultural resources are discovered during the course of grading (inadvertent discoveries), the following procedures shall be carried out for final disposition of the discoveries: a. One or more of the following treatments, in order of preference, shall be employed with the tribes. Evidence of such shall be provided to the City of Moreno Valley Planning Department: i. Preservation-In-Place of the cultural resources, if feasible. Preservation in place means avoiding the resources, leaving them in the place they were found with no development affecting the integrity of the resources. ii. Onsite reburial of the discovered items as detailed in the treatment plan required pursuant to Mitigation Measure CR-1. This shall include measures and provisions to protect the future reburial area from any future impacts in perpetuity. Reburial shall not occur until all legally required cataloging and basic recordation have been completed. No recordation of	City of Moreno Valley	Ongoing during construction	Prior to Certificate of Occupancy	Review of construction documents and on-site inspection		Withhold Certificate of Occupancy

Mitigation Measure No./ Implementation Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
sacred items is permitted without the written consent of all Consulting Native American Tribal Governments as defined in CR-1.						
CR-4: The City shall verify that the following note is included on the Grading Plan: "If any suspected archaeological resources are discovered during ground-disturbing activities and the Project Archaeologist or Native American Tribal Representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call the Project Archaeologist and the Tribal Representatives to the site to assess the significance of the find."	City of Moreno Valley	Prior to construction	Prior to issuance of Grading Permit/Certificate of Occupancy	Review of construction documents		Withhold Grading Permit
CR-5: If potential historic or cultural resources are uncovered during excavation or construction activities at the project site, work in the affected area must cease immediately and a qualified person meeting the Secretary of the Interior's standards (36 CFR 61), Tribal Representatives, and all site monitors per the Mitigation Measures, shall be consulted by the City to evaluate the find, and as appropriate recommend alternative measures to avoid, minimize or mitigate negative effects on the historic, or prehistoric resource. Determinations and recommendations by the consultant shall be immediately submitted to the Planning Division for consideration, and	City of Moreno Valley	Ongoing during construction	Prior to Certificate of Occupancy	Review of construction documents and on-site inspection		Withhold Certificate of Occupancy

Mitigation Measure No./ Implementation Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
implemented as deemed appropriate by the Community Development Director, in consultation with the State Historic Preservation Officer (SHPO) and any and all Consulting Native American Tribes as defined in CR-1 before any further work commences in the affected area.						
CR-6: If human remains are discovered, no further disturbance shall occur in the affected area until the County Coroner has made necessary findings as to origin. If the County Coroner determines that the remains are potentially Native American, the California Native American Heritage Commission shall be notified within 5-days of the published finding to be given a reasonable opportunity to identify the "most likely descendant". The "most likely descendant" shall then make recommendations, and engage in consultations concerning the treatment of the remains (California Public Resources Code 5097.98). (GP Objective 23.3, CEQA).	City of Moreno Valley	Ongoing during construction	Prior to Certificate of Occupancy	Review of construction documents and on-site inspection		Withhold Certificate of Occupancy
PR-1: Prior to construction involving excavation four feet or more below existing surface grade, the construction contractor shall provide evidence that a qualified paleontologist has been retained, and that the paleontologist(s) shall be present during all grading and other significant ground-disturbing activities that reach four feet or more below existing surface grade. In the event fossiliferous deposits are	City of Moreno Valley	Prior to and ongoing during construction	Prior to issuance of Grading Permit/Certificate of Occupancy	Review of construction documents and on-site inspection		Withhold Grading Permit/Certificate of Occupancy

Mitigation Measure No./ Implementation Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
encountered, the following measures shall be implemented: • Monitoring shall be conducted by qualified paleontological monitor(s) of excavation in areas identified as likely to contain paleontological resources, including very old alluvial fan deposits. Paleontological monitors shall be equipped to salvage fossils as they are unearthed, to avoid construction delays, and to remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. Monitors shall be empowered to temporarily halt or divert equipment to allow removal of abundant or large specimens. Monitoring may be reduced if the potentially fossiliferous units are determined upon exposure and examination by qualified paleontological personnel to have low potential to contain fossil resources. • Paleontological monitoring of any earthmoving shall be conducted by a monitor, under direct guidance of a qualified paleontologist. Earthmoving in areas of the parcel where previously undisturbed sediments are buried, but not otherwise disturbed, will not be monitored.						

Mitigation Measure No./ Implementation Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
• If too few fossil remains are found after 50 percent of the planned-for earthmoving has been completed, monitoring can be reduced or discontinued in those areas at the Project paleontologist's direction. • Recovered specimens shall be prepared to a point of identification and permanent preservation, including washing of sediments to recover small invertebrates and vertebrates. • Specimens shall be identified and curated into a professional, fully accredited museum repository with permanent retrievable storage. The paleontologist must have a written repository agreement in hand prior to the initiation of mitigation activities. • A report of findings with and appended itemized inventory of specimens shall be prepared. The report and inventory, when submitted to the City along with confirmation of the curation of recovered of recovered specimens into an established, accredited museum repository, will signify completion of the program to mitigate impacts to paleontological resources.						

Mitigation Measure No./ Implementation Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
Noise						
NOI-1: The following design items must be adhered to in order for the noise level limits to be met. • The car wash equipment shall be the same as that used at the Arco facility described in the project's noise report (Landrum & Brown 2018), and placed in the same locations within the tunnel as at the Arco facility. The Arco facility is equipped with automatic doors at both the entrance and exit ends, and these doors are essential in reducing the noise levels from the car wash facility when they are closed. • The building design (walls and roof) shall be the same materials as used at the Arco facility. • The roll-up doors shall be the same type, and shall be installed the same as the Arco facility. • Both the entrance end and exit end doors need to be in the closed position when a car is being washed and dried. • A noise barrier shall be constructed that meets or exceeds the barrier shown in Exhibit 5 of the project's noise report (Landrum & Brown 2018).	City of Moreno Valley	Ongoing during construction	Prior to Certificate of Occupancy	Review of construction documents and on-site inspection		Withhold Certificate of Occupancy

Mitigation Measure No./ Implementation Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
• The noise barrier must have a surface density of at least 3.5 pounds per square foot, and shall have no openings or gaps. The wall may be constructed of stud and stucco, 3/8-inch plate glass, 5/8-inch Plexiglas, any masonry material, or a combination of these materials.						
Traffic/Transportation						
TRA-1: Prior to issuance of the first building permit, the Project Applicant shall make a fair-share contribution in the funding of off-site improvements that are needed to serve acceptable cumulative traffic operations through the payment of the required Transportation Uniform Mitigation Fee (TUMF) fees in addition to the City of Moreno Valley Development Impact Fee (DIF). The fees shall be collected by the Western Riverside Council of Governments (WRCOG) for the TUMF and by the City of Moreno Valley for the DIF.	City of Moreno Valley Transportation Engineering Division, Engineering and Planning Division	Ongoing during construction	Prior to Certificate of Occupancy	Review of construction documents and on-site inspection		Withhold Certificate of Occupancy

RESOLUTION NO. 2018-XX

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY APPROVING APPLICATION NO. PEN16-0086, AN AMENDMENT TO THE GENERAL PLAN LAND USE MAP, CHANGING THE LAND USE DESIGNATION FROM RESIDENTIAL OFFICE TO COMMERCIAL FOR 1.77 ACRES LOCATED AT THE NORTHEAST CORNER OF PERRIS BOULEVARD AND COTTONWOOD AVENUE (ASSESSOR'S PARCEL NUMBER: 479-140-023).

WHEREAS, Yum Yum Donuts, filed Application No. PEN16-0086, requesting an amendment to the Moreno Valley General Plan, as described in the title of this resolution and the attached Exhibit A.

WHEREAS, the application has been evaluated in accordance with established City of Moreno Valley (City) procedures, and with consideration of the General Plan and other applicable regulations; and

WHEREAS, An Initial Study and Mitigated Negative Declaration have been prepared for the project consistent with the California Environmental Quality Act (CEQA) and based on a thorough analysis of potential environmental impacts, and the Mitigated Negative Declaration represents the City's independent judgment and analysis; and

WHEREAS, the Planning Commission of the City of Moreno Valley held a public hearing on January 26, 2018 to consider the subject application and all environmental documentation prepared for the project and recommended approval of the project by the City Council; and

WHEREAS, the public hearing notice for this project was published in the local newspaper on August 25, 2018. Public notice was sent to all property owners of record within 300 feet of the project site on August 23, 2018. The public hearing notice for this project was also posted on the project site on August 25, 2018;

WHEREAS, on September 4, 2018, the City Council held a public hearing to consider the application; and

WHEREAS, all legal prerequisites to the adoption of this Resolution have occurred; and

WHEREAS, pursuant to Government Code Section 66020(d)(1), NOTICE IS HEREBY GIVEN that this project is subject to certain fees, dedications, reservations and other exactions as provided herein.

NOW, THEREFORE, BE IT RESOLVED, it is hereby found, determined and resolved by the City Council as follows:

A. This City Council hereby specifically finds that all of the facts set forth above in this Resolution are true and correct.

B. Based upon substantial evidence presented to this City Council during the above-referenced meeting on September 4, 2018, including written and oral staff reports, public testimony and the record from the public hearing, this City Council hereby specifically finds as follows:

1. Conformance with General Plan Policies – The proposed general plan amendment is consistent with the General Plan, and its goals, objectives, policies and programs.

   FACT: The Yum Yum Donuts Moreno Valley project includes three applications – a General Plan Amendment, a Zone Change, and Conditional Use Permit. The project proposes to develop a 1.77 acre site with a service station, convenience store with beer and wine sales and a donut shop, and a car wash.

   The project site is comprised of one parcel (Assessor's Parcel Number 479-140-023) with a current General Plan land use designation of Residential Office (R/O).

   Properties to the north and south with similar frontage on the east side of Perris Boulevard also have a General Plan land use designation of R/O. The properties across the street to the west and to the north on the west side of Perris Boulevard have a Commercial designation.

   The request as submitted by the applicant is to amend the Land Use Map of the City's General Plan and change the land use designation for the 1.77 acre project site from Residential Office to Commercial. This would make the project site consistent with commercial properties to the west, and properties on the east side of Perris Boulevard, north of Fir Avenue and south of Bay Avenue.

   General Plan Policy 2.4.1 states that the primary purpose of areas designated Commercial is to provide property for business purposes, including, but not limited to, retail stores, restaurants, banks, hotels, professional offices, personal services and repair services.

   With approval of the requested General Plan Amendment, the project as designed and conditioned will achieve the objectives of the City of Moreno Valley's General Plan for commercial land uses and will promote development of the undeveloped parcel.

2. Health, Safety and Welfare – The proposed general plan amendment will not be detrimental to the public health, safety or welfare.

FACT: The proposed General Plan Amendment is a legislative action and will not result in any direct physical impacts; therefore, the action itself could not be detrimental to the public health, safety or welfare.

The development of the vacant 1.77 acres will be required to comply with the City's General Plan policies and land use designation and the City's Municipal Code. This will ensure that future development is consistent with the General Plan, zoning, and public health safety and welfare.

An Initial Study was prepared which assessed the potential of the proposed General Plan Amendment, to impact the environment. The Initial Study provided the documentation of the factual basis for the finding in the Mitigated Negative Declaration that the proposed General Plan Amendment will not have a significant effect on the environment. The City as the Lead Agency has prepared a Mitigated Negative Declaration (MND) pursuant to Sections 15070 et seq. of the State CEQA Guidelines. The preparation and review of the Initial Study / Mitigated Negative Declaration reflects the independent judgment of the City.

The Mitigated Negative Declaration has been considered by the City Council and there is no evidence that the proposed project will have a significant impact on public health or be materially injurious to surrounding properties of the environment as a whole.

BE IT FURTHER RESOLVED that the City Council HEREBY APPROVES Resolution No. 2018-XX, and thereby:

1. APPROVE General Plan Amendment Application No. PEN16-0086, based on the findings contained in this resolution, the General Plan Map attached hereto as Exhibit A.

APPROVED AND ADOPTED this 4th day of September, 2018.

____
Mayor of the City of Moreno Valley

ATTEST:

____
City Clerk

APPROVED AS TO FORM:

____
City Attorney

RESOLUTION JURAT

STATE OF CALIFORNIA)

COUNTY OF RIVERSIDE) ss.

CITY OF MORENO VALLEY)

I, Pat Jacquez-Nares, City Clerk of the City of Moreno Valley, California, do hereby certify that Resolution No. 2018-XX was duly and regularly adopted by the City Council of the City of Moreno Valley at a regular meeting thereof held on the 4th day of September, 2018 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

(Council Members, Mayor Pro Tem and Mayor)

____

CITY CLERK

(SEAL)

GENERAL PLAN AMENDMENT

Application No. PEN16-0086
APNs: 479-140-023

N

ORDINANCE NO. 2018-XX

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, APPROVING ZONE CHANGE APPLICATION NO. PEN16-0087: AN AMENDMENT TO THE OFFICIAL ZONING ATLAS, CHANGING THE ZONING CLASSIFICATION FROM OFFICE COMMERCIAL (OC) TO COMMUNITY COMMERCIAL (CC) FOR APPROXIMATELY 1.77 ACRES LOCATED AT THE NORTHEAST CORNER OF PERRIS BOULEVARD AND COTTONWOOD AVENUE (ASSESSOR'S PARCEL NUMBER: 479-140-023).

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

SECTION 1 GENERAL:

1.1 The applicant, Yum Yum Donuts, has filed application PEN16-0087, requesting an amendment to Pages 71 and 85 of the Official Zoning Atlas to change the zoning classification for certain property as described in the title of this ordinance and the attached Exhibit A.

1.2 Pursuant to the provisions of the law, a public hearing was held before the City Council on September 4, 2018, for deliberations and decision.

1.3 The matter was fully discussed, and the public and other agencies were given opportunity to present testimony and documentation.

1.4 An Initial Study has been prepared for the project for the purpose of compliance with the California Environmental Quality Act (CEQA). Based on the Initial Study, it was determined that the project impacts are less than significant and approval of a Mitigated Negative Declaration is recommended.

SECTION 2 FINDINGS:

2.1 Based upon substantial evidence presented to this City Council during the above-referenced meeting on September 4, 2018, including written and oral staff reports, and the record from the public hearing, this City Council hereby specifically finds as follows:

1. Conformance with General Plan Policies – The proposed amendment is consistent with the General Plan, and its goals, objectives, policies and programs.

FACT: The project area for the proposed Zone Change includes one vacant parcel (APN: 479-140-023) totaling 1.77 acres. The current General Plan Land Use designation for the project area is Residential Office with an Office Commercial (OC) zoning designation.

This project proposes to change the zone from Office Commercial (OC) to Community Commercial (CC) to allow for development of a service station with a convenience store that includes alcohol sales. The proposed change would be consistent with CC zoning to the west and CC zoning on the east side of Perris Boulevard, north of Fir Avenue and south of Bay Avenue.

The proposed zone change from OC to CC is compatible with the site's proposed change to a Commercial General Plan land use designation. The proposed change is also consistent with the intent of General Plan Community Goal 2.1, to establish a pattern of land uses, which organizes future growth, minimizes conflicts between land uses, and which promotes the rational utilization of presently underdeveloped and undeveloped parcels.

2. Health, Safety and Welfare – The proposed amendment will not adversely affect the public health, safety or general welfare.

FACT: The proposed Zone Change is a legislative action and will not result in any direct physical impacts; therefore, the action itself could not be detrimental to the public health, safety or welfare. The proposed Zone Change is consistent with the applicant's request to change General Plan land use designation to Commercial.

Development of the vacant 1.77 acres will be required to comply with the City's General Plan policies and land use designation and the City's Municipal Code. This will ensure that future development is consistent with the General Plan, zoning, and public health safety and welfare.

An Initial Study was prepared which assessed the potential of the proposed Zone Change, to impact the environment. The Initial Study provided the documentation of the factual basis for the finding in the Mitigated Negative Declaration that the proposed project will not have a significant effect on the environment. The City as the Lead Agency has prepared a Mitigated Negative Declaration (MND) pursuant to Sections 15070 et seq. of the State CEQA Guidelines. The preparation and review of the Initial Study / Mitigated Negative Declaration reflects the independent judgment of the City.

The Mitigated Negative Declaration has been considered by the City Council and there is no evidence that the proposed project will have a significant impact on public health or be materially injurious to surrounding properties of the environment as a whole.

3. Conformance with the Zoning Regulations – The proposed Zone Change is consistent with the purposes and intent of Title 9 of the City of Moreno Valley Municipal Code.

FACT: As proposed, the Change of Zone from OC to CC for the 1.77 acre project area is consistent with the purposes and intent of Title 9.

The proposed Zone Change to CC is compatible with the established zoning designations of the parcels located on the west side of Perris Boulevard and in proximity to the project site and along east side of Perris Boulevard north of Fir Avenue and south of Bay Avenue. at other prominent intersections along Perris Boulevard such as Alessandro Boulevard to the south and Dracaea Avenue to the north. The change from the existing OC to CC for the project area considers the land use patterns in this area of the community.

SECTION 3 AMENDMENT OF THE OFFICIAL ZONING ATLAS:

3.1 The City of Moreno Valley Official Zoning Atlas, as adopted by Ordinance No. 359, on April 14, 1992, of the City of Moreno Valley, and as amended thereafter from time to time by the City Council of the City of Moreno Valley, is further amended by placing in effect the zone or zone classification to Pages 71 and 85 of the Official Zoning Atlas as shown on the attached map marked “Exhibit A” and included herein by reference and on file in the office of the City Clerk).

SECTION 4 EFFECT OF ENACTMENT:

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

SECTION 5. NOTICE OF ADOPTION:

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

SECTION 6. EFFECTIVE DATE:

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

APPROVED AND ADOPTED this _____ day of _______________, _____.

____
Mayor

ATTEST:

____
City Clerk

APPROVED AS TO FORM:

____
City Attorney

ORDINANCE JURAT

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

I, Pat Jacquez-Nares, City Clerk of the City of Moreno Valley, California, do hereby certify that Ordinance No. YYYY-___ was duly and regularly adopted by the City Council of the City of Moreno Valley at a regular meeting thereof held on the _____ day of September, 2018, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

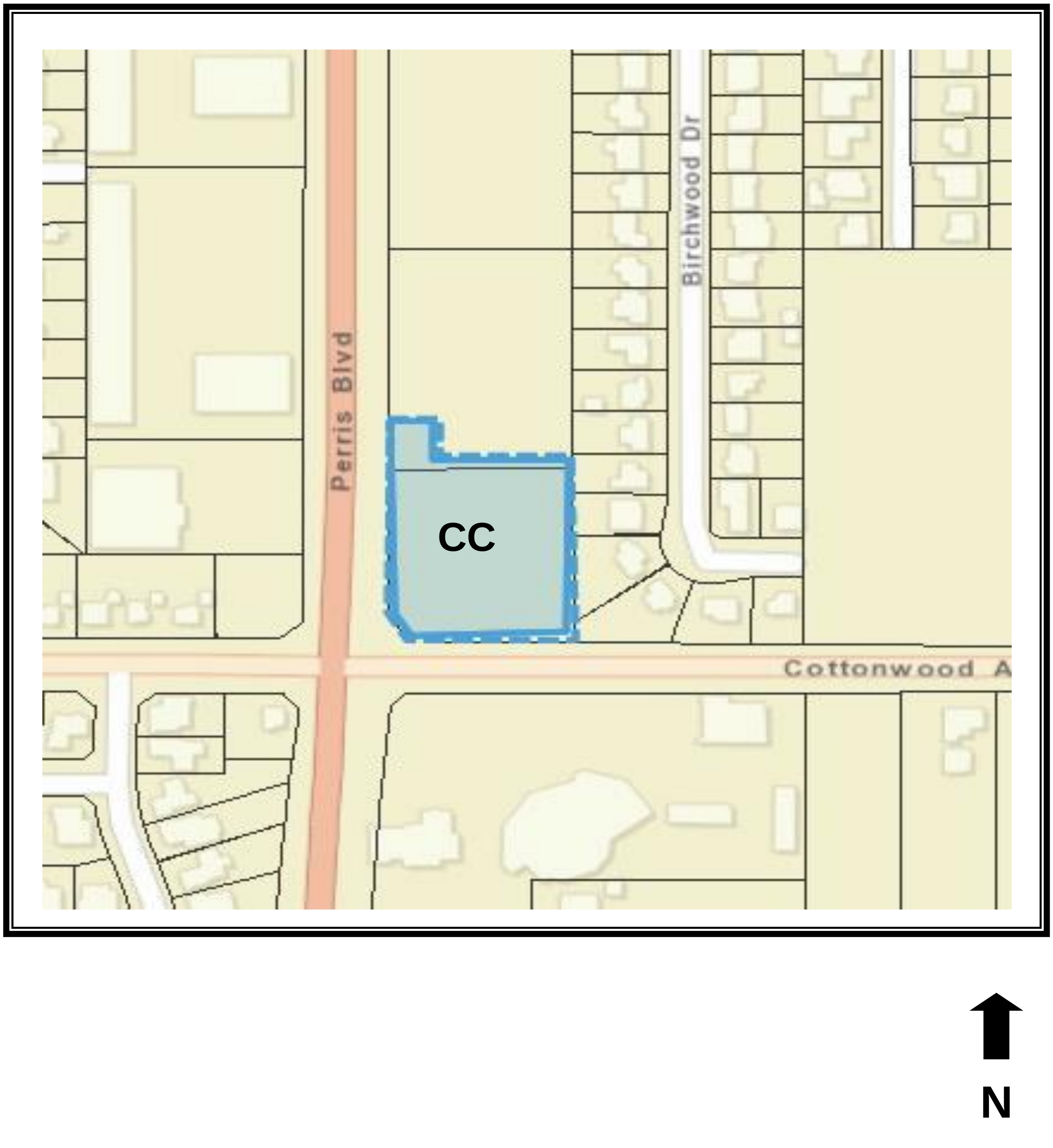
(Council Members, Mayor Pro Tem and Mayor)

____
CITY CLERK

(SEAL)

ZONE CHANGE

Application No. PEN16-0087
APNs: 479-140-023



RESOLUTION NO. 2018-XX

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY APPROVING CONDITIONAL USE PERMIT APPLICATION PEN16-0088 FOR DEVELOPMENT A SERVICE STATION WITH DONUT STORE, A CONVENIENCE STORE TO INCLUDE BEER AND WINE SALES AND A CAR WAS ON 1.77 ACRES LOCATED AT THE NORTHEAST CORNER OF PERRIS BOULEVARD AND COTTONWOOD AVENUE SUBJECT TO APPROVAL OF A GENERAL PLAN AMENDMENT AND A ZONE CHANGE (ASSESSOR'S PARCEL NUMBERS 479-140-023).

WHEREAS, Yum Yum Donuts, has filed an application for the approval of Conditional Use Permit (CUP) PEN16-0088 for development of a service station as described in the title above; and

WHEREAS, the application has been evaluated in accordance with established City of Moreno Valley (City) procedures, and with consideration of the General Plan and other applicable regulations; and

WHEREAS, approval of the CUP for the proposed service station with a donut store, a convenience store to include beer and wine sales and a car wash is subject to approval of a General Plan Amendment from Residential Office to Commercial (case number PEN16-0086) and a Zone Change from Office Commercial (OC) to Community Commercial (CC) (case number PEN16-0087); and

WHEREAS, an Initial Study and Mitigated Negative Declaration have been prepared for the project consistent with the California Environmental Quality Act (CEQA) and based on a thorough analysis of potential environmental impacts. The Mitigated Negative Declaration represents the City's independent judgment and analysis; and

WHEREAS, the Planning Commission of the City of Moreno Valley held a public hearing on January 26, 2018 to consider the subject application and all environmental documentation prepared for the project and recommended approval of the project by the City Council; and

WHEREAS**,** the public hearing notice for this project was published in the local newspaper on August 25, 2018. Public notice was sent to all property owners of record within 300 feet of the project site on August 23, 2018. The public hearing notice for this project was also posted on the project site on August 25, 2018;

WHEREAS, on September 4, 2018, the City Council held a public hearing to consider the application; and

WHEREAS, all legal prerequisites to the adoption of this Resolution have occurred; and

WHEREAS, pursuant to Government Code Section 66020(d)(1), NOTICE IS HEREBY GIVEN that this project is subject to certain fees, dedications, reservations and other exactions as provided herein.

NOW, THEREFORE, BE IT RESOLVED, it is hereby found, determined and resolved by the City Council as follows:

A. This City Council hereby specifically finds that all of the facts set forth above in this Resolution are true and correct.

B. Based upon substantial evidence presented to this City Council during the above-referenced meeting on September 4, 2018, including written and oral staff reports, public testimony and the record from the public hearing, this City Council hereby specifically finds as follows:

1. Conformance with General Plan Policies – The proposed use is consistent with the General Plan, and its goals, objectives, policies and programs.

   FACT: With the adoption of the proposed General Plan Amendment, the proposed land uses will be consistent with the goals and policies of the General Plan. The project as designed and conditioned will achieve the objectives of the City of Moreno Valley's General Plan for commercial land uses and will promote development of the undeveloped parcel.

   General Plan Policy 2.4.1 states that the primary purpose of areas designated Commercial is to provide property for business purposes, including, but not limited to, retail stores, restaurants, banks, hotels, professional offices, personal services and repair services.

2. Conformance with Zoning Regulations – The proposed use complies with all applicable zoning and other regulations.

   FACT: With the approval of the proposed Zone Change to Community Commercial (CC), beer and wine sales in conjunction with a convenience store are permitted in the CC zone with approval of a Conditional Use Permit.

   The project is designed in accordance with the provisions of Chapter 9.04 Commercial Districts, Chapter 9.09.200 Service Stations, and Chapter 9.16.150 Commercial Design Guidelines of the City's Municipal Code.

   With approval of the requested Zone Change, the project as designed and conditioned would comply with all applicable zoning and other regulations

3. Health, Safety and Welfare – The proposed use will not be detrimental to the public health, safety or welfare or materially injurious to properties or improvements in the vicinity.

   FACT: The proposed Conditional Use Permit as designed and conditioned will provide acceptable levels of protection from natural and man-made hazards to life, health, and property consistent with General Plan Goal 9.6.1. The project site is located approximately one and one half mile south of the Sunnymead Fire Station. Therefore, adequate emergency services can be provided to the site consistent with General Plan Goal 9.6.2.

   The proposed project as designed and conditioned will result in a development that will minimize the potential for loss of life and protect residents, workers, and visitors to the City from physical injury and property damage due to seismic ground shaking and flooding as provided for in General Plan Objective 6.1 and General Plan Objective 6.2.

   The project as designed is consistent with the City's Municipal Code Section 9.09.200 Service Stations and will satisfy all City requirements related to light and noise. Planning staff worked with Helix Environmental Planning Inc. in the preparation of an Initial Study and Mitigated Negative Declaration in accordance with the provisions of the California Environmental Quality Act (CEQA) based on a thorough analysis of potential environmental impacts. The project as designed and conditioned and with the implementation of mitigation measures will not result in significant impacts to the environment. The Mitigated Negative Declaration represents the City's independent judgment and analysis.

4. Location, Design and Operation – The location, design and operation of the proposed project will be compatible with existing and planned land uses in the vicinity.

   FACT: Municipal Code Section 9.04.020 Commercial Districts states that the primary purpose of the community commercial (CC) district is to provide for the general shopping needs of area residents and workers with a variety of business, retail, personal and related or similar services. These uses must be compatible with the surrounding residential communities. With approval of the requested General Plan Amendment and Zone Change, the project as designed and conditioned, and with implementation of mitigation measures, the Conditional Use Permit for the project is compatible with existing and proposed land uses in the vicinity.

FEES, DEDICATIONS, RESERVATIONS, AND OTHER EXACTIONS

1. FEES

Impact, mitigation and other fees are due and payable under currently applicable ordinances and resolutions. These fees may include but are not limited to: Development Impact Fee, Transportation Uniform Mitigation Fee (TUMF), Multi-species Habitat Conservation Plan (MSHCP) Mitigation Fee, Stephens Kangaroo Habitat Conservation Fee, Underground Utilities in lieu Fee, Area Drainage Plan Fee, Bridge and Thoroughfare Mitigation fee (Future) and Traffic Signal Mitigation Fee. The final amount of fees payable is dependent upon information provided by the applicant and will be determined at the time the fees become due and payable.

Unless otherwise provided for by this Resolution, all impact fees shall be calculated and collected at the time and in the manner provided in Chapter 3.32 of the City of Moreno Valley Municipal Code or as so provided in the applicable ordinances and resolutions. The City expressly reserves the right to amend the fees and the fee calculations consistent with applicable law.

2. DEDICATIONS, RESERVATIONS, AND OTHER EXACTIONS

The adopted Conditions of Approval for PEN16-0088, incorporated herein by reference, may include dedications, reservations, and exactions pursuant to Government Code Section 66020 (d) (1).

3. CITY RIGHT TO MODIFY/ADJUST; PROTEST LIMITATIONS

The City expressly reserves the right to establish, modify or adjust any fee, dedication, reservation or other exaction to the extent permitted and as authorized by law.

Pursuant to Government Code Section 66020(d)(1), NOTICE IS FURTHER GIVEN that the 90 day period to protest the imposition of any impact fee, dedication, reservation, or other exaction described in this Resolution begins on the effective date of this Resolution and any such protest must be in a manner that complies with Government Code Section 66020(a) and failure to timely follow this procedure will bar any subsequent legal action to attack, review, set aside, void or annul imposition.

The right to protest the fees, dedications, reservations, or other exactions does not apply to planning, zoning, grading, or other similar application processing fees or service fees in connection with this project and it does not apply to any fees, dedication, reservations, or other exactions of which a notice has been given similar to this, nor does it revive challenges to any fees for which the applicable statute of limitations has previously expired.

BE IT FURTHER RESOLVED that the City Council HEREBY APPROVES Resolution No. 2018-XX, and thereby:

1. APPROVE Conditional Use Permit Application No. PEN16-0088, based on the findings contained in this resolution, and the conditions of approval attached hereto as Exhibit A and

APPROVED AND ADOPTED this 4th day of September, 2018.

____
Mayor of the City of Moreno Valley

ATTEST:

____
City Clerk

APPROVED AS TO FORM:

____
City Attorney

RESOLUTION JURAT

STATE OF CALIFORNIA)

COUNTY OF RIVERSIDE) ss.

CITY OF MORENO VALLEY)

I, Pat Jacquez-Nares, City Clerk of the City of Moreno Valley, California, do hereby certify that Resolution No. 2018-XX was duly and regularly adopted by the City Council of the City of Moreno Valley at a regular meeting thereof held on the 4th day of September, 2018 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

(Council Members, Mayor Pro Tem and Mayor)

____

CITY CLERK

(SEAL)

CITY OF MORENO VALLEY
CONDITIONS OF APPROVAL
Conditional Use Permit (PEN16-0088)

EFFECTIVE DATE:
EXPIRATION DATE:

COMMUNITY DEVELOPMENT DEPARTMENT

Planning Division

1. Conditional Use Permit PEN16-0088 is approved for development of a 1.77 acre site with a service station to include a canopy with eight (8) pump islands, a 5,815 square foot donut store / convenience store and a 900 square foot automated car wash. The convenience store is also approved for beer and wine sales. The hours of operation for the car wash shall be 8 am to 10 pm.

2. Any expansion to this use or exterior alterations will require the submittal of a separate application(s) and shall be reviewed and approved under separate permit(s). (MC 9.02.080)

3. The developer, or the developer's successor-in-interest, shall be responsible for maintaining any undeveloped portion of the site in a manner that provides for the control of weeds, erosion and dust. (MC 9.02.030)

4. This approval shall expire three years after the approval date of this project unless used or extended as provided for by the City of Moreno Valley Municipal Code. (MC 9.02.230)

5. In the event the use hereby permitted ceases operation for a period of one (1) year or more, or as defined in the current Municipal Code, this permit may be revoked in accordance with provisions of the Municipal Code.

6. All landscaped areas shall be maintained in a healthy and thriving condition, free from weeds, trash and debris. (MC 9.02.030)

7. The site shall be developed in accordance with the approved plans on file in the Community Development Department - Planning Division, the Municipal Code regulations, General Plan, and the conditions contained herein. Prior to any use of the project site or business activity being commenced thereon, all Conditions of Approval shall be completed to the satisfaction of the Planning Official. (MC 9.14.020)

8. Any signs indicated on the submitted plans are not included with this approval. Any

signs, whether permanent (e.g. wall, monument) or temporary (e.g. banner, flag), require separate application and approval by the Planning Division. No signs are permitted in the public right of way. (MC 9.12)

9. All site plans, grading plans, landscape and irrigation plans, fence/wall plans, lighting plans and street improvement plans shall be coordinated for consistency with this approval.

10. A change or modification to the land use or the approved site plans may require a separate approval. Prior to any change or modification, the property owner shall contact the City of Moreno Valley Community Development Department to determine if a separate approval is required.

<u>Special Conditions</u>

11. The following Mitigation Measures apply to this project:

CR-1: Prior to the issuance of a grading permit, the City shall retain a professional archaeologist to conduct monitoring of all mass grading and trenching activities. The Project Archaeologist shall have the authority to temporarily redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project Archaeologist, in consultation with the Consulting Tribe(s), the contractor, and the City, shall develop a Cultural Resources Management Plan (CRMP) in consultation pursuant to the definition in AB52 to address the details, timing and responsibility of all archaeological and cultural activities that will occur on the project site. A consulting tribe is defined as a tribe that initiated the AB 52 tribal consultation process for the Project, has not opted out of the AB52 consultation process, and has completed AB 52 consultation with the City as provided for in Cal Pub Res Code Section 21080.3.2(b)(1) of AB52. Details in the Plan shall include:

a. Project grading and development scheduling;

b. The Project archeologist and the Consulting Tribes(s) as defined in CR-1 shall attend the pre-grading meeting with the City, the construction manager and any contractors and will conduct a mandatory Cultural Resources Worker Sensitivity Training to those in attendance. The Training will include a brief review of the cultural sensitivity of the Project and the surrounding area; what resources could potentially be identified during earthmoving activities; the requirements of the monitoring program; the protocols that apply in the event inadvertent discoveries of cultural resources are identified, including who to contact and appropriate avoidance measures until the find(s) can be properly evaluated; and any other appropriate protocols. All new construction personnel that will conduct earthwork or grading activities that begin work on the Project following the initial Training must take the Cultural Sensitivity Training prior to beginning work and the Project archaeologist and Consulting Tribe(s) shall make themselves available to provide the training on an as-needed basis;

c. The protocols and stipulations that the contractor, City, Consulting Tribe(s) and Project archaeologist will follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resource deposits that shall be subject to a cultural resources evaluation.

CR-2: Prior to the issuance of a grading permit, the City of Moreno Valley shall secure agreements with the Soboba Band of Luiseno Indians for tribal monitoring. The City is also required to provide a minimum of 30 days advance notice to the tribes of all mass grading and trenching activities. The Native American Tribal Representatives shall have the authority to temporarily halt and redirect earth moving activities in the affected area in the event that suspected archaeological resources are unearthed. If the Native American Tribal Representatives suspect that an archaeological resource may have been unearthed, the Project Archaeologist or the Tribal Representatives shall immediately redirect grading operations in a 100-foot radius around the find to allow identification and evaluation of the suspected resource. In consultation with the Native American Tribal Representatives, the Project Archaeologist shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2.

12. NOI-1: Noise emitted from the proposed project shall not exceed 60 dBA at residential property lines during the daytime hours (8 a.m. to 10 p.m.) and 55 dBA during nighttime hours (10 p.m. to 8 a.m.). Measures to reduce noise levels include the following:

• An 8-foot noise barrier shall be constructed that meets or exceeds the barrier shown in Exhibit 5 of the project's noise report (Landrum & Brown 2018). The noise barrier must have a surface density of at least 3.5 pounds per square foot, and shall have no openings or gaps. The wall may be constructed of stud and stucco, 3/8-inch plate glass, 5/8-inch Plexiglas, any masonry material, or a combination of these materials.

• The car wash equipment must be equipped with automatic doors at both the entrance and exit ends that can close when a car is being washed and dried.

13. CR-3: In the event that Native American cultural resources are discovered during the course of grading (inadvertent discoveries), the following procedures shall be carried out for final disposition of the discoveries:

a) One or more of the following treatments, in order of preference, shall be employed with the tribes. Evidence of such shall be provided to the City of Moreno Valley Planning Department:

i. Preservation-In-Place of the cultural resources, if feasible. Preservation in place means avoiding the resources, leaving them in the place they were found with no development affecting the integrity of the resources.

ii. Onsite reburial of the discovered items as detailed in the treatment plan required pursuant to Mitigation Measure CR-1. This shall include measures and provisions to protect the future reburial area from any future impacts in perpetuity. Reburial shall not occur until all legally required cataloging and basic recordation have been completed. No recordation of sacred items is permitted without the written consent of all Consulting Native American Tribal Governments as defined in CR-1.

CR-4: The City shall verify that the following note is included on the Grading Plan:
"If any suspected archaeological resources are discovered during ground-disturbing activities and the Project Archaeologist or Native American Tribal Representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call the Project Archaeologist and the Tribal Representatives to the site to assess the significance of the find."

CR-5: If potential historic or cultural resources are uncovered during excavation or construction activities at the project site, work in the affected area must cease immediately and a qualified person meeting the Secretary of the Interior's standards (36 CFR 61), Tribal Representatives, and all site monitors per the Mitigation Measures, shall be consulted by the City to evaluate the fin

14. TRA-1: Prior to issuance of the first building permit, the Project Applicant shall make a fair-share contribution in the funding of off-site improvements that are needed to serve acceptable cumulative traffic operations through the payment of the required Transportation Uniform Mitigation Fee (TUMF) fees in addition to the City of Moreno Valley Development Impact Fee (DIF). The fees shall be collected by the Western Riverside Council of Governments (WRCOG) for the TUMF and by the City of Moreno Valley for the DIF.

15. CR-6: If human remains are discovered, no further disturbance shall occur in the affected area until the County Coroner has made necessary findings as to origin. If the County Coroner determines that the remains are potentially Native American, the California Native American Heritage Commission shall be notified within 5-days of the published finding to be given a reasonable opportunity to identify the "most likely descendant". The "most likely descendant" shall then make recommendations, and engage in consultations concerning the treatment of the remains (California Public Resources Code 5097.98). (GP Objective 23.3, CEQA).

<u>Prior to Grading Permit</u>

16. Prior to issuance of any grading permit, all Conditions of Approval and Mitigation Measures shall be completed to the satisfaction of the Community Development Direct and shall be printed on the grading plans.

17. Prior to the issuance of grading permits, decorative (e.g. colored/scored concrete or as approve by the Planning Official) pedestrian pathways across circulation aisles/paths shall be provided throughout the development to connect dwellings with open spaces and/or recreational uses or commercial/industrial buildings with open space and/or parking. and/or the public right-of-way. The pathways shall be shown on the precise grading plan. (GP Objective 46.8, DG)

18. Prior to approval of any grading permits, landscape and irrigation plans for any median enhancements or construction shall be reviewed and approved by to the Planning Division.

19. Prior to issuance of any grading permits, mitigation measures contained in the Mitigation Monitoring Program approved with this project shall be implemented as provided therein. A mitigation monitoring fee, as provided by City ordinance, shall be paid by the applicant within 30 days of project approval. No City permit or approval shall be issued until such fee is paid. (CEQA)

20. Prior to issuance of grading permits, the developer shall pay the applicable Stephens' Kangaroo Rat (SKR) Habitat Conservation Plan mitigation fee. (Ord)

21. Within thirty (30) days prior to any grading or other land disturbance, a pre-construction survey for Burrowing Owls shall be conducted pursuant to the established guidelines of Multiple Species Habitat Conservation Plan. The pre-construction survey shall be submitted to the Planning Division prior to any disturbance of the site and/or grading permit issuance.

22. Prior to the issuance of grading permits, the site plan and grading plans shall show decorative hardscape (e.g. colored concrete, stamped concrete, pavers or as approved by the Planning Official) consistent and compatible with the design, color and materials of the proposed development for all driveway ingress/egress locations of the project.

23. Prior to issuance of grading permits, the developer shall submit wall/fence plans to the Planning Division for review and approval as follows:

    A. An eight (8) foot high solid decorative block perimeter wall with pilasters and a cap shall be required adjacent to all residential zoned areas.

    B. 3-foot high decorative wall, solid hedge or berm shall be placed in any setback areas between a public right of way and a parking lot for screening.

    C. Any proposed retaining walls shall also be decorative in nature, while the combination of retaining and other walls on top shall not exceed the height requirement.

D. An eight (8) foot tall decorative block wall with pilasters shall be required along the northern property line to the depth of the west elevation of the car wash building.

24. Prior to the issuance of grading permits, a temporary project identification sign shall be erected on the site in a secure and visible manner. The sign shall be conspicuously posted at the site and remain in place until occupancy of the project. The sign shall include the following:

    a. The name (if applicable) and address of the development.
    b. The developer's name, address, and a 24-hour emergency telephone number.

25. Prior to issuance of grading permits, the location of the trash enclosure shall be included on the plans.

<u>Prior to Building Permit</u>

26. Prior to issuance of any building, all Conditions of Approval and Mitigation Measures shall be completed to the satisfaction of the Community Development Director and shall be printed on the building plans.

27. Prior to the issuance of building permits, the developer shall provide documentation that contact was made to the U.S. Postal Service to determine the appropriate type and location of mailboxes.

28. Prior to the issuance of building permits, proposed covered trash enclosures shall be included in the Planning review of the Fence and Wall plan or separate Planning submittal. The trash enclosure(s), including the roof materials, shall be compatible with the architecture, color and materials of the building(s) design. Trash enclosure areas shall include landscaping on three sides. Approved design plans shall be included in a Building submittal (Fence and Wall or building design plans). (GP Objective 43.6, DG)

29. Prior to issuance of any building permits, final landscaping and irrigation plans shall be submitted for review and approved by the Planning Division. After the third plan check review for landscape plans, an additional plan check fee shall apply. The plans shall be prepared in accordance with the City's Landscape Requirements and shall include:

    A. A three (3) foot high decorative wall, solid hedge or berm shall be placed in any setback areas between a public right of way and a parking lot for screening.

    B. Finger and end planters with required step outs and curbing shall be provided every 12 parking stalls as well as at the terminus of each aisle.

C. Drought tolerant landscape shall be used. Sod shall be limited to gathering areas.

D. Street trees shall be provided every 40 feet on center in the right of way.

E. On-site trees shall be planted at an equivalent of one (1) tree per thirty (30) linear feet of the perimeter of a parking lot and per thirty linear feet of a building dimension for the portions of the building visible from a parking lot or right of way. Trees may be massed for pleasing aesthetic effects.

F. Enhanced landscaping shall be provided at all driveway entries and street corner locations The review of all utility boxes, transformers etc. shall be coordinated to provide adequate screening from public view.

G. Landscaping on three sides of any trash enclosure.

H. All site perimeter and parking lot landscape and irrigation shall be installed prior to the release of building final or certificate of any occupancy permits for the site.

30. Prior to issuance of building permits, the Planning Division shall review and approve the location and method of enclosure or screening of transformer cabinets, commercial gas meters and back flow preventers as shown on the final working drawings. Location and screening shall comply with the following criteria: transformer cabinets and commercial gas meters shall not be located within required setbacks and shall be screened from public view either by architectural treatment or landscaping; multiple electrical meters shall be fully enclosed and incorporated into the overall architectural design of the building(s); back-flow preventers shall be screened by landscaping. (GP Objective 43.30)

31. Prior to issuance of a building permit, the developer/property owner or developer's successor-in-interest shall pay all applicable impact fees due at permit issuance, including but not limited to Multi-species Habitat Conservation Plan (MSHCP) mitigation fees. (Ord)

32. Prior to building final, the developer/owner or developer's/owner’s successor-in-interest shall pay all applicable impact fees, including but not limited to Transportation Uniform Mitigation fees (TUMF), and the City’s adopted Development Impact Fees. (Ord)

33. Prior to or at building plan check submittal, the elevation plans shall include decorative lighting sconces on all sides of the buildings of the complex facing a parking lot, courtyard or plaza, or public right of way or open space to provide up-lighting and shadowing on the structures. Include drawings of the sconce

details for each building within the elevation plans, approved by the Planning Division prior to building permit issuance.

34. Prior to or at building plan check submittal, two copies of a detailed, on-site, computer generated, point-by-point comparison lighting plan, including exterior building, parking lot, and landscaping lighting, shall be submitted to the Planning Division for review and approval prior to the issuance of a building permit. The lighting plan shall be generated on the plot plan and shall be integrated with the final landscape plan. The plan shall indicate the manufacturer's specifications for light fixtures used, shall include style, illumination, location, height and method of shielding per the City's Municipal Code requirements. After the third plan check review for lighting plans, an additional plan check fee will apply. (MC 9.08.100, 9.16.280)

35. Prior to issuance of building permits, screening details shall be addressed on the building plans for roof top equipment submitted for Planning Division review and approval through the building plan check process. All equipment shall be completely screened so as not to be visible from public view, and the screening shall be an integral part of the building.

Prior to Building Final or Occupancy

36. Prior to building final, all required landscaping and irrigation shall be installed per plan, certified by the Landscape Architect and inspected by the Planning Division. (MC 9.03.040, MC 9.17).

37. Prior to building final, Planning approved/stamped landscape plans shall be provided to the Community Development Department – Planning Division on a CD disk.

38. Prior to building final, all required and proposed fences and walls shall be constructed according to the approved plans on file in the Planning Division. (MC 9.080.070).

39. Prior to building final or Certificate of Occupancy, all Conditions of Approval and Mitigation Measures shall be completed to the satisfaction of the Community Development Director.

ECONOMIC DEVELOPMENT DEPARTMENT (EDD)

40. New Moreno Valley businesses may work with the Economic Development Department to coordinate job recruitment fairs.

41. New Moreno Valley businesses may adopt a "First Source" approach to

employee recruitment that gives notice of job openings to Moreno Valley residents for one week in advance of the public recruitment.

42. New Moreno Valley businesses are encouraged to hire local residents.

43. New Moreno Valley businesses are encouraged to provide a job fair flyer and/or web announcement to the City in advance of job recruitments, so that the City can assist in publicizing these events.

44. New Moreno Valley businesses may utilize the workforce recruitment services provided by the Moreno Valley Employment Resource Center ("ERC").

    The ERC offers no cost assistance to businesses recruiting and training potential employees. Complimentary services include:

    • Job Announcements
    • Applicant testing / pre-screening
    • Interviewing
    • Job Fair support
    • Training space

FIRE DEPARTMENT

Fire Prevention Bureau

45. The Fire Prevention Bureau is required to set a minimum fire flow for the remodel or construction of all commercial buildings per CFC Appendix B and Table B105.1. The applicant/developer shall provide documentation to show there exists a water system capable of delivering 1500 gallons per minute for 2 hour(s) duration at 20-PSI residual operating pressure. (CFC 507.3, Appendix B)

46. Prior to issuance of Certificate of Occupancy or Building Final, the applicant/developer shall be responsible for obtaining underground and/or above ground tank permits for the storage of combustible liquids, flammable liquids, or any other hazardous materials from both the County of Riverside Community Health Agency Department of Environmental Health and the Fire Prevention Bureau. (CFC 105)

47. Prior to issuance of Certificate of Occupancy, approval shall be required from the County of Riverside Community Health Agency (Department of Environmental Health) and Moreno Valley Fire Prevention Bureau to maintain, store, use, handle materials, or conduct processes which produce conditions hazardous to life or property, and to install equipment used in connection with such activities. (CFC 105)

48. Fire lanes and fire apparatus access roads shall have an unobstructed width of not less than twenty–four (24) feet for buildings below 35 feet in height and thirty (30) feet for buildings over 35 feet in height. An unobstructed vertical clearance of not less than thirteen (13) feet six (6) inches shall be provided. (CFC 503.2.1 and MVMC 8.36.060[E])

49. The minimum number of fire hydrants required, as well as the location and spacing of fire hydrants, shall comply with the C.F.C., MVMC, and NFPA 24. Fire hydrants shall be located no closer than 40 feet to a building. A fire hydrant shall be located within 50 feet of the fire department connection for buildings protected with a fire sprinkler system. The size and number of outlets required for the approved fire hydrants are (6" x 4" x 2 ½" x 2 ½") (CFC 507.5.1, 507.5.7, Appendix C, NFPA 24-7.2.3, MVMC 912.2.1)

50. Plans for private water mains supplying fire sprinkler systems and/or private fire hydrants shall be submitted to the Fire Prevention Bureau for approval. (CFC 105 and CFC 3312.1)

51. Prior to issuance of Certificate of Occupancy or Building Final, "Blue Reflective Markers" shall be installed to identify fire hydrant locations in accordance with City specifications. (CFC 509.1 and MVLT 440A-0 through MVLT 440C-0)

52. Prior to issuance of Building Permits, the applicant/developer shall submit water system plans to the Fire Prevention Bureau for review. Plans shall:

a. Be signed by a registered civil engineer or a certified fire protection engineer;
b. Contain a Fire Prevention Bureau approval signature block; and
c. Conform to hydrant type, location, spacing of new and existing hydrants and minimum fire flow required as determined by the Fire Prevention Bureau.

The required water system, including fire hydrants, shall be installed, made serviceable, and be accepted by the Moreno Valley Fire Department prior to beginning construction. They shall be maintained accessible.

53. Existing fire hydrants on public streets are allowed to be considered available. Existing fire hydrants on adjacent properties shall not be considered available unless fire apparatus access roads extend between properties and easements are established to prevent obstruction of such roads. (CFC 507, 501.3)

a. After the local water company signs the plans, the originals shall be presented to the Fire Prevention Bureau for signatures. The required water system, including fire hydrants, shall be installed, made serviceable, and be accepted by the Moreno Valley Fire Department prior to beginning construction. They shall be maintained accessible.

54. Prior to issuance of Certificate of Occupancy or Building Final, the applicant/developer shall install a fire sprinkler system based on square footage and type of construction, occupancy or use. Fire sprinkler plans shall be submitted to the Fire Prevention Bureau for approval prior to installation. (CFC Chapter 9, MVMC 8.36.100[D])

55. Prior to issuance of Certificate of Occupancy or Building Final, the applicant/developer shall install a fire alarm system monitored by an approved Underwriters Laboratory listed central station based on a requirement for monitoring the sprinkler system, occupancy or use. Fire alarm panel shall be accessible from exterior of building in an approved location. Plans shall be submitted to the Fire Prevention Bureau for approval prior to installation. (CFC Chapter 9 and MVMC 8.36.100)

56. Prior to issuance of Certificate of Occupancy or Building Final, all commercial buildings shall display street numbers in a prominent location on the street side. The numerals shall be a minimum of six inches in height. (CFC 505.1, MVMC 8.36.060[I])

57. Prior to issuance of Building Permits, the applicant/developer shall provide the Fire Prevention Bureau with an approved site plan for Fire Lanes and signage. (CFC 501.3)

58. The angle of approach and departure for any means of Fire Department access shall not exceed 1 ft drop in 20 ft (0.3 m drop in 6 m), and the design limitations of the fire apparatus of the Fire Department shall be subject to approval by the AHJ. (CFC 503 and MVMC 8.36.060)

59. The Fire Code Official is authorized to enforce the fire safety during construction requirements of Chapter 33. (CFC Chapter 33 & CBC Chapter 33)

60. The Fire Department emergency vehicular access road shall be (all weather surface) capable of sustaining an imposed load of 80,000 lbs. GVW, based on street standards approved by the Public Works Director and the Fire Prevention Bureau. The approved fire access road shall be in place during the time of construction. Temporary fire access roads shall be approved by the Fire Prevention Bureau. (CFC 501.4, and MV City Standard Engineering Plan 108d)

61. Fire Department access driveways over 150 feet in length shall have a turn-around as determined by the Fire Prevention Bureau capable of accommodating fire apparatus. (CFC 503 and MVMC 8.36.060, CFC 501.4)

62. All Fire Department access roads or driveways shall not exceed 12 percent grade. (CFC 503.2.7 and MVMC 8.36.060[G])

63. Prior to issuance of a Certificate of Occupancy or Building Final, a “Knox Box Rapid Entry System” shall be provided. The Knox-Box shall be installed in an accessible location approved by the Fire Code Official. All exterior security emergency access gates shall be electronically operated and be provided with Knox key switches for access by emergency personnel. (CFC 506.1)

PUBLIC WORKS DEPARTMENT

Land Development

64. Aggregate slurry, as defined in Section 203-5 of Standard Specifications for Public Works Construction, may be required just prior to the end of the Project's construction of the public streets at the discretion of the City Engineer. If slurry is required, a slurry mix design shall be submitted for review and approved by the City Engineer. The latex additive shall be Ultra Pave 70 (for anionic) or Ultra Pave 65 K (for cationic) or an approved equal per the geotechnical report. The latex shall be added at the emulsion plant after weighing the asphalt and before the addition of mixing water. The latex shall be added at a rate of two to two-and-one-half (2 to 2½) parts to one-hundred (100) parts of emulsion by volume. Any existing striping shall be removed prior to slurry application and replaced per City standards.

65. The developer shall comply with all applicable City ordinances and resolutions including the City’s Municipal Code (MC) and if subdividing land, the Government Code (GC) of the State of California, specifically Sections 66410 through 66499.58, said sections also referred to as the Subdivision Map Act (SMA). [MC 9.14.010]

66. The final approved conditions of approval (COAs) and any applicable Mitigation Measures issued by the Planning Division shall be photographically or electronically placed on mylar sheets and included in the Grading and Street Improvement plans.

67. The developer shall monitor, supervise and control all construction related activities, so as to prevent these activities from causing a public nuisance, including but not limited to, insuring strict adherence to the following:
(a) Removal of dirt, debris, or other construction material deposited on any public street no later than the end of each working day.
(b) Observance of working hours as stipulated on permits issued by the Land Development Division.
(c) The construction site shall accommodate the parking of all motor vehicles used by persons working at or providing deliveries to the site.
(d) All dust control measures per South Coast Air Quality Management District (SCAQMD) requirements during the grading operations.
Violation of any condition, restriction or prohibition set forth in these conditions shall subject the owner, applicant, developer or contractor(s) to remedy as noted in City

Municipal Code 8.14.090. In addition, the City Engineer or Building Official may suspend all construction related activities for violation of any condition, restriction or prohibition set forth in these conditions until such time as it has been determined that all operations and activities are in conformance with these conditions.

68. If improvements associated with this project are not initiated within two (2) years of the date of approval of the Public Improvement Agreement (PIA), the City Engineer may require that the engineer's estimate for improvements associated with the project be modified to reflect current City construction costs in effect at the time of request for an extension of time for the PIA or issuance of a permit. [MC 9.14.210(B)(C)]

69. The developer shall protect downstream properties from damage caused by alteration of drainage patterns (i.e. concentration or diversion of flow, etc). Protection shall be provided by constructing adequate drainage facilities, including, but not limited to, modifying existing facilities or by securing a drainage easement. [MC 9.14.110]

70. The proposed private storm drain system may connect to the existing RCFC&WCD Line P-3. This connection may require a permit from RCFC&WCD prior to any storm drain construction. A storm drain manhole shall be placed at the right-of-way line to mark the beginning of the publicly maintained portion of this storm drain.

71. This project shall submit civil engineering design plans, reports and/or documents (prepared by a registered/licensed civil engineer) for review and approval by the City Engineer per the current submittal requirements, prior to the indicated threshold or as required by the City Engineer. The submittal consists of, but is not limited to, the following:
    a. A Lot Line Adjustment (recordation prior to building permit issuance);
    b. Rough grading w/ erosion control plan (prior to grading permit issuance);
    c. Precise grading w/ erosion control plan (prior to building permit issuance);
    d. Public improvement plan (e.g., street/storm drain w/ striping, prior to encroachment permit issuance;
    e. Final drainage study (prior to grading plan approval);
    f. Final WQMP (prior to grading plan approval);
    g. Legal documents (e.g., easement(s), dedication(s), lot line adjustment, etc.) prior to building permit issuance;
    h. As-Built revision for all plans (prior to Occupancy release);

72. Water quality best management practices (BMPs) designed to meet Water Quality Management Plan (WQMP) requirements for Industrial development shall not be used as a construction BMP. Water quality BMPs shall be maintained for the entire duration of the project construction and be used to treat runoff from those developed portions of the project. Water quality BMPs shall be protected from upstream

construction related runoff by having proper best management practices in place and maintained. Water quality BMPs shall be graded per the approved design plans and once landscaping and irrigation has been installed, it and its maintenance shall be turned over to the property owner or an established Property Owner's Association (POA).

Prior to Grading Plan Approval

73. Resolution of all drainage issues shall be as approved by the City Engineer.

74. A final detailed drainage study (prepared by a registered/licensed civil engineer) shall be submitted for review and approved by the City Engineer. The study shall include, but not be limited to: existing and proposed hydrologic conditions as well as hydraulic calculations for all drainage control devices and storm drain lines. The study shall analyze 1, 3, 6 and 24-hour duration events for the 2, 5, 10 and 100-year storm events [MC 9.14.110(A.1)]. A digital (pdf) copy of the approved drainage study shall be submitted to the Land Development Division.

75. A final project-specific Water Quality Management Plan (WQMP) shall be submitted for review and approved by the City Engineer, which:
    a. Addresses Site Design Best Management Practices (BMPs) such as minimizing impervious areas, maximizing permeability, minimizes directly connected impervious areas to the City's street and storm drain systems, and conserves natural areas;
    b. Incorporates Source Control BMPs and provides a detailed description of their implementation;
    c. Describes the long-term operation and maintenance requirements for BMPs requiring maintenance; and
    d. Describes the mechanism for funding the long-term operation and maintenance of the BMPs.

    A copy of the latest version of the final WQMP template can be obtained on the City's Website or by contacting the Land Development Division. A digital (pdf) copy of the approved final project-specific Water Quality Management Plan (WQMP) shall be submitted to the Land Development Division.

76. The developer shall ensure compliance with the City Grading ordinance, these Conditions of Approval and the following criteria:
    a. The project street and lot grading shall be designed in a manner that perpetuates the existing natural drainage patterns with respect to tributary drainage area and outlet points. Unless otherwise approved by the City Engineer, lot lines shall be located at the top of slopes.
    b. Any grading that creates cut or fill slopes adjacent to the street shall provide erosion control, sight distance control, and slope easements as approved by the City Engineer.

c. All improvement plans are substantially complete and appropriate clearance letters are provided to the City.

d. A soils/geotechnical report (addressing the soil's stability and geological conditions of the site) shall be submitted to the Land Development Division for review. A digital (pdf) copy of the soils/geotechnical report shall be submitted to the Land Development Division.

77. Grading plans (prepared by a registered/licensed civil engineer) shall be submitted for review and approved by the City Engineer per the current submittal requirements.

78. The developer shall select Low Impact Development (LID) Best Management Practices (BMPs) designed per the latest version of the Water Quality Management Plan (WQMP) - a guidance document for the Santa Ana region of Riverside County.

79. The developer shall pay all remaining plan check fees.

80. A Storm Water Pollution Prevention Plan (SWPPP) shall be prepared in conformance with the State's current Construction Activities Storm Water General Permit. A copy of the current SWPPP shall be kept at the project site and be available for review upon request.

81. Any proposed trash enclosure(s) shall be dual bin (1 for trash and 1 for recycables) [MC 9.03.040 (G)]. The enclosure shall have a solid roof and appropriate drainage collection for water quality purposes. The architecture shall be approved by the Planning Division and any structural approvals shall be made by the Building & Safety Division.

82. For projects that will result in discharges of storm water associated with construction with a soil disturbance of one or more acres of land, the developer shall submit a Notice of Intent (NOI) and obtain a Waste Discharger's Identification number (WDID#) from the State Water Quality Control Board (SWQCB) which shall be noted on the grading plans.

83. Landscape & Irrigation plans (prepared by a registered/licensed civil engineer) for water quality BMPs shall be submitted for review and approved by the City Engineer per the current submittal requirements, if applicable.

<u>Prior to Grading Permit</u>

84. A receipt showing payment of the Area Drainage Plan (ADP) fee to Riverside County Flood Control and Water Conservation District shall be submitted. [MC 9.14.100(O)]

85. The developer shall pay current Development Impact Fees (DIF), adopted by the City Council. [Ord. 695 § 1.1 (part), 2005] [MC 3.38.030, 040, 050]

86. A digital (pdf) copy of all approved grading plans shall be submitted to the Land Development Division.

87. Security, in the form of a cash deposit (preferable), or letter of credit shall be submitted as a guarantee of the implementation and maintenance of erosion control measures. At least twenty-five (25) percent of the required security shall be in the form of a cash deposit with the City. [MC 8.21.160(H)]

88. Security, in the form of a cash deposit (preferable), or letter of credit shall be submitted as a guarantee of the completion of the grading operations for the project. [MC 8.21.070]

89. The developer shall pay all applicable inspection fees.

90. The developer shall pay current Transportation Uniform Mitigation Fees (TUMF) adopted by the City Council. [Ord. 835 § 2.1, 2012] [MC 3.44.060]

<u>Prior to Improvement Plan Approval</u>

91. The developer is required to bring any existing access ramps adjacent to and fronting the project to current ADA (Americans with Disabilities Act) requirements. However, when work is required in an intersection that involves or impacts existing access ramps, all access ramps in that intersection shall be retrofitted to comply with current ADA requirements, unless otherwise approved by the City Engineer.

92. The street improvement plans shall comply with current City policies, plans and applicable City standards (i.e. MVSI-160 series, etc.) throughout this project.

93. The hydrology study shall be designed to accept and properly convey all off-site drainage flowing onto or through the site. In the event that the City Engineer permits the use of streets for drainage purposes, the provisions of current City standards shall apply. Should the quantities exceed the street capacity or the use of streets be prohibited for drainage purposes, as in the case where one travel lane in each direction shall not be used for drainage conveyance for emergency vehicle access on streets classified as minor arterials and greater, the developer shall provide adequate facilities as approved by the City Engineer. [MC 9.14.110 A.2]

94. All public improvement plans (prepared by a licensed/registered civil engineer) shall be submitted for review and approved by the City Engineer per the current submittal requirements.

95. Any missing or deficient existing improvements along the project frontage within Cottonwood Avenue shall be constructed or secured for construction. The City Engineer may require the ultimate structural section for pavement to half-street width plus 18-feet or provide core test results confirming that existing pavement section is per current City Standards; additional signing & striping to accommodate increased traffic imposed by the development, etc.

96. For non-subdivision projects, all street dedications shall be free of encumbrances, irrevocably offered to the public and shall continue in force until the City accepts or abandons such offers, unless otherwise approved by the City Engineer.

97. All dry and wet utilities shall be shown on the plans and any crossings shall be potholed to determine actual location and elevation. Any conflicts shall be identified and addressed on the plans. The pothole survey data shall be submitted to Land Development with the public improvement plans for reference purposes only. The developer is responsible to coordinate with all affected utility companies and bear all costs of any utility relocation.

98. Perris Boulevard (110' RW / 86' CC) shall be constructed to half-width plus a raised landscaped median plus a 14-foot travel lane. The improvements shall consist of, but not be limited to, pavement, curb, gutter, sidewalk, streetlights, storm drain, catch basins, pavement transitions, dry and wet utilities, and undergrounding of overhead utilities less than 115,000 volts. The Developer shall construct pavement transitions joining existing and proposed edge of pavement beyond the northern tract boundary on Perris Boulevard. The developer shall dedicate additional right of way to meet the required street ROW width of 55-foot half street along the east side of Perris Boulevard, west side of the project property. Additional ROW shall be dedicated as noted in the City's Standard MVSI-161-0 for the bus turnout.

99. Cottonwood Avenue (88' RW/ 64' CC) shall be constructed to half-width plus a 12-foot travel lane. The improvements shall consist of, but not be limited to, pavement, curb, gutter, sidewalk, streetlights, storm drain, catch basins, pavement transitions, dry and wet utilities, and undergrounding of overhead utilities less than 115,000 volts. The developer shall dedicate additional right of way to meet the required street ROW width of 44-foot half street along the north side of Cottonwood Avenue, south side of the project property. A striping plan shall be included in the improvement plans and approved by the City Traffic Engineer.

100. Show & label a 4-foot right-of-way dedication for pedestrian sidewalk per current City Standard MVSI-112C-0 behind all proposed driveway locations.

<u>Prior to Encroachment Permit</u>

101. A digital (pdf) copy of all approved improvement plans shall be submitted to the

Land Development Division.

102. All applicable inspection fees shall be paid.

103. For non-subdivision projects, execution of a Public Improvement Agreement (PIA) and/or security (in the form of a cash deposit or other approved means) may be required as determined by the City Engineer. [MC 9.14.220]

104. Any work performed within public right-of-way requires an encroachment permit.

Prior to Building Permit

105. An engineered-fill certification, rough grade certification and compaction report shall be submitted for review and approved by the City Engineer. A digital (pdf) copy of the approved compaction report shall be submitted to the Land Development Division. All pads shall meet pad elevations per approved grading plans as noted by the setting of "blue-top" markers installed by a registered land surveyor or licensed civil engineer.

106. For non-subdivision projects, the developer shall guarantee the completion of all related public improvements required for this project by executing a Public Improvement Agreement (PIA) with the City and posting the required security. [MC 9.14.220]

107. For Commercial/Industrial projects, the owner may have to secure coverage under the State's General Industrial Activities Storm Water Permit as issued by the State Water Resources Control Board.

108. For non-subdivision projects, all street dedications shall be free of encumbrances, irrevocably offered to the public and shall continue in force until the City accepts or abandons such offers, unless otherwise approved by the City Engineer.

109. A walk through with a Land Development Inspector shall be scheduled to inspect existing improvements within public right of way along project frontage. Any missing, damaged or substandard improvements including handicap access ramps that do not meet current City standards shall be required to be installed, replaced and/or repaired. The applicant shall post security to cover the cost of the repairs and complete the repairs within the time allowed in the public improvement agreement used to secure the improvements.

Prior to Occupancy

110. All outstanding fees shall be paid.

111. All required as-built plans (prepared by a registered/licensed civil engineer) shall be submitted for review and approved by the City Engineer per the current submittal requirements.

112. The final/precise grade certification shall be submitted for review and approved by the City Engineer.

113. For commercial, industrial and multi-family projects, in compliance with Proposition 218, the developer shall agree to approve the City of Moreno Valley NPDES Regulatory Rate Schedule that is in place at the time of certificate of occupancy issuance. Under the current permit for storm water activities required as part of the National Pollutant Discharge Elimination System (NPDES) as mandated by the Federal Clean Water Act, this project is subject to the following requirements:

a. Select one of the following options to meet the financial responsibility to provide storm water utilities services for the required continuous operation, maintenance, monitoring system evaluations and enhancements, remediation and/or replacement, all in accordance with Resolution No. 2002-46.

i. Participate in the mail ballot proceeding in compliance with Proposition 218, for the Common Interest, Commercial, Industrial and Quasi-Public Use NPDES Regulatory Rate Schedule and pay all associated costs with the ballot process; or

ii. Establish an endowment to cover future City costs as specified in the Common Interest, Commercial, Industrial and Quasi-Public Use NPDES Regulatory Rate Schedule.

b. Notify the Special Districts Division of the intent to request building permits 90 days prior to their issuance and the financial option selected. The financial option selected shall be in place prior to the issuance of certificate of occupancy. [California Government Code & Municipal Code]

114. The developer shall complete all public improvements in conformance with current City standards, except as noted in the Special Conditions, including but not limited to the following:

a. Street improvements including, but not limited to: pavement, base, curb and/or gutter, cross gutters, spandrel, sidewalks, drive approaches, pedestrian ramps, street lights, signing, striping, under sidewalk drains, landscaping and irrigation, medians, pavement tapers/transitions and traffic control devices as appropriate.

b. Storm drain facilities including, but not limited to: storm drain pipe, storm drain laterals, open channels, catch basins and local depressions.

c. City-owned utilities.

d. Sewer and water systems including, but not limited to: sanitary sewer, potable water and recycled water.

e. Under grounding of all existing and proposed utilities adjacent to and on-site. [MC 9.14.130]

f. Relocation of overhead electrical utility lines including, but not limited to: electrical, cable and telephone.

115. For commercial, industrial and multi-family projects, a "Stormwater Treatment Device and Control Measure Access and Maintenance Covenant" shall be recorded to provide public notice of the maintenance requirements to be implemented per the approved final project-specific WQMP. A boilerplate copy of the "Stormwater Treatment Device and Control Measure Access and Maintenance Covenant" can be obtained by contacting the Land Development Division.

116. The applicant shall ensure the following, pursuant to Section XII. I. of the 2010 NPDES Permit:
   a. Field verification that structural Site Design, Source Control and Treatment Control BMPs are designed, constructed and functional in accordance with the approved Final Water Quality Management Plan (WQMP).
   b. Certification of best management practices (BMPs) from a state licensed civil engineer. An original WQMP BMP Certification shall be submitted for review and approved by the City Engineer.

117. The Developer shall comply with the following water quality related items:
   a. Notify the Land Development Division prior to construction and installation of all structural BMPs so that an inspection can be performed.
   b. Demonstrate that all structural BMPs described in the approved final project-specific WQMP have been constructed and installed in conformance with the approved plans and specifications;
   c. Demonstrate that Developer is prepared to implement all non-structural BMPs described in the approved final project-specific WQMP; and
   d. Demonstrate that an adequate number of copies of the approved final project-specific WQMP are available for future owners/occupants.
   e. Clean and repair the water quality BMP's, including re-grading to approved civil drawing if necessary.
   f. Obtain approval and complete installation of the irrigation and landscaping.

<u>Special Districts Division</u>

118. The parcel(s) associated with this project have been incorporated into the Moreno Valley Community Services District Zone A (Parks & Community Services) and Zone C (Arterial Street Lighting). All assessable parcels therein shall be subject to annual parcel taxes for Zone A and Zone C for operations and capital improvements.

119. The Developer, or the Developer's successors or assignees shall be responsible for all parkway and/or median landscape maintenance for a period of one (1) year commencing from the time all items of work have been completed to the satisfaction

of Special Districts staff as per the City of Moreno Valley Public Works Department Landscape Design Guidelines, or until such time as the District accepts maintenance responsibilities.

120. Inspection fees for the monitoring of landscape installation associated with the City of Moreno Valley maintained parkways/medians are due prior to the required pre-construction meeting. (MC 3.32.040)

121. Plans for parkway, median, slope, and/or open space landscape areas designated in the project's Conditions of Approval for incorporation into a City Coordinated landscape maintenance program, shall be prepared and submitted in accordance with the City of Moreno Valley Public Works Department Landscape Design Guidelines. The guidelines are available on the City's website at www.moval.org/sd or from the Special Districts Division (951.413.3480 or specialdistricts@moval.org).

122. The ongoing maintenance of any landscaping required to be installed behind the curb shall be the responsibility of the property owner.

123. Plan check fees for review of parkway/median landscape plans for improvements that shall be maintained by the City of Moreno Valley are due upon the first plan submittal. (MC 3.32.040)

124. Street Light Authorization forms for all street lights that are conditioned to be installed as part of this project must be submitted to the Special Districts Division for approval, prior to street light installation. The Street Light Authorization form can be obtained from the utility company providing electric service to the project, either Moreno Valley Utility or Southern California Edison. For questions, contact the Special Districts Division at 951.413.3480 or specialdistricts@moval.org.

125. Prior to the issuance of the first building permit for this project, the Developer shall pay Advanced Energy fees for all applicable Residential and Arterial Street Lights required for this development. Payment shall be made to the City of Moreno Valley and collected by the Land Development Division. Fees are based upon the Advanced Energy fee rate in place at the time of payment, as set forth in the current Listing of City Fees, Charges, and Rates adopted by City Council. The Developer shall provide a copy of the receipt to the Special Districts Division (specialdistricts@moval.org). Any change in the project which may increase the number of street lights to be installed will require payment of additional Advanced Energy fees at the then current fee. Questions may be directed to the Special Districts Division at 951.413.3480 or specialdistricts@moval.org.

126. This project has been identified to potentially be included in the formation of a Map Act Area of Benefit Special District for the construction of major thoroughfares and/or freeway improvements. The property owner(s) shall participate in such

District and pay any special tax, assessment, or fee levied upon the project property for such District. At the time of the public hearing to consider formation of the district, the property owner(s) will not protest the formation, but will retain the right to object any eventual assessment that is not equitable should the financial burden of the assessment not be reasonably proportionate to the benefit the affected property obtains from the improvements to be installed. The Developer must notify the Special Districts Division at 951.413.3480 or at specialdistricts@moval.org of its selected financial option when submitting an application for the first building permit to determine whether the development will be subjected to this condition. If subject to the condition, the special election requires a 90 day process in compliance with the provisions of Article 13C of the California Constitution. (Street & Highway Code, GP Objective 2.14.2, MC 9.14.100).

127. This project is conditioned for a proposed district to provide a funding source for the operation and maintenance of public improvements and/or services associated with new development in that territory. The Developer shall satisfy this condition with one of the options outlined below.

a. Participate in a special election for maintenance/services and pay all associated costs of the election process and formation, if any. Financing may be structured through a Community Facilities District, Landscape and Lighting Maintenance District, or other financing structure as determined by the City; or

b. Establish an endowment fund to cover the future maintenance and/or service costs.

The Developer must notify the Special Districts Division at 951.413.3480 or at specialdistricts@moval.org when submitting the application for building permit issuance. If the first building permit is pulled prior to formation of the district, this condition will not apply. If the district has been or is in the process of being formed the Developer must inform the Special Districts Division of its selected financing option (a. or b. above). The option for participating in a special election requires 90 days to complete the special election process. This allows adequate time to be in compliance with the provisions of Article 13C of the California Constitution.

The financial option selected shall be in place prior to the issuance of the first certificate of occupancy for the project.

128. This project is conditioned to provide a funding source for the following special financing program(s):

a. Street Lighting Services for capital improvements, energy charges, and maintenance.

b. Landscape Maintenance Services for parkway, open space, and/or median landscaping on ________________.

The Developer's responsibility is to provide a funding source for the capital improvements and the continued maintenance. The Developer shall satisfy this condition with one of the options below.

i. Participate in a special election (mail ballot proceeding) and pay all associated costs of the special election and formation, if any. Financing may be structured through a Community Services District zone, Community Facilities District, Landscape and Lighting Maintenance District, or other financing structure as determined by the City; or

ii. Establish a Property Owner's Association (POA) or Home Owner's Association (HOA) which will be responsible for any and all operation and maintenance costs

The Developer must notify the Special Districts Division at 951.413.3480 or at specialdistricts@moval.org of its selected financial option when submitting the application for building permit issuance. The option for participating in a special election requires approximately 90 days to complete the special election process. This allows adequate time to be in compliance with the provisions of Article 13C of the California Constitution.

The financial option selected shall be in place prior to the issuance of the first certificate of occupancy for the project and prior to acceptance of any improvements.

129. Commercial (BP) If Land Development, a Division of the Public Works Department, requires this project to supply a funding source necessary to provide for, but not limited to, stormwater utilities services for the continuous operation, remediation and/or replacement, monitoring, systems evaluations and enhancement of on-site facilities and performing annual inspections of the affected areas to ensure compliance with state mandated stormwater regulations, a funding source needs to be established. The Developer must notify the Special Districts Division at 951.413.3480 or at specialdistricts@moval.org of its selected financial option for the National Pollution Discharge Elimination System (NPDES) program when submitting the application for the first building permit issuance (see Land Development's related condition). Participating in a special election the process requires a 90 day period prior to the City's issuance of a building permit. This allows adequate time to be in compliance with the provisions of Article 13D of the California Constitution. (California Health and Safety Code Sections 5473 through 5473.8 (Ord. 708 Section 3.1, 2006) & City of Moreno Valley Municipal Code Title 3, Section 3.50.050.)

130. For those areas to be maintained by the City and prior to the issuance of the first Building Permit, Planning Division (Community Development Department), Special Districts Division (the Public Works Department) and Transportation Division (the Public Works Department) shall review and approve the final median, parkway, slope, and/or open space landscape/irrigation plans as designated on the tentative map or in these Conditions of Approval prior to the issuance of the first Building Permit.

131. This project has been identified to be included in the formation of a Community Facilities District (Mello-Roos) for Public Safety services, including but not limited to Police, Fire Protection, Paramedic Services, Park Rangers, and Animal Control services. The property owner(s) shall not protest the formation; however, they retain the right to object to the rate and method of maximum special tax. In compliance with Proposition 218, the property owner shall agree to approve the mail ballot proceeding (special election) for either formation of the CFD or annexation into an existing district. The Developer must notify the Special Districts Division at 951.413.3480 or at specialdistricts@moval.org when submitting the application for building permit issuance to determine the requirement for participation. If the first building permit is pulled prior to formation of the district, this condition will not apply. If the condition applies, the special election will require a minimum of 90 days prior to issuance of the first building permit. This allows adequate time to be in compliance with the provisions of Article 13C of the California Constitution. (California Government Code Section 53313 et. seq.)

132. Parkway, open space, and/or median landscaping specified in the project's Conditions of Approval shall be constructed in compliance with the approved landscape plans and completed prior to the issuance of the first Certificate of Occupancy/Building Final for this project.

133. Landscape and irrigation plans for parkway, median, slope, and/or open space landscape areas designated to be maintained by the City shall be placed on compact disk (CD) in pdf format. The CD shall include "As Built" plans, revisions, and changes. The CD will become the property of the City of Moreno Valley and the Moreno Valley Community Services District.

<u>Transportation Engineering Division</u>

134. All proposed on-site traffic signing and striping should be accordance with the latest California Manual on Uniform Traffic Control Devices (CAMUTCD).

135. Conditions of approval may be modified and/or added if the project is altered from any approved plans.

136. Perris Boulevard is classified as a 6-Lane Divided Arterial (110'RW/86'CC) per

City Standard Plan No. MVSI-103C-0. Any improvements undertaken by this project shall be consistent with the City's standards for this facility.

137. Cottonwood Avenue is classified as a Minor Arterial (88'RW/64'CC) per City Standard Plan No. MVSI-105A-1. Any other improvements undertaken by this project shall be consistent with the City's standards for this facility.

138. The driveways shall conform to City of Moreno Valley Standard No. MVSI-112C-0 for Commercial Driveway Approaches. Access at the driveways shall be allowed as follows:

- Perris Boulevard driveway: right turn in/out only.
- Cottonwood driveway: full access. However, in the future, if the City determines that there is a significant traffic safety issue related to the full access driveway, then the City reserves the right to implement additional turning movement restrictions to mitigate the issue.

139. Prior to final approval of the landscape plans and construction plans for any type of fencing or monument sign, the project plans shall demonstrate that sight distance at the project driveway conforms to City Standard Plan No. MVSI-164A-0 through MVSI-164C-0. Trees, plants, shrubs, fence and monument sign shall not be located in an area that obstructs the drivers' line-of-sight.

140. Prior to the final approval of the street improvement plans, a signing and striping plan shall be prepared per City of Moreno Valley Standard Plans - Section 4 for all street segments along the project frontages. Signing and striping plans shall be prepared per the latest edition of the California Manual on Uniform Traffic Control Devices (CAMUTCD) and current City of Moreno Valley Standard Plans by a qualified registered civil or traffic engineer.

141. Prior to the final approval of the street improvement plans, a median improvement plan shall be prepared by a registered civil engineer for a raised concrete median along the project frontage on Perris Boulevard. Minimum vehicle storage length shall be 250 feet.

142. Prior to the final approval of the street improvement plans, a bus turnout shall be designed per the latest City of Moreno Valley Standard Plans for northbound traffic and shall be located on the east side of Perris Boulevard, between the project driveway and Cottonwood Avenue.

143. Prior to issuance of an encroachment permit for work within the public right-of-way, construction traffic control plans prepared by a qualified, registered Civil or Traffic Engineer shall be required for plan approval by the City Traffic Engineer.

144. Prior to issuance of Certificate of Occupancy, raised median improvement along

the project frontage on Perris Boulevard shall be completed and fully operational per the approved plans to the satisfaction of the City Engineer. Median construction shall include but not be limited to: paving, concrete curbs, signing and striping. Exact requirements will be determined during the plan check process.

145. Prior to issuance of Certificate of Occupancy, a bus turnout shall be installed for northbound traffic and shall be located on the east side of Perris Boulevard, between the project driveway and Cottonwood Avenue.

146. Prior to issuance of Certificate of Occupancy, all signing and striping shall be installed per current City Standards and the approved plans.

Attachment: Architectural Rendering (3224 : A GENERAL PLAN AMENDMENT, CHANGE

A & S Engineering, Inc.
Planning • Engineering • Construction Management
28405 Sand Canyon Rd. Suite B Canyon Country, CA 91387

WIN WIN
Corner of Perris Blvd. & Cottonwood Ave.
Moreno Valley, CA 92553

REVISIONS	BY
1 07/13/2018	IJ
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PLANS PREPARED BY:
A & S ENGINEERING INC.
PLANNING ENGINEERING CONSTRUCTION MANAGEMENT
28405 SAND CANYON ROAD, SUITE B
CANYON COUNTRY, CA 91387
PHONE #: (661) 250-9300; FAX #: (661) 250-9333

REGISTERED PROFESSIONAL ENGINEER
NADER GHADERI
NO. 36475
EXP. 6-30-20
CIVIL
STATE OF CALIFORNIA

YUM YUM DONUT
ADDRESS: 18830 SAN JOSE AVENUE, CITY OF INDUSTRY, CA 91748

STORE #: -
ADDRESS: CORNER OF PERRIS BLVD. & COTTONWOOD AVE.
MORENO VALLEY, CA 92553

DRAWN
HOSS FARZAD
CHECKED
HF
DATE
01-22-2016
SHT. TITLE
PROPOSED
SITE PLAN
JOB NUMBER
-
SHEET
PS1

H:\YUM YUM DONUTS-MORENO VALLEY-CA

Attachment: Project Plans (3224 : A GENERAL PLAN AMENDMENT, CHANGE OF ZONE, AND CONDITIONAL USE PERMIT FOR DEVELOPMENT OF A DONUT STOR)

North Elevation
Scale: NTS

West Elevation
Scale: NTS

East Elevation
Scale: NTS

South Elevation
Scale: NTS

A & S Engineering, Inc.
Planning • Engineering • Construction Management
28405 Sand Canyon Rd. Suite B Canyon Country, CA 91387

Yum Yum Donuts
NEC Perris and Cottonwood
Moreno Valley CA

REVISIONS
NO. DATE BY

North Elevation

Scale: NTS

West Elevation

Scale: NTS

East Elevation

Scale: NTS

South Elevation

Scale: NTS

A & S Engineering, Inc.
Planning • Engineering • Construction Management
28405 Sand Canyon Rd. Suite B Canyon Country, CA 91387

Yum Yum Donuts
NEC Perris and Cottonwood
Moreno Valley CA

REVISIONS

NO.	DATE	BY

POLICE DEPARTMENT REQUIREMENT:

1. ADDRESS NUMBERS SHOULD BE PLACED AT MULTIPLE LOCATIONS ON THE BUILDING, BE ILLUMINATED AND CLEARLY VISIBLE FROM THE STREET
2. ROOFTOP ADDRESSING OF ALL BUILDINGS.
3. THE PARKING LOT AND BUILDINGS SHOULD BE WELL LIT. MINIMIZE THE SHADOWS CAST BY LANDSCAPING AND TREES ON THE PROPERTY.
4. ALL LIGHTING AFFIXED TO THE EXTERIOR OF BUILDINGS LESS THAN 8 FEET HIGH SHALL BE VANDAL RESISTANT
5. ALL EXTERIOR DOORS SHALL HAVE A VANDAL RESISTANT LIGHT FIXTURE INSTALLED ABOVE THE DOOR. THE DOORS SHALL BE ILLUMINATED WITH A MINIMUM ONE FOOT CANDLE ILLUMINATION AT GROUND LEVEL, EVENLY DISPERSED.
6. ENSURE ANY TREES SURROUNDING BUILDING ROOFTOPS BE KEPT AT A DISTANCE TO PREVENT ROOF ACCESSIBILITY BY POTENTIAL BURGLARS. SINCE TREES ALSO ACT AS A NATURAL LADDER, THE BRANCHES MUST BE PRUNED TO HAVE AT LEAST SIX FOOT CLEARANCE FROM THE BUILDINGS.
7. MINIMIZE THE NUMBER OF WINDOWS ON THE BUSSINESSES SO CUSTOMERS CAN SEE OUT IN TO THE PARKING LOT WHILE INSIDE EATING. THIS WILL HELP PARKING LOT SECURITY BY GIVING PEOPLE THE OPPORTUNITY TO MAINTAIN VISUAL OF THEIR VEHICLES AND VALUABLES.
8. UPON COMPLETION OF CONSTRUTION, EACH BUILDING OR BUSSINESS SHALL HAVE AN ALARM SYSTEM THAT IS MONITORED BY A DESIGNATED PRIVATE ALARM COMPANY TO NOTIFY THE MORENO VALLEY POLICE DEPARTMENT OF ANY INTRUSION
9. SECURITY CAMARAS INSIDE THE BUSINESSES AND SEVERAL CAMERAS OUTSIDE

FIRE DEPARTMENT REQUIREMENT:

F16. COMPLETE PLANS AND SPECIFICATIONS FOR FORE ALARM SYSTEMS, FIRE-EXTINGUISHING SYSTEMS (INCLUDING AUTOMATIC SPRINKLERS OF STANDPIPE SYSTEM). CLEAN AGENT SYSTEM (OR OTHER SPECIAL TYPES OF AUTOMATIC FIRE-EXTINGUISHING SYSTEMS). AS WELL AS OTHER FIRE PROTECTION SYSTEMS AND APPURTENANCES THERETO WILL BE SUBMITTED TO THE MORENO VALLEY FIRE PREVENTION BUREAU FOR REVIEW AND APPROVAL PRIOR TO SYSTEM INSTALLATION. SUBMITTALS WILL BE IN ACCORDANCE WITH CFC CHAPTER 9 AND ASSOCIATED ACCEPTED NATIONAL STANDARDS.

BUILDING SAFETY DIVISION COMMENT 8.

ANY CONSTRUCTION WITHIN THE CITY SHALL ONLY BE AS FOLLOWS:
MONDAY THROUGH FRIDAY (EXCEPT FOR HOLIDAYS WHICH OCCUR ON WEEKDAYS), SIX a.m. TO EIGHT p.m. WEEKENDS AND HOLIDAYS (AS OBSERVED BY THE CITY AND DESCRIBED IN CHAPTER 2.55 OF THE MVMC), SEVEN A.M. TO EIGHT P.M., UNLESS WRITTEN APPROVAL IS OBTAINED FROM THE CITY BUILDING OFFICIAL OR CITY ENGINEER.

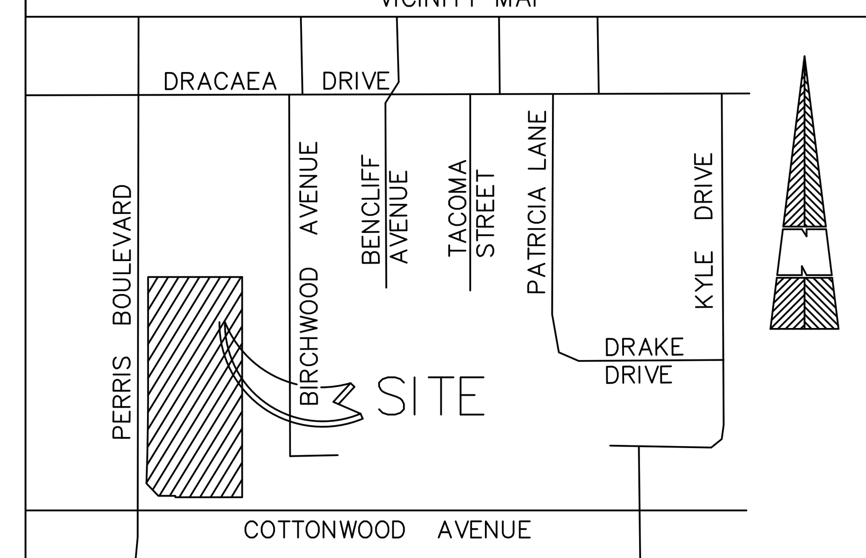
SCOPE OF WORK

1. INSTALL 48" MINIMUM ACCESSIBLE ROUTE (MISSION RED, INTERLOCKING DECORATIVE PAVING) SLOPE NOT TO EXCEED 4.5% WITH MAXIMUM 2.0% CROSS SLOPE
2. CONSTRUCT 5,075.0 SQUARE FEET, 4-COLUMNS STEEL CANOPY PER PLAN & ELEVATIONS
3. CONSTRUCT 5,515.0 SQUARE FEET BUILDING PER PLAN & ELEVATIONS AND STRUCTURAL DRAWINGS
4. CONSTRUCT LANDSCAPE & PLANTING AREA PER PLAN & LANDSCAPE DRAWINGS.
5. INSTALL NEW MONUMENT SIGN WITH PRICE SIGN PER PLAN. SIGNS ARE UNDER SEPARATE PERMIT.
6. INSTALL MINIMUM 36" WIDE YELLOW COLOR DETECTABLE WARNING PER PLAN AND CBC FIGURE 11B-705.1
7. CONSTRUCT (2) DRIVEWAYS PER CITY OF MORENO VALLEY STANDARD PLAN MVS1-112C-0 (OLD 118-C)
8. CONSTRUCT 9'-4"X16'-0"X9'-0" HIGH STUCCO FINISH CMU TRASH ENCLOSURE WITH SOLID ROOF COVER & DOUBLE STEEL GATE PER PLAN AND CITY STANDARD PLAN MVGF-660A-0 OPTION 1
9. STRIPE (8)-2'-6"X6'-0" BICYCLE PARKING SPACES WITH REQUIRED BIKE U RACK PER PLAN
10. INSTALL YARD LIGHTS PER ELECTRICAL DRAWINGS
11. 4'-0" DEDICATION PER PLAN
12. INSTALL MAIN SWITCH BOARD INSIDE ENLOSURE MATCH BUILDING PER ELECTRICAL DRAWINGS.
13. PROPOSED LOCATION FOR UNDERGROUND STORAGE TANKS
14. 6'-0"X5'-0" CLEAR AND LEVEL AREA SLOPE NOT TO EXCEED 2.0% AT ANY DIRECTION. FLOOR NOT MORE THAN ½" LOWER THAN THE THRESHOLD
15. 5'-0"X5'-0" CLEAR AND LEVEL AREA SLOPE NOT TO EXCEED 2.0% AT ANY DIRECTION. FLOOR NOT MORE THAN ½" LOWER THAN THE THRESHOLD
16. STRIPE 18'-0"X26'-0" DISABILITY PARKING SPACE PER PLAN. SLOPE NOT TO EXCEED 2.0% AT ANY DIRECTION
17. INSTALL DISABILITY PARKING SIGNS PER PLAN
18. INSTALL ADDITIONAL SIGN AT EACH ENTRANCE TO OFF STREET PARKING FACILITIES OR IMMEDIATELY ADJACENT AND VISIBLE FROM EACH ACCESSIBLE STALL OR SPACE PER PLAN
19. INSTALL AIR AND WATER UNIT PER PLAN, WITH FREE SIGN ON UNIT
20. CONSTRUCT REINFORCED CONCRETE PAVING AT THE ENTIRE OF SITE PER SOIL REPORT AND CIVIL DRAWINGS
21. INSTALL FIRE HYDRANT PER FIRE DEPARTMENT REQUIREMENT (6"X4"X2.5"X2.5")
22. STRIPE STANDARD PARKING STALLS PER CITY STANDARD FIGURE 9.11.080-6
23. INSTALL CANISTER ON TOP OF ROOF
24. ELECTRICAL TRANSFORMER CONCRETE PAD SEE ELECTRICAL SITE PLAN, TRANSFORMER INSTALLATION BY UTILITY COMPANY
25. 30"X48" CLEAR AND LEVEL AREA, SLOPE NO TO EXCEED 2.0% AT ANY DIRECTION
26. CONSTRUCT CURB RAMP WITH CURB AT EACH SIDE. SLOPE NOT TO EXCEED 8.0% AND 2.0% CROSS SLOPE
27. CONSTRUCT CURB RAMP WITH FLARE AT EACH SIDE. SLOPE NOT TO EXCEED 8.0% AND 2.0% CROSS SLOPE SLOPE ON FLARE = 8.0% AS WELL
28. CONSTRUCT GROOVED BORDER 12" INCHES WIDE AT LEVEL SURFACE OF THE SIDEWALK AT TOP APPROXIMATELY ¾" INCH ON CENTER
29. CONSTRUCT 1,300.0 SQUARE FEET CAR WASH BUILDING & EQUIPMENT ROOM PER PLAN & ELEVATIONS AND STRUCTURAL DRAWINGS
30. INSTALL PRODUCTION DISPENSER TYPICAL OF 8 PER PLAN
31. CONSTRUCT REINFORCED CONCRETE SIDEWALK, SLOPE NOT TO EXCEED 2.0% AT ANY DIRECTION
32. INSTALL CAR WASH COIN BOX WITH GUARD POST AT EACH SIDE PER CAR WASH MANUFACTURER DRAWINGS
33. INSTALL (2) VACUUM PER MANUFACTURER REQUIREMENT
34. CONSTRUCT 8'-0" HIGH DECORATIVE BLOCK WALL ALONG REAR FACILITY PER PLAN
35. 40' ON CENTER PLANTINGS FOR STREET TREES. MINIMUM CONTAINER SIZE IS 24" BOX. THE STREET TREE FOR PERRIS BOULEVARD IS THE TULIP TREE AND THE STREET TREE FOR COTTONWOOD AVENUE IS THE JARACANDA.
36. NOT USED
37. CURB RAMP WITH FLARE AT BOTH SIDES WILL BE RECONSTRUCTED TO MEET CURRENT ACCESSIBILITY REQUIREMENTS WITH 8.33% SLOPE AND 2.0% CROSS SLOPE ON CURB RAMP 8.33% SLOPE ON FLARES WITH GROOVED BOARDER & 36" INCHES MINIMUM DETECTABLE WARNING
38. INSTALL SIGN FOR 9'-0"X18'-0" CARPOOL/VAN POOL LOW-EMITTING FUEL-EFFICIENT PARKING
39. INSTALL POLE WITH 208 / 240 V, 40 AMP GROUNDED AC OUTLET PER ELECTRICAL DRAWINGS
40. INSTALL 36" TALL BERM, OR HEDGE TO SCREEN THESE PARKING SPACES
41. CONSTRUCT CONCRETE SIDEWALK WITH CONCRETE CURB AND GUTTER ON COTTONWOOD AVENUE AND PERRIS BLVD PER CITY STANDARD
42. INSTALL 6" PLANTER CURB.
43. RELOCATE EXISTING POWER POLE.
44. NEW GUTTER.
45. NEW STREET LIGHT.

DIRECTIONAL ARROW/ GRAPHIC SCALE

0 15 30 60 90
GRAPHIC SCALE: 1"=30'

VICINITY MAP



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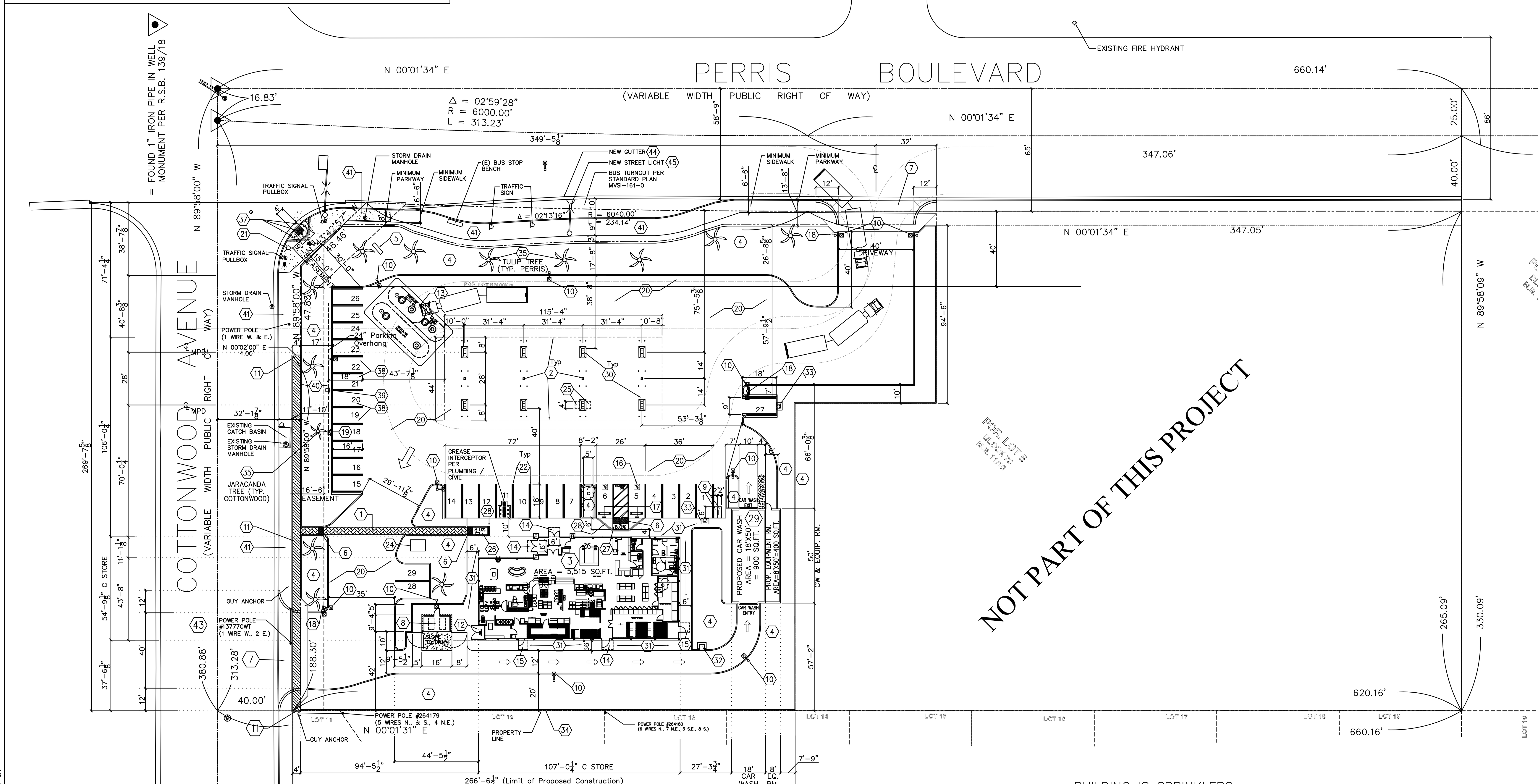


SITE INFORMATION

ITEM	SIZE	LOT %	AREA (SQ.FT.)
TOTAL LOT AREA	N/A	N/A	77,155= 1.77 AC
C-STORE	AS SHOWN	7.14	5,515.00
CANOPY	115'-4" x 44'-0"	6.57	5,075.00
CAR WASH	18'-0" x 50'-0"	1.17	900.00
EQUIPMENT ROOM	8'-0" x 50'-0"	0.52	400.00
PLANTER AREA	N/A	26.41	20,388.00

PARKING CALCULATIONS:
"C" STORE, 1:225, 5,515:225 = 24.5
CAR WASH, 1:250, 900:250 = 3.6
EQUIPMENT ROOM, 1:250, 400:250 = 1.6

TOTAL PARKING REQUIRED = 29.7

TOTAL PARKING PROVIDED AS FOLLOWINGS = 29

TOTAL OF 4 (9'X16') W/ 2' O.H. FUEL EFFICIENT CARPOOL / VANPOOL PARKING =28X8%=3
TOTAL OF 2 (2'X6') BICYCLE PARKING = 28 X 5% = 2
TOTAL OF 2 (18'X26') DISABILITY PARKING SPACE = 101 : 150 REQUIRED 5 PER TABLE 11B-208.2
TOTAL OF 16 (9'X18') STANDARD PARKING STALL
TOTAL OF 10 (9'X16') W/ 2' O.H. PARKING STALL (13 FUEL EFFICIENT PARKING INCLUDED)

APN 479-140-023

CASE NUMBER: PA15-0030

LEGAL DESCRIPTION

REAL PROPERTY IN THE CITY OF MORENO VALLEY, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

LOTS 4 AND 5 IN BLOCK 73 AS SHOWN BY MAP NO. 1 OF BEAR VALLEY AND ALESSANDRO DEVELOPMENT COMPANY, IN THE CITY OF MORENO VALLEY, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 11, PAGE 10 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY;

EXCEPT THE EASTERLY 330.00;

ALSO EXCEPT THAT PORTION CONVEYED TO THE COUNTY OF RIVERSIDE BY DEED RECORDED JULY 10, 1972 AS INSTRUMENT NO. 89941 OF OFFICIAL RECORDS.

APN: 479-140-023-2; 479-140-024-3; 479-131-012-4

THIS SURVEY IS FOR A PORTION OF LOT 5 OF THE ABOVE DESCRIPTION ONLY PER TITLE REPORT IDENTIFIED AS FIRST AMERICAN TITLE COMPANY, ORDER NO. LDT-4808606, DATED FEBRUARY 11, 2015.

BUILDING IS SPRINKLERS

ALLOWABLE HEIGHT AND BUILDING AREA PER TABLE 503

ITEM	TYPE OF CONSTRUCTION	USE GROUP	MAX. AREA SQ. FT	MAX. HEIGHT FT.	MAX. HEIGHT PROVIDED	STORY PROVIDED	AREA PROVIDED SQ.FT.
C STORE	V-B	M	9,000	40	27'-0"	ONE	5,515.0
CANOPY	II-B	M	9,000	40	20'-6"	ONE	4,278.0
CAR WASH WITH EQPT. ROOM	V-B	B	9,000	40	15'-6"	ONE	1,300.0

SALES AREA	STOCK/UTILITY/CABINETS
1394.0 : 30 =47	4,121.0 : 300 =14
MAXIMUM ACCESS TRAVEL DISTANCE PER TABLE 1021.2(2) = 75 FEET MAXIMUM ACCESS TRAVEL DISTANCE IS =61'-0"	
MAXIMUM OCCUPANT LOAD PER TABLE 1015.01 A=49	
TOTAL OCCUPANT LOAD = 61 3- EXIST DOORS PROVIDED	

PLANS PREPARED BY:
A & S ENGINEERING INC.
PLANNING ENGINEERING CONSTRUCTION MANAGEMENT
28405 SAND CANYON ROAD, SUITE B
CANYON COUNTRY, CA 91387
PHONE #: (661) 250-9300; FAX #: (661) 250-9333

REGISTERED PROFESSIONAL ENGINEER
NO. 36475
EXP. 6-30-20
CIVIL
STATE OF CALIFORNIA

YUM YUM DONUT

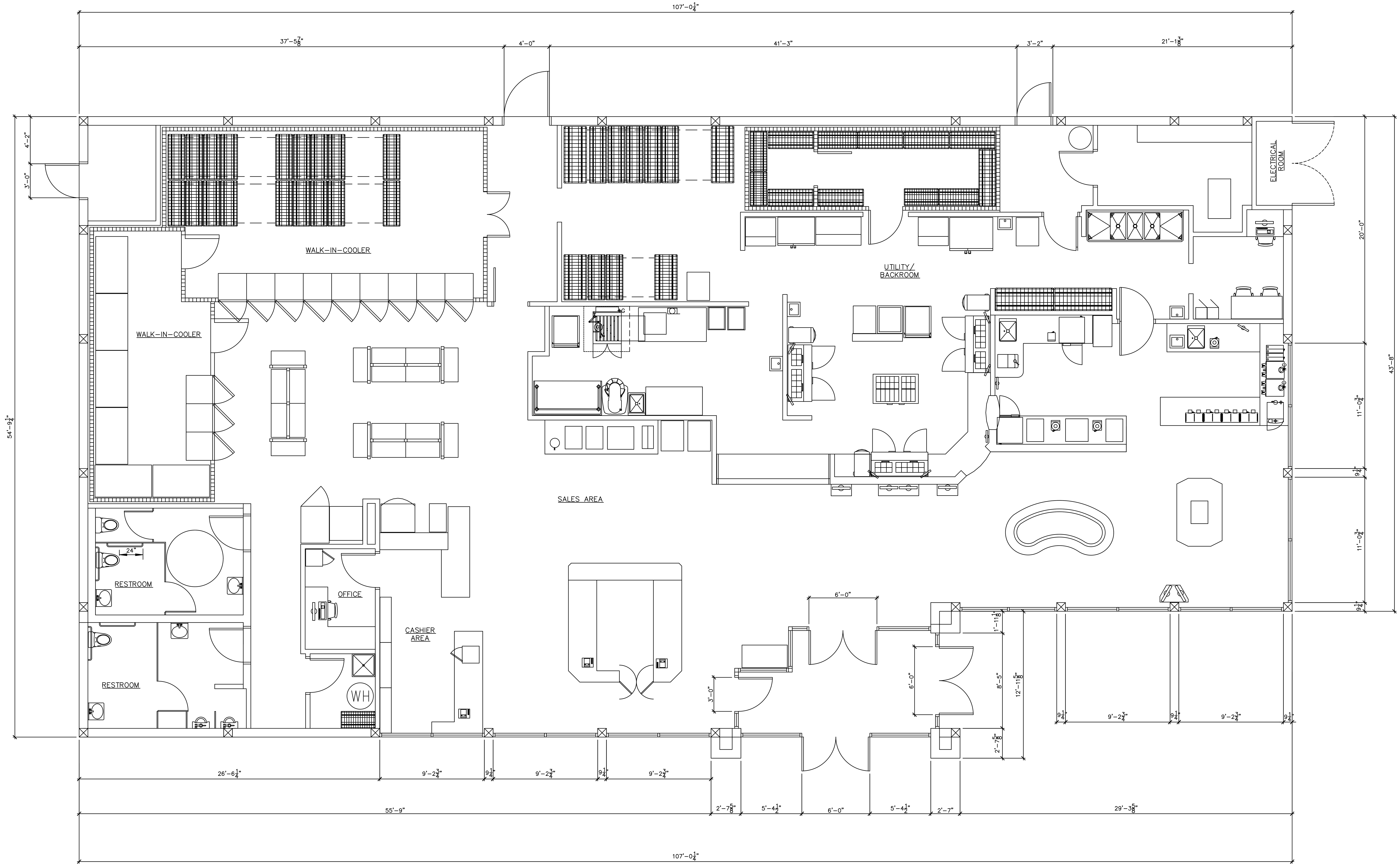
ADDRESS: 18830 SAN JOSE AVENUE, CITY OF INDUSTRY, CA 91748

STORE #: -
ADDRESS: CORNER OF PERRIS BLVD. & COTTONWOOD AVE. MORENO VALLEY, CA 92553

DRAWN: HOSS FARZAD
CHECKED: HF
DATE: 01-22-2016
SHT. TITLE: PROPOSED SITE PLAN
JOB NUMBER: -
SHEET: PS1

H:\YUM YUM DONUTS-MORENO VALLEY-CA

Attachment: Project Plans (3224 : A GENERAL PLAN AMENDMENT, CHANGE OF ZONE, AND CONDITIONAL USE PERMIT FOR DEVELOPMENT OF A DONUT STOR)



PROPOSED FLOOR PLAN

SCALE : $\frac{1}{4}$" = 1'-0"

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PLANS PREPARED BY:
A & S ENGINEERING INC.
PLANNING ENGINEERING CONSTRUCTION MANAGEMENT
28405 SAND CANYON ROAD, SUITE B
CANYON COUNTRY, CA 91387
PHONE #: (661) 250-9300; FAX #: (661) 250-9333

REGISTERED PROFESSIONAL ENGINEER
NO. 36475
EXP. 6-30-20
CIVIL
STATE OF CALIFORNIA

YUM YUM DONUT

ADDRESS: 18830 EAST SAN JOSE AVENUE
CITY OF INDUSTRY, CA 91748

STORE #: –
ADDRESS: CORNER OF PERRIS BLVD & COTTONWOOD AVENUE
MORENO VALLEY, CA 92553

DRAWN
HOSS FARZAD
CHECKED
HF
DATE
07/07/2015
SHT. TITLE
PROPOSED
FLOOR PLAN
JOB NUMBER
–
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H:\YUM YUM DONUTS N. SUNSET LA PUENTE CA

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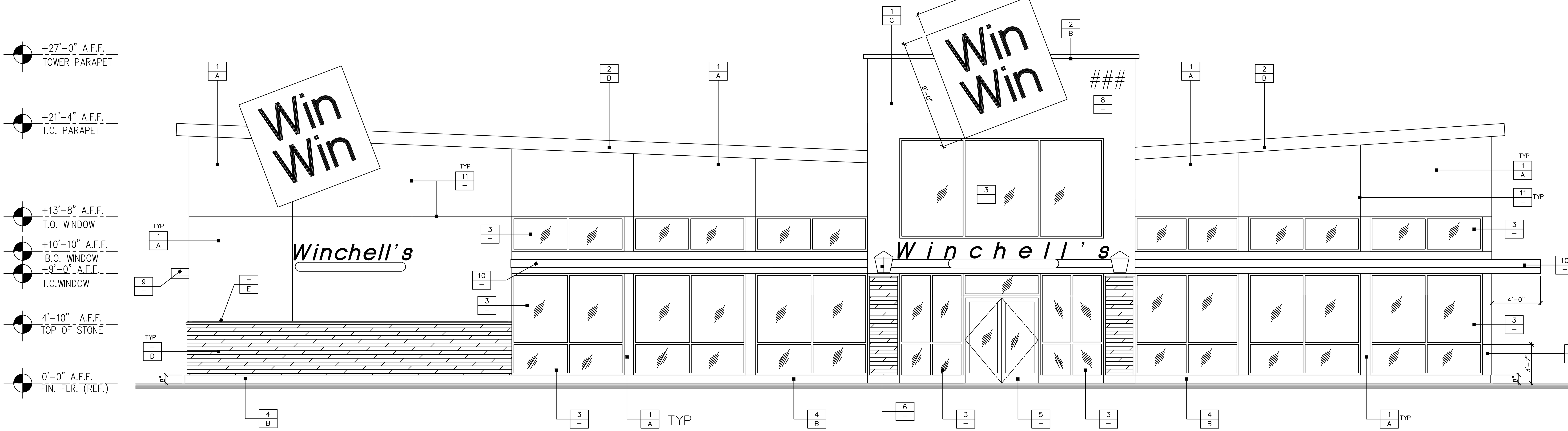
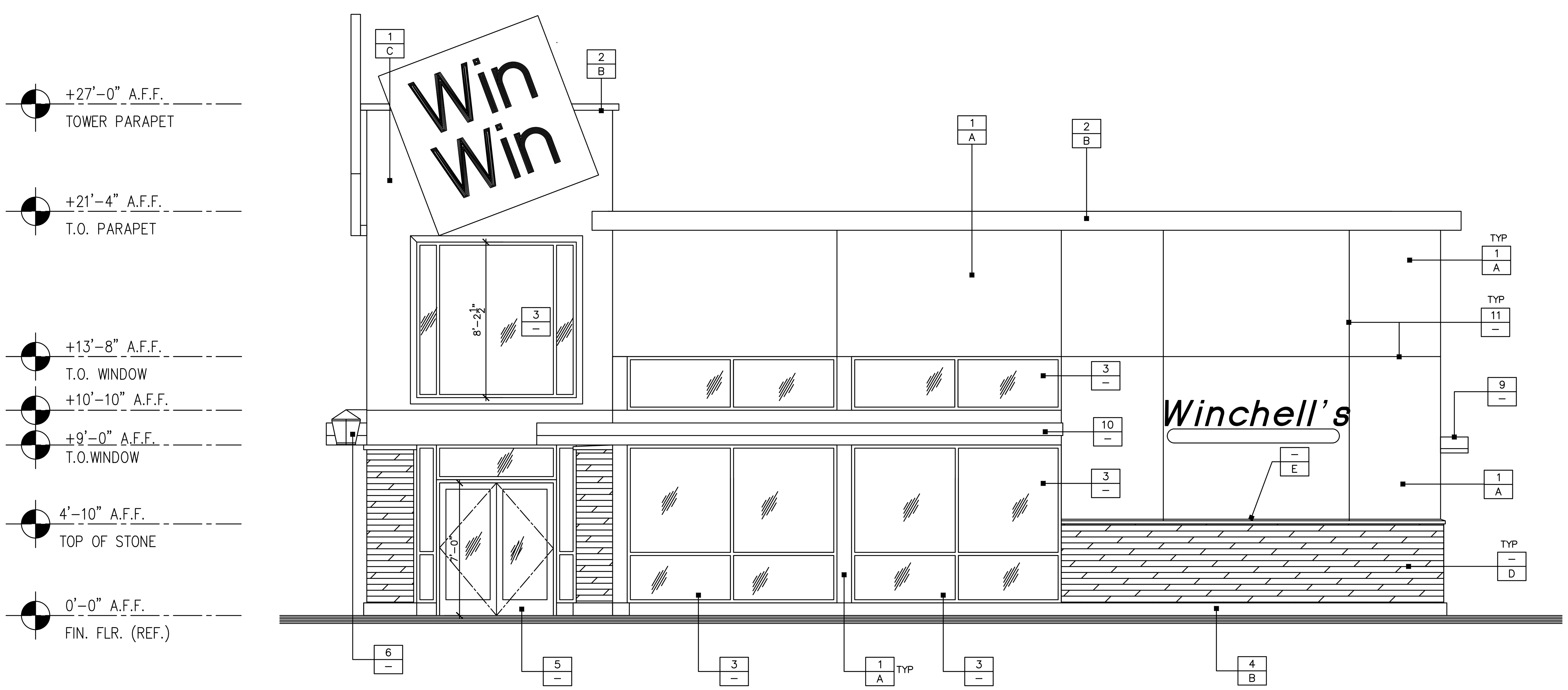


FRONT (EAST) ELEVATION

SCALE : 1/4" = 1'-0"



RIGHT SIDE (NORTH) ELEVATION

SCALE : 1/4" = 1'-0"

ELDORADO STONE / TRIM INSTALLATION ESR-1215, OCT. 1. 15 PER CBC 1405.6.2

A 2-INCH BY 2-INCH 0.0625-INCH CORROSION-RESISTANT WIRE MESH WITH TWO LAYERS OF WATER RESISTIVE BARRIER IN ACCORDANCE WITH SECTION 1404.2 SHALL BE APPLIED DIRECTLY TO WOOD STUDS SPACED A MAXIMUM OF 16 INCHES O.C. ON STUDS, THE MESH SHALL BE ATTACHED WITH 2-INCH-LONG CORROSION RESISTANT STEEL WIRE FURRING NAILS AT 4-INCHES O.C. PROVIDING A MINIMUM 1.125 INCH PENETRATION INTO EACH STUD AND WITH 8d COMMON NAILS AT 8 INCHES O.C. INTO TOP AND BOTTOM PLATES OR WITH EQUIVALENT WIRE TIES. THERE SHALL BE NOT LESS THAN A 0.1055-INCH CORROSION RESISTANT WIRE, OR APPROVED EQUAL, LOOPED THROUGH THE MESH FOR EVERY 2 SQUARE FEET OF STONE VENEER. THIS TIE SHALL BE A LOOP HAVING LEGS NOT LESS THAN 15 INCHES IN LENGTH, SO BENT THAT IT WILL LIE IN THE STONE VENEER MORTAR JOINT. THE LAST 2 INCHES OF EACH WIRE LEG SHALL HAVE A RIGHT ANGLE BEND. ONE INCH MINIMUM THICKNESS OF CEMENT GROUT SHALL BE PLACED BETWEEN THE BACKING AND THE STONE VENEER.

GENERAL NOTES

STUCCO

1. COLD JOINTS WILL NOT BE ACCEPTABLE UNDER ANY CIRCUMSTANCES.
2. LATH WITH GRID EXCEEDING 2"x2" WILL BE REJECTED.
3. ALL FASTENERS SHALL BE GALVANIZED.
4. STUCCO FINISH PER EXTERIOR MATERIALS
5. 7/8" STUCCO OVER 3.4 LB./SQ. YD. SELF FURRING METAL LATH.
6. MESH AS SPECIFIED SHALL NOT OVERLAP AT CONTROL JOINTS.
7. MESH OVERLAPS SHALL NOT COINCIDE WITH PLYWOOD JOINTS.
8. SCARIFICATION AS SPECIFIED SHALL ALWAYS BE IN THE HORIZONTAL DIRECTION.
9. INTERIOR DRYWALL SHALL ALWAYS BE INSTALLED AFTER BUILDING HAS BEEN "DRYED-IN," BUT PRIOR TO APPLICATION OF STUCCO – UNLESS DRYWALL IS SCREWED, NOT NAILED.

SEALERS (REFER TO MANUFACTURER SPECIFICATION)

1. SEALANT AT ALL WALL AND ROOF PENETRATIONS.
2. SEALANT AT ALL WINDOWS AND DOOR FRAMES AT HEAD, SILL AND JAMB.

EXTERIOR MATERIALS

1 / –	7/8" 3- COATS STUCCO SAND FINISH OVER WIRE MESH, OVER 2 LAYERS OF BUILDING PAPER OVER PLYWOOD SHEATHING PER SPEC. COLOR PER FINSH SCHEDULE
2 / –	20 GAUGE PARAPET WALL CAP FLASHING
3 / –	GRAY COLOR TEMPERED SAFETY GLASS & ALUMINUM WINDOW FRAME
4 / –	8" CONCRETE BASE
5 / –	GRAY COLOR TEMPERED SAFETY STOREFRONT DOORS & FRAME
6 / –	EXTERIOR WALL MOUNTED LIGHT FIXTURE, PROVINCIAL LANTERN 9" WIDE CURVED ARM SEE ELECTRICAL DRAWINGS
7 / –	NOT USED
8 / –	5" INCHES HIGH X 2 INCHES WIDE WITH 1/2" INCH STROKE BUILDING ADDRESS NUMBERS. VERIFY WITH FIRE INSPECTOR PRIOR TO INSTALLATION
9 / –	EXTERIOR WALL MOUNTED LIGHT FIXTURE, LS1 SIERRA FULL CUTOFF SEE ELECTRICAL DRAWINGS
10 / –	BRONZE COLOR ALUMINUM AWNING
11 / –	"CEMCO" STUCCO EXPANSION JOINT TYP.
12 / –	INSULATED HOLLOW METAL DOOR FRAME AND DOOR

EXT. COLORS AND FINISHES

– / A	PAINT – FRAZEE – 7750W BEACH BASKET
– / B	PAINT – SHERWIN WILLIAMS – SW1105 TORTOISE
– / C	PAINT – SHERWIN WILLIAMS – SW2185 TOWER TAN
– / D	EL DORADO STONE – MOUNTAIN LEDGE – BUCKSKIN INSTALL PER SPEC. ON THIS DRAWING "ESR-1215"
– / E	ELDORADO STONE – CHISELED EDGE WAINSCOT SILL – BUCKSKIN INSTALL PER SPEC. ON THIS DRAWING "ESR-1215"

PLANS PREPARED BY:
A & S ENGINEERING INC.
PLANNING ENGINEERING CONSTRUCTION MANAGEMENT
28405 SAND CANYON ROAD, SUITE B
CANYON COUNTRY, CA 91387
PHONE #: (661) 250-9300; FAX #: (661) 250-9333

REGISTERED PROFESSIONAL ENGINEER NADER GHADERI NO. 36475 EXP. 6-30-20 CIVIL STATE OF CALIFORNIA

YUM YUM DONUT

ADDRESS: 18830 EAST SAN JOSE AVENUE
CITY OF INDUSTRY, CA 91748

STORE #: –
ADDRESS: CORNER OF PERRIS BLVD & COTTONWOOD AVENUE
MERONO VALLEY, CA 92553

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07/20/2015
SHT. TITLE
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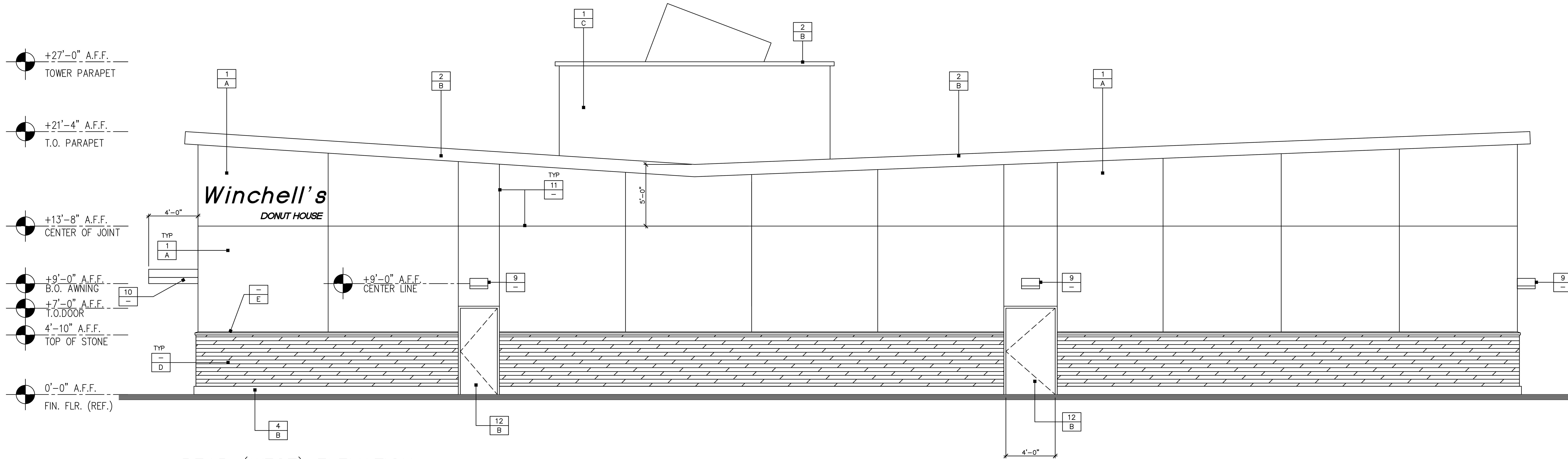
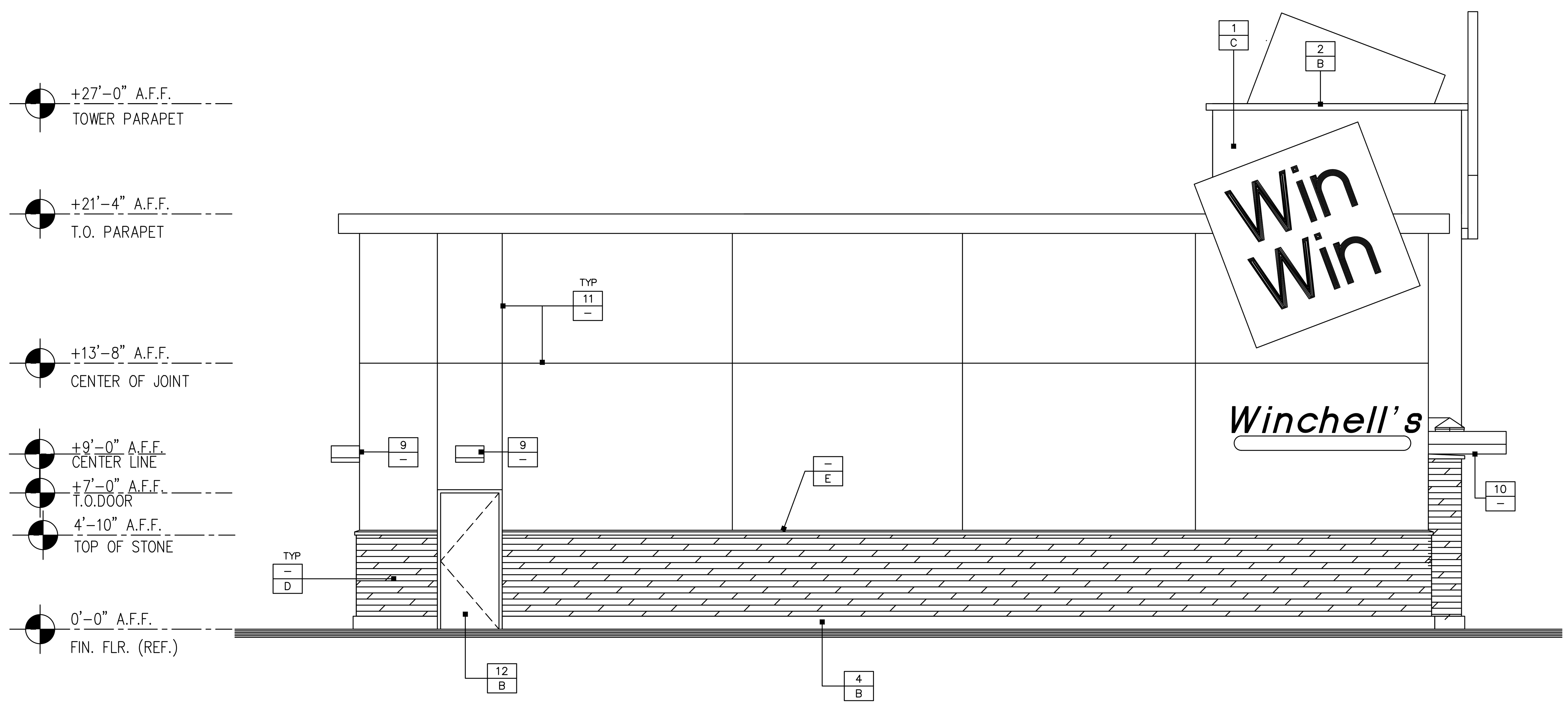


REAR (WEST) ELEVATION

SCALE : $\frac{1}{4}$" = 1'-0"



LEFT SIDE (SOUTH) ELEVATION

SCALE : $\frac{1}{4}$" = 1'-0"

ELDORADO STONE / TRIM INSTALLATION ESR-1215, OCT. 1. 15 PER CBC 1405.6.2

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GENERAL NOTES

STUCCO

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2. LATH WITH GRID EXCEEDING 2"x2" WILL BE REJECTED.
3. ALL FASTENERS SHALL BE GALVANIZED.
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SEALERS (REFER TO MANUFACTURER SPECIFICATION)

1. SEALANT AT ALL WALL AND ROOF PENETRATIONS.
2. SEALANT AT ALL WINDOWS AND DOOR FRAMES AT HEAD, SILL AND JAMB.

EXTERIOR MATERIALS

1 / –	7/8" 3- COATS STUCCO SAND FINISH OVER WIRE MESH, OVER 2 LAYERS OF BUILDING PAPER OVER PLYWOOD SHEATHING PER SPEC. COLOR PER FINSH SCHEDULE
2 / –	20 GAUGE PARAPET WALL CAP FLASHING
3 / –	GRAY COLOR TEMPERED SAFETY GLASS & ALUMINUM WINDOW FRAME
4 / –	8" CONCRETE BASE
5 / –	GRAY COLOR TEMPERED SAFETY STOREFRONT DOORS & FRAME
6 / –	EXTERIOR WALL MOUNTED LIGHT FIXTURE, PROVINCIAL LANTERN 9" WIDE CURVED ARM SEE ELECTRICAL DRAWINGS
7 / –	NOT USED
8 / –	5" INCHES HIGH X 2 INCHES WIDE WITH 1/2" INCH STROKE BUILDING ADDRESS NUMBERS. VERIFY WITH FIRE INSPECTOR PRIOR TO INSTALLATION
9 / –	EXTERIOR WALL MOUNTED LIGHT FIXTURE, LS1 SIERRA FULL CUTOFF SEE ELECTRICAL DRAWINGS
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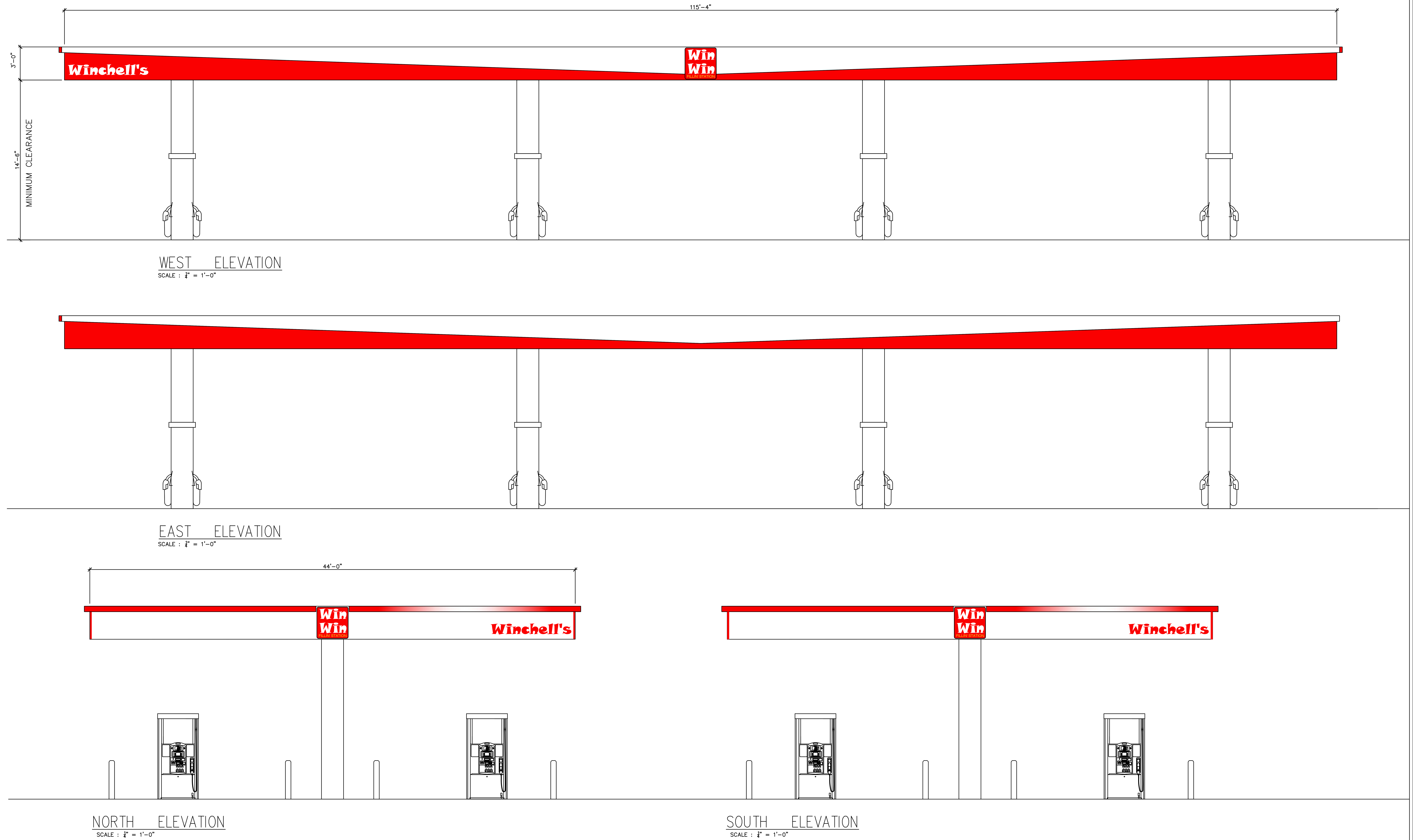

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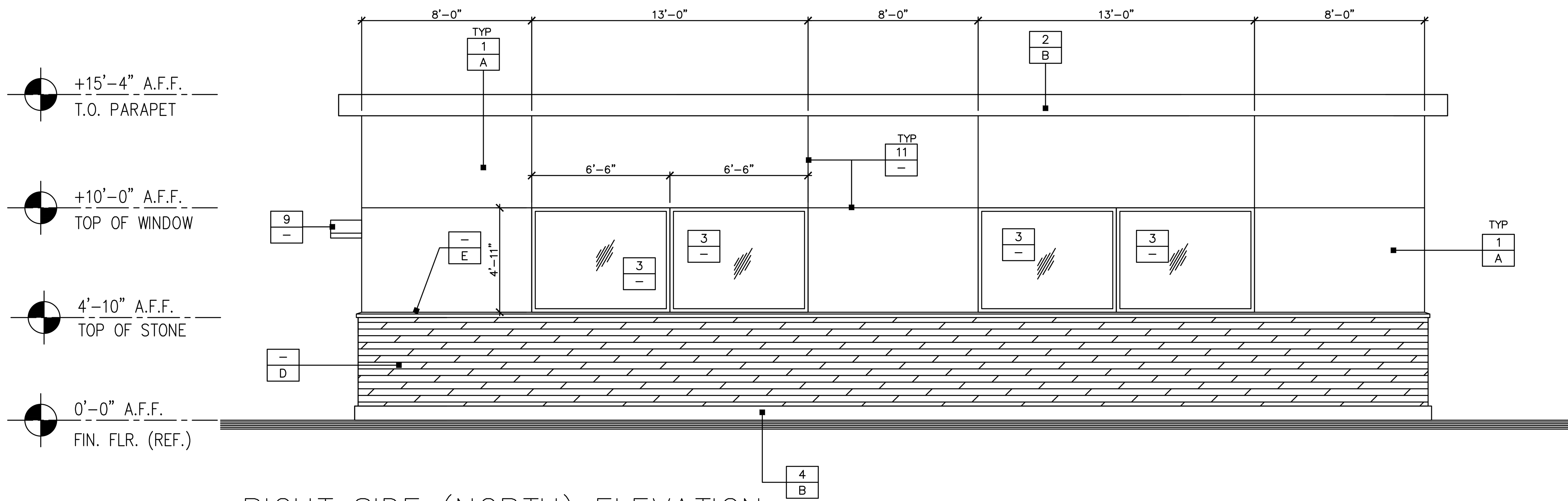
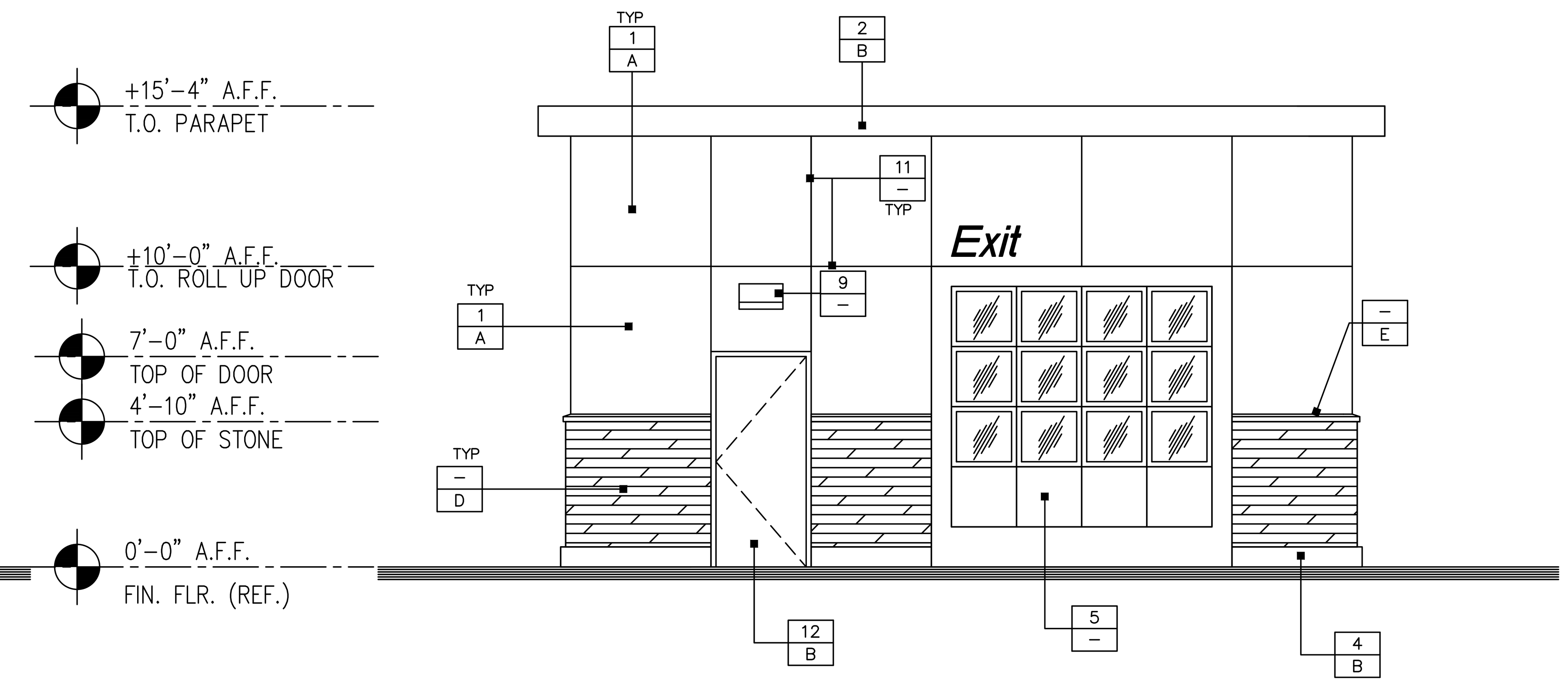


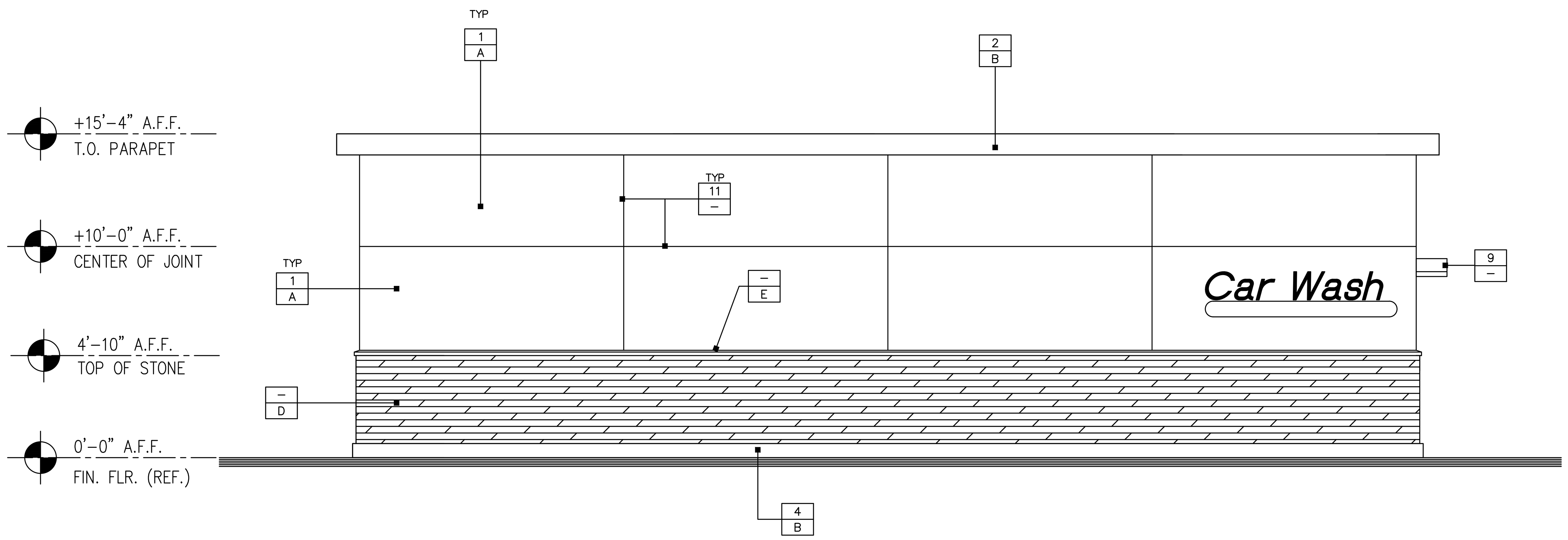
RIGHT SIDE (NORTH) ELEVATION

SCALE : $\frac{1}{4}$" = 1'-0"



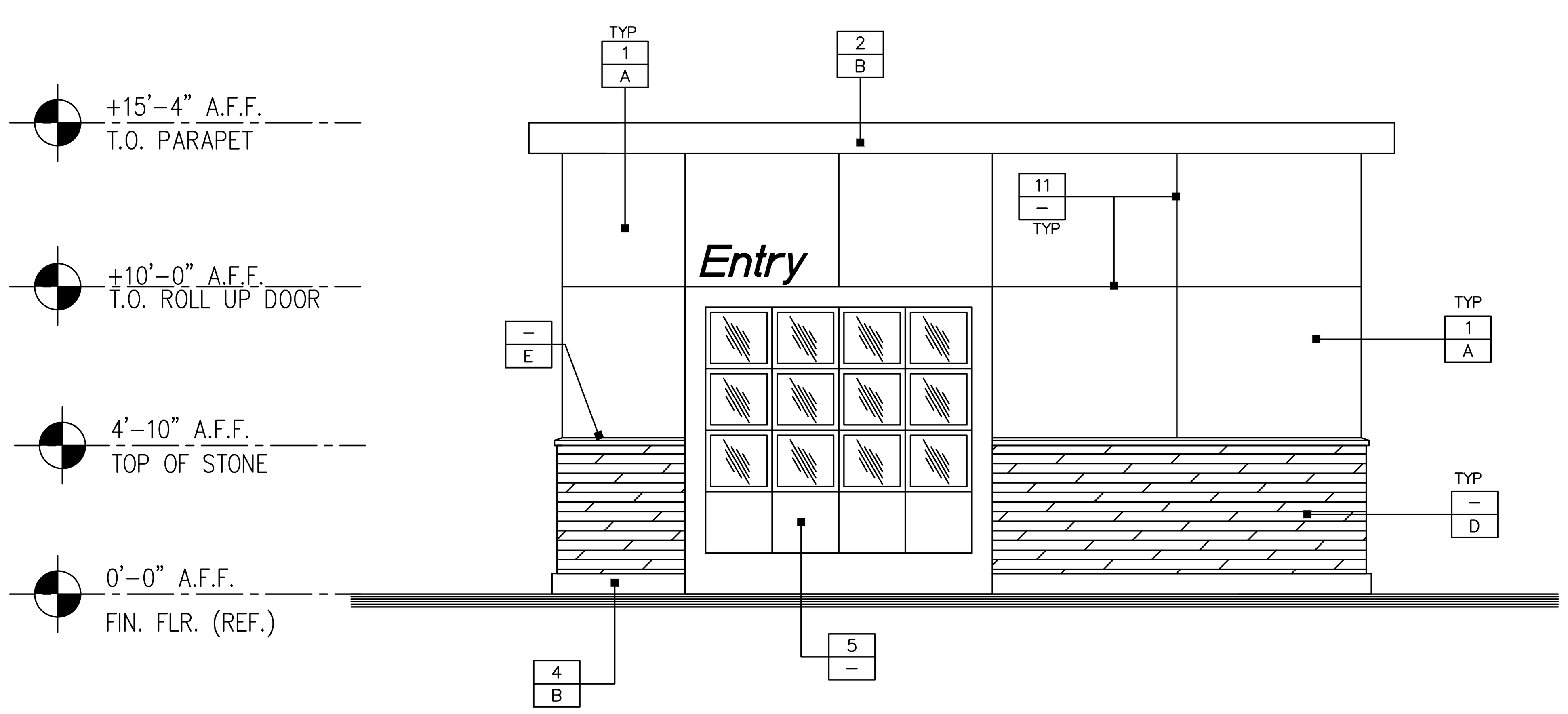
CAR WASH EXIT (EAST) ELEVATION

SCALE : $\frac{1}{4}$" = 1'-0"



LEFT SIDE (SOUTH) ELEVATION

SCALE : $\frac{1}{4}$" = 1'-0"



CAR WASH ENTRY (WEST) ELEVATION

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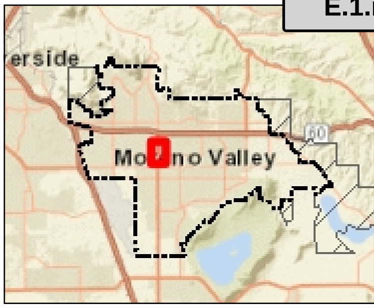
SHEET
A2.4

H:\YUM YUM DONUTS N. SUNSET LA PUENTE CA

MORENO VALLEY
WHERE DREAMS SOAR

Location Map



Legend

Public Facilities
- Public Facilities
- Fire Stations

Parcels
City Boundary
Sphere of Influence

Notes

1,261.9 0 630.96 1,261.9 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere

Print Date: 7/12/2018

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

OFFICIAL MINUTES OF THE PLANNING COMMISSION OF THE CITY OF MORENO VALLEY

REGULAR MEETING – 7:00 PM
July 26, 2018

CALL TO ORDER

This Regular Meeting of the Planning Commission of the City of Moreno Valley was called to order at 7:01 p.m. by Chair Barnes in the Council Chamber located at 14177 Frederick Street.

ROLL CALL

Planning Commission:	Jeffrey Barnes	Chair	Present
	Patricia Korzec	Vice Chair	Present
	Jeffrey Sims	Commissioner	Excused Absence
	Ray L. Baker	Commissioner	Excused Absence
	Jeffrey Barnes	Commissioner	Present
	Alvin Dejohnette	Commissioner	Present
	Robert Harris	Commissioner	Present
	JoAnn Stephan	Commissioner	Present

PLEDGE OF ALLEGIANCE

The Pledge of Allegiance was led by Commissioner Robert Harris.

APPROVAL OF AGENDA

Motion made by Vice Chair Patricia Korzec and seconded by Commissioner Robert Harris.

Vote:	5-0-0-2
Ayes:	Vice Chair Korzec, Commissioners Harris, Stephan, Dejohnette, and Chair Barnes
Noes:	
Abstain:	
Action:	Approved
Excused:	Commissioners Sims and Baker

STAFF PRESENT

Paul Early	City Attorney
Albert Armijo	Interim Planning Manager
Chris Ormsby	Senior Planner
Jeff Bradshaw	Associate Planner
Vince Giron	Associate Engineer
Michael Lloyd	Assistant City Engineer
Eric Lewis	City Traffic Engineer
Chris Cox	Fire Safety Specialist

Ashley Aparicio Planning Commission Secretary

CONSENT CALENDAR

No items for Discussion

APPROVAL OF MINUTES

Minutes - Planning Commission Regular Meeting of May 24, 2018 7:00 PM

Motion made by Vice Chair Patricia Korzec and seconded by Commissioner Robert Harris with the recommendation to update the attendance of Commissioner Jeffrey Sims to reflect excused absence.

Vote:	5-0-0-2
Ayes:	Vice Chair Korzec, Commissioners Harris, Stephan, Dejohnette, and Chair Barnes
Noes:	
Abstain:	
Action:	Approved
Excused:	Commissioners Sims and Baker

PUBLIC COMMENTS PROCEDURE

Rafael Brugueras

1. The City's progress and economic growth due to the City approving great projects. We have an estimated 210,000 residents. We are the 3rd in the nation for our budget and we are the 21st largest city in the State of CA and we are doing very well.
2. We need to continue to offer jobs and affordable housing as that is the reason for people to continue to choose Moreno Valley.
3. Continue filling our lots until there are no more lots to fill.

Ken Iglesias

1. Recommendation to expand RTA Route 40 through Moreno Valley from the north east of Moreno Valley, similar to route 18 or route 31.

Louise Zulueta

1. Asked to withdraw request to speak.

NON-PUBLIC HEARING ITEMS

No items for Discussion

PUBLIC HEARING ITEMS

1. Street Vacation of a Portion of Hemlock Avenue, westerly of Heacock Street and easterly of Swegles Lane along the Frontage of an Approved Multi-family Project (Report of: Planning Commission)

Recommendations:

Staff recommends that the Planning Commission APPROVE Resolution No. 2018-39, and thereby FINDS that the vacation of Hemlock Avenue is in conformance with the General Plan and current zoning, and RECOMMENDS that the City Council approve the street vacation for a portion of Hemlock Avenue, LGL17-0014.

Public Hearing Opened: 7:17 p.m.

Public Comments:

Rafael Brugueras supported the item.

Public Hearing Closed: 7:18 p.m.

Motion made by Vice Chair Patricia Korzec and seconded by Commissioner Dejohnette.

Vote:	5-0-0-2
Ayes:	Vice Chair Korzec, Commissioners Harris, Stephan, Dejohnette, and Chair Barnes
Noes:	
Abstain:	
Action:	Approved
Excused:	Commissioners Sims and Baker

2. Conditional Use Permit and Zone Change for Moreno Valley Storage, a proposed 538 unit mini-storage facility with a caretaker's residence. The Zone Change from Neighborhood Commercial to Community Commercial is required for the proposed use to be approved. (Report of: Planning Commission)

A. Staff recommends that the Planning Commission APPROVE Resolution No. 2018-32, and thereby RECOMMEND that the City Council:

   1. CERTIFY that the Mitigated Negative Declaration prepared for Zone Change PEN17-0134 and Conditional Use Permit PEN17-0135 on file with the Community Development Department, incorporated herein by this reference, has been completed in compliance with the California Environmental Quality Act, that the Planning Commission reviewed and considered the information contained in the Mitigated Negative Declaration and that the document reflects the City's independent judgment and analysis; attached hereto as Exhibit A; and

2. APPROVE the Mitigation Monitoring Program prepared for Zone Change PEN17-0134 and Conditional Use Permit PEN17-0135, attached hereto as Exhibit B.

B. Staff recommends that the Planning Commission APPROVE Resolution No. 2018-33, and thereby RECOMMEND that the City Council:

1. APPROVE Zone Change application PEN17-0134 based on the findings contained in this resolution, and as shown on the attachment included as Exhibit A.

C. Staff recommends that the Planning Commission APPROVE Resolution No. 2018-34, and thereby RECOMMEND that the City Council:

1. APPROVE Conditional Use Permit PEN17-0135 based on the findings contained in this resolution, and subject to the conditions of approval included as Exhibit A.

Public Hearing Opened: 7:39 p.m.

Public Comments:

Rafael Brugueras supports the item.

Ken Iglesias supports the item.

Public Hearing Closed: 7:44 p.m.

Motion made by Vice Chair Patricia Korzec and seconded by Commissioner Harris to approve the project with the Conditions of Approval as amended.

Vote:	5-0-0-2
Ayes:	Vice Chair Korzec, Commissioners Harris, Stephan, Dejohnette, and Chair Barnes
Noes:	
Abstain:	
Action:	Approved
Excused:	Commissioners Sims and Baker

3. Conditional Use Permit for Yum Yum Donuts Moreno Valley, a service station with convenience store and car wash on a 1.77 acre site located at the northeast corner of Perris Boulevard and Cottonwood Avenue. The applicant is also requesting approval for beer and wine sales in the convenience store. A General Plan Amendment from Residential Office to Commercial and a Zone Change from Office Commercial (OC) to Community Commercial (CC) is requested. (Report of: Planning Commission)

A. Staff recommends that the Planning Commission APPROVE Resolution No. 2018-35, and thereby RECOMMEND that the City Council:

1. CERTIFY that the Mitigated Negative Declaration prepared for General Plan Amendment PEN16-0086, Zone Change PEN16-0087 and Conditional Use Permit PEN16-0088 on file with the Community Development Department, incorporated herein by this reference, has been completed in compliance with the California Environmental Quality Act, that the Planning Commission reviewed and considered the information contained in the Mitigated Negative Declaration and that the document reflects the City's independent judgment and analysis; attached hereto as Exhibit A; and

2. APPROVE the Mitigation Monitoring Program prepared for General Plan Amendment PEN16-0086, Zone Change PEN16-0087 and Conditional Use Permit PEN16-0088, attached hereto as Exhibit B.

B. Staff recommends that the Planning Commission APPROVE Resolution No. 2018-36, and thereby RECOMMEND that the City Council:

1. APPROVE General Plan Amendment application PEN16-0086 based on the findings contained in this resolution, and as shown on the attachment included as Exhibit A.

C. Staff recommends that the Planning Commission APPROVE Resolution No. 2018-37, and thereby RECOMMEND that the City Council:

1. APPROVE Zone Change application PEN16-0087 based on the findings contained in this resolution, and as shown on the attachment included as Exhibit A. 3 Packet Pg. 667 Page 8

D. Staff recommends that the Planning Commission APPROVE Resolution No. 2018-38, and thereby RECOMMEND that the City Council:

2. APPROVE Conditional Use Permit PEN16-0088 based on the findings contained in this resolution, and subject to the conditions of approval included as Exhibit A.

Public Hearing Opened: 8:10 p.m.

Public Comments:

Rafael Brugueras supports the item.

Ken Iglesias supports the item.

Theresa Anchuleta supports the convenience store but opposes the gas station.

Public Hearing Closed: 8:19 p.m.

Motion made by Vice Chair Patricia Korzec and seconded by Commissioner Harris to approve the project with the Conditions of Approval as amended.

Vote:	5-0-0-2
Ayes:	Vice Chair Korzec, Commissioners Harris, Stephan, Dejohnette, and Chair Barnes
Noes:	
Abstain:	
Action:	Approved
Excused:	Commissioners Sims and Baker

OTHER COMMISSION BUSINESS

No items for Discussion

STAFF COMMENTS

No items for Discussion

PLANNING COMMISSIONER COMMENTS

No items for Discussion

ADJOURNMENT

There being no further business to come before the Planning Commission, Chairman Barnes adjourned the meeting at 8:29 PM.

Submitted by:

____
Ashley Aparicio
Planning Commission Secretary

Approved by:

____
Jeffrey Barnes
Chair

Appendix A

Air Quality and Greenhouse Gas Emissions Technical Report

Yum Yum Donuts Moreno Valley Project

Air Quality and Greenhouse Gas Emissions Technical Report

March 2018 | ASE-01

Prepared for:

A & S Engineering
28405 Sand Canyon Road, Suite "B"
Canyon County, CA 91387

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

Yum Yum Donuts Moreno Valley Project

Air Quality and Greenhouse Gas Emissions Technical Report

Prepared for:

A & S Engineering
28405 Sand Canyon Road, Suite "B"
Canyon County, CA 91387

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

March 2018 | ASE-01

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TABLE OF CONTENTS (cont.)

Section **Page**

LIST OF APPENDICES

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LIST OF FIGURES

LIST OF TABLES

ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ADT	average daily trips
AQMP	Air Quality Management Plan
C_2F_6	hexafluoroethane
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
CALGreen	California Green Building Standards Code
CAP	Climate Action Plan
CARB	California Air Resources Board
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CF_4	tetraflouromethane
CFC	chlorofluorocarbon
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
County	Riverside County
DPM	diesel particulate matter
EIR	Environmental Impact Report
EO	Executive Order
GHG	greenhouse gas
GWP	global warming potential
H_2S	hydrogen sulfide
HFC	hydrofluorocarbon
HI	Hazard Index
HRA	health risk assessment
I-	Interstate
IPCC	Intergovernmental Panel on Climate Change
LCFS	Low Carbon Fuel Standard
LOS	Level of Service
LST	localized significance threshold
mg/m^3	milligrams per cubic meter
MMT	million metric tons

ACRONYMS AND ABBREVIATIONS (cont.)

MT	metric tons
mpg	miles per gallon
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NASA	National Aeronautics and Space Administration
NHTSA	National Highway Traffic Safety Administration
NO	nitrogen oxide
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NO_X	nitrogen oxides
O_3	ozone
Pb	lead
PFC	perfluorocarbon
PM	particulate matter
PM_{10}	particulate matter less than 10 microns
$PM_{2.5}$	particulate matter less than 2.5 microns
ppm	parts per million
ROG	reactive organic gas
RTP	Regional Transportation Plan
SB	Senate Bill
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SF_6	hexafluoride
SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_X	sulfur oxides
SRA	source receptor area
TACs	toxic air contaminants
TIA	Transportation Impact Analysis
USEPA	U.S. Environmental Protection Agency
VMT	vehicle miles traveled
VOC	volatile organic compound

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EXECUTIVE SUMMARY

This report presents an assessment of potential air quality and greenhouse gas (GHG) emission impacts during construction and operation of the proposed Yum Yum Donuts Moreno Valley Project (project), located at the corner of Perris Boulevard and Cottonwood Avenue in the City of Moreno Valley (City).

The project would result in emissions of criteria air pollutants during construction and operation. Construction emissions include fugitive dust, heavy construction equipment exhaust, and vehicle trips associated with workers commuting to and from the site and trucks hauling materials. In accordance with South Coast Air Quality Management District (SCAQMD) Rule 403, fugitive dust control measures including the use of an on-site water truck to wet down active grading areas and roads at least twice daily are incorporated into the project design. Operational sources of emissions include area, on-site energy use, and transportation. Project emissions of criteria pollutants during construction and operation would remain below SCAQMD emissions thresholds.

The project would be consistent with air quality policies set forth by the SCAQMD as presented in the most recent Air Quality Management Plan.

Project-generated traffic would not result in a carbon monoxide hot spot. Construction and operation of the project would not result in exposure of sensitive receptors to significant quantities of toxic air contaminants (TACs). In addition, evaluation of potential odors from the project indicated that associated impacts would be less than significant.

Construction sources of GHG emissions include heavy construction equipment, worker vehicle miles traveled (VMT), and water use. Operational sources of GHG emissions include area, energy, transportation, water use, and solid waste. The project would be required to comply with the 2016 Title 24 Energy Code; the 2016 California Green Building Standards Code (CALGreen); the Assembly Bill (AB) 341 solid waste diversion target of 75 percent; reduction of potable water use by 20 percent when compared to the statewide average; low-flow water and bathroom fixtures; reduction of wastewater generation by 20 percent; weather-based irrigation systems; provide areas for storage and collection of recyclables and yard waste.

The project-related construction activities are estimated to generate 76 metric tons (MT) of carbon dioxide equivalent (CO_2e). Construction emissions are amortized over 30 years, such that the proposed construction activities would contribute an average of 3 MT per year of CO_2e emissions. The project-related operational and amortized construction GHG emissions for opening year are estimated to generate 1,165 MT CO_2e. Project emissions would not exceed the GHG screening threshold of 3,000 MT CO_2e established by the SCAQMD and adopted by the City Climate Action Strategy (CAS). Therefore, the project would be consistent with the City CAS and result in a less than significant impact related to GHG emissions.

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1.0 INTRODUCTION

This report presents an assessment of potential air quality and greenhouse gas (GHG) emissions impacts during construction and operation of the proposed Yum Yum Donuts Moreno Valley Project (project), located in the City of Moreno Valley (City) in Riverside County (County).

1.1 PROJECT LOCATION

The project site is located at the corner of Perris Boulevard and Cottonwood Avenue and is composed of Assessor's Parcel Numbers (APNs) 479-140-023-2, 479-140-024-3, and 479-131-012-4. Project site access would be provided via driveways on both Perris Boulevard and Cottonwood Avenue. Surrounding land uses include single-family residences to the east, a commercial area across Perris Boulevard to the west, a church across Cottonwood Avenue to the south, and a vacant lot to the north. Interstate (I-) 215 is located approximately 3.5 miles east of the project site (see Figure 1, *Regional Location*, and Figure 2, *Aerial Photograph*).

1.2 PROJECT DESCRIPTION

The project proposes to develop a 3.77-acre vacant lot for a 5,515-square foot Yum Yum Donuts restaurant and convenience market with a car wash and gas station. Sixteen gas pumps through eight production dispensers would be provided and a 5,075-square foot steel canopy would be constructed above. The car wash would be 900-square feet with an adjacent 400-square foot equipment room. Additionally, two underground storage tanks would be installed in the southeast corner of the project to provide gas. The majority of the project site would be paved and would provide 28 vehicle parking spaces and 2 bicycle parking spaces. Additional improvements include signs at the access points; air, water, and vacuum units for vehicles; curb and sidewalk improvements; fire hydrant installation; and storm drain improvements. Landscaping would be maintained throughout the site. See Figure 3, *Site Plan*, for details. The project would not require demolition, as the site is currently vacant and undeveloped.

1.3 CONSTRUCTION ACTIVITIES AND PHASING

Project construction is assumed to begin in January 2019 and be completed in June 2019, for a total construction period of six months. Construction activities include site preparation, grading, installation of underground utilities, construction of structures and paving and coating of the site. Grading and underground utilities installation are expected to overlap in February 2019. During grading, export of 200 cubic yards of soil is expected. Detailed construction phasing and equipment assumptions are summarized in Section 4.1, *Methodology*, and provided in Appendix A.

2.0 REGULATORY SETTING

2.1 AIR QUALITY

2.1.1 Criteria Pollutants

Criteria pollutants are defined by state and federal law as a risk to the health and welfare of the general public. In general, air pollutants include the following compounds:

- Ozone (O_3)
- Reactive organic gases (ROGs) or volatile organic compounds (VOCs)
- Carbon monoxide (CO)
- Nitrogen dioxide (NO_2)
- Respirable particulate matter and fine particulate matter (PM_{10} and $PM_{2.5}$)
- Sulfur dioxide (SO_2)
- Lead (Pb)

The following specific descriptions of health effects for each of the air pollutants potentially associated with project construction and operation are based on information provided by the California Air Resources Board (CARB; 2009) and the U.S. Environmental Protection Agency (USEPA; 2017a).

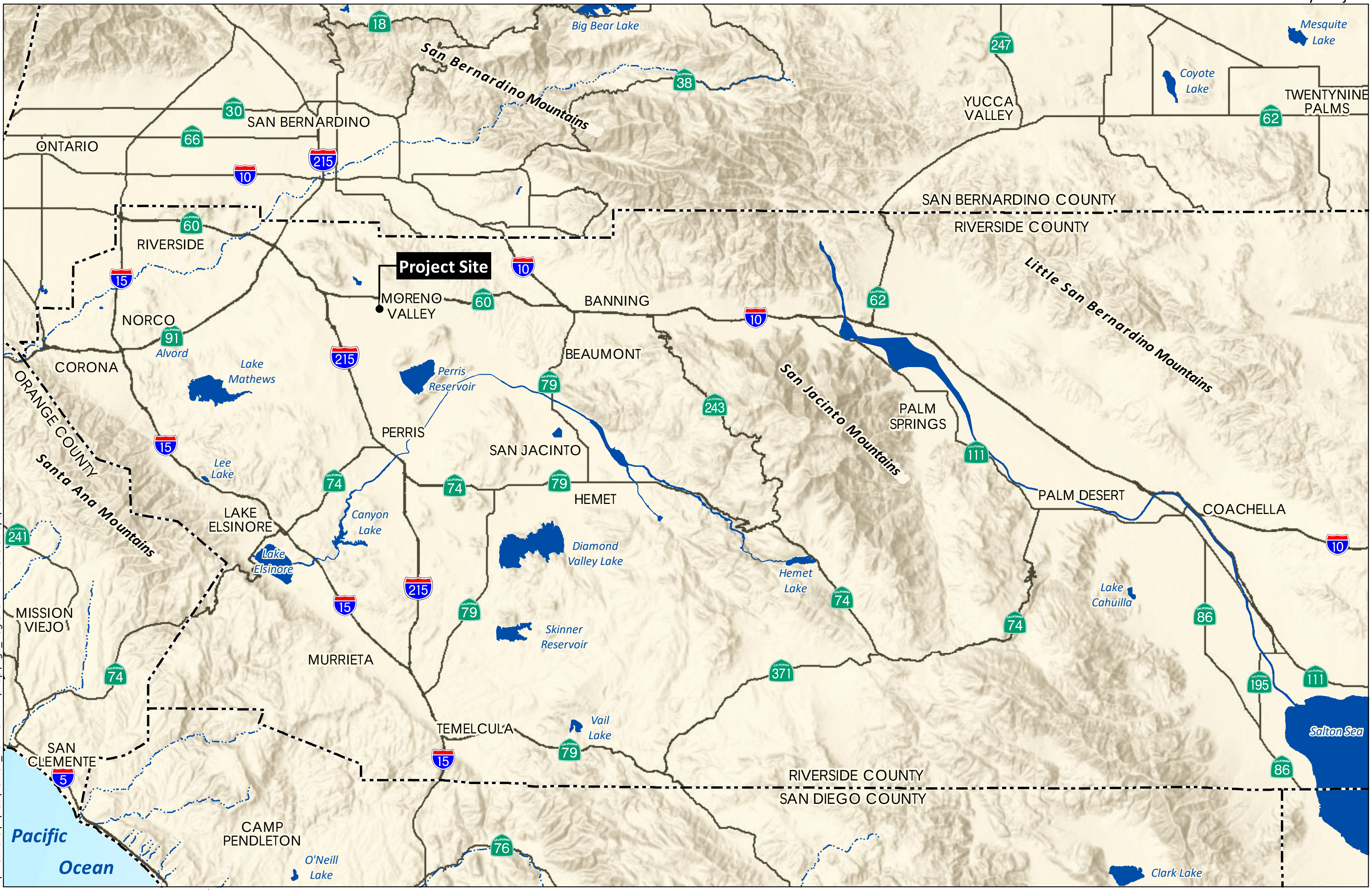
Ozone. Ozone is considered a photochemical oxidant, which is a chemical that is formed when VOCs and nitrogen oxides (NO_X), both by-products of fuel combustion, react in the presence of ultraviolet light. Ozone is considered a respiratory irritant and prolonged exposure can reduce lung function, aggravate asthma, and increase susceptibility to respiratory infections. Children and those with existing respiratory diseases are at greatest risk from exposure to ozone.

Reactive Organic Gases. ROGs (also known as VOCs) are compounds composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of ROGs. Other sources of ROGs include evaporative emissions from paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. While ROGs can be a health concern indoors, CARB regulates ROGs outdoors mainly because of their ability to create photochemical smog under certain conditions.

Carbon Monoxide. CO is a by-product of fuel combustion. CO is an odorless, colorless gas. CO affects red blood cells in the body by binding to hemoglobin and reducing the amount of oxygen that can be carried to the body's organs and tissues. CO can cause health effects to those with cardiovascular disease and can also affect mental alertness and vision.

Nitrogen Dioxide. NO_2, a species of the aforementioned NO_X, is also a by-product of fuel combustion and is formed both directly as a product of combustion and in the atmosphere through the reaction of nitrogen oxide (NO) with oxygen. NO_2 is a respiratory irritant and may affect those with existing respiratory illness, including asthma. NO_2 can also increase the risk of respiratory illness.

Yum Yum Donuts Moreno Valley Project



0 10 Miles

Source: Base Map Layers (ESRI, 2013)

HELIX Environmental Planning

Regional Location

Figure 1

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Attachment: Air Quality and Green House Gas Study (3224 : A GENERAL PLAN AMENDMENT, CHANGE

Yum Yum Donuts Moreno Valley Project

Source: Base Map Layers (Eagle, 2014)

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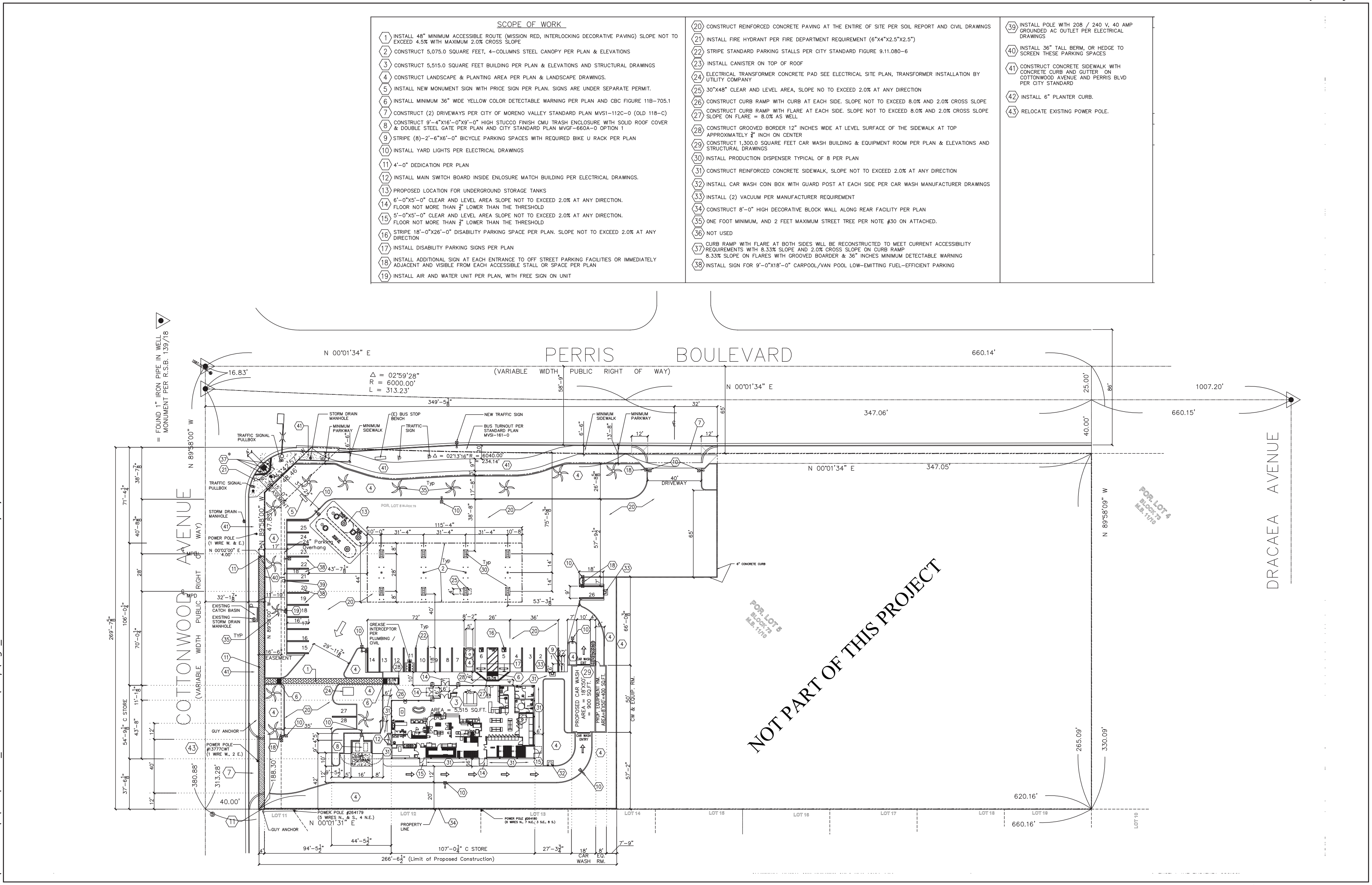
HELIX Environmental Planning

Aerial Photograph

Figure 2



Source: A & S Engineering, 2018

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HELIX
Environmental Planning

Site Plan

Figure 3

Respirable Particulate Matter and Fine Particulate Matter. Respirable particulate matter, or PM_{10}, refers to particulate matter with an aerodynamic diameter of 10 microns or less. Fine particulate matter, or $PM_{2.5}$, refers to particulate matter with an aerodynamic diameter of 2.5 microns or less. Particulate matter in these size ranges have been determined to have the potential to lodge in the lungs and contribute to respiratory problems. PM_{10} and $PM_{2.5}$ arise from a variety of sources, including road dust, diesel exhaust, fuel combustion, tire and brake wear, construction operations, and windblown dust. PM_{10} and $PM_{2.5}$ can increase susceptibility to respiratory infections and can aggravate existing respiratory diseases such as asthma and chronic bronchitis. $PM_{2.5}$ is considered to have the potential to lodge deeper in the lungs. Particulate matter originating from diesel exhaust, diesel particulate matter (DPM), discussed in further detail below, is classified a carcinogen by CARB.

Sulfur dioxide. SO_2 is a colorless, reactive gas that is produced from the burning of sulfur-containing fuels such as coal and oil and by other industrial processes. Generally, the highest concentrations of SO_2 are found near large industrial sources. SO_2 is a respiratory irritant that can cause narrowing of the airways leading to wheezing and shortness of breath. Long-term exposure to SO_2 can cause respiratory illness and aggravate existing cardiovascular disease.

Lead. Lead in the atmosphere occurs as particulate matter. With the phase-out of leaded gasoline, large manufacturing facilities are the sources of the largest amounts of lead emissions. Lead is also present in some aircraft and racing fuels. Lead has the potential to cause gastrointestinal, central nervous system, kidney, and blood diseases upon prolonged exposure. Lead is also classified as a probable human carcinogen. Because emissions of lead are found only in specialty fuels and projects that are permitted by the local air district, lead is not an air quality of concern for the proposed project.

2.1.2 Toxic Air Contaminants

Toxic air contaminants (TACs) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or in serious illness or that may pose a present or potential hazard to human health. TACs include both organic and inorganic chemical substances that may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. One of the main sources of TACs in California is diesel engines which emit exhaust containing solid material known as diesel particulate matter (DPM) (CARB 2011). TACs are different than the criteria pollutants previously discussed because ambient air quality standards have not been established for TACs. TACs occurring at extremely low levels may still cause health effects, and it is typically difficult to identify levels of exposure that do not produce adverse health effects. TAC impacts are described by carcinogenic risk and by chronic (i.e., of long duration) and acute (i.e., severe but of short duration) adverse effects on human health.

2.1.3 Federal Air Quality Regulations

2.1.3.1 Federal Clean Air Act

Air quality is defined by ambient air concentrations of specific pollutants identified by the USEPA to be of concern with respect to health and welfare of the general public. The USEPA is responsible for enforcing the Federal Clean Air Act (CAA) of 1970 and its 1977 and 1990 Amendments. The CAA required the USEPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the USEPA established both primary and secondary standards for several criteria pollutants, which are introduced above. Table 1, *Ambient Air Quality Standards*, shows the federal and state ambient air quality standards for these pollutants.

The CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards. CARB has established the more stringent California Ambient Air Quality Standards (CAAQS) for the six criteria pollutants through the California Clean Air Act of 1988, and also has established CAAQS for additional pollutants, including sulfates, hydrogen sulfide (H_2S), vinyl chloride, and visibility-reducing particles. Areas that do not meet the NAAQS or the CAAQS for a particular pollutant are considered to be "nonattainment areas" for that pollutant.

Table 1
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards	
			Primary[1]	Secondary[2]
O_3	1 Hour	0.09 ppm (180 μg/m^3)	–	–
	8 Hour	0.070 ppm (137 μg/m^3)	0.070 ppm (137 μg/m^3)	Same as Primary
PM_{10}	24 Hour	50 μg/m^3	150 μg/m^3	Same as Primary
	AAM	20 μg/m^3	–	Same as Primary
$PM_{2.5}$	24 Hour	–	35 μg/m^3	Same as Primary
	AAM	12 μg/m^3	12.0 μg/m^3	15.0 μg/m^3
CO	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	–
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	–
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
NO_2	1 Hour	0.18 ppm (339 μg/m^3)	0.100 ppm (188 μg/m^3)	–
	AAM	0.030 ppm (57 μg/m^3)	0.053 ppm (100 μg/m^3)	Same as Primary
SO_2	1 Hour	0.25 ppm (655 μg/m^3)	0.075 ppm (196 μg/m^3)	–
	3 Hour	–	–	0.5 ppm (1,300 μg/m^3)
	24 Hour	0.04 ppm (105 μg/m^3)	–	–
Lead	30-day Avg.	1.5 μg/m^3	–	–
	Calendar Quarter	–	1.5 μg/m^3	Same as Primary
	Rolling 3-month Avg.	–	0.15 μg/m^3	

Table 1 (cont.)
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per km – visibility ≥ 10 miles (0.07 per km – ≥30 miles for Lake Tahoe)	**No Federal Standards**
Sulfates	24 Hour	25 μg/m^3	
Hydrogen Sulfide	1 Hour	0.03 ppm (42 μg/m^3)	
Vinyl Chloride	24 Hour	0.01 ppm (26 μg/m^3)	

Source: CARB 2016

[1] National Primary Standards: The levels of air quality necessary, within an adequate margin of safety, to protect the public health.

[2] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

O_3: ozone; ppm: parts per million; μg/m^3: micrograms per cubic meter; PM_{10}: particulate matter with an aerodynamic diameter of 10 microns or less;

AAM: Annual Arithmetic Mean; $PM_{2.5}$: fine particulate matter; CO: carbon monoxide; mg/m^3: milligrams per cubic meter; NO_2 nitrogen dioxide; SO_2: sulfur dioxide; km: kilometer; –: No Standard.

The USEPA has classified air basins (or portions thereof) as being in "attainment," "nonattainment," or "unclassified" for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. The project site is located within the South Coast Air Basin (SCAB) and, as such, is in an area designated a nonattainment area for certain pollutants that are regulated under the CAA. Table 2 of Section 2.2.3, *South Coast Air Basin Attainment Status*, lists the federal and state attainment status of the SCAB for the criteria pollutants. The USEPA classifies the SCAB as in attainment for CO, PM_{10}, NO_2, SO_2, and lead; in extreme nonattainment for 8-hour ozone; and in serious nonattainment for $PM_{2.5}$ with respect to federal air quality standards.

The CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the State Implementation Plan (SIP). The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The SIP is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The USEPA has the responsibility to review all SIPs to determine whether they conform to the requirements of the CAA.

2.1.4 California Air Quality Regulations

2.1.4.1 California Clean Air Act

The federal CAA allows states to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the California EPA (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the California Ambient Air Quality Standards (CAAQS). CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California's SIP, for which it works closely with the federal government and the local air districts.

In addition to primary and secondary AAQS, the state has established a set of episode criteria for ozone, CO, NO_2, SO_2, and PM. These criteria refer to episode levels representing periods of short-term exposure to air pollutants that actually threaten public health. Table 2, below, lists the state attainment status of the SCAB for the criteria pollutants. Under state designation, the SCAB is currently in attainment for CO, NO_2, SO_2, and lead; and in nonattainment for ozone, PM_{10}, and $PM_{2.5}$.

2.1.4.2 Toxic Air Contaminants

California's air toxics control program began in 1983 with the passage of the Toxic Air Contaminant Identification and Control Act, better known as AB 1807 or the Tanner Bill. When a compound becomes listed as a TAC under the Tanner process, the CARB normally establishes minimum statewide emission control measures to be adopted by local air pollution control districts (APCDs). Later legislative amendments (AB 2728) required the CARB to incorporate all 189 federal hazardous air pollutants (HAPs) into the state list of TACs.

Supplementing the Tanner process, AB 2588 – the Air Toxics "Hot Spots" Information and Assessment Act of 1987 – currently regulates over 600 air compounds, including all of the Tanner-designated TACs. Under AB 2588, specified facilities must quantify emissions of regulated air toxics and report them to the local APCD. If the APCD determines that a potentially significant public health risk is posed by a given facility, the facility is required to perform a health risk assessment (HRA) and notify the public in the affected area if the calculated risks exceed specified criteria.

On August 27, 1998, CARB formally identified PM emitted in both gaseous and particulate forms by diesel-fueled engines as a TAC (CARB 2010). The particles emitted by diesel engines are coated with chemicals, many of which have been identified by the USEPA as HAPs and by CARB as TACs. CARB's Scientific Advisory Committee has recommended a unit risk factor (URF) of 300 in 1 million over a 70-year exposure period for diesel particulate. In September 2000, the CARB approved the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (Diesel Risk Reduction Plan; CARB 2000). The Diesel Risk Reduction Plan outlined a comprehensive and ambitious program that included the development of numerous new control measures over the next several years aimed at substantially reducing emissions from new and existing on-road vehicles (e.g., heavy-duty trucks and buses), off-road equipment (e.g., graders, tractors, forklifts, sweepers, and boats), portable equipment (e.g., pumps), and stationary engines (e.g., stand-by power generators). These requirements are now in force on a statewide basis.

2.1.5 Local Regulations

2.1.5.1 South Coast Air Quality Management District

The project is located in Riverside County. Air quality in the non-desert portion of Riverside County is regulated by the South Coast Air Quality Management District (SCAQMD). As a regional agency, the SCAQMD works directly with the Southern California Association of Governments (SCAG), County transportation commissions, and local governments and cooperates actively with all federal and state government agencies. The SCAQMD develops rules and regulations; establishes permitting requirements for stationary sources; inspects emissions sources; and enforces such measures through educational programs or fines, when necessary.

The SCAQMD is directly responsible for reducing emissions from stationary (area and point), mobile, and indirect sources. It has responded to this requirement by preparing a sequence of Air Quality Management Plans (AQMP).

On March 3, 2017, the SCAQMD adopted the 2016 AQMP, which is a regional and multi-agency effort (SCAQMD, CARB, SCAG, and USEPA). The 2016 AQMP represents a comprehensive analysis of emissions, meteorology, atmospheric chemistry, regional growth projections, and the impact of existing control measures. The plan seeks to achieve multiple goals in partnership with other entities promoting reductions in criteria pollutant, greenhouse gases, and toxic risk, as well as efficiencies in energy use, transportation, and goods movement (SCAQMD 2017).

The AQMP, in combination with those from all other California nonattainment areas with serious (or worse) air quality problems, is submitted to CARB, which develops the California State Implementation Plan (SIP). The SIP relies on the same information from SCAG to develop emission inventories and emission reduction strategies that are included in the attainment demonstration for the air basin. The current federal and state attainment status for the South Coast Air Basin (SCAB) is presented in Table 2, *South Coast Air Basin Attainment Status*.

Table 2
SOUTH COAST AIR BASIN ATTAINMENT STATUS

Criteria Pollutant	Federal Designation	State Designation
O_3 (1-hour)	(No federal standard)	Nonattainment
O_3 (8-hour)	Extreme Nonattainment	Nonattainment
CO	Attainment (Maintenance)	Attainment
PM_{10}	Attainment (Maintenance)	Nonattainment
$PM_{2.5}$	Serious Nonattainment	Nonattainment
NO_2	Attainment (Maintenance)	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(No federal standard)	Attainment
Hydrogen Sulfide	(No federal standard)	Attainment
Visibility	(No federal standard)	Attainment

Source: SCAQMD 2016

2.2 GREENHOUSE GASES

2.2.1 Climate Change Overview

Global climate change refers to changes in average climatic conditions on Earth including temperature, wind patterns, precipitation, and storms. Global temperatures are moderated by atmospheric gases. These gases are commonly referred to as greenhouse gases (GHGs) because they function like a greenhouse by letting sunlight in but preventing heat from escaping, thus warming the Earth's atmosphere.

GHGs are emitted by natural processes and human (anthropogenic) activities. Anthropogenic GHG emissions are primarily associated with: (1) the burning of fossil fuels during motorized transport, electricity generation, natural gas consumption, industrial activity, manufacturing, and other activities; (2) deforestation; (3) agricultural activity; and (4) solid waste decomposition.

The temperature record shows a decades-long trend of warming, with 2016 global surface temperatures ranking as the warmest year on record (National Aeronautics and Space Administration [NASA] 2016). The newest realize in long-term warming trends announced 2017 ranked the second warmest year with an increase of 1.62 degrees Fahrenheit compared to the 1950-1980 average (NASA 2018). GHG emissions from human activities are the most significant driver of observed climate change since the mid-20th century (Intergovernmental Panel on Climate Change [IPCC] 2013). The IPCC constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. The statistical models show a "high confidence" that temperature increase caused by anthropogenic GHG emissions could be kept to less than two degrees Celsius relative to pre-industrial levels if atmospheric concentrations are stabilized at about 450 parts per million (ppm) carbon dioxide equivalent (CO_2e) by the year 2100 (IPCC 2014).

2.2.2 Types of Greenhouse Gases

The GHGs defined under California's Assembly Bill (AB) 32 include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

Carbon dioxide. CO_2 is the most important and common anthropogenic GHG. CO_2 is an odorless, colorless GHG. Natural sources include the decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungi; evaporation from oceans; and volcanic outgassing. Anthropogenic sources of CO_2 include burning fuels, such as coal, oil, natural gas, and wood. Data from ice cores indicate that CO_2 concentrations remained steady prior to the current period for approximately 10,000 years. The atmospheric CO_2 concentration in 2010 was 390 ppm, 39 percent above the concentration at the start of the Industrial Revolution (about 280 ppm in 1750). As of October 2017, the CO_2 concentration exceeded 403 ppm, a 44 percent increase since 1750 (National Oceanic and Atmospheric Administration [NOAA] 2018).

Methane. CH_4 is the main component of natural gas used in homes. A natural source of methane is from the decay of organic matter. Geological deposits known as natural gas fields contain methane, which is extracted for fuel. Other sources are from decay of organic material in landfills, fermentation of manure, and cattle digestion.

Nitrous oxide. N_2O is produced by both natural and human-related sources. N_2O is emitted during agricultural and industrial activities, as well as during the combustion of fossil fuels and solid waste. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic (fatty) acid production, and nitric acid production.

Hydrofluorocarbons. Fluorocarbons are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. Chlorofluorocarbons are nontoxic, nonflammable, insoluble, and chemically nonreactive in the troposphere (the level of air at Earth's surface). Chlorofluorocarbons were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone; therefore, their production was stopped as required by the 1989 Montreal Protocol.

Sulfur Hexafluoride. SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semi-conductor manufacturing, and as a tracer gas for leak detection.

GHGs have long atmospheric lifetimes that range from one year to several thousand years. Long atmospheric lifetimes allow for GHG emissions to disperse around the globe. Because GHG emissions vary widely in the power of their climatic effects, climate scientists have established a unit called global warming potential (GWP). The GWP of a gas is a measure of both potency and lifespan in the atmosphere as compared to CO_2. For example, because methane and N_2O are approximately 25 and 298 times more powerful than CO_2, respectively, in their ability to trap heat in the atmosphere, they have GWPs of 25 and 298, respectively (CO_2 has a GWP of 1). CO_2e is a quantity that enables all GHG emissions to be considered as a group despite their varying GWP. The GWP of each GHG is multiplied by the prevalence of that gas to produce CO_2e. The atmospheric lifetime and GWP of selected GHGs are summarized in Table 3, *Global Warming Potentials and Atmospheric Lifetimes*.

Table 3
GLOBAL WARMING POTENTIALS AND ATMOSPHERIC LIFETIMES

Greenhouse Gas	Atmospheric Lifetime (years)	Global Warming Potential (100-year time horizon)
Carbon Dioxide (CO_2)	50-200	1
Methane (CH_4)	12	25
Nitrous Oxide (N_2O)	114	298
HFC-134a	14	1,430
PFC: Tetraflouromethane (CF_4)	50,000	7,390
PFC: Hexafluoroethane (C_2F_6)	10,000	12,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

Source: IPCC 2007
HFC: hydrofluorocarbon; PFC: perfluorocarbon

2.2.3 Federal Greenhouse Gas Regulations

2.2.3.1 Federal Clean Air Act

The U.S. Supreme Court ruled on April 2, 2007, in *Massachusetts v. U.S. Environmental Protection Agency* (USEPA*)* that CO_2 is an air pollutant, as defined under the CAA, and that the USEPA has the authority to regulate emissions of GHGs. The USEPA announced that GHGs (including CO_2, CH_4, N_2O, HFC, PFC, and SF_6) threaten the public health and welfare of the American people. This action was a prerequisite to finalizing the USEPA's GHG emissions standards for light-duty vehicles, which were jointly proposed by the USEPA and the United States Department of Transportation's National Highway Traffic Safety Administration (NHTSA). The standards were established on April 1, 2010 for 2012 through 2016 model year vehicles and on October 15, 2012 for 2017 through 2025 model year vehicles (USEPA 2017b; USEPA and NHTSA 2012).

2.2.3.2 Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards

The USEPA and the NHTSA have been working together on developing a national program of regulations to reduce GHG emissions and to improve fuel economy of light-duty vehicles. The USEPA is finalizing the first-ever national GHG emissions standards under the CAA, and the NHTSA is finalizing Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act. On April 1, 2010, the USEPA and NHTSA announced a joint Final Rulemaking that established standards for 2012 through 2016 model year vehicles. This was followed up on October 15, 2012, when the agencies issued a Final Rulemaking with standards for model years 2017 through 2025. The rules require these vehicles to meet an estimated combined average emissions level of 250 grams per mile by 2016, decreasing to an average industry fleet-wide level of 163 grams per mile in model year 2025. The 2016 standard is equivalent to 35.5 miles per gallon (mpg), and the 2025 standard is equivalent to 54.5 mpg if the levels were achieved solely through improvements in fuel efficiency. The agencies expect, however, that a portion of these improvements will be made through improvements in air conditioning leakage and the use of alternative refrigerants that would not contribute to fuel economy. These standards would cut GHG emissions by an estimated 2 billion metric tons (MT) and 4 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2017–2025). The combined USEPA GHG emission standards and NHTSA CAFE standards resolve previously conflicting requirements under both federal programs and the standards of the State of California and other states that have adopted the California standards (USEPA 2017b; USEPA and NHTSA 2012).

2.2.4 California Greenhouse Gas Regulations

There are numerous State plans, policies, regulations, and laws related to GHG emissions and global climate change. Following is a discussion of some of these plans, policies, and regulations that (1) establish overall State policies and GHG emission reduction targets; (2) require State or local actions that result in direct or indirect GHG emission reductions for the proposed project; and (3) require California Environmental Quality Act (CEQA) analysis of GHG emissions.

2.2.4.1 California Code of Regulations, Title 24, Part 6

California Code of Regulations (CCR) Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. Energy-efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in GHG emissions.

The Title 24 standards are updated approximately every three years to allow consideration and possible incorporation of new energy efficiency technologies and methods. The latest update to the Title 24 standards occurred in 2016 and went into effect on January 1, 2017. The 2016 update to the Building Energy Efficiency Standards focuses on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. The most significant efficiency improvements to the residential Standards include improvements for attics, walls, water heating, and lighting. The Standards are divided into three basic sets. First, there is a basic set of mandatory requirements that apply to all buildings. Second, there is a set of performance standards – the energy budgets – that vary by climate zone (of which there are 16 in California) and building type; thus, the Standards are tailored to local conditions. Finally, the third set constitutes an alternative to the performance standards, which is a set of prescriptive packages that are basically a recipe or a checklist compliance approach.

2.2.4.2 California Green Building Standards Code

The California Green Building Standards Code (CALGreen; CCR Title 24, Part 11) is a code with mandatory requirements for new residential and nonresidential buildings (including industrial buildings) throughout California. The code is Part 11 of the California Building Standards Code in Title 24 of the CCR (California Building Standards Commission 2017). The current 2016 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings went into effect on January 1, 2017.

The development of CALGreen is intended to (1) cause a reduction in GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. In short, the code is established to reduce construction waste; make buildings more efficient in the use of materials and energy; and reduce environmental impact during and after construction.

CALGreen contains requirements for storm water control during construction; construction waste reduction; indoor water use reduction; material selection; natural resource conservation; site irrigation conservation; and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for the verification that all building systems, like heating and cooling equipment and lighting systems, are functioning at their maximum efficiency.

2.2.4.3 Executive Order S-3-05

On June 1, 2005, Executive Order (EO) S-3-05 proclaimed that California is vulnerable to climate change impacts. It declared that increased temperatures could reduce snowpack in the Sierra Nevada, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To avoid or reduce climate change impacts, EO S-3-05 calls for a reduction in GHG emissions to the year 2000 level by 2010, to year 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

2.2.4.4 Assembly Bill 32 – Global Warming Solution Act of 2006

The California Global Warming Solutions Act of 2006, widely known as AB 32, requires that the CARB develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB is directed to set a GHG emission limit, based on 1990 levels, to be achieved by 2020. The bill requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG emission reductions.

2.2.4.5 Executive Order B-30-15

On April 29, 2015, EO B-30-15 established a California GHG emission reduction target of 40 percent below 1990 levels by 2030. The EO aligns California's GHG emission reduction targets with those of leading international governments, including the 28 nation European Union. California is on track to meet or exceed the target of reducing greenhouse gas emissions to 1990 levels by 2020, as established in AB 32. California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the goal established by EO S-3-05 of reducing emissions 80 percent under 1990 levels by 2050.

2.2.4.6 Senate Bill 32

As a follow-up to AB 32 and in response to EO-B-30-15, Senate Bill (SB) 32 was passed by the California legislature in August 2016 to codify the EO's California GHG emission reduction target of 40 percent below 1990 levels by 2030.

2.2.4.7 Assembly Bill 1493 – Vehicular Emissions of Greenhouse Gases

AB 1493 (Pavley) requires that CARB develop and adopt regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State." On September 24, 2009, CARB adopted amendments to the Pavley regulations that intend to reduce GHG emissions in new passenger vehicles from 2009 through 2016. The amendments bind California's enforcement of AB 1493 (starting in 2009), while providing vehicle manufacturers with new compliance flexibility. The amendments also prepare California to merge its rules with the federal CAFE rules for passenger vehicles (CARB 2013). In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single packet of standards called Advanced Clean Cars (CARB 2013).

2.2.4.8 Assembly Bill 341

The state legislature enacted AB 341 (California Public Resource Code Section 42649.2), increasing the diversion target to 75 percent statewide. AB 341 requires all businesses and public entities that generate 4 cubic yards or more of waste per week to have a recycling program in place. The final regulation was approved by the Office of Administrative Law on May 7, 2012, and went into effect on July 1, 2012.

2.2.4.9 Executive Order S-01-07

This EO, signed by Governor Schwarzenegger on January 18, 2007, directs that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by the year 2020. It orders that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California and directs CARB to determine whether a LCFS can be adopted as a discrete early action measure pursuant to AB 32. CARB approved the LCFS as a discrete early action item with a regulation adopted and implemented in April 2010. Although challenged in 2011, the Ninth Circuit reversed the District Court's opinion and rejected arguments that implementing LCFS violates the interstate commerce clause in September 2013. CARB is therefore continuing to implement the LCFS statewide.

2.2.4.10 Senate Bill 350

Approved by Governor Brown on October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard eligible resources, including solar, wind, biomass, and geothermal. In addition, large utilities are required to develop and submit Integrated Resource Plans to detail how each entity will meet their customers resource needs, reduce greenhouse gas emissions, and increase the use of clean energy.

2.2.4.11 California Air Resources Board: Scoping Plan

On December 11, 2008, CARB adopted the Scoping Plan (CARB 2008) as directed by AB 32. The Scoping Plan proposes a set of actions designed to reduce overall GHG emissions in California to the levels required by AB 32. Measures applicable to development projects include those related to energy-efficiency building and appliance standards, the use of renewable sources for electricity generation, regional transportation targets, and green building strategy. Relative to transportation, the Scoping Plan includes nine measures or recommended actions related to reducing VMT and vehicle GHG emissions through fuel and efficiency measures. These measures would be implemented statewide rather than on a project by project basis.

CARB released the First Update to the Climate Change Scoping Plan in May 2014 to provide information on the development of measure-specific regulations and to adjust projections in consideration of the economic recession (CARB 2014). To determine the amount of GHG emission reductions needed to achieve the goal of AB 32 (i.e., 1990 levels by 2020) CARB developed a forecast of the AB 32 Baseline 2020 emissions, which is an estimate of the emissions expected to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. CARB estimated the AB 32 Baseline 2020 to be 509 million metric tons (MMT) of CO_2e. The Scoping Plan's current estimate of the necessary GHG emission reductions is 78 MMT CO_2e (CARB 2014). This represents an approximately 15 percent reduction. CARB is forecasting that this would be achieved through the following reductions by sector: 25 MMT CO_2e for energy, 23 MMT CO_2e for transportation, 5 MMT CO_2e for high-GWP GHGs, and 2 MMT CO_2e for waste. The remaining 23 MMT CO_2e would be achieved through Cap-and-Trade Program reductions. This reduction is flexible—if CARB receives new information and changes the other sectors' reductions to be less than expected, the agency can increase the Cap-and-Trade reduction (and vice versa).

In response to EO B-30-15 and SB 32, all state agencies with jurisdiction over sources of GHG emissions were directed to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 targets. CARB was directed to update the Scoping Plan to reflect the 2030 target and, therefore, is moving forward with the update process. The mid-term target is critical to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to continue driving down emissions. CARB is moving forward with a second update to the Scoping Plan to reflect the 2030 target set by Executive Order B-30-15 and codified by SB 32. The 2017 Climate Change Scoping Plan Update, Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target, was adopted December 2017. The Scoping Plan Update establishes a proposed framework for California to meet a 40 percent reduction in GHGs by 2030 compared to 1990 levels. This is the most aggressive climate target in North America and aligns California with the rest of the world in flighting climate change. The Proposed Plan would continue to move California towards a sustainable future while shifting dependence away from fossil fuels. The Plan would build on the Cap-and-Trade

Regulation, Low Carbon Fuel Standard program, and continue to increase the use of renewable energy through cleaner cars, trucks and freight movement, and reduce agricultural and waste methane emissions by utilizing it for energy needs. The Proposed Plan also addresses for the first time the GHG emissions from agriculture and forestry sectors along with other natural and working lands of California (CARB 2017a).

2.2.5 Local Regulations

2.2.5.1 South Coast Air Quality Management District

Beginning in April 2008, the SCAQMD convened a Working Group to provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. On December 5, 2008, the SCAQMD Governing Board adopted its staff proposal for an interim CEQA GHG significance threshold of 10,000 MT CO_2e per year for projects where the SCAQMD is the lead agency. The policy objective for establishing this significance threshold and the recommended screening thresholds below is to capture projects that represent approximately 90 percent of GHG emissions from new sources (SCAQMD 2008). These projects would be subject to further analysis and the incorporation of measures to reduce GHG emissions.

In September 2010, the Working Group presented a revised tiered approach to determining GHG significance for residential and commercial projects (SCAQMD 2010). These proposals have not been considered by the SCAQMD Board.

At Tier 1, GHG emissions impacts would be less than significant if a project qualifies under a categorical or statutory CEQA exemption. For projects that do not meet the Tier 1 criteria, the GHG emissions impact would be less than significant at Tier 2 if a project is consistent with a previously adopted GHG reduction plan that meets specific requirements. At Tier 3, the Working Group proposes extending the 10,000 MT CO_2e per year screening threshold currently applicable to industrial projects where the SCAQMD is the lead agency (described above) to other lead agency industrial projects. For residential and commercial projects, the Working Group proposes a 3,000 MT CO_2e per year threshold for all land use types. A project with emissions less than the applicable screening value would be considered to have less than significant GHG emissions.

2.2.5.2 City of Moreno Valley

The City developed an Energy Efficiency and Climate Action Strategy (CAS) that was adopted in October 2012 (City 2012a). The Energy Efficiency and CAS (Strategy) establishes policies, practices, and strategies, to assist the City in energy and water conservation and reduction of GHG emissions. The program will encourage its community members to reduce their own GHG emissions through energy and water conservation by providing training and public awareness. The Strategy will help lead agencies to assess cumulative impacts of a project and provide a means for future projects to address GHG impacts under CEQA. A lead agency may conclude that a project's GHG impact is not cumulatively significant if the project demonstrates consistency with this CAS (CEQA Guidelines Section 15183.5[h][3]).

Following the state's adopted AB 32 GHG reduction target, the City set a goal to reduce emissions to 1990 levels by the year 2020. This target was calculated as a 15 percent decrease from 2007 levels, as recommended in the AB 32 Scoping Plan (2007 was the closet year to 2005 with best data available).

The estimated business-as-usual emissions for the year 2020, based on population and housing growth projections associated with the assumptions used in the proposed General Plan, is 1,298,546 MT of CO_2e (City 2012b). To reach 15 percent below 2007 levels, the City must reduce GHG emissions to 798,693 MT of CO_2e by 2020. A community-wide emissions inventory was also calculated in 2010 which is the most current year with data available.

To reach the reduction target, the City is committed to incorporating sustainable features into the community. The Strategy includes measures that encourage energy efficiency and renewable energy in buildings, access to sustainable transportation, water conservation, and increased waste diversion. Through the CAS, the City has established goals and policies that incorporate environmental responsibility into its daily management of residential, commercial and industrial growth, education, energy and water use, air quality, transportation, waste reduction, economic development and open space and natural habitats to further their commitment. The development of the CAS may require the City's General Plan to be updated to reference the Strategy for direction on energy efficiency and GHG reduction.

3.0 EXISTING CONDITIONS

3.1 CLIMATE AND METEOROLOGY

The project site is in the SCAB, which consists of all or part of four counties: Los Angeles, San Bernardino, Riverside, and Orange. The distinctive climate of the SCAB is determined by its terrain and geographic location. The SCAB is a coastal plain with connecting broad valleys and low hills. It is bound by the Pacific Ocean to the southwest and high mountains around the rest of its perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light, average wind speeds.

The usually mild climatological pattern is interrupted occasionally by periods of extremely hot weather, winter storms, or Santa Ana winds. Winds in the project area are usually driven by the dominant land/sea breeze circulation system. Regional wind patterns are dominated by daytime onshore sea breezes. At night, the wind generally slows and reverses direction traveling toward the sea. Local canyons can also alter wind direction, with wind tending to flow parallel to the canyons. The vertical dispersion of air pollutants in the SCAB is hampered by the presence of persistent temperature inversions. High pressure systems, such as the semi-permanent high-pressure zone in which the SCAB is located, are characterized by an upper layer of dry air that warms as it descends, restricting the mobility of cooler marine-influenced air near the ground surface, and resulting in the formation of subsidence inversions. Such inversions restrict the vertical dispersion of air pollutants released into the marine layer and, together with strong sunlight, can produce worst-case conditions for the formation of photochemical smog. The basin-wide occurrence of inversions at 3,500 feet above mean sea level or less averages 191 days per year (SCAQMD 1993).

The annual average maximum temperature as measured at the Perris City climatic station, approximately 3 miles south of the project site, is 78.7°Farenheit (F). The highest monthly average maximum temperature (96.9°F) occurs in August, and the lowest monthly average minimum temperature (34.7°F) occurs in January. The average annual precipitation is approximately 10 inches (Western Regional Climate Center 2017).

3.2 EXISTING AIR QUALITY

3.2.1 Criteria Pollutants

3.2.1.1 Attainment Designations

Attainment designations are discussed in Section 2.1 and Table 2. The SCAB is a federal and state nonattainment area for 8-hour ozone and $PM_{2.5}$. The SCAB is also a state nonattainment area for 1-hour ozone and PM_{10}.

3.2.1.2 Monitored Air Quality

The SCAQMD maintains monitoring stations to measure ambient concentrations of pollutants in the SCAB. The nearest monitoring station to the project site is the Perris monitoring station, which is located approximately 10 miles south of the project site. The Perris station monitors ozone and PM_{10}. The Lake Elsinore monitoring station, located approximately 20 miles southeast of the project site in the City of Lake Elsinore monitors NO_2 and $PM_{2.5}$. Table 4, *Air Quality Monitoring Data*, presents a summary of the ambient pollutant concentrations monitored at the Perris and Lake Elsinore air quality monitoring stations during the last three years (2014 through 2016) for which the SCAQMD has reported data.

Table 4
AIR QUALITY MONITORING DATA

Pollutant Standards	2014	2015	2016
Ozone (O_3) [Perris]			
Maximum concentration 1-hour period (ppm)	0.117	0.124	0.131
Maximum concentration 8-hour period (ppm)	0.094	0.102	0.098
Days above 1-hour state standard (>0.09 ppm)	16	25	23
Days above 8-hour state/federal standard (>0.070 ppm)	59	49	55
Nitrogen Dioxide (NO_2) [Lake Elsinore]			
Maximum 1-hour concentration (ppm)	0.045	0.047	0.051
Days above state 1-hour standard (0.18 ppm)	0	0	0
Days above federal 1-hour standard (0.100 ppm)	0	0	0
Suspended Particulates (PM_{10}) [Perris]			
Maximum 24-hour concentration (μg/m^3)	87.0	188.0	76.0
Days above state standard (>50 μg/m^3)	6	4	*
Days above federal standard (>150 μg/m^3)	0	1	0
Suspended Particulates ($PM_{2.5}$) [Lake Elsinore]			
Maximum 24-hour concentration (μg/m^3)	33.7	42.2	31.5
Days above federal standard (>35 μg/m^3)	0	*	0

Source: CARB 2017b
ppm = parts per million
* insufficient data available to determine the value

The 1- and 8-hour ozone standards were exceeded several times in each of the sample years. The state PM_{10} standard was exceeded 6 times in 2014 and 4 times in 2015. The federal PM_{10} standard was exceeded once in 2015.

3.2.2 Greenhouse Gases

For 2012, total GHG emissions worldwide were estimated at 46,049 MMT CO_2e (World Resources Institute 2017). The U.S. contributed the second largest portion of GHG emissions (behind China) at 12 percent of global emissions, with 5,823 MMT CO_2e in 2012. On a national level in 2013, approximately 27 percent of GHG emissions are associated with transportation and about 31 percent are associated with electricity generation (USEPA 2015).

CARB performs statewide GHG inventories. The inventory is divided into six broad sectors; agriculture and forestry, commercial, electricity generation, industrial, residential, and transportation. Emissions are quantified in MMT CO_2e. Table 5, *California Greenhouse Gas Emissions by Sector*, shows the estimated statewide GHG emissions for the years 1990, 2000, 2010, and 2015 (CARB 2017d).

Table 5
CALIFORNIA GREENHOUSE GAS EMISSIONS BY SECTOR
(MMT CO_2e)

Sector	1990	2000	2010	2015
Agriculture and Forestry	23.6 (5%)	32.1 (7%)	34.5 (8%)	34.6 (8%)
Commercial	14.4 (3%)	15.0 (3%)	21.6 (5%)	22.2 (5%)
Electricity Generation	110.6 (26%)	105.2 (22%)	90.5 (20%)	84.1 (19%)
Industrial	103.0 (24%)	105.4 (22%)	102.7 (23%)	103.0 (23%)
Residential	29.7 (7%)	31.8 (7%)	32.2 (7%)	26.9 (6%)
Transportation	150.7 (35%)	178.1 (38%)	173.7 (38%)	169.4 (39%)
Unspecified Remaining	1.3 (<1%)	1.2 (<1%)	0.8 (<1%)	0.82(<1%)
TOTAL	**433.3**	**468.8**	**456.0**	**440.4**

Source: CARB 2007 and CARB 2017c

As shown in Table 5, statewide GHG emissions totaled 433 MMT CO_2e in 1990, 469 MMT CO_2e in 2000, 456 MMT CO_2e in 2010, and 440 MMT CO_2e in 2015. Transportation-related emissions consistently contribute the most GHG emissions, followed by electricity generation and industrial emissions.

The City prepared an emissions inventory as part of their CAS. The 2010 emissions inventory for the City is duplicated below in Table 6, *City of Moreno Valley Greenhouse Gas Emissions by Sector*. The sectors included in this inventory are somewhat different from those in the statewide inventory.

Table 6
CITY OF MORENO VALLEY GREENHOUSE GAS EMISSIONS
BY SECTOR (MT CO_2e [x 1,000])

Sector	2010
Transportation	514
Energy	277
Area Sources	69
Water and Wastewater	17
Solid Waste	44
TOTAL	**921**

Source: City 2012b

Similar to the statewide emissions, transportation-related GHG emissions were the greatest contributor, with approximately 56 percent of GHG emissions for the City in 2010. Energy-related GHG emissions ranked second, with approximately 30 percent in 2010.

4.0 METHODOLOGY AND SIGNIFICANCE CRITERIA

4.1 METHODOLOGY

Criteria pollutant and GHG emissions were calculated using the California Emissions Estimator Model (CalEEMod), Version 2016.3.2. CalEEMod is a computer model used to estimate criteria air pollutant and GHG emissions resulting from construction and operation of land development projects throughout the state of California. CalEEMod was developed by the SCAMQD with the input of several air quality management and pollution control districts. The input data and subsequent construction and operation emission estimates for the proposed project are discussed below. CalEEMod output files are included in Appendix A.

4.1.1 Construction Emissions

As described above, construction emissions are assessed using the CalEEMod. CalEEMod contains OFFROAD2011 emission factors and EMFAC2014 emission factors from CARB's models for off-road equipment and on-road vehicles, respectively. The construction analysis included modeling of the projected construction equipment that would be used during each construction activity and quantities of earth and debris to be moved. The model calculates emissions of CO, PM_{10}, $PM_{2.5}$, SO_2, and the ozone precursors ROG and NO_X.

Construction input data for CalEEMod include, but are not limited to, (1) the anticipated start and finish dates of construction activity; (2) inventories of construction equipment to be used; (3) areas to be excavated and graded; and (4) volumes of materials to be exported from and imported to the project area. The analysis assessed maximum daily emissions from individual construction activities, including site preparation, grading, underground utility installation, building construction, paving, and architectural coating. Construction would require heavy equipment during site preparation, grading, trenching for underground infrastructure, building construction, and paving. Construction equipment estimates are based on detailed assumptions provided by A & S Engineering and CalEEMod defaults. Table 7, *Construction Equipment Assumptions*, presents a summary of the assumed equipment that would be involved in each phase of construction.

Table 7
CONSTRUCTION EQUIPMENT ASSUMPTIONS

Construction Phase	Equipment	Number
Site Preparation	Graders	1
	Tractors/Loaders/Backhoes	1
Grading	Concrete/Industrial Saws	1
	Rubber Tired Dozers	1
	Tractors/Loaders/Backhoes	2
Underground Utilities Installation	Tractors/Loaders/Backhoes	1
Building Construction	Cranes	1
	Forklifts	2
	Tractors/Loaders/Backhoes	2
Paving	Pavers	1
	Cement and Mortar Mixers	4
	Rollers	1
	Tractors/Loaders/Backhoes	1
Architectural Coating	Air Compressors	1

Source: CalEEMod defaults and pers. communication with A & S Engineers.
Note: Output data, including equipment horsepower, is provided in Appendix A

The construction schedule was based on information provided by A & S Engineers. As shown in Table 8, *Anticipated Construction Schedule*, project development is assumed to start in January 2019 and projected to be complete June 2019. Grading and underground utilities installation will overlap for 20 days.

Table 8
ANTICIPATED CONSTRUCTION SCHEDULE

Construction Activity	Construction Period		
	Start	End	Number of Working Days
Site Preparation	1/1/2019	1/31/2019	23
Grading	2/1/2019	2/28/2019	20
Underground Utilities Installation	2/1/2019	2/28/2019	20
Building Construction	3/1/2019	6/14/2019	76
Paving	6/15/2019	6/21/2019	5
Architectural Coating	6/22/2019	6/28/2019	5

Source: Schedule provided by A & S Engineers.
Note: Output data is provided in Appendix A.

The quantity, duration, and the intensity of construction activity influence the amount of construction emissions and their related pollutant concentrations that occur at any one time. As such, the emission forecasts provided herein reflect a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction is occurring in a relatively intensive manner. Because of this conservative assumption, actual emissions could be less than those forecasted. If construction is delayed or occurs over a longer time period, emissions could be reduced because of (1) a more modern and cleaner-burning construction equipment fleet mix than incorporated in the CalEEMod, and/or (2) a less intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval). A complete listing of the assumptions used in the analysis and model output is provided in Appendix A of this report.

CalEEMod has the capability to calculate reductions in construction emissions from the effects of dust control, diesel-engine classifications, and other selected emissions reduction measures. Emissions calculations assume application of water during grading and a 15-miles per hour (mph) speed limit on unpaved surfaces in compliance with SCAQMD Rule 403, Fugitive Dust. Based on CalEEMod, Version 2016.3.2, the control efficiency for watering two times per day is 55 percent.

CalEEMod estimates construction emissions for each year of construction activity based on the annual construction equipment profile and other factors determined as needed to complete all phases of construction by the target completion year. As such, each year of construction activity has varying quantities of GHG emissions. Per SCAQMD Guidance, total construction GHG emissions resulting from the project are amortized over 30 years and added to operational GHG emissions.

4.1.2 Operation Emissions

Operational impacts were estimated using CalEEMod. Operational sources of emissions include area, energy, transportation, water use, and solid waste. Operational emissions from area sources include the use of consumer products, engine emissions from landscape maintenance equipment, and VOC emissions from repainting of buildings.

Operational emissions from mobile source emissions are associated with project-related vehicle trip generation and trip length. Based on the Transportation Impact Analysis (TIA; Kimley-Horn and Associates, Inc. 2016), the project would generate 2,445 daily trips, 72 morning peak hour trips, 98 evening peak hour trips, and 138 Sunday peak hour trips. CalEEMod default vehicle speeds, trip purpose, and distance were used. Model output data sheets are included in Appendix A.

4.1.3 Localized Significance Threshold Methodology

As part of the SCAQMD's environmental justice program, more attention has been focused on localized air quality effects. In addition to the CEQA significance thresholds for mass daily emissions and regional conditions, the SCAQMD has established thresholds for ambient air quality (Table 9, *SCAQMD Air Quality Significance Thresholds*) to address localized impacts. Also, while regional impact analysis is based on attaining or maintaining regional emissions standards, localized impact analysis compares the concentration of a pollutant at a receptor site to a health-based standard.

SCAQMD staff then developed localized significance threshold (LST) methodology and mass rate look-up tables by source receptor area (SRA) that can be used by public agencies to determine whether a project may generate significant adverse localized air quality impacts. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard; they are developed based on the ambient concentrations of that pollutant for each SRA (SCAQMD 2009). The LST methodology translates the concentration standards into emissions thresholds that are a function of project site area, source to receptor distance, and the location within the SCAB. The LST methodology is recommended to be limited to projects of five acres or less and to avoid the need for complex dispersion modeling. For projects that exceed five acres, the five-acre LST look-up values can be used as a screening tool to determine which pollutants require detailed analysis (Sun 2017). The proposed project is located on a 3.77-acre lot and will therefore utilize the applicable five-acre LST values. If a project exceeds the LST look up values, then the SCAQMD recommends that project-specific localized air quality modeling be performed.

4.2 SIGNIFICANCE CRITERIA

4.2.1 Air Quality

The following significance thresholds are based on Appendix G of the state CEQA Guidelines. A significant impact is identified if the project would result in any of the following:

(1) Conflict with or obstruct implementation of the applicable air quality plan;

(2) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

(3) Expose sensitive receptors to substantial pollutant concentrations;

(4) Result in a cumulatively-considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative standards for ozone precursors); or

(5) Create objectionable odors affecting a substantial number of people.

Appendix G of the State CEQA Guidelines states that the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. The SCAQMD has established significance thresholds to assess the regional and localized impacts of project-related air pollutant emissions. The significance thresholds are updated, as needed, to appropriately represent the most current technical information and attainment status in the SCAB. Table 9 presents the most current significance thresholds, including regional daily thresholds for short-term construction and long term operational emissions; maximum incremental cancer risk and hazard indices for TACs; and maximum ambient concentrations for exposure of sensitive receptors to localized pollutants. A project with daily emission rates, risk values, or concentrations below these thresholds is generally considered to have a less than significant effect on air quality.

Table 9
SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS

Mass Daily Thresholds (pounds per day)		
Pollutant	**Construction**	**Operation**
VOC	75	55
NO_X	100	55
CO	550	550
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_X	150	150
Lead	3	3

Table 9 (cont.)
SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS

Toxic Air Contaminants	
TACs	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)
Ambient Air Quality for Criteria Pollutants	
NO_2	1-hour average ≥ 0.18 ppm Annual average ≥ 0.03 ppm
CO	1-hour average ≥ 20.0 ppm (state) 8-hour average ≥ 9.0 ppm (state/federal)
PM_{10}	24-hour average ≥ 10.4 μg/m^3 (construction) 24-hour average ≥ 2.5 μg/m^3 (operation) Annual average ≥ 1.0 μg/m^3
$PM_{2.5}$	24-hour average ≥ 10.4 μg/m^3 (construction) 24-hour average ≥ 2.5 μg/m^3 (operation)
SO_2	1-hour average ≥ 0.075 ppm 24-hour average ≥ 0.04 ppm

Source: SCAQMD 2015

lbs/day: pounds per day; VOC: volatile organic compound; NOx: nitrogen oxides; CO: carbon monoxide; PM_{10}: respirable particulate matter with a diameter of 10 microns or less; $PM_{2.5}$: fine particulate matter with a diameter of 2.5 microns or less; SO_X: sulfur oxides; TACs: toxic air contaminants; GHG: greenhouse gas emissions; MT/yr: metric tons per year; CO_2e: carbon dioxide equivalent; NO_2: nitrogen dioxide; ppm: parts per million; μg/m^3: micrograms per cubic meter.

4.2.2 Greenhouse Gases

Given the relatively small levels of emissions generated by a typical development in relationship to the total amount of GHG emissions generated on a national or global basis, individual development projects are not expected to result in significant, direct impacts with respect to climate change. However, given the magnitude of the impact of GHG emissions on the global climate, GHG emissions from new development could result in significant, cumulative impacts with respect to climate change. Thus, the potential for a significant GHG impact is limited to cumulative impacts.

According to Appendix G of the CEQA Guidelines, a project would have a significant environmental impact if it would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

There are no established federal, state, or local quantitative thresholds applicable to the project to determine the quantity of GHG emissions that may have a significant effect on the environment. CARB, the SCAQMD, and various cities and agencies have proposed, or adopted on an interim basis, thresholds of significance that require the implementation of GHG emission reduction measures. For the proposed project, the most appropriate screening threshold for determining GHG emissions is the SCAQMD proposed Tier 3 screening threshold (SCAQMD 2010); therefore, a significant impact would occur if the proposed project would exceed the SCAQMD proposed Tier 3 screening threshold of 3,000 MT CO_2e per year.

5.0 AIR QUALITY IMPACT ANALYSIS

This section evaluates potential direct impacts of the proposed project related to the air pollutant emissions. Project-level air quality modeling was completed as part of this analysis. Complete modeling results are included as Appendix A of this report.

5.1 CONSISTENCY WITH AIR QUALITY PLANS

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties, and addresses regional issues relating to transportation, economy, community development, and environment. With regard to air quality planning, SCAG has prepared the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), a long-range transportation plan that uses growth forecasts to project trends out over a 20-year period to identify regional transportation strategies to address mobility needs. These growth forecasts form the basis for the land use and transportation control portions of the AQMP. These documents are utilized in the preparation of the air quality forecasts and consistency analysis included in the AQMP. Both the RTP/SCS and AQMP are based, in part, on projections originating with County and City General Plans.[1]

The proposed project is consistent with the City General Plan land use of *Office Commercial*. Because the project is consistent with the local general plan, pursuant to SCAQMD guidelines, the proposed project is considered consistent with the region's AQMP. As such, proposed project-related emissions are accounted for in the AQMP, which is crafted to bring the basin into attainment for all criteria pollutants. Accordingly, the proposed project would be consistent with the projections in the AQMP, thus resulting in a less than significant impact.

5.2 CONFORMANCE TO FEDERAL AND STATE AIR QUALITY STANDARDS

The project would generate criteria pollutants in the short term during construction and the long term during operation. To determine whether a project would result in emissions that would violate an air quality standard or contribute substantially to an existing or projected air quality violation, a project's emissions are evaluated based on the quantitative emission thresholds established by the SCAQMD (as shown in Table 9).

5.2.1 Construction

5.2.1.1 Project Emissions

The project's construction emissions were estimated using the CalEEMod model as described in Section 4.1.1. Project-specific input was based on general information provided in Section 1.0, assumptions provided by A & S Engineers, and default model settings to estimate reasonably conservative conditions. Additional details of phasing, selection of construction equipment, and other input parameters, including CalEEMod data, are included in Appendix A.

[1] SCAG serves as the federally designated metropolitan planning organization for the Southern California region.

The results of the calculations for project construction are shown in Table 10, *Maximum Daily Construction Emissions*. The data are presented as the maximum anticipated daily emissions for comparison with the SCAQMD thresholds.

Table 10
MAXIMUM DAILY CONSTRUCTION EMISSIONS

Phase	Pollutant Emissions (pounds/day)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Site Preparation	1	9	4	<0.5	1	<0.5
Grading	1	9	8	<0.5	1	1
Underground Utilities	<0.5	2	2	<0.5	<0.5	<0.5
Building Construction	1	10	8	<0.5	1	1
Paving	1	8	8	<0.5	1	1
Architectural Coating	12	2	2	<0.5	<0.5	<0.5
Maximum Daily Emissions[1]	**12**	**11**	**11**	**<0.5**	**1**	**<0.5**
SCAQMD Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)

[1] Maximum daily emissions of ROG emissions occur during architectural coating; all other maximum daily emissions occur when Grading and Underground Utilities phases overlap.

Note: Totals may not sum due to rounding.

As shown in Table 10, emissions of all criteria pollutants related to project construction would be below the SCAQMD significance thresholds. Therefore, direct impacts from criteria pollutants generated during construction would be less than significant and no mitigation would be required.

5.2.2 Operation

5.2.2.1 Project Emissions

The project's operational emissions were estimated using the CalEEMod model as described in Section 4.1.2. The CalEEMod model input was based on the current vehicle trip generation provided in the project's TIA (Kimley-Horn and Associates, Inc. 2016) and the building area. Operational emission calculations and model outputs are provided in Appendix A. Table 11, *Maximum Daily Operational Emissions*, presents the summary of operational emissions for the project.

Table 11
MAXIMUM DAILY OPERATIONAL EMISSIONS

Category	Pollutant Emissions (pounds per day)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Area	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Energy	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Mobile	3	24	22	<0.5	<0.5	1
Total Daily Emissions	**4**	**24**	**22**	**<0.5**	**<0.5**	**1**
SCAQMD Thresholds	*55*	*55*	*550*	*150*	*150*	*55*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)
Note: Totals may not sum due to rounding

As shown in Table 11, project emissions during operation would not exceed the daily thresholds set by the SCAQMD. Therefore, impacts from criteria pollutants generated during project operation would be less than significant and no mitigation would be required.

5.3 CUMULATIVELY CONSIDERABLE NET INCREASE OF NONATTAINMENT CRITERIA POLLUTANTS

In accordance with CEQA Guidelines Section 15064(h)(3), the SCAQMD's approach for assessing cumulative impacts is based on the AQMP forecasts of attainment of ambient air quality standards in accordance with the requirements of the federal and State Clean Air Acts. If a project is not consistent with the AQMP, which is intended to bring the SCAB into attainment for all criteria pollutants, that project can be considered cumulatively considerable. Additionally, if the mass regional emissions calculated for a project exceed the applicable SCAQMD daily significance thresholds that are designed to assist the region in attaining the applicable state and national ambient air quality standards, that project can be considered cumulatively considerable. As detailed in Section 5.2, Tables 10 and 11, construction and operational emissions would not exceed the SCAQMD regional significance thresholds for all criteria pollutants and would therefore not be cumulatively considerable.

For two or more projects within close proximity, that is, 1,640 feet (500 meters) or less from the same sensitive receptor, a local cumulative analysis must be performed. The onsite emissions from the related project must be added to the background concentration, which is then summed with the proposed project emissions for comparison to the SCAQMD LSTs or State and federal AAQS. If the related projects combine with the proposed project to result in an exceedance of the ambient standards, the project is considered cumulatively significant. There are no known projects within close proximity, defined as 1,640 feet (500 meters) or less, to the proposed project. Therefore, a local cumulative analysis is not required.

5.4 IMPACTS TO SENSITIVE RECEPTORS

5.4.1 Construction Activities

5.4.1.1 Criteria Pollutants

The localized effects from the on-site portion of daily construction emissions were evaluated at sensitive receptor locations potentially impacted by the project according to the SCAQMD's LST method, described above. Consistent with the LST guidelines, when quantifying mass emissions for localized analysis, only emissions that occur on site are considered. Emissions related to off-site delivery/haul truck activity and construction worker trips are not considered in the evaluation of construction-related localized impacts, as these do not contribute to emissions generated on a project site. The closest sensitive receptors are the single-family residences approximately 70 feet (21 meters) west of the project site. Therefore, the LSTs for receptors located at 82 feet (25 meters) are used. As shown in Table 12 below, localized emissions for all criteria pollutants would remain below their respective SCAQMD LSTs. There would be a less than significant impact and no mitigation is required.

Table 12
MAXIMUM LOCALIZED DAILY CONSTRUCTION EMISSIONS

Phase	Pollutant Emissions (pounds/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Site Preparation	9	4	<0.5	<0.5
Grading	9	8	1	1
Underground Utilities	2	2	<0.5	<0.5
Building Construction	10	8	1	1
Paving	8	7	<0.5	<0.5
Architectural Coating	2	2	<0.5	<0.5
Maximum Daily Emissions[1]	**11**	**10**	**1**	**1**
SCAQMD Thresholds	*270*	*1,557*	*13*	*8*
Significant Impact?	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)
[1] Maximum daily emissions occur when Grading and Underground Utilities phases overlap.
Note: Totals may not sum due to rounding.

5.4.1.2 Toxic Air Contaminants

The greatest potential for TAC emissions during construction would be related to DPM associated with heavy equipment operations during earth-moving activities. The SCAQMD does not consider diesel-related cancer risks from construction equipment to be an issue due to the short-term nature of construction activities. Construction activities associated with the proposed project would be sporadic, transitory, and short term in nature (i.e., less than one year). The assessment of cancer risk is typically based on a 30-year exposure duration. Because exposure to diesel exhaust would be well below 30 years, construction of the proposed project is not anticipated to result in an elevated cancer risk to exposed persons due to the short-term nature of construction. As such, project-related TAC emission impacts during construction would not be significant and no mitigation is required.

5.4.2 Operational Activities

5.4.2.1 CO Hotspots

CO concentration is a direct function of motor vehicle activity (e.g., idling time and traffic flow conditions) particularly during peak commute hours and meteorological conditions. Under specific meteorological conditions (e.g., stable conditions that result in poor dispersion), CO concentrations may reach unhealthy levels with respect to local sensitive land uses such as residential areas, schools, and hospitals. As a result, the SCAQMD recommends analysis of CO emissions at the local and regional levels.

A CO hotspot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. If a project increases average delay at signalized intersections operating at Level of Service (LOS) E or F or causes an intersection that would operate at LOS D or better without the project to operate at LOS E or F with the project, a quantitative screening is required.

According to the project traffic analysis (Kimley-Horn and Associates, Inc. 2016), four of the intersections evaluated would meet these criteria, indicating that there would be a potential CO hotspot and a quantitative screening is required. The four intersections and their projected LOS include; Perris Boulevard at Atwood Avenue which would operate at LOS E (AM) and F (PM/Sun); the unsignalized intersection of Cottonwood Avenue at Crape Myrtle Drive which would operate at LOS F in the AM and E on Sunday; Perris Boulevard at Alessandro Boulevard which would operate at LOS E in PM peak hours; and the Perris Boulevard Driveway which would operate at LOS F during all AM, PM and Sunday peak hours.

In the 2003 SCAQMD AQMP, the SCAQMD modeled the four highest volume intersections in the SCAB to determine the highest potential for a CO hotspot in the SCAB. The results of the SCAQMD's analysis are provided in Table 13 and illustrate that no intersections would exceed the federal or State 1-hour standards or the federal 8-hour standard and one intersection would likely exceed the State 8-hour CO standard (Long Beach-Imperial) in 2003[2]. By 2004, all intersections were estimated to fall below all CO standards and be further reduced in 2005. This decrease over time is largely due to improved technologies and the use of progressively cleaner vehicles.

Table 13
CARBON MONOXIDE MODELING RESULTS FROM THE 2003 AIR QUALITY MANAGEMENT PLAN (PPM)

Intersection	Morning 1-Hour	Afternoon 1-Hour	Peak 1-Hour	2003 8-hour	2004 8-hour	2005 8-hour
Wilshire Ave at Veteran Ave	4.6	3.5	-	4.2	4.0	3.7
Sunset Ave at Highland Ave	4.0	4.5	-	3.9	3.7	3.5
La Cienega Blvd at Century Blvd	3.7	3.1	-	5.8	5.5	5.2
Long Beach Blvd at Imperial Hwy	3.0	3.1	1.2	9.3	8.8	8.4

Ppm: parts per million
Note: The federal 1-hour standard is 35 ppm, the State 1-hour standard is 20 ppm, the federal 8-hour standard is 9 ppm, and State 8-hour standard is 9.0 ppm.
Sources: SCAQMD 2003

Due to the high level of urbanization in the Los Angeles area where the highest volume intersections are located and due to the continuing reduction in vehicle CO emissions, background CO concentrations are expected to be lower in the City than any of the intersections in Table 13. When qualitatively comparing the CO modeling locations in the 2003 AQMP to those in the project area, several factors can be used to demonstrate that the project area can be expected to have lower CO concentrations than in the attainment plan. The factors considered are traffic demand, emission variables, site variables, and meteorological variables.

Table 14, *Traffic Volume Comparison*, provides a summary of the traffic volumes contained in the SCAQMD's modeling and the traffic volumes for the proposed Project for comparison.

[2] It should be noted that the federal 8-hour CO standard is 9 ppm and not 9.0 ppm. As such, all values less than 9.5 do not exceed the standard. Therefore, the 2003 concentration for Long Beach Blvd/Imperial Hwy of 9.3 is said to not exceed the federal 8-hour CO standard.

Table 14
TRAFFIC VOLUME COMPARISON

Intersection		Eastbound (AM/PM)	Westbound (AM/PM)	Southbound (AM/PM)	Northbound (AM/PM)	TOTAL (AM/PM)
2003 AQMP	Wilshire Ave at Veteran Ave	4,951/2,069	1,830/3,317	721/1,400	560/933	**8,062/8,388**
	Sunset Ave at Highland Ave	1,417/1,764	1,342/1,540	2,304/1,832	1,551/2,238	**6,614/7,374**
	La Cienega Blvd at Century Blvd	2,540/2,243	1,890/2,728	1,384/2,029	821/1,674	**6,635/8,888**
	Long Beach Blvd at Imperial Hwy	1,217/2,020	1,760/1,400	479/944	756/1,150	**4,212/5,514**
Proposed Project	Perris Blvd at Atwood Ave	56/58	21/15	1311/1765	1531/1465	**2,919/3,303**
	Cottonwood Ave at Crape Myrtle Dr	373/424	532/343	1341/1706	1328/1376	**3,574/3,849**
	Perris Blvd at Alessandro Blvd	764/1842	1341/1136	1162/1427	1395/1255	**4,662/5,660**
	Perris Blvd Driveway	11/86	61/69	1334/1666	1480/1468	**2,886/3,289**

Source: SCAQMD 2003; Kimley-Horn and Associates, Inc. 2016.

As shown in Table 14, traffic volumes at the project-affected intersections are less than the maximum traffic volumes in the AQMP modeled intersections, therefore CO concentrations would be less than those modeled for the AQMP intersections. There would be no exposure of sensitive receptors to a project-generated CO hotspot and impacts would be less than significant.

5.4.2.2 Toxic Air Contaminants

The new fuel facility would require authority to construct (ATC) and permit to operate (PTO) approval from the SCAQMD, which will review the facility design and location for compliance with SCAQMD standards for criteria pollutants and air quality. All tanks and dispensers would be equipped with the latest Phase I and Phase II Enhanced Vapor Recovery (EVR) air pollution control equipment technology per CARB regulations and associated Executive Orders. The Phase I EVR equipment controls the vapors in the return path from the tanks back to the tanker truck during offloading filling operations. Phase I EVR systems are 98 percent effective in controlling fugitive emissions from escaping into the environment. The Phase II EVR equipment, which also includes “in-station diagnostics,” controls and monitors the vapors in the return path from the vehicles back to the tanks. Phase II EVR systems are 95 percent effective in controlling fugitive emissions from escaping into the environment. Therefore, operations expected to occur at the proposed project would not emit a significant quantity of toxic chemicals.

Other long-term operational emissions include toxic substances such as cleaning agents in use on site, compliance with State and federal handling regulations would ensure that emissions remain below a level of significance. The use of such substances such as cleaning agents is regulated by the 1990 Federal Clean Air Act Amendments as well as State-adopted regulations for the chemical composition of consumer products. As such, project-related TAC emission impacts during operation would be less than significant and no mitigation is required.

5.5 ODORS

The Air Quality Section of the City General Plan's Environmental Impact Report (EIR; City 2006) provides guidance for defining objectionable odors. For construction activities, odors would be short-term in nature and are subject to SCAQMD Rule 402 *Nuisance* (CARB 2018) and may be reported to the AQMD (City 2012c). In addition, construction odors are limited to the number of people living and working near the source. The nearest residences are located adjacent to the east of the project. While some components of asphalt and diesel emissions are considered toxic air contaminants, construction activities would be temporary and transitory and associated odors would not be unfamiliar and would cease upon construction completion. Therefore, odor impacts from construction of the project would be less than significant due to the duration of exposure.

Common sources of operational odor complaints include sewage treatment plants, landfills, recycling facilities, and agricultural uses. The proposed project, a donut restaurant and convenience store with a fueling station and car wash, would not include any of these uses. The fueling station would emit odors during operation in the form of diesel exhaust from vehicles and operation of the fueling pumps. The increase in odor emission, however, would be minimal, as vehicle exhaust is already prevalent in the area due to its proximity to busy roadways such as Perris Boulevard and Cottonwood Avenue.

Solid waste generated by the proposed on-site uses would be collected by a contracted waste hauler, ensuring that any odors resulting from on-site waste would be managed and collected in a manner to prevent the proliferation of odors. Operational odor impacts would be less than significant.

6.0 GREENHOUSE GAS IMPACT ANALYSIS

This section evaluates potential impacts of the proposed project related to the generation of GHG emissions. Complete modeling results are included as Appendix A of this report.

6.1 GREENHOUSE GAS EMISSIONS

6.1.1 Construction

Project construction GHG emissions were estimated using the CalEEMod model as described in Section 4.1. Project-specific input was based on general information provided in Section 1.0, information provided by A & S Engineers, and default model settings to estimate reasonably conservative conditions. Additional details of phasing, selection of construction equipment, and other input parameters, including CalEEMod data, are included in Appendix A.

Emissions of GHGs related to the construction of the project would be temporary. As shown in Table 15, *Estimated Construction GHG Emissions*, total GHG emissions associated with construction of the project are estimated at 76 MT CO_2e. For construction emissions, SCAQMD recommends that the emissions be amortized (i.e., averaged) over 30 years and added to operational emissions. Averaged over 30 years, the proposed construction activities would contribute approximately 3 MT CO_2e emissions per year.

Table 15
ESTIMATED CONSTRUCTION GHG EMISSIONS

Phase	Emissions ($MT\ CO_2e$)
Site Preparation	11
Grading	13
Underground Utilities	3
Building Construction	46
Paving	3
Architectural Coating	1
TOTAL[1]	**76**
Amortized Construction Emissions[2]	3

Source: CalEEMod (output data is provided in Appendix A)
[1] The total presented is the sum of the unrounded values.
[2] Construction emissions are amortized over 30 years in accordance with SCAQMD guidance.

6.1.2 Operational Emissions

Operational sources of GHG emissions include: (1) area sources (landscaping equipment); (2) energy use; (3) vehicle use; (4) solid waste generation; and (5) water conveyance and treatment.

6.1.2.1 Area Source Emissions

Project area sources include emissions from use of consumer products, landscaping equipment, and VOC emissions from repainting buildings. GHG emissions associated with area sources were estimated using the CalEEMod default values for the project. The annual GHG emissions from area sources are estimated to be less than 0.5 MT CO_2e per year.

6.1.2.2 Energy Emissions

The project would use electricity for lighting, heating, and cooling. Electricity generation typically entails the combustion of fossil fuels, including natural gas and coal, which are then stored and transported to end users. A building's electricity use is thus associated with the off-site or indirect emission of GHGs at the source of electricity generation (power plant). Project electricity will be supplied by Southern California Edison. No natural gas would be used in the project.

With the implementation of energy-reducing project design features to comply with 2016 Title 24 standards, the annual GHG emissions from electricity consumption are estimated to be 51 MT CO_2e.

6.1.2.3 Vehicular (Mobile) Sources

Operational emissions from mobile source emissions are associated with project-related vehicle trip generation and trip length. Based on information from Traffic Impact Study prepared for the project (Kimley-Horn and Associates, Inc. 2016), after applying additional pass-by reductions, the project would generate 2,445 ADTs, 72 morning peak hour trips, 98 evening peak hours trips, and 138 Sunday trips. CalEEMod default vehicle speeds were used. The project would result in vehicle-related emissions of 1,092 MT CO_2e.

6.1.2.4 Solid Waste Sources

Solid waste generated by the project would also contribute to GHG emissions. Treatment and disposal of solid waste produces emissions of methane. For the project calculations, a countywide average waste disposal rate was used and was obtained from the California Department of Resources Recycling and Recovery (CalRecycle). This analysis assumes that the countywide average already accounts for the 50 percent diversion requirement from AB 75. In 2012, the State legislature enacted AB 341, increasing the diversion target to 75 percent statewide by 2020. Therefore, a 25 percent diversion rate over the countywide average was applied to the project in this analysis. Using CalEEMod defaults and a 25 percent operational solid waste diversion rate in accordance AB 341 standards, GHG emissions from project-related solid waste would be 13 MT CO_2e per year.

6.1.2.5 Water Sources

Water-related GHG emissions are from the conveyance and treatment of water. The California Energy Commission's 2006 Refining Estimates of Water-Related Energy Use in California defines average energy values for water in southern California. These values are used in CalEEMod to establish default water-related emission factors. Using these defaults and a 20 percent reduction in potable water use and wastewater generation in accordance with CALGreen, the project's estimated GHG emissions related to water treatment and conveyance would be 5 MT CO_2e per year.

6.1.3 Other GHG Emission Sources

Ozone is also a GHG; however, unlike other GHGs, ozone in the troposphere is relatively short lived and therefore is not global in nature. According to CARB, it is difficult to make an accurate determination of the contribution of ozone precursors (NO_X and VOCs) to global warming (CARB 2006). Therefore, it is assumed that emission of ozone precursors associated with the project would not significantly contribute to climate change.

At present, there is a federal ban on chlorofluorocarbons (CFCs); therefore, it is assumed that the project would not generate emissions of this GHG. Implementation of the project may emit a small amount of HFC emissions from leakage, service of, and from disposal at the end of the life of refrigeration and air conditioning equipment. However, these emissions are not quantifiable and are assumed to be negligible. PFCs and sulfur hexafluoride are typically used in heavy-duty industrial manufacturing applications. The proposed project is a donut restaurant and convenience store with a fueling station and carwash and would not include heavy-duty industrial manufacturing applications. Therefore, it is not anticipated that the project would contribute significant emissions of these GHGs.

6.1.4 Summary

Table 16, *Total Estimated Operational GHG Emissions*, includes the total annual emissions for the project. The emissions include the amortized annual construction emissions anticipated for the project. Appendix A contains the CalEEMod output files for the project. As shown in Table 16, the project would result in annual GHG emissions of 1,165 MT CO_2e. This value is less than the SCAQMD's 3,000 MT CO_2e per year interim threshold. Therefore, GHG emissions during project operation, including amortized construction emissions, are less than significant.

Table 16
TOTAL ESTIMATED OPERATIONAL GHG EMISSIONS

Emission Sources	Emissions (MT CO_2e)
	2019
Area Sources	<0.5
Energy Sources	51
Vehicular (Mobile) Sources	1,092
Solid Waste Sources	13
Water Sources	5
Operational Subtotal	*1,162*
Construction (Annualized over 30 years)	3
TOTAL OPERATIONAL EMISSIONS	**1,165**

Source: CalEEMod output data is provided in Appendix A
Note: Totals may not add up exactly due to rounding.

6.2 CONSISTENCY WITH LOCAL PLANS ADOPTED FOR THE PURPOSE OF REDUCING GHG EMISSIONS

There are numerous State plans, policies, and regulations adopted for the purpose of reducing GHG emissions. The principal overall State plan and policy is AB 32, the California Global Warming Solutions Act of 2006. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020. SB 32 would require further reductions of 40 percent below 1990 levels by 2030. Because of the project's operational year in 2018, the project aims to reach the quantitative goals set by AB 32. Statewide plans and regulations such as GHG emissions standards for vehicles (AB 1493), the LCFS, and regulations requiring an increasing fraction of electricity to be generated from renewable sources are being implemented at the statewide level; as such, compliance at the project level is not addressed. Therefore, the proposed project does not conflict with those plans and regulations.

As previously discussed, the City CAS does not have GHG emission thresholds and therefore utilizes the significance thresholds set forth by the SCAQMD. The SCAQMD applies a screening threshold for Tier 3 of 3,000 MT of CO_2e per year. The proposed project's increase in GHG emissions would be less than the SCAQMD's screening threshold; therefore, the project would be consistent with the City CAS. Implementation of the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. This would represent a less than significant impact.

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Appendix C

Cultural Resources Survey Report

HELIX
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Yum Yum Donuts Project

CULTURAL RESOURCES SURVEY REPORT

October 2017 | ASE-01

Stacie Wilson
Senior Archaeologist

Prepared for:

A & S Engineering
28405 Sand Canyon Road, Suite "B"
Canyon Country, CA 91387

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

Yum Yum Donuts Project

CULTURAL RESOURCES SURVEY REPORT FOR THE PROPOSED YUM YUM DONUTS PROJECT, CITY OF MORENO VALLEY, RIVERSIDE COUNTY, CALIFORNIA

Prepared for:

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October 2017 | ASE-01

National Archaeological Database Information

Authors:	Stacie Wilson
Firm:	HELIX Environmental Planning, Inc.
Client/Project:	A & S Engineering / Yum Yum Donuts Project
Report Date:	October 2017
Report Title:	Cultural Resources Survey Report for the Proposed Yum Yum Donuts Project, City of Moreno Valley, Riverside County, California
Type of Study:	Cultural Resources Survey
New Sites:	None
Updated Sites:	None
USGS Quad:	Sunnymead 7.5' Quadrangle
Acreage:	3.77 acres
Key Words:	Riverside County; Moreno Valley; Sunnymead; Perris Boulevard; no resources

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EXECUTIVE SUMMARY

HELIX Environmental Planning, Inc. (HELIX) was contracted by A & S Engineering to conduct a cultural resources study for the Yum Yum Donuts Project (project) in the City of Moreno Valley, California. A cultural resources study including a records search, Sacred Lands File search, Native American outreach, a review of historic aerial photographs and maps, and a field survey was completed. This report details the methods and results of the cultural resources study and has been prepared to comply with the California Environmental Quality Act (CEQA).

The records search conducted at the Eastern Information Center (EIC) indicated that 11 previous cultural resources studies have been conducted within one mile of the project area, none of which occurred within the project site. The records search results also indicated that a total of 6 cultural resources have been previously recorded within one mile of the project area; however, no sites have been recorded within the project site.

The field investigations included intensive pedestrian survey of the study area by a HELIX archaeologist and a Native American monitor on September 27, 2017. The survey did not result in the identification of any cultural material within the study area. As such, no impacts to cultural resources are anticipated. However, the project site was covered by fill material, and the original ground surface could not be observed. Additionally, the project site is located within alluvial soils, where there is a potential for buried cultural resources. Based on this, it is recommended that an archaeological and Native American monitoring program be implemented if grading or other ground disturbing activities (i.e., trenching for utilities) are to occur below the current layer of fill. The monitoring program would include attendance by the archaeologist and Native American monitor at a preconstruction meeting with the grading contractor and the presence of archaeological and Native American monitors during initial ground disturbing activities on site. Both archaeological and Native American monitors would have the authority to temporarily halt or redirect grading and other ground-disturbing activity in the event that cultural resources are encountered. If significant cultural material is encountered, the monitors will coordinate with the applicant and City staff to develop and implement appropriate mitigation measures.

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1.0 INTRODUCTION

1.1 PROJECT LOCATION AND DESCRIPTION

The Yum Yum Donuts Project (project) is located in the City of Moreno Valley (City) in northwestern Riverside County (Figure 1, *Regional Location*). The project is located northeast of March Air Force Base and northwest of Perris Reservoir within Section 8 of Township 3 South, Range 3 West, on the U.S. Geological Survey (USGS) 7.5' Sunnymead quadrangle (Figure 2, *Project Vicinity [USGS Topography]*). The 5.77-acre project area is located within Assessor Parcel Number (APN) 479-140-023 and 479-140-024, and is bordered by Perris Boulevard to the west and Cottonwood Avenue to the south (Figure 3, *Project Vicinity [Aerial Photograph]*). The project proposes to develop the property for commercial uses. A car wash, a convenience store, two office buildings, and a steel canopy are proposed within the study area. In addition, two underground storage tanks would be installed in the southeast corner of the project site.

1.2 REGULATORY FRAMEWORK

Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance. The California Environmental Quality Act (CEQA), Public Resources Code 21084.1 and CEQA Guidelines, California Code of Regulations Title 14 Section 15064.5 discuss significant cultural resources as "historical resources," and defines them as:

- resource(s) listed or determined eligible by the State Historical Resources Commission for listing in the California Register of Historical Resources (CRHR) (14 CCR Section 15064.5[a][1])
- resource(s) either listed in the NRHP [National Register of Historic Places] or in a "local register of historical resources" or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, unless "the preponderance of evidence demonstrates that it is not historically or culturally significant" (14 CCR Section 15064.5[a][2])
- resources determined by the Lead Agency to meet the criteria for listing on the CRHR (14 CCR Section 15064.5[a][3])

For listing in the CRHR, a historical resource must be significant at the local, state, or national level under one or more of the following four criteria:

A. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;

B. It is associated with the lives of persons important to local, California, or national history;

C. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values;

D. It has yielded or has the potential to yield information important to the prehistory or history of the local area, California, or the nation.

Under 14 CCR Section 15064.5(a)(4), a resource may also be considered a "historical resource" for the purposes of CEQA at the discretion of the lead agency.

All resources that are eligible for listing in the CRHR must have integrity, which is the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Resources, therefore, must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. In an archaeological deposit, integrity is assessed with reference to the preservation of material constituents and their culturally and historically meaningful spatial relationships. A resource must also be judged with reference to the particular criteria under which it is proposed for nomination.

California State Assembly Bill 52 (AB 52) revised PRC Section 21074 to include Tribal Cultural Resources (TCRs) as an area of CEQA environmental impact analysis. Further, per new PRC Section 21080.3, a CEQA lead agency must consult with any California Native American tribe that requests consultation and that is traditionally and culturally affiliated with the geographic area of a proposed project to identify resources of cultural or spiritual value to the tribe, even if such resources are already eligible as historical resources as a result of cultural resources studies.

1.2.1 City of Moreno Valley General Plan

The City's General Plan (2006) includes the following objective and related policies regarding cultural and historical resources as part of the Conservation Element (City of Moreno Valley 2006: 9-37):

Objective 7.6: Identify and preserve Moreno Valley's unique historical and archaeological resources for future generations.

Policies

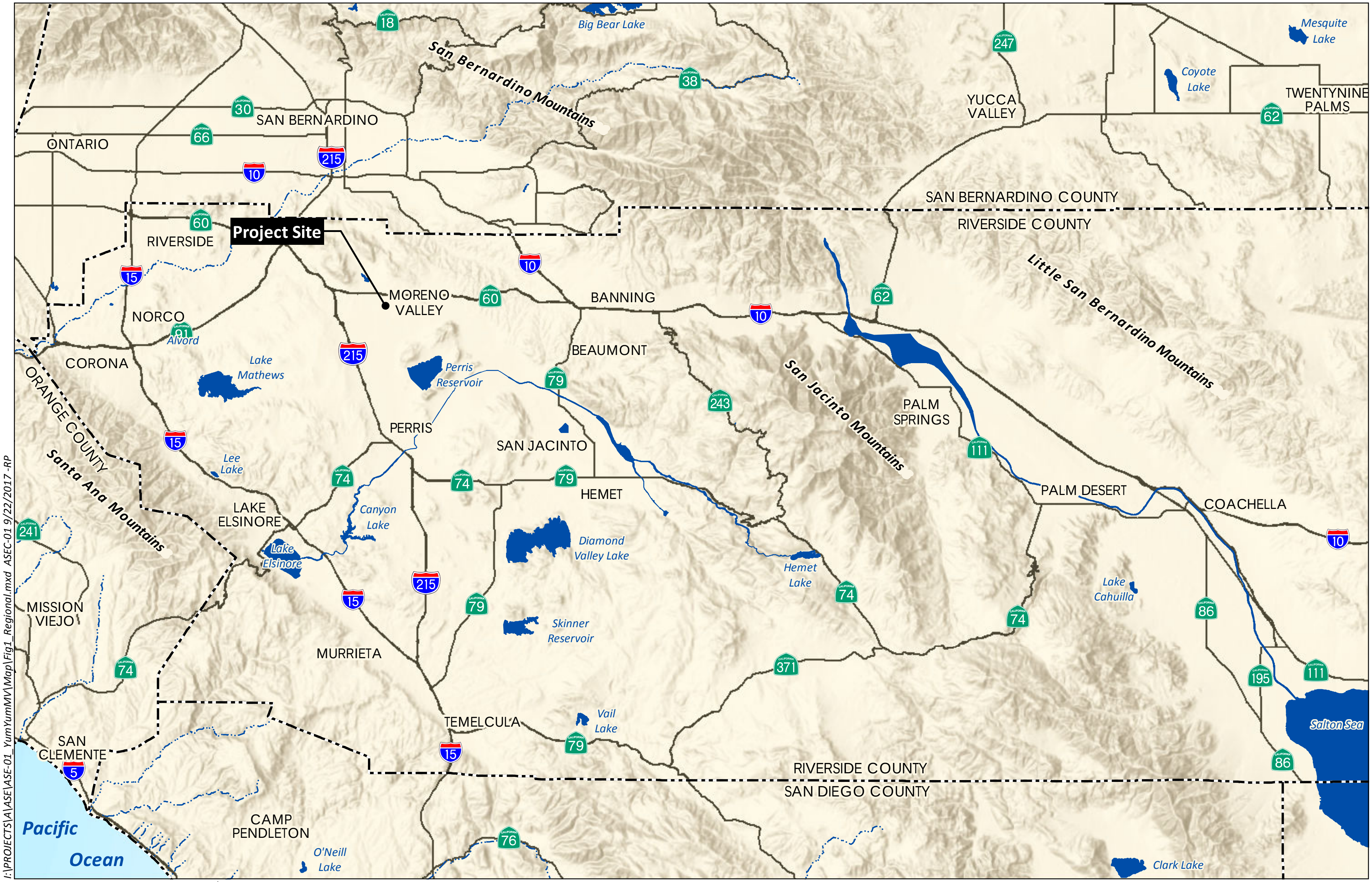
7.6.1: Historical, cultural and archaeological resources shall be located and preserved, or mitigated consistent with their intrinsic value.

7.6.2: Implement appropriate mitigation measures to conserve cultural resources that are uncovered during excavation and construction activities.

7.6.3: Minimize damage to the integrity of historic structures when they are altered.

7.6.4: Encourage restoration and adaptive reuse of historical buildings worthy of preservation.

7.6.5: Encourage documentation of historic buildings when such buildings must be demolished.



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Source: Base Map Layers (ESRI, 2013)

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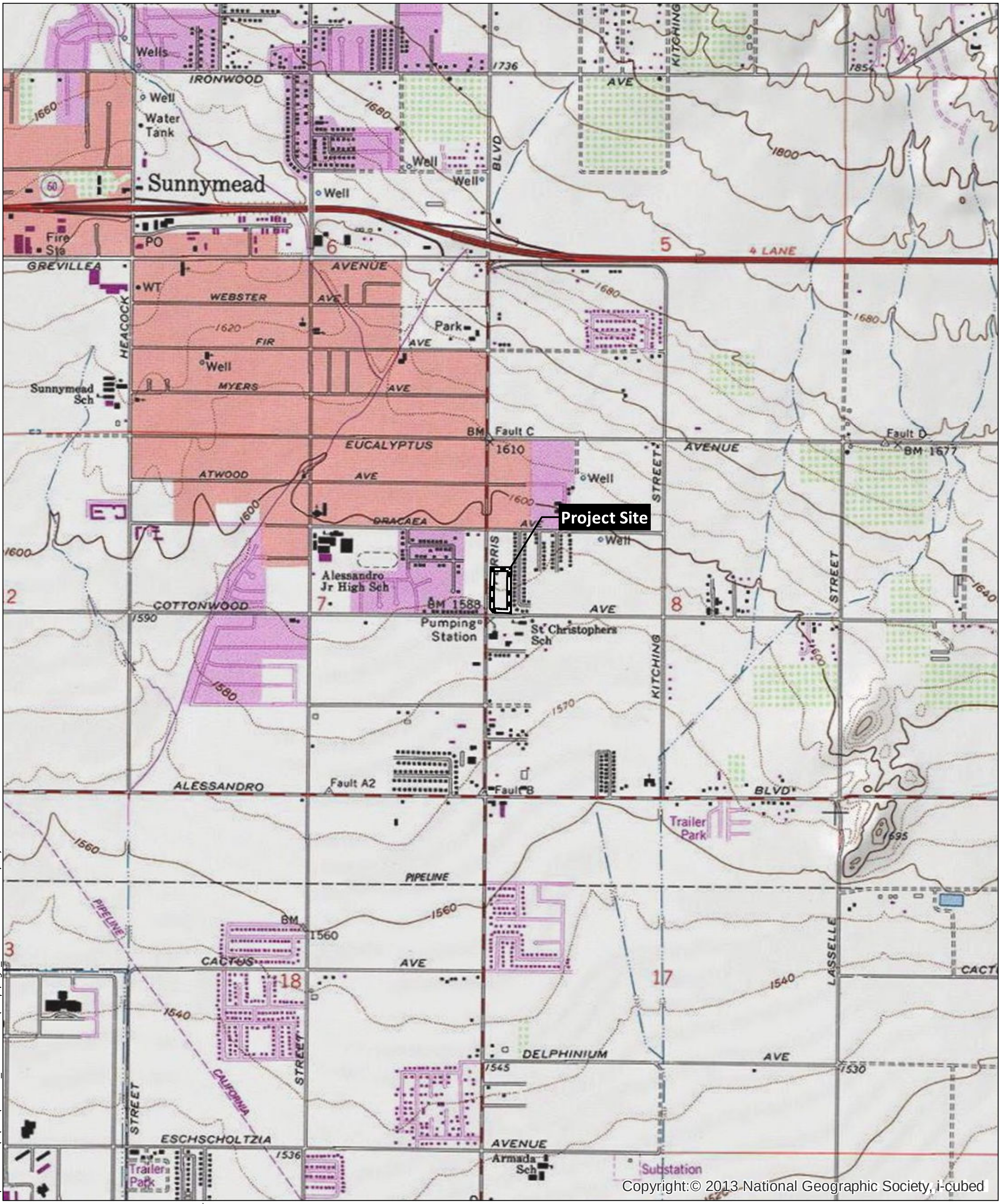
Regional Location

Figure 1



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HELIX
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Project Vicinity (USGS Topography)

Figure 2

Yum Yum Donuts

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Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

Project Vicinity (Aerial Photograph)

Figure 3

1.3 PROJECT PERSONNEL

Stacie Wilson, M.S., RPA, conducted the field survey and is the primary author of this technical report. Christina Mills of the Soboba Band of Luiseño Indians was present for the pedestrian survey. Senior technical review was provided by Mary Robbins-Wade, M.A., RPA. Resumes for key project personnel are presented in Appendix A.

2.0 PROJECT SETTING

2.1 NATURAL SETTING

The project area is in the Moreno Valley in the foothills of northwestern Riverside County. The Badlands and the San Bernardino and San Jacinto mountains lie to the east, the Santa Ana Mountains lie to the west, and the Box Spring Mountains are to the north. The climate of western Riverside County is characterized as semi-arid environment with low humidity and rainfall. Almost all rainfall occurs in the winter, but the region can also experience rare, intense summer thunderstorms. Wind is also a strong feature of this climatic regime, with dry winds in excess of 25 miles per hour in the late winter and early spring (National Oceanic and Atmospheric Administration [NOAA] 2014). Average monthly temperatures range from a December low of 53.6 degrees Fahrenheit (^{o}F) to an August high of 79.0°F, and the average yearly rainfall is 9.97 inches (Weather Currents 2017). The property parcel is flat with an elevation of 1,590 feet above mean sea level (amsl). Various drainages in the vicinity would have made fresh water easily accessible to native populations living in the area.

Geologically, the project area is underlain by young alluvium in the southeastern portion of the study area and very old alluvium in the remainder of the project site (Morton and Matti 2001). The very old alluvium forms widespread deposits north and south of Moreno Valley, while the young alluvium is extensively developed in eastern Moreno Valley. The nearby hills south and west of the Valley are Mesozoic granitic formations, and the Badlands to the east are of undivided Pliocene nonmarine formations (Morton et al. 1999). Three soil series are mapped for the project site: Hanford coarse sandy loam (2 to 8 percent slopes), Pachappa fine sandy loam (2 to 8 percent slopes, eroded), and Ramona sandy loam (2 to 5 percent slopes, eroded). The Ramona sandy loam is found on the northern portion of the project site, Pachappa fine sandy loam is within the central portion, and Hanford coarse sandy loam is found in the southwestern area (Web Soil Survey n.d.). All three of the soil series are granite-derived alluviums found in alluvial fans and terraces that generally support wild oats, ripgut brome, soft chess, filaree, foxtail, mustard, and coast live oak (Bowman 1973). Native grassland species and coast live oak would have been used by native populations for food, medicine, tools, and ceremonial and other uses (Bean and Shipek 1978; Christenson 1990; Hedges and Beresford 1986). Many of the animal species living within these communities (such as rabbits, deer, small mammals, and birds) would have been used by native inhabitants as well.

2.2 CULTURAL SETTING

2.2.1 Prehistoric Period

Proposed dates for the earliest human occupation in California vary from around 20,000 years ago (Bada and Schroeder 1974; Carter 1957, 1978, 1980) to 10,000 years ago. Carter (1957, 1978, 1980), Minshall (1976) and others (e.g., Childers 1974; Davis 1968, 1973) have long argued for the presence of Pleistocene humans in California. However, these sites identified as "early man" are all controversial. The material from the sites is generally considered nonartifactual, and the investigative methodology is often questioned (Moratto 1984).

In southern California, three major time periods are commonly recognized for the prehistoric period: Early Prehistoric, Archaic, and Late Prehistoric. The best example of Early Prehistoric Period archaeological evidence in Southern California is in the San Dieguito complex of San Diego County, dating to over 9,000 years ago (Warren 1967; Warren et al. 2004). The San Dieguito Tradition is thought by most researchers to have an emphasis on big game hunting and coastal resources (Warren 1967). The material culture of the San Dieguito complex consists primarily of scrapers, scraper planes, choppers, large blades, and large projectile points. In some areas of California, the Early Prehistoric Period is often referred to as the Paleo-Indian period and is associated with the last Ice Age occurring during the Terminal Pleistocene (pre-10,000 years ago) and the Early Holocene, beginning circa 10,000 years ago (Erlandson 1994, 1997).

The Archaic Period, or Millingstone Horizon (Wallace 1955), dates from 7,000-8,600 to 1,300-3,000 years ago and is generally consistent with the Topanga complex of Los Angeles and the La Jolla complex of San Diego (Warren et al. 2004). The Millingstone Horizon is also referred to as the Encinitas Tradition (Warren 1968). The Encinitas tradition is generally “recognized by millingstone assemblages in shell middens, often near sloughs and lagoons” (Moratto 1984:147). According to Wallace, “a changeover from hunting to the collection of seed foods is clearly reflected in the archaeological record for the period between 6000 and 3000 B.C. The importance of seeds in the diet of the prehistoric peoples can be seen in the numbers of food-grinding implements present at their settlements” (Wallace 1978:28). Basin metates, manos, discoidals, a small number of Pinto series and Elko series points, and flexed burials are also characteristic. Most of the archaeological evidence for Archaic Period occupation in southern California is derived from sites located in near-coastal valleys, and around estuaries that are present along the San Diego coast (Warren et al. 2004). In the vicinity of the project, Archaic Period occupation is represented by a few diagnostic artifacts and one radiocarbon date of circa 2,200 years before present (B.P.) identified during archaeological excavations conducted for the Perris Reservoir project in Perris Valley (Bettinger 1974).

The Late Prehistoric period in southern California is characterized by the incursion of Uto-Aztecan - speaking people who occupied large portions of the Great Basin and an area stretching from southern Arizona and northwest and central Mexico into Nevada, Oregon, and Idaho (Miller 1986). The expansion of the Takic group into southern California is unrefined, but several scholars have hypothesized as to when and how the so-called “Uto Aztecan wedge” occurred. Sutton (2009) argues that the Takic group expanded into southern California from the San Joaquin Valley about 3,500 years ago. According to Moratto (1984), the Takic expansion into southern California occurred ca. 3,200 to 3,500 years ago. Golla (2007) suggests Uto-Aztecan speakers expanded into southern California at approximately 2,000 years ago. While the exact chronology of Takic-speaking groups’ immigration to southern California remains uncertain, it is generally accepted that Native American population figures in the region substantially increased in the Late Prehistoric Period. In addition, the Late Prehistoric Period is marked by evidence of a number of new tool technologies and subsistence shifts in the archaeological record and is characterized by intensification of social, political, and technological systems. The changes include the production of pottery and the use of the bow and arrow for hunting instead of atlatl and dart, a reduction of shellfish gathering in some areas, an increase in the storage of foodstuffs such as acorns, and new traits such as the cremation of the dead (Gallegos 2002; McDonald and Eighmey 2004). After approximately A.D. 1600 a change occurred in settlement and subsistence patterns, and land use intensified in the San Jacinto and Perris valleys, which was reflected into the ethnohistoric period (Bean et al. 1991; Wilke 1974).

2.2.2 Ethnohistory

While some ethnographers place the area of the project site in the traditional territory of the Luiseño people (see Kroeber 1925: Plate 57), others show it as within traditional Cahuilla territory (see Bean 1978; Bean and Shipek 1978). Most probably, this is a transitional area between the two related cultural groups. The Cahuilla and Luiseño are Takic-speaking people of the Uto-Aztecan linguistic stock (Bean and Vane 1979; Miller 1986). Kroeber and others have previously referred to these Takic-speaking people of the Uto-Aztecan linguistic stock as members of the Shoshonean language family (Kroeber 1925). While, some dispute the use of this terminology (e.g., Miller 1986), it is still commonly used to refer to these groups.

2.2.2.1 Cahuilla

The Cahuilla term *ʔiviʔlyuʔatum* (or *īvīatim*) refers to those who speak the Cahuilla language and is also a recognition of a commonly shared cultural tradition (Bean 1972; Strong 1929). Prehistorically, the Cahuilla territory was topographically diverse, occupying elevations from 11,000 feet in the San Bernardino Mountains to below sea level at the Salton Sea (Bean 1978). The Cahuilla are thought to have been in part distinguished from other Shoshonean groups (the Luiseño, Serrano, and Gabrielino) by mountain ranges and plains, but they are known to have interacted regularly with these and other groups through trade, intermarriage, ritual, and war. Cahuilla villages were commonly situated within canyons extending into mountain ranges or on nearby alluvial fans, typically near sources of water and food (Bean 1978; Bean et al. 1991). The diverse habitat of the Cahuilla enabled a wide variety of plant and animal species to be used for food, goods manufacture, and medicine (Bean 1978).

2.2.2.2 Luiseño

The Late Prehistoric period is represented by the San Luis Rey complex in northern San Diego County and portions of Riverside County. The term Luiseño is derived from the Mission San Luis Rey and since Spanish-Mexican colonial times has been used in reference to those Takic-speaking people associated with the mission. The San Luis Rey (SLR) complex is divided into two phases: SLR I and SLR II. Elements of the SLR complex include small, triangular, pressure-flaked projectile points (generally Cottonwood series, but Desert Side-notched series also occurs); milling implements: mortars and pestles, manos and metates, and bedrock milling features; bone awls; Olivella shell beads; other stone and shell ornaments; and cremations (Meighan 1954; Moratto 1984; True et al. 1974). The later SLR II complex also includes several elements not found in the SLR I complex: "pottery vessels, cremation urns, red and black pictographs, and such nonaboriginal items as metal knives and glass beads" (Meighan 1954:223). SLR I was originally thought to date from A.D. 1400 to A.D. 1750, with SLR II dating between A.D. 1750 and A.D. 1850 (Meighan 1954). However, that division was based on the assumption that the Luiseño did not practice pottery manufacture until just prior to the arrival of the Spanish. The chronology has since been revised due to evidence that pottery may have been introduced to the Luiseño by their southern neighbors, the Kumeyaay, circa A.D. 1200-1600 (True et al. 1974).

2.2.3 Historical Background

Southern California's historic period began in September 1542 when Juan Rodriguez Cabrillo landed on Santa Catalina Island as part of his exploration expedition up the coast north of "New Spain." Although the impact of this initial contact did not usher in instant changes in the region, it marks the opening of the area to new contact, colonialism, and cultural shifts.

2.2.3.1 Spanish Period

During the mid-18th century, Spain escalated its involvement in California from exploration to colonization (Weber 1992). In 1769, a Spanish expedition headed by Gaspar de Portolá and Junípero Serra traveled north from San Diego seeking suitable locations to establish military presidios and religious missions in order to extend the Spanish Empire into Alta California. The Presidio of San Diego and Mission San Diego de Alcalá were established in 1769 followed by the Presidio of Monterey and Mission San Carlos Borromeo de Carmelo in 1770 in northern California. The missions and presidios stood, literally and figuratively, as symbols of Spanish colonialism, importing new systems of labor, demographics, settlement, and economies to the area. Agriculture and animal husbandry were the main pursuits of the Missions.

The first documented Spanish contact in what is now Riverside County was by Spanish military captain Juan Bautista de Anza who led expeditions in 1774 and 1775 from Sonora to Monterey (Bolton 1930). Anza embarked on the initial expedition to explore a land route northward through California from Sonora, with the second expedition bringing settlers across the land route to strengthen the colonization of San Francisco (Rolle 1963). Anza's route led from the San Jacinto Mountains northwest through the San Jacinto Valley, which was named "San José" by Anza. Little documentation exists of Anza's route being used after the two expeditions, although it was likely used to bring Spanish supplies into the newly colonized Alta California (Lech 2004). In 1781, the Spanish government closed the route due to uprisings by the Yuman Indians. However, by that time, the missions were established and self-sufficient; thus, the need for Spanish supplies from Sonora had begun to diminish.

Although Riverside County proved to be too far inland to include any missions within its limits, Missions San Juan Capistrano and San Luis Rey de Francia, established in 1776 and 1798 respectively, claimed a large part of southwestern Riverside County. Due to the inland geographical location of the Cahuilla territory, the Spanish missions did not have as direct an effect on them as it did on the Luiseño who lived along the coast (Bean 1978). On the coast, the Luiseño were moved into the Mission environment where living conditions and diseases promoted the decline of the Luiseño population (Bean and Shipek 1978). However, throughout the Spanish Period, the influence of the Spanish progressively spread further from the coast and into the inland areas of southern California as Missions San Luis Rey and San Gabriel extended their influence into the surrounding regions and used the lands for grazing cattle and other animals.

In the 1810s, ranchos and mission outposts, called *asistencias*, were established near the project area, increasing the amount of Spanish contact in the region. An asistencia was established in Pala in 1818 and in San Bernardino in 1819. Additionally, Rancho San Jacinto was established for cattle grazing in the San Jacinto Valley (Bean and Vane 1980; Brigandi 1999). In 1820, Father Payeras, a senior mission official, promoted the idea that the San Bernardino and Pala *asistencias* be developed into full missions in order to establish an inland mission system (Lech 2004). However, Mexico won its independence from Spain in 1821, bringing an end to the Spanish Period in California.

2.2.3.2 Mexican Period

Although Mexico gained its independence from Spain in 1821, Spanish patterns of culture and influence remained for a time. The missions continued to operate as they had in the past, and laws governing the distribution of land were also retained in the 1820s. Following secularization of the missions in 1834, large ranchos were granted to prominent and well-connected individuals, ushering in the Rancho Era, with the society making a transition from one dominated by the church and the military to a more civilian population, with people living on ranchos or in pueblos. With the numerous new ranchos in private hands, cattle ranching expanded and prevailed over agricultural activities.

In order to obtain a rancho, an applicant submitted a petition containing personal information and a land description and map (*diseño*). In 1835, Jose Antonio Estudillo of San Diego submitted a petition for the San Jacinto Rancho. Although Estudillo's petition was for four square leagues (approximately 30,000 acres), in 1842 he was granted close to the maximum size allowed of 11 square leagues (Lech 2004; State Lands Commission 1982). In 1845, Estudillo's son-in-law, Miguel de Pedrorena filed a petition for half of the San Jacinto Viejo Rancho and a small additional portion of land two miles to the northeast in the hills east of Lamb Canyon (Lech 2004). This portion, the northern half of the San Jacinto Viejo Rancho, became known as the San Jacinto Nuevo y Potrero Rancho, and is where the project is located.

During the Mexican period, the Cahuilla were increasingly influenced by Mexican culture. Some of the Cahuilla acquired Spanish names, learned Spanish, and adopted forms of Spanish subsistence, such as raising cattle, agriculture, and wage labor (Ward 1967; Bean 1978). Many Cahuilla worked seasonally for the Mexicans, traveling to and from their villages (Bean 1978).

2.2.3.3 American Period

American governance began in 1848, when Mexico signed the Treaty of Guadalupe Hidalgo, ceding California to the United States at the conclusion of the Mexican–American War.

California's acquisition by the United States substantially increased the growth of the population in California. The California gold rush, the end of the Civil War, and the passage of the Homestead Act implementing the United States' manifest destiny to occupy and exploit the North American continent brought many people to California after 1848. While the American system required that the newly acquired land be surveyed prior to settlement, the Treaty of Guadalupe Hidalgo bound the United States to honor the land claims of Mexican citizens who were granted ownership of ranchos by the Mexican government (Lech 2004). The Land Act of 1851 established a board of commissioners to review land grant claims, and land patents for the land grants were issued from 1876 to 1893. The San Jacinto Nuevo y Potrero Rancho land grant was patented in 1883 to Miguel Pedrorena, Maria Antonia Estudillo Pedrorena, Isabel Pedrorena, and Helena Pedrorena.

Initially southern California was divided into only two counties: Los Angeles and San Diego. In 1853, San Bernardino County was added, placing what is now Riverside County primarily within San Diego County and partially within San Bernardino County.

Southern California was developed by Americans and other immigrants who migrated to the western frontier in pursuit of gold and other mining, agriculture, trade, and land speculation (Lech 2004). This population growth of southern California during the early years of the American Period brought a need for mail and freight travel. In 1857, John Butterfield was awarded a six-year contract to transport mail twice a week between St. Louis, Missouri, and San Francisco, California (Helmich 2008). The Butterfield Stage Route used the same trail as the Sonora (or Southern Emigrant) Trail from Yuma through Warner Springs and Temecula, and then up through Temescal Valley to Chino, and then to Los Angeles. By the mid-nineteenth century, the Southern Emigrant Trail ran through western Riverside County in a similar alignment to the current I-15 freeway. The Butterfield Overland Stage route went through a major stop called "Alamos," the Spanish word for cottonwoods, in Murrieta. Another branch of the Southern Emigrant Trail veered northward from Temecula to Box Springs near present-day Moreno Valley, roughly following the present-day route of I-215 (Lech 2004).

Local mail routes within southern California were also developed beginning in the 1850s, such as the line begun in 1852 by Phineas Banning between Los Angeles and San Diego (Stott 1968). In 1868, Tomlinson & Co. briefly operated a daily mail route from Tucson, Arizona to Los Angeles via San Diego and San Bernardino (Stott 1968), although after only four months the company had lost $12,000 and discontinued service (Mills 1957). In 1867, the U.S. Mail Company sent weekly stages that ran between San Diego and San Bernardino.

While stagecoaches were successful at transporting gold, people, and mail, the need for a railroad to California was imperative. In the 1850s, surveys were initiated by the federal government to determine a railroad route to the Pacific coast (Lech 2004). Although the first transcontinental railroad was completed in 1869 to northern California, in the 1870s the Southern Pacific Railroad Company, incorporated in 1865 and consolidated in 1870, began to construct a southern route that would traverse the state (Fickewirth 1992). In the early 1880s, the California Southern Railway, a subsidiary of the Atchison, Topeka and Santa Fe Railway (Santa Fe), was completed and allowed for travel through the Cajon Pass to Barstow to a junction of the Atlantic and Pacific Railroad and down to San Diego through western Riverside County. In 1887, Santa Fe officials consolidated their family of railroads in southern California, forming the California Central Railway. Although the California Southern remained an individual subsidiary at that time, it consolidated with the California Central Railway and the Redondo Beach Railway two years later 1889. The resulting corporation was the Southern California Railway Company, wholly owned by Santa Fe (Price 1988). In 1906 all of lines of Southern California Railway Company were deeded to the Atchison, Topeka and Santa Fe Railway Company.

The project area and the surrounding region developed along with the railroad. The trains were used to transport settlers into the area, creating a period of agricultural and land development, ultimately resulting in the establishment of Riverside County in 1893, formed from portions of San Bernardino and San Diego counties. Moreno Valley, which consisted of small, unincorporated communities, got its name from Frank E. Brown ("Moreno" in Spanish), who formed the Bear Valley Land and Water Company in 1883. Brown built a dam at Bear Valley and provided water to the Perris and Moreno communities until 1899, when he lost a legal suit, and thereby water rights, to the City of Redlands. This litigation and a period of natural drought devastated the local farming communities, forcing families to either move or abandon their homes in favor of better irrigated areas. The few who remained turned to "the dry farming of hay, grain, and grapes" (City of Moreno Valley, n.d.).

The community was revived in 1918, with the construction of March Field in anticipation of America's entry into World War I. It began as a temporary base for training fighter pilots but was established as a permanent base and flight training school in the late 1920s. This led to a population boom in the Moreno Valley, with the Base supporting up to 85,000 troops at a time. The establishment of the Riverside International Raceway in 1958 and the Lake Perris Recreation Area in 1973 led to further population increases until the unincorporated communities of Moreno, Edgemont, and Sunnymead were combined into the City of Moreno Valley in 1984 (City of Moreno Valley, n.d.).

3.0 ARCHIVAL RESEARCH AND CONTACT PROGRAM

3.1 RECORDS SEARCH

HELIX conducted a record search of the California Historical Resources Information System (CHRIS) at the Eastern Information Center (EIC) on September 25, 2017. The records search covered a one-mile radius around the project area and included archaeological and historical resources, locations and citations for previous cultural resources studies, and a review of the state Office of Historic Preservation (OHP) historic properties directory. The records search summary and map are included as Appendix A (Confidential Appendices, bound separately).

3.1.1 Previous Surveys

The records search results identified 11 previous cultural resource studies within the record search limits, none of which occurred within the project area (Table 1, *Previous Studies within One Mile of the Project Area*). Six of the studies were cultural resource inventories, record searches, or site visits; the remaining studies include an archaeological survey, a historical resource investigation, an architectural evaluation, and an environmental impact report. Only two of the studies, a historical resources investigation (Alexandrowicz 2006) and the California Living Moreno Valley Project (Hogan et al. 2011) identified resources within the search radius.

Table 1
PREVIOUS STUDIES WITHIN ONE MILE OF THE PROJECT AREA

Report Title	Author, Date	Report Type	Results
Environmental Impact Evaluation: Archaeology of Brodiaea Avenue, Pl 984, Water Systems Addition, Riverside County, California	Weaver, 1975	Environmental Impact Report	None in search radius
Cultural Resource Report on Tracts 12608, 12606-2 and 11410 Located in the Sunnymead Area, Riverside County, California	Scientific Resource Surveys, Inc., 1983	Cultural Resources Report	None
Cultural Resources Inventory for the City of Moreno Valley, Riverside County, California	McCarthy, 1987	Cultural Resources Inventory	None in search radius
Cultural Resource Assessment for AT&T Wireless Facility 950-031-029a Located at 24899 Alessandro Boulevard, City of Moreno Valley, Riverside County, California	Kyle, 2004	Cultural Resource Assessment	None
An Architectural Evaluation of Structures Located within Assessor Parcel Numbers 482-090-009-0, -010-0, and 033-0, within the City of Moreno Valley, Riverside County, California	McKenna et al., 2004	Architectural Evaluation	None

Table 1 (cont.)
PREVIOUS STUDIES WITHIN ONE MILE OF THE PROJECT AREA

Report Title	Author, Date	Report Type	Results
An Archaeological Survey for the Alessandro Plaza Project, City of Moreno Valley, County of Riverside, California	Rosenberg and Smith, 2005	Archaeological Survey	None
An Historical Resources Identification Investigation of the Alessandro Pointe Project, Tract 34681, 25817 Alessandro Boulevard, City of Moreno Valley, Riverside County, California	Alexandrowicz, 2006	Historical Resources Investigation	P-33-015454
Letter Report: Cultural Resources Records Search and Site Visit for Royal Street Telecommunications, LLC Candidate LA2356b (Sunnymead Plaza), 24903 Sunnymead Boulevard, Moreno Valley, Riverside County, California	Bonner and Aislin-Kay, 2007	Record Search and Site Visit	None
Cultural Resources Search and Site Visit Results for T-Mobile USA Candidate IE24173-B	Bonner et al., 2011	Cultural Resources Search and Site Visit	None
Letter Report: Cultural Resources Records Search and Site Visit Results for T-Mobile USA Candidate IE24899-H (A Storage Place)	Bonner and Williams, 2011	Record Search and Site Visit	None
California Living Moreno Valley Project	Hogan et al., 2011	Unknown	P-33-007280, 33-007284, and 33-007289

3.1.2 Previously Recorded Sites

The EIC has a record of six previously recorded cultural resources within a one-mile radius of the project, but none have been recorded within the project area (Table 2, *Previously Recorded Resources within One Mile of the Project Area*). Two of the resources, P-33-007279 and 33-007280, are within a half mile of the project. All of the resources are historic, including five historic addresses of private residences displaying vernacular architecture and dating to between ca. 1880 and ca. 1920. The sixth resource, P-33-015454, is a historic site consisting of the remains of two private residences and associated structures and trash scatters.

Table 2
PREVIOUSLY RECORDED RESOURCES WITHIN ONE MILE OF THE PROJECT AREA

Resource Number (P-37-#)	Resource Number (CA-RIV-#)	Description	Recorder, Date
007276	7276	Vernacular ranch house built ca. 1920	Warner, 1983
007279	7279	Vernacular ranch house built in 1896, home of Moreno Valley pioneer D.C. Hield	Warner, 1983
007280	7280	Historic Rosa More House, vernacular ranch house built ca. 1880	Warner, 1983
007284	7284	Vernacular wood framed house built ca. 1915	Warner, 1983
007289	7289	Vernacular ranch house built ca. 1915	Warner, 1983
015454	8149	Historic site consisting of the remains of two early to mid-20th Century residences with associated trash scatters	Alexandrowicz, 2006

3.1.3 Other Archival Research

Various additional archival sources were also consulted, including historic topographic maps and aerial imagery. The purpose of this research was to identify historic structures and land use in the area.

One building appears in the northwest corner of the project area on the 1901 USGS 30’ Elsinore quadrangle, along with several roads in street grids and other buildings in the vicinity. The community of “Armada” is indicated two blocks south of the project site. On the 1942 (Department of the Army 15' Perris quadrangle) and 1953 (USGS 7.5' Perris quadrangle) historic topographic maps, several more buildings are shown in the project vicinity, as well as community structures, such as schools. Additionally, Cottonwood Avenue, running east-west along the southern border of the project site, is named. No buildings or structures are shown within the project site on historic topographic maps from 1942 (Department of the Army 15' Perris quadrangle), 1953 (USGS 7.5' Perris quadrangle), and historic aerial photographs available at historicaerials.com from 1966, 1967, and 1978 (NETR Online 2017). On the 1996 aerial photograph, the housing development located directly to the east of the project site is in place, and Perris Boulevard, located adjacent to the project on the west, is shown as a two-lane road. By 1997, aerial photographs show Perris Boulevard has being expanded into a four-lane road, and the project area looks as if grading had occurred, possibly with fill placed within the area prior to the grading.

3.2 NATIVE AMERICAN CONTACT PROGRAM

HELIX contacted the Native American Heritage Commission (NAHC) on September 25, 2017 for a Sacred Lands File search and list of Native American contacts for the project area. The NAHC indicated in a response dated September 27, 2017 that no known sacred lands or Native American cultural resources are within the project area. Letters were sent on October 2, 2017 to Native American representatives and interested parties identified by the NAHC. Two responses have been received to date. The Pala Band of Mission Indians responded on October 4, 2017, that the project is not within the boundaries of the territory that the tribe considers its Traditional Use Area and defers to the wishes of Tribes in closer proximity to the project area. The San Manuel Band of Mission Indians responded on October 5, 2017, that proposed project area is within the Serrano ancestral territory and as such, is of interest to the Tribe. However, due to the nature and location of the proposed project, they do not have any concerns with the project's implementation, as planned, at this time. If any additional responses are received, they will be forwarded to City staff. Native American correspondence is included as Appendix C (Confidential Appendices, bound separately).

4.0 METHODS

4.1 SURVEY METHODOLOGY

A pedestrian survey of the project site was conducted on September 28, 2017 by HELIX senior archaeologist Stacie Wilson and Native American monitor, Christine Mills from the Soboba Band of Luiseño Indians. The project area was walked in transects spaced approximately 15 meters (m) apart.

Visibility was excellent for the project area (Plates 1 and 2). It was observed that fill had been overlain on the entirety of project site except for the eastern edge of the site along the property line next to the adjacent private residences. Based on the berm present along the east side of the project area, it is estimated that the fill is approximately three to four feet in height (Plate 3). The fill dirt contained gravel, asphalt chunks, and modern clay pipe fragments. The project area was devoid of vegetation except for a few small weeds.

Plate 1. Overview of the project area from northeast corner, view to the south.

Plate 2. Overview of the project area from northwest corner, view to the south.

Plate 3. Overview of the berm located along the eastern border of project area, view to the south.

5.0 RESULTS

No cultural material was observed within the archaeological survey area; however, as noted above, the project area is overlain by fill soils with modern asphalt and debris intermixed.

6.0 SUMMARY AND MANAGEMENT RECOMMENDATIONS

A study was undertaken to identify cultural resources that are present in the Yum Yum Donuts Project Area and to determine the effects of the project on historical resources. The cultural resources survey did not identify any cultural resources within the project area; therefore, no impacts to cultural resources are anticipated. However, the project site was covered by fill material and the original ground surface could not be observed. Additionally, the project site is located within alluvial soils, where there is a potential for buried cultural resources. Based on this, it is recommended that an archaeological and Native American monitoring program be implemented if grading or other ground disturbing activities (i.e., trenching for utilities) are to occur below the current layer of fill. The monitoring program would include attendance by the archaeologist and Native American monitor at a preconstruction meeting with the grading contractor and the presence of archaeological and Native American monitors during initial ground disturbing activities on site. Both archaeological and Native American monitors would have the authority to temporarily halt or redirect grading and other ground-disturbing activity in the event that cultural resources are encountered. If significant cultural material is encountered, the monitors will coordinate with the applicant and City staff to develop and implement appropriate mitigation measures.

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Appendix A

Resume

Stacie Wilson, RPA

Senior Archaeologist

HELIX Environmental Planning

Summary of Qualifications

Ms. Wilson has been professionally involved in cultural resources management for 14 years. She has served as principal investigator on numerous cultural resources management projects, and regularly coordinates with local, state, and federal agencies and Native American tribal representatives. She is skilled in project management, archaeological inventories and excavation, and report documentation and has broad experience on private, municipal, federal, utility, and renewable energy projects. She also is proficient at creating, organizing, and analyzing GIS data; technical skills include ArcGIS 10.4, Spatial Analyst, Geostatistical Analyst, and working with large datasets. Ms. Wilson is detail oriented and has strong organizational and coordination capabilities.

Selected Project Experience

The Lakes - Unit 4B & Unit 6 (2017). Senior Archaeologist for an approximately 130-acre construction monitoring project in Rancho Santa Fe. Provided cultural resources consultation support, arranged for archaeological and Native American monitors, and provided project status updates to the County. Work performed for Lennar Homes of California, with the County of San Diego as the lead agency.

El Cuervo Del Sur Phase II Mitigation Support (2016 - 2017). Principal Investigator for a cultural resources study for the El Cuervo Del Sur restoration site. Conducted as part of an as-needed contract with the City of San Diego, Transportation & Storm Water Department, the project proposed the creation of approximately 1.4 acres of wetland habitat. Duties included conducting background research, reviewing previous cultural resource surveys, conducting Native American outreach, and preparing reports. Work performed for the City of San Diego.

Emerald Drive Planned Residential Development Project (2016). Principal Investigator for a cultural resources study for a proposed residential development. Conducted as part of an as-needed contract with the City of Vista, the project proposed the subdivision of a 6.9-acre parcel into 27 single family detached lots. Duties included conducting background research, overseeing field survey and recording of cultural resources, Native American outreach and coordination, and report preparation. Work performed for the City of Vista.

Coastal Reliability Project (2016). Project Archaeologist and field director for a cultural resource survey of eight miles of transmission line located within

Education

Master of Science, Applied Geographical Information Science, Northern Arizona University, 2008

Bachelor of Arts, Anthropology, University of California, San Diego, 2001

Bachelor of Science, Biological Psychology, University of California, San Diego, 2001

Registrations/ Certifications

Register of Professional Archaeologists, 2016

Professional Affiliations

Society for California Archaeology

Society for American Archaeology

Stacie Wilson, RPA
Senior Archaeologist

the cities of San Diego and Del Mar. The project involved the reconfiguration, removal, and conversion of transmission lines. Duties included the oversight of pedestrian archaeological and historic architecture surveys and documentation of 45 cultural resources. Work performed for SDG&E, with California Public Utilities Commission as the lead agency.

Terramar Area Coastal Improvement Project (2015 - 2016). Task Lead for a cultural resources study of the Terramar Area Coastal Improvement Project. The project proposed to enhance the City of Carlsbad's Terramar community by improving safety, traffic, and coastal access by constructing new sidewalks and walking paths, creating more parking, improving road conditions, and building a buffer for bicyclists. Duties included oversight of the cultural resources records search, field survey, and archaeological documentation for the project. Work performed for the City of Carlsbad

County of San Diego Department of Parks and Recreation As-Needed Consulting Services (2012 - 2016). Cultural Resources Task Lead and Principal Investigator for as-needed CEQA and NEPA support. Duties included coordination of archaeological monitors, site assessments, survey, California Department of Parks and Recreation (DPR) documentation, and reporting efforts.

San Diego Gas & Electric (SDG&E) As-Needed Services (2011 - 2016). Cultural Resources Project Manager and Principal Investigator for cultural resources as-needed services for SDG&E pole replacement, operation and maintenance, transmission line planning, and other projects in San Diego and Imperial counties on private, local agency, and federal lands. Activities included task coordination and management of field survey, monitoring, and archaeological documentation for project task orders.

Otay Truck Route (2013 - 2014). Task Lead for a cultural resources study for the Otay Truck Route project. The Otay Truck Route fronts a portion of the U.S./Mexico international border in the Otay Mesa community of the City of San Diego. Duties included conducting an archaeological survey of approximately 18.4 acres, recording prehistoric and archaeological sites, and reporting efforts that included a Historic Property Survey Report, Archaeological Survey Report, and City of San Diego Archaeological Resource Report Form. The project proponent was the City of San Diego, with local assistance funding from the FHWA. The City of San Diego was the lead agency for CEQA compliance and (via delegated authority from the FHWA) Caltrans was the lead agency for NEPA.

Blythe and Palen Solar Power Projects (2009 - 2014). Field Archaeologist and GIS analyst for concentrated solar electric-generating facilities proposed on approximately 2,000-acre and 7,000-acre sites on U.S. Bureau of Land Management land in eastern Riverside County. The projects, under a fast-track American Recovery and Reinvestment Act of 2009 funding schedule, use parabolic trough solar thermal technology to produce electrical power using a steam turbine generator fed from a solar steam generator. Work included extensive resource and project GIS data management. Work performed for Solar Millennium, LCC, with the U.S. Bureau of Land Management as the lead agency.

Appendix D

Preliminary Hydrology Report

PRELIMINARY HYDROLOGY REPORT

For

YUM YUM MORENO VALLEY

NEC PERRIS BOULEVARD AND COTTONWOOD AVENUE

MORENO VALLEY, CA

Prepared For:

YUM YUM DONUT

18830 SAN JOSE AVENUE

INDUSTRY, CA. 91748

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November 2017

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Appendices

1.0 Scope

Hydrologic calculations to evaluate surface runoff associated with 2- and 100-year hypothetical design storm frequency from the tributary drainage areas were performed based on the latest *Riverside County Flood Control and Water Conservation District* rational method. Hydrologic parameters used in the analysis, such as rainfall and soil classification are presented in the *Riverside County Hydrology Manual* (Hydrology Manual).

2.0 Project Description

2.1. Existing Conditions

The subject property is located at NEC of Cottonwood Avenue and Perris Boulevard in Moreno Valley, California. The existing site is a portion of an existing lot, Lot 5, that is approximately 3.77 acres. The site is approximately 1.61 acres and is the southern portion of Lot 5. It is an existing vacant lot and it is bounded by a vacant lot to the north, a residential development to the east, Perris Boulevard to the west, and Cottonwood Avenue to the south. The existing site is relatively flat and sheet flows in a generally southeasterly direction towards Cottonwood Avenue.

2.2. Proposed Conditions

The proposed project will include a gas station with a one-story mini-mart and a drive-thru, fuel dispenser area with overhead canopy, and a surface parking lot area.

Site has underlying soil with low infiltration rates per soil report. Therefore, the site is proposing a vegetated bioretention area along the western, eastern, and southern perimeter of the site.

3.0 Hydrology

3.1 Methodology

The hydrologic calculations to determine the 2-year and 100-year peak flow rates were performed using the criteria in the *Riverside County Flood Control District and Riverside County Hydrology Manual*. The Rational Method is an empirical computation procedure for developing a peak runoff rate (discharge) for storms of a specific recurrence interval. Rational Method equations are based on the assumption that the peak flow rate is directly proportional to the drainage area, rainfall intensity, and a loss rate coefficient, which describes the effects of land use and soil type. The Rational Method flow rates were computed by generating a hydrologic "link-node" model, which divides the area into drainage subareas. Please see Appendix A for hydrology calculations.

3.2 Areas

Hydrology Maps are included in Appendix C of this report delineating the drainage subareas. Areas are provided in the maps in both square feet (SF) and acres (AC). AC units are used in the rational method calculations. Hydrology Maps are provided in Appendix C of this report.

3.3 Soil

When making estimates of storm water runoff it is assumed that infiltration is a loss for the storm event under consideration. The major affecting infiltration is the nature of the soil itself. The site is underlain by soil with slow infiltration rates. Therefore, Soil Type C was selected for the hydrology analysis.

3.4 Time of Concentration

The Time of Concentration (T_c) is the time required for runoff to flow from the most remote part of the drainage area to the point of interest. The T_c (minutes) is based on slope and runoff coefficient and it was obtained using the nomograph in Plate D-3 of the Hydrology Manual, and it is included in Appendix B of this report for reference.

3.5 Rainfall Intensity

The rainfall intensity is the rainfall in inches per hour (in/hr) for a duration equal to the T_c for a selected storm frequency. Intensity is dependent on precipitation and T_c. The time-averaged rainfall intensity for the 2- and 100-year storm event were obtained from the precipitation intensity curves using the regression equation in Plate D-4.1 of the Hydrology Manual. The regression equations determine the precipitation intensities corresponding to the time of concentrations and selected design frequency. Calculations of intensities are provided as part of the hydrology calculations and included in Appendix A.

3.6 Hydrology

The peak rate runoff flow of the proposed site increases due to increase in impervious areas including roofs, drive aisles, and sidewalks. The existing and proposed flows were calculated using the Rational Method based on the site conditions discussed in Sections 2.1 and 2.2, respectively.

3.6.1 Existing Hydrology

The entire existing site sheet flows in a generally southerly direction towards the south side of the property. Runoff from the site eventually sheet flows onto Cottonwood Avenue to the south of the property. The existing flow for the different storm frequencies is outlined in Table 1 below.

Table 1 – Summary of Existing Flow

Subarea	Area		
	100-year	(sf)	(ac)
Area 1	3.65	75,175	1.73
Total	3.65	75,175	1.73

3.6.2 Proposed Hydrology

The proposed project site has been subdivided into subareas for runoff of storm water based on drainage patterns including ridge lines and low/confluence points. The drainage patterns include the roof surface runoff and ground surface runoff areas. Each subarea and the discharge point of each subarea is identified in the Proposed Hydrology Map. Flow for each subarea is outlined in Table 2 below:

Table 2 – Summary of Proposed Flows

Subarea	Area		
	100-year	(sf)	(ac)
Area 1	1.75	25,032	0.57
Area 2	2.50	34,536	0.79
Area 3	0.76	10,578	0.24
Total	5.01	70,146	1.6

4.0 Conclusion

The overall drainage patterns in the proposed condition are similar to the existing condition in terms of the overall drainage direction. However, the proposed drainage patterns are divided into subareas as shown on the attached Hydrology Map – Proposed Condition. The subareas account for the ridges in the roof areas as well as the ground surfaces including the drive aisles, parking spaces, and landscape areas.

Due to increase in impervious areas, the proposed site generates more flow than the existing condition. Table 3 below summarizes the flows of the existing and proposed site.

Table 3 - Pre- and Post-Construction Flows

Storm Event	Existing Q (CFS)	Proposed Q (CFS)
100-yr	3.65	5.01

This site's runoff is mitigated by proposing a storm drain system that includes vegetated bioretention basins.

Appendix A – Hydrology Calculations

HYDROLOGY CALCULATIONS
CORNER OF PERRIS BOULEVARD AND COTTONWOOD AVENUE

EXISTING AREA

Q = CIA				Where	Q = proposed peak flows, cfs
					A = total area, acres
A =	75,175 sf	=	1.73 acres		C = coefficient of runoff
					I = rainfall intensity (in/hr) corresponding to the time of concentration
Soil Group =	C		(Plate C-1.17)		
T_c =	13.0 min		(Plate D-3)		T_c = duration, min
I_{100} =	2.58 in/hr		(Plate D-4.1)		
C_{100} =	0.82 in/hr		(Plate D-5.3)		
Q_{100} =	3.65 cfs				

HYDROLOGY CALCULATIONS
CORNER OF PERRIS BOULEVARD AND COTTONWOOD AVENUE

AREA-1

Q =	CIA				Where	Q = proposed peak flows, cfs
						A = total area, acres
A =	25,032	sf	=	0.57 acres		C = coefficient of runoff
						I = rainfall intensity (in/hr) corresponding to the time of concentration
Soil Group =	C		(Plate C-1.17)			
T_c =	7.4	min	(Plate D-3)			T_c = duration, min
I_{100} =	3.42	in/hr	(Plate D-4.1)			
C_{100} =	0.89	in/hr	(Plate D-5.3)			
Q_{100} =	1.75	cfs				

HYDROLOGY CALCULATIONS
CORNER OF PERRIS BOULEVARD AND COTTONWOOD AVENUE

AREA-2

Q = CIA		Where	Q = proposed peak flows, cfs A = total area, acres C = coefficient of runoff I = rainfall intensity (in/hr) corresponding to the time of concentration
A =	34,536 sf = 0.79 acres		
Soil Group =	C	(Plate C-1.17)	
T_c =	4.9 min	(Plate D-3)	T_c = duration, min
I_{100} =	3.54 in/hr	(Plate D-4.1)	
C_{100} =	0.89 in/hr	(Plate D-5.3)	
Q_{100} =	2.50 cfs		

HYDROLOGY CALCULATIONS
CORNER OF PERRIS BOULEVARD AND COTTONWOOD AVENUE

AREA-3

Q = CIA			Where	Q = proposed peak flows, cfs
				A = total area, acres
A =	10,578 sf	= 0.24 acres		C = coefficient of runoff
				I = rainfall intensity (in/hr) corresponding to the time of concentration
Soil Group =	C	(Plate C-1.17)		
T_c =	4.8 min	(Plate D-3)		T_c = duration, min
I_{100} =	3.51 in/hr	(Plate D-4.1)		
C_{100} =	0.89 in/hr	(Plate D-5.3)		
Q_{100} =	0.76 cfs			

HYDROLOGY CALCULATIONS
67670 CAREY ROAD, CATHEDRAL CITY

Proposed

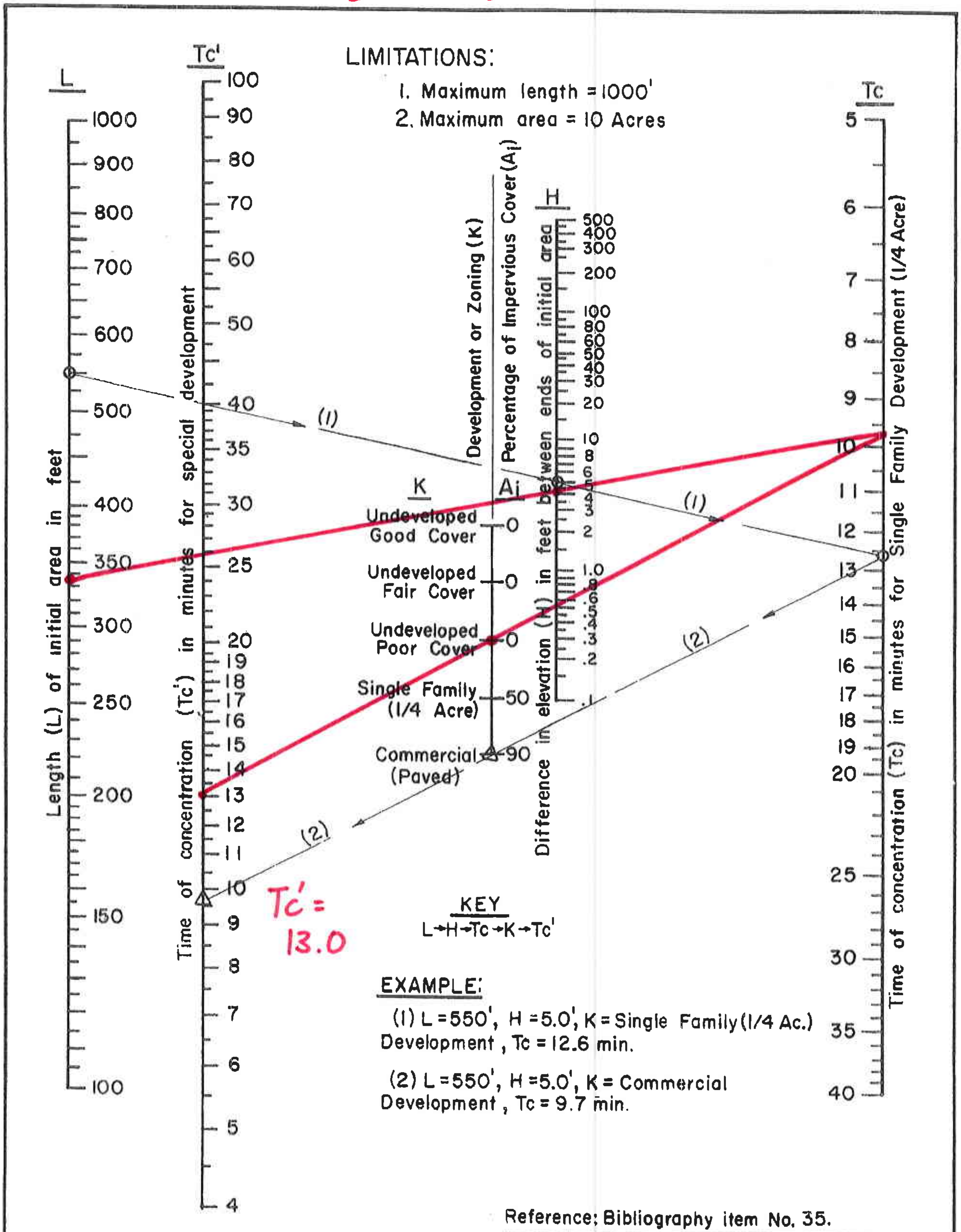
Subarea	Area		
	100-year	(sf)	(ac)
Area 1	1.75	25,032	0.57
Area 2	2.50	34,536	0.79
Area 3	0.76	10,578	0.24
Total	5.01	70,146	1.61

Existing

Area	Area		
	100-year	(sf)	(ac)
Area 1	3.65	75,175	1.73

Appendix B – Reference Figures and Tables

EXISTING AREA



RCFC & WCD
HYDROLOGY MANUAL

TIME OF CONCENTRATION FOR INITIAL SUBAREA

PLATE D-3

AREA 1

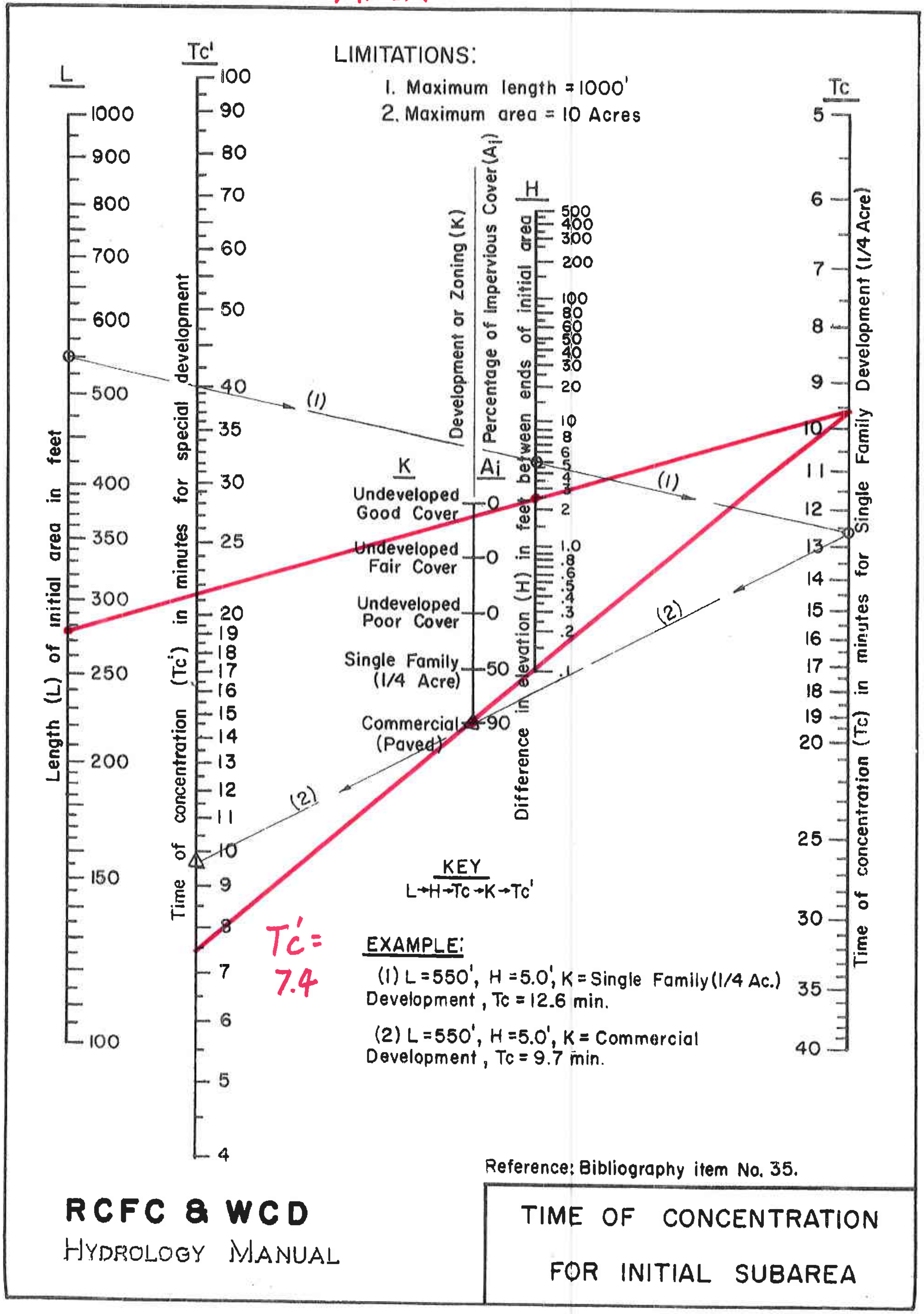
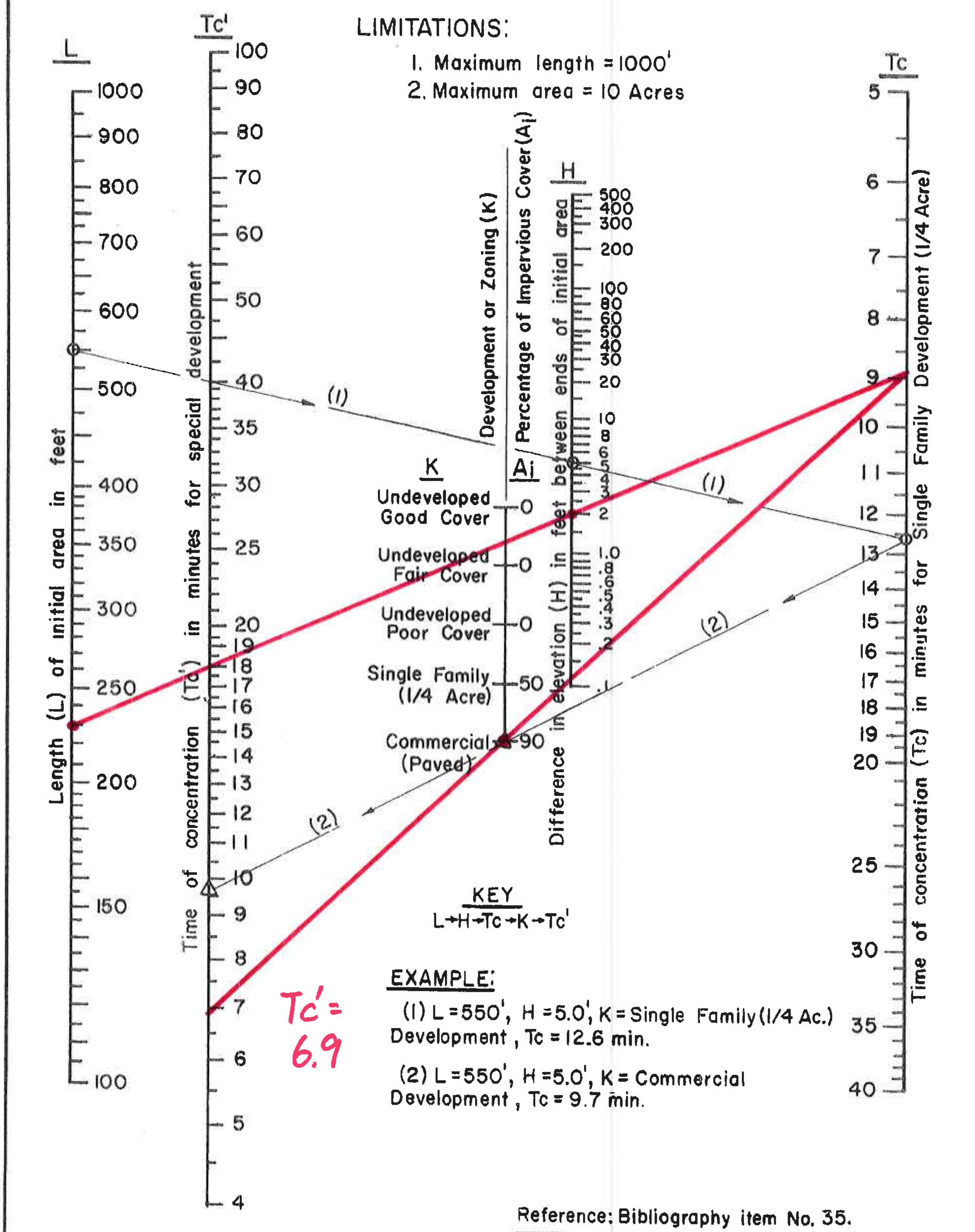


PLATE D-3

Attachment: Cultural Resources Assessment (3224 : A GENERAL PLAN AMENDMENT, CHANGE OF ZONE, AND CONDITIONAL USE PERMIT

AREA 2

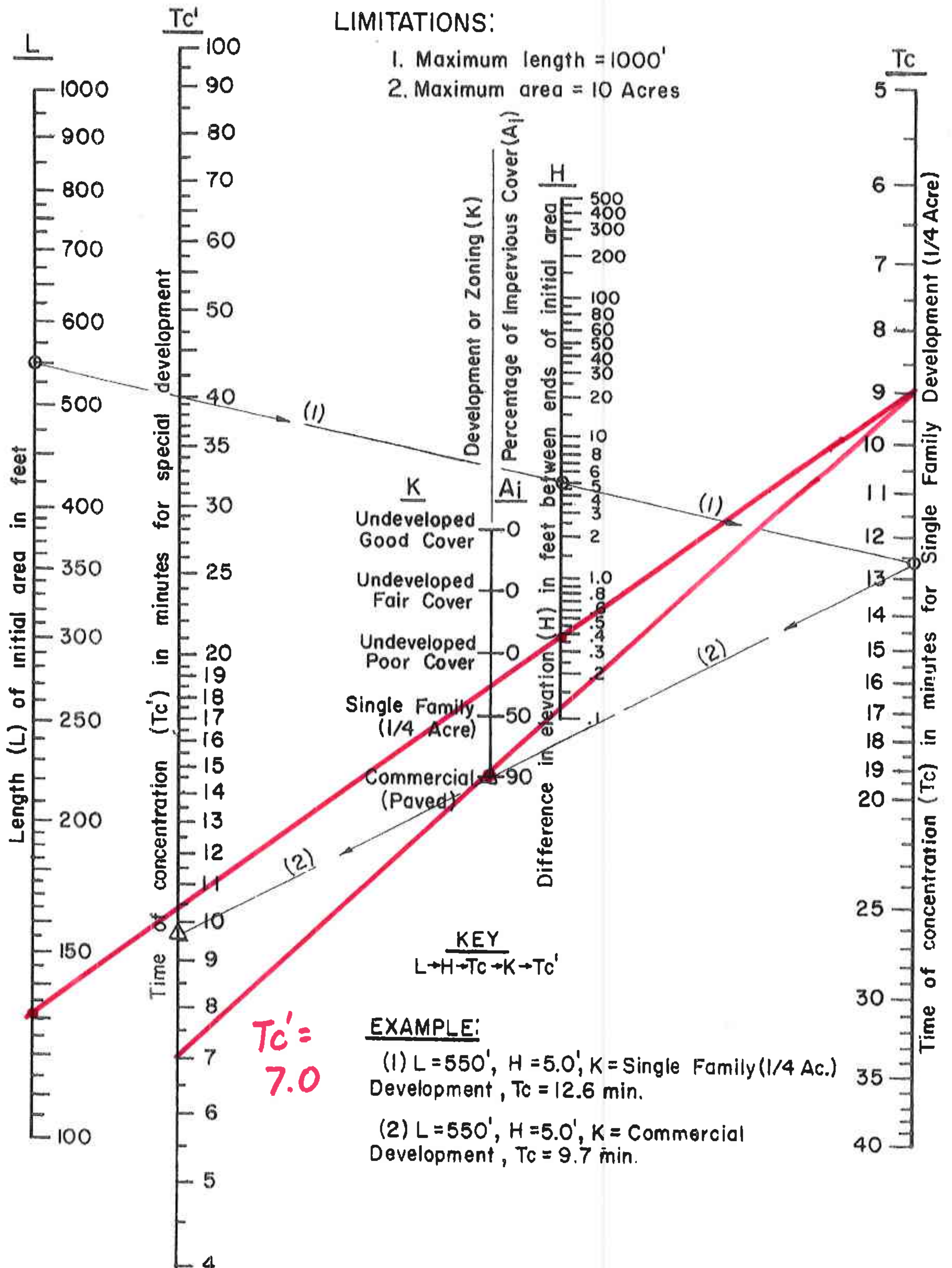


RCFC & WCD
HYDROLOGY MANUAL

TIME OF CONCENTRATION
FOR INITIAL SUBAREA

PLATE D-3

AREA 3



Reference: Bibliography item No. 35.

RCFC & WCD
HYDROLOGY MANUAL

TIME OF CONCENTRATION
FOR INITIAL SUBAREA

PLATE D-3

Attachment: Cultural Resources Assessment (3224 : A GENERAL PLAN AMENDMENT, CHANGE OF ZONE, AND CONDITIONAL USE PERMIT

Appendix E

Noise Mitigation Analysis

Noise Mitigation Analysis for The Proposed Yum Yum Donuts Car Wash City of Moreno Valley, California

Project #0110.0026.001.0001
February 14, 2018

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NOISE MITIGATION ANALYSIS FOR THE PROPOSED YUM YUM DONUTS CAR WASH CITY OF MORENO VALLEY

1.0 INTRODUCTION

A car wash is being proposed at the northeast corner of Perris Boulevard and Cottonwood Avenue in Moreno Valley, as shown in Exhibit 1. The car wash will be "self-serve" and is planned to be open 24 hours per day. The purpose of this report is to determine whether the noise levels from the proposed car wash will be consistent with the Noise Ordinance adopted by the City of Moreno Valley. The project calls for the addition of a tunnel-type car wash. The developer is planning to design and construct this car wash very similar to an existing car wash facility located in the City of San Diego. This report presents the results of the car wash noise measurements at the existing San Diego car wash, and determines whether that design is acceptable for the planned Yum Yum Donuts car wash in Moreno Valley.

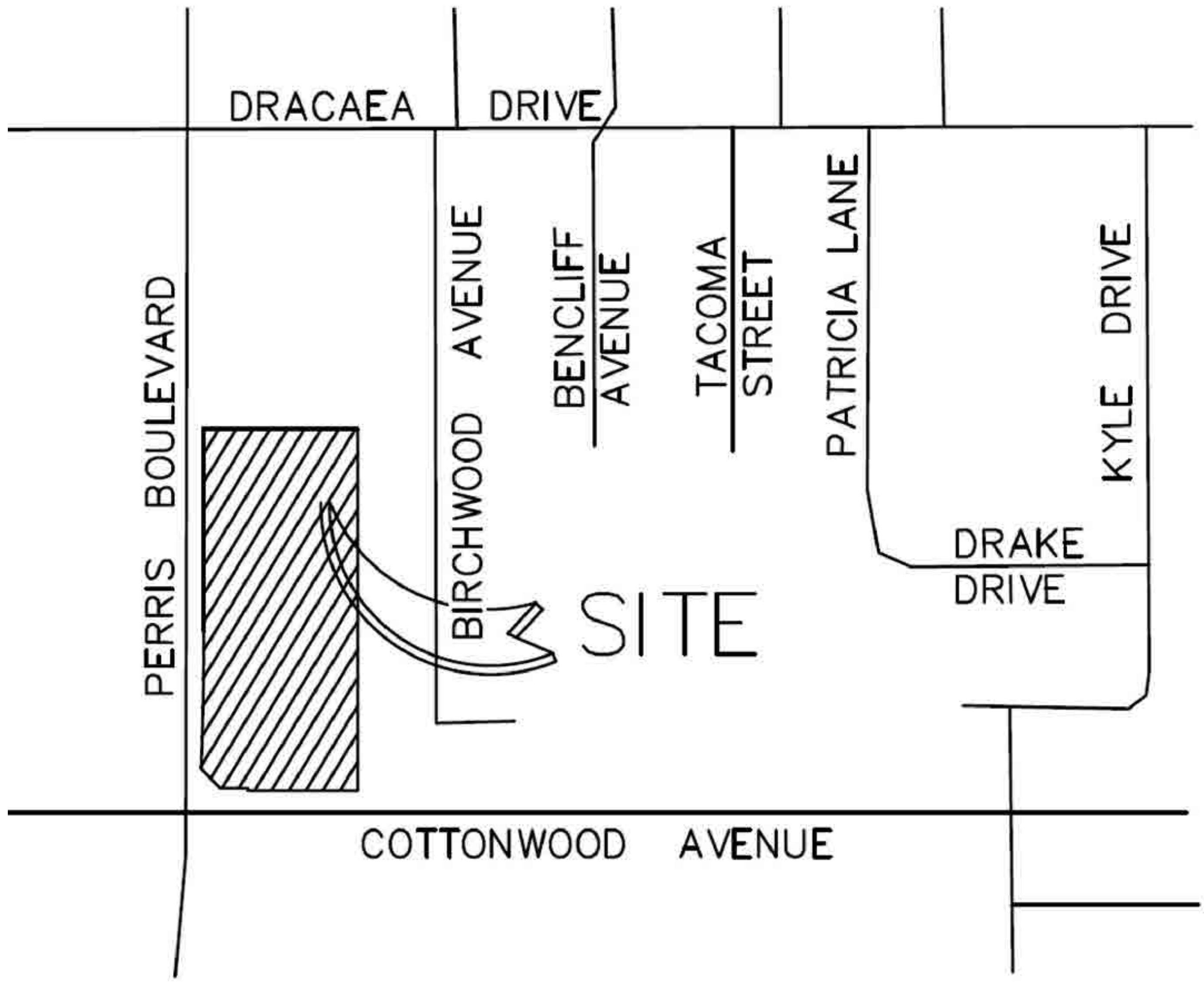
The site plan is shown in Exhibit 2. The nearest residences are located directly to the east. Other residential areas are located much farther from the facility. The potential noise impacts on the nearest residential area are addressed in this report, and any required mitigation measures are identified.

2.0 BACKGROUND INFORMATION ON NOISE

Sound is technically described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquakes. In terms of human response to noise, a sound 10 dB higher than another is judged to be twice as loud; and 20 dB higher four times as loud; and so forth. Everyday sounds normally range from 30 dB (very quiet) to 100 dB (very loud).

Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. Community noise levels are measured in terms of the "A-weighted decibel" abbreviated dBA. Exhibit 3 provides examples of various noises and their typical A-weighted noise level.

Two commonly used metrics to describe fluctuating noise levels are Leq and Lmax. These metrics are described below. The noise level limits set forth in the City's Noise Ordinance are specified in terms of these metrics.



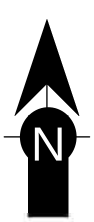


Exhibit 1
Vicinity Map

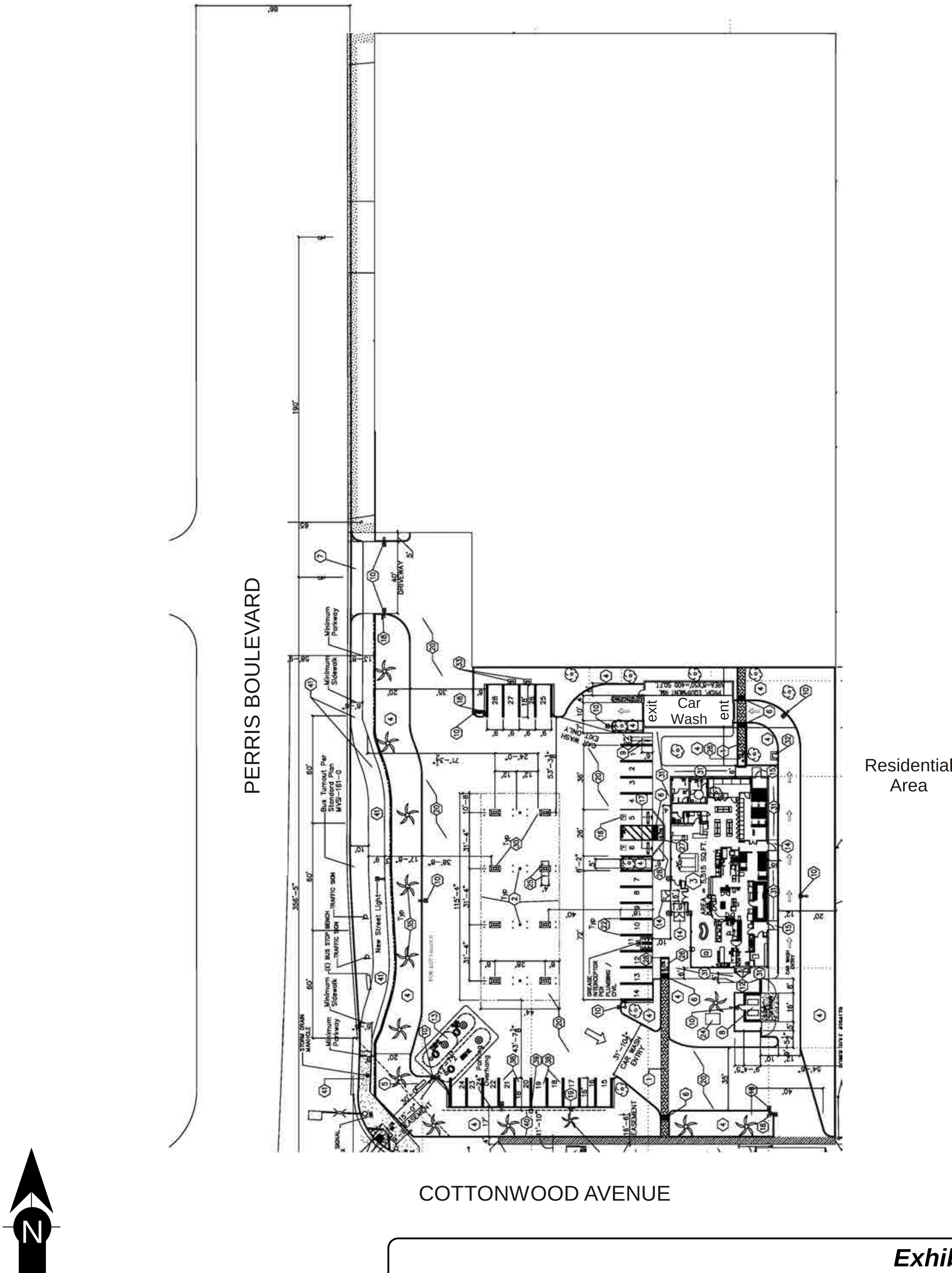


Exhibit 2

Site Plan

dBA	Outdoor	Indoor
0 dBA	threshold of hearing (0 dBA)	
20	rustling of leaves (20 dBA)	whispering at 5 feet (20 dBA)
40	quiet residential area (40 dBA)	refrigerator (50 dBA)
60	air-conditioner at 100 feet (60 dBA) car at 25 feet at 65 mph (77 dBA)	sewing machine (60 dBA) normal conversation (60 to 65 dBA) dishwasher (55-70 dBA) living room music or TV (70 -75 dBA)
80	diesel truck at 50 feet at 40 mph (84 dBA) propeller airplane flyover at 1000 feet (88 dBA) motorcycle at 25 feet (90 dBA) lawnmower (96 dBA) backhoe at 50 feet (75-95 dBA)	garbage disposal (80 dBA) ringing telephone (80 dBA) vacuum cleaner (60-85 dBA) shouted conversation (90 dBA)
100	snowmobile (100 dBA) pile driver at 50 feet (90-105 dBA) car horn (110 dBA) rock concert (110 dBA) leaf blower (110 dBA)	baby crying on shoulder (110 dBA)
120	ambulance siren (120 dBA) stock car races (130 dBA) jackhammer (130 dBA)	
140		

Sources: League for the Hard Of Hearing, www.lhh.org
Handbook of Noise Control, McGraw Hill, Edited by Cyril Harris, 1979
Measurements by Landrum & Brown

Exhibit 3

Typical A-Weighted Sound Levels

Leq is the sound level corresponding to a steady-state sound level that would contain the same total energy as the time-varying signal over a given sample period. Leq is the "energy" average noise level during the time period of the sample. It is the energy average of all the events and background noise levels that occur during that time period.

Lmax is the loudest sound level measured during the time period of the sample.

Sound levels decrease as a function of distance from the source as a result of wave divergence, atmospheric absorption and ground attenuation. As the sound wave travels away from the source, the sound energy is dispersed over a greater area, thereby dispersing the sound power of the wave. Intervening topography or sound walls can also have a substantial effect on the effective perceived noise levels.

Noise has been defined as unwanted sound and it is known to have several adverse effects on people. From these known effects of noise, criteria have been established to help protect the public health and safety and prevent disruption of certain human activities. These criteria are based on such known impacts of noise on people as hearing loss, speech interference, sleep interference, physiological responses and annoyance. Each of these potential noise impacts on people are briefly discussed in the following narratives:

HEARING LOSS is not a concern in community noise situations of this type. The potential for noise induced hearing loss is more commonly associated with occupational noise exposures in heavy industry or very noisy work environments. Noise levels in neighborhoods, even in very noisy airport environs, are not sufficiently loud to cause hearing loss.

SPEECH INTERFERENCE is one of the primary concerns in environmental noise problems. Normal conversational speech is in the range of 60 to 65 dBA, and any noise in this range or louder may interfere with speech. There are specific methods of describing speech interference as a function of distance between speaker and listener and voice level.

SLEEP INTERFERENCE is a major noise concern for traffic noise. Sleep disturbance studies have identified interior noise levels that have the potential to cause sleep disturbance. Note that sleep disturbance does not necessarily mean awakening from sleep, but can refer to altering the pattern and stages of sleep.

PHYSIOLOGICAL RESPONSES are those measurable effects of noise on people that are realized as changes in pulse rate, blood pressure, etc. While such effects can be induced and observed, the extent is not known to which these physiological responses cause harm or are signs of harm.

ANNOYANCE is the most difficult of all noise responses to describe. Annoyance is a very individual characteristic and can vary widely from person to person. What one person considers tolerable can be quite unbearable to another of equal hearing capability.

3.0 MORENO VALLEY NOISE ORDINANCE STANDARDS

Noise ordinances are designed to protect adjacent noise-sensitive land uses from non-transportation related noise sources operating on private property (e.g., manufacturing facilities, music, and mechanical equipment). Many communities have developed noise ordinances to control these types of non-transportation related noise.

The City's noise level limits for car wash noise are shown in Section 9.10.140 of the City's Noise Ordinance. These standards are given in terms of maximum allowable noise levels. Higher noise levels are permitted during the daytime hours (8 a.m. to 10 p.m.) than are during nighttime hours (10 p.m. to 8 a.m.). The City of Moreno Valley Noise Ordinance levels are contained in Table 1, and they show the acceptable levels at outdoor residential land uses during each time period. The Lmax criterion applies to the highest noise level experienced at the receptor site.

Table 1
CITY OF MORENO VALLEY
EXTERIOR NOISE ORDINANCE STANDARDS

LAND USE	NOISE METRIC	NOISE LEVEL NOT TO BE EXCEEDED Daytime 8 a.m. to 10 p.m.	 Nighttime 10 p.m. to 8 a.m.
Residential	Lmax	60 dBA	55 dBA

As the car wash is expected to operate 24 hours a day, the projected noise levels will be compared to the nighttime criteria, since meeting the nighttime criteria ensures that the daytime criteria will also be met. The City's Noise Ordinance does not contain any indoor noise standards. Therefore, compliance with the nighttime Lmax exterior standard in the Noise Ordinance is addressed.

4.0 PROJECTED CAR WASH NOISE LEVELS

The projected noise levels from the planned Yum Yum Donuts car wash are based on the measured noise levels at the existing Arco car wash facility at 3170 Carmel Valley Road in San Diego. This car wash is equipped with automatic doors at both the entrance and exit ends, and these doors are essential in reducing the noise levels from the car wash facility when they are closed. The noise levels at this facility were measured on August 12, 2016. Measurements were performed on-axis with the tunnel at a distance of 25 feet from the entrance end with both car wash doors closed. The measurements at this location were used to determine the noise levels at the nearest noise-sensitive receptors at the Moreno Valley site. The measurement site is shown in Exhibit 4. The car wash operations of interest (wash cycle, rinse cycle, and dry cycle) were measured. Truck passes in the parking lot passes were not able to be excluded from the measurements, and were edited out of the data in order to assess the car wash noise levels alone.

The sound level meter used for the measurements was a Brüel and Kjær Model 2236 sound level meter. This meter conforms to American National Standards Institute (ANSI) Type 1 specifications. The meter and calibrator are laboratory calibrated and certified annually with calibration traceable to the National Institute of Standards and Technology (NIST). The meter was field calibrated before and after the measurement period using a Brüel and Kjær Model 4231 acoustical calibrator. The measured Lmax was 65.7 dBA at a distance of 25 feet from the entrance end of the tunnel with the car wash doors closed.

Based upon the measured car wash source noise data and the proposed site plan, the noise level was calculated for the nearest observer at the adjacent residential area, at a distance of 57 feet from the entrance end of the tunnel. The resulting unmitigated noise level at the residential area is 58.5 dBA. This noise level would exceed the nighttime noise standard of 55 dBA. The developer plans to construct a 6-foot high masonry wall at the east property line. The wall will need to wrap around the northeast corner of the project and extend westward to the car wash tunnel. The required barrier location is shown in Exhibit 5. With this noise barrier, the resulting projected noise level is shown below in Table 2.

Table 2
PROJECTED NOISE LEVELS (dBA)

Location	**Projected Noise Level (Lmax)**	Comparison To Noise Level Limit
With Yum Yum Donuts car wash designed like existing Arco facility and 6.0’-high noise barrier		
Nearest Residence	**49.4**	Meets Ordinance

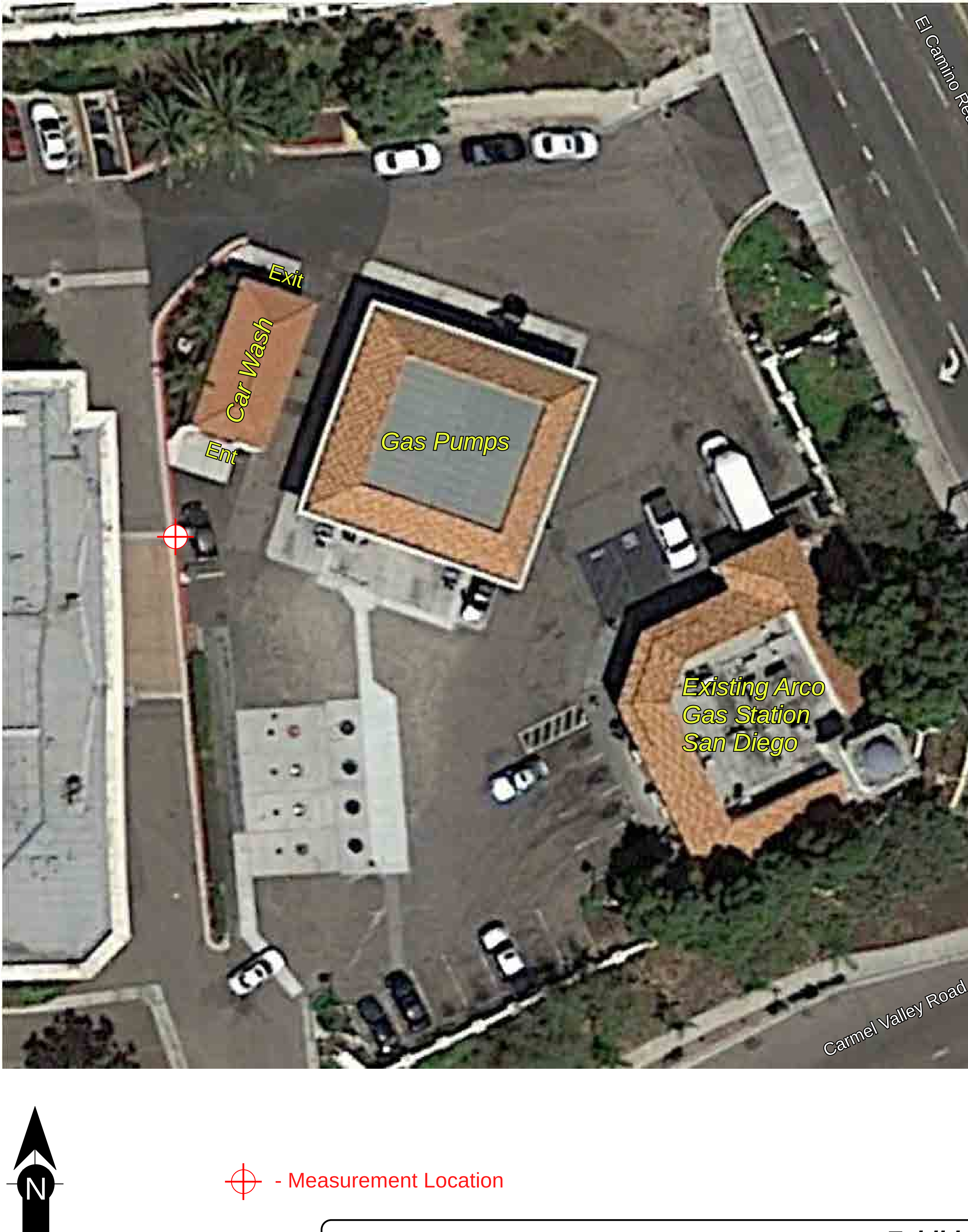
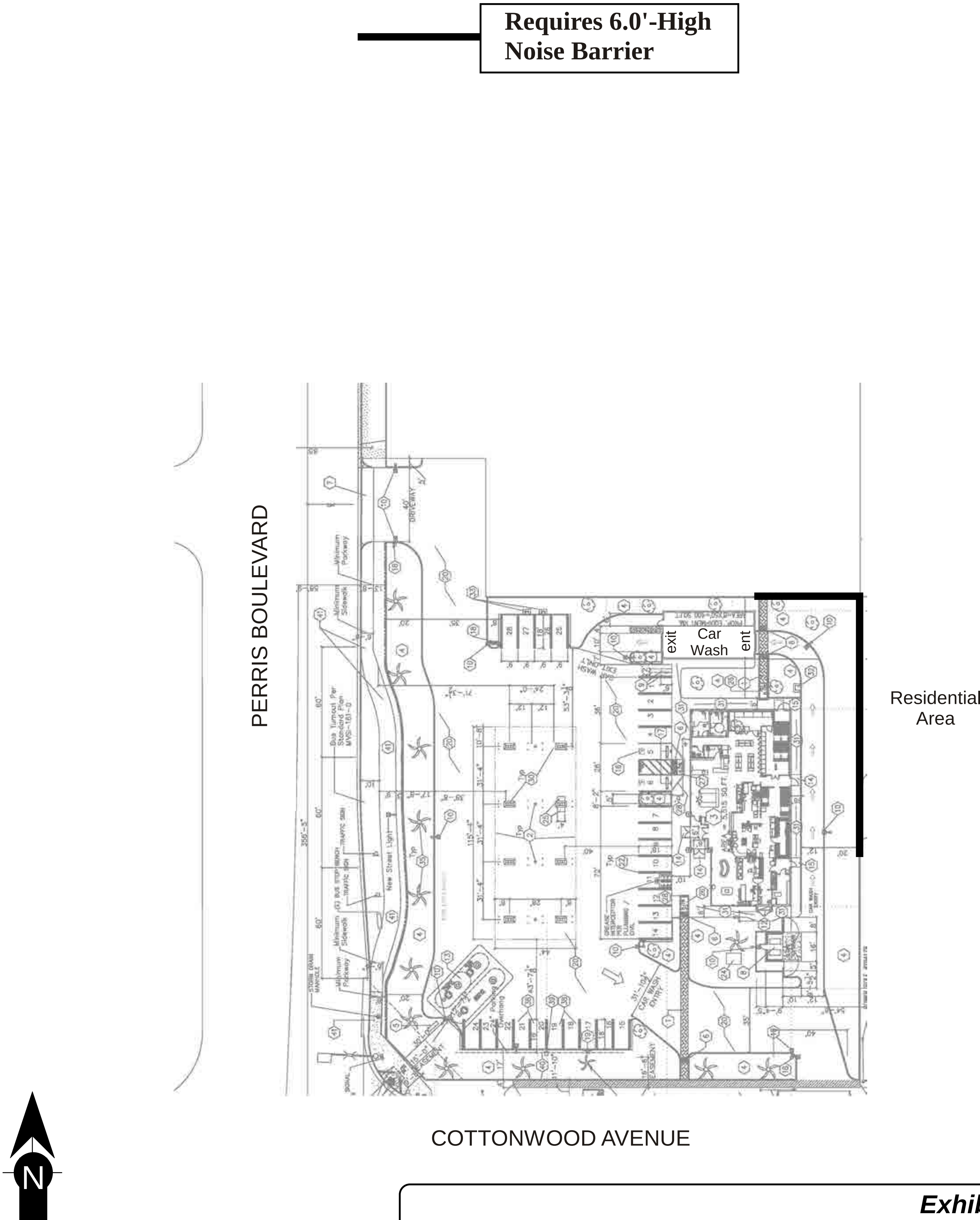


Exhibit 4

Existing Car Wash Measurement Locations



Exhibit

Required Noise Barrier

The projected Lmax at the nearest residential receiver from the proposed car wash is 49.4 dBA. This meets the City's nighttime exterior Noise Ordinance limit of 55 dBA. The results of the analysis indicate that with the car wash designed like the existing Arco facility, the Lmax noise levels at all the nearest residential areas are projected to meet the daytime and nighttime Noise Ordinance limits. The proposed car wash must be designed, constructed, and operated the same as the existing Arco car wash in order for the noise level limits to be met. This includes such items as equipment types and locations, door types and configuration, and operational parameters such as when the doors open and close.

6.0 DESIGN MEASURES

Calculations have shown that with the car wash designed and operated like the existing Arco facility, the project will meet the City's daytime and nighttime Noise Ordinance limits. The following design items must be adhered to in order for the noise level limits to be met.

- The car wash equipment shall be the same as that used at the Arco facility, and placed in the same locations within the tunnel as at the Arco facility.

- The building design (walls and roof) shall be the same materials as used at the Arco facility.

- The roll-up doors shall be the same type, and shall be installed the same as the Arco facility.

- Both the entrance end and exit end doors need to be in the closed position when a car is being washed and dried.

- A noise barrier shall be constructed that meets or exceeds the barrier shown in Exhibit 5.

- The noise barrier must have a surface density of at least 3.5 pounds per square foot, and shall have no openings or gaps. The wall may be constructed of stud and stucco, 3/8-inch plate glass, 5/8-inch Plexiglas, any masonry material, or a combination of these materials.

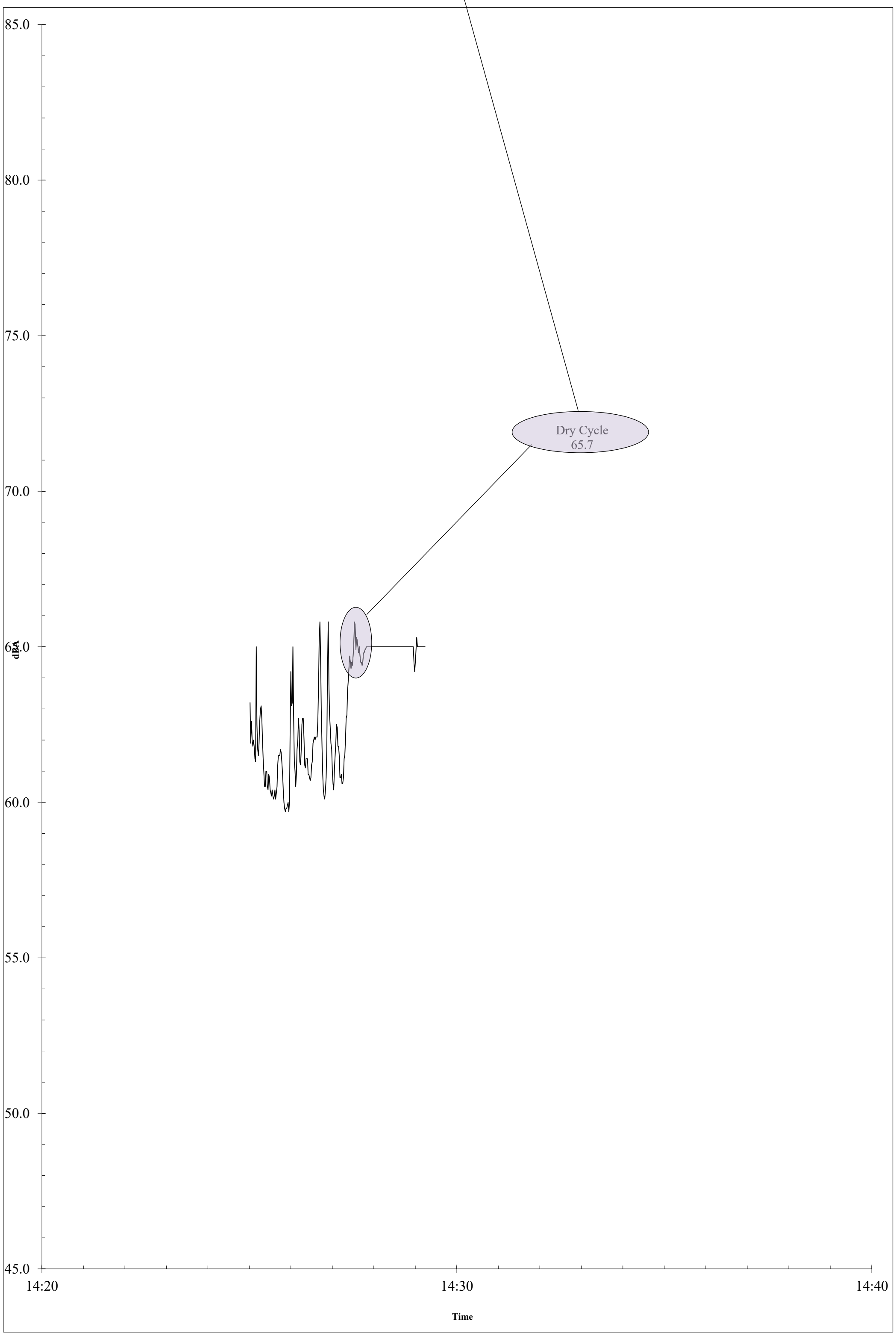
With these design measures in place, the noise levels at the nearest homes will meet the City's daytime and nighttime Noise Ordinance limits.

APPENDIX
Calculation Spreadsheets

Arco Car Wash
3170 Carmel Valley Road
San Diego
25' from Entrance End, Doors Closed
8-12-16

ref at 25' Distance, On-Axis

		Metric	Level	at 57'	
		LEQ	63.0		
Night STD =	**55**	**Lmax**	65.7	**58.5**	no wall
		L1.7	65.3		
		L8.3	65.0		
		L25	#NUM!		
		L50	62.7		
		L90	60.4		
		Lmin	59.7		



Source: Arco Car Wash SD, Entrance End, Door Closed
Reference Frequency (Hz): 500

Nighttime Lmax Standard
55

Residential property to the east

Source Height	Source Elevation	Source Level	Reference Distance	Source to Barrier	Barrier Height	Barrier Elevation	Barrier to Receiver	Receiver Height	Receiver Elevation	Barrier Reduction	**Lmax (dBA)**
8	0	65.7	25	57	0.0	0	1	5	0	0.000	58.4
8	0	65.7	25	57	**6.0** planned	0	1	5	0	9.139	49.2

Appendix B

Traffic Impact Study and Supplemental Traffic Assessment

TRAFFIC IMPACT STUDY
FOR THE
PERRIS BLVD/COTTONWOOD AVE PROJECT
IN THE CITY OF MORENO VALLEY

REGISTERED PROFESSIONAL ENGINEER
JASON J. MELCHOR
No. 65218
EXP 9/30/17
CIVIL
STATE OF CALIFORNIA

Prepared for:

A & S Engineering, Inc.

Prepared by:

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Tim Chan, EIT

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765 The City Drive, Suite 200
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TRAFFIC IMPACT STUDY
FOR THE PERRIS BLVD / COTTONWOOD AVE PROJECT
IN THE CITY OF MORENO VALLEY

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TRAFFIC IMPACT STUDY
FOR THE PERRIS BLVD/COTTONWOOD AVE PROJECT
IN THE CITY OF MORENO VALLEY

INTRODUCTION

This traffic impact study has been prepared to evaluate the project-related traffic impacts associated with the proposed development of a Yum Yum Donut Shop and Gas Station with Car Wash within a vacant parcel located at the northeast corner of Perris Boulevard and Cottonwood Avenue in the City of Moreno Valley, California. The study assesses the project impact by providing an analysis of existing and future conditions, with and without project traffic. This document follows the assumptions established during discussions with the City of Moreno Valley staff and the approved Scoping Agreement. The approved Scoping Agreement is provided in *Appendix A*.

This report has been prepared in accordance with the City of Moreno Valley Traffic Impact Analysis Preparation Guide.

PROJECT DESCRIPTION

The proposed project, designated as Planning Case PA15-0030, will be developed on the northeast corner of Perris Boulevard and Cottonwood Avenue in the City of Moreno Valley. The project site location is shown in its regional setting on Figure 1. The project will involve development of a 16-pump gas station with a 5,515-square-foot building consisting of a donut shop/convenience market and a drive-through car wash. The project site is located in an Office Commerical (OC) zone based on the City of Moreno Valley Zoning Code, which allows the development of retail sales and service. The site is bounded to the south by Cottonwood Avenue, to the north by vacant parcels, to the west by Perris Boulevard, and to the east by residential land uses. Ingress and egress to the site will be provided via an unsignalized driveway on Perris Boulevard and an unsignalized driveway on Cottonwood Avenue. There is an existing church on Cottonwood Avenue across the street from the project. The project site plan is shown on Figure 2.

The project is anticipated to be completed in 2016. To be consistent with the analysis methodology detailed in the City's guidelines, a minimum five-year horizon was considered for the future conditions analysis. Therefore, a project opening year of 2020 was used in this study.

FIGURE 1
VICINITY MAP

Kimley»Horn

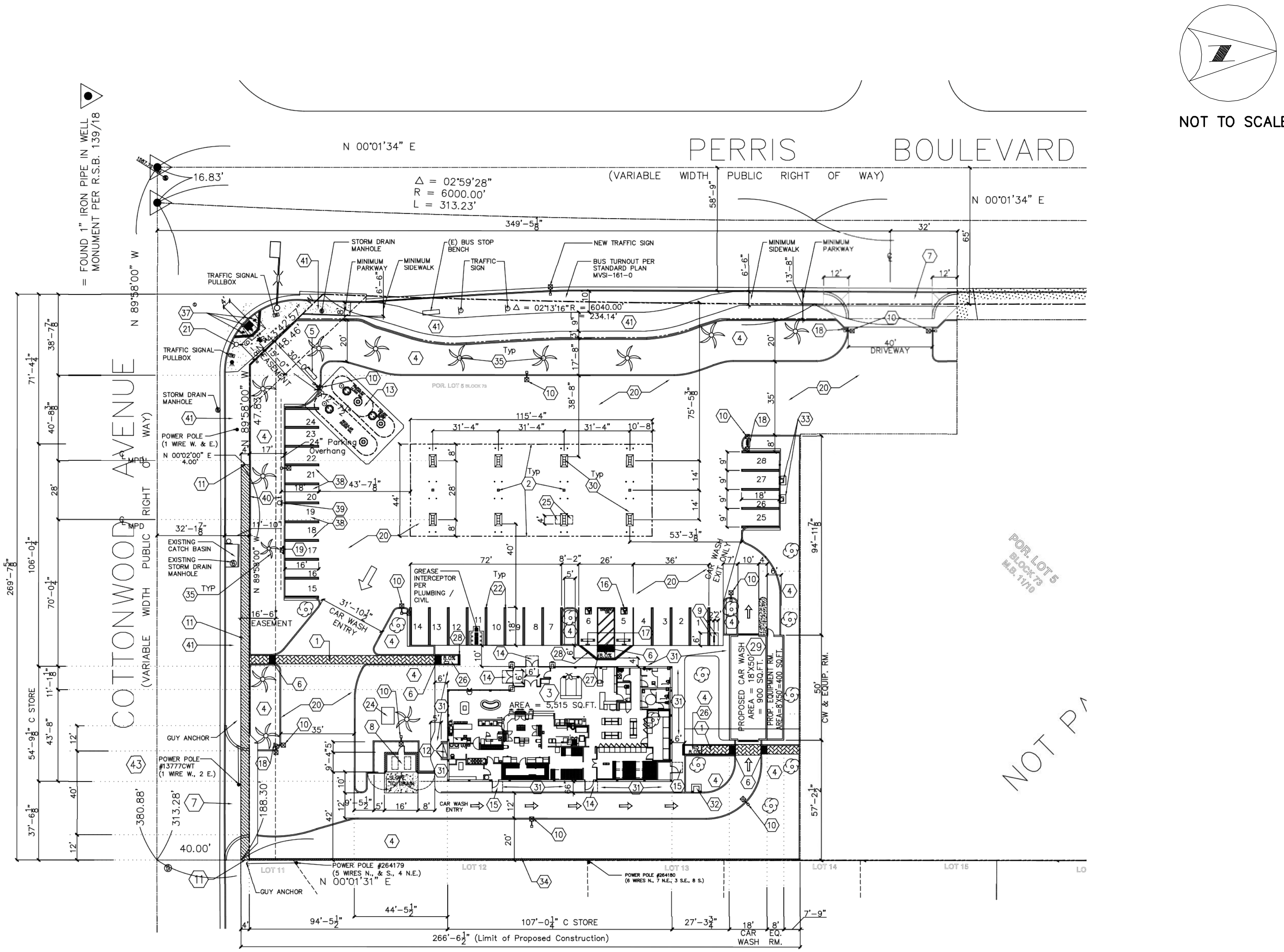


FIGURE 2
PROJECT SITE PLAN

Kimley»Horn

ANALYSIS SCENARIOS AND METHODOLOGY

Analysis Scenarios

The study area was determined with input from City Staff through the scoping process. The following study intersections were identified for evaluation:

Int. #	Study Intersection	Traffic Control	LOS Standard[1]
1	Perris Boulevard at Eucalyptus Avenue	Signalized	D
2	Perris Boulevard at Atwood Avenue	Unsignalized	D
3	Perris Boulevard at Dracaea Avenue	Signalized	D
4	Cottonwood Avenue at Indian Street	Signalized	C
5	Cottonwood Avenue at Perris Boulevard	Signalized	D
6	Cottonwood Avenue at Crape Myrtle Drive	Unsignalized	C
7	Cottonwood Avenue at Kitching Street	Signalized	C
8	Perris Boulevard at Bay Avenue	Signalized	D
9	Perris Boulevard at Alessandro Boulevard	Signalized	D
D1	Perris Boulevard Driveway	Unsignalized	D
D2	Cottonwood Avenue Driveway	Unsignalized	D

[1] The Level of Service (LOS) Standard is based on the City of Moreno Valley General Plan (July 2006)

The following roadway segments were also identified for evaluation:

1. Perris Boulevard: Eucalyptus Avenue to Cottonwood Avenue
2. Perris Boulevard: Cottonwood Avenue to Alessandro Boulevard
3. Cottonwood Avenue: Indian Street to Perris Boulevard
4. Cottonwood Avenue: Perris Boulevard to Kitching Street

The location of the study intersections and roadway segments are shown on Figure 3. Based on the City's guidelines, this traffic analysis provides an evaluation of daily as well as morning and evening peak hour operations. Additionally, City staff identified the need to study Sunday noon conditions to account for traffic generated by the existing church adjacent to the project site. The analysis includes the following scenarios:

- Existing Conditions
- Existing With Project Conditions
- Cumulative (Opening Year 2020) Without Project
- Cumulative (Opening Year 2020) With Project

Any mitigation measures for the future conditions will be identified, if necessary.

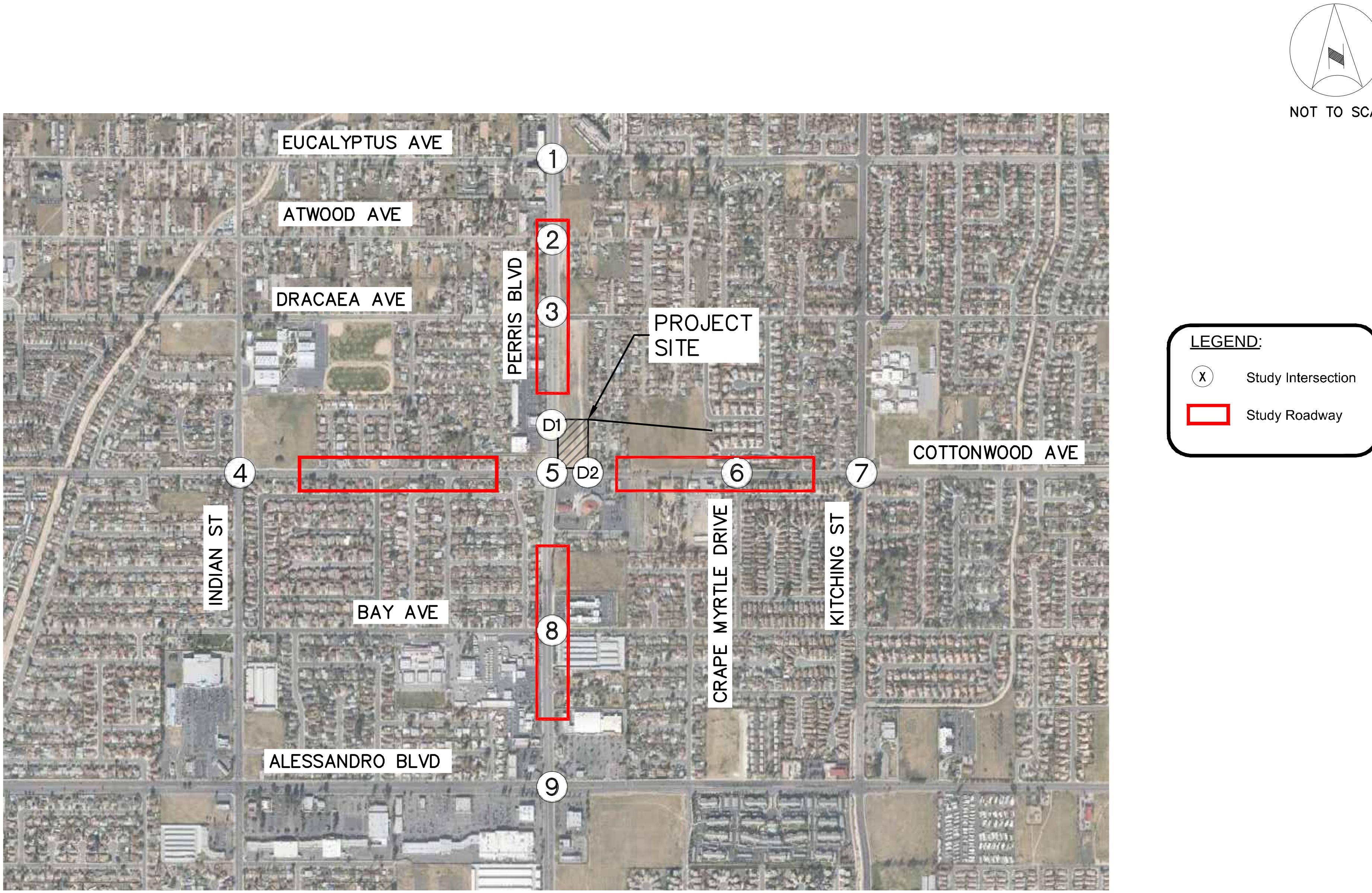


FIGURE 3
STUDY INTERSECTIONS AND ROADWAYS

ANALYSIS METHODOLOGY

The Synchro 8 software (Trafficware) was used to analyze the peak hour operations of both signalized and unsignalized intersections. Synchro 8 uses the methodologies outlined in the 2010 *Highway Capacity Manual (HCM)*. Analysis assumptions presented in the City of Moreno Valley Traffic Impact Analysis Preparation Guide were used.

Signalized Intersections

The 2010 Highway Capacity Manual (HCM), published by the Transportation Research Board (TRB), establishes a system whereby highway facilities are rated for their ability to accommodate traffic volumes. The terminology "Level of Service" is used to provide a qualitative evaluation based on certain quantitative calculations, which are related to empirical values.

Level of Service (LOS) for signalized intersections is defined in terms of average vehicle delay, which is a measure of driver discomfort, frustration, fuel consumption, and loss of travel time. Specifically, LOS criteria are stated in terms of the average control delay per vehicle for the peak 15-minute period within the hour analyzed. The average control delay includes initial deceleration delay, queue move-up time, and final acceleration time in additional to the stop delay. The Level of Service criteria for the various LOS designations are summarized on the following chart.

LEVEL OF SERVICE (LOS) CRITERIA FOR SIGNALIZED INTERSECTIONS			
LOS	Control Delay (sec/veh)	V/C Ratio	Description
A	≤10.0	≤ 0.60	Operations with very low delay and most vehicles do not stop.
B	>10.0 – 20.0	0.61 – 0.70	Operations with good progression but with some restricted movement.
C	>20.0 – 35.0	0.71 – 0.80	Operations where a significant number of vehicles are stopping with some backup and light congestion.
D	>35.0 – 55.0	0.81 – 0.90	Operations where congestion is noticeable, longer delays occur, and many vehicles stop. The proportion of vehicles not stopping declines.
E	>55.0 – 80.0	0.91 – 1.00	Operations where there is significant delay, extensive queuing, and poor progression.
F	>80.0	> 1.00	Operations are unacceptable to most drivers, when the arrival rates exceed the capacity of the intersection.
Source: 2010 Highway Capacity Manual, Chapter 18, Page 18-6, Exhibit 18-4			

Unsignalized Intersections

The Level of Service for unsignalized intersections is determined by the computed or measured control delay and is defined for each minor movement. The Level of Service criteria for unsignalized intersections, as described in the 2010 Highway Capacity Manual, are provided in the following chart.

LEVEL OF SERVICE (LOS) CRITERIA FOR UNSIGNALIZED INTERSECTIONS	
Level of Service	Control Delay (sec/veh)
A	0 - 10.0
B	>10.0 - 15.0
C	>15.0 - 25.0
D	>25.0 - 35.0
E	>35.0 - 50.0
F	>50.0
Note: The LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for major-street approaches, or for the intersection as a whole. Source: 2010 Highway Capacity Manual, Chapter 19, Page 19-2, Exhibit 19-1	

Roadway Segments

In order to determine the project-related impacts on the study area roadway segments, the following roadway capacities, provided in the City of Moreno Valley Traffic Impact Analysis Preparation Guide, were used. Roadway capacities are provided in vehicles per day.

TYPE OF ROADWAY	LEVEL OF SERVICE FOR ROADWAY SEGMENTS				
	A	**B**	**C**	**D**	**E**
Six Lane Divided Arterial	33,900	39,400	45,000	50,600	56,300
Four Lane Divided Arterial	22,500	26,300	30,000	33,800	37,500
Four Lane Undivided Arterial	15,000	17,500	20,000	22,500	25,000
Two Lane Industrial Collector	7,500	8,800	10,000	11,300	12,500
Two Lane Undivided Residential	N/A	N/A	N/A	N/A	2,000

Significant Impact Criteria

Based on the City of Moreno Traffic Impact Analysis Preparation Guide, significant impacts are defined by the California Environmental Quality Act (CEQA) under the following conditions:

- Existing traffic conditions exceed the General Plan target LOS.
- When cumulative traffic exceeds the target LOS, and impacts cannot be mitigated through the Transportation Uniform Mitigation Fee (TUMF) and/or the City of Moreno Valley Developer Impact Fee (DIF) network (or other funding mechanism), project conditions of approval, or other implementation mechanism.

EXISTING TRAFFIC CONDITIONS

This section summarizes the existing roadway circulation network, daily and peak-hour traffic volumes, and existing operating conditions and Level of Service at the study intersections and roadway segments.

Existing Street System

Regional access to the site will be provided by the SR-60 and the I-215 Freeways. The SR-60 Freeway is located approximately 1.0 mile to the north of the project site. The I-215 Freeway is located approximately 3.5 miles to the west of the project site.

Local access to the project vicinity is provided by several roadways. Roadway classifications were taken from the City of Moreno Valley General Plan Circulation Element. These roadway classifications are shown on Figure 4. Typical roadway cross sections corresponding to these classifications are shown on Figure 5.

Perris Boulevard is a four-lane divided roadway with two lanes in each direction and a two-way-left-turn median. Perris Boulevard has a width of 86 feet measured from curb to curb within the study area. The posted speed limit is 40 miles per hour. The street traverses the City of Moreno Valley in the north-south direction and is classified as a Divided Arterial in the City of Moreno Valley General Plan.

Cottonwood Avenue is a two-lane divided roadway with one lane in each direction and a two-way-left-turn median. Cottonwood Avenue has a width of 64 feet measured from curb to curb. The posted speed limit is 45 miles per hour throughout the study area. There is currently a bike lane striped in each direction. Based on the City of Moreno Valley Bicycle Master Plan, Cottonwood Avenue is designated as a Bicycle Boulevard. The street runs east-west and is classified as a Minor Arterial in the City of Moreno Valley General Plan.

Alessandro Boulevard is a six-lane divided roadway running east-west with three lanes in each direction and a two-way-left-turn median. At the intersection of Perris Boulevard, there is a raised median

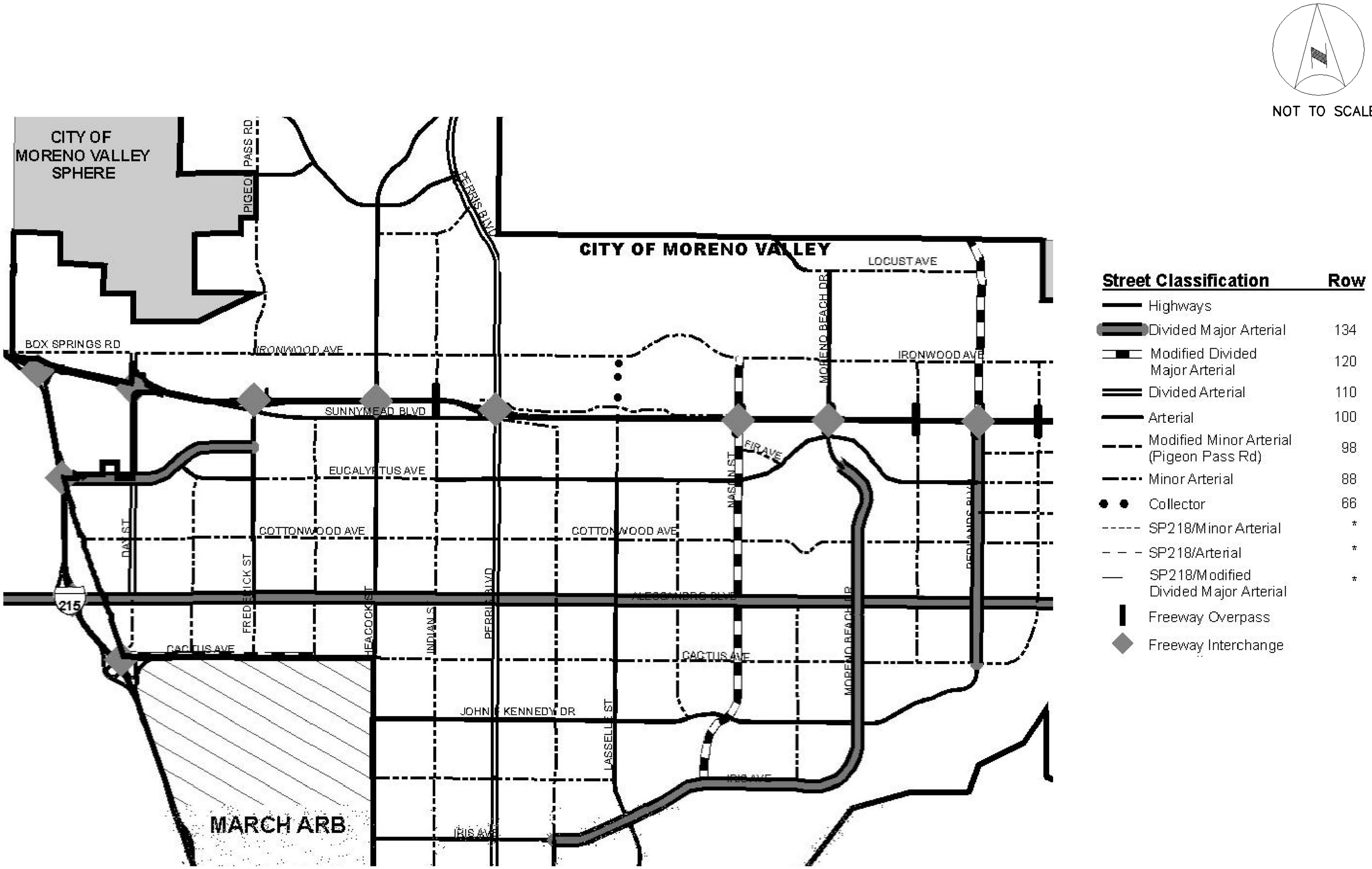


FIGURE 4
GENERAL PLAN ROADWAY NETWORK
SOURCE: CITY OF MORENO VALLEY GENERAL PLAN CIRCULATION ELEMENT

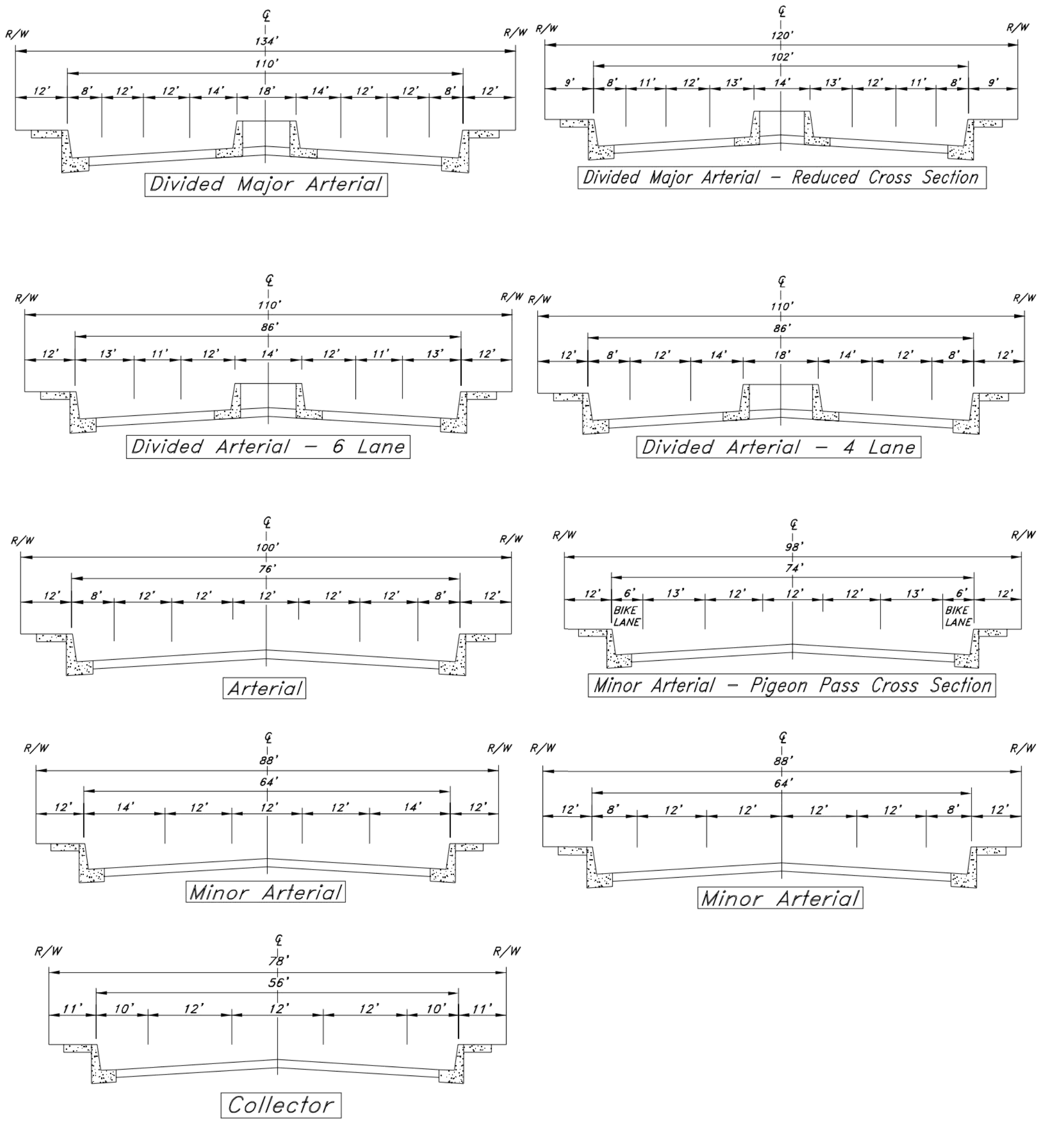


FIGURE 5
ROADWAY CROSS SECTIONS

SOURCE: CITY OF MORENO VALLEY GENERAL PLAN CIRCULATION ELEMENT

along Alessandro Boulevard. Alessandro Boulevard has a width of 110 feet measured from curb to curb. The posted speed limit is 45 miles per hour. The street is classified as a Divided Major Arterial in the City of Moreno Valley General Plan.

Existing Transit Services

Riverside Transit Agency Route 18 is a bus route that operates along Cottonwood Avenue within the project vicinity. Route 18 operates seven days a week and provides transportation services between Sunnymead Ranch and Moreno Valley College.

Riverside Transit Agency Route 19 is a bus route that currently operates along Perris Boulevard within the project vicinity. Route 19 operates seven days a week and provides transportation between the Moreno Valley Mall and the Perris Station Transit Center to the south of the project site.

Riverside Transit Agency Route 20 is a bus route that runs in the east-west direction along Alessandro Boulevard within the study area. Route 20 operates seven days a week and provides transportation between Magnolia Center in the City of Riverside and Moreno Valley College.

Truck Routes

Perris Boulevard is a designated truck route within the study area and provides access to the SR-60 Freeway to the north of the project site. Alessandro Boulevard is a truck route in the east-west direction along its entirety within the City of Moreno Valley limits.

Existing Traffic Volumes

Existing morning peak period (7:00 to 9:00 AM) and evening peak period (4:00 to 6:00 PM) turning movement counts were collected for all study intersections, and 24-hour roadway volumes were collected for all study roadway segments. Sunday Noon counts (11:00 AM to 2:00 PM) were collected at all study intersections to coincide with peak traffic generated by the St. Christopher Catholic Church. The counts were completed in September, 2015, when area schools were in session.

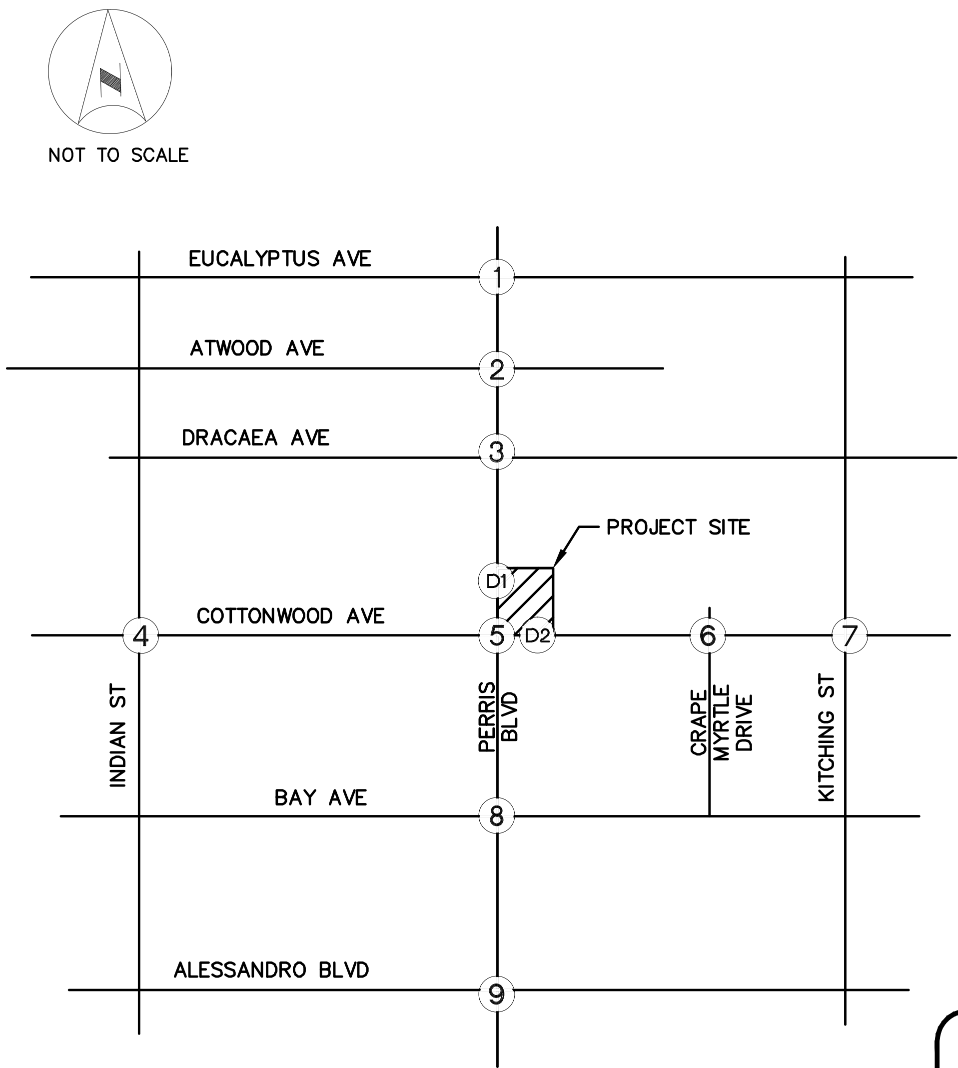
The existing lane configurations and traffic control at the study intersections are shown in Figure 6. Existing peak hour turning movement volumes at the study intersections and daily volumes on study roadways are shown in Figure 7. Existing Sunday traffic volumes are shown in Figure 8. Peak hour intersection traffic count and daily roadway traffic count worksheets are provided in *Appendix B*.

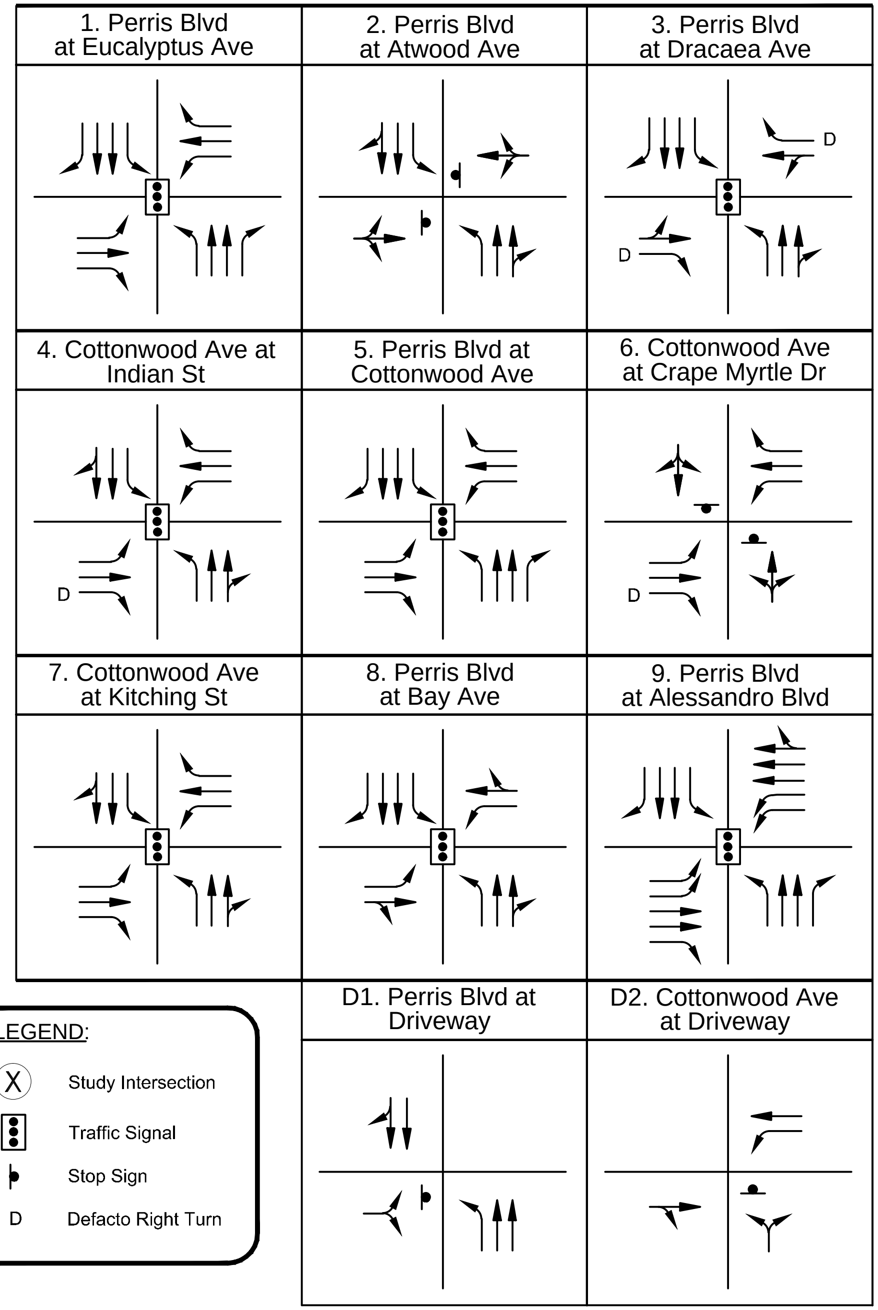
Intersection Analysis – Existing Operating Conditions

The study intersections were analyzed in accordance with the analysis methodology described earlier in this report. Intersection Level of Service worksheets are provided in *Appendix C*. The Existing Conditions analysis results and Level of Service for the study intersections are presented in Table 1. Review of this table shows that all study intersections currently operate at LOS D or better during all peak hour periods, with the exception of the unsignalized intersection of Cottonwood Avenue at Crape Myrtle Drive. The intersection currently operates at a LOS E in the morning peak hour based on the worst-case approach. This worst-case delay is caused by 31 vehicles making a southbound left-turn movement from the minor street approach.

Roadway Segment Analysis – Existing Conditions

The study roadway segments were analyzed in accordance with the analysis methodology described earlier in this report. The Existing Conditions analysis results and Level of Service for the study roadway segments are presented in Table 2. As review of this table shows, all study roadway segments are currently operating at LOS D or better under Existing Conditions.





LEGEND:

X	Study Intersection
	Traffic Signal
	Stop Sign
D	Defacto Right Turn

FIGURE 6
EXISTING LANE CONFIGURATION AND TRAFFIC CONTROL

Kimley»Horn

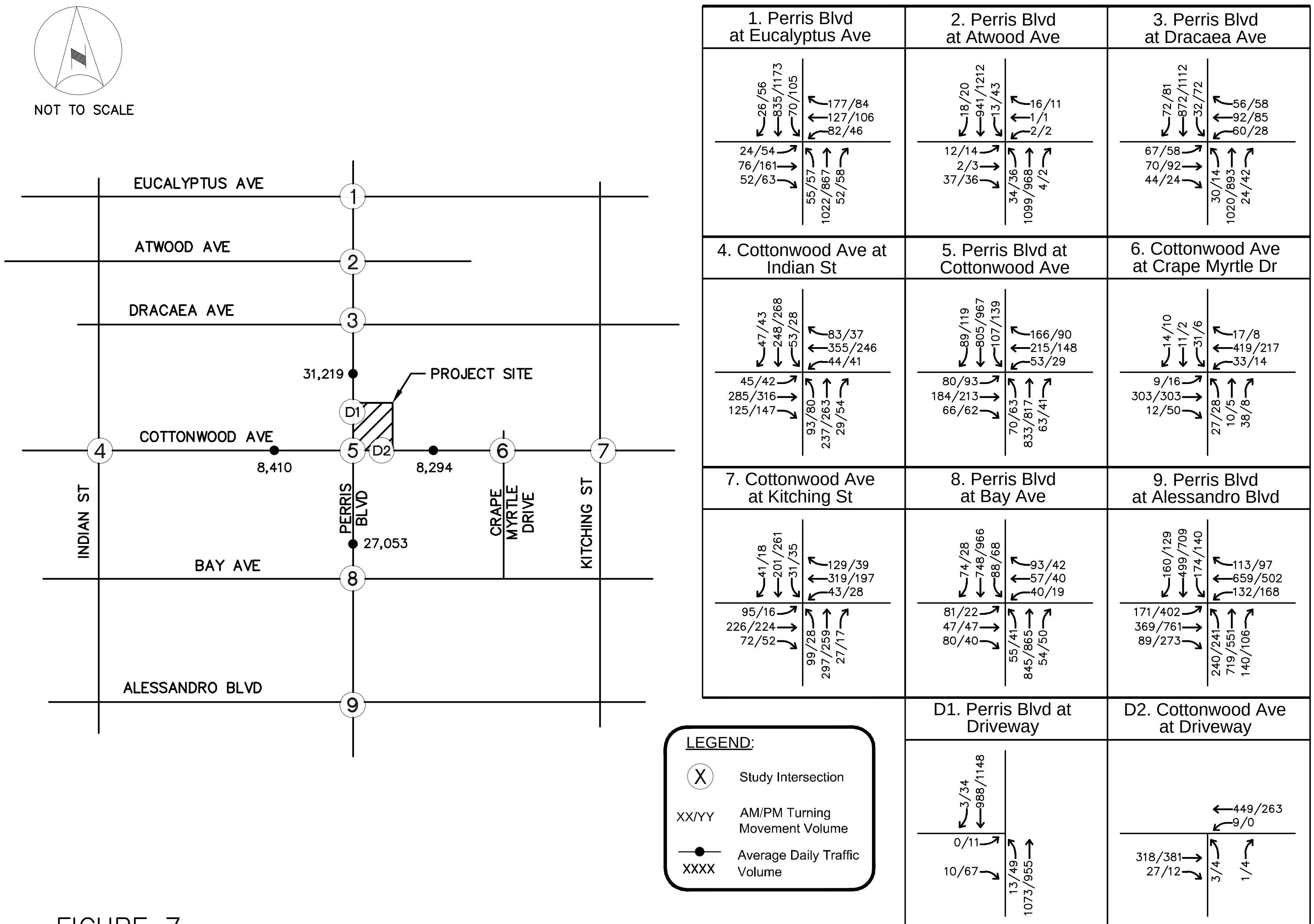


FIGURE 7
EXISTING TRAFFIC VOLUMES – WEEKDAY

Kimley»Horn

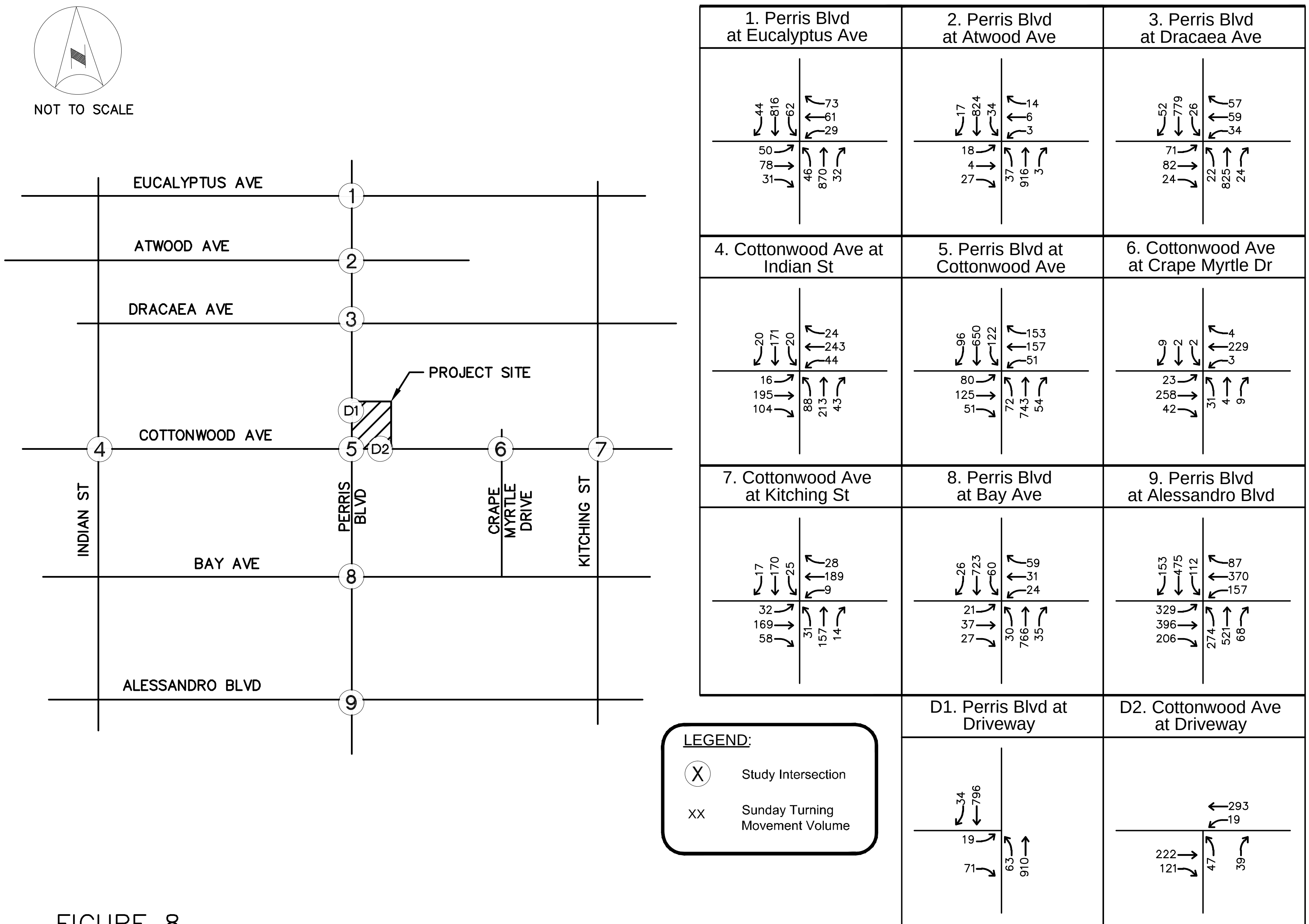


FIGURE 8
EXISTING TRAFFIC VOLUMES – SUNDAY

TABLE 1
SUMMARY OF INTERSECTION OPERATION
EXISTING CONDITIONS

Int. #	Intersection	Intersection Control	Peak Hour	Existing Conditions	
				Delay (sec/veh)	LOS
1	Perris Boulevard at Eucalyptus Avenue	Signal	AM	19.9	B
			PM	20.4	C
			SUN	16.6	B
2	Perris Boulevard at Atwood Avenue	Unsignalized	AM	23.8	C
			PM	29.0	D
			SUN	27.4	D
3	Perris Boulevard at Dracaea Avenue	Signal	AM	26.5	C
			PM	18.0	B
			SUN	20.6	C
4	Cottonwood Avenue at Indian Street	Signal	AM	23.1	C
			PM	20.1	C
			SUN	18.1	B
5	Cottonwood Avenue at Perris Boulevard	Signal	AM	26.1	C
			PM	21.7	C
			SUN	23.1	C
6	Cottonwood Avenue at Crape Myrtle Drive	Unsignalized	AM	39.5	E
			PM	15.2	C
			SUN	22.3	C
7	Cottonwood Avenue at Kitching Street	Signal	AM	25.3	C
			PM	16.1	B
			SUN	16.9	B
8	Perris Boulevard at Bay Ave	Signal	AM	22.2	C
			PM	16.4	B
			SUN	14.6	B
9	Perris Boulevard at Alessandro Boulevard	Signal	AM	30.1	C
			PM	35.3	D
			SUN	28.6	C
D1	Perris Boulevard Driveway	Unsignalized	AM	13.2	B
			PM	34.8	D
			SUN	32.6	D
D2	Cottonwood Avenue Driveway	Unsignalized	AM	17.5	C
			PM	13.0	B
			SUN	17.4	C

Unsignalized Intersection Delay is reported for the worst approach

TABLE 2
SUMMARY OF ROADWAY OPERATIONS
EXISTING CONDITIONS

Roadway Segment	Roadway Classification	Roadway Capacity	ADT	V/C	LOS
Perris Boulevard: Eucalyptus Avenue to Cottonwood Avenue	4-Lane Divided Arterial	37,500	31,219	0.83	D
Perris Boulevard: Cottonwood Avenue to Alessandro Boulevard	4-Lane Divided Arterial	37,500	27,053	0.72	C
Cottonwood Avenue: Indian Street to Perris Boulevard	2-Lane Arterial	12,500	8,410	0.67	A
Cottonwood Avenue: Perris Boulevard to Kitching Street	2-Lane Arterial	12,500	8,294	0.66	A

PROJECT TRAFFIC

Trip Generation

The trips expected to be generated by the project were calculated using trip generation rates published in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition (2012). Trip rates are based on ITE Land Use Category 946 – Gas Station with Convenience Market & Car Wash.

It is recognized that not all inbound and outbound trips to the proposed project will be "new" trips on the roadway system in the vicinity of the proposed project. Some trips to the project site will consist of "pass-by" trips -- motorists who are already traveling on the surrounding roadways from one place to another. Common pass-by trips for a gas station would be individuals who stop at the project site on the way to work, home, or school.

The ITE Trip Generation Handbook, 9th Edition (2012) was used to determine the pass-by factors for the Gas Station with Convenience Market & Car Wash. For the Gas Station component, a pass-by rate of 62% was applied to the morning peak hour, and a pass-by rate of 56% was applied to the evening peak hour. Since pass-by rates were not provided for the Sunday peak, the lower 56% from the evening peak hour was used for a conservative estimate. The trip generation assumptions were approved by City Staff in the Scoping Agreement.

Daily, morning peak hour, evening peak hour, and Sunday trip generation estimates are summarized on Table 3. The project is estimated to generate 2,445 daily trips, 190 morning peak hour trips, 222 evening peak hour trips, and 312 Sunday peak hour trips. After applying pass-by reductions, the development is projected to generate a net of 2,445 daily trips, 72 morning peak hour trips, 98 evening peak hour trips, and 138 Sunday peak hour trips.

Trip Distribution and Assignment

Project trip distribution and assignment assumptions for the proposed project were developed with approval from the City Traffic Engineering staff. The distribution and assignment assumptions took into account existing traffic patterns. Trip distribution assumptions are shown on Figure 9.

Based on the proposed project trip distribution, project trips were assigned through the study intersections. The resulting project-related traffic weekday and Sunday volumes at each study intersection and roadway are shown on Figure 10 and Figure 11, respectively. The volumes provided on Figure 10 and Figure 11 account for pass-by trips, which would typically be added to project driveways but not to non-adjacent study intersections; pass-by trips are assumed to be part of the existing flow of traffic until reaching the project site. A breakdown of non pass-by and pass-by trips can be found in *Appendix D*.

The trip assignment in this section is based on the existing roadway geometry. Additional access alternatives to account for the potential construction of raised medians on Perris Boulevard and Cottonwood Avenue are discussed in the *Project Access Alternatives* section of this report.

TABLE 3
SUMMARY OF PROJECT TRIP GENERATION

Land Use	ITE Code	Unit	Trip Generation Rates [1]									
				AM Peak Hour			PM Peak Hour			Sunday Noon [3]		
			Daily	In	Out	Total	In	Out	Total	In	Out	Total
Gasoline Station w/ Conv. Mkt. & Car Wash	946	Fueling Position	152.84	6.04	5.80	11.84	7.07	6.79	13.86	9.73	9.73	19.46
			Trip Generation Estimates									
				AM Peak Hour			PM Peak Hour			Sunday Noon		
Land Use	Quantity	Unit	Daily	In	Out	Total	In	Out	Total	In	Out	Total
Gasoline Station w/ Conv. Mkt. & Car Wash	16	Fueling Position	2,445	97	93	190	113	109	222	156	156	312
- Pass-by Trips (AM 62%, PM 56%) [2]			-	-60	-58	-118	-63	-61	-124	-87	-87	-174
Total Project Trips			2,445	37	35	72	50	48	98	68	68	138

[1] *Source: Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition*

[2] *Source: ITE Trip Generation Manual - Volume 1: User's Guide and Handbook. A pass-by rate of 56% was used for Sunday trips.*

[3] *Sunday Peak Hour trips were calculated based on ITE rates for the Saturday Peak Hour of Generator.*

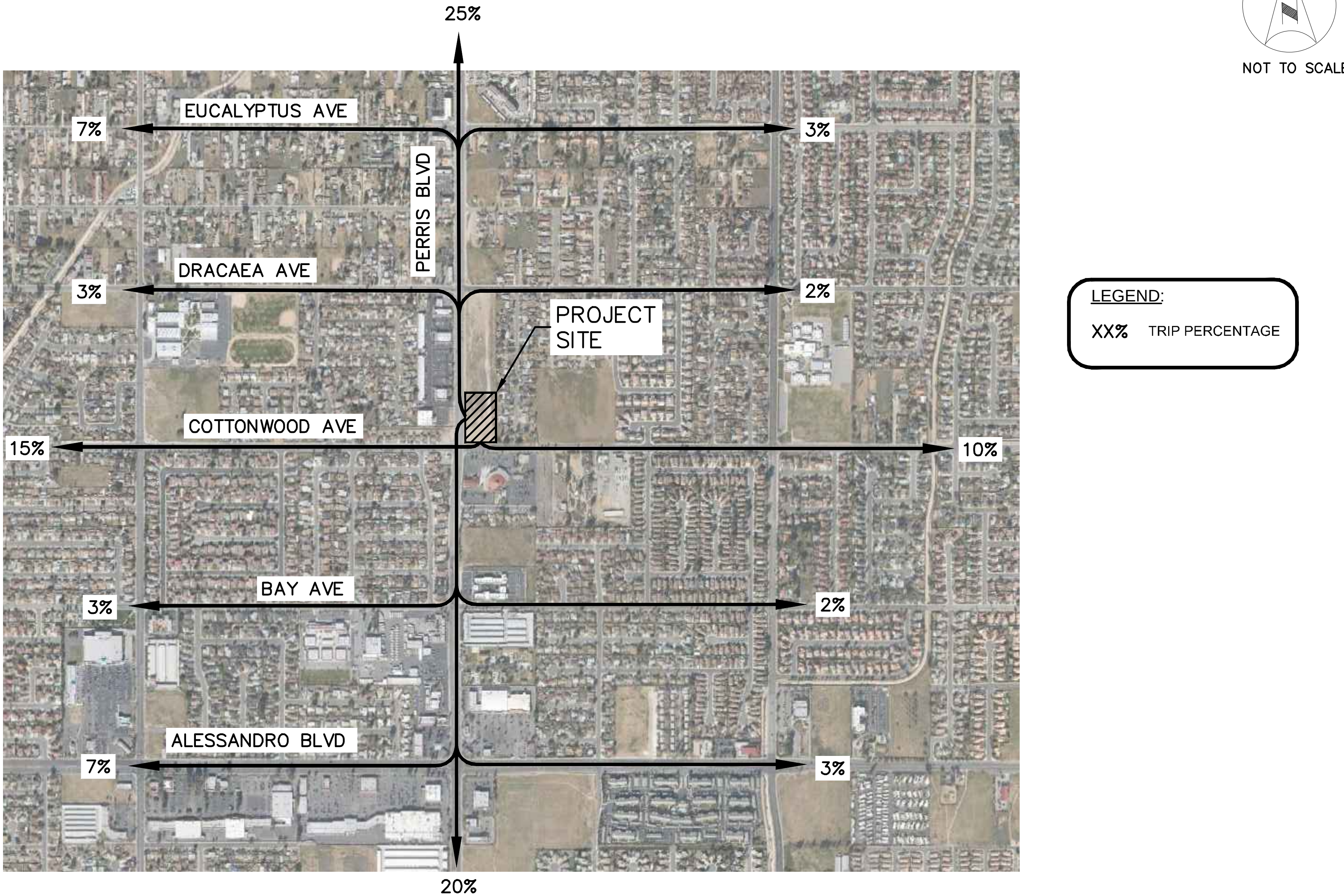


FIGURE 9
TRIP DISTRIBUTION ASSUMPTIONS

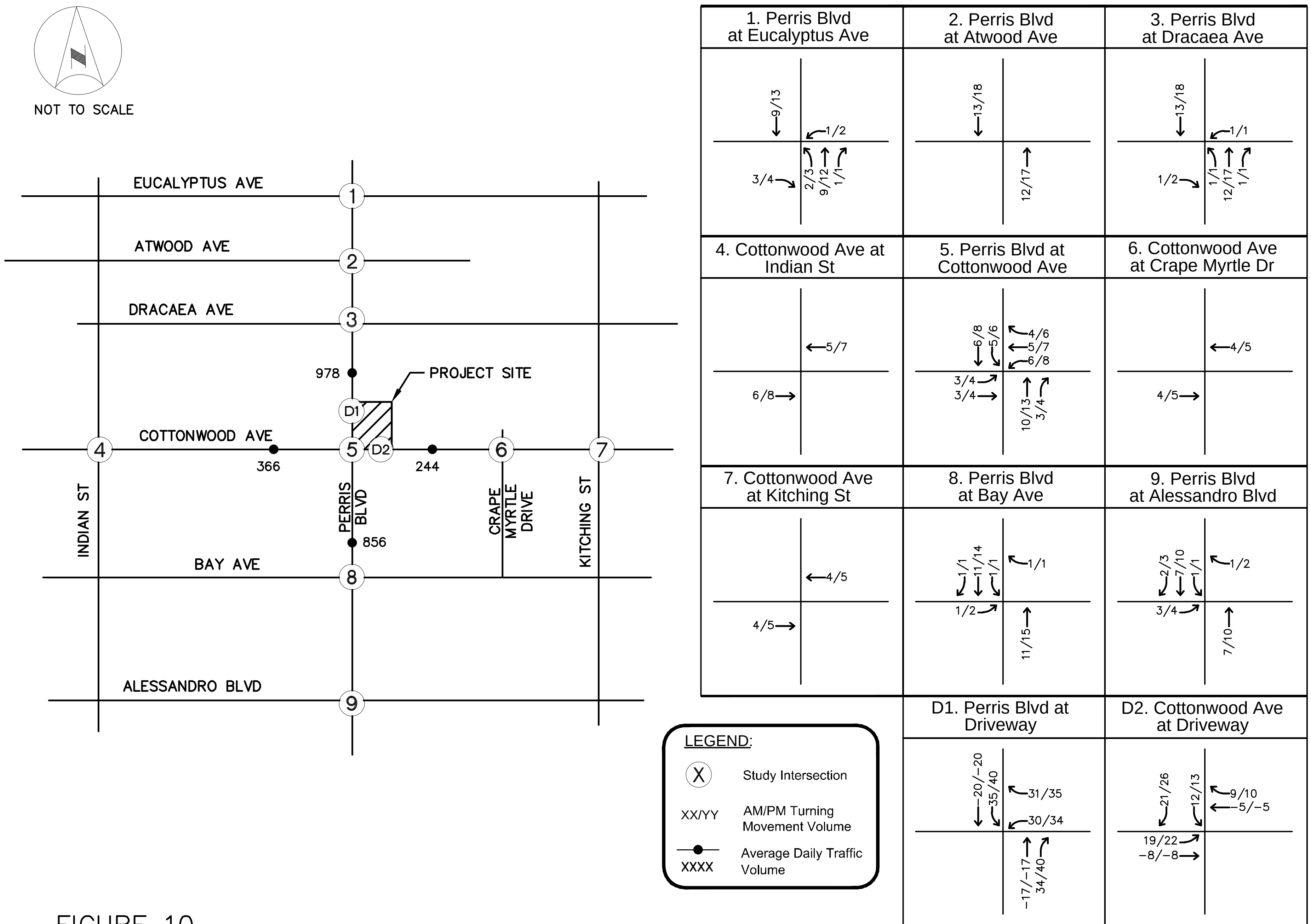


FIGURE 10
PROJECT TRAFFIC – WEEKDAY TRIPS

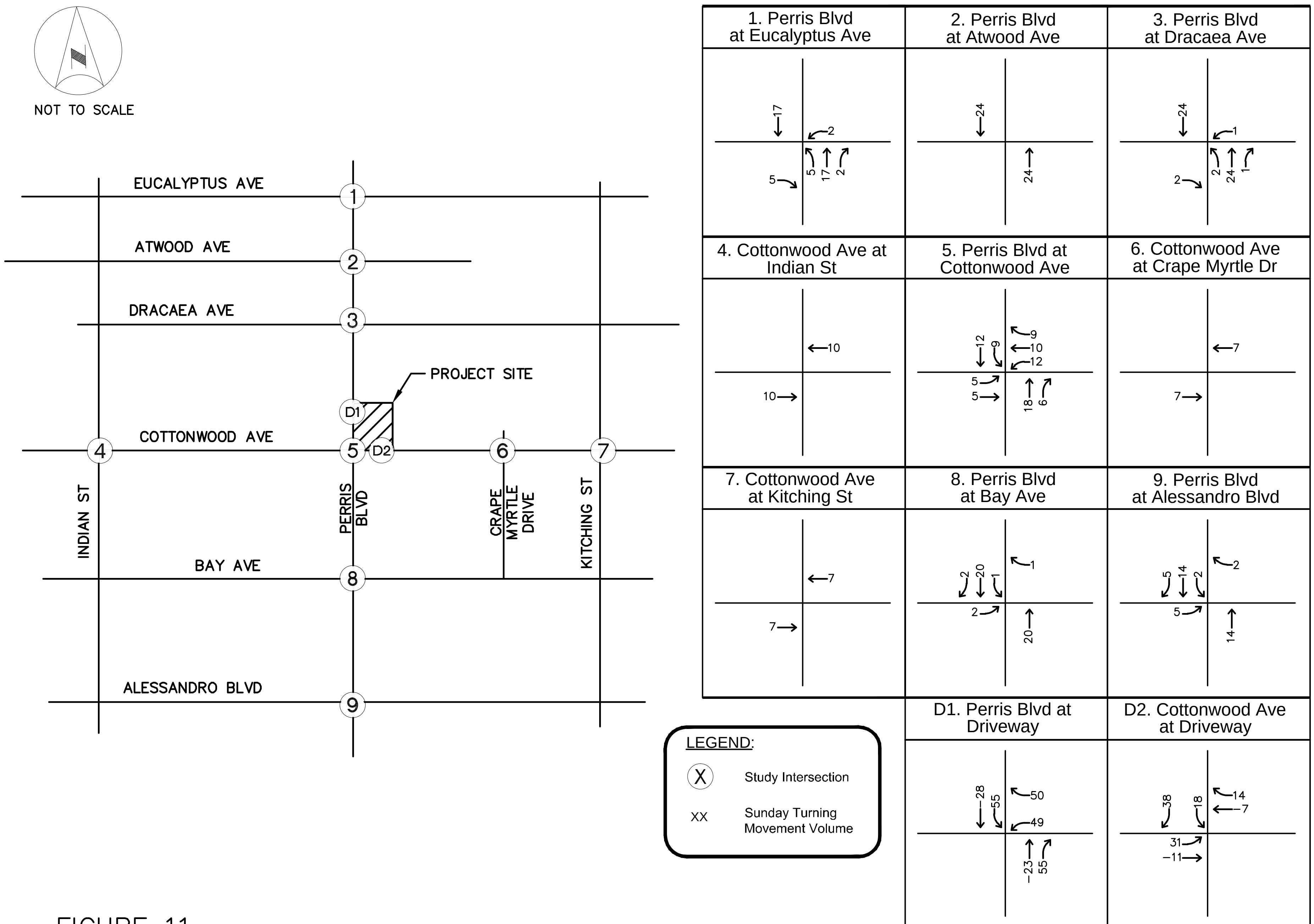


FIGURE 11
PROJECT TRAFFIC – SUNDAY TRIPS

EXISTING WITH PROJECT CONDITIONS

The Existing With Project analysis provides a summary of the impacts associated with adding project-related trips to existing traffic volumes. The Existing With Project scenario is a hypothetical scenario which assumes that the Project would be fully implemented at the present time and full absorption of Project traffic on the existing circulation system.

Intersection Analysis – Existing With Project

Existing With Project weekday and Sunday peak hour traffic volumes are shown on Figure 12 and Figure 13, respectively. The intersection analysis was conducted for the Existing With Project scenario, and the results are presented on Table 4. Intersection analysis worksheets are provided in *Appendix C*. Review of this table indicates that all study intersections will operate at acceptable Level of Service, with the exception of the following:

- Cottonwood Avenue at Crape Myrtle Drive (AM LOS E) – Southbound Approach
- Perris Boulevard Driveway (AM LOS F, PM LOS F, Sunday LOS F) – Westbound Approach

The intersection of Cottonwood Avenue at Crape Myrtle Drive is unsignalized and is shown to already operate deficiently in Existing Conditions. The deficiency is caused by the low volumes turning from the minor street approach.

The Perris Boulevard Driveway is unsignalized. The LOS F delay would be experienced by vehicles making a westbound left-turn out of the driveway onto Perris Boulevard.

Roadway Segment Analysis – Existing With Project

Existing With Project daily roadway segment volumes are shown on Figure 12, shown previously. The daily roadway segment analysis was conducted for the Existing With Project scenario, and the results are presented in Table 5. Review of this table indicates that all study roadway segments will continue to operate at Level of Service D or better with the addition of project traffic.

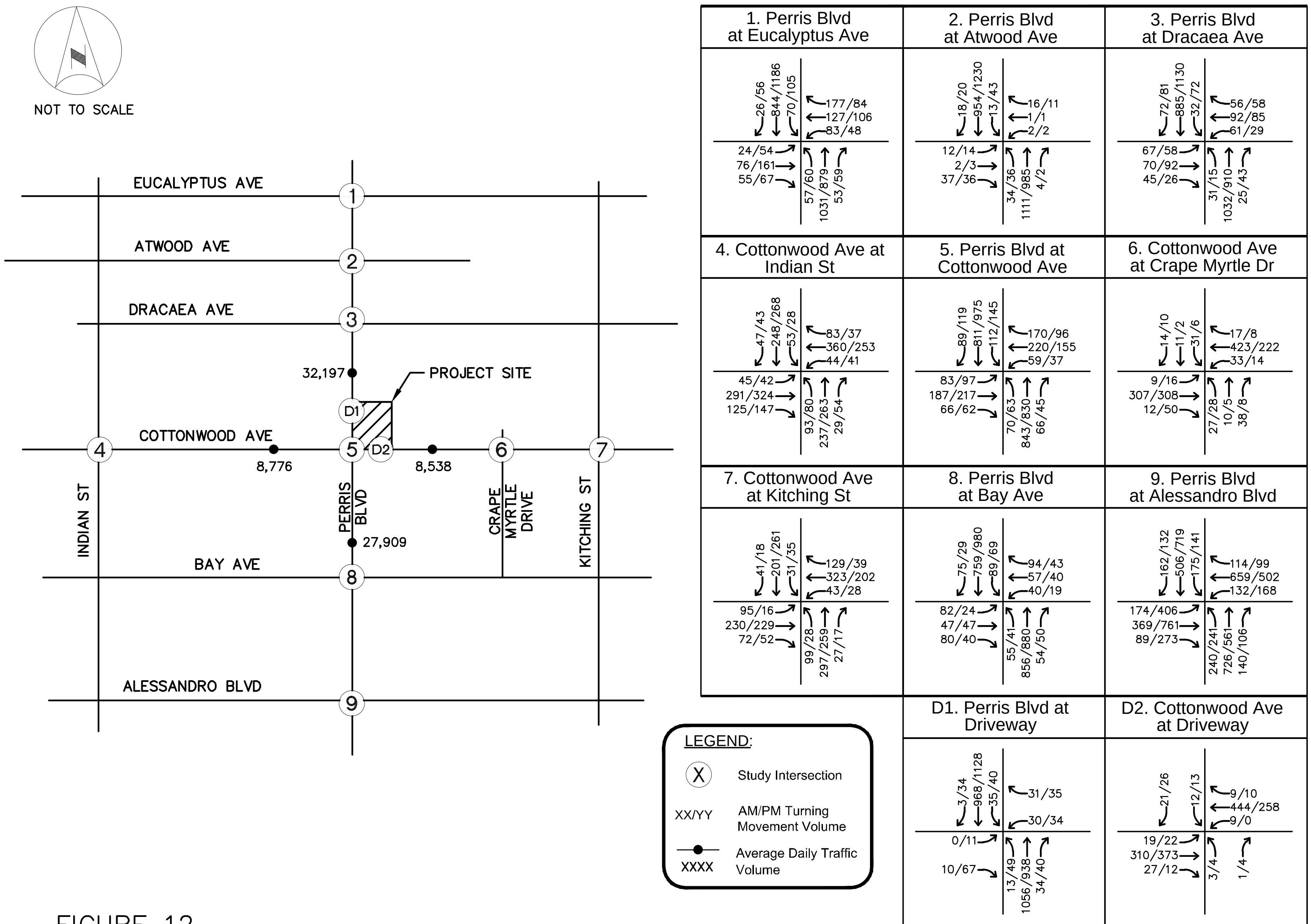
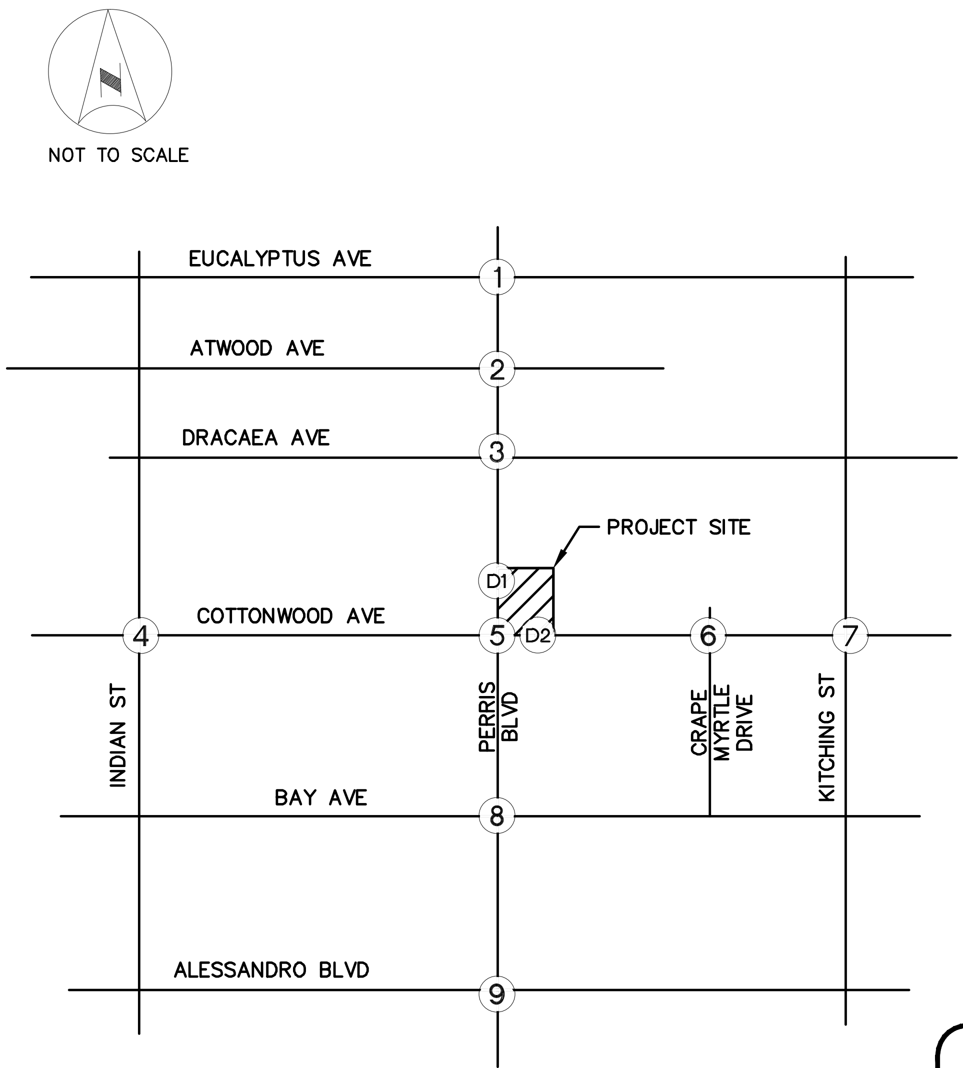


FIGURE 12
EXISTING WITH PROJECT
TRAFFIC VOLUMES – WEEKDAY



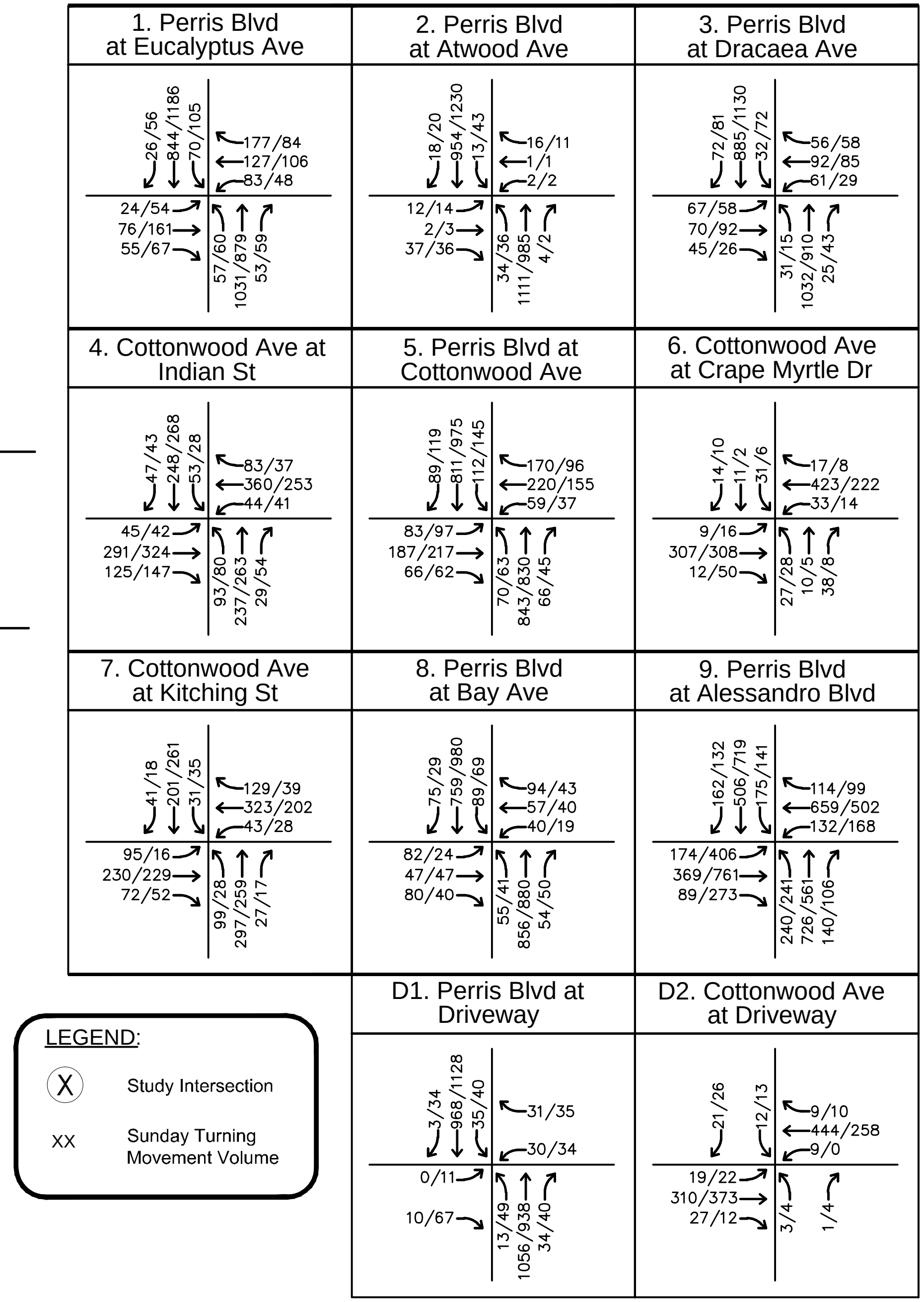


FIGURE 13
EXISTING WITH PROJECT
TRAFFIC VOLUMES – SUNDAY

TABLE 4
SUMMARY OF INTERSECTION OPERATIONS
EXISTING WITH PROJECT CONDITIONS

Int. #	Intersection	Peak Hour	Existing Conditions		Existing With Project Conditions		Project Impact
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
1	Perris Boulevard at Eucalyptus Avenue	AM	19.9	B	20.1	C	0.2
		PM	20.4	C	20.8	C	0.4
		SUN	16.6	B	16.9	B	0.3
2	Perris Boulevard at Atwood Avenue	AM	23.8	C	24.3	C	0.5
		PM	29.0	D	29.8	D	0.8
		SUN	27.4	D	28.5	D	1.1
3	Perris Boulevard at Dracaea Avenue	AM	26.5	C	27.0	C	0.5
		PM	18.0	B	18.2	B	0.2
		SUN	20.6	C	20.8	C	0.2
4	Cottonwood Avenue at Indian Street	AM	23.1	C	23.4	C	0.3
		PM	20.1	C	20.3	C	0.2
		SUN	18.1	B	18.2	B	0.1
5	Cottonwood Avenue at Perris Boulevard	AM	26.1	C	27.1	C	1.0
		PM	21.7	C	22.5	C	0.8
		SUN	23.1	C	24.6	C	1.5
6	Cottonwood Avenue at Crape Myrtle Drive	AM	39.5	E	40.5	E	1.0
		PM	15.2	C	15.4	C	0.2
		SUN	22.3	C	23.1	C	0.8
7	Cottonwood Avenue at Kitching Street	AM	25.3	C	25.6	C	0.3
		PM	16.1	B	16.2	B	0.1
		SUN	16.9	B	17.0	B	0.1
8	Perris Boulevard at Bay Ave	AM	22.2	C	22.5	C	0.3
		PM	16.4	B	16.7	B	0.3
		SUN	14.6	B	14.8	B	0.2
9	Perris Boulevard at Alessandro Boulevard	AM	30.1	C	30.2	C	0.1
		PM	35.3	D	35.6	D	0.3
		SUN	28.6	C	28.8	C	0.2
D1	Perris Boulevard Driveway	AM	13.2	B	224.4	F	211.2
		PM	34.8	D	260.0	F	225.2
		SUN	32.6	D	498.3	F	465.7
D2	Cottonwood Avenue Driveway	AM	17.5	C	22.3	C	4.8
		PM	13.0	B	14.8	B	1.8
		SUN	17.4	C	24.5	C	7.1

TABLE 5
SUMMARY OF ROADWAY OPERATIONS
EXISTING WITH PROJECT CONDITIONS

Roadway Segment	Roadway Classification	Roadway Capacity	ADT	V/C	LOS
Perris Boulevard: Eucalyptus Avenue to Cottonwood Avenue	4-Lane Divided Arterial	37,500	32,197	0.86	D
Perris Boulevard: Cottonwood Avenue to Alessandro Boulevard	4-Lane Divided Arterial	37,500	27,909	0.74	C
Cottonwood Avenue: Indian Street to Perris Boulevard	2-Lane Arterial	12,500	8,776	0.70	A
Cottonwood Avenue: Perris Boulevard to Kitching Street	2-Lane Arterial	12,500	8,538	0.68	A

FUTURE CONDITIONS

Cumulative (Opening Year 2020) Without Project

Cumulative Without Project traffic forecasts were developed using the following "build-up" forecasting method:

- Existing traffic volumes, plus
- An annual ambient growth rate of 2% per year to Opening Year 2020, plus
- Cumulative projects traffic
    - Cumulative projects consist of projects that have been approved but are not yet built or fully occupied, as well as projects that are in various stages of the application and approval process, but have not yet been approved. These projects are considered to be "reasonably foreseeable," and must therefore be included in the Cumulative Projects analysis.

Cumulative Project information was obtained from the City of Moreno Valley Planning and Economic Development Department at the start of the study process. Cumulative projects within a 3.5 mile radius of the project site were considered. For the purpose of this traffic study, the projects were assessed for their proximity to the project site and for their potential to generate traffic based on their approved or pending land uses. Therefore, not all projects are anticipated to affect the study area. A summary of the Cumulative Projects is provided on Table 6. The location of the Cumulative Projects in relation to the project site is shown on Figure 14. Cumulative weekday and Sunday project-related trips at study intersections and roadways are shown on Figure 15 and Figure 16, respectively.

As part of the Cumulative scenario, the St. Christopher's Catholic Church on the southeast corner of the intersection of Perris Boulevard and Cottonwood Avenue will undergo an expansion. The existing driveway along Cottonwood Avenue will be eliminated as part of that expansion. The removal of the church's driveway was taken into consideration in the analysis of future conditions.

Ambient growth and project-related trips for the Cumulative Projects were added to the study intersections and roadways. Cumulative Without Project weekday and Sunday traffic volumes are shown on Figure 17 and Figure 18, respectively.

Intersection Analysis – Cumulative (Opening Year 2020) Without Project

The study intersections were analyzed with the annual growth and traffic from the Cumulative Projects. Intersection Level of Service worksheets are provided in *Appendix D*. The Cumulative Without Project analysis results and Level of Service for the study intersections are presented in Table 7.

Review of this table shows that, with the addition Cumulative Projects traffic and an ambient traffic growth rate, the following intersections would operate at an unacceptable Level of Service:

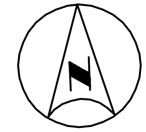
TABLE 6
SUMMARY OF CUMULATIVE PROJECTS

Map #	Builder/Applicant	Quantity	Unit	Trip Generation Estimates [1]									
					AM Peak Hour			PM Peak Hour			Weekend		
				Daily	In	Out	Total	In	Out	Total	In	Out	Total
Single-Family Residential Development													
1	TR 34151 Moreno Valley Property Investment LLC	37	DU	352	7	21	28	23	14	37	17	15	32
2	TR 28860 Professor's Fund IV, LLC	9	DU	86	2	5	7	6	3	9	4	4	8
3	TR 36760 Mission Pacific Land Co.	189	DU	1,799	36	106	142	119	70	189	86	76	162
4	TR 31297 Randy McFarland	7	DU	67	1	4	5	4	3	7	3	3	6
5	TR 31305 Richland Communities, Inc.	87	DU	828	16	49	65	55	32	87	40	35	75
6	TR 34112 SKG Pacific Enterprises Inc.	63	DU	600	12	35	47	40	23	63	29	25	54
7	TR 31517 Professor Prop Six/Winchester Associates	83	DU	790	16	47	63	52	31	83	38	34	72
8	TR 31621 Skyline Homes	12	DU	114	2	7	9	8	4	12	5	5	10
9	TR 32126 Salvador Torres	35	DU	333	7	20	27	22	13	35	16	14	30
10	TR 32194 Arman Pezeshifar	32	DU	305	6	18	24	20	12	32	15	13	28
11	TR 32218 Granite Capital/Winchesters Associates, Inc.	63	DU	600	12	35	47	40	23	63	29	25	54
12	TR 32284 Joe Anderson	32	DU	305	6	18	24	20	12	32	15	13	28
13	TR 32408 Sandstone, Inc.	80	DU	762	15	45	60	50	30	80	36	32	68
14	TR 32505 DR Horton	72	DU	685	14	41	55	45	27	72	33	29	62
15	TR 32548 Gabel, Cook and Associates	107	DU	1,019	20	60	80	67	40	107	49	43	92
16	TR 32645 Winchester Associates	53	DU	505	10	30	40	33	20	53	24	21	45
17	TR 32716 Bob Rogers	57	DU	543	11	32	43	36	21	57	26	23	49
18	TR 32978 Focus Estates	19	DU	181	4	11	15	12	7	19	9	8	17
19	TR 33024 Adam Wislar	8	DU	76	2	5	7	5	3	8	4	3	7
20	TR 27251 RSI	156	DU	1,485	29	88	117	98	58	156	71	63	134
21	TR 33388 SCH Development, LLC	16	DU	152	3	9	12	10	6	16	7	6	13
22	TR 32844 Winchester Associates	105	DU	1,000	20	59	79	66	39	105	48	42	90
23	TR 33810 David Boyle Engineering	16	DU	152	3	9	12	10	6	16	7	6	13
24	TR 33963 Rance Garrett	31	DU	295	6	17	23	20	11	31	14	13	27
25	TR 34043 RM3 Building and Development	12	DU	114	2	7	9	8	4	12	5	5	10
26	TR 34748 Rados	135	DU	1,285	25	76	101	85	50	135	62	55	117
27	TR 35663 OFA	12	DU	114	2	7	9	8	4	12	5	5	10
28	TR 32835 Beazer Homes	274	DU	2,608	52	154	206	173	101	274	125	111	236
29	TR 30268 Pacific Communities	83	DU	790	16	47	63	52	31	83	38	34	72
30	TR 31618 Frontier Homes	56	DU	533	11	32	43	35	21	56	26	23	49
31	TR 31494 Winchester Associates	12	DU	114	2	7	9	8	4	12	5	5	10
32	TR 32715 GFR-Trinity	30	DU	286	6	17	23	19	11	30	14	12	26
33	TR 33256 Granite Homes	79	DU	752	15	44	59	50	29	79	36	32	68
34	TR 32711 Issac Genah	9	DU	86	2	5	7	6	3	9	4	4	8
35	TR 31789 GFR	24	DU	228	5	14	19	15	9	24	11	10	21
36	TR 35429 Ralph Liu	54	DU	514	10	30	40	34	20	54	25	22	47
37	TR 22180 MPLC Legacy 140 Partners, LP	543	DU	5,169	102	306	408	342	201	543	247	219	466
38	TR 36436 CV Communities	159	DU	1,514	30	90	120	100	59	159	72	64	136
39	TR 36401 Continental East Fund III, LLC	92	DU	876	17	52	69	58	34	92	42	37	79
40	TR 36598 Habitat for Humanity	8	DU	76	2	5	7	5	3	8	4	3	7
41	TR 36761 Right Solutions, LLC	8	DU	76	2	5	7	5	3	8	4	3	7
42	TR 31592 CV Communities	139	DU	1,323	26	78	104	88	51	139	63	56	119
43	TR 36708 Nova Homes	127	DU	1,209	24	72	96	80	47	127	58	51	109
44	TR 29920 MVR Properties, LLC	299	DU	2,846	56	168	224	188	111	299	136	121	257
45	TR 36882 Frontier Homes	40	DU	381	8	23	31	25	15	40	18	16	34
46	TR 36719 Kuo Ming Lee	34	DU	324	6	19	25	21	13	34	15	14	29

TABLE 6
SUMMARY OF CUMULATIVE PROJECTS (CONTINUED)

47	TR 29920 Pacific Communities	98	DU	933	18	55	73	62	36	98	45	40	85
Multi-Family Residential Development													
48	TR 31814 Jesse Huizar	60	DU	399	6	24	30	24	13	37	15	15	30
49	TR 32215 Winchester Associates "Scottish Village"	194	DU	1,290	20	79	99	78	42	120	49	49	98
50	TR 32756 Jimmy Lee	24	DU	160	2	10	12	10	5	15	6	6	12
51	TR 32917 Continental East Fund	227	DU	1,510	23	93	116	91	49	140	58	58	116
52	TR 33417 Jimmy Lee	60	DU	399	6	24	30	24	13	37	15	15	30
53	TR 33607 TL Group Corp.	52	DU	346	5	21	26	21	11	32	13	13	26
54	TR 33771 Jian Qiang Liu	12	DU	80	1	5	6	5	3	8	3	3	6
55	TR 34216 Creative Design Associates	39	DU	259	4	16	20	16	8	24	10	10	20
56	TR 34681 Perris Pacific Company	49	DU	326	5	20	25	20	11	31	12	12	24
57	TR 34988 Status Properties	271	DU	1,802	28	111	139	109	59	168	69	69	138
58	TR 35369 Tason Myers Property	12	DU	80	1	5	6	5	3	8	3	3	6
59	TR 35663 Jimmy Lee	12	DU	80	1	5	6	5	3	8	3	3	6
60	TR 35769 Michael Chen	16	DU	106	2	7	9	6	3	9	4	4	8
61	TR 34544 Cottonwood 939, LLC	84	DU	559	9	34	43	34	18	52	21	21	42
62	PA 09-0006 Jim Nydam	15	DU	100	2	6	8	6	3	9	4	4	8
63	PA 13-0006 Rancho Belago Developers, Inc.	141	DU	938	14	58	72	57	31	88	36	36	72
64	PA 14-0027 Tilak Chopra	40	DU	266	4	16	20	16	9	25	10	10	20
65	TR 35304 Jimmy Lee	12	DU	80	1	5	6	5	3	8	3	3	6
66	PA 14-0028 MV Bella Vista GP, LLC	220	DU	1,463	22	90	112	89	48	137	56	56	112
67	PA 14-0042 Latso SC Inc.	112	DU	745	11	46	57	45	24	69	29	29	58
68	TR 32142 GHA	66	DU	439	7	27	34	27	14	41	17	17	34
Medical/Office Development													
69	TownGate Square	170.000	KSF	1,875	233	32	265	43	210	253	44	51	95
70	Olivewood Plaza	22.758	KSF	251	31	4	35	6	28	34	6	7	13
71	Riverside County Office Building	52.000	KSF	574	71	10	81	13	64	77	13	16	29
72	Fresenius Medical Care	12.000	KSF	434	23	6	29	12	31	43	3	4	7
73	Riverside University Medical Center	34.749	KSF	1,255	66	17	83	35	89	124	9	11	20
74	Kaiser Permanente (Emergeny room Exp.)	8.500	KSF	307	16	4	20	9	22	31	2	3	5
Commercial Development													
75	Alessandro & Lasselle	140.000	KSF	5,978	83	51	134	249	270	519	36	42	78
76	Rancho Belago Plaza	14.000	KSF	598	8	5	13	25	27	52	4	4	8
77	South Moreno Valley Walmart [2]	-	-	9,625	218	170	388	411	423	834	543	543	1,086
81	St. Christopher Catholic Church Expansion[3]	3.200	KSF	-	-	-	-	-	-	-	56	58	114
Industrial/Job Development													
78	Centerpointe Business Park	1,734.030	KSF	11,843	1,165	257	1,422	310	1,165	1,475	161	117	278
79	Moreno Valley Industrial Area	3,509.496	KSF	23,970	2,358	519	2,877	628	2,358	2,986	326	236	562
80	SR-60 Business Park	3,079.928	KSF	21,036	2,070	456	2,526	551	2,070	2,621	286	207	493

Note: [1] Source: Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition
[2] Source: Moreno Valley Walmart Traffic Impact Analysis, Urban Crossroads, Inc. March 2015 (Revised).
[3] Source: St Christopher Catholic Church Master Plan Traffic Impact Study, Federhart & Associates, October 2012



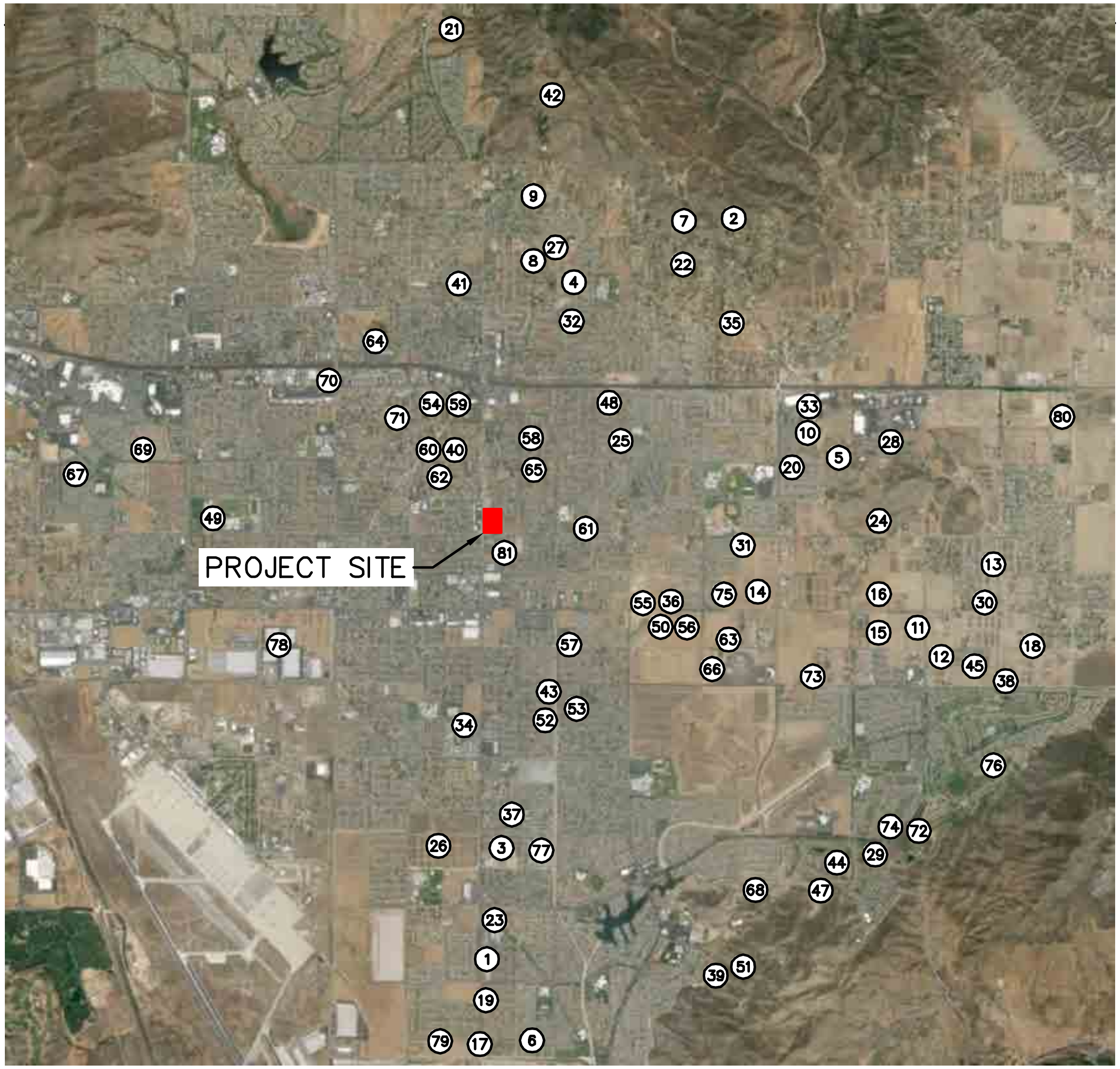


FIGURE 14
CUMULATIVE PROJECT LOCATIONS

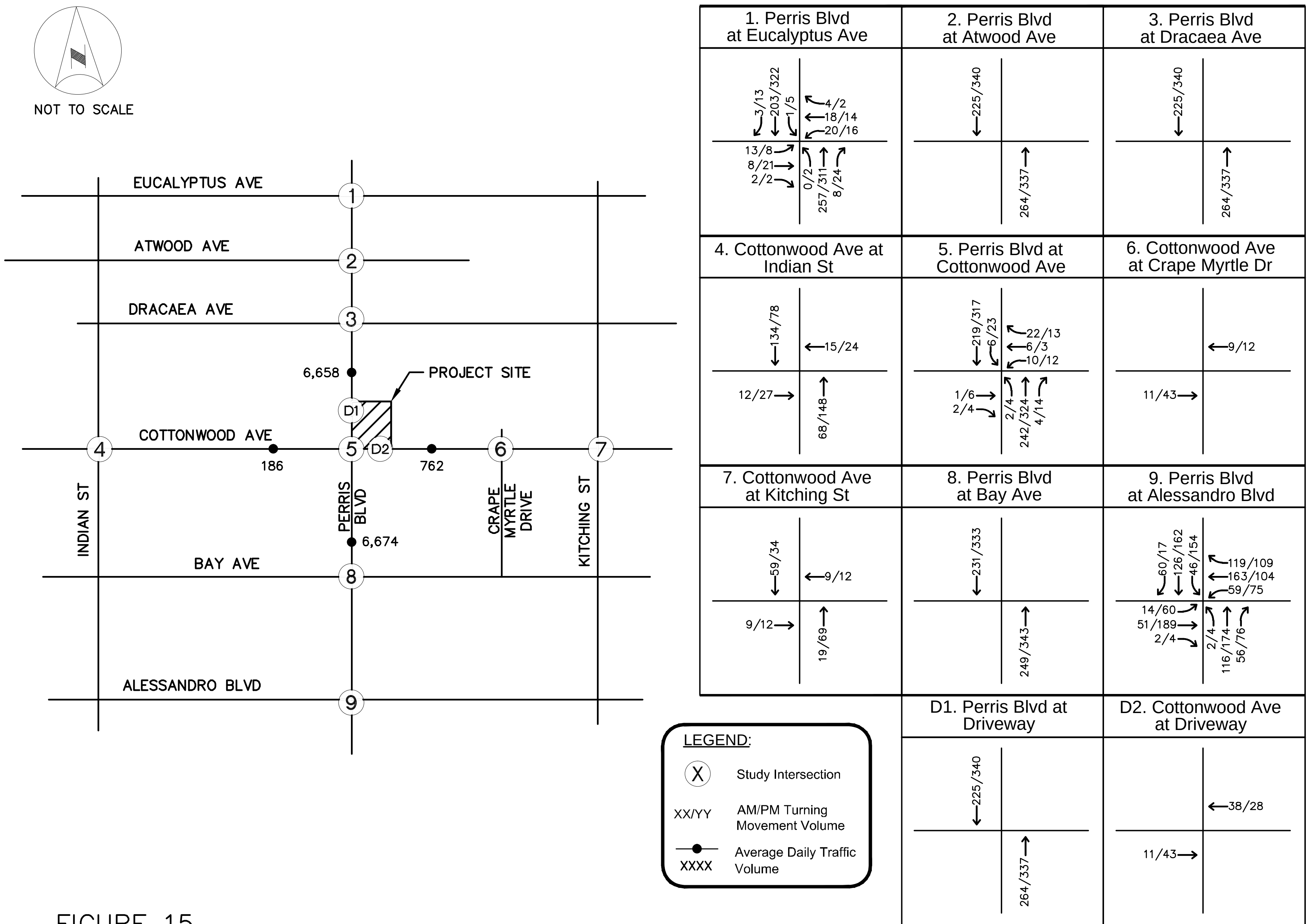


FIGURE 15
CUMULATIVE PROJECT
TRAFFIC VOLUMES – WEEKDAY

Attachment: Traffic Impact Study (3224 : A GENERAL PLAN AMENDMENT, CHANGE OF ZONE, AND

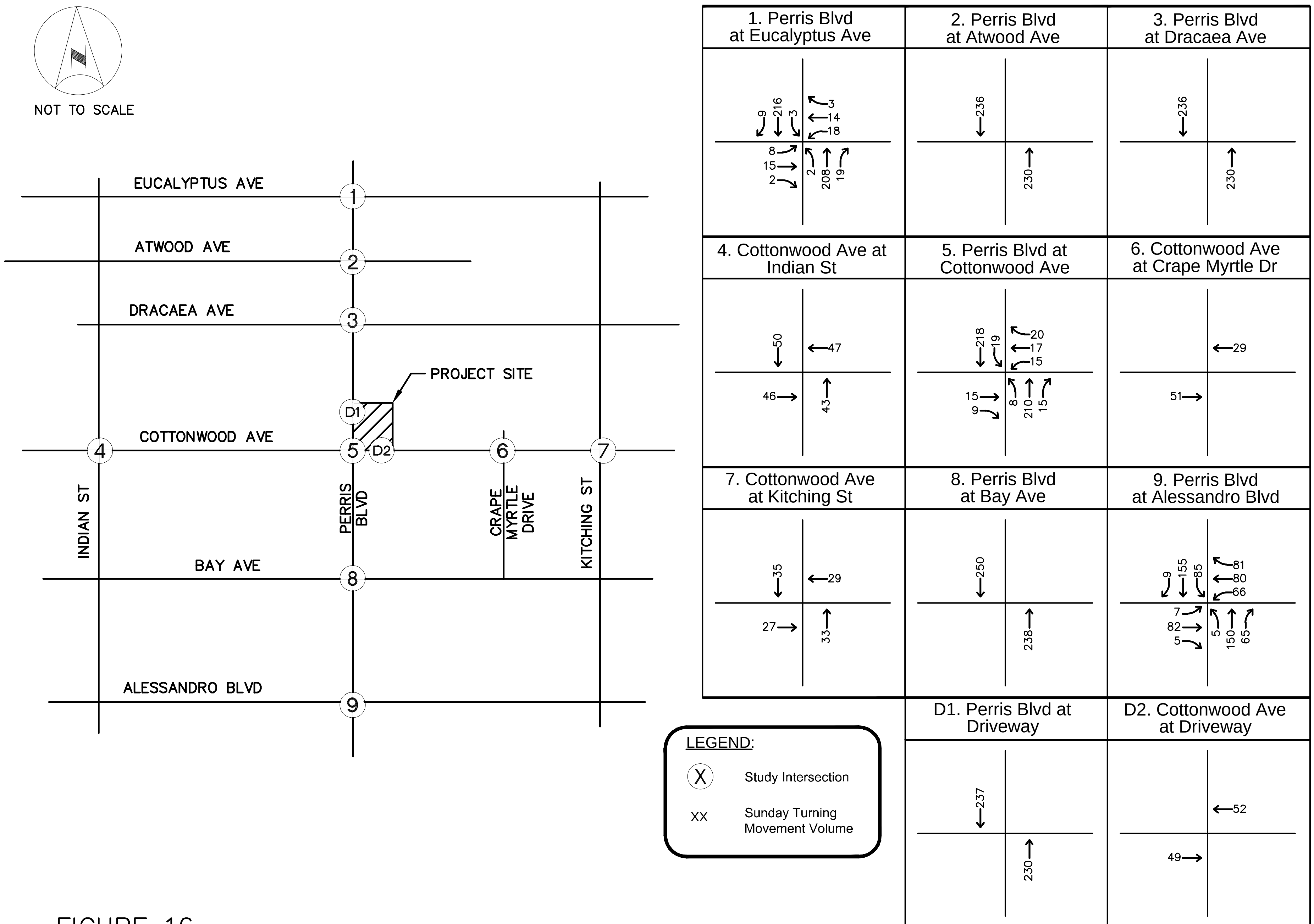


FIGURE 16
CUMULATIVE PROJECT
TRAFFIC VOLUMES – SUNDAY

Kimley»Horn

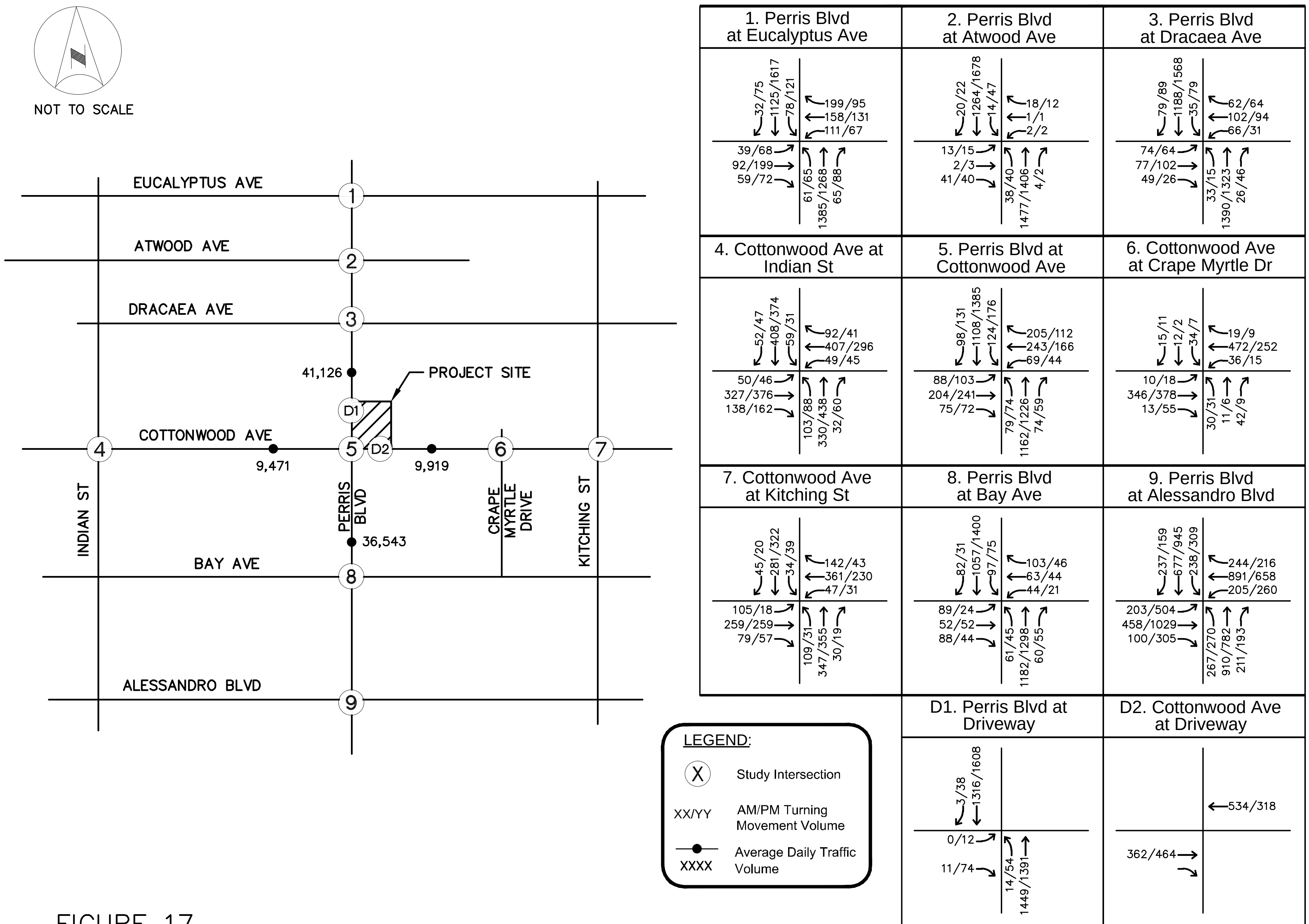
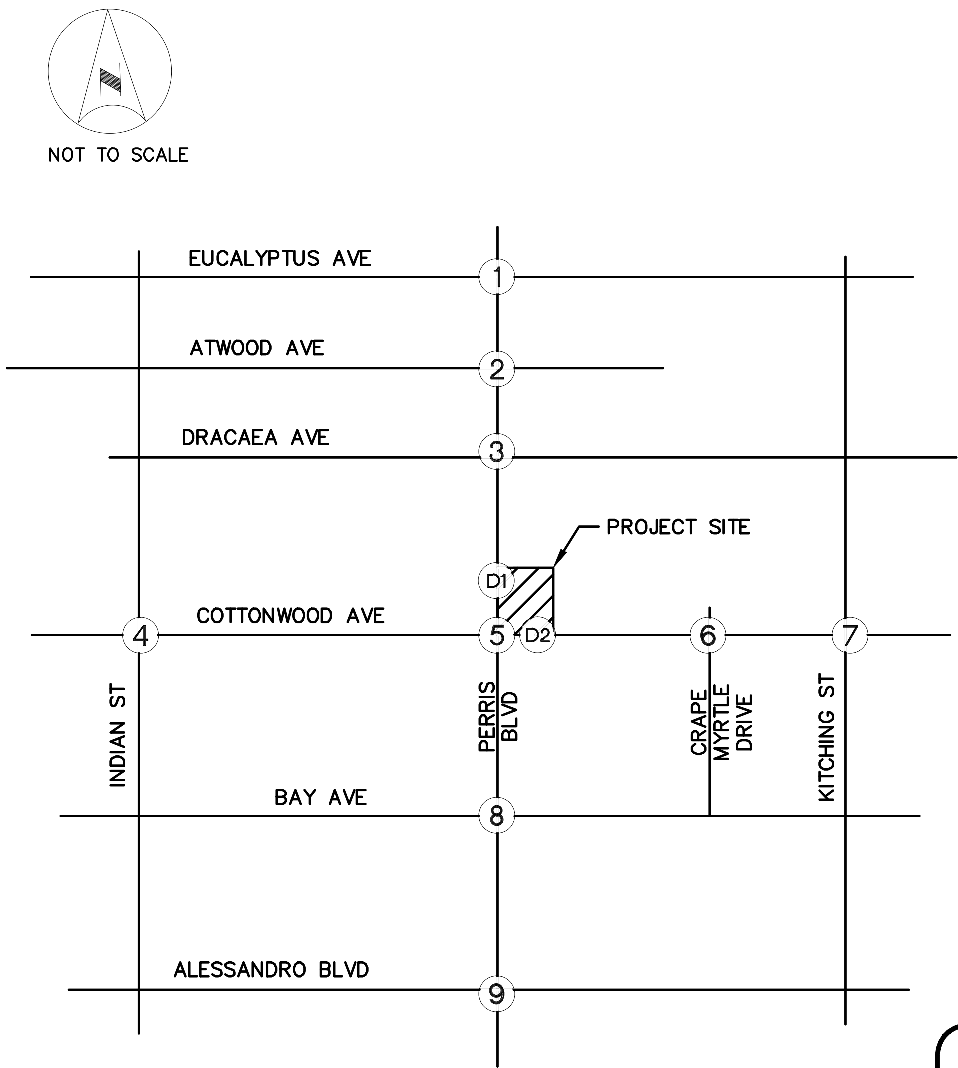
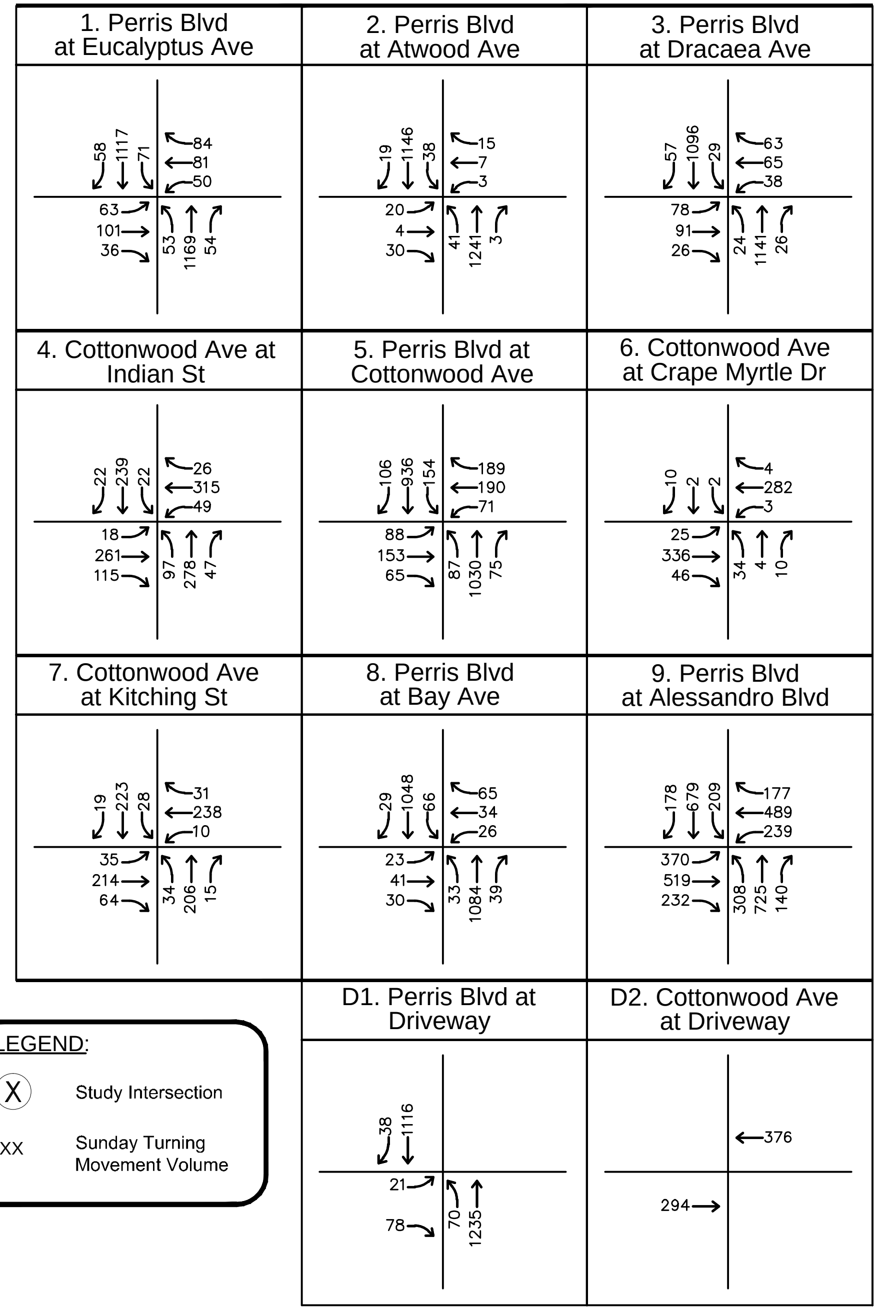


FIGURE 17
CUMULATIVE WITHOUT PROJECT
TRAFFIC VOLUMES – WEEKDAY

Attachment: Traffic Impact Study (3224 : A GENERAL PLAN AMENDMENT, CHANGE OF ZONE, AND





LEGEND:

X	Study Intersection
XX	Sunday Turning Movement Volume

FIGURE 18
CUMULATIVE WITHOUT PROJECT
TRAFFIC VOLUMES – SUNDAY

Kimley»Horn

TABLE 7
SUMMARY OF INTERSECTION OPERATION
CUMULATIVE WITHOUT PROJECT

Int. #	Intersection	Intersection Control	Peak Hour	Cumulative Conditions	
				Delay (sec/veh)	LOS
1	Perris Boulevard at Eucalyptus Avenue	Signal	AM	27.7	C
			PM	28.9	C
			SUN	18.7	B
2	Perris Boulevard at Atwood Avenue	Unsignalized	AM	46.4	E
			PM	79.7	F
			SUN	65.2	F
3	Perris Boulevard at Dracaea Avenue	Signal	AM	44.3	D
			PM	26.0	C
			SUN	27.8	C
4	Cottonwood Avenue at Indian Street	Signal	AM	27.9	C
			PM	22.4	C
			SUN	19.9	B
5	Cottonwood Avenue at Perris Boulevard	Signal	AM	35.6	D
			PM	30.9	C
			SUN	34.4	C
6	Cottonwood Avenue at Crape Myrtle Drive	Unsignalized	AM	65.3	F
			PM	18.1	C
			SUN	34.2	D
7	Cottonwood Avenue at Kitching Street	Signal	AM	30.4	C
			PM	16.6	B
			SUN	17.8	B
8	Perris Boulevard at Bay Ave	Signal	AM	27.9	C
			PM	18.2	B
			SUN	17.2	B
9	Perris Boulevard at Alessandro Boulevard	Signal	AM	50.7	D
			PM	64.8	E
			SUN	38.3	D
D1	Perris Boulevard Driveway	Unsignalized	AM	16.2	C
			PM	626.3	F
			SUN	397.9	F
D2	Cottonwood Avenue Driveway	Unsignalized	Church Driveway Removed		

Unsignalized Intersection Delay is reported for the worst approach

Attachment: Traffic Impact Study (3224 : A GENERAL PLAN AMENDMENT, CHANGE OF ZONE, AND CONDITIONAL USE PERMIT FOR

- Perris Boulevard at Atwood Avenue (AM LOS E, PM LOS F, Sunday LOS F)
- Cottonwood Avenue at Crape Myrtle Drive (AM LOS F)
- Perris Boulevard at Alessandro Boulevard (PM LOS E)
- Perris Boulevard Driveway (PM LOS F, Sunday LOS F)

With the exception of the Perris Boulevard at Alessandro Boulevard intersection, the deficient intersections are unsignalized. Due to the heavy traffic volumes anticipated in Opening Year 2020 as a result of growth and nearby projects, vehicles turning from minor streets onto Perris Boulevard are forecasted to encounter significant delays, regardless of their low volumes.

Roadway Segment Analysis – Cumulative (Opening Year 2020) Without Project

The study roadway segments were analyzed in accordance with the analysis methodology described earlier in this report. The Cumulative Without Project analysis results and Level of Service for the study roadway segments are presented in Table 8. As shown in this table, both roadway segments along Perris Boulevard are anticipated to operate deficiently in the Cumulative Without Project scenario.

Cumulative (Opening Year 2020) With Project

Project-related traffic was added to the Cumulative Without Project traffic volumes. Cumulative With Project traffic volumes are shown on Figure 19 and Figure 20.

Intersection Analysis – Cumulative (Opening Year 2020) With Project

Cumulative With Project peak hour intersection operations are summarized in Table 9. With the addition of project traffic, the following intersections would operate at an unacceptable Level of Service:

- Perris Boulevard at Atwood Avenue (AM LOS E, PM LOS F, Sunday LOS F)
- Cottonwood Avenue at Crape Myrtle Drive (AM LOS F, Sunday LOS E)
- Perris Boulevard at Alessandro Boulevard (PM LOS E)
- Perris Boulevard Driveway (AM LOS F, PM LOS F, Sunday LOS F)

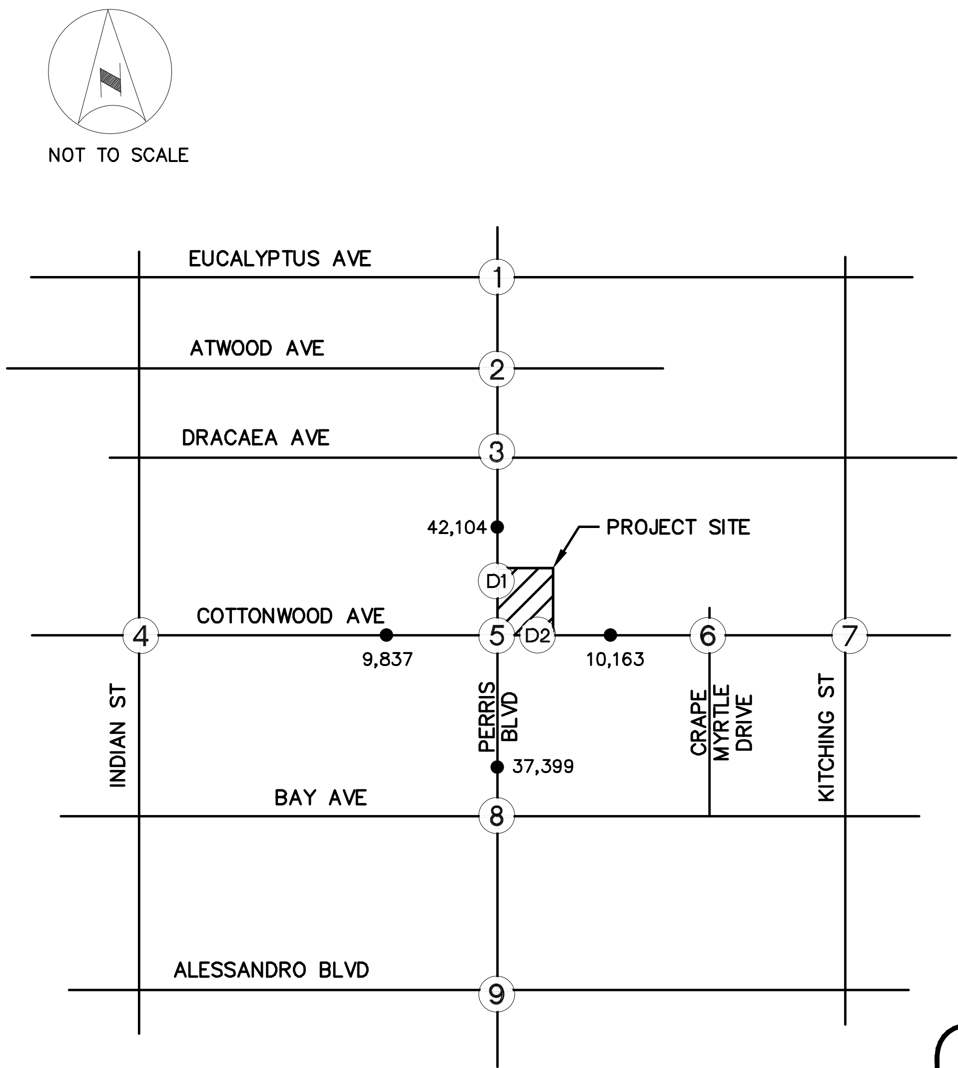
These intersections are forecasted to operate deficiently before the addition of project traffic. The deficiency at the Perris Boulevard Driveway in the Without Project scenario is caused by egress vehicles from the shopping center to the west. In the With Project scenario, the westbound approach at the driveway also operates deficiently. At the remaining intersections, the project alone does not trigger the deficiencies, but rather contributes to a less-than-significant cumulative impact.

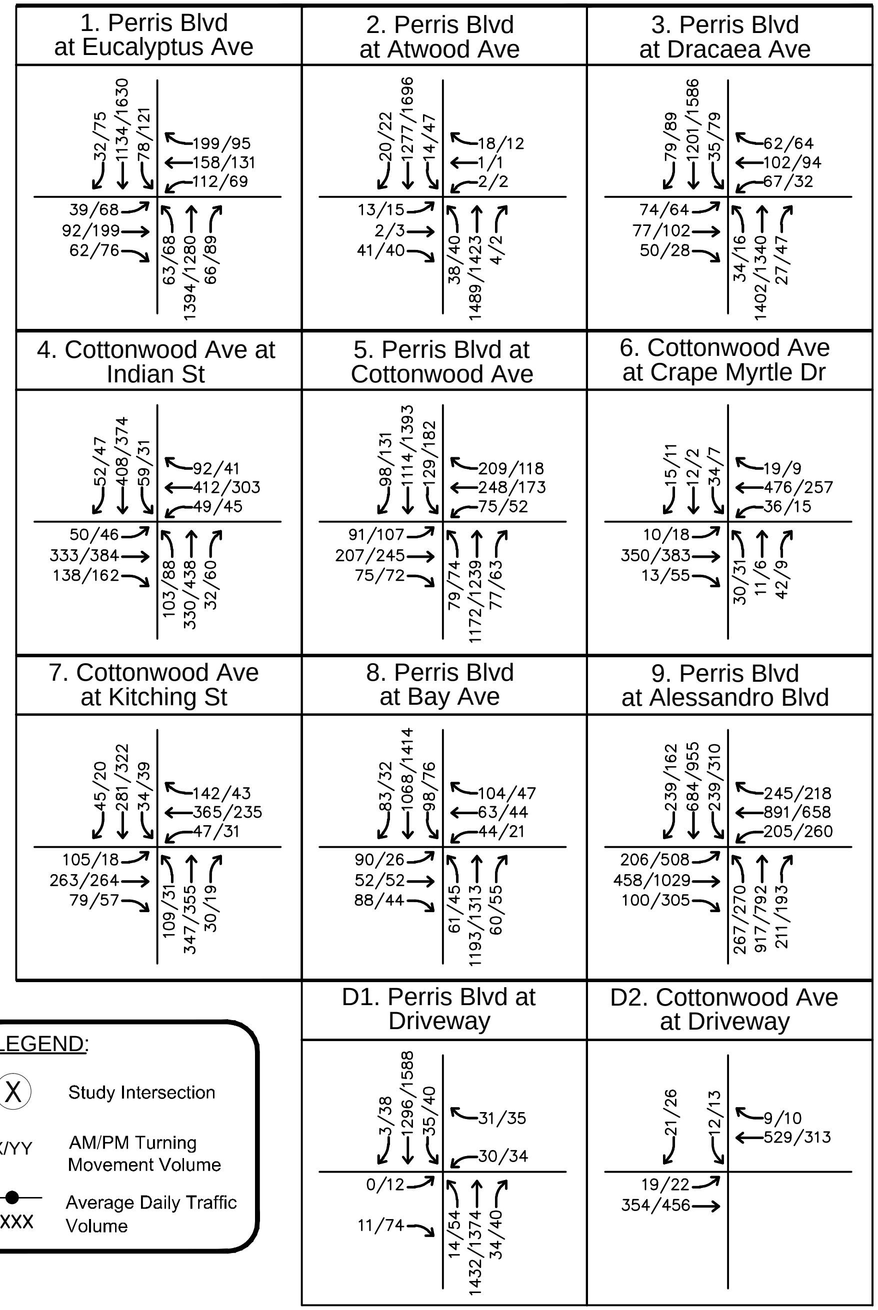
Roadway Segment Analysis – Cumulative (Opening Year 2020) With Project

The study roadway segments were analyzed in accordance with the analysis methodology described earlier in this report. Cumulative With Project analysis results and Level of Service for the study roadway segments are presented in Table 10. As shown in this table, both roadway segments along Perris Boulevard would continue to operate deficiently with the addition of project traffic.

TABLE 8
SUMMARY OF ROADWAY OPERATIONS
CUMULATIVE (OPENING YEAR 2020) WITHOUT PROJECT

Roadway Segment	Roadway Classification	Roadway Capacity	ADT	V/C	LOS
Perris Boulevard: Eucalyptus Avenue to Cottonwood Avenue	4-Lane Divided Arterial	37,500	41,126	1.10	F
Perris Boulevard: Cottonwood Avenue to Alessandro Boulevard	4-Lane Divided Arterial	37,500	36,543	0.97	E
Cottonwood Avenue: Indian Street to Perris Boulevard	2-Lane Arterial	12,500	9,471	0.76	B
Cottonwood Avenue: Perris Boulevard to Kitching Street	2-Lane Arterial	12,500	9,919	0.79	B





LEGEND:

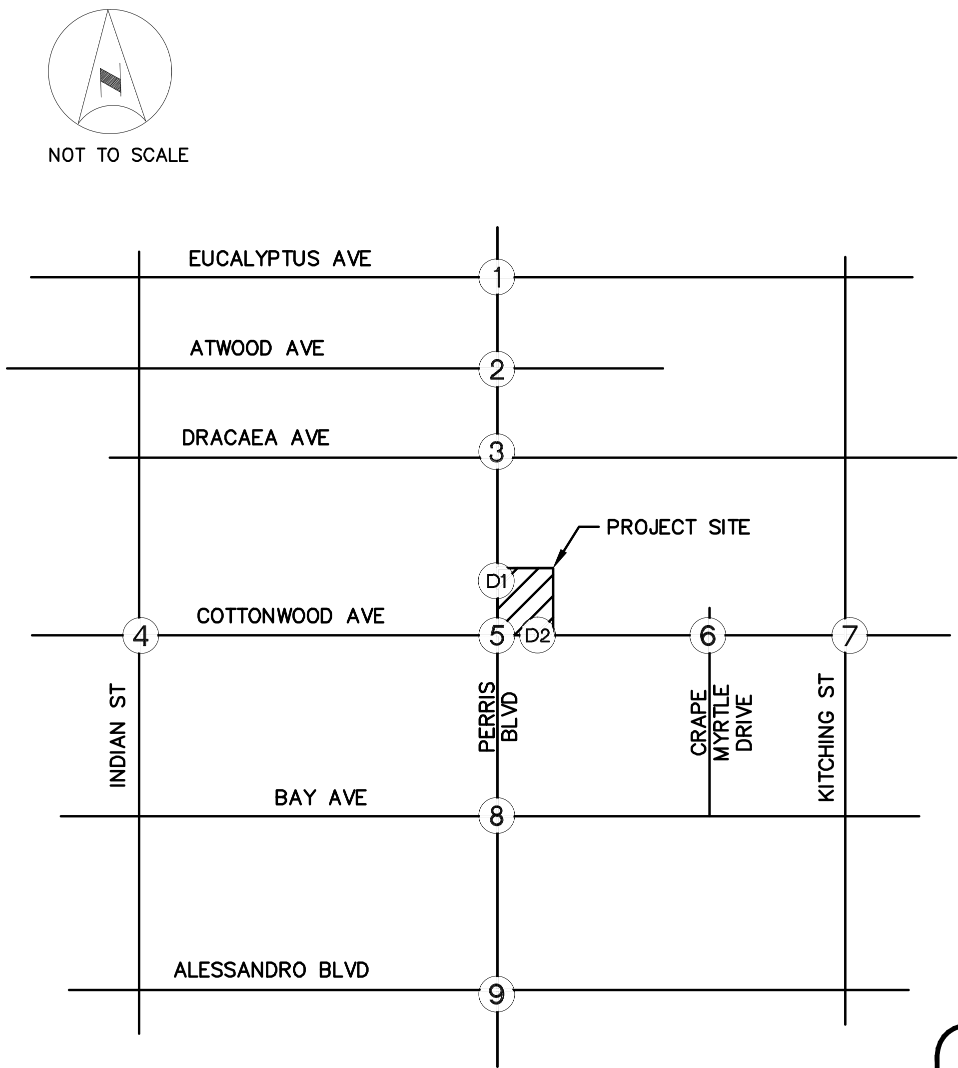
X Study Intersection

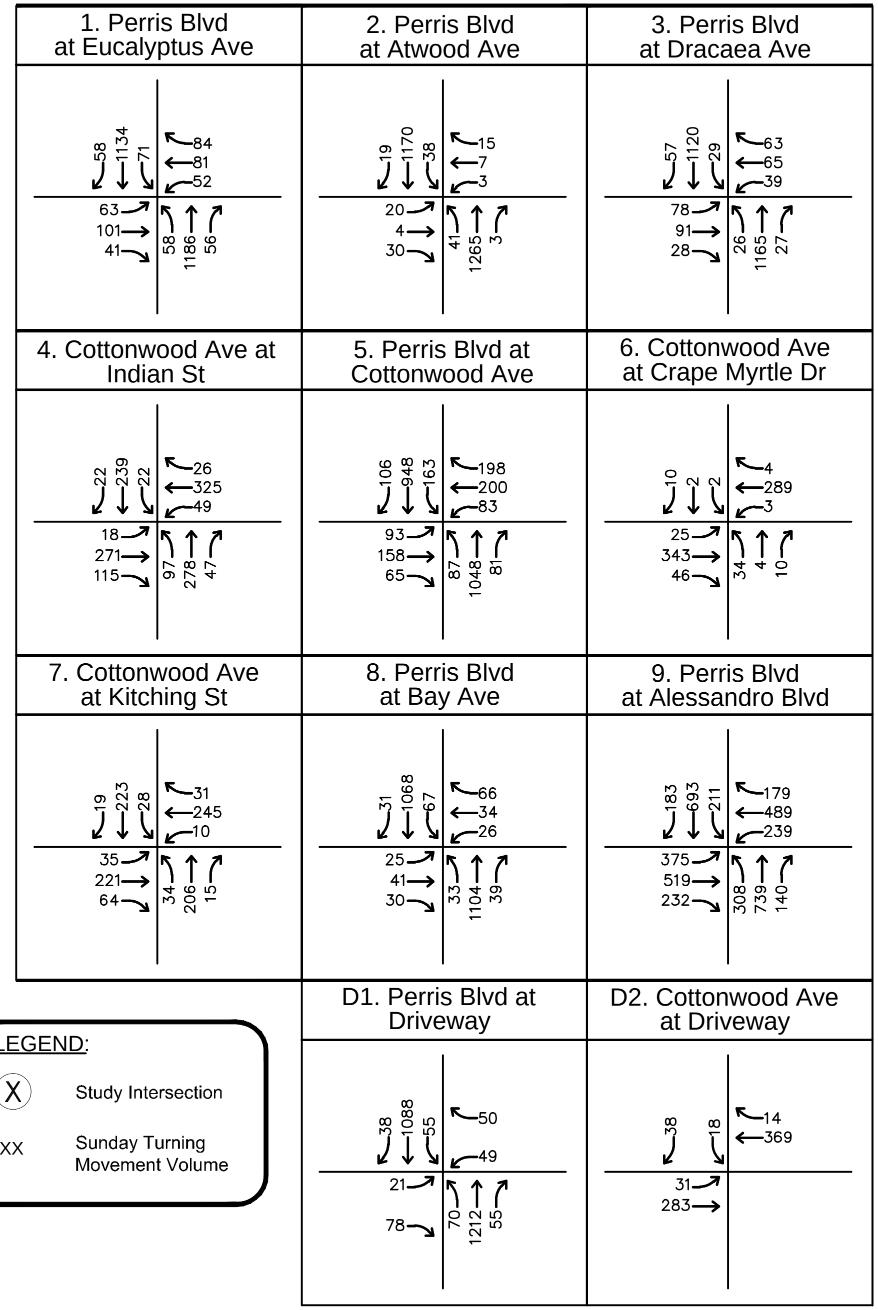
XX/YY AM/PM Turning Movement Volume

XXXX Average Daily Traffic Volume

FIGURE 19
CUMULATIVE WITH PROJECT
TRAFFIC VOLUMES – WEEKDAY

Attachment: Traffic Impact Study (3224 : A GENERAL PLAN AMENDMENT, CHANGE OF ZONE, AND





LEGEND:

X	Study Intersection
XX	Sunday Turning Movement Volume

FIGURE 20
CUMULATIVE WITH PROJECT
TRAFFIC VOLUMES – SUNDAY

TABLE 9
SUMMARY OF INTERSECTION OPERATIONS
CUMULATIVE WITH PROJECT

Int. #	Intersection	Peak Hour	Cumulative Without Project		Cumulative With Project		Project Impact
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
1	Perris Boulevard at Eucalyptus Avenue	AM	27.7	C	28.0	C	0.3
		PM	28.9	C	29.5	C	0.6
		SUN	18.7	B	19.1	B	0.4
2	Perris Boulevard at Atwood Avenue	AM	46.4	E	47.8	E	1.4
		PM	79.7	F	85.3	F	5.6
		SUN	65.2	F	71.1	F	5.9
3	Perris Boulevard at Dracaea Avenue	AM	44.3	D	45.1	D	0.8
		PM	26.0	C	26.6	C	0.6
		SUN	27.8	C	28.7	C	0.9
4	Cottonwood Avenue at Indian Street	AM	27.9	C	28.4	C	0.5
		PM	22.4	C	22.8	C	0.4
		SUN	19.9	B	20.2	C	0.3
5	Cottonwood Avenue at Perris Boulevard	AM	35.6	D	37.0	D	1.4
		PM	30.9	C	32.7	C	1.8
		SUN	34.4	C	37.7	D	3.3
6	Cottonwood Avenue at Crape Myrtle Drive	AM	65.3	F	68.0	F	2.7
		PM	18.1	C	18.4	C	0.3
		SUN	34.2	D	35.9	E	1.7
7	Cottonwood Avenue at Kitching Street	AM	30.4	C	29.0	C	-1.4
		PM	16.6	B	16.7	B	0.1
		SUN	17.8	B	18.1	B	0.3
8	Perris Boulevard at Bay Ave	AM	27.9	C	28.6	C	0.7
		PM	18.2	B	18.7	B	0.5
		SUN	17.2	B	17.5	B	0.3
9	Perris Boulevard at Alessandro Boulevard	AM	50.7	D	51.1	D	0.4
		PM	64.8	E	65.4	E	0.6
		SUN	38.3	D	38.8	D	0.5
D1	Perris Boulevard Driveway	AM	16.2	C	1275.4	F	1259.2
		PM	626.3	F	2499.9	F	1873.6
		SUN	397.9	F	2664.0	F	2266.1
D2	Cottonwood Avenue Driveway	AM	Church Driveway Removed		18.4	C	
		PM			13.7	B	
		SUN			14.3	B	

TABLE 10
SUMMARY OF ROADWAY OPERATIONS
CUMULATIVE (OPENING YEAR 2020) WITH PROJECT

Roadway Segment	Roadway Classification	Roadway Capacity	ADT	V/C	LOS
Perris Boulevard: Eucalyptus Avenue to Cottonwood Avenue	4-Lane Divided Arterial	37,500	42,104	1.12	F
Perris Boulevard: Cottonwood Avenue to Alessandro Boulevard	4-Lane Divided Arterial	37,500	37,399	0.99	E
Cottonwood Avenue: Indian Street to Perris Boulevard	2-Lane Arterial	12,500	9,837	0.79	A
Cottonwood Avenue: Perris Boulevard to Kitching Street	2-Lane Arterial	12,500	10,163	0.81	C

PROJECT ACCESS ALTERNATIVES

If the current roadway geometry is maintained on Perris Boulevard and Cottonwood Avenue along the project frontage, then each driveway can accommodate full ingress and egress movements. However, the potential for turn restrictions at each driveway has not yet been determined at this time. To assess the potential construction of a raised median along Perris Boulevard and/or Cottonwood Avenue, and the resulting turn restrictions caused by these medians, several project access alternatives were analyzed for the Cumulative (Opening Year 2020) With Project scenario. These alternatives are described below:

- Alternative 1 – Left-in/left-out movements restricted at both driveways. This alternative analyzes the potential for a raised median on both Perris Boulevard and Cottonwood Avenue. Only right-in/right-out movements would be allowed at both driveways.

- Alternative 2 – Left-out movements restricted at Perris Driveway and left-in/left-out movements are restricted at the Cottonwood Avenue driveway. This alternative allows southbound left turns into the driveway along Perris Boulevard, but assumes that only right-in/right-out movements are allowed along Cottonwood Avenue.

- Alternative 3 – Left-in/left-out movements are restricted at the Perris Driveway. Full movements allowed at the Cottonwood Driveway to maintain existing conditions.

Each alternative is anticipated to cause variations in project trip assignment at immediately adjacent intersections. These variations result from additional U-turn movements required to maintain access to the site from each direction, as well as from differences in pass-by trip assignment. The resulting project trip assignments for each alternative are shown on Figures 21-26. A breakdown of pass-by trips can be found in *Appendix C*.

Intersection Analysis – Cumulative (Opening Year 2020) With Project

Cumulative With Project peak hour intersection operations for Alternative 1, Alternative 2, and Alternative 3 are summarized in Table 11. The project, regardless of access alternative, is not anticipated to contribute sufficient traffic to the transportation system to cause an additional deficiency compared to the Cumulative Without Project scenario. However, the intersections operating deficiently in the Cumulative Without Project scenario would continue to do so.

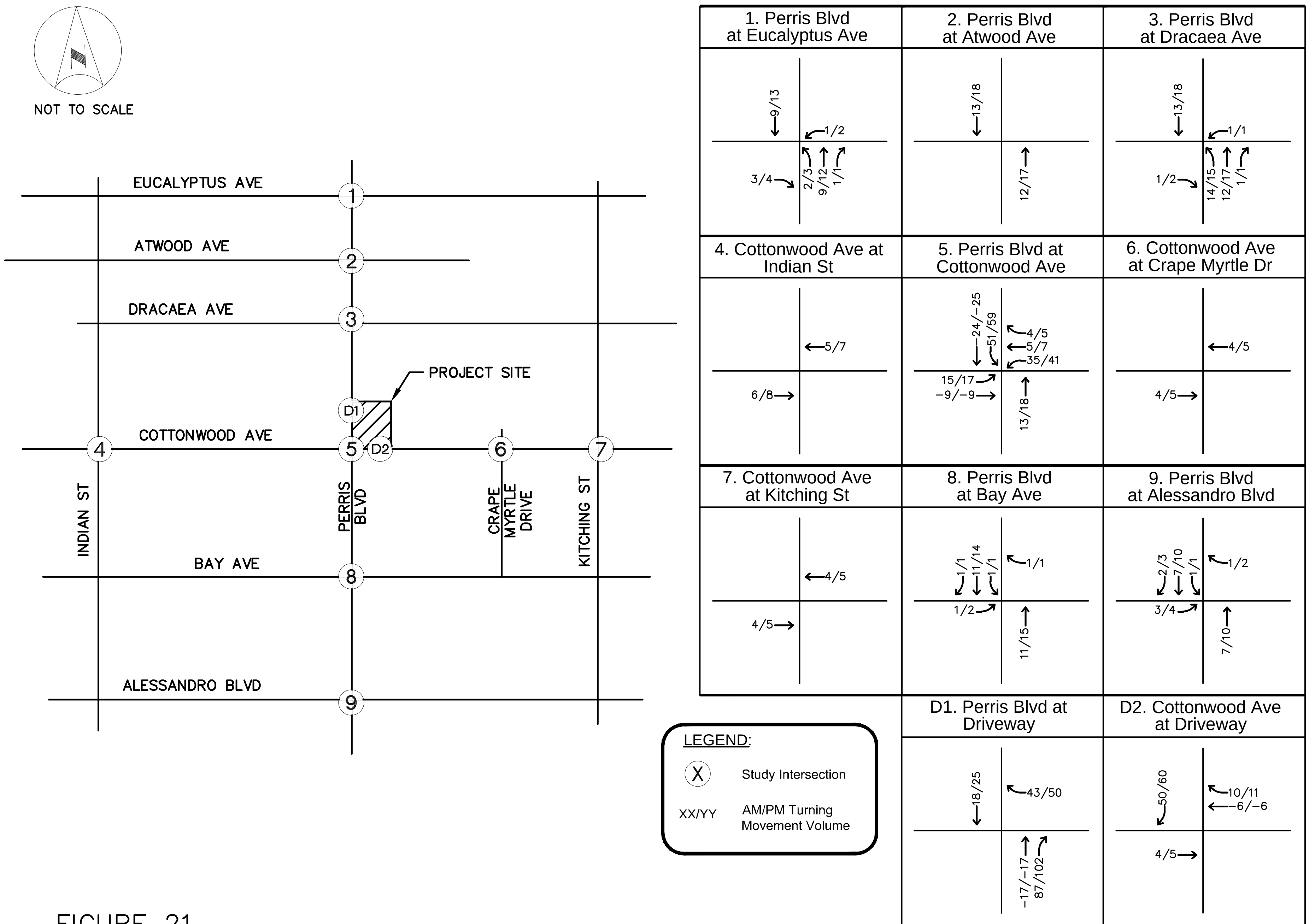


FIGURE 21
PROJECT TRAFFIC – ALTERNATIVE 1 WEEKDAY TRIPS

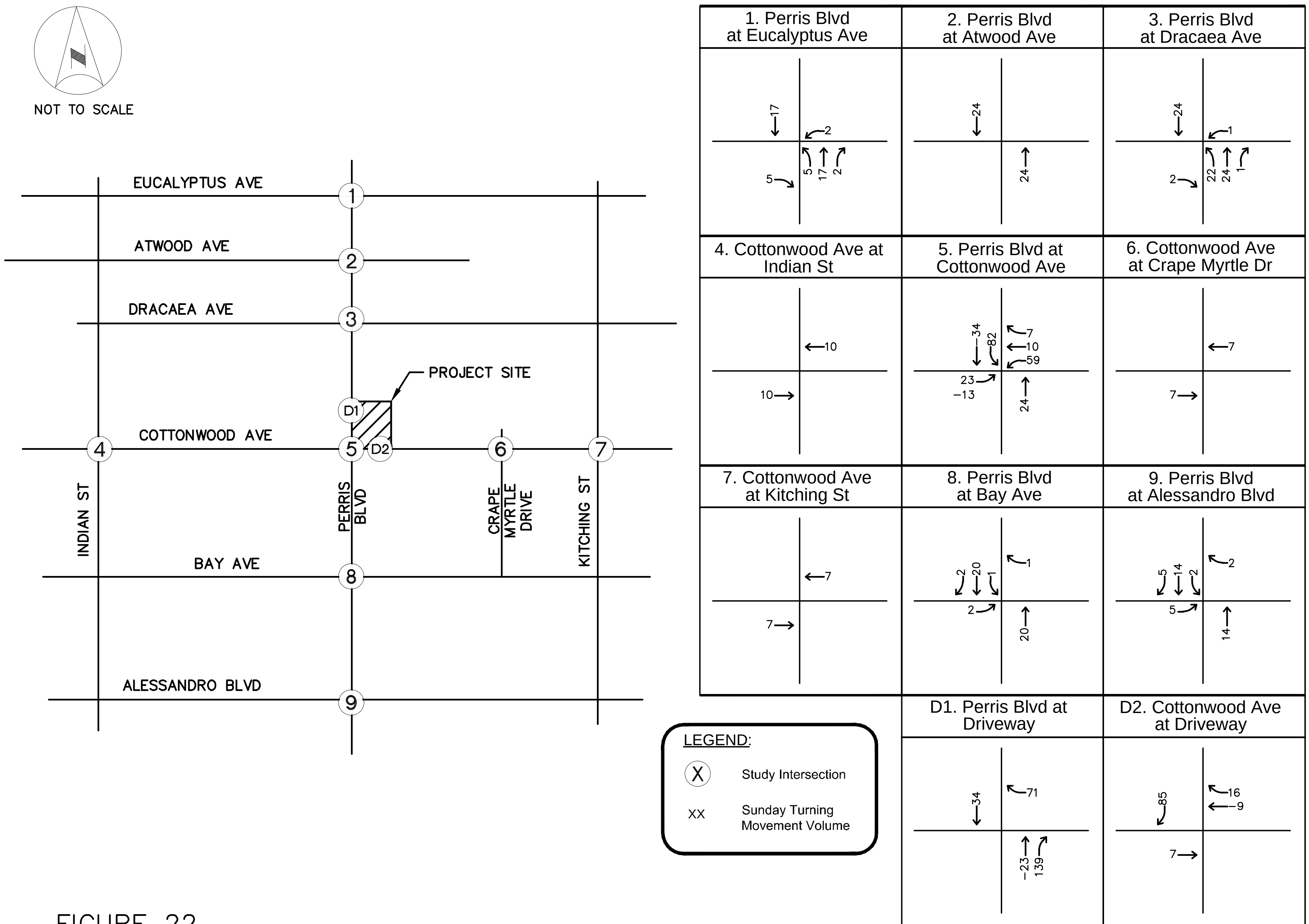


FIGURE 22
PROJECT TRAFFIC – ALTERNATIVE 1 SUNDAY TRIPS

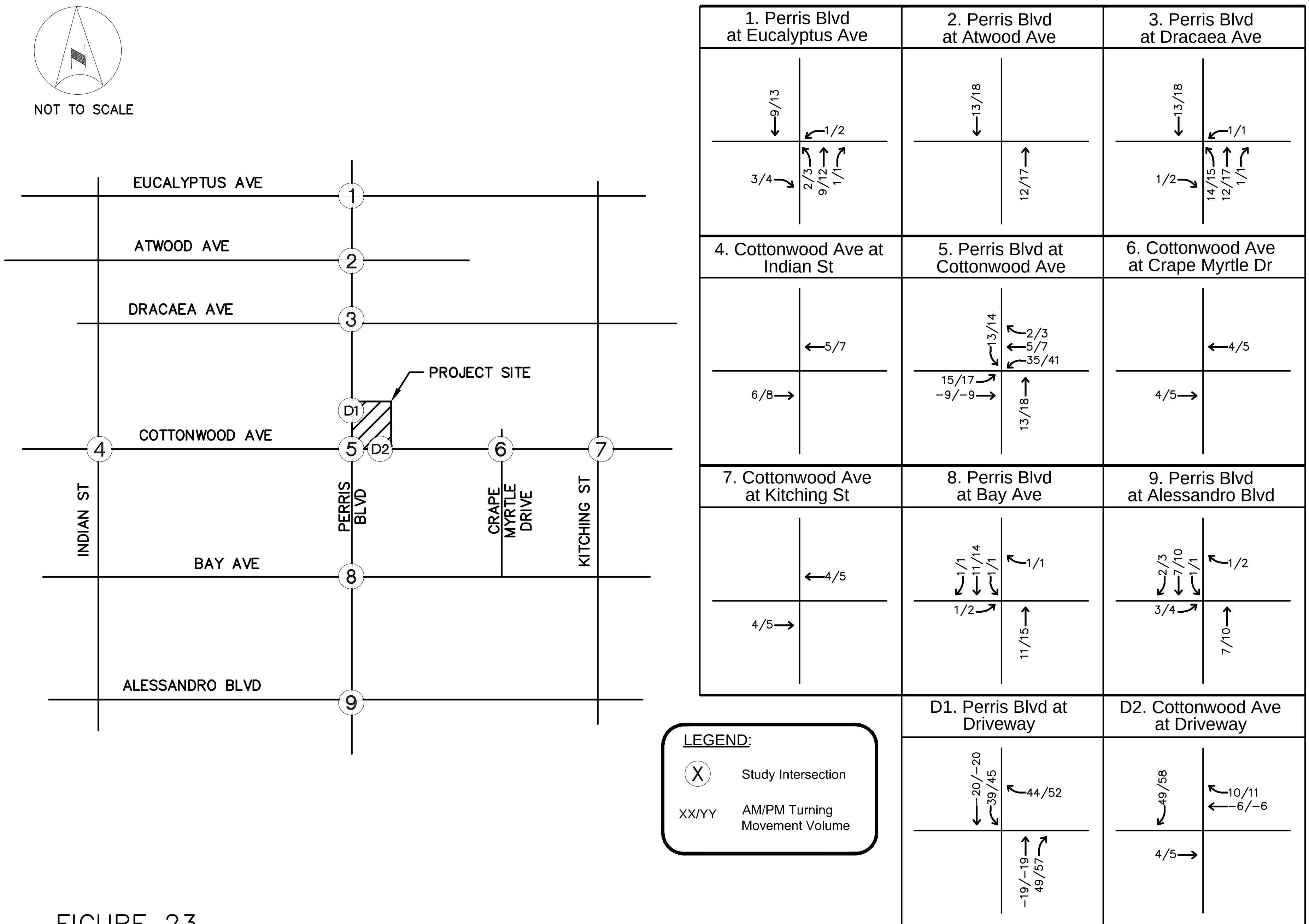


FIGURE 23
PROJECT TRAFFIC – ALTERNATIVE 2 WEEKDAY TRIPS

Attachment: Traffic Impact Study (3224 : A GENERAL PLAN AMENDMENT, CHANGE OF ZONE, AND

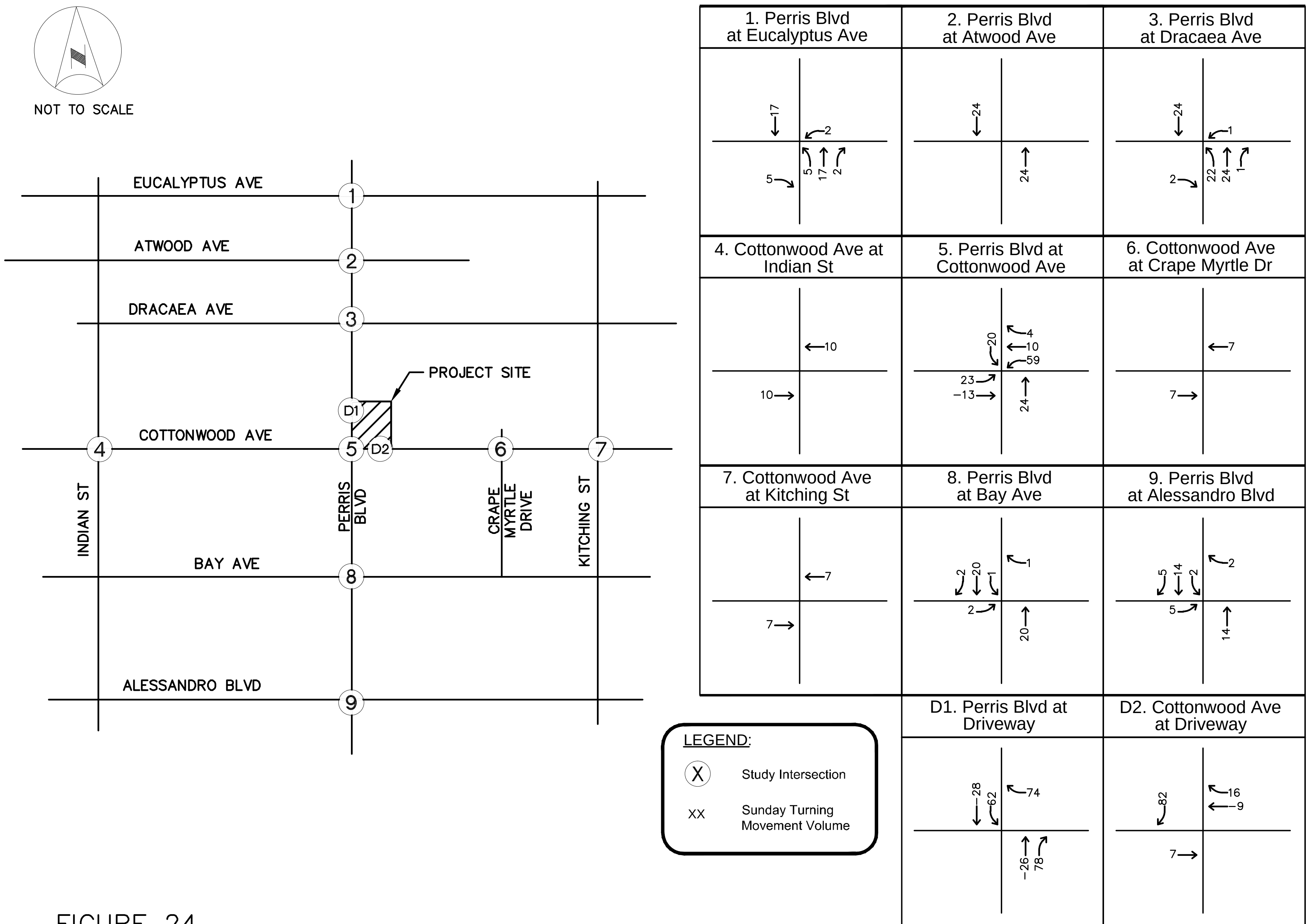


FIGURE 24
PROJECT TRAFFIC – ALTERNATIVE 2 SUNDAY TRIPS

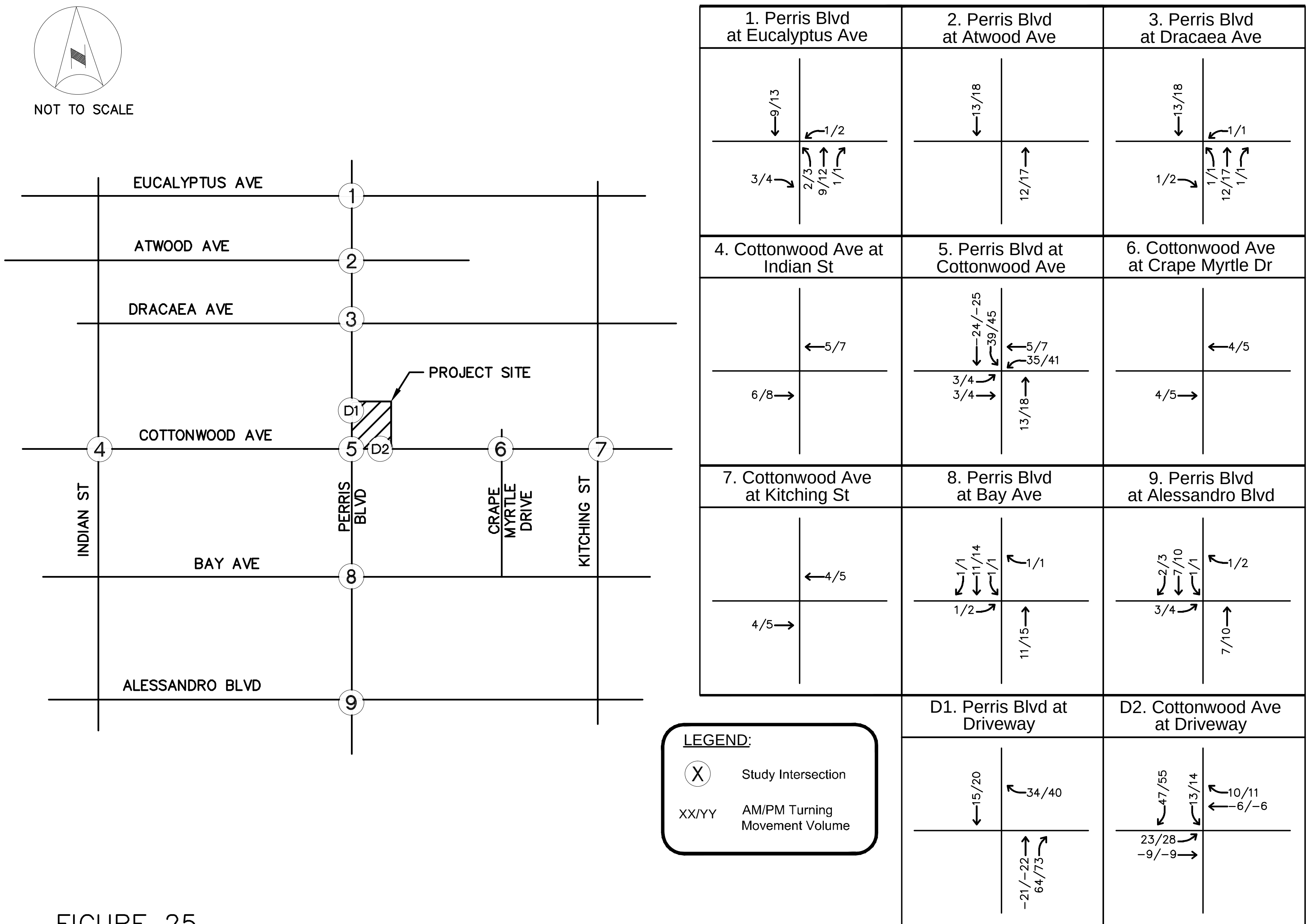
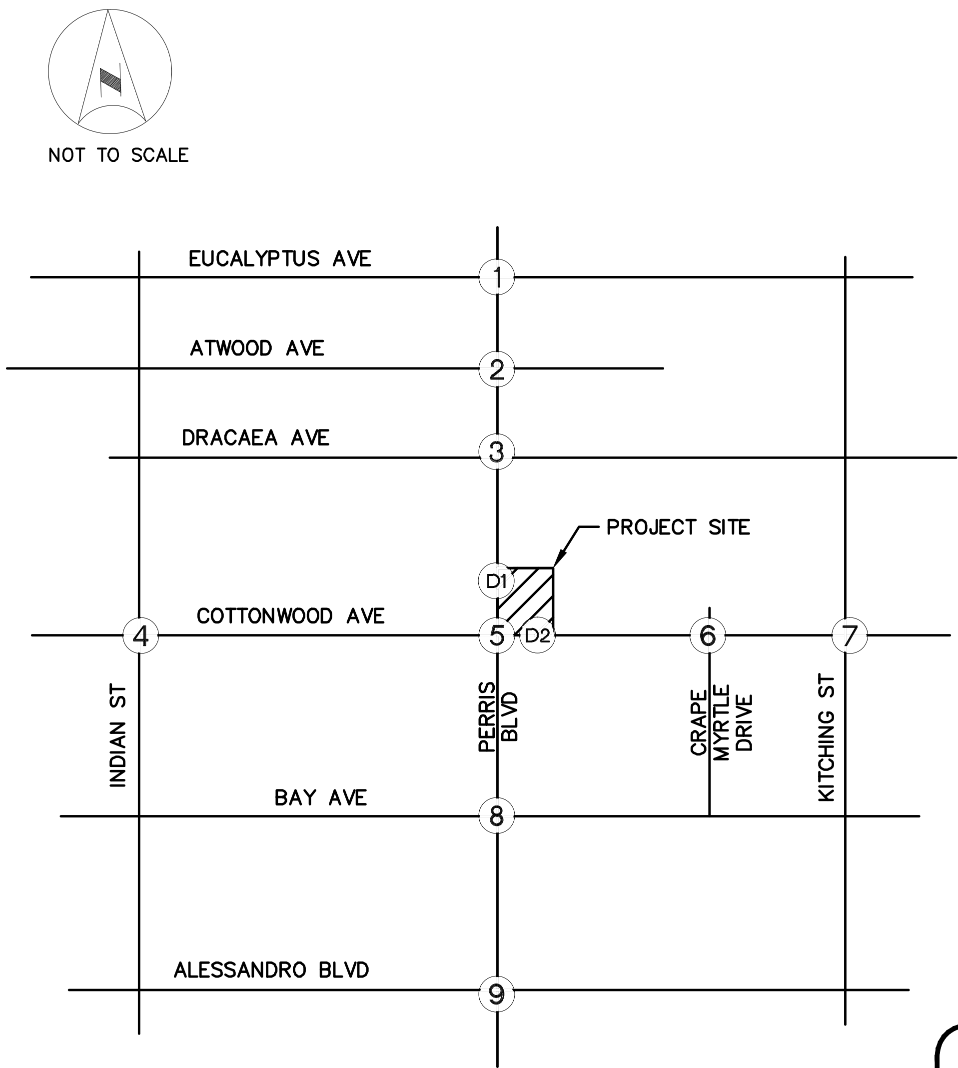
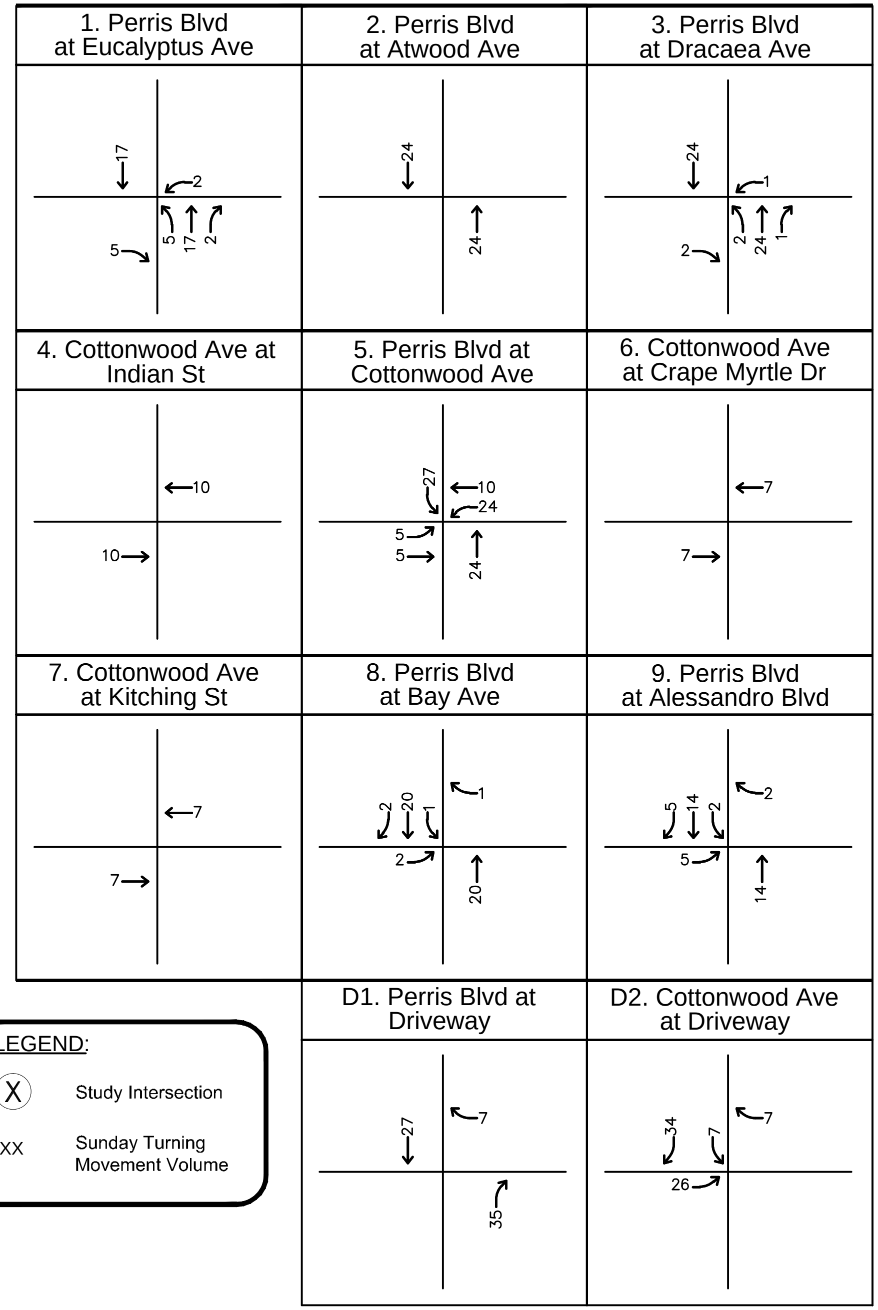


FIGURE 25
PROJECT TRAFFIC – ALTERNATIVE 3 WEEKDAY TRIPS





LEGEND:

X Study Intersection

XX Sunday Turning Movement Volume

FIGURE 26
PROJECT TRAFFIC – ALTERNATIVE 3 SUNDAY TRIPS

TABLE 11
SUMMARY OF INTERSECTION OPERATIONS
CUMULATIVE WITHOUT AND WITH PROJECT ALTERNATIVES

Int. #	Intersection	Peak Hour	Cumulative Without Project		Cumulative With Alternative 1		Project Impact	Cumulative With Alternative 2		Project Impact	Cumulative With Alternative 3		Project Impact
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	Delay (sec/veh)	LOS	Delay (sec/veh)	Delay (sec/veh)	LOS	Delay (sec/veh)
1	Perris Boulevard at Eucalyptus Avenue	AM	27.7	C	28.0	C	0.3	28.0	C	0.3	28.0	C	0.3
		PM	28.9	C	29.5	C	0.6	29.5	C	0.6	29.5	C	0.6
		SUN	18.7	B	19.1	B	0.4	19.1	B	0.4	19.1	B	0.4
2	Perris Boulevard at Atwood Avenue	AM	46.4	E	47.8	E	1.4	47.8	E	1.4	47.8	E	1.4
		PM	79.7	F	85.3	F	5.6	85.3	F	5.6	85.3	F	5.6
		SUN	65.2	F	71.1	F	5.9	71.1	F	5.9	71.1	F	5.9
3	Perris Boulevard at Dracaea Avenue	AM	44.3	D	46.1	D	1.8	46.1	D	1.8	45.1	D	0.8
		PM	26.0	C	27.9	C	1.9	27.9	C	1.9	26.6	C	0.6
		SUN	27.8	C	29.2	C	1.4	29.2	C	1.4	28.7	C	0.9
4	Cottonwood Avenue at Indian Street	AM	27.9	C	28.4	C	0.5	28.4	C	0.5	28.4	C	0.5
		PM	22.4	C	22.8	C	0.4	22.8	C	0.4	22.8	C	0.4
		SUN	19.9	B	20.2	C	0.3	20.2	C	0.3	20.2	C	0.3
5	Cottonwood Avenue at Perris Boulevard	AM	35.6	D	42.6	D	7.0	39.3	D	3.7	40.9	D	5.3
		PM	30.9	C	35.6	D	4.7	33.4	C	2.5	34.9	C	4.0
		SUN	34.4	C	45.4	D	11.0	40.2	D	5.8	40.5	D	6.1
6	Cottonwood Avenue at Crape Myrtle Drive	AM	65.3	F	68.0	F	2.7	68.0	F	2.7	68.0	F	2.7
		PM	18.1	C	18.4	C	0.3	18.4	C	0.3	18.4	C	0.3
		SUN	34.2	D	35.9	E	1.7	35.9	E	1.7	35.9	E	1.7
7	Cottonwood Avenue at Kitching Street	AM	30.4	C	29.0	C	-1.4	29.0	C	-1.4	29.0	C	-1.4
		PM	16.6	B	16.7	B	0.1	16.7	B	0.1	16.7	B	0.1
		SUN	17.8	B	18.1	B	0.3	18.1	B	0.3	18.1	B	0.3
8	Perris Boulevard at Bay Ave	AM	27.9	C	28.6	C	0.7	28.6	C	0.7	28.6	C	0.7
		PM	18.2	B	18.7	B	0.5	18.7	B	0.5	18.7	B	0.5
		SUN	17.2	B	17.5	B	0.3	17.5	B	0.3	17.5	B	0.3
9	Perris Boulevard at Alessandro Boulevard	AM	50.7	D	51.1	D	0.4	51.1	D	0.4	51.1	D	0.4
		PM	64.8	E	65.6	E	0.8	65.4	E	0.6	65.4	E	0.6
		SUN	38.3	D	38.8	D	0.5	38.8	D	0.5	38.8	D	0.5
D1	Perris Boulevard Driveway	AM	16.2	C	20.2	C	4.0	19.6	C	3.4	19.2	C	3.0
		PM	626.3	F	17.6	C	-608.7	17.1	C	-609.2	16.8	C	-609.5
		SUN	397.9	F	20.0	C	-377.9	19.1	C	-378.8	18.4	C	-379.5
D2	Cottonwood Avenue Driveway	AM	Church Driveway Removed		14.1	B		14.1	B		17.8	C	
		PM			11.1	B		11.1	B		13.2	B	
		SUN			12.1	B		12.1	B		14.5	B	

Queuing Analysis

The queues associated with ingress and egress movements at the Perris Boulevard driveway and at the Cottonwood Driveway were evaluated via the Simtraffic Software for the Cumulative With Project scenario. This evaluation was conducted for all driveway variations.

The Perris Boulevard driveway has been designed to align with an existing shopping center driveway on the west side of Perris Boulevard. Therefore, any potential conflicts between northbound left-turn and southbound left-turn traffic would not exist. Vehicles would be able to store in an existing two-way-left-turn lane. For other driveway alternatives, a potential raised median along Perris Boulevard and/or Cottonwood Avenue would impose limitations on queueing.

Cottonwood Avenue at the Cottonwood Avenue driveway currently has one through lane (24') striped in the eastbound direction. It is assumed that vehicles entering the project site in this direction will share the lane with through traffic, although the wide lane width provides adequate clearance for through-movement vehicles to maneuver around a turning vehicle. Furthermore, the St. Christopher Church driveway on the south side of the intersection is anticipated to be removed in future conditions as part of the church's plans for expansion.

Results of the analysis are presented in the following tables. Analysis worksheets can be found in *Appendix C*.

Summary of Queueing Analysis Existing Geometry			
	Queue Length (ft)		
	AM Peak	PM Peak	Sunday
Perris Boulevard Driveway (Southbound Left)			
Average Queue	25	20	27
95th Percentile Queue	95	54	65
Perris Boulevard Driveway (Northbound Right)			
Average Queue	1	1	8
95th Percentile Queue	7	11	78
Cottonwood Avenue Driveway (Eastbound Left)			
Average Queue	7	14	30
95th Percentile Queue	30	74	98
Cottonwood Avenue Driveway (Westbound Right)			
Average Queue	39	1	7
95th Percentile Queue	179	11	38

Summary of Queueing Analysis Alternative **1**			
	Queue Length (ft)		
	AM Peak	PM Peak	Sunday
Perris Boulevard Driveway (Southbound Left)			
Average Queue	N/A	N/A	N/A
95th Percentile Queue	N/A	N/A	N/A
Perris Boulevard Driveway (Northbound Right)			
Average Queue	3	7	Nom.
95th Percentile Queue	26	62	Nom.
Cottonwood Avenue Driveway (Eastbound Left)			
Average Queue	N/A	N/A	N/A
95th Percentile Queue	N/A	N/A	N/A
Cottonwood Avenue Driveway (Westbound Right)			
Average Queue	93	37	57
95th Percentile Queue	347	65	237

Summary of Queueing Analysis Alternative **2**			
	Queue Length (ft)		
	AM Peak	PM Peak	Sunday
Perris Boulevard Driveway (Southbound Left)			
Average Queue	17	32	36
95th Percentile Queue	44	97	74
Perris Boulevard Driveway (Northbound Right)			
Average Queue	Nom.	Nom.	1
95th Percentile Queue	Nom.	Nom.	10
Cottonwood Avenue Driveway (Eastbound Left)			
Average Queue	N/A	N/A	N/A
95th Percentile Queue	N/A	N/A	N/A
Cottonwood Avenue Driveway (Westbound Right)			
Average Queue	73	14	32
95th Percentile Queue	274	65	149

Summary of Queueing Analysis Alternative **3**			
	Queue Length (ft)		
	AM Peak	PM Peak	Sunday
Perris Boulevard Driveway (Southbound Left)			
Average Queue	N/A	N/A	N/A
95th Percentile Queue	N/A	N/A	N/A
Perris Boulevard Driveway (Northbound Right)			
Average Queue	Nom.	Nom.	Nom.
95th Percentile Queue	Nom.	Nom.	Nom.
Cottonwood Avenue Driveway (Eastbound Left)			
Average Queue	26	23	29
95th Percentile Queue	103	80	102
Cottonwood Avenue Driveway (Westbound Right)			
Average Queue	22	4	21
95th Percentile Queue	128	34	113

The results indicate that the forecasted queues can be accommodated by the existing roadway geometry within the vicinity of the site.

SITE CIRCULATION RECOMMENDATIONS

Based on the proposed site plan, shown previously on Figure 2, the project features two driveways. Currently, potential access restrictions into and out of these driveways have not yet been determined. The following discussion assesses the circulation of trucks to and from the site.

Fuel trucks and supply trucks could originate from the SR-60 Freeway and travel on Perris Boulevard, which is a designated truck route, or originate from the I-215 Freeway and travel along Alessandro Boulevard, which is a designated truck route. In both instances, Perris Boulevard would be used from either the northbound or southbound direction to approach the proposed site.

To accommodate truck access into the site from the north on Perris Boulevard, there are two options with the existing roadway geometry – a truck can make a southbound left turn into the Perris Boulevard Driveway or turn onto Cottonwood Avenue before making an eastbound left turn into the Cottonwood Avenue Driveway. However, construction of a raised median along either street will restrict truck access. These turn restrictions have been studied as Alternatives 1-3. The truck access capabilities for all study scenarios are shown on Figure 27-30.

In the Alternative 1 scenario, right-in/right-out movements would be restricted on Perris Boulevard and on Cottonwood Avenue. As a result, a truck approaching from the north can only access the site via a U-Turn at the intersection. However, a U-Turn movement for a truck would not be feasible based on the turning radius. A truck from the south would be able to access the Perris Driveway in the northbound direction via a right-in movement, but would need to return to its origin by using the Cottonwood Avenue driveway to exit.

In the Alternative 2 scenario, southbound left-turn movements along Perris Boulevard would be allowed. However, eastbound left-turn movements into the site from Cottonwood Avenue would be prohibited. This access scenario would allow trucks from north on Perris Boulevard to access the site uninhibited, and return to Perris Boulevard via a westbound right-turn movement out of the driveway. Also, trucks from the south would be able to access the site via the Perris Boulevard Driveway. However, egress trucks destined for the south would need to use the Cottonwood Avenue driveway to return to Perris Boulevard.

In Alternative 3, the Perris Boulevard is restricted to right-in/right-out movements and full movements are allowed at the Cottonwood Driveway. Like Alternative 1, a truck would not be able to access the Perris Boulevard driveway from the north. A truck from the north would be able to turn onto Cottonwood Avenue and make an eastbound left-turn into the site. A vehicle from the south can access the Perris Boulevard driveway, but would need to return to Perris Boulevard using the Cottonwood Avenue driveway.

A summary table highlighting truck access capabilities at each driveway is shown on the following page.

	Truck Access Capability			
	Existing	Alternative 1	Alternative 2	Alternative 3
Perris Driveway	Yes – Trucks from North and South	Yes – Only Trucks from South	Yes – Trucks from North and South	Yes – Only Trucks from South
Cottonwood Driveway	Yes – Trucks from North and South	No	No	Yes – Trucks from North and South

Per Level of Service analysis, the cause of deficiency at the Perris Driveway is the westbound left-turn movement. The delay at the westbound left-turn, regardless of low volume, is reported as the worst-case movement. The Cottonwood Avenue driveway, however, does not experience any excessive delays, either inbound or outbound. The delay at the Perris Driveway can be reduced by restricting left-turn movements out of the driveway during the peak hours.

From a queueing perspective, none of the alternatives experience significant queues that would cause spillback or conflicts. There is adequate room for queueing that does not inhibit other accesses from adjacent properties. Furthermore, the Church site on the south side of Cottonwood Avenue will remove its driveway as part of its envisioned expansion. As a result, conflicts between ingress/egress vehicles at the church and at the proposed project site will be inconsequential.

From an access perspective, a southbound left-turn into the site from Perris Boulevard is needed to accommodate fuel trucks from the north. Prohibiting the southbound left would require trucks to turn onto Cottonwood Avenue and use the Cottonwood Avenue driveway, given that left turns are allowed at that driveway. With a median along Perris Boulevard, a southbound truck would be forced to make a U-Turn, which is a movement that is not feasible due to physical constraints.

Based on the results of the traffic analyses and review of the truck turning templates, a recommendation can be made regarding turn restrictions at each driveway. The presence of a raised median would prevent left-turn movements exiting the site onto Perris Boulevard, which is beneficial to peak hour operations. However, a raised median with an opening would allow preserve the southbound left-turn into the site. Nevertheless, trucks would be unable to make the southbound left-turn into the site due to geometric constraints. A truck would need to turn from Perris Boulevard onto Cottonwood Avenue before entering via the Cottonwood Driveway. Therefore, an eastbound left-turn movement must be maintained along Cottonwood Avenue to maintain truck access from the north.

The driveway on Perris Boulevard is consistent with Section 9.11.080 of the Moreno Valley Municipal Code for design parameters. The distance from the driveway to the intersection of Perris Boulevard and Cottonwood Avenue exceeds 350' when measured from the centerline of Cottonwood. The driveway is located at the far northern portion of the site, and aligns with the existing driveway on the west side of Perris Boulevard. The driveway on Cottonwood Avenue has been placed as far from the intersection as possible and is within 250 feet of the intersection, per Section 9.11.080.

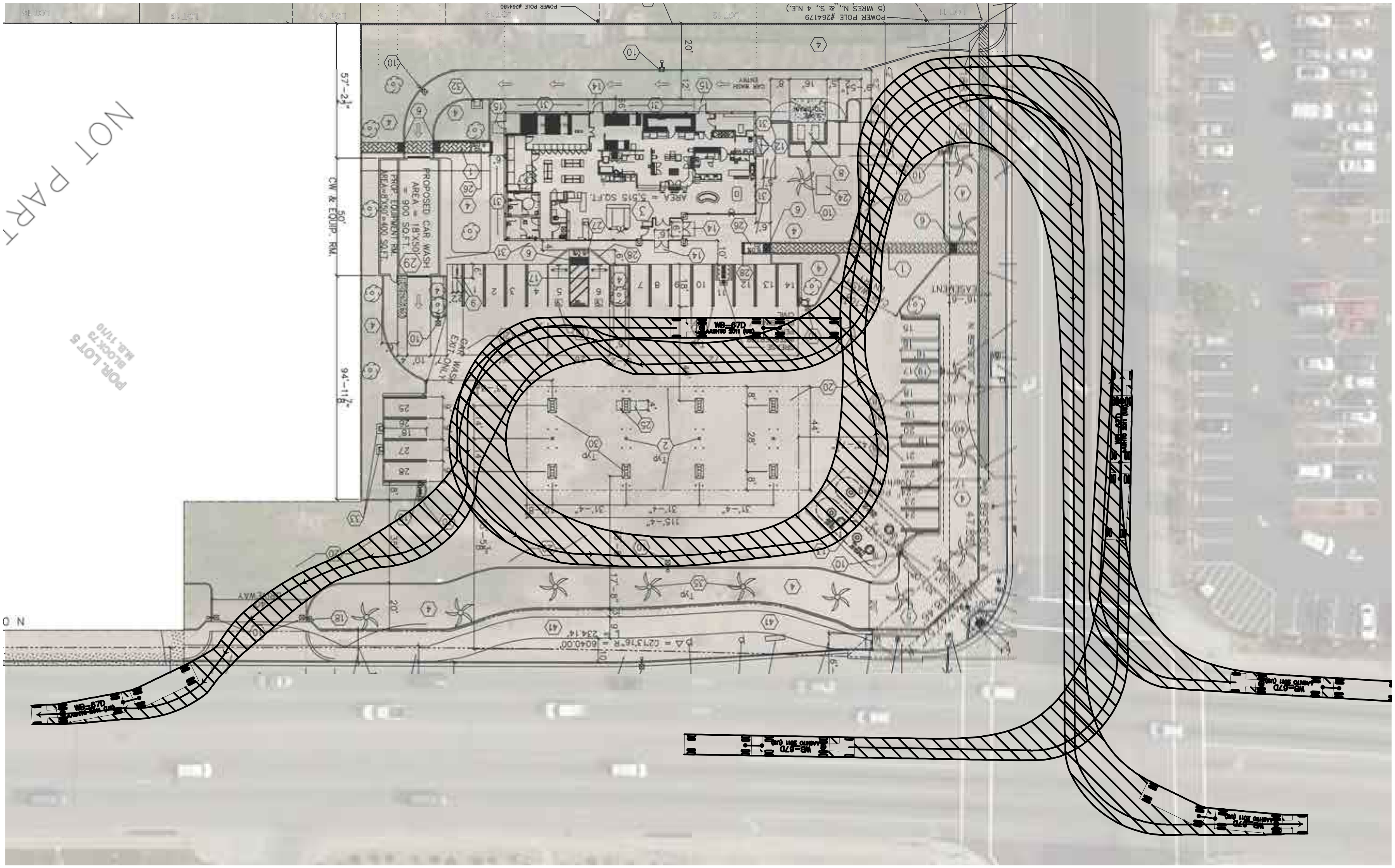


FIGURE 27
PROPOSED TRUCK TURNING TEMPLATE

NOT TO SCALE

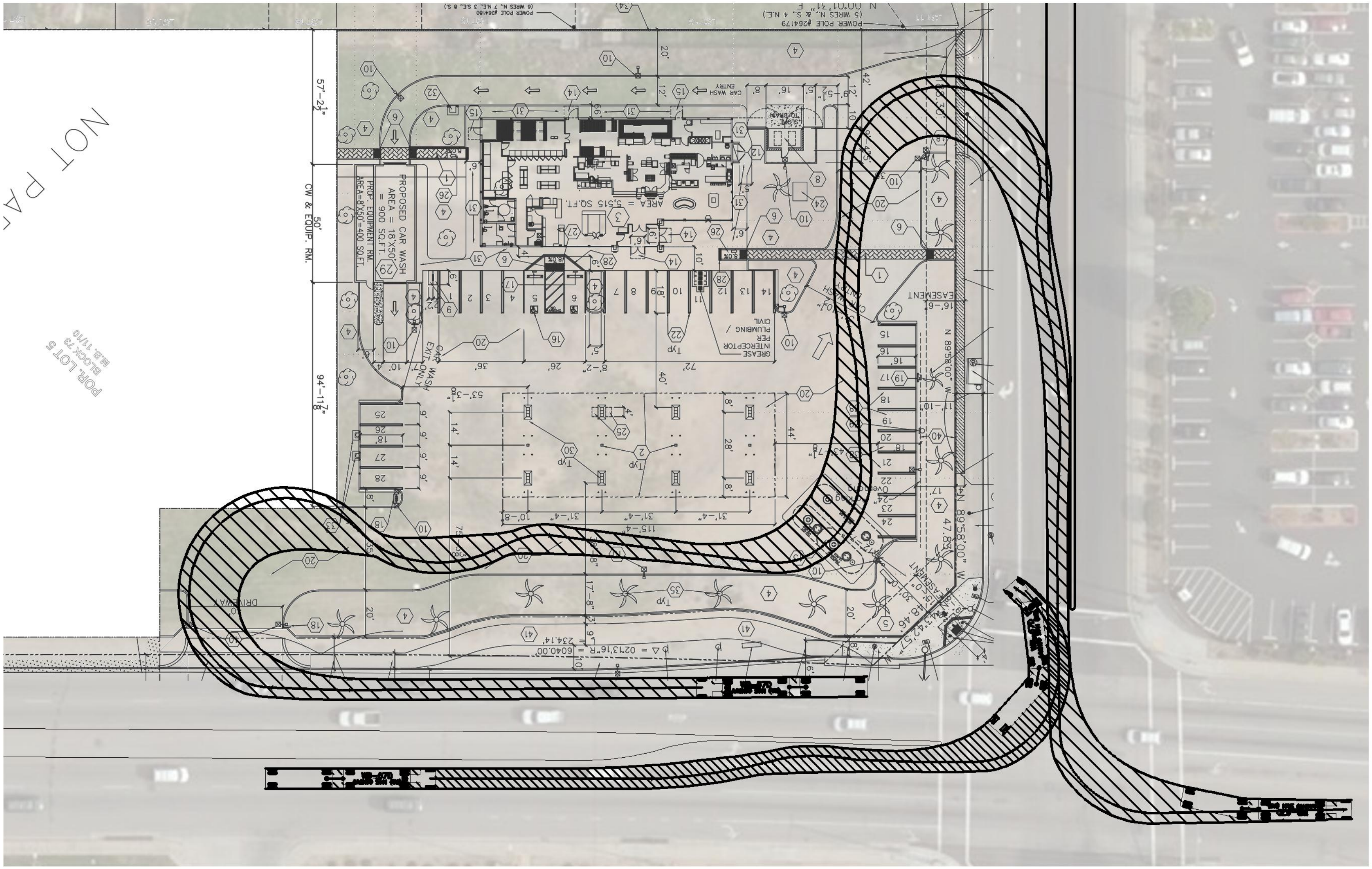


FIGURE 28
PROPOSED TRUCK TURNING TEMPLATE –
ALTERNATIVE 1

NOT TO SCALE

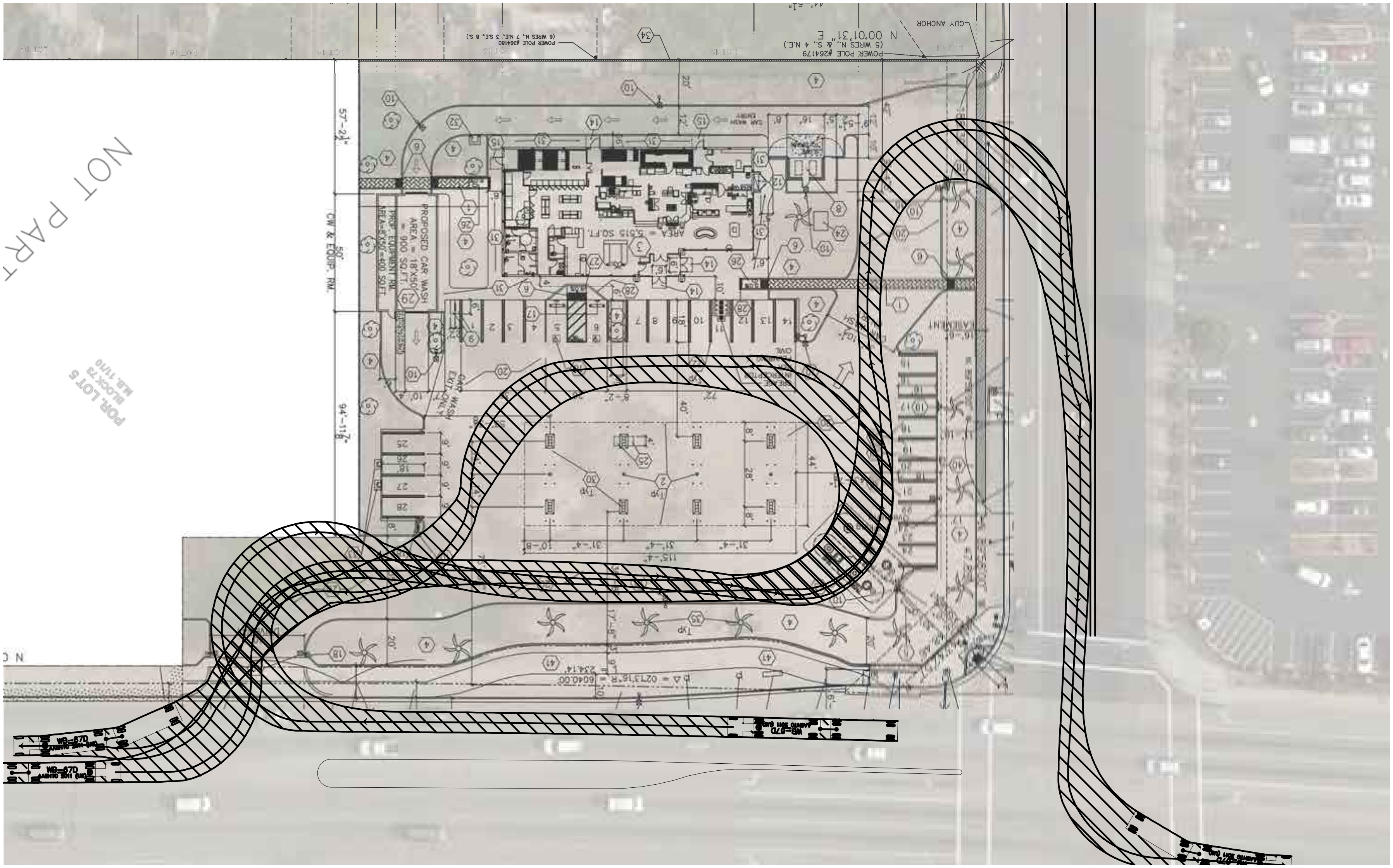


FIGURE 29
PROPOSED TRUCK TURNING TEMPLATE –
ALTERNATIVE 2

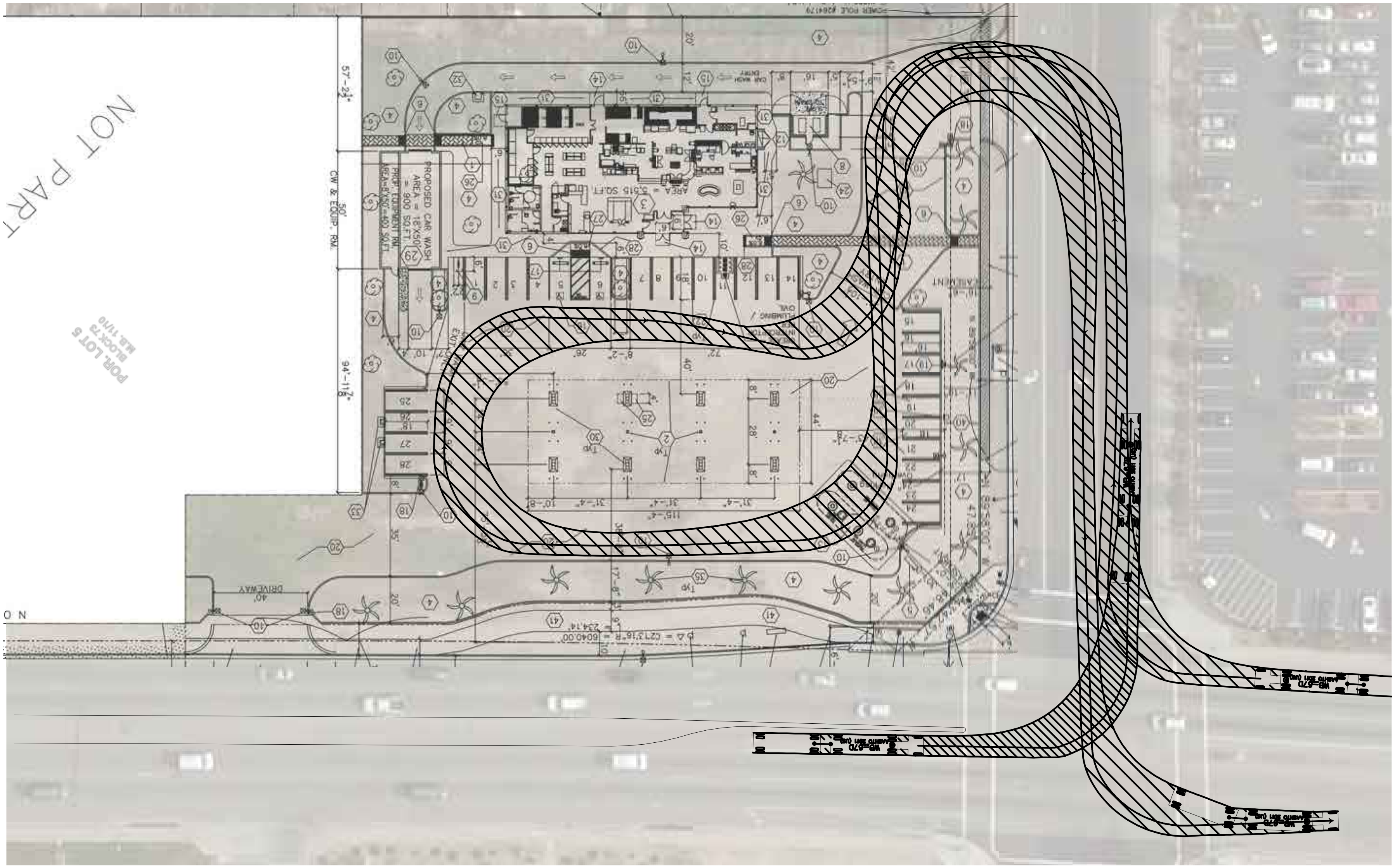


FIGURE 30
PROPOSED TRUCK TURNING TEMPLATE –
ALTERNATIVE 3

NOT TO SCALE

Attachment: Traffic Impact Study (3224 : A GENERAL PLAN AMENDMENT, CHANGE OF ZONE, AND

TRAFFIC SIGNAL WARRANTS

Traffic signal warrants, based on the California Manual on Uniform Traffic Control Devices (MUTCD), are used to determine whether or not traffic volumes on minor streets are great enough to warrant the installation of a traffic signal at an unsignalized intersection. There are two unsignalized intersections, excluding the project driveways, within the study area:

1. Perris Boulevard at Atwood Avenue
2. Cottonwood Avenue at Crape Myrtle Drive

Traffic signal warrants for the project driveways along Perris Boulevard and Cottonwood Avenue were not conducted due to the close proximity to the existing traffic signal at Perris Boulevard and Cottonwood Avenue.

The intersection of Cottonwood Avenue and Crape Myrtle Drive operates deficiently in Existing Conditions, and would continue to do so in all subsequent analysis scenarios. The intersection of Perris Boulevard and Atwood Avenue would operate deficiently in the Cumulative Without Project scenario, and would continue to do so with the addition of project traffic. The results of the traffic signal warrants indicate that minor street volumes are too low to warrant installation of a traffic signal at either intersection. Traffic signal warrant worksheets can be found in *Appendix E*.

NON-MOTORIZED SITE ACCESS

Pedestrian and bicycle counts were conducted at the intersection of Perris Boulevard and Cottonwood Avenue in September, 2015. Count sheets can be found in Appendix B. The counts indicate that low volume of pedestrian and bicycle traffic travels through the intersection on a weekday and weekend basis. The maximum number of bikes observed during any peak hour was four along Perris Boulevard. Furthermore, a maximum of thirteen pedestrians were observed along any one approach during the Sunday peak hour. Because the gas station and car wash components of the proposed project occupy a large part of the site, a heavy traffic volume from pedestrians and from bicycles is not likely. The project's donut shop component may attract pedestrians from the St. Christopher's Church at the southeast corner of Perris Boulevard and Cottonwood Avenue.

Currently, a Class II bike lane is striped along Cottonwood Avenue to the east and west of the project frontage. However, a Class II bike lane is not present in the immediate frontage. The bike lane runs along a parking lane.

The Riverside Transit Agency provides transit lines that run along the project frontage:

<u>Riverside Transit Agency Route 18</u> is a bus route that operates along Cottonwood Avenue within the project vicinity. Route 18 operates seven days a week and provides transportation services between Sunnymead Ranch and Moreno Valley College.

<u>Riverside Transit Agency Route 19</u> is a bus route that currently operates along Perris Boulevard within the project vicinity. Route 19 operates seven days a week and provides transportation between the Moreno Valley Mall and the Perris Station Transit Center to the south of the project site.

A far-side bus stop for Route 19 is located on the east side of Perris Boulevard, along the project frontage.

PROJECT IMPROVEMENTS AND MITIGATION

Based on the Cumulative With Project scenarios, four intersections were shown to operate deficiently, as well as both roadway segments along Perris Boulevard. The deficient intersections include:

- Perris Boulevard at Atwood Avenue
- Cottonwood Avenue at Crape Myrtle Drive
- Perris Boulevard at Alessandro Boulevard
- Perris Boulevard Driveway

While these intersections are deficient, the project only contributes to their existing deficiencies. The project would contribute to any improvement not included in an existing fee program on a fair-share basis. The following mitigation measures are recommended:

- Perris Boulevard at Atwood Avenue - The deficiency is a result of a small number of vehicles turning left into heavy peak hour traffic along Perris Boulevard. The intersection does not warrant a traffic signal. No mitigation measure is recommended.
- Cottonwood Avenue at Crape Myrtle Drive - The deficiency is a result of a small number of vehicles exiting a residential tract. The intersection does not warrant a traffic signal. No mitigation measure is recommended.
- Perris Boulevard at Alessandro Boulevard – Construct an additional southbound left-turn lane and an additional northbound left-turn lane.
- Perris Boulevard Driveway – The delay is a result of vehicles exiting the site. Since any queueing is restricted to the project site and delays are experienced onsite rather than on a public roadway, no offsite mitigation measures are recommended. Implementation of a westbound left-turn restriction would also reduce this delay.

On Perris Boulevard, the street is currently striped as a four-lane divided roadway with 86' of curb-to-curb width. Per the City of Moreno General Plan Roadway Network, Perris Boulevard will eventually be widened to add one lane in each direction, which will increase the daily roadway capacity to 56,300 vehicles. This lane addition can be accomplished in the 86' width, as shown on the roadway cross sections on Figure 5. With the construction of additional turn lanes at the Alessandro Boulevard intersection, the delay will improve to 48 seconds in the evening peak hour, which indicates a LOS D.

Moreover, intersections that operate at acceptable Level of Service, but experience individual lane groups (i.e. westbound left or southbound through movements) that become LOS E or LOS F with the addition of project traffic, are identified below:

- Perris Boulevard and Eucalyptus Avenue WBL (PM LOS E)
- Perris Boulevard and Alessandro Boulevard NBT (PM LOS E)
- Perris and Cottonwood Avenue EBL, WBL, WBR, SBL (Sunday LOS E-F)

Despite these intersections experiencing acceptable overall Level of Service, the following mitigation measures would help improve these lane groups:

- Perris Boulevard and Eucalyptus Avenue WBL – Perris Boulevard is planned to be widened one lane in each direction based on the General Plan Roadway Network, converting it from a 4-lane arterial to a 6-lane arterial. The additional roadway capacity would improve all lane group operations at the intersection.
- Perris Boulevard and Alessandro Boulevard NBT – Construct an additional southbound left-turn lane and an additional northbound left-turn lane. This measure was identified in the previous section, and is included in an existing fee program.
- Perris and Cottonwood Avenue EBL, WBL, WBR, SBL – Perris Boulevard is planned to be widened one lane in each direction based on the General Plan Roadway Network, converting it from a 4-lane arterial to a 6-lane arterial. The additional roadway capacity would improve all lane group operations at the intersection.

As previously mentioned, the project would contribute to improvements not found in an existing fee program on a fair-share basis.

FUNDING MECHANISMS

The Transportation Uniform Mitigation Fee (TUMF) Program, which has been developed by the Western Riverside Council of Governments (WRCOG), provides a means of funding improvement projects throughout the County of Riverside. The TUMF levies a fee on new developments in the region to contribute to the construction of transportation projects throughout the region. Fees are calculated on a per unit basis for residential uses, and on a per square foot basis for commercial and industrial uses. The fees and improvements are based on the TUMF Nexus Study, adopted by the WRCOG in 2009.

Additionally, the City of Moreno Valley's Development Impact Fee Program (DIF) provides a mechanism for funding the development of the City's General Plan circulation system. The DIF program, like the TUMF program, collects fees from developers for residential, commercial, and industrial development. A determination of the exact project contribution to the fee program should be made between the developer and the City of Moreno Valley.

FINDINGS AND CONCLUSIONS

This traffic impact study has been prepared to evaluate the project-related traffic impacts associated with the proposed development of a Yum Yum Donut Shop and Gas Station on a vacant parcel located at the northeast corner of Perris Boulevard and Cottonwood Avenue in the City of Moreno Valley, California. The project is estimated to generate 2,445 daily trips, 190 morning peak hour trips, 222 evening peak hour trips, and 312 Sunday peak trips. After applying pass-by reductions, the development is projected to generate a net of 2,445 daily trips, 72 morning peak hour trips, 98 evening peak hour trips, and 138 Sunday trips.

Existing traffic volumes for study intersections and roadways were collected in September 2015. Existing volumes, along with existing lane geometrics and traffic control at each intersection and roadway, were used in conducting peak hour Level of Service (LOS) analyses. Under Existing Conditions, all of the study intersections and roadways are currently operating at LOS D or better, with the exception of the unsignalized intersection of Cottonwood Avenue at Crape Myrtle Drive.

Project traffic was added to the Existing traffic volumes in the Existing With Project scenario. In the Existing With Project scenario, all study intersections would operate at acceptable Level of Service with the exception of the following:

- Cottonwood Avenue at Crape Myrtle Drive (AM LOS E)
- Perris Boulevard Driveway (AM LOS F, PM LOS F, Sunday LOS F)

The intersection of Cottonwood Avenue at Crape Myrtle Drive is unsignalized and is shown to already operate deficiently in Existing Conditions. The deficiency is caused by the low volumes turning from the minor street approach.

The Perris Boulevard Driveway is unsignalized. The LOS F delay would be experienced by vehicles making a westbound left-turn out of the driveway onto Perris Boulevard.
All study roadway segments would continue to operate at LOS D or better in the Existing With Project scenario.

Traffic from cumulative projects and an ambient growth of 2% per year over 5 years was added to Existing volumes to determine traffic conditions for the Cumulative Without Project scenario. The following intersections operate deficiently in the Cumulative Without Project scenario:

- Perris Boulevard at Atwood Avenue (AM LOS E, PM LOS F, Sunday LOS F)
- Cottonwood Avenue at Crape Myrtle Drive (AM LOS F)
- Perris Boulevard at Alessandro Boulevard (PM LOS E)
- Perris Boulevard Driveway (PM LOS F, Sunday LOS F)

With the exception of the Perris Boulevard at Alessandro Boulevard intersection, the deficient intersections are unsignalized. Due to the heavy traffic volumes anticipated in Opening Year 2020 as a result of growth and nearby projects, vehicles turning from minor streets onto Perris Boulevard are forecasted to encounter significant delays, regardless of their low volumes.

Moreover, both study roadway segments along Perris Boulevard are anticipated to operate deficiently in the Cumulative Without Project scenario.

With the addition of project traffic to the Cumulative Without Project scenario, the following intersections would operate at an unacceptable Level of Service:

- Perris Boulevard at Atwood Avenue (AM LOS E, PM LOS F, Sunday LOS F)
- Cottonwood Avenue at Crape Myrtle Drive (AM LOS F, Sunday LOS E)
- Perris Boulevard at Alessandro Boulevard (PM LOS E)
- Perris Boulevard Driveway (AM LOS F, PM LOS F, Sunday LOS F)

These intersections are forecasted to operate deficiently before the addition of project traffic. The deficiency at the Perris Boulevard Driveway in the Without Project scenario is caused by egress vehicles from the shopping center to the west. In the With Project scenario, the westbound approach at the driveway also operates deficiently. At the remaining intersections, the project alone does not trigger the deficiencies, but rather contributes to a less-than-significant cumulative impact.

Furthermore, the two study roadway segments along Perris Boulevard will continue to operate deficiently with the addition of project traffic.

While these intersections and roadways are deficient, the project only contributes to their existing deficiencies. The project would contribute to any improvement not included in an existing fee program on a fair-share basis. The following mitigation measures are recommended:

- Perris Boulevard at Atwood Avenue - The deficiency is a result of a small number of vehicles turning left into heavy peak hour traffic along Perris Boulevard. The intersection does not warrant a traffic signal. No mitigation measure is recommended.
- Cottonwood Avenue at Crape Myrtle Drive - The deficiency is a result of a small number of vehicles exiting a residential tract. The intersection does not warrant a traffic signal. No mitigation measure is recommended.
- Perris Boulevard at Alessandro Boulevard – Construct an additional southbound left-turn lane and an additional northbound left-turn lane.
- Perris Boulevard Driveway – The delay is a result of vehicles exiting the site. Since any queueing is restricted to the project site and delays are experienced onsite rather than on a public roadway, no offsite mitigation measures are recommended.

On Perris Boulevard, the street is currently striped as a four-lane divided roadway with 86' of curb-to-curb width. Per the City of Moreno General Plan Roadway Network, Perris Boulevard will eventually be widened to add one lane in each direction, which will increase the daily roadway capacity to 56,300 vehicles. This lane addition can be accomplished in the 86' width, and will improve roadway operations to acceptable levels. With the construction of additional turn lanes at the Alessandro Boulevard intersection, the delay will improve to 48 seconds in the evening peak hour, which indicates a LOS D.

Moreover, intersections that operate at acceptable Level of Service, but experience individual lane groups that become LOS E or LOS F with the addition of project traffic, are identified below:

- Perris Boulevard and Eucalyptus Avenue WBL (PM LOS E)
- Perris Boulevard and Alessandro Boulevard NBT (PM LOS E)
- Perris and Cottonwood Avenue EBL, WBL, WBR, SBL (Sunday LOS E-F)

Despite these intersections experiencing acceptable overall Level of Service, the following mitigation measures would help improve these lane groups:

- Perris Boulevard and Eucalyptus Avenue WBL – Perris Boulevard is planned to be widened one lane in each direction based on the General Plan Roadway Network, converting it from a 4-lane arterial to a 6-lane arterial. The additional roadway capacity would improve all lane group operations at the intersection.
- Perris Boulevard and Alessandro Boulevard NBT – Construct an additional southbound left-turn lane and an additional northbound left-turn lane. This measure was identified in the previous section, and is included in an existing fee program.
- Perris and Cottonwood Avenue EBL, WBL, WBR, SBL – Perris Boulevard is planned to be widened one lane in each direction based on the General Plan Roadway Network, converting it from a 4-lane arterial to a 6-lane arterial. The additional roadway capacity would improve all lane group operations at the intersection.

APPENDIX A

APPROVED SCOPING AGREEMENT

MORENO VALLEY

SCOPING AGREEMENT
FOR TRAFFIC ANALYSIS STUDY

Date: August 14, 2015

This letter acknowledges the City of Moreno Valley Transportation Engineering Division requirements for the traffic impact analysis of the following project.

Case No.	P15-018
Project Name:	Moreno Valley Yum Yum Donut Shop and Gas Station
Project Address:	Northeast Corner of Perris Blvd and Cottonwood Ave
Project Description:	Gas Station w/ 16 Pumps and Convenience Market/Donut Shop/Car Wash
Related Cases:	

	Consultant	Developer
Name:	Kimley-Horn and Associates, Inc.	A & S Engineering
Address:	765 The City Drive, Suite 200 Orange, CA 92868	28405 Sand Canyon Rd., Suite B Canyon Country, CA 91387
Telephone:	714-705-1362	661-250-9300

I. Background

The proposed project is located on the northeast corner of Perris Boulevard and Cottonwood Avenue. The project consists of a Gas Station w/ 5,515 SF building (Convenience Store and Donut Shop) & Car Wash. The project is anticipated to be completed in 2016. Per the City's guidelines, the opening year scenario for analysis will be 2020. The site plan is shown on **Figure 1**.

II. Trip Geographic Distribution and Assignment*

N: 40% **S:** 35% **E:** 10% **W:** 15%

***See Figure 2 for trip distribution diagram**

III. Site Trip Generation Forecast

A. ITE Trip Generation Manual (latest edition)
B. AM Peak: 7:00-9:00 AM
C. PM Peak: 4:00-6:00 PM
D. Sunday Noon: 11:00-2:00 PM
E. Intersection and link acceptable Level of Service "D" for some intersections and links and Level of Service "C" for others based upon the current City policy. (Use Highway Capacity Manual - latest edition - operations procedures; parameters per County of Riverside Traffic Impact Analysis Guidelines.)

Proposed Use Rates

Gasoline Station w/ Convenience Market & Car Wash (Fueling Position)	Daily: 152.84	AM: 11.84	PM: 13.86	Weekend: 19.46

Internal Trip
Allowance: Yes ______ No __X__ Percentage ____________

Pass-by Trip
Allowance: Yes __X__ No ______ Percentage __See Attached **Table 1**__

IV. Specific Project Issues to be Analyzed

A. The focus of this traffic study will be on addressing the adequacy of site access and identifying specific near-term and future circulation improvements required in the study area to maintain acceptable peak hour and daily levels of service (LOS).
B. The traffic study shall address the project traffic impacts at all study intersections listed in Section VI and provide appropriate mitigation measures if applicable.
C. Sunday traffic conditions will be analyzed to address the additional weekend traffic on the street system due to the church at the southeast corner of Perris Boulevard and Cottonwood Avenue.
D. Different site access alternatives will be analyzed to assess the construction of a raised median on Perris Boulevard and/or Cottonwood Avenue. These alternatives include:
   A. Full movements at both driveways
   B. Left in/Left out restricted at both driveways
   C. Left out restricted at Perris Driveway, Left in/Left out restricted at Cottonwood Driveway
   D. Left in/Left out restricted at Perris Driveway, Full movement at Cottonwood Driveway
E. Queueing analysis will be conducted at the two site driveways. Queuing analysis for SBL movement into driveway will take into account NBL movements into adjacent shopping center.
F. Assess non-motorized (i.e. peds, bicycles, ex.) access, document available transit/bus routes

G. Truck turning exhibits will be prepared to show potential conflicts with raised medians.

V. Study of Horizon Years

A. Existing (2015)
B. Existing (2015) Plus Project
C. Cumulative (Opening Year 2020) Without Project (2% annual growth and cumulative project traffic) – See **Figure 3** for Cumulative Projects within a 3.5-mile radius
D. Cumulative (Opening Year 2020) With Project

VI. Facilities to be Studied (See Figure 4 for Study Area)

A. Intersections

1. Perris Boulevard at Eucalyptus Avenue
2. Perris Boulevard and Atwood Avenue
3. Perris Boulevard and Dracaea Avenue
4. Cottonwood Avenue at Indian Street
5. Cottonwood Avenue at Perris Boulevard (Will include ped/bike counts)
6. Cottonwood Avenue at Crape Myrtle Drive
7. Cottonwood Avenue at Kitching Street
8. Perris Boulevard and Bay Ave
9. Perris Boulevard at Alessandro Boulevard
10. Cottonwood Avenue Driveway
11. Perris Boulevard Driveway

B. Roadway Segments

1. Perris Boulevard between Eucalyptus Avenue and Cottonwood Avenue
2. Perris Boulevard between Cottonwood Avenue and Alessandro Boulevard
3. Cottonwood Avenue between Indian Street and Perris Boulevard
4. Cottonwood Avenue between Perris Boulevard and Kitching Street

VII. Deliverables

A. Draft traffic impact study (2 copies)
B. Final traffic impact study (4 copies)

All draft and final traffic impact studies shall be delivered with the appropriate review fee to the Permit Technician, Land Development Division, Moreno Valley City Hall, 14177 Frederick Street, Moreno Valley, CA 92552. Please contact the Land Development Division at 951-413-3110 prior to the delivery of the traffic study.

If you have any questions regarding this *Scoping Agreement*, please contact Michael Lloyd at (951) 413-3146.

Recommended By:

Tim Chan
Kimley-Horn and Associates, Inc.

Approved By:

8/14/15

Michael Lloyd, P.E.
Senior Traffic Engineer

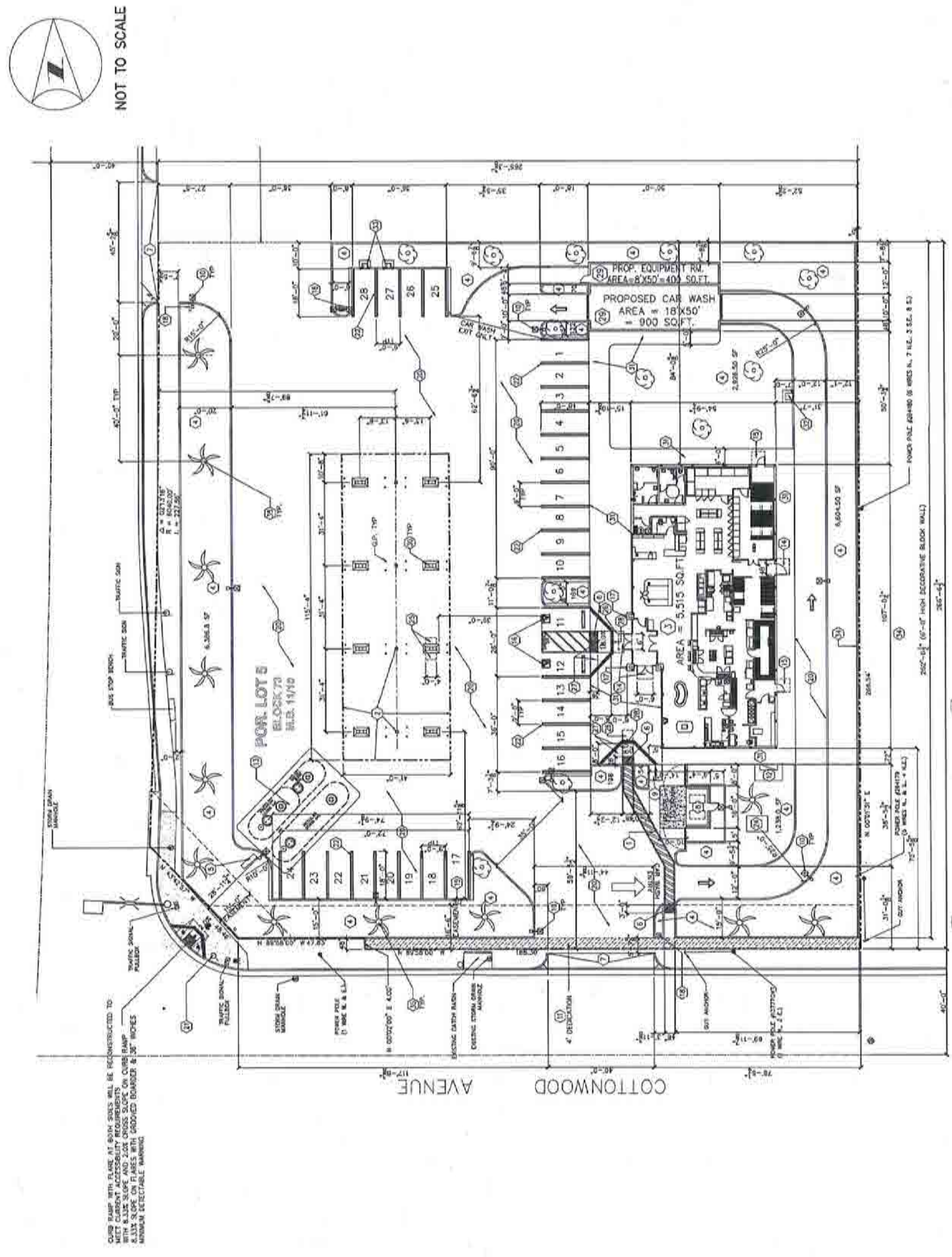


FIGURE 1
SITE PLAN

TABLE 1
SUMMARY OF PROJECT TRIP GENERATION

			Trip Generation Rates [1]									
	ITE			AM Peak Hour			PM Peak Hour			Sunday Noon [3]		
Land Use	Code	Unit	Daily	In	Out	Total	In	Out	Total	In	Out	Total
Gasoline Station w/ Conv. Mkt. & Car Wash	946	Fueling Position	152.84	6.04	5.80	11.84	7.07	6.79	13.86	9.73	9.73	19.46
			Trip Generation Estimates									
				AM Peak Hour			PM Peak Hour			Sunday Noon		
Land Use	Quantity	Unit	Daily	In	Out	Total	In	Out	Total	In	Out	Total
Gasoline Station w/ Conv. Mkt. & Car Wash	16	Fueling Position	2,445	97	93	190	113	109	222	156	156	311
- Pass-by Trips (AM 62%, PM 56%) [2]			-	-60	-58	-118	-63	-61	-124	-87	-87	-174
Total Project Trips			**2,445**	**37**	**35**	**72**	**50**	**48**	**98**	**68**	**68**	**137**

[1] *Source: Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition*
[2] *Source: ITE Trip Generation Manual - Volume 1: User's Guide and Handbook. A pass-by rate of 56% was used for Sunday trips.*
[3] *Sunday Peak Hour trips were calculated based on ITE rates for the Saturday Peak Hour of Generator.*

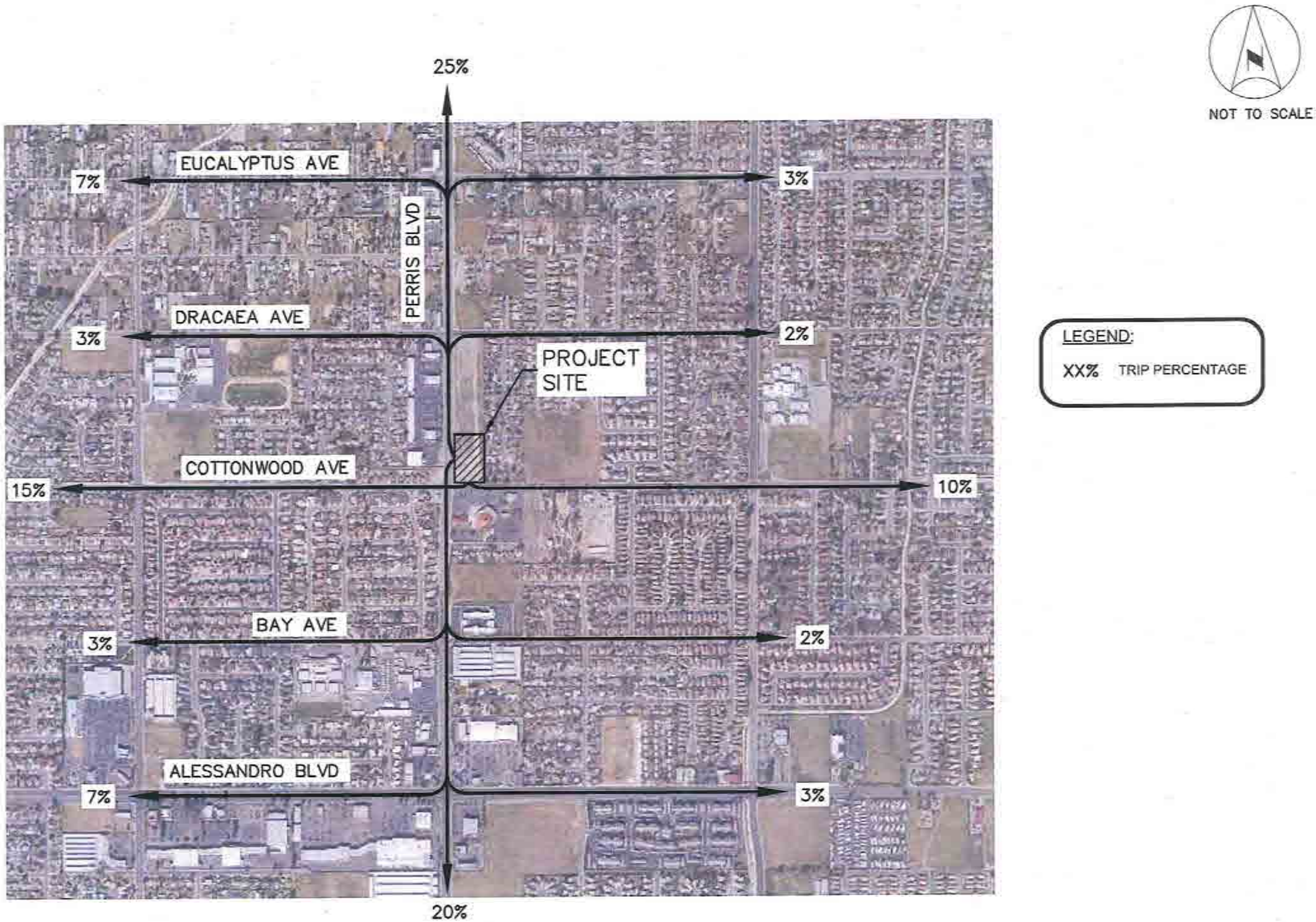


FIGURE 2
TRIP DISTRIBUTION ASSUMPTIONS

Kimley»Horn

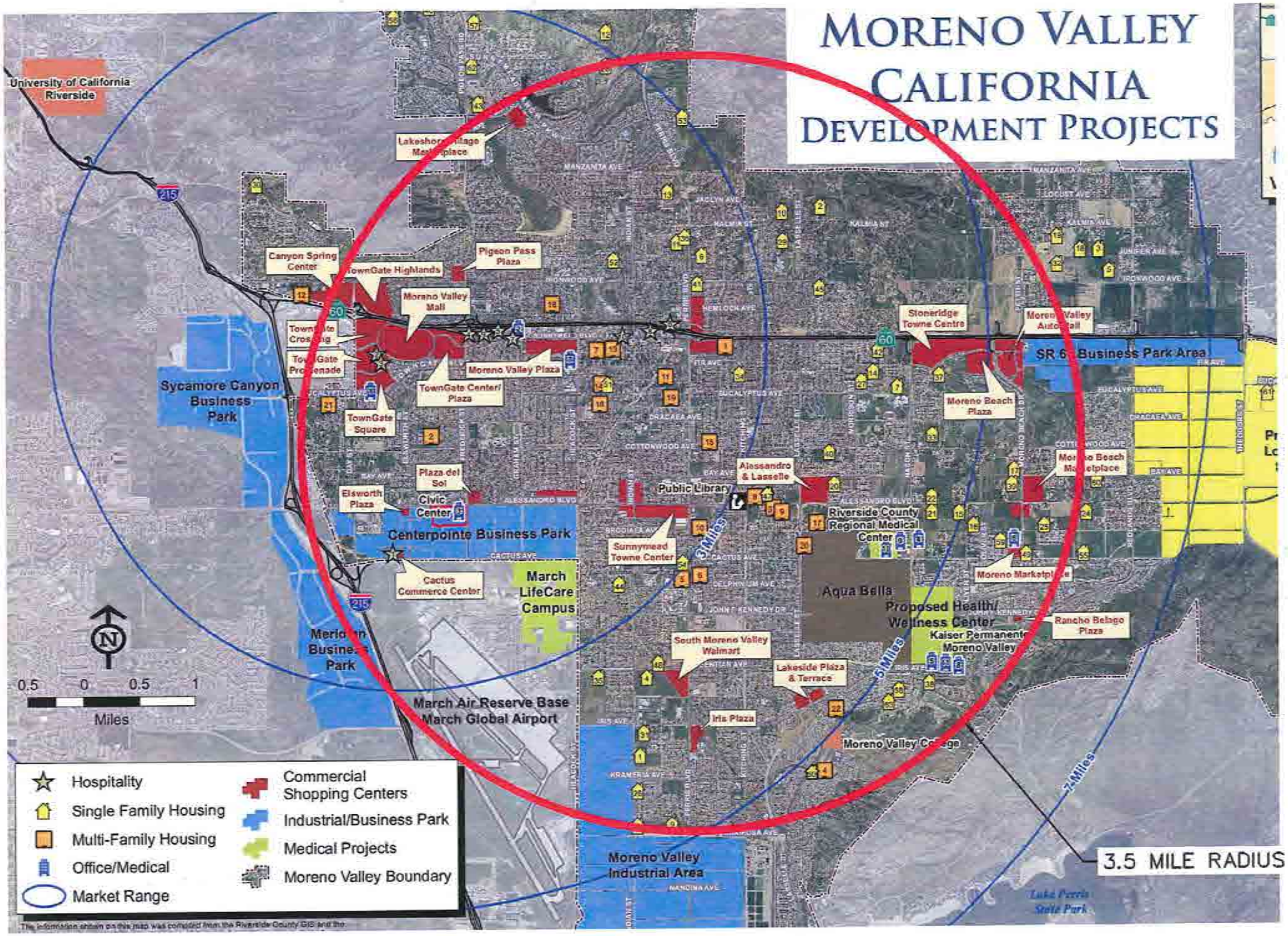


FIGURE 3
CUMULATIVE PROJECTS

Kimley»Horn

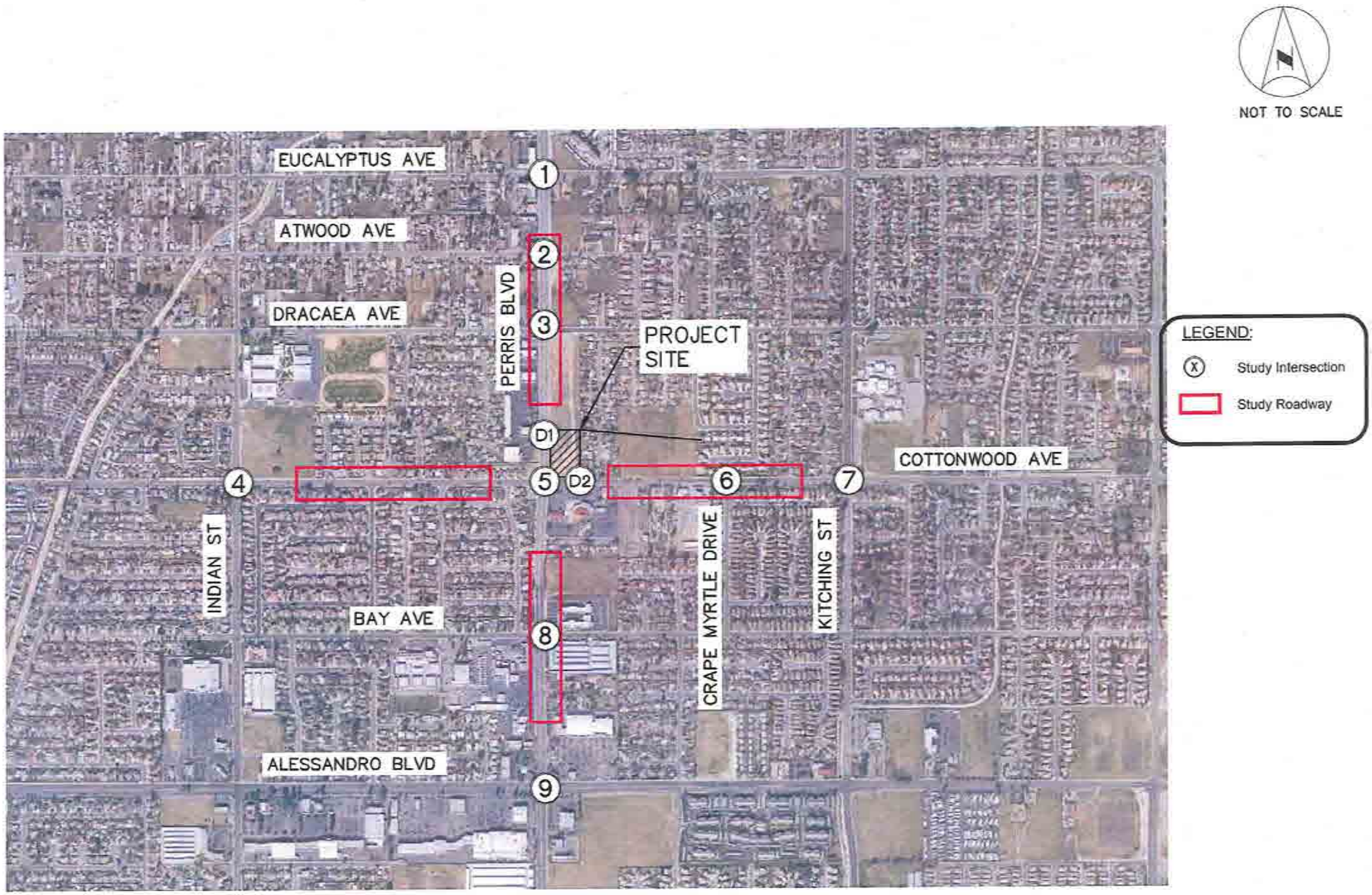


FIGURE 4
STUDY INTERSECTIONS AND ROADWAYS

Kimley»Horn

APPENDIX B

TRAFFIC DATA COLLECTION SHEETS

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Perris Blvd and Eucalyptus Ave , Moreno Valley

Date: 9/2/2015
Day: Wednesday

Project #: 15-6148-001
City: Moreno Valley

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

N

Perris Blvd

Eucalyptus Ave

Peak Hour Summary

Southbound Approach

	Left	Through	Right	Out (Northbound departures)
Lanes	1	2	1	
AM	26	835	70	1223
NOON	0	0	0	0
PM	56	1173	105	1005

Eastbound Approach

	Lanes	AM	NOON	PM
Out (Westbound departures)		208	0	219
Left	1	24	0	54
Through	1	76	0	161
Right	1	52	0	63

Westbound Approach

	AM	NOON	PM	Lanes
Right	177	0	84	1
Through	127	0	106	1
Left	82	0	46	1
Out (Eastbound departures)	198	0	324	

CONTROL
Signalized

Northbound Approach

	Out (Southbound departures)	Left	Through	Right
AM	969	55	1022	52
NOON	0	0	0	0
PM	1282	57	867	58
Lanes		1	2	1

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

North Leg

AM	931	1223
NOON	0	0
PM	1334	1005

East Leg

	AM	NOON	PM
In	386	0	236
Out	198	0	324

West Leg

	AM	NOON	PM
Out	208	0	219
In	152	0	278

South Leg

AM	969	1129
NOON	0	0
PM	1282	982

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	2154	0	2339
East Leg	584	0	560
West Leg	360	0	497
South Leg	2098	0	2264

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Perris Blvd and Eucalyptus Ave , Moreno Valley

Date: 9/13/2015

Day: Sunday

Project #: 15-6148-001

City: Moreno Valley

N

Perris Blvd

Eucalyptus Ave

AM Peak Hour	
NOON Peak Hour	100 PM
PM Peak Hour	

Peak Hour Summary

Southbound Approach

Lanes	1	2	1		
AM	0	0	0	0	AM
NOON	44	816	62	993	NOON
PM	0	0	0	0	PM

Westbound Approach

AM	NOON	PM	Lanes
0	73	0	1
0	61	0	1
0	29	0	1
0	172	0	
AM	NOON	PM	

Eastbound Approach

	AM	NOON	PM
	0	151	0
1	0	50	0
1	0	78	0
1	0	31	0
Lanes	AM	NOON	PM

CONTROL

Signalized

Northbound Approach

AM	0	0	0	0	AM
NOON	876	46	870	32	NOON
PM	0	0	0	0	PM
		1	2	1	Lanes

Count Periods	Start	End
AM		
NOON	11:00 AM	2:00 PM
PM		

Total Ins & Outs

North Leg

0	0	AM
922	993	NOON
0	0	PM

West Leg

AM	NOON	PM
0	151	0
0	159	0

East Leg

AM	NOON	PM
0	163	0
0	172	0

South Leg

AM	0	0
NOON	876	948
PM	0	0

Total Volume Per Leg

North Leg

0	AM
1915	NOON
0	PM

West Leg

AM	NOON	PM
0	310	0

East Leg

AM	NOON	PM
0	335	0

South Leg

AM	0
NOON	1824
PM	0

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Perris Blvd and Atwood Ave , Moreno Valley

Date:	9/2/2015
Day:	Wednesday
Project #:	15-6148-002
City:	Moreno Valley

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Perris Blvd

Atwood Ave

N

Southbound Approach

	Left	Through	Right	Northbound (out)
Lanes	0	2	0	
AM	18	941	13	1127
NOON	0	0	0	0
PM	20	1212	43	993

Eastbound Approach

	AM	NOON	PM
Westbound (out)	53	0	57

Lanes		AM	NOON	PM
0	Left	12	0	14
1	Through	2	0	3
0	Right	37	0	36

CONTROL

2-Way Stop (EB/WB)

Westbound Approach

	AM	NOON	PM	Lanes
Right	16	0	11	0
Through	1	0	1	1
Left	2	0	2	0
Eastbound (out)	19	0	48	

Northbound Approach

	Southbound (out)	Left	Through	Right
AM	980	34	1099	4
NOON	0	0	0	0
PM	1250	36	968	2
Lanes		0	2	0

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

North Leg

	In	Out
AM	972	1127
NOON	0	0
PM	1275	993

West Leg

	AM	NOON	PM
Out	53	0	57
In	51	0	53

East Leg

	AM	NOON	PM
In	19	0	14
Out	19	0	48

South Leg

	Out	In
AM	980	1137
NOON	0	0
PM	1250	1006

Total Volume Per Leg

North Leg

AM	2099
NOON	0
PM	2268

West Leg

AM	NOON	PM
104	0	110

East Leg

AM	NOON	PM
38	0	62

South Leg

AM	2117
NOON	0
PM	2256

Attachment: Traffic Impact Study (3224 : A GENERAL PLAN AMENDMENT, CHANGE OF ZONE, AND CONDITIONAL USE PERMIT FOR

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Perris Blvd and Atwood Ave , Moreno Valley

Date:	9/13/2015
Day:	Sunday

Project #:	15-6148-002
City:	Moreno Valley

AM Peak Hour	
NOON Peak Hour	100 PM
PM Peak Hour	

N

Perris Blvd

Atwood Ave

Peak Hour Summary

Southbound Approach

	Right	Thru	Left	Out
Lanes	0	2	0	
AM	0	0	0	0
NOON	17	824	34	948
PM	0	0	0	0

Eastbound Approach

	AM	NOON	PM
Out	0	60	0

Lanes		AM	NOON	PM
0	Left	0	18	0
1	Thru	0	4	0
0	Right	0	27	0

Westbound Approach

	AM	NOON	PM	Lanes
Right	0	14	0	0
Thru	0	6	0	1
Left	0	3	0	0

	AM	NOON	PM
Out	0	41	0

CONTROL

2-Way Stop (EB/WB)

Northbound Approach

	Out	Left	Thru	Right
AM	0	0	0	0
NOON	854	37	916	3
PM	0	0	0	0
Lanes		0	2	0

Count Periods	Start	End
AM		
NOON	11:00 AM	2:00 PM
PM		

Total Ins & Outs

North Leg

	In	Out
AM	0	0
NOON	875	948
PM	0	0

West Leg

	AM	NOON	PM
Out	0	60	0
In	0	49	0

East Leg

	AM	NOON	PM
In	0	23	0
Out	0	41	0

South Leg

	Out	In
AM	0	0
NOON	854	956
PM	0	0

Total Volume Per Leg

North Leg

AM	0
NOON	1823
PM	0

West Leg

AM	NOON	PM
0	109	0

East Leg

AM	NOON	PM
0	64	0

South Leg

AM	0
NOON	1810
PM	0

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Perris Blvd and Dracaea Ave , Moreno Valley

Date:	9/2/2015
Day:	Wednesday
Project #:	15-6148-003
City:	Moreno Valley

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

N

Perris Blvd

Dracaea Ave

Peak Hour Summary

CONTROL: Signalized

Southbound Approach

	Right	Thru	Left	Out (NB departing)
Lanes	1	2	1	
AM	72	872	32	1143
NOON	0	0	0	0
PM	81	1112	72	1009

Westbound Approach

	AM	NOON	PM	Lanes
Right	56	0	58	0
Thru	92	0	85	1
Left	60	0	28	0
Out	126	0	206	

Eastbound Approach

	AM	NOON	PM	Lanes
Out	194	0	180	
Left	67	0	58	0
Thru	70	0	92	1
Right	44	0	24	0

Northbound Approach

	Out	Left	Thru	Right
AM	976	30	1020	24
NOON	0	0	0	0
PM	1164	14	893	42
Lanes		1	2	0

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

North Leg	In	Out
AM	976	1143
NOON	0	0
PM	1265	1009

West Leg	AM	NOON	PM
Out	194	0	180
In	181	0	174

East Leg	AM	NOON	PM
In	208	0	171
Out	126	0	206

South Leg	Out	In
AM	976	1074
NOON	0	0
PM	1164	949

Total Volume Per Leg

North Leg	
AM	2119
NOON	0
PM	2274

	AM	NOON	PM
West Leg	375	0	354
East Leg	334	0	377

South Leg	
AM	2050
NOON	0
PM	2113

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Perris Blvd and Dracaea Ave , Moreno Valley

Date: 9/13/2015

Day: Sunday

Project #: 15-6148-003

City: Moreno Valley

AM Peak Hour	
NOON Peak Hour	100 PM
PM Peak Hour	

Peak Hour Summary

Perris Blvd

Dracaea Ave

N

Southbound Approach

	Left	Thru	Right	Out
Lanes	1	2	1	
AM	0	0	0	0
NOON	52	779	26	953
PM	0	0	0	0

Eastbound Approach

	Lanes	AM	NOON	PM
Out		0	133	0
Left	0	0	71	0
Thru	1	0	82	0
Right	0	0	24	0

Westbound Approach

	AM	NOON	PM	Lanes
Right	0	57	0	0
Thru	0	59	0	1
Left	0	34	0	0
Out	0	132	0	

Northbound Approach

	Out	Left	Thru	Right
AM	0	0	0	0
NOON	837	22	825	24
PM	0	0	0	0
Lanes		1	2	0

CONTROL

Signalized

Count Periods	Start	End
AM		
NOON	11:00 AM	2:00 PM
PM		

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	0	0
North Leg	NOON	857	953
North Leg	PM	0	0
South Leg	AM	0	0
South Leg	NOON	837	871
South Leg	PM	0	0

West Leg	AM	NOON	PM
	0	133	0
	0	177	0

East Leg	AM	NOON	PM
	0	150	0
	0	132	0

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	0	1810	0
West Leg	0	310	0
East Leg	0	282	0
South Leg	0	1708	0

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Indian St and Cottonwood Ave , Moreno Valley

Date:	9/2/2015
Day:	Wednesday
Project #:	15-6148-004
City:	Moreno Valley

N

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Indian St

Cottonwood Ave

Southbound Approach

	Lanes 0	2	1	Out
AM	47	248	53	365
NOON	0	0	0	0
PM	43	268	28	342

Eastbound Approach

	AM	NOON	PM
Out	495	0	369

Lanes	AM	NOON	PM
1	45	0	42
1	285	0	316
0	125	0	147

Westbound Approach

	AM	NOON	PM	Lanes
	83	0	37	0
	355	0	246	1
	44	0	41	1
In	367	0	398	

Northbound Approach

	Out			
AM	417	93	237	29
NOON	0	0	0	0
PM	456	80	263	54
Lanes		1	2	0

CONTROL
Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

North Leg		
AM	348	365
NOON	0	0
PM	339	342

West Leg	AM	NOON	PM
	495	0	369
	455	0	505

East Leg	AM	NOON	PM
	482	0	324
	367	0	398

South Leg		
AM	417	359
NOON	0	0
PM	456	397

Total Volume Per Leg

North Leg	
AM	713
NOON	0
PM	681

West Leg	AM	NOON	PM
	950	0	874

East Leg	AM	NOON	PM
	849	0	722

South Leg	
AM	776
NOON	0
PM	853

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Indian St and Cottonwood Ave , Moreno Valley

Date:	9/13/2015
Day:	Sunday
Project #:	15-6148-004
City:	Moreno Valley

AM Peak Hour	
NOON Peak Hour	100 PM
PM Peak Hour	

Peak Hour Summary

Indian St

Cottonwood Ave

N

Southbound Approach

Lanes	0	2	1	
AM	0	0	0	0
NOON	20	171	20	253
PM	0	0	0	0

Westbound Approach

AM	NOON	PM	Lanes
0	24	0	0
0	243	0	1
0	44	0	1
0	258	0	

Eastbound Approach

Lanes	AM	NOON	PM
	0	351	0
1	0	16	0
1	0	195	0
0	0	104	0

CONTROL

Signalized

Northbound Approach

AM	0	0	0	0	AM
NOON	319	88	213	43	NOON
PM	0	0	0	0	PM
		1	2	0	Lanes

Count Periods	Start	End
AM		
NOON	11:00 AM	2:00 PM
PM		

Total Ins & Outs

North Leg

AM	0	0
NOON	211	253
PM	0	0

West Leg

AM	NOON	PM
0	351	0
0	315	0

East Leg

AM	NOON	PM
0	311	0
0	258	0

South Leg

AM	0	0
NOON	319	344
PM	0	0

Total Volume Per Leg

North Leg

AM	0
NOON	464
PM	0

West Leg

AM	NOON	PM
0	666	0

East Leg

AM	NOON	PM
0	569	0

South Leg

AM	0
NOON	663
PM	0

E.1.r

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Perris Blvd and Cottonwood Ave , Moreno Valley

Date: 9/2/2015

Day: Wednesday

Project #: 15-6148-005

City: Moreno Valley

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

CONTROL: Signalized

Southbound Approach (Perris Blvd)

	Right	Thru	Left	Out
Lanes	1	2	1	
AM	89	805	107	1079
NOON	0	0	0	0
PM	119	967	139	1000

Eastbound Approach (Cottonwood Ave)

	Lanes	AM	NOON	PM
Out		374	0	330
Left	1	80	0	93
Thru	1	184	0	213
Right	1	66	0	62

Westbound Approach

	AM	NOON	PM	Lanes
Right	166	0	90	1
Thru	215	0	148	1
Left	53	0	29	1
Out	354	0	393	

Northbound Approach

	Out	Left	Thru	Right
AM	924	70	833	63
NOON	0	0	0	0
PM	1058	63	817	41
Lanes		1	2	1

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	1001	1079
North Leg	NOON	0	0
North Leg	PM	1225	1000
West Leg	AM	330	374
West Leg	NOON	0	0
West Leg	PM	368	330
East Leg	AM	434	354
East Leg	NOON	0	0
East Leg	PM	267	393
South Leg	AM	966	924
South Leg	NOON	0	0
South Leg	PM	921	1058

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	2080	0	2225
West Leg	704	0	698
East Leg	788	0	660
South Leg	1890	0	1979

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Perris Blvd and Cottonwood Ave , Moreno Valley

Date:	9/13/2015
Day:	Sunday

Project #:	15-6148-005
City:	Moreno Valley

Peak Hour Summary

AM Peak Hour	
NOON Peak Hour	100 PM
PM Peak Hour	

N

Perris Blvd

Cottonwood Ave

Southbound Approach

	Lanes 1	Lanes 2	Lanes 1	Exit
AM	0	0	0	0
NOON	96	650	122	976
PM	0	0	0	0

Eastbound Approach

	AM	NOON	PM
Exit	0	325	0

Lanes	AM	NOON	PM
1	0	80	0
1	0	125	0
1	0	51	0

Westbound Approach

AM	NOON	PM	Lanes
0	153	0	1
0	157	0	1
0	51	0	1

	AM	NOON	PM
Exit	0	301	0

CONTROL

Signalized

Northbound Approach

	Exit	Lanes 1	Lanes 2	Lanes 1
AM	0	0	0	0
NOON	752	72	743	54
PM	0	0	0	0

Count Periods	Start	End
AM		
NOON	11:00 AM	2:00 PM
PM		

Total Ins & Outs

North Leg			
AM	0	0	
NOON	868	976	
PM	0	0	

West Leg	AM	NOON	PM
	0	325	0
	0	256	0

East Leg	AM	NOON	PM
	0	361	0
	0	301	0

South Leg		
AM	0	0
NOON	752	869
PM	0	0

Total Volume Per Leg

North Leg	
AM	0
NOON	1844
PM	0

West Leg	AM	NOON	PM
	0	581	0

East Leg	AM	NOON	PM
	0	662	0

South Leg	
AM	0
NOON	1621
PM	0

Attachment: Traffic Impact Study (3224 : A GENERAL PLAN AMENDMENT, CHANGE OF ZONE, AND CONDITIONAL USE PERMIT FOR

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Crape Myrtle Dr and Cottonwood Ave , Moreno Valley

Date: 9/2/2015

Day: Wednesday

Project #: 15-6148-006

City: Moreno Valley

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Crape Myrtle Dr

Cottonwood Ave

Southbound Approach

	Right	Through	Left	Northbound departing
Lanes	0	1	0	
AM	14	11	31	36
NOON	0	0	0	0
PM	10	2	6	29

Westbound Approach

	AM	NOON	PM	Lanes
Right	17	0	8	0
Through	419	0	217	2
Left	33	0	14	0
Eastbound departing	372	0	317	

Eastbound Approach

Lanes		AM	NOON	PM
	Westbound departing	460	0	255
0	Left	9	0	16
2	Through	303	0	303
0	Right	12	0	50

CONTROL

2-Way Stop (NB/SB)

Northbound Approach

	Southbound departing	Left	Through	Right
AM	56	27	10	38
NOON	0	0	0	0
PM	66	28	5	8
Lanes		0	1	0

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	56	36
North Leg	NOON	0	0
North Leg	PM	18	29
South Leg	AM	56	75
South Leg	NOON	0	0
South Leg	PM	66	41

West Leg	AM	NOON	PM
	460	0	255
	324	0	369

East Leg	AM	NOON	PM
	469	0	239
	372	0	317

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	92	0	47
West Leg	784	0	624
East Leg	841	0	556
South Leg	131	0	107

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Crape Myrtle Dr and Cottonwood Ave , Moreno Valley

Date: 9/13/2015

Day: Sunday

Project #: 15-6148-006

City: Moreno Valley

Peak Hour Summary

AM Peak Hour	
NOON Peak Hour	100 PM
PM Peak Hour	

N

Cottonwood Ave

Crape Myrtle Dr

CONTROL

2-Way Stop (NB/SB)

Southbound Approach

	Right	Thru	Left	Out
Lanes	0	1	0	
AM	0	0	0	0
NOON	9	2	2	31
PM	0	0	0	0

Westbound Approach

	AM	NOON	PM	Lanes
Right	0	4	0	0
Thru	0	229	0	2
Left	0	3	0	0
Out	0	269	0	

Eastbound Approach

Lanes		AM	NOON	PM
	Out	0	269	0
0	Left	0	23	0
2	Thru	0	258	0
0	Right	0	42	0

Northbound Approach

	Out	Left	Thru	Right
AM	0	0	0	0
NOON	47	31	4	9
PM	0	0	0	0
Lanes		0	1	0

Count Periods	Start	End
AM		
NOON	11:00 AM	2:00 PM
PM		

Total Ins & Outs

	North Leg		South Leg		West Leg		East Leg	
AM	0	0	0	0	0	0	0	0
NOON	13	31	47	44	269	323	236	269
PM	0	0	0	0	0	0	0	0

Total Volume Per Leg

	North Leg	South Leg	West Leg	East Leg
AM	0	0	0	0
NOON	44	91	592	505
PM	0	0	0	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Kitching St and Cottonwood Ave , Moreno Valley

Date:	9/2/2015
Day:	Wednesday
Project #:	15-6148-007
City:	Moreno Valley

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	445 PM

Peak Hour Summary

Kitching St (N-S), Cottonwood Ave (E-W)

CONTROL: Signalized

Southbound Approach

	Right	Through	Left	Total Out (northbound departures)
Lanes	0	2	1	
AM	41	201	31	521
NOON	0	0	0	0
PM	18	261	35	314

Westbound Approach

	AM	NOON	PM	Lanes
Right	129	0	39	0
Through	319	0	197	2
Left	43	0	28	1
Departures (eastbound)	284	0	276	

Eastbound Approach

	Lanes	AM	NOON	PM
Departures (westbound)		459	0	243
Left	1	95	0	16
Through	2	226	0	224
Right	0	72	0	52

Northbound Approach

	Departures (southbound)	Left	Through	Right
AM	316	99	297	27
NOON	0	0	0	0
PM	341	28	259	17
Lanes		1	2	0

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	273	521
North Leg	NOON	0	0
North Leg	PM	314	314
East Leg	AM	491	284
East Leg	NOON	0	0
East Leg	PM	264	276
West Leg	AM	393	459
West Leg	NOON	0	0
West Leg	PM	292	243
South Leg	AM	423	316
South Leg	NOON	0	0
South Leg	PM	304	341

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	794	0	628
East Leg	775	0	540
West Leg	852	0	535
South Leg	739	0	645

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Kitching St and Cottonwood Ave , Moreno Valley

Date:	9/13/2015
Day:	Sunday
Project #:	15-6148-007
City:	Moreno Valley

AM Peak Hour	
NOON Peak Hour	100 PM
PM Peak Hour	

Peak Hour Summary

N

Kitching St

Cottonwood Ave

CONTROL: Signalized

Southbound Approach

	Right	Through	Left	Out (Northbound)
Lanes	0	2	1	
AM	0	0	0	0
NOON	17	170	25	217
PM	0	0	0	0

Eastbound Approach

	AM	NOON	PM
Out (Westbound)	0	237	0

Lanes		AM	NOON	PM
1	Left	0	32	0
2	Through	0	169	0
0	Right	0	58	0

Westbound Approach

	AM	NOON	PM	Lanes
Right	0	28	0	0
Through	0	189	0	2
Left	0	9	0	1
Out (Eastbound)	0	208	0	

Northbound Approach

	Out (Southbound)	Left	Through	Right
AM	0	0	0	0
NOON	237	31	157	14
PM	0	0	0	0
Lanes		1	2	0

Count Periods	Start	End
AM		
NOON	11:00 AM	2:00 PM
PM		

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	0	0
North Leg	NOON	212	217
North Leg	PM	0	0
South Leg	AM	0	0
South Leg	NOON	237	202
South Leg	PM	0	0

Leg		AM	NOON	PM
West Leg	Out	0	237	0
West Leg	In	0	259	0
East Leg	In	0	226	0
East Leg	Out	0	208	0

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	0	429	0
South Leg	0	439	0
West Leg	0	496	0
East Leg	0	434	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Perris Blvd and Bay Ave , Moreno Valley

Date: 9/2/2015
Day: Wednesday

Project #: 15-6148-008
City: Moreno Valley

Peak Hour Summary

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Perris Blvd / Bay Ave

Southbound Approach

	Lanes 1 (Left)	Lanes 2 (Through)	Lanes 1 (Right)	Northbound departure
AM	74	748	88	1019
NOON	0	0	0	0
PM	28	966	68	929

Eastbound Approach

	Lanes	AM	NOON	PM
Westbound departure		186	0	109
Left	1	81	0	22
Through	1	47	0	47
Right	0	80	0	40

Westbound Approach

	AM	NOON	PM	Lanes
Right	93	0	42	0
Through	57	0	40	1
Left	40	0	19	1
Eastbound departure	189	0	165	

CONTROL: Signalized

Northbound Approach

	Southbound departure	Left	Through	Right
AM	868	55	845	54
NOON	0	0	0	0
PM	1025	41	865	50
Lanes		1	2	0

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	910	1019
North Leg	NOON	0	0
North Leg	PM	1062	929
South Leg	AM	868	954
South Leg	NOON	0	0
South Leg	PM	1025	956

West Leg	AM	NOON	PM
	186	0	109
	208	0	109

East Leg	AM	NOON	PM
	190	0	101
	189	0	165

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	1929	0	1991
West Leg	394	0	218
East Leg	379	0	266
South Leg	1822	0	1981

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Perris Blvd and Bay Ave , Moreno Valley

Date: 9/13/2015

Day: Sunday

Project #: 15-6148-008

City: Moreno Valley

AM Peak Hour	
NOON Peak Hour	100 PM
PM Peak Hour	

Perris Blvd

Bay Ave

N

Peak Hour Summary

CONTROL

Signalized

Southbound Approach

Southbound	Right	Through	Left	Out
Lanes	1	2	1	
AM	0	0	0	0
NOON	26	723	60	846
PM	0	0	0	0

Eastbound Approach

Eastbound	Lanes	AM	NOON	PM
Out		0	87	0
Left	1	0	21	0
Through	1	0	37	0
Right	0	0	27	0

Westbound Approach

Westbound	AM	NOON	PM	Lanes
Right	0	59	0	0
Through	0	31	0	1
Left	0	24	0	1
Out	0	132	0	

Northbound Approach

Northbound	Out	Left	Through	Right
AM	0	0	0	0
NOON	774	30	766	35
PM	0	0	0	0
Lanes		1	2	0

Count Periods	Start	End
AM		
NOON	11:00 AM	2:00 PM
PM		

Total Ins & Outs

North Leg	Out	In
AM	0	0
NOON	809	846
PM	0	0

West Leg	AM	NOON	PM
Out	0	87	0
In	0	85	0

East Leg	AM	NOON	PM
In	0	114	0
Out	0	132	0

South Leg	Out	In
AM	0	0
NOON	774	831
PM	0	0

Total Volume Per Leg

North Leg	
AM	0
NOON	1655
PM	0

West Leg	AM	NOON	PM
	0	172	0

East Leg	AM	NOON	PM
	0	246	0

South Leg	
AM	0
NOON	1605
PM	0

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Perris Blvd and Alessandro Blvd , Moreno Valley

Date:	9/2/2015
Day:	Wednesday
Project #:	15-6148-009
City:	Moreno Valley

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

N

Perris Blvd

Alessandro Blvd

CONTROL: Signalized

Southbound Approach

	Right	Through	Left	Out
Lanes	1	2	1	
AM	160	499	174	1003
NOON	0	0	0	0
PM	129	709	140	1050

Eastbound Approach

	Lanes	AM	NOON	PM
Out		1059	0	872
Left	1	171	0	402
Through	2	369	0	761
Right	1	89	0	273

Westbound Approach

	AM	NOON	PM	Lanes
Right	113	0	97	0
Through	659	0	502	3
Left	132	0	168	1
Out	683	0	1007	

Northbound Approach

	Out	Left	Through	Right
AM	720	240	719	140
NOON	0	0	0	0
PM	1150	241	551	106
Lanes		1	2	1

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	833	1003
North Leg	NOON	0	0
North Leg	PM	978	1050
East Leg	AM	904	683
East Leg	NOON	0	0
East Leg	PM	767	1007
West Leg	AM	629	1059
West Leg	NOON	0	0
West Leg	PM	1436	872
South Leg	AM	1099	720
South Leg	NOON	0	0
South Leg	PM	898	1150

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	1836	0	2028
East Leg	1587	0	1774
West Leg	1688	0	2308
South Leg	1819	0	2048

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Perris Blvd and Alessandro Blvd , Moreno Valley

Date:	9/13/2015
Day:	Sunday
Project #:	15-6148-009
City:	Moreno Valley

AM Peak Hour	
NOON Peak Hour	100 PM
PM Peak Hour	

Peak Hour Summary

Perris Blvd

Alessandro Blvd

N

Southbound Approach

Lanes	1	2	1	
AM	0	0	0	0
NOON	153	475	112	937
PM	0	0	0	0

Westbound Approach

	AM	NOON	PM	Lanes
	0	87	0	0
	0	370	0	3
	0	157	0	1
	0	576	0	

Eastbound Approach

Lanes	AM	NOON	PM
	0	797	0
1	0	329	0
2	0	396	0
1	0	206	0

CONTROL

Signalized

Northbound Approach

AM	0	0	0	0
NOON	838	274	521	68
PM	0	0	0	0
Lanes		1	2	1

Count Periods	Start	End
AM		
NOON	11:00 AM	2:00 PM
PM		

Total Ins & Outs

North Leg

AM	0	0
NOON	740	937
PM	0	0

East Leg

AM	NOON	PM
0	614	0
0	576	0

West Leg

AM	NOON	PM
0	797	0
0	931	0

South Leg

AM	0	0
NOON	838	863
PM	0	0

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	0	1677	0
East Leg	0	1190	0
West Leg	0	1728	0
South Leg	0	1701	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Dwy 1 into Church and Cottonwood Ave , Moreno Valley

Date:	9/2/2015
Day:	Wednesday
Project #:	15-6148-010
City:	Moreno Valley

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Control: No Control

Southbound Approach (Dwy 1 into Church)

	Right	Thru	Left	Out
Lanes	0	0	0	
AM	0	0	0	0
NOON	0	0	0	0
PM	0	0	0	0

Eastbound Approach (Cottonwood Ave)

	Lanes	AM	NOON	PM
Out		452	0	267
Left	0	0	0	0
Thru	1	318	0	381
Right	0	27	0	12

Westbound Approach

	AM	NOON	PM	Lanes
Right	0	0	0	0
Thru	449	0	263	1
Left	9	0	0	1
Out	319	0	385	

Northbound Approach

	Out	Left	Thru	Right
AM	36	3	0	1
NOON	0	0	0	0
PM	12	4	0	4
Lanes		0	1	0

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	0	0
North Leg	NOON	0	0
North Leg	PM	0	0
South Leg	AM	36	4
South Leg	NOON	0	0
South Leg	PM	12	8

West Leg	AM	NOON	PM
	452	0	267
	345	0	393

East Leg	AM	NOON	PM
	458	0	263
	319	0	385

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	0	0	0
West Leg	797	0	660
East Leg	777	0	648
South Leg	40	0	20

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Dwy 1 into Church and Cottonwood Ave , Moreno Valley

Date: 9/13/2015

Day: Sunday

Project #: 15-6148-010

City: Moreno Valley

AM Peak Hour	
NOON Peak Hour	1100 AM
PM Peak Hour	

Peak Hour Summary

Dwy 1 into Church (north leg) / Cottonwood Ave (east–west)

Southbound Approach

	Right	Through	Left	Departing
Lanes	0	0	0	
AM	0	0	0	0
NOON	0	0	0	0
PM	0	0	0	0

Eastbound Approach

	Lanes	AM	NOON	PM
Departing		0	340	0
Left	0	0	0	0
Through	1	0	222	0
Right	0	0	121	0

Westbound Approach

	AM	NOON	PM	Lanes
Right	0	0	0	0
Through	0	293	0	1
Left	0	19	0	1
Departing	0	261	0	

Northbound Approach

	Departing	Left	Through	Right
AM	0	0	0	0
NOON	140	47	0	39
PM	0	0	0	0
Lanes		0	1	0

CONTROL

No Control

Count Periods	Start	End
AM		
NOON	11:00 AM	2:00 PM
PM		

Total Ins & Outs

North Leg

	In	Out
AM	0	0
NOON	0	0
PM	0	0

West Leg

	AM	NOON	PM
	0	340	0
	0	343	0

East Leg

	AM	NOON	PM
	0	312	0
	0	261	0

South Leg

AM	0	0
NOON	140	86
PM	0	0

Total Volume Per Leg

North Leg	
AM	0
NOON	0
PM	0

West Leg	AM	NOON	PM
	0	683	0

East Leg	AM	NOON	PM
	0	573	0

South Leg	
AM	0
NOON	226
PM	0

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Perris Blvd and Dwy 2 into Shopping Center , Moreno Valley

Date: 9/2/2015
Day: Wednesday

Project #: 15-6148-011
City: Moreno Valley

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

N

Perris Blvd

Dwy 2 into Shopping Center

Southbound Approach

	↲	↓	↳	⇧
Lanes	0	2	0	
AM	3	988	0	1073
NOON	0	0	0	0
PM	34	1148	0	966

Eastbound Approach

	AM	NOON	PM
⇦	16	0	83

Lanes		AM	NOON	PM
0	↱	0	0	11
1	→	0	0	0
0	↴	10	0	67

CONTROL

1-Way Stop (EB)

Westbound Approach

	AM	NOON	PM	Lanes
↰	0	0	0	0
←	0	0	0	0
↙	0	0	0	0
⇨	0	0	0	

Northbound Approach

	⇩	↰	↑	↱
AM	998	13	1073	0
NOON	0	0	0	0
PM	1215	49	955	0
Lanes		0	2	0

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

North Leg

AM	991	1073
NOON	0	0
PM	1182	966

West Leg

AM	NOON	PM
16	0	83
10	0	78

East Leg

AM	NOON	PM
0	0	0
0	0	0

South Leg

AM	998	1086
NOON	0	0
PM	1215	1004

Total Volume Per Leg

North Leg

AM	2064
NOON	0
PM	2148

West Leg

AM	NOON	PM
26	0	161

East Leg

AM	NOON	PM
0	0	0

South Leg

AM	2084
NOON	0
PM	2219

Attachment: Traffic Impact Study (3224 : A GENERAL PLAN AMENDMENT, CHANGE OF ZONE, AND CONDITIONAL USE PERMIT FOR

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Perris Blvd and Dwy 2 into Shopping Center , Moreno Valley

Date:	9/13/2015
Day:	Sunday

Project #:	15-6148-011
City:	Moreno Valley

N

Peak Hour Summary

Perris Blvd

Dwy 2 into Shopping Center

Southbound Approach

	Left	Thru	Right	Northbound (out)
Lanes	0	2	0	
AM	0	0	0	0
NOON	34	796	0	929
PM	0	0	0	0

AM Peak Hour	
NOON Peak Hour	100 PM
PM Peak Hour	

Eastbound Approach

	AM	NOON	PM
Westbound (out)	0	97	0

Lanes	Movement	AM	NOON	PM
0	Left	0	19	0
1	Thru	0	0	0
0	Right	0	71	0

Westbound Approach

Movement	AM	NOON	PM	Lanes
Right	0	0	0	0
Thru	0	0	0	0
Left	0	0	0	0
Eastbound (out)	0	0	0	

CONTROL

1-Way Stop (EB)

Northbound Approach

	Southbound (out)	Left	Thru	Right
AM	0	0	0	0
NOON	867	63	910	0
PM	0	0	0	0
Lanes		0	2	0

Count Periods	Start	End
AM		
NOON	11:00 AM	2:00 PM
PM		

Total Ins & Outs

North Leg			
AM	0	0	
NOON	830	929	
PM	0	0	

West Leg	AM	NOON	PM
	0	97	0
	0	90	0

East Leg	AM	NOON	PM
	0	0	0
	0	0	0

South Leg		
AM	0	0
NOON	867	973
PM	0	0

Total Volume Per Leg

North Leg	
AM	0
NOON	1759
PM	0

West Leg	AM	NOON	PM
	0	187	0

East Leg	AM	NOON	PM
	0	0	0

South Leg	
AM	0
NOON	1840
PM	0

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Pedestrian Count Peak Hour

	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

PROJECT#: 15-6148-005
N/S Street: Perris Blvd
E/W Street: Cottonwood Ave
DATE: 9/2/2015
DAY: Wednesday
CITY: Moreno Valley

AM	1
NOON	0
PM	5

0	AM
0	NOON
4	PM

AM	NOON	PM
4	0	6

NORTH LEG

AM	NOON	PM
3	0	1

WEST LEG

EAST LEG

1	0	5
AM	NOON	PM

SOUTH LEG

4	0	3
AM	NOON	PM

AM	8
NOON	0
PM	1

0	AM
0	NOON
2	PM

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Bicycle Count Peak Hour

	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

PROJECT#: 15-6148-005
N/S Street: Perris Blvd
E/W Street: Cottonwood Ave
DATE: 9/2/2015
DAY: Wednesday
CITY: Moreno Valley

North Leg:

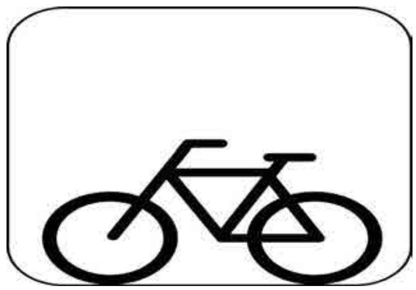
AM	0	1	0
NOON	0	0	0
PM	0	3	0

NORTH LEG

West Leg:

AM	NOON	PM
0	0	0
0	0	3
0	0	0

WEST LEG



EAST LEG

East Leg:

AM	NOON	PM
0	0	0
1	0	0
0	0	0

SOUTH LEG

South Leg:

AM	0	2	0
NOON	0	0	0
PM	0	2	0

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-6148-005
N/S Street: Perris Blvd
E/W Street: Cottonwood Ave
DATE: 9/2/2015 DAY: Wednesday
CITY: Moreno Valley

A M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	2	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	1
7:30 AM	0	0	3	0	0	0	0	0
7:45 AM	0	0	4	0	1	2	0	1
8:00 AM	0	0	0	0	0	0	0	1
8:15 AM	0	0	2	0	0	0	1	2
8:30 AM	1	0	2	0	3	1	0	0
8:45 AM	0	1	1	0	1	2	0	0
TOTALS	1	1	14	0	5	5	1	5

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	2	0	0	1	0	0	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	2	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	0	2	0	0	1	0	0	0	0	0	3	0

P M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	1	0	0	0	0	0
4:15 PM	2	1	0	0	1	0	1	0
4:30 PM	1	3	0	0	2	0	1	0
4:45 PM	1	0	1	1	0	1	2	3
5:00 PM	1	0	0	1	0	0	1	3
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	2	0	0	0	0	3	0
5:45 PM	1	0	0	0	1	1	0	0
TOTALS	6	6	2	2	4	2	8	6

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	1	0	0	1	0	0	2	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0
4:30 PM	0	1	0	0	1	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	1	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	2	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	1	0	0	3	0	0	0	0
TOTALS	0	2	0	0	7	0	0	6	0	0	0	0

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Pedestrian Count Peak Hour

PROJECT#: 15-6148-005
N/S Street: Perris Blvd
E/W Street: Cottonwood Ave
DATE: 9/13/2015
DAY: Sunday
CITY: Moreno Valley

	Start:	End:
AM		
NOON	11:00	14:00
PM		

AM	0
NOON	1
PM	0

0	AM
8	NOON
0	PM

AM	NOON	PM
0	3	0

NORTH LEG

AM	NOON	PM
0	4	0

WEST LEG

EAST LEG

0	2	0
AM	NOON	PM

SOUTH LEG

0	13	0
AM	NOON	PM

AM	0
NOON	4
PM	0

0	AM
12	NOON
0	PM

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Bicycle Count Peak Hour

	Start:	End:
AM		
NOON	11:00	14:00
PM		

PROJECT#: 15-6148-005
N/S Street: Perris Blvd
E/W Street: Cottonwood Ave
DATE: 9/13/2015 DAY: Sunday
CITY: Moreno Valley

North leg:

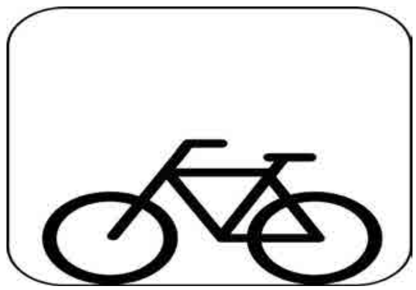
AM	0	0	0
NOON	0	4	0
PM	0	0	0

NORTH LEG

West leg:

AM	NOON	PM
0	0	0
0	0	0
0	0	0

WEST LEG



EAST LEG

East leg:

AM	NOON	PM
0	0	0
0	0	0
0	1	0

SOUTH LEG

South leg:

AM	0	0	0
NOON	0	1	0
PM	0	0	0

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-6148-005
N/S Street: Perris Blvd
E/W Street: Cottonwood Ave
DATE: 9/13/2015 DAY: Sunday
CITY: Moreno Valley

N O O N

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
11:00 AM	0	0	1	5	0	0	1	1
11:15 AM	1	0	5	1	0	1	1	1
11:30 AM	0	0	5	0	0	3	0	0
11:45 AM	2	1	0	0	0	1	0	0
12:00 PM	1	0	1	0	0	0	0	0
12:15 PM	0	0	0	0	1	0	0	0
12:30 PM	0	0	0	3	1	0	0	0
12:45 PM	0	0	0	0	1	0	0	0
1:00 PM	0	2	1	0	4	1	0	0
1:15 PM	0	5	1	12	6	0	2	0
1:30 PM	1	0	2	0	0	3	0	3
1:45 PM	0	1	0	0	3	0	0	0
TOTALS	5	9	16	21	16	9	4	5

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
11:00 AM	0	1	0	1	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	1	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	1	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	1	0	0	0	0	1	0	0
1:15 PM	0	1	0	0	1	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	1	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	1	0	0	0	0	0	0	0
TOTALS	0	2	0	1	6	0	0	0	0	1	0	0

Prepared by NDS/ATD

VOLUME

Perris Blvd Bet. Eucalyptus Ave & Cottonwood Ave

Day: Wednesday
Date: 9/2/2015

City: Moreno Valley
Project #: CA15_6149_001

DAILY TOTALS	NB	SB	EB	WB	Total
	15,554	15,665	0	0	31,219

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	31		47				78		12:00	210		226				436	
00:15	17		44				61		12:15	261		239				500	
00:30	24		31				55		12:30	239		226				465	
00:45	21	93	23	145			44	238	12:45	226	936	221	912			447	1848
01:00	14		33				47		13:00	254		234				488	
01:15	15		30				45		13:15	233		231				464	
01:30	25		23				48		13:30	229		248				477	
01:45	21	75	24	110			45	185	13:45	268	984	209	922			477	1906
02:00	15		25				40		14:00	215		283				498	
02:15	20		23				43		14:15	271		282				553	
02:30	23		26				49		14:30	220		268				488	
02:45	33	91	25	99			58	190	14:45	257	963	288	1121			545	2084
03:00	45		19				64		15:00	267		257				524	
03:15	31		23				54		15:15	248		278				526	
03:30	50		25				75		15:30	238		239				477	
03:45	56	182	40	107			96	289	15:45	232	985	243	1017			475	2002
04:00	89		51				140		16:00	239		300				539	
04:15	92		72				164		16:15	242		267				509	
04:30	124		52				176		16:30	257		249				506	
04:45	134	439	42	217			176	656	16:45	251	989	264	1080			515	2069
05:00	142		63				205		17:00	262		317				579	
05:15	154		86				240		17:15	226		328				554	
05:30	116		112				228		17:30	229		309				538	
05:45	145	557	81	342			226	899	17:45	264	981	296	1250			560	2231
06:00	183		76				259		18:00	229		293				522	
06:15	176		129				305		18:15	197		250				447	
06:30	197		160				357		18:30	215		235				450	
06:45	221	777	147	512			368	1289	18:45	208	849	251	1029			459	1878
07:00	213		207				420		19:00	200		243				443	
07:15	278		231				509		19:15	166		226				392	
07:30	251		321				572		19:30	149		231				380	
07:45	347	1089	220	979			567	2068	19:45	131	646	184	884			315	1530
08:00	249		199				448		20:00	156		200				356	
08:15	182		147				329		20:15	142		219				361	
08:30	229		186				415		20:30	150		164				314	
08:45	211	871	139	671			350	1542	20:45	111	559	145	728			256	1287
09:00	168		193				361		21:00	147		149				296	
09:15	197		188				385		21:15	113		157				270	
09:30	194		206				400		21:30	98		134				232	
09:45	189	748	168	755			357	1503	21:45	102	460	114	554			216	1014
10:00	204		182				386		22:00	79		114				193	
10:15	229		173				402		22:15	73		109				182	
10:30	212		173				385		22:30	101		103				204	
10:45	223	868	188	716			411	1584	22:45	84	337	67	393			151	730
11:00	230		175				405		23:00	57		81				138	
11:15	196		227				423		23:15	40		72				112	
11:30	220		218				438		23:30	53		66				119	
11:45	248	894	224	844			472	1738	23:45	31	181	59	278			90	459
TOTALS		6684		5497				12181	TOTALS		8870		10168				19038
SPLIT %		54.9%		45.1%				39.0%	SPLIT %		46.6%		53.4%				61.0%

DAILY TOTALS	NB	SB	EB	WB	Total
	15,554	15,665	0	0	31,219

	NB	SB	EB	WB	TOTAL		NB	SB	EB	WB	TOTAL
AM Peak Hour	07:15	07:00			07:15	PM Peak Hour	14:15	17:00			17:00
AM Pk Volume	1125	979			2096	PM Pk Volume	1015	1250			2231
Pk Hr Factor	0.811	0.762			0.916	Pk Hr Factor	0.936	0.953			0.963
7 - 9 Volume	1960	1650	0	0	3610	4 - 6 Volume	1970	2330	0	0	4300
7 - 9 Peak Hour	07:15	07:00			07:15	4 - 6 Peak Hour	16:15	17:00			17:00
7 - 9 Pk Volume	1125	979	0	0	2096	4 - 6 Pk Volume	1012	1250	0	0	2231
Pk Hr Factor	0.811	0.762	0.000	0.000	0.916	Pk Hr Factor	0.966	0.953	0.000	0.000	0.963

Prepared by NDS/ATD

VOLUME

Perris Blvd Bet. Cottonwood Ave & Alessandro Blvd

Day: Wednesday
Date: 9/2/2015

City: Moreno Valley
Project #: CA15_6149_002

DAILY TOTALS	NB	SB	EB	WB	Total
	13,784	13,269	0	0	27,053

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	28		41				69		12:00	208		206				414	
00:15	12		34				46		12:15	218		210				428	
00:30	21		22				43		12:30	217		206				423	
00:45	17	78	23	120			40	198	12:45	172	815	237	859			409	1674
01:00	13		28				41		13:00	245		215				460	
01:15	17		23				40		13:15	208		195				403	
01:30	25		17				42		13:30	202		218				420	
01:45	15	70	15	83			30	153	13:45	230	885	183	811			413	1696
02:00	12		16				28		14:00	196		215				411	
02:15	15		25				40		14:15	219		240				459	
02:30	21		19				40		14:30	185		212				397	
02:45	25	73	24	84			49	157	14:45	286	886	241	908			527	1794
03:00	32		17				49		15:00	249		236				485	
03:15	22		18				40		15:15	219		222				441	
03:30	42		23				65		15:30	208		212				420	
03:45	47	143	37	95			84	238	15:45	225	901	210	880			435	1781
04:00	64		43				107		16:00	222		226				448	
04:15	67		62				129		16:15	233		229				462	
04:30	100		46				146		16:30	202		233				435	
04:45	101	332	36	187			137	519	16:45	238	895	211	899			449	1794
05:00	114		58				172		17:00	246		262				508	
05:15	114		84				198		17:15	226		262				488	
05:30	84		102				186		17:30	214		254				468	
05:45	117	429	77	321			194	750	17:45	254	940	243	1021			497	1961
06:00	153		77				230		18:00	218		254				472	
06:15	139		109				248		18:15	189		210				399	
06:30	153		122				275		18:30	203		187				390	
06:45	171	616	144	452			315	1068	18:45	203	813	175	826			378	1639
07:00	186		172				358		19:00	181		200				381	
07:15	244		195				439		19:15	148		183				331	
07:30	247		254				501		19:30	139		189				328	
07:45	312	989	197	818			509	1807	19:45	127	595	156	728			283	1323
08:00	222		175				397		20:00	126		151				277	
08:15	163		150				313		20:15	128		167				295	
08:30	217		170				387		20:30	129		139				268	
08:45	173	775	127	622			300	1397	20:45	92	475	113	570			205	1045
09:00	170		159				329		21:00	114		127				241	
09:15	152		140				292		21:15	86		130				216	
09:30	170		174				344		21:30	85		103				188	
09:45	154	646	134	607			288	1253	21:45	86	371	87	447			173	818
10:00	195		158				353		22:00	74		100				174	
10:15	200		159				359		22:15	57		97				154	
10:30	194		151				345		22:30	92		80				172	
10:45	183	772	176	644			359	1416	22:45	80	303	54	331			134	634
11:00	222		178				400		23:00	55		59				114	
11:15	175		192				367		23:15	34		62				96	
11:30	223		187				410		23:30	46		53				99	
11:45	204	824	180	737			384	1561	23:45	23	158	45	219			68	377
TOTALS		5747		4770				10517	TOTALS		8037		8499				16536
SPLIT %		54.6%		45.4%				38.9%	SPLIT %		48.6%		51.4%				61.1%

DAILY TOTALS	NB	SB	EB	WB	Total
	13,784	13,269	0	0	27,053

	NB	SB	EB	WB	TOTAL		NB	SB	EB	WB	TOTAL
AM Peak Hour	07:15	07:15			07:15	PM Peak Hour	14:45	17:00			17:00
AM Pk Volume	1025	821			1846	PM Pk Volume	962	1021			1961
Pk Hr Factor	0.821	0.808			0.907	Pk Hr Factor	0.841	0.974			0.965
7 - 9 Volume	1764	1440	0	0	3204	4 - 6 Volume	1835	1920	0	0	3755
7 - 9 Peak Hour	07:15	07:15			07:15	4 - 6 Peak Hour	17:00	17:00			17:00
7 - 9 Pk Volume	1025	821	0	0	1846	4 - 6 Pk Volume	940	1021	0	0	1961
Pk Hr Factor	0.821	0.808	0.000	0.000	0.907	Pk Hr Factor	0.925	0.974	0.000	0.000	0.965

Prepared by NDS/ATD

VOLUME

Cottonwood Ave Bet. Indian St & Perris Blvd

Day: Wednesday
Date: 9/2/2015

City: Moreno Valley
Project #: CA15_6149_003

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,166	4,244	8,410

AM Period	NB	SB	EB		WB		TOTAL	
00:00			6		7		13	
00:15			8		4		12	
00:30			4		6		10	
00:45			10	28	3	20	13	48
01:00			8		4		12	
01:15			3		2		5	
01:30			3		6		9	
01:45			3	17	4	16	7	33
02:00			2		5		7	
02:15			2		4		6	
02:30			1		1		2	
02:45			7	12	3	13	10	25
03:00			2		2		4	
03:15			3		3		6	
03:30			5		5		10	
03:45			6	16	4	14	10	30
04:00			7		10		17	
04:15			14		12		26	
04:30			12		15		27	
04:45			10	43	16	53	26	96
05:00			12		10		22	
05:15			17		8		25	
05:30			17		11		28	
05:45			19	65	17	46	36	111
06:00			27		16		43	
06:15			18		21		39	
06:30			35		32		67	
06:45			39	119	34	103	73	222
07:00			39		45		84	
07:15			63		62		125	
07:30			103		90		193	
07:45			70	275	103	300	173	575
08:00			42		75		117	
08:15			43		46		89	
08:30			43		55		98	
08:45			65	193	57	233	122	426
09:00			51		45		96	
09:15			42		49		91	
09:30			45		54		99	
09:45			44	182	40	188	84	370
10:00			49		53		102	
10:15			52		40		92	
10:30			49		56		105	
10:45			47	197	114	263	161	460
11:00			41		75		116	
11:15			60		79		139	
11:30			51		55		106	
11:45			57	209	49	258	106	467
TOTALS				1356		1507		2863
SPLIT %				47.4%		52.6%		34.0%

PM Period	NB	SB	EB		WB		TOTAL	
12:00			57		58		115	
12:15			66		83		149	
12:30			70		80		150	
12:45			80	273	96	317	176	590
13:00			61		70		131	
13:15			69		55		124	
13:30			61		60		121	
13:45			83	274	61	246	144	520
14:00			82		73		155	
14:15			97		104		201	
14:30			81		79		160	
14:45			61	321	85	341	146	662
15:00			62		95		157	
15:15			47		70		117	
15:30			77		56		133	
15:45			61	247	56	277	117	524
16:00			77		64		141	
16:15			68		59		127	
16:30			82		49		131	
16:45			75	302	71	243	146	545
17:00			96		89		185	
17:15			92		70		162	
17:30			100		83		183	
17:45			87	375	84	326	171	701
18:00			91		61		152	
18:15			72		62		134	
18:30			84		75		159	
18:45			93	340	69	267	162	607
19:00			72		64		136	
19:15			56		60		116	
19:30			64		63		127	
19:45			58	250	52	239	110	489
20:00			49		52		101	
20:15			38		49		87	
20:30			43		43		86	
20:45			44	174	52	196	96	370
21:00			28		51		79	
21:15			36		38		74	
21:30			29		32		61	
21:45			21	114	22	143	43	257
22:00			31		30		61	
22:15			23		16		39	
22:30			18		17		35	
22:45			25	97	20	83	45	180
23:00			13		26		39	
23:15			8		17		25	
23:30			9		8		17	
23:45			13	43	8	59	21	102
TOTALS				2810		2737		5547
SPLIT %				50.7%		49.3%		66.0%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,166	4,244	8,410

	NB	SB	EB	WB	TOTAL		NB	SB	EB	WB	TOTAL
AM Peak Hour			07:15	07:15	07:15	PM Peak Hour			17:00	14:15	17:00
AM Pk Volume			278	330	608	PM Pk Volume			375	363	701
Pk Hr Factor			0.675	0.801	0.788	Pk Hr Factor			0.938	0.873	0.947
7 - 9 Volume	0	0	468	533	1001	4 - 6 Volume	0	0	677	569	1246
7 - 9 Peak Hour			07:15	07:15	07:15	4 - 6 Peak Hour			17:00	17:00	17:00
7 - 9 Pk Volume	0	0	278	330	608	4 - 6 Pk Volume	0	0	375	326	701
Pk Hr Factor	0.000	0.000	0.675	0.801	0.788	Pk Hr Factor	0.000	0.000	0.938	0.916	0.947

Prepared by NDS/ATD

VOLUME

Cottonwood Ave Bet. Perris Blvd & Kitching St

Day: Wednesday
Date: 9/2/2015

City: Moreno Valley
Project #: CA15_6149_004

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,283	4,011	8,294

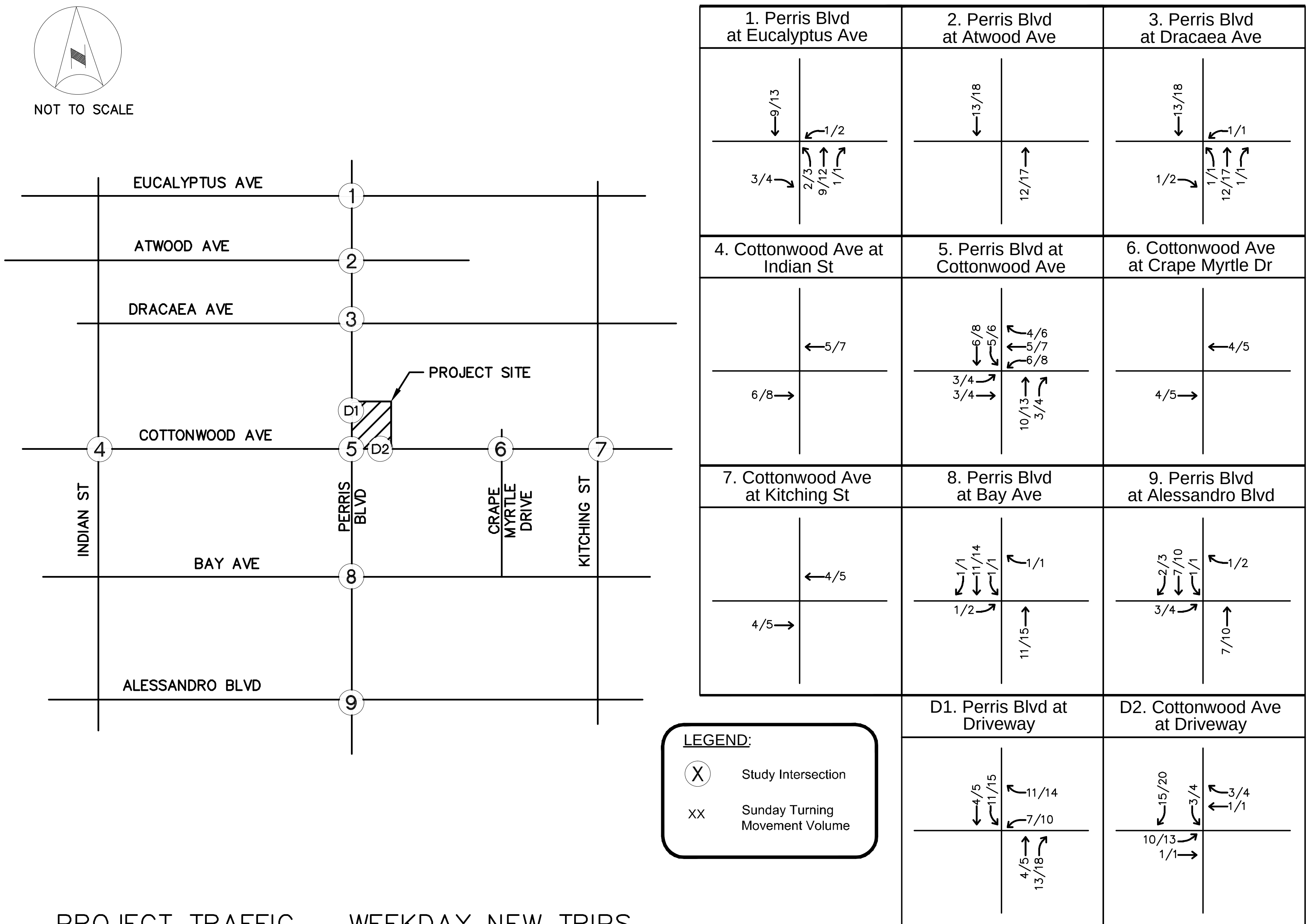
AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			7		6		13		12:00			62		60		122	
00:15			11		4		15		12:15			56		74		130	
00:30			7		3		10		12:30			61		52		113	
00:45			4	29	3	16	7	45	12:45			86	265	59	245	145	510
01:00			8		4		12		13:00			65		44		109	
01:15			2		1		3		13:15			55		40		95	
01:30			5		4		9		13:30			77		63		140	
01:45			5	20	3	12	8	32	13:45			73	270	66	213	139	483
02:00			5		3		8		14:00			82		54		136	
02:15			2		10		12		14:15			81		89		170	
02:30			2		2		4		14:30			80		63		143	
02:45			5	14	3	18	8	32	14:45			75	318	69	275	144	593
03:00			2		5		7		15:00			70		72		142	
03:15			1		8		9		15:15			68		55		123	
03:30			4		5		9		15:30			71		46		117	
03:45			5	12	10	28	15	40	15:45			57	266	50	223	107	489
04:00			1		21		22		16:00			78		68		146	
04:15			11		20		31		16:15			68		55		123	
04:30			8		16		24		16:30			67		73		140	
04:45			6	26	26	83	32	109	16:45			86	299	63	259	149	558
05:00			10		27		37		17:00			97		64		161	
05:15			3		24		27		17:15			80		47		127	
05:30			10		28		38		17:30			95		66		161	
05:45			13	36	21	100	34	136	17:45			105	377	67	244	172	621
06:00			13		33		46		18:00			87		47		134	
06:15			18		46		64		18:15			85		59		144	
06:30			33		50		83		18:30			74		57		131	
06:45			31	95	57	186	88	281	18:45			85	331	48	211	133	542
07:00			41		79		120		19:00			81		46		127	
07:15			71		84		155		19:15			58		48		106	
07:30			113		107		220		19:30			56		47		103	
07:45			70	295	144	414	214	709	19:45			70	265	45	186	115	451
08:00			48		98		146		20:00			60		45		105	
08:15			40		47		87		20:15			63		46		109	
08:30			51		67		118		20:30			52		32		84	
08:45			45	184	74	286	119	470	20:45			58	233	28	151	86	384
09:00			43		51		94		21:00			71		30		101	
09:15			35		55		90		21:15			47		36		83	
09:30			34		60		94		21:30			39		23		62	
09:45			47	159	49	215	96	374	21:45			30	187	16	105	46	292
10:00			39		51		90		22:00			38		20		58	
10:15			50		43		93		22:15			26		16		42	
10:30			54		59		113		22:30			17		12		29	
10:45			55	198	62	215	117	413	22:45			37	118	20	68	57	186
11:00			59		56		115		23:00			14		11		25	
11:15			51		60		111		23:15			11		10		21	
11:30			53		57		110		23:30			11		4		15	
11:45			73	236	53	226	126	462	23:45			14	50	7	32	21	82
TOTALS				1304		1799		3103	TOTALS				2979		2212		5191
SPLIT %				42.0%		58.0%		37.4%	SPLIT %				57.4%		42.6%		62.6%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,283	4,011	8,294

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour			07:15	07:15	07:15	PM Peak Hour			17:00	14:15	17:00
AM Pk Volume			302	433	735	PM Pk Volume			377	293	621
Pk Hr Factor			0.668	0.752	0.835	Pk Hr Factor			0.898	0.823	0.903
7 - 9 Volume	0	0	479	700	1179	4 - 6 Volume	0	0	676	503	1179
7 - 9 Peak Hour			07:15	07:15	07:15	4 - 6 Peak Hour			17:00	16:00	17:00
7 - 9 Pk Volume	0	0	302	433	735	4 - 6 Pk Volume	0	0	377	259	621
Pk Hr Factor	0.000	0.000	0.668	0.752	0.835	Pk Hr Factor	0.000	0.000	0.898	0.887	0.903

APPENDIX C

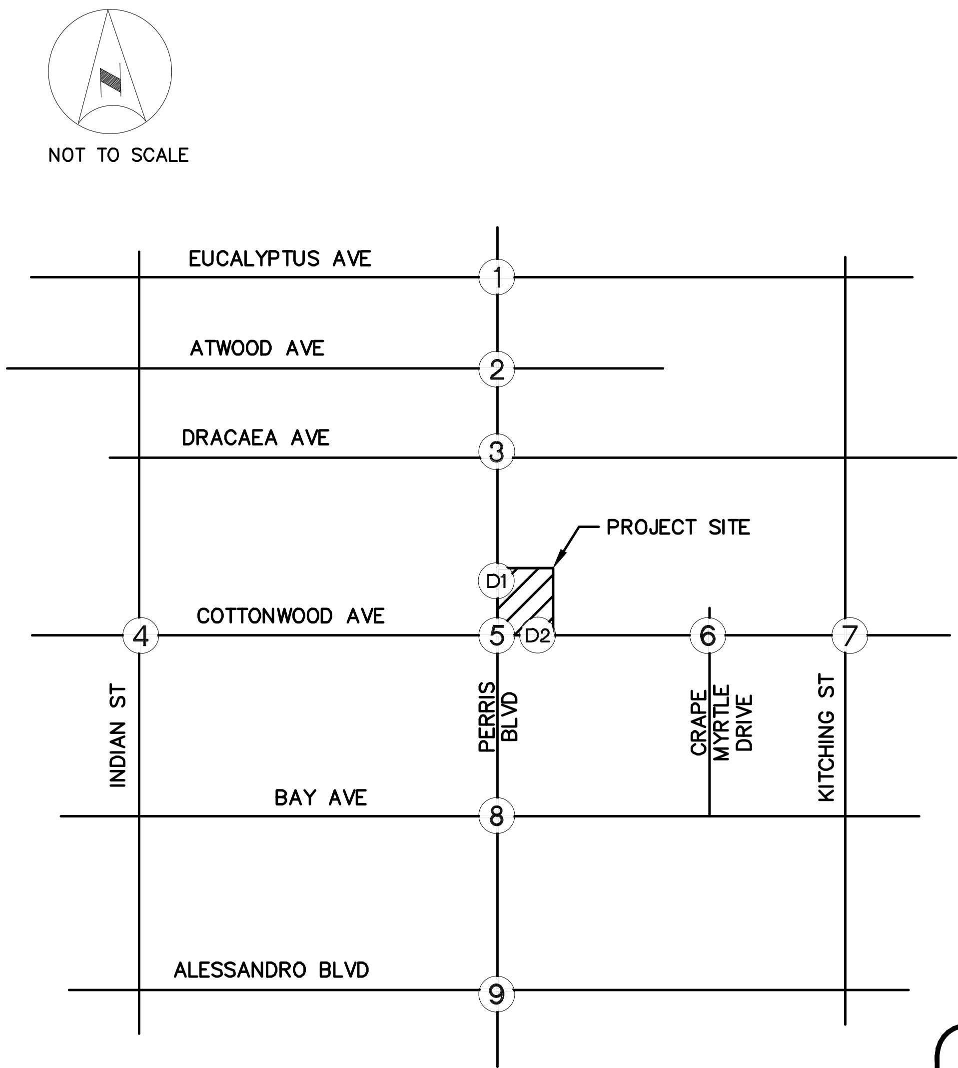
TRIP ASSIGNMENT DATA

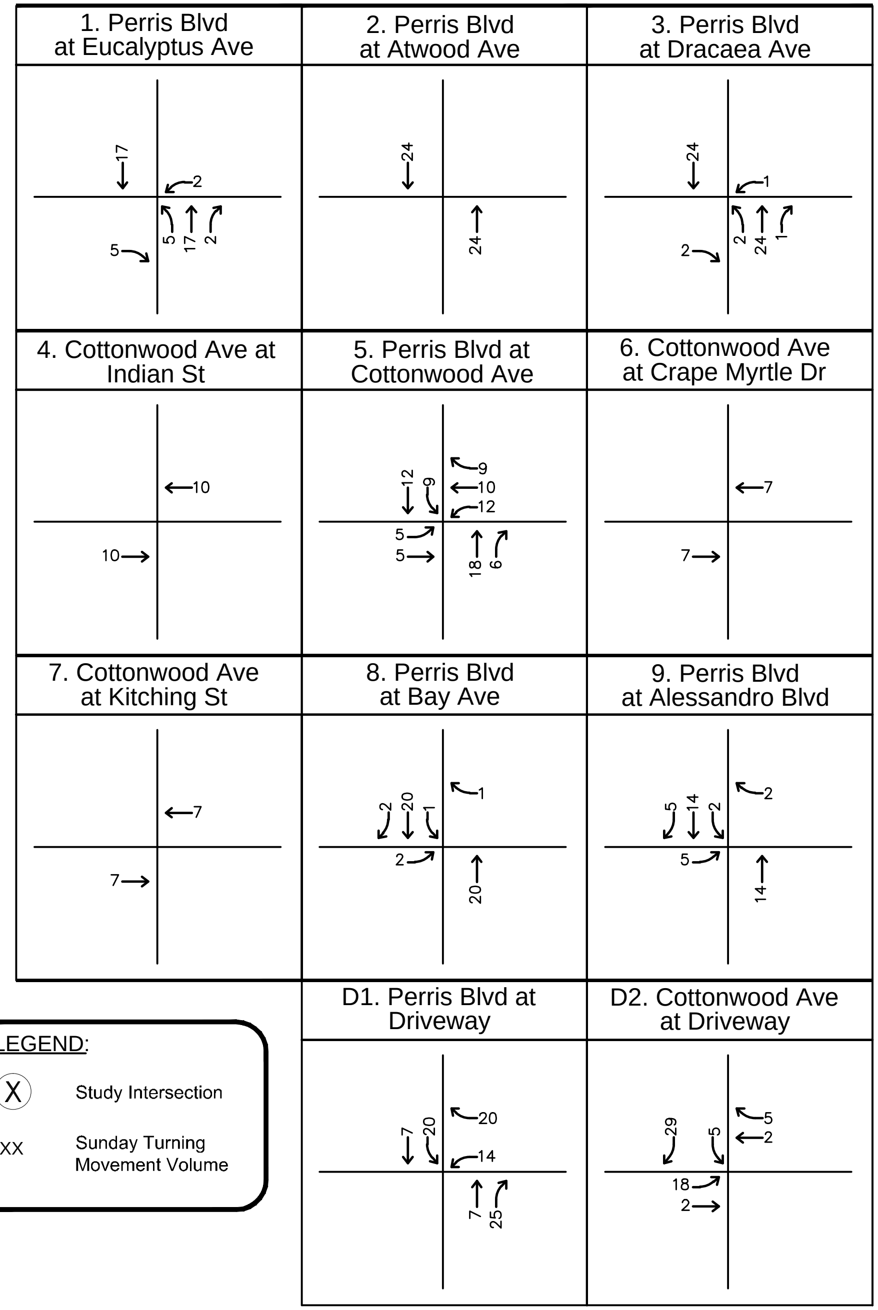


PROJECT TRAFFIC – WEEKDAY NEW TRIPS

Attachment: Traffic Impact Study (3224 : A GENERAL PLAN AMENDMENT, CHANGE OF ZONE, AND

Kimley»Horn



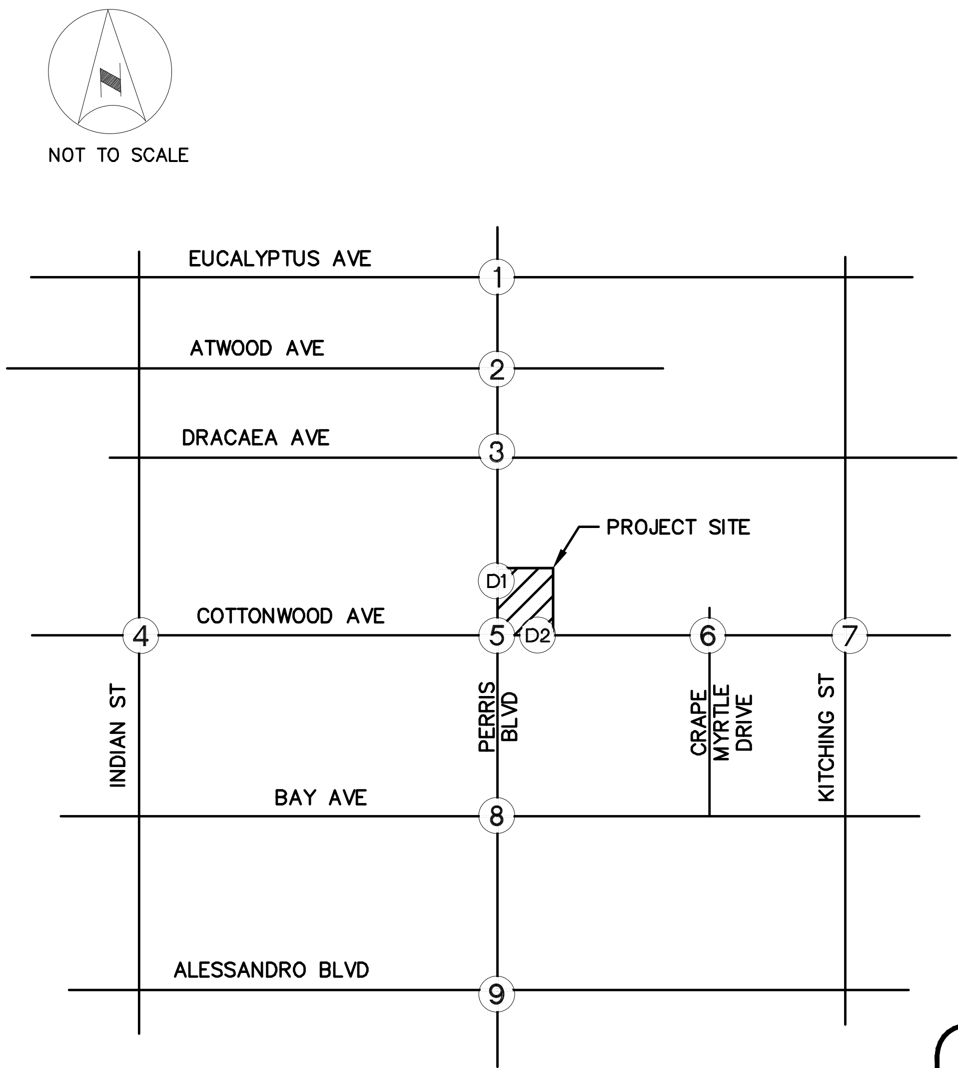


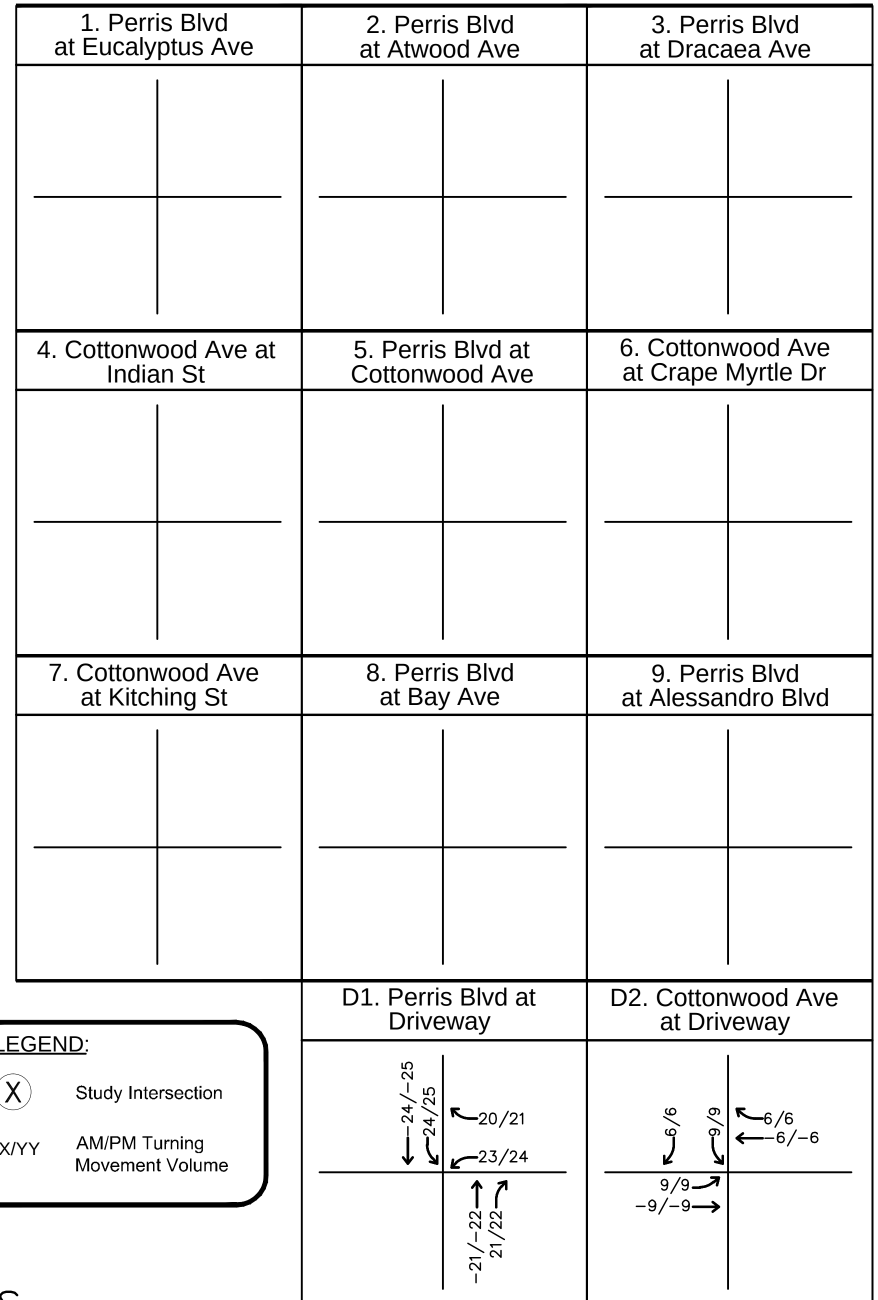
LEGEND:

(X)	Study Intersection
XX	Sunday Turning Movement Volume

PROJECT TRAFFIC – SUNDAY NEW TRIPS

Kimley»Horn





LEGEND:

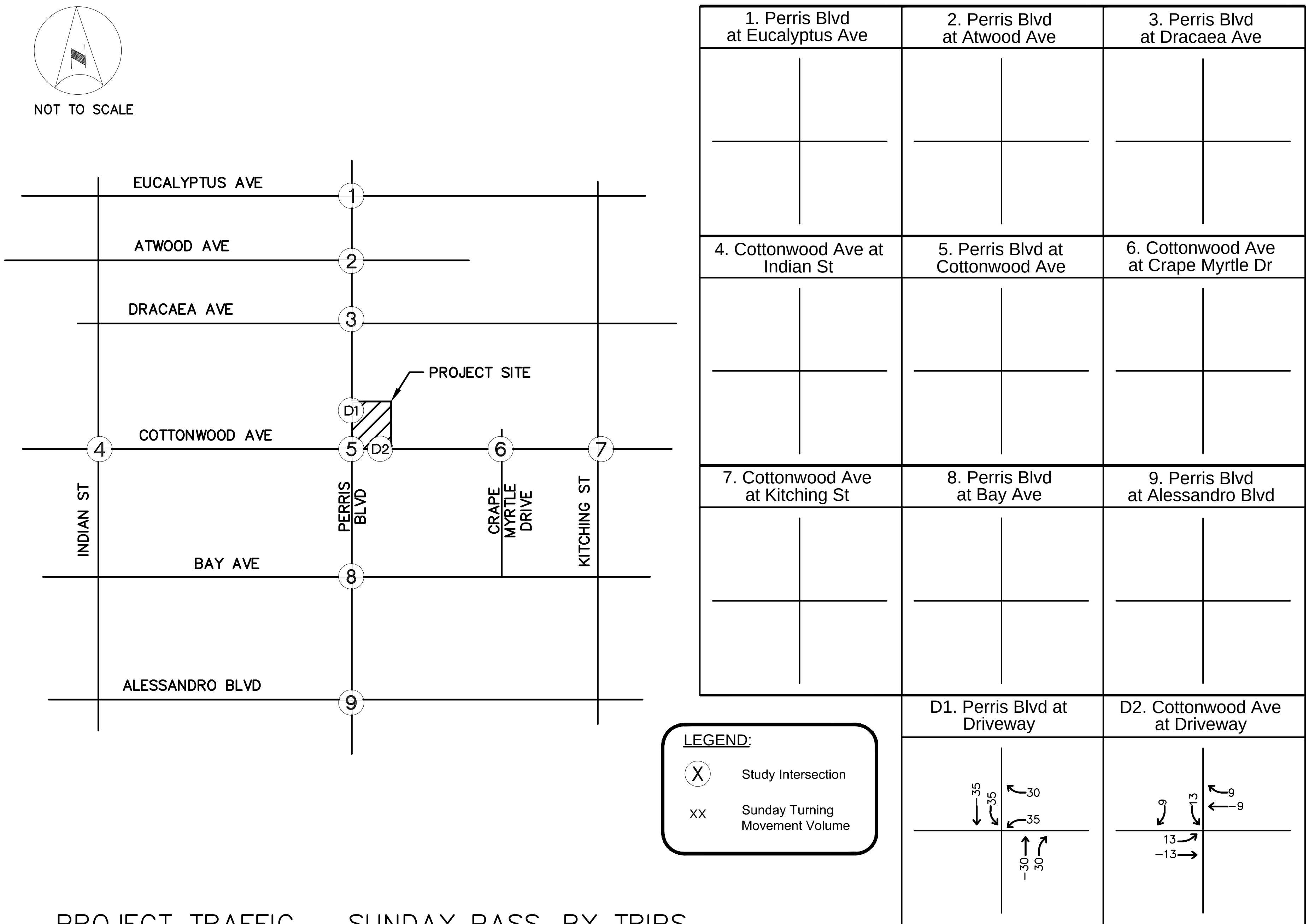
X Study Intersection

XX/YY AM/PM Turning Movement Volume

PROJECT TRAFFIC – WEEKDAY PASS–BY TRIPS

Attachment: Traffic Impact Study (3224 : A GENERAL PLAN AMENDMENT, CHANGE OF ZONE, AND

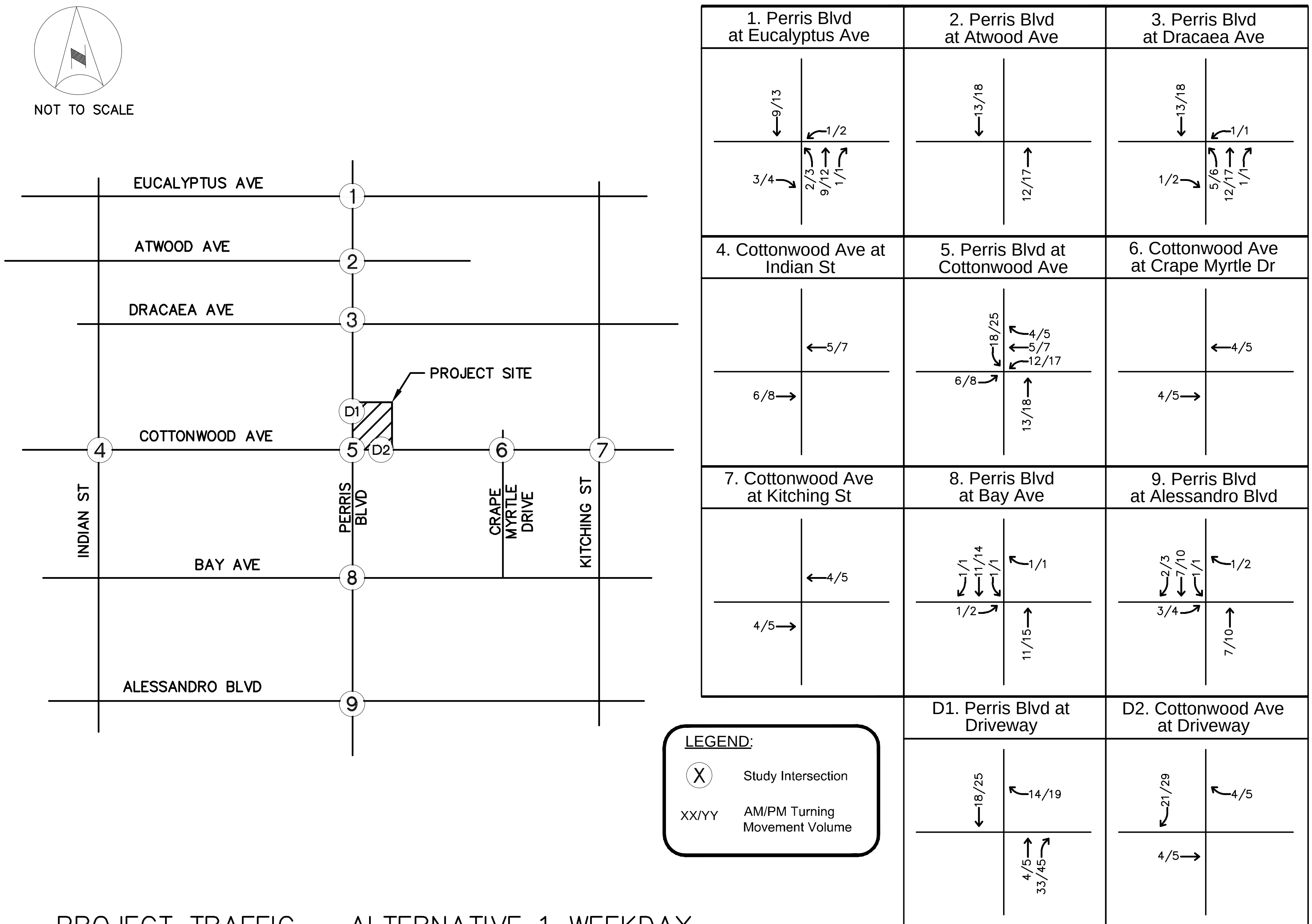
Kimley»Horn



PROJECT TRAFFIC – SUNDAY PASS-BY TRIPS

Attachment: Traffic Impact Study (3224 : A GENERAL PLAN AMENDMENT, CHANGE OF ZONE, AND

Kimley»Horn



PROJECT TRAFFIC – ALTERNATIVE 1 WEEKDAY NEW TRIPS

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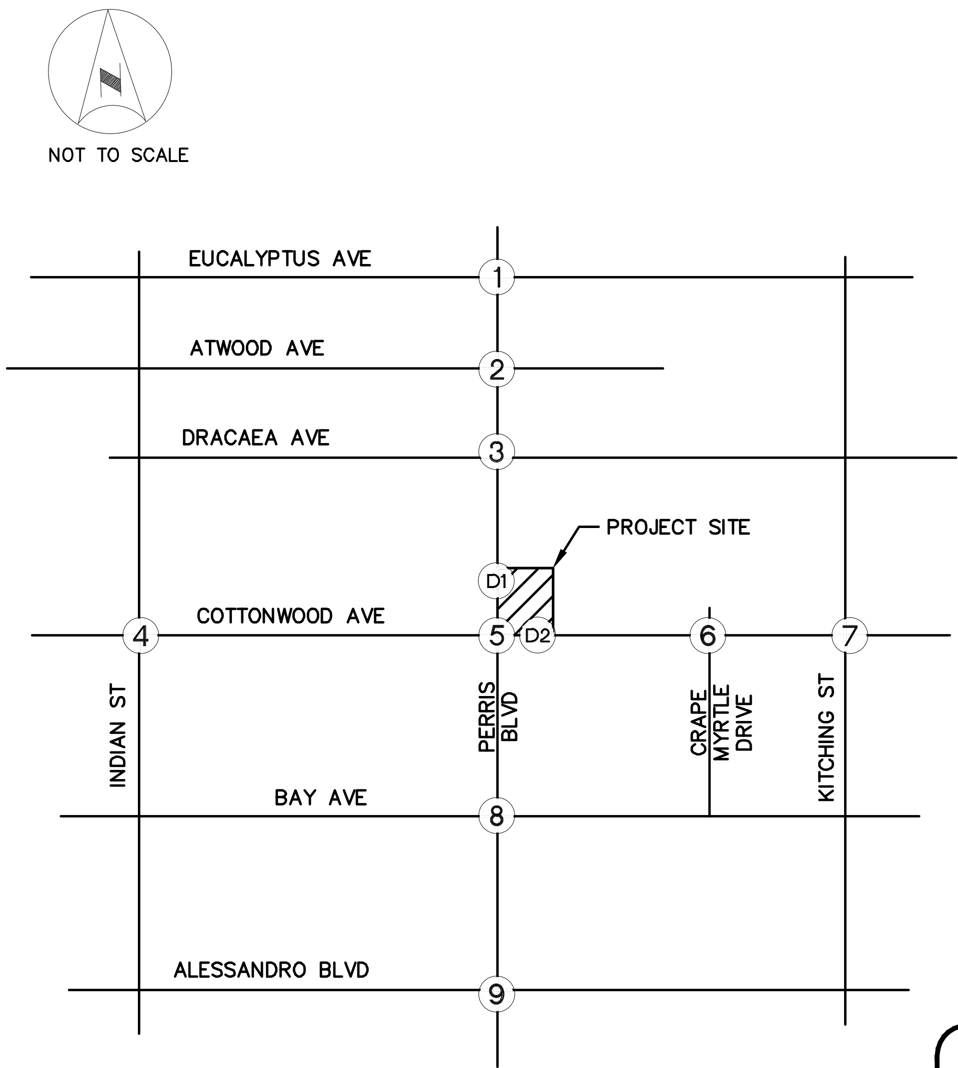
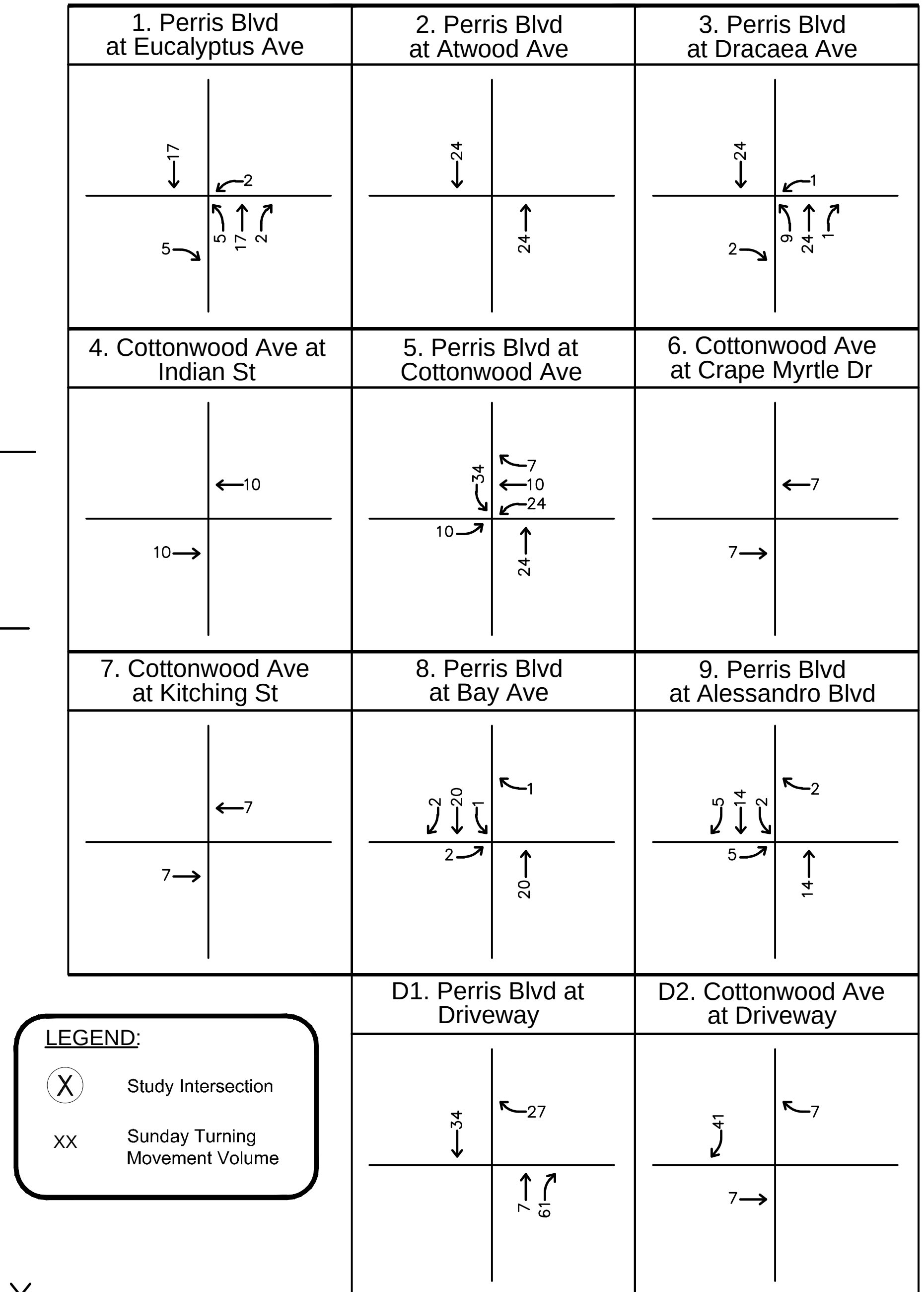
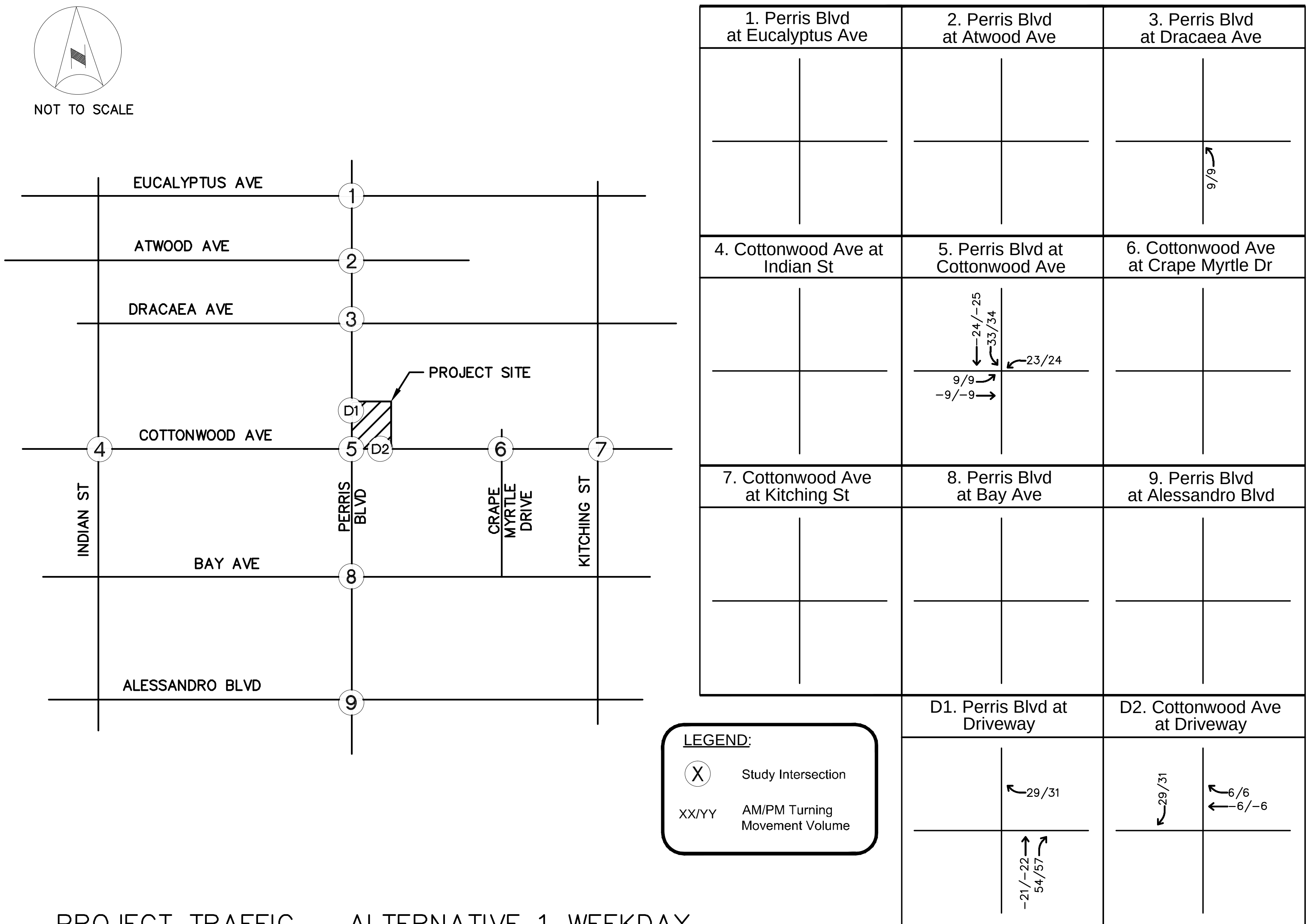
Kimley»Horn

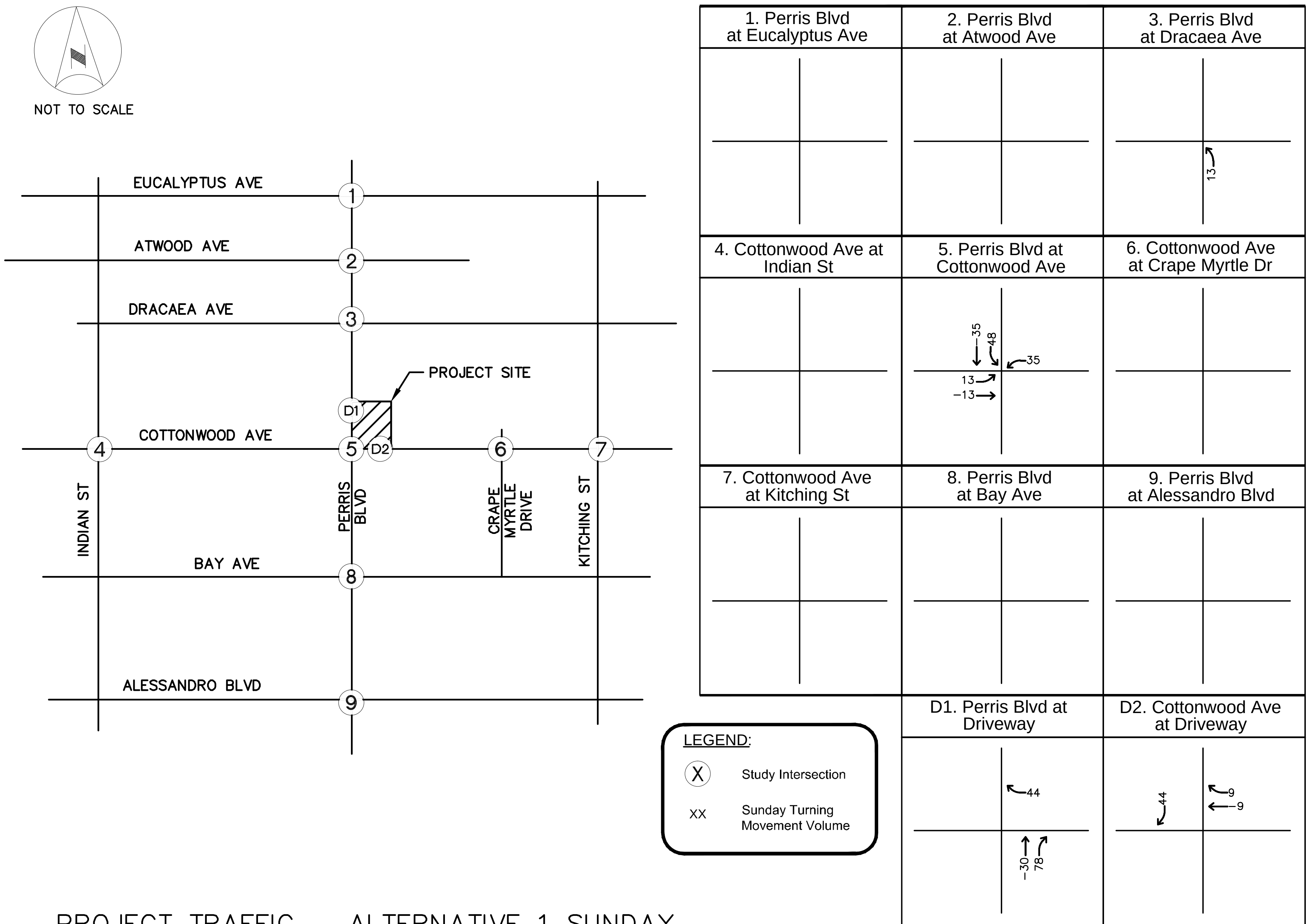




PROJECT TRAFFIC – ALTERNATIVE 1 SUNDAY NEW TRIPS



PROJECT TRAFFIC – ALTERNATIVE 1 WEEKDAY PASS–BY TRIPS



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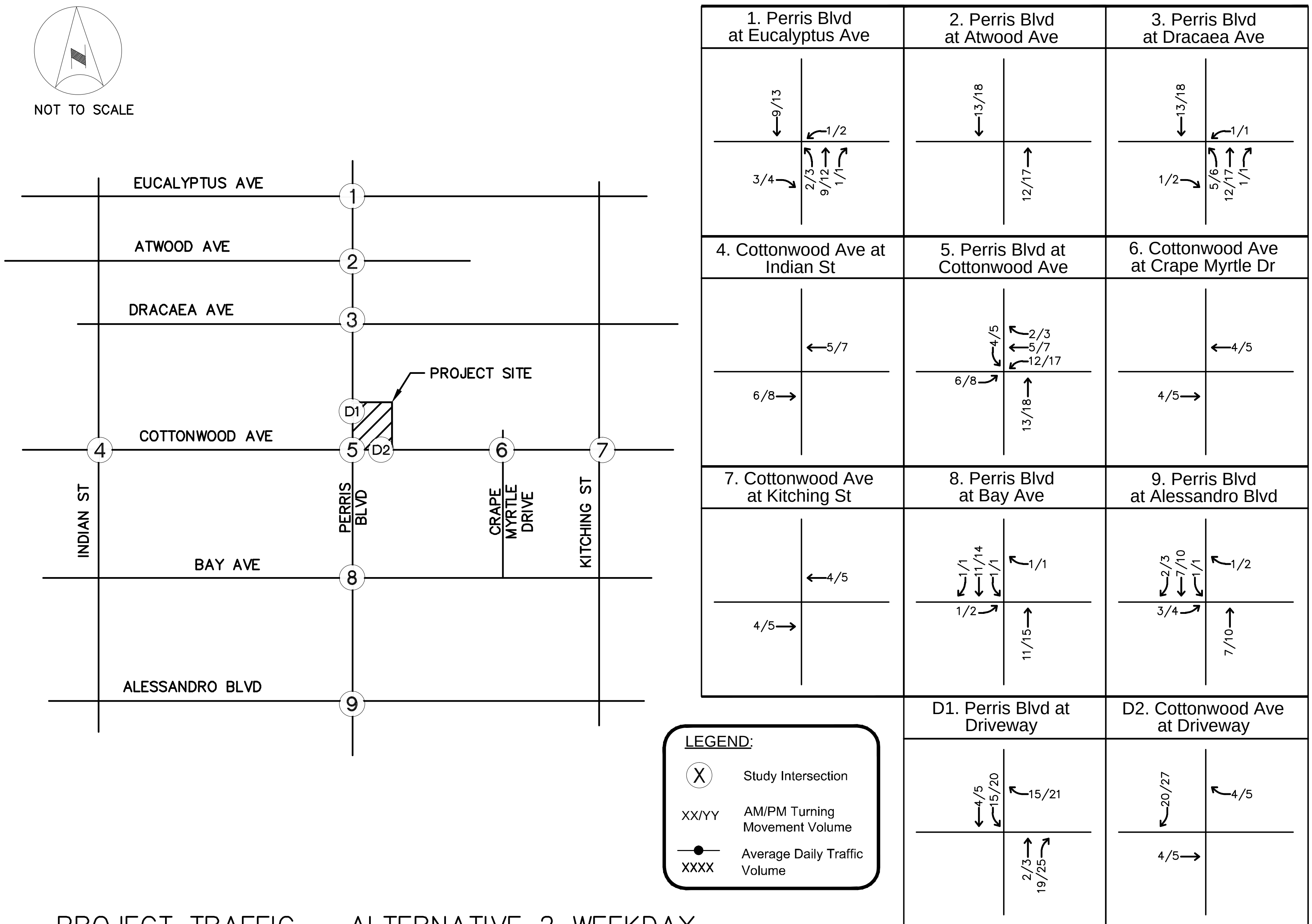
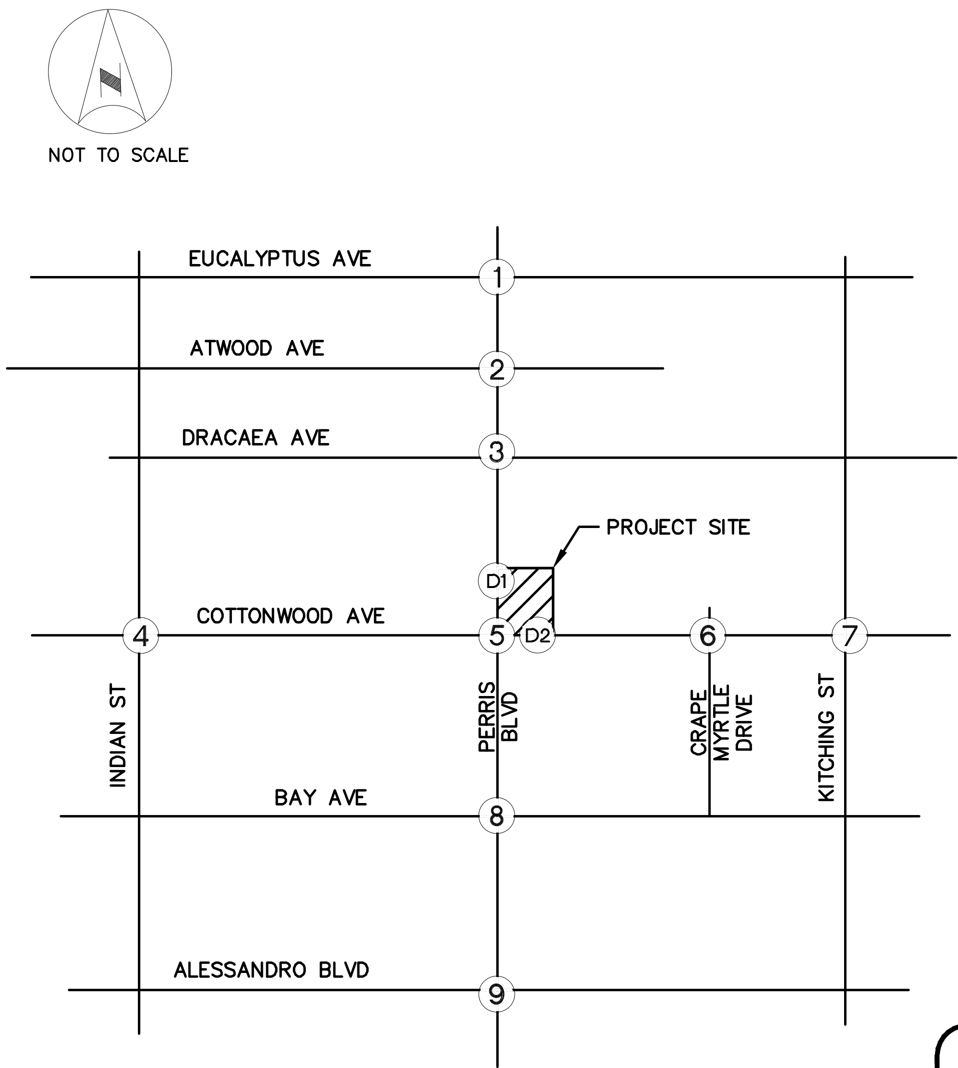
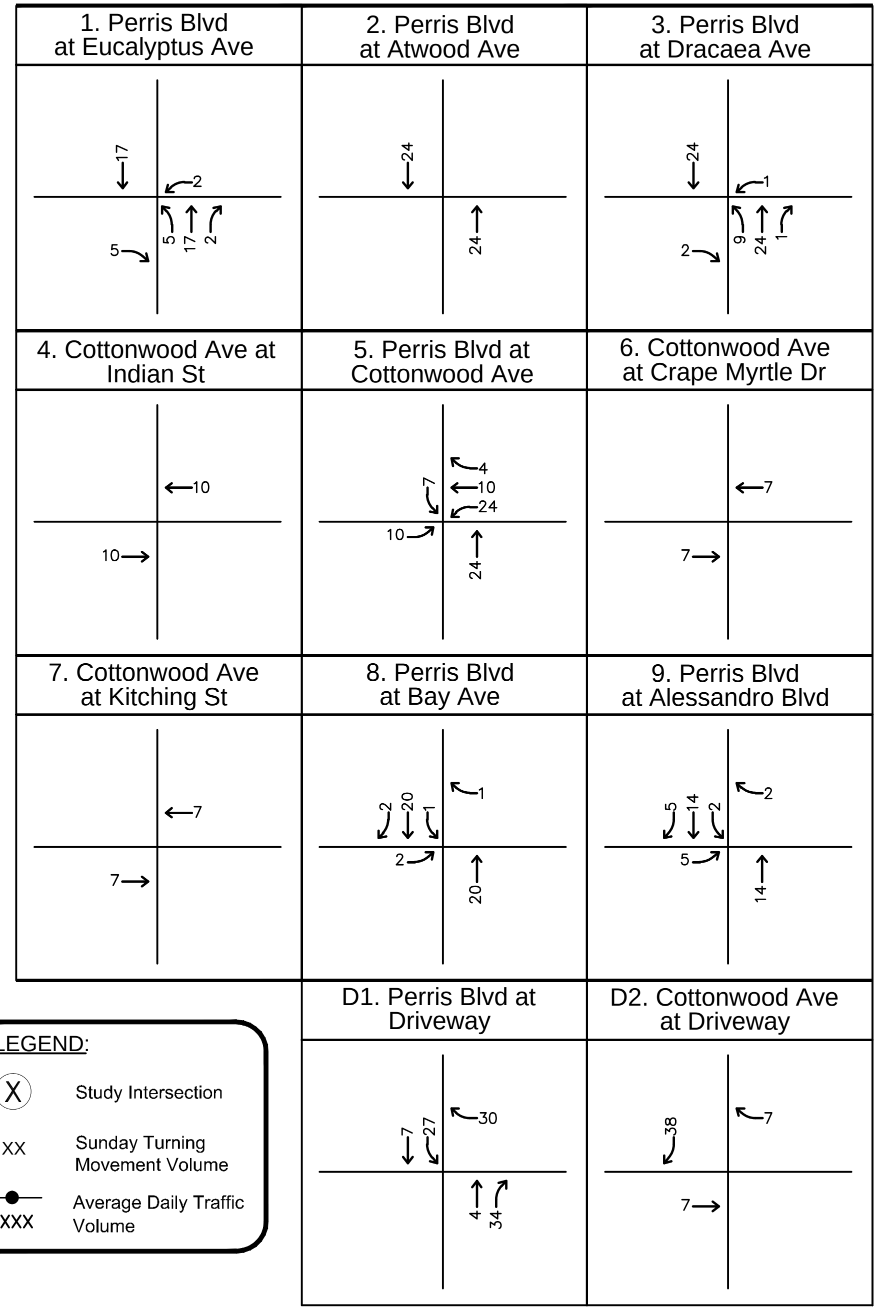


PROJECT TRAFFIC – ALTERNATIVE 2 WEEKDAY NEW TRIPS

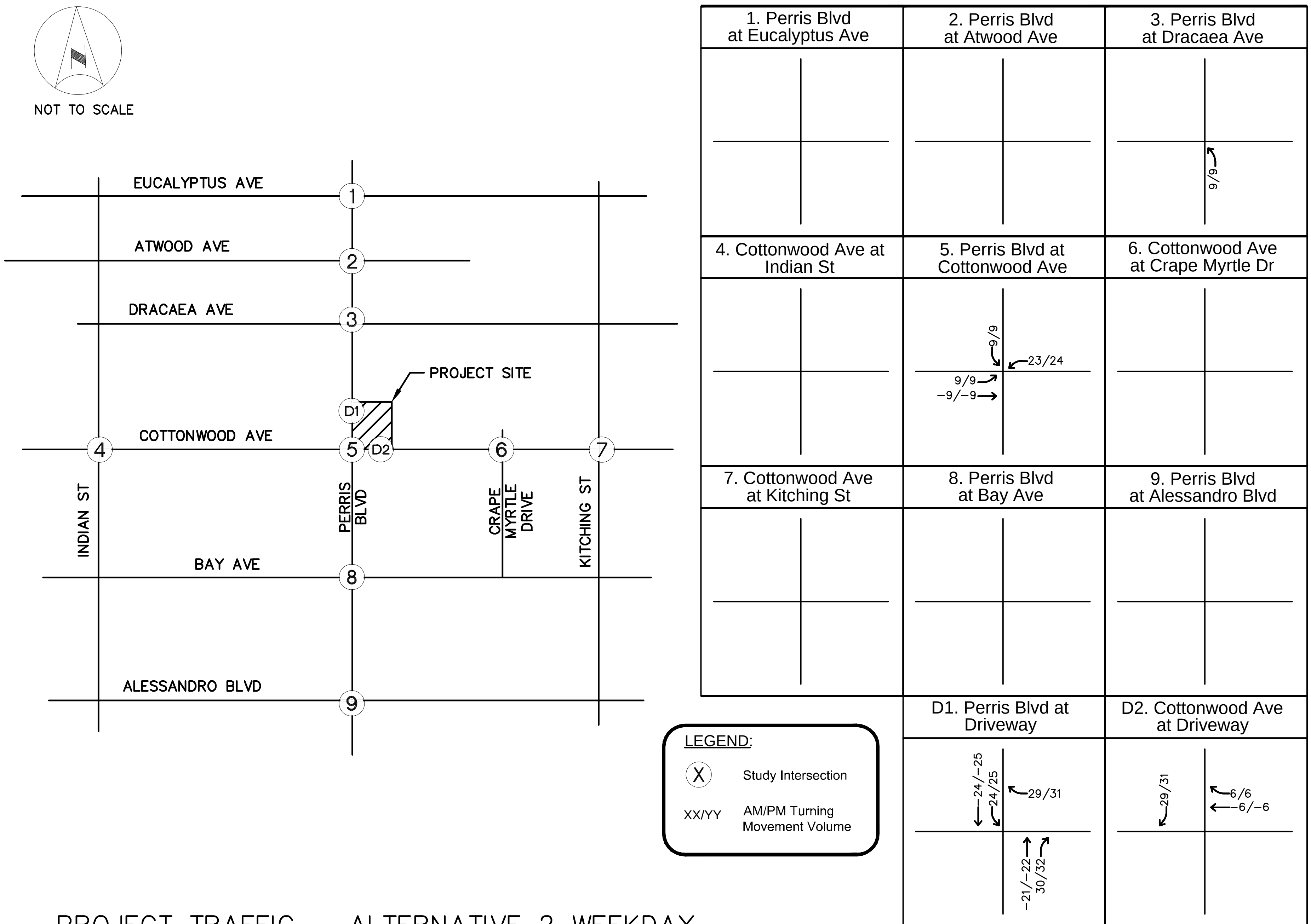




LEGEND:

- (X) Study Intersection
- XX Sunday Turning Movement Volume
- XXXX Average Daily Traffic Volume

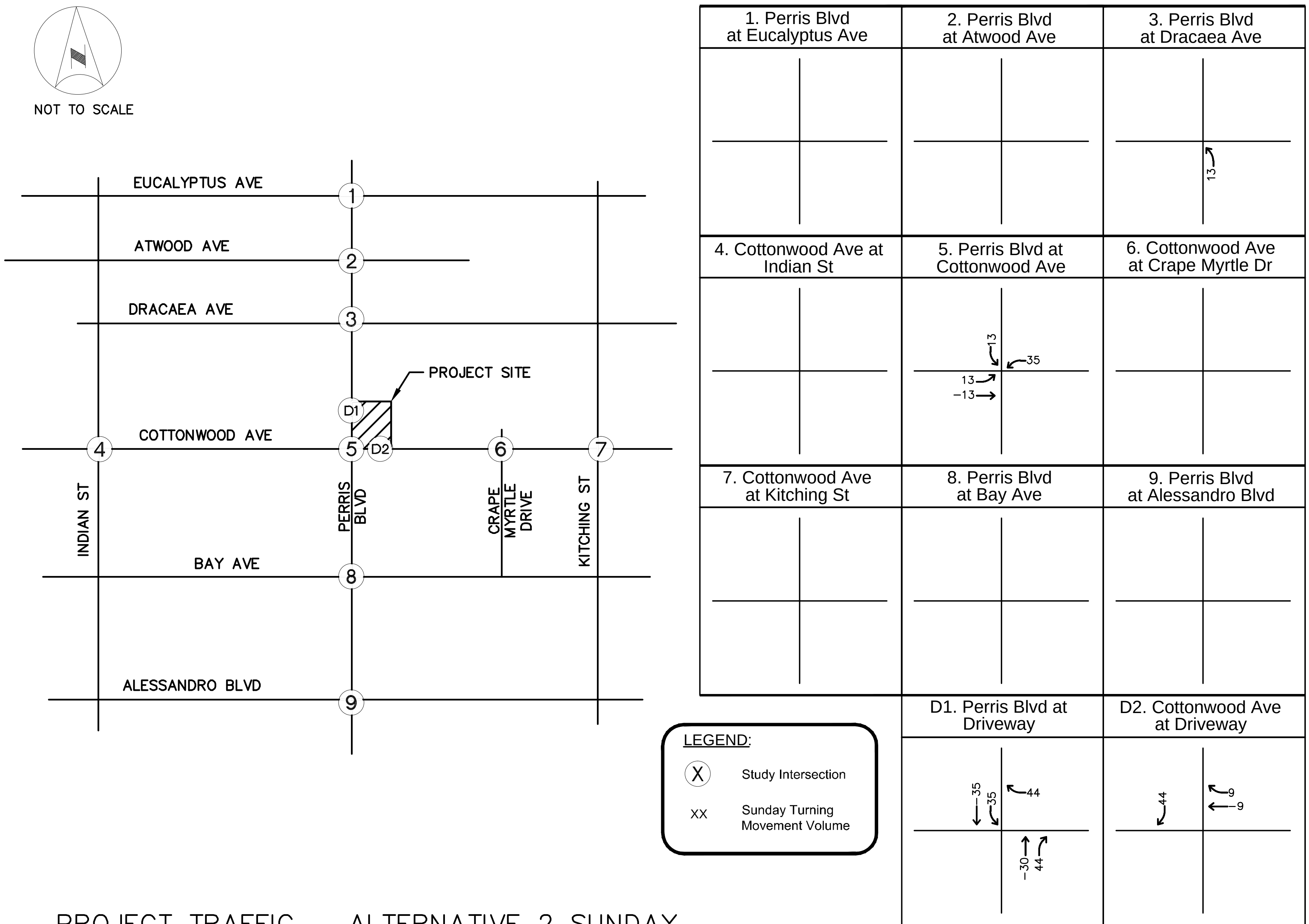
PROJECT TRAFFIC – ALTERNATIVE 2 SUNDAY NEW TRIPS



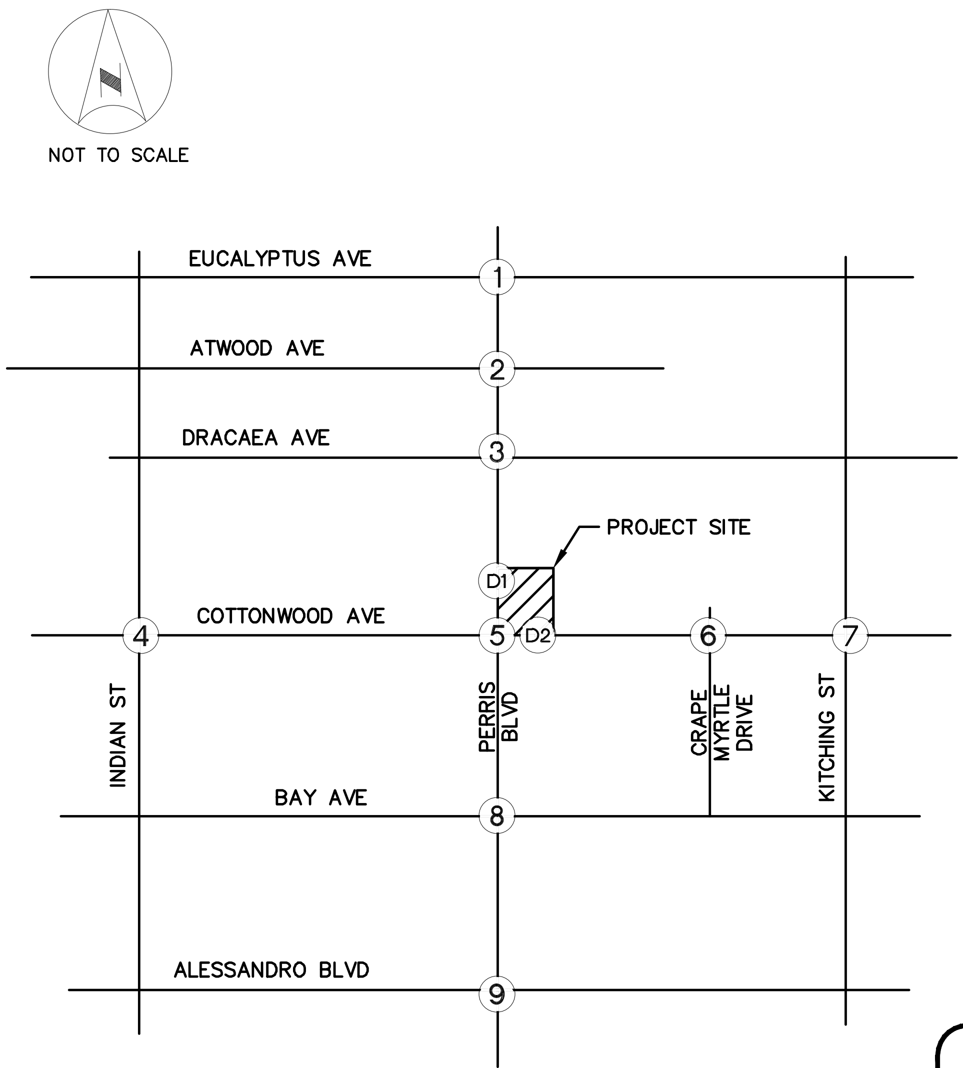
PROJECT TRAFFIC – ALTERNATIVE 2 WEEKDAY PASS–BY TRIPS

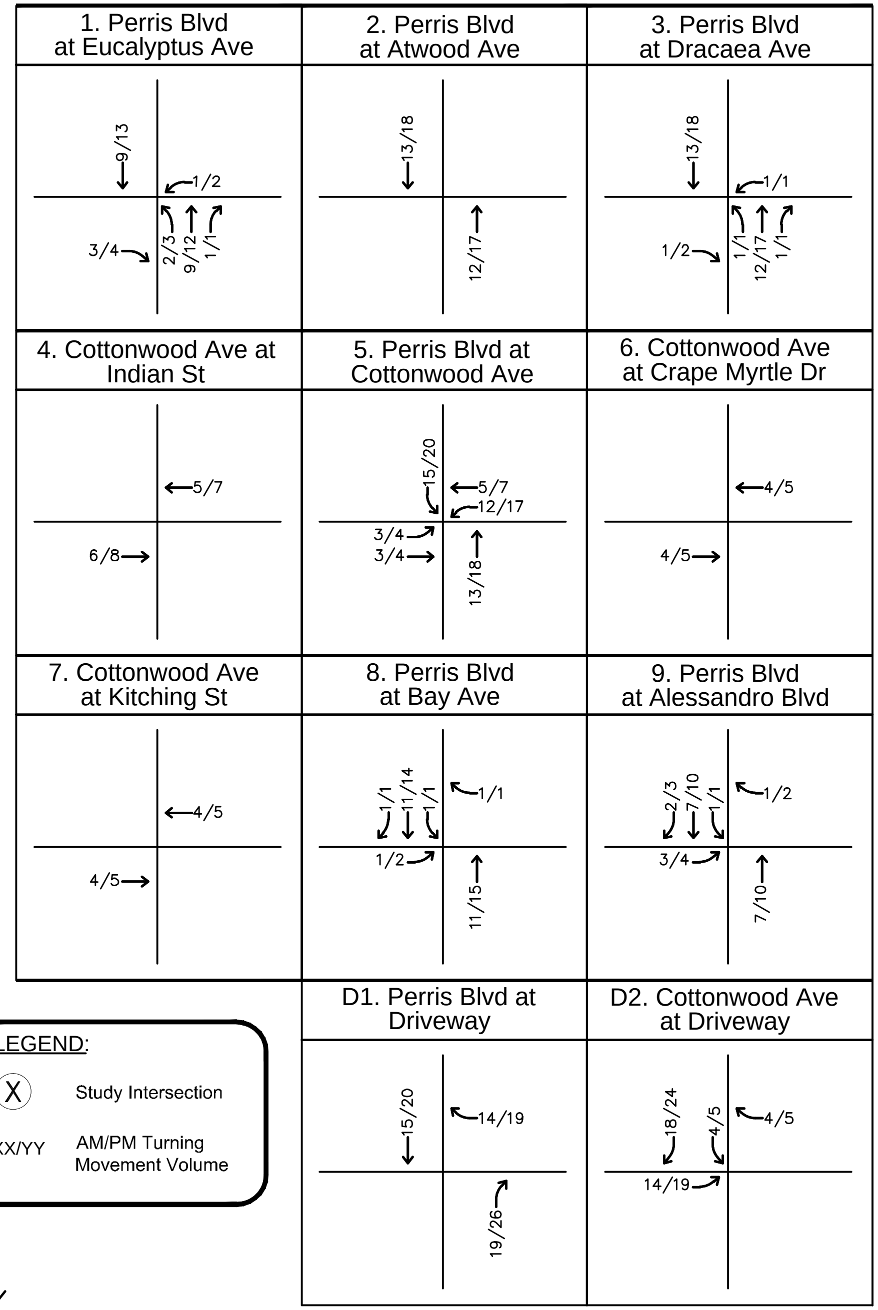
Attachment: Traffic Impact Study (3224 : A GENERAL PLAN AMENDMENT, CHANGE OF ZONE, AND

Kimley»Horn



PROJECT TRAFFIC – ALTERNATIVE 2 SUNDAY PASS–BY TRIPS



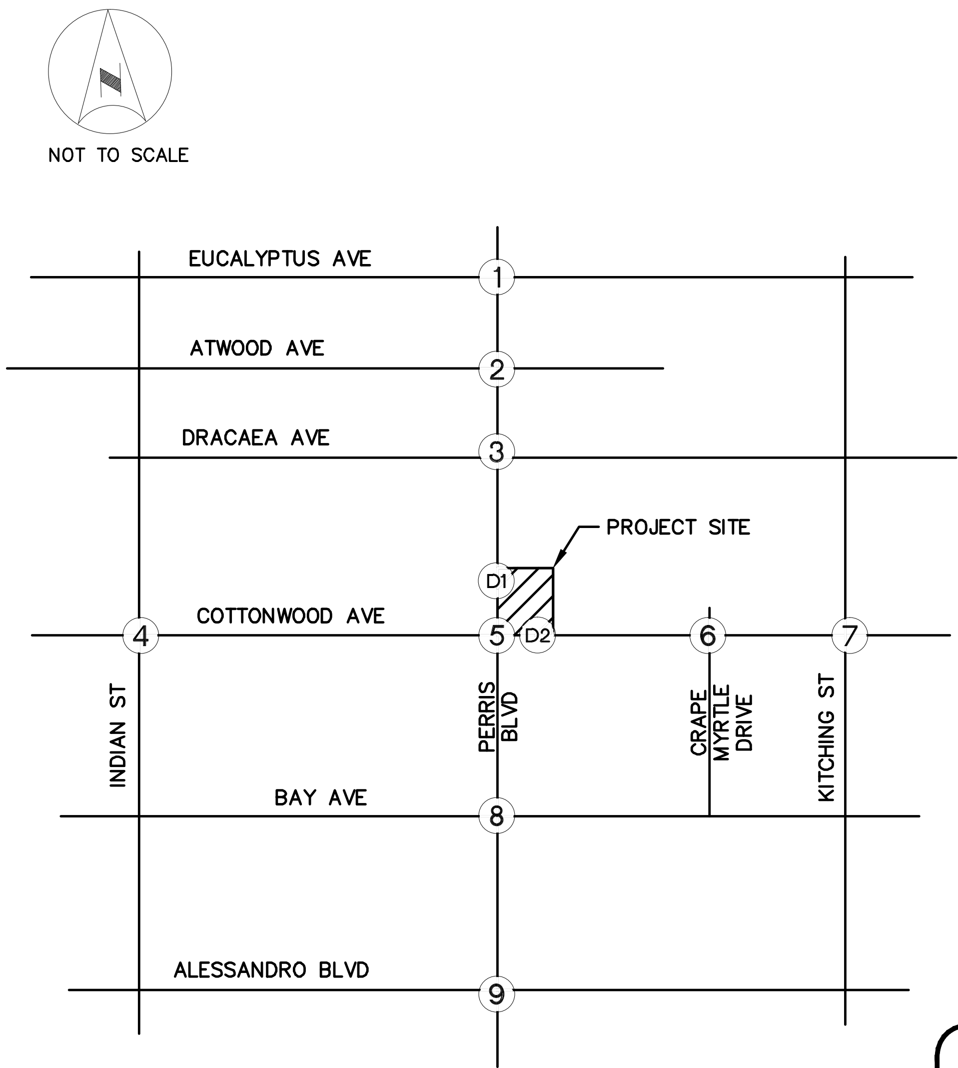


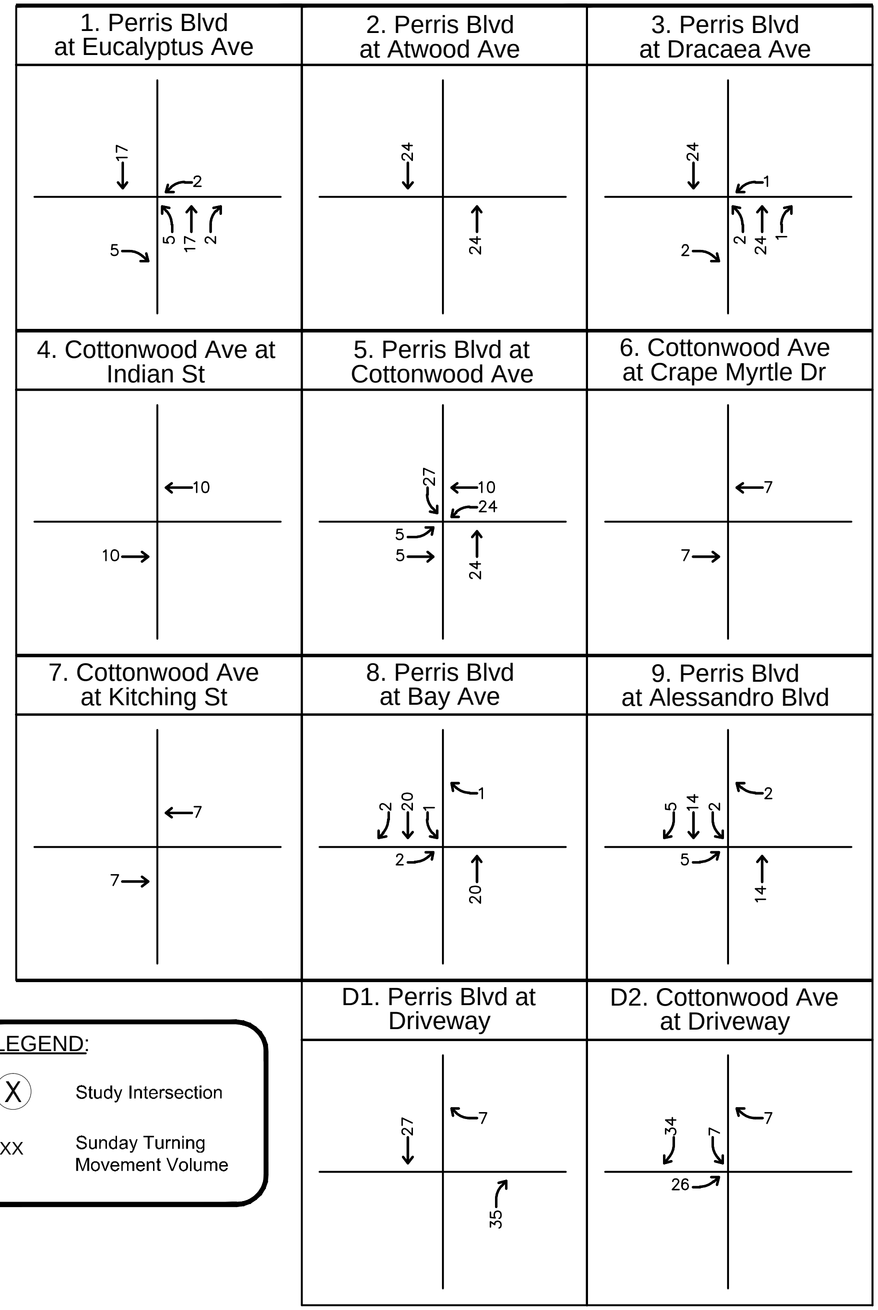
LEGEND:

X	Study Intersection
XX/YY	AM/PM Turning Movement Volume

PROJECT TRAFFIC – ALTERNATIVE 3 WEEKDAY NEW TRIPS

Kimley»Horn



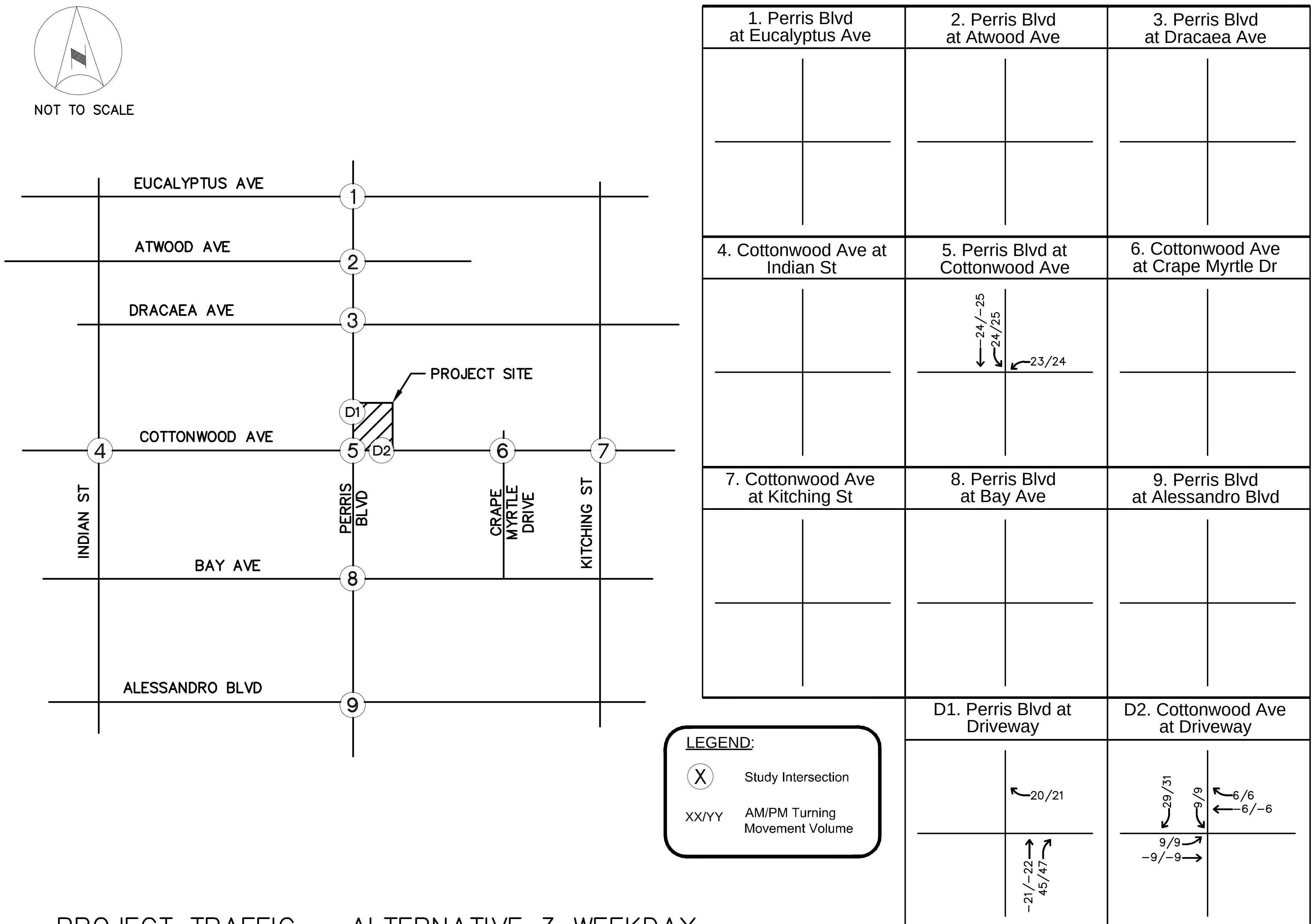


LEGEND:

X	Study Intersection
XX	Sunday Turning Movement Volume

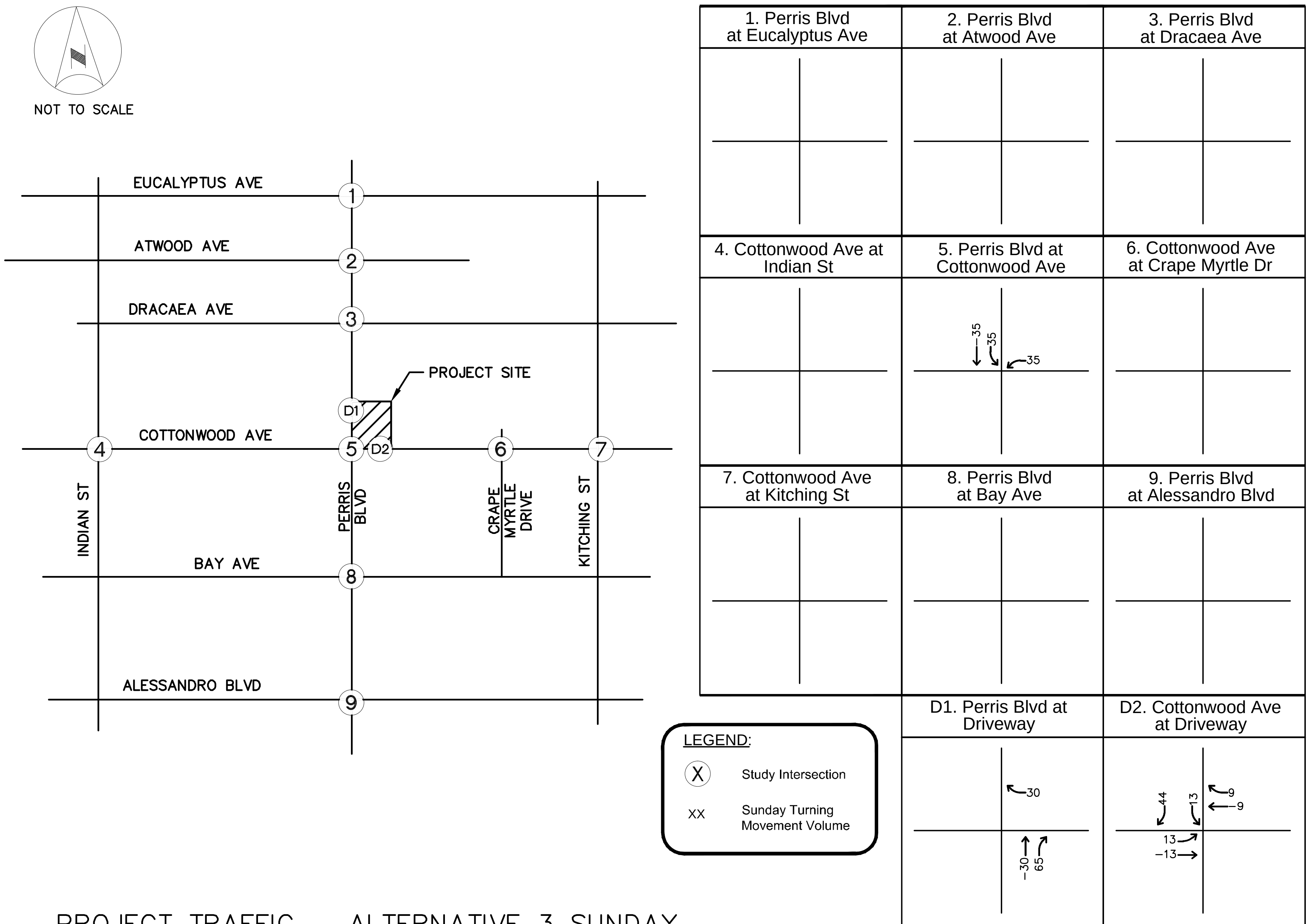
PROJECT TRAFFIC – ALTERNATIVE 3 SUNDAY NEW TRIPS

Kimley»Horn



PROJECT TRAFFIC – ALTERNATIVE 3 WEEKDAY
PASS-BY TRIPS

Kimley»Horn



PROJECT TRAFFIC – ALTERNATIVE 3 SUNDAY PASS-BY TRIPS

APPENDIX D

INTERSECTION ANALYSIS WORKSHEETS

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	76	52	82	127	177	55	1022	52	70	835	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	35	110	75	93	144	201	63	1175	60	80	949	30
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.69	0.69	0.69	0.88	0.88	0.88	0.87	0.87	0.87	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	252	215	165	329	280	136	1453	650	154	1490	666
Arrive On Green	0.05	0.14	0.14	0.09	0.18	0.18	0.08	0.41	0.41	0.09	0.42	0.42
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	35	110	75	93	144	201	63	1175	60	80	949	30
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	1.1	3.2	2.5	2.9	4.0	7.0	2.0	17.1	1.4	2.5	12.4	0.7
Cycle Q Clear(g_c), s	1.1	3.2	2.5	2.9	4.0	7.0	2.0	17.1	1.4	2.5	12.4	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	92	252	215	165	329	280	136	1453	650	154	1490	666
V/C Ratio(X)	0.38	0.44	0.35	0.56	0.44	0.72	0.46	0.81	0.09	0.52	0.64	0.05
Avail Cap(c_a), veh/h	212	510	433	212	510	433	212	1453	650	212	1490	666
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	23.2	22.9	25.4	21.5	22.7	25.8	15.2	10.6	25.5	13.4	10.0
Incr Delay (d2), s/veh	2.6	1.2	1.0	3.0	0.9	3.4	2.4	5.0	0.3	2.7	2.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.7	1.2	1.6	2.2	3.3	1.1	9.3	0.6	1.3	6.4	0.3
LnGrp Delay(d),s/veh	29.4	24.4	23.9	28.3	22.4	26.1	28.3	20.2	10.8	28.2	15.5	10.1
LnGrp LOS	C	C	C	C	C	C	C	C	B	C	B	B
Approach Vol, veh/h		220			438			1298			1059	
Approach Delay, s/veh		25.0			25.4			20.1			16.3	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	28.0	9.5	11.9	8.5	28.6	7.0	14.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.5	19.1	4.9	5.2	4.0	14.4	3.1	9.0
Green Ext Time (p_c), s	0.0	4.3	0.0	1.7	0.0	7.9	0.0	1.3

Intersection Summary		
HCM 2010 Ctrl Delay		19.9
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	67	70	44	60	92	56	30	1020	24	32	872	72
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	77	80	51	80	123	75	35	1186	28	38	1038	86
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.75	0.75	0.75	0.86	0.86	0.86	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	96	69	451	89	100	451	93	1574	37	99	1588	710
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.05	0.45	0.45	0.06	0.45	0.45
Sat Flow, veh/h	0	241	1583	0	351	1583	1774	3534	83	1774	3539	1583
Grp Volume(v), veh/h	157	0	51	203	0	75	35	594	620	38	1038	86
Grp Sat Flow(s),veh/h/ln	241	0	1583	351	0	1583	1774	1770	1848	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	1.3	0.0	0.0	2.0	1.1	15.7	15.7	1.2	12.8	1.8
Cycle Q Clear(g_c), s	16.0	0.0	1.3	16.0	0.0	2.0	1.1	15.7	15.7	1.2	12.8	1.8
Prop In Lane	0.49		1.00	0.39		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	164	0	451	190	0	451	93	788	823	99	1588	710
V/C Ratio(X)	0.96	0.00	0.11	1.07	0.00	0.17	0.38	0.75	0.75	0.38	0.65	0.12
Avail Cap(c_a), veh/h	164	0	451	190	0	451	221	788	823	221	1588	710
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.5	0.0	14.8	20.4	0.0	15.1	25.7	13.0	13.0	25.6	12.1	9.0
Incr Delay (d2), s/veh	57.1	0.0	0.1	85.4	0.0	0.2	2.5	6.6	6.3	2.4	2.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	0.6	7.4	0.0	0.9	0.6	9.0	9.4	0.6	6.7	0.8
LnGrp Delay(d),s/veh	78.6	0.0	14.9	105.8	0.0	15.2	28.2	19.6	19.3	28.0	14.2	9.4
LnGrp LOS	E		B	F		B	C	B	B	C	B	A
Approach Vol, veh/h		208			278			1249			1162	
Approach Delay, s/veh		63.0			81.3			19.7			14.3	
Approach LOS		E			F			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.1	29.0		20.0	6.9	29.2		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	25.0		16.0	7.0	25.0		16.0
Max Q Clear Time (g_c+I1), s	3.2	17.7		18.0	3.1	14.8		18.0
Green Ext Time (p_c), s	0.0	6.2		0.0	0.0	8.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.5
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	45	285	125	44	355	83	93	237	29	53	248	47
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	53	335	147	58	467	109	118	300	37	61	285	54
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.76	0.76	0.76	0.79	0.79	0.79	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	543	462	128	550	468	178	933	114	132	797	149
Arrive On Green	0.07	0.29	0.29	0.07	0.30	0.30	0.10	0.29	0.29	0.07	0.27	0.27
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3176	388	1774	2977	557
Grp Volume(v), veh/h	53	335	147	58	467	109	118	166	171	61	168	171
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1794	1774	1770	1765
Q Serve(g_s), s	1.7	9.3	4.3	1.9	14.1	3.1	3.8	4.4	4.4	2.0	4.6	4.7
Cycle Q Clear(g_c), s	1.7	9.3	4.3	1.9	14.1	3.1	3.8	4.4	4.4	2.0	4.6	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		0.32
Lane Grp Cap(c), veh/h	122	543	462	128	550	468	178	520	527	132	474	472
V/C Ratio(X)	0.44	0.62	0.32	0.45	0.85	0.23	0.66	0.32	0.32	0.46	0.35	0.36
Avail Cap(c_a), veh/h	208	592	503	208	592	503	208	520	527	208	474	472
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	18.3	16.5	26.6	19.8	15.9	25.9	16.4	16.5	26.5	17.7	17.7
Incr Delay (d2), s/veh	2.4	1.7	0.4	2.5	10.6	0.3	6.1	1.6	1.6	2.5	2.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.0	1.9	1.0	8.8	1.4	2.2	2.4	2.4	1.1	2.5	2.6
LnGrp Delay(d),s/veh	29.2	20.0	16.9	29.0	30.4	16.2	32.0	18.1	18.1	29.0	19.8	19.9
LnGrp LOS	C	B	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		535			634			455			400	
Approach Delay, s/veh		20.0			27.8			21.7			21.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	21.6	8.3	21.4	10.0	20.0	8.1	21.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	4.0	6.4	3.9	11.3	5.8	6.7	3.7	16.1
Green Ext Time (p_c), s	0.0	2.7	0.0	3.4	0.0	2.7	0.0	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	23.1
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	80	184	66	53	215	166	70	833	63	107	805	89
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	100	230	82	72	291	224	85	1016	77	127	958	106
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.80	0.80	0.80	0.74	0.74	0.74	0.82	0.82	0.82	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	169	419	356	145	394	335	158	1133	507	183	1185	530
Arrive On Green	0.10	0.22	0.22	0.08	0.21	0.21	0.09	0.32	0.32	0.10	0.33	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	100	230	82	72	291	224	85	1016	77	127	958	106
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.2	6.5	2.5	2.3	8.7	7.7	2.7	16.2	2.1	4.1	14.7	2.8
Cycle Q Clear(g_c), s	3.2	6.5	2.5	2.3	8.7	7.7	2.7	16.2	2.1	4.1	14.7	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	169	419	356	145	394	335	158	1133	507	183	1185	530
V/C Ratio(X)	0.59	0.55	0.23	0.50	0.74	0.67	0.54	0.90	0.15	0.69	0.81	0.20
Avail Cap(c_a), veh/h	209	502	427	209	502	427	209	1133	507	209	1185	530
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.7	20.3	18.8	26.1	21.9	21.5	25.9	19.2	14.4	25.7	18.0	14.1
Incr Delay (d2), s/veh	3.3	1.1	0.3	2.6	4.2	2.7	2.8	11.1	0.6	8.0	6.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	3.5	1.1	1.2	4.9	3.6	1.4	9.7	1.0	2.4	8.0	1.3
LnGrp Delay(d),s/veh	29.0	21.5	19.1	28.7	26.1	24.2	28.7	30.3	15.0	33.7	24.0	14.9
LnGrp LOS	C	C	B	C	C	C	C	C	B	C	C	B
Approach Vol, veh/h		412			587			1178			1191	
Approach Delay, s/veh		22.8			25.7			29.2			24.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	23.0	8.9	17.3	9.3	23.9	9.7	16.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.1	18.2	4.3	8.5	4.7	16.7	5.2	10.7
Green Ext Time (p_c), s	0.0	0.7	0.0	2.4	0.0	2.1	0.0	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	26.1
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	95	226	72	43	319	129	99	297	27	31	201	41
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	134	318	101	63	469	190	115	345	31	42	275	56
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.71	0.71	0.71	0.68	0.68	0.68	0.86	0.86	0.86	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	180	583	496	132	533	453	172	975	87	103	757	152
Arrive On Green	0.10	0.31	0.31	0.07	0.29	0.29	0.10	0.30	0.30	0.06	0.26	0.26
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3287	294	1774	2939	590
Grp Volume(v), veh/h	134	318	101	63	469	190	115	185	191	42	164	167
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1811	1774	1770	1759
Q Serve(g_s), s	4.6	8.8	2.9	2.1	14.9	6.0	3.9	5.1	5.2	1.4	4.7	4.8
Cycle Q Clear(g_c), s	4.6	8.8	2.9	2.1	14.9	6.0	3.9	5.1	5.2	1.4	4.7	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.34
Lane Grp Cap(c), veh/h	180	583	496	132	533	453	172	525	537	103	456	453
V/C Ratio(X)	0.74	0.55	0.20	0.48	0.88	0.42	0.67	0.35	0.36	0.41	0.36	0.37
Avail Cap(c_a), veh/h	200	583	496	200	570	484	200	525	537	200	456	453
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	17.7	15.7	27.6	21.1	18.0	27.1	17.2	17.2	28.2	18.9	18.9
Incr Delay (d2), s/veh	12.7	1.1	0.2	2.6	14.1	0.6	6.7	1.9	1.8	2.6	2.2	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	4.7	1.3	1.1	9.8	2.7	2.2	2.7	2.8	0.8	2.6	2.6
LnGrp Delay(d),s/veh	39.8	18.7	15.9	30.2	35.3	18.6	33.8	19.0	19.0	30.8	21.1	21.2
LnGrp LOS	D	B	B	C	D	B	C	B	B	C	C	C
Approach Vol, veh/h		553			722			491			373	
Approach Delay, s/veh		23.3			30.4			22.5			22.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	22.4	8.6	23.5	10.0	20.0	10.3	21.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.4	7.2	4.1	10.8	5.9	6.8	6.6	16.9
Green Ext Time (p_c), s	0.0	2.6	0.0	3.5	0.0	2.7	0.0	0.9

Intersection Summary		
HCM 2010 Ctrl Delay		25.3
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	81	47	80	40	57	93	55	845	54	88	748	74
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	109	64	108	47	67	109	59	909	58	109	923	91
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.74	0.74	0.74	0.85	0.85	0.85	0.93	0.93	0.93	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	122	206	116	101	164	134	1166	74	183	1319	590
Arrive On Green	0.10	0.20	0.20	0.07	0.16	0.16	0.08	0.35	0.35	0.10	0.37	0.37
Sat Flow, veh/h	1774	624	1053	1774	639	1040	1774	3379	216	1774	3539	1583
Grp Volume(v), veh/h	109	0	172	47	0	176	59	476	491	109	923	91
Grp Sat Flow(s),veh/h/ln	1774	0	1677	1774	0	1679	1774	1770	1825	1774	1770	1583
Q Serve(g_s), s	3.2	0.0	5.1	1.4	0.0	5.4	1.8	13.3	13.3	3.2	12.2	2.1
Cycle Q Clear(g_c), s	3.2	0.0	5.1	1.4	0.0	5.4	1.8	13.3	13.3	3.2	12.2	2.1
Prop In Lane	1.00		0.63	1.00		0.62	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	183	0	329	116	0	265	134	611	630	183	1319	590
V/C Ratio(X)	0.60	0.00	0.52	0.41	0.00	0.66	0.44	0.78	0.78	0.60	0.70	0.15
Avail Cap(c_a), veh/h	226	0	487	226	0	488	226	611	630	226	1319	590
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	0.0	19.8	24.7	0.0	21.8	24.3	16.1	16.1	23.6	14.7	11.5
Incr Delay (d2), s/veh	3.1	0.0	1.3	2.3	0.0	2.8	2.3	9.5	9.2	3.1	3.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	2.5	0.8	0.0	2.7	0.9	8.1	8.3	1.7	6.5	1.0
LnGrp Delay(d),s/veh	26.7	0.0	21.1	27.0	0.0	24.6	26.6	25.7	25.4	26.7	17.8	12.0
LnGrp LOS	C		C	C		C	C	C	C	C	B	B
Approach Vol, veh/h		281			223			1026			1123	
Approach Delay, s/veh		23.3			25.1			25.6			18.2	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	23.0	7.6	14.8	8.2	24.5	9.7	12.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	5.2	15.3	3.4	7.1	3.8	14.2	5.2	7.4
Green Ext Time (p_c), s	0.0	3.1	0.0	1.3	0.0	3.9	0.0	1.3

Intersection Summary		
HCM 2010 Ctrl Delay		22.2
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	171	369	89	132	659	113	240	719	140	174	499	160
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	209	450	109	155	775	133	255	765	149	207	594	190
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.94	0.94	0.94	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	368	847	379	353	1028	175	278	998	447	222	887	397
Arrive On Green	0.11	0.24	0.24	0.10	0.23	0.23	0.16	0.28	0.28	0.13	0.25	0.25
Sat Flow, veh/h	3442	3539	1583	3442	4376	745	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	209	450	109	155	599	309	255	765	149	207	594	190
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1731	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.7	7.1	3.6	2.7	10.5	10.6	9.0	12.6	4.8	7.4	9.6	6.5
Cycle Q Clear(g_c), s	3.7	7.1	3.6	2.7	10.5	10.6	9.0	12.6	4.8	7.4	9.6	6.5
Prop In Lane	1.00		1.00	1.00		0.43	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	368	847	379	353	797	407	278	998	447	222	887	397
V/C Ratio(X)	0.57	0.53	0.29	0.44	0.75	0.76	0.92	0.77	0.33	0.93	0.67	0.48
Avail Cap(c_a), veh/h	377	887	397	377	850	434	278	998	447	222	887	397
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	21.2	19.8	26.9	22.7	22.7	26.5	21.0	18.2	27.6	21.5	20.4
Incr Delay (d2), s/veh	1.9	0.5	0.4	0.9	3.6	7.2	33.1	5.6	2.0	41.6	4.0	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	3.5	1.6	1.3	5.3	5.9	6.9	6.9	2.3	6.1	5.2	3.3
LnGrp Delay(d),s/veh	29.0	21.7	20.2	27.8	26.2	29.9	59.6	26.6	20.2	69.2	25.5	24.5
LnGrp LOS	C	C	C	C	C	C	E	C	C	E	C	C
Approach Vol, veh/h		768			1063			1169			991	
Approach Delay, s/veh		23.5			27.5			33.0			34.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	22.0	10.6	19.3	14.0	20.0	10.8	19.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	18.0	7.0	16.0	10.0	16.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	9.4	14.6	4.7	9.1	11.0	11.6	5.7	12.6
Green Ext Time (p_c), s	0.0	2.6	0.1	4.4	0.0	3.3	0.1	2.4

Intersection Summary		
HCM 2010 Ctrl Delay		30.1
HCM 2010 LOS		C

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	12	2	37	2	1	16	34	1099	4	13	941	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	68	68	68	87	87	87	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	3	55	3	1	24	43	1390	5	15	1069	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1890	2590	545	2044	2597	697	1090	0	0	1395	0	0
Stage 1	1109	1109	-	1478	1478	-	-	-	-	-	-	-
Stage 2	781	1481	-	566	1119	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	43	25	482	33	25	383	636	-	-	486	-	-
Stage 1	223	283	-	132	188	-	-	-	-	-	-	-
Stage 2	354	187	-	476	280	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	37	23	482	26	23	383	636	-	-	486	-	-
Mov Cap-2 Maneuver	127	102	-	92	101	-	-	-	-	-	-	-
Stage 1	208	274	-	123	175	-	-	-	-	-	-	-
Stage 2	307	174	-	404	271	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.8	20.6	0.3	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	636	-	-	267	259	486	-	-
HCM Lane V/C Ratio	0.068	-	-	0.285	0.108	0.03	-	-
HCM Control Delay (s)	11.1	-	-	23.8	20.6	12.6	-	-
HCM Lane LOS	B	-	-	C	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.1	0.4	0.1	-	-

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	9	303	12	33	419	17	27	10	38	31	11	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	70	70	70	67	67	67	64	64	64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	394	16	47	599	24	40	15	57	48	17	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	599	0	0	394	0	0	1129	1110	394	1146	1110	599
Stage 1	-	-	-	-	-	-	417	417	-	693	693	-
Stage 2	-	-	-	-	-	-	712	693	-	453	417	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	978	-	-	1165	-	-	181	209	655	176	209	502
Stage 1	-	-	-	-	-	-	613	591	-	434	445	-
Stage 2	-	-	-	-	-	-	423	445	-	586	591	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	978	-	-	1165	-	-	155	198	655	146	198	502
Mov Cap-2 Maneuver	-	-	-	-	-	-	155	198	-	146	198	-
Stage 1	-	-	-	-	-	-	605	584	-	429	427	-
Stage 2	-	-	-	-	-	-	373	427	-	515	584	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	28.2	39.5
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	265	978	-	-	1165	-	-	189
HCM Lane V/C Ratio	0.422	0.012	-	-	0.04	-	-	0.463
HCM Control Delay (s)	28.2	8.7	-	-	8.2	-	-	39.5
HCM Lane LOS	D	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	2	0	-	-	0.1	-	-	2.2

HCM 2010 TWSC
10: Driveway & Cottonwood Ave

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	318	27	9	449	0	3	0	1	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	78	78	78	50	50	50	25	25	25
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	424	36	12	576	0	6	0	2	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	576	0	0	460	0	0	1041	1041	442
Stage 1	-	-	-	-	-	-	442	442	-
Stage 2	-	-	-	-	-	-	599	599	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	997	-	-	1101	-	-	255	230	615
Stage 1	-	-	-	-	-	-	648	576	-
Stage 2	-	-	-	-	-	-	549	490	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	997	-	-	1101	-	-	252	0	615
Mov Cap-2 Maneuver	-	-	-	-	-	-	252	0	-
Stage 1	-	-	-	-	-	-	648	0	-
Stage 2	-	-	-	-	-	-	543	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	17.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	296	997	-	-	1101	-	-
HCM Lane V/C Ratio	0.027	-	-	-	0.01	-	-
HCM Control Delay (s)	17.5	0	-	-	8.3	-	-
HCM Lane LOS	C	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	10	0	0	0	13	1073	0	0	988	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	62	62	62	25	25	25	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	16	0	0	0	15	1262	0	0	1162	4

Major/Minor	Minor2						Major1			Major2		
Conflicting Flow All	1826	2457	583				1166	0	0	1262	0	0
Stage 1	1164	1164	-				-	-	-	-	-	-
Stage 2	662	1293	-				-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94				4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-				-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32				2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	68	30	456				595	-	-	547	-	-
Stage 1	259	267	-				-	-	-	-	-	-
Stage 2	475	231	-				-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	66	0	456				595	-	-	547	-	-
Mov Cap-2 Maneuver	66	0	-				-	-	-	-	-	-
Stage 1	259	0	-				-	-	-	-	-	-
Stage 2	463	0	-				-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.2	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	595	-	-	456	547	-	-
HCM Lane V/C Ratio	0.026	-	-	0.035	-	-	-
HCM Control Delay (s)	11.2	-	-	13.2	0	-	-
HCM Lane LOS	B	-	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	-	-

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	54	161	63	46	106	84	57	867	58	105	1173	56
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	64	189	74	66	151	120	59	903	60	109	1222	58
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.70	0.70	0.70	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	290	246	138	292	248	130	1420	635	174	1507	674
Arrive On Green	0.08	0.16	0.16	0.08	0.16	0.16	0.07	0.40	0.40	0.10	0.43	0.43
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	64	189	74	66	151	120	59	903	60	109	1222	58
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.1	5.7	2.5	2.1	4.4	4.1	1.9	12.3	1.4	3.5	18.1	1.3
Cycle Q Clear(g_c), s	2.1	5.7	2.5	2.1	4.4	4.1	1.9	12.3	1.4	3.5	18.1	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	136	290	246	138	292	248	130	1420	635	174	1507	674
V/C Ratio(X)	0.47	0.65	0.30	0.48	0.52	0.48	0.45	0.64	0.09	0.63	0.81	0.09
Avail Cap(c_a), veh/h	208	498	423	208	498	423	208	1420	635	208	1507	674
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	23.7	22.4	26.4	23.1	23.0	26.6	14.4	11.1	25.9	15.1	10.2
Incr Delay (d2), s/veh	2.5	2.5	0.7	2.5	1.4	1.5	2.5	2.2	0.3	4.4	4.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.1	1.1	1.1	2.4	1.9	1.0	6.3	0.7	1.9	9.8	0.6
LnGrp Delay(d),s/veh	29.0	26.2	23.1	29.0	24.6	24.5	29.1	16.6	11.4	30.3	19.9	10.5
LnGrp LOS	C	C	C	C	C	C	C	B	B	C	B	B
Approach Vol, veh/h		327			337			1022			1389	
Approach Delay, s/veh		26.0			25.4			17.0			20.3	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	28.0	8.7	13.3	8.4	29.5	8.6	13.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	5.5	14.3	4.1	7.7	3.9	20.1	4.1	6.4
Green Ext Time (p_c), s	0.0	8.0	0.0	1.6	0.0	3.5	0.0	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	20.4
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	58	92	24	28	85	58	14	893	42	72	1112	81
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	65	103	27	31	96	65	15	930	44	74	1146	84
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.96	0.96	0.96	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	86	100	438	77	178	438	46	1486	70	149	1735	776
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.03	0.43	0.43	0.08	0.49	0.49
Sat Flow, veh/h	0	362	1583	0	644	1583	1774	3441	163	1774	3539	1583
Grp Volume(v), veh/h	168	0	27	127	0	65	15	478	496	74	1146	84
Grp Sat Flow(s),veh/h/ln	362	0	1583	644	0	1583	1774	1770	1834	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.7	0.0	0.0	1.8	0.5	12.2	12.2	2.3	14.1	1.7
Cycle Q Clear(g_c), s	16.0	0.0	0.7	16.0	0.0	1.8	0.5	12.2	12.2	2.3	14.1	1.7
Prop In Lane	0.39		1.00	0.24		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	186	0	438	256	0	438	46	764	792	149	1735	776
V/C Ratio(X)	0.90	0.00	0.06	0.50	0.00	0.15	0.33	0.63	0.63	0.50	0.66	0.11
Avail Cap(c_a), veh/h	186	0	438	256	0	438	215	764	792	215	1735	776
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.3	0.0	15.4	17.2	0.0	15.8	27.7	12.8	12.8	25.3	11.1	7.9
Incr Delay (d2), s/veh	39.6	0.0	0.1	1.5	0.0	0.2	4.0	3.8	3.7	2.5	2.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	0.3	1.7	0.0	0.8	0.3	6.7	6.9	1.2	7.3	0.8
LnGrp Delay(d),s/veh	60.0	0.0	15.5	18.7	0.0	15.9	31.7	16.6	16.5	27.9	13.1	8.2
LnGrp LOS	E		B	B		B	C	B	B	C	B	A
Approach Vol, veh/h		195			192			989			1304	
Approach Delay, s/veh		53.8			17.8			16.8			13.6	
Approach LOS		D			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.9	29.0		20.0	5.5	32.4		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	25.0		16.0	7.0	25.0		16.0
Max Q Clear Time (g_c+I1), s	4.3	14.2		18.0	2.5	16.1		18.0
Green Ext Time (p_c), s	0.0	8.6		0.0	0.0	7.2		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			18.0
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	42	316	147	41	246	37	80	263	54	28	268	43
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	49	372	173	50	300	45	96	317	65	29	282	45
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.82	0.82	0.82	0.83	0.83	0.83	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	118	482	410	119	484	411	170	1022	207	80	913	144
Arrive On Green	0.07	0.26	0.26	0.07	0.26	0.26	0.10	0.35	0.35	0.05	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	2934	594	1774	3064	483
Grp Volume(v), veh/h	49	372	173	50	300	45	96	190	192	29	161	166
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1758	1774	1770	1777
Q Serve(g_s), s	1.5	10.6	5.2	1.5	8.1	1.2	3.0	4.5	4.6	0.9	4.0	4.1
Cycle Q Clear(g_c), s	1.5	10.6	5.2	1.5	8.1	1.2	3.0	4.5	4.6	0.9	4.0	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.34	1.00		0.27
Lane Grp Cap(c), veh/h	118	482	410	119	484	411	170	617	613	80	527	529
V/C Ratio(X)	0.42	0.77	0.42	0.42	0.62	0.11	0.56	0.31	0.31	0.36	0.31	0.31
Avail Cap(c_a), veh/h	218	587	499	218	587	499	218	617	613	218	527	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.6	19.6	17.6	25.6	18.6	16.1	24.7	13.6	13.6	26.4	15.5	15.5
Incr Delay (d2), s/veh	2.3	5.1	0.7	2.3	1.4	0.1	2.9	1.3	1.3	2.7	1.5	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	6.1	2.4	0.8	4.4	0.6	1.6	2.4	2.4	0.5	2.2	2.2
LnGrp Delay(d),s/veh	27.9	24.7	18.3	27.9	20.0	16.2	27.6	14.9	14.9	29.2	17.0	17.1
LnGrp LOS	C	C	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		594			395			478			356	
Approach Delay, s/veh		23.1			20.6			17.4			18.0	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	23.9	7.8	18.8	9.5	21.0	7.8	18.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	18.0	7.0	17.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	2.9	6.6	3.5	12.6	5.0	6.1	3.5	10.1
Green Ext Time (p_c), s	0.0	3.0	0.0	2.2	0.0	3.1	0.0	2.9

Intersection Summary		
HCM 2010 Ctrl Delay		20.1
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	93	213	62	29	148	90	63	817	41	139	967	119
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	109	251	73	37	190	115	67	869	44	148	1029	127
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.78	0.78	0.78	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	180	396	336	97	308	262	143	1193	534	199	1304	583
Arrive On Green	0.10	0.21	0.21	0.05	0.17	0.17	0.08	0.34	0.34	0.11	0.37	0.37
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	109	251	73	37	190	115	67	869	44	148	1029	127
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.3	6.9	2.1	1.1	5.3	3.7	2.0	12.2	1.1	4.6	14.6	3.1
Cycle Q Clear(g_c), s	3.3	6.9	2.1	1.1	5.3	3.7	2.0	12.2	1.1	4.6	14.6	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	180	396	336	97	308	262	143	1193	534	199	1304	583
V/C Ratio(X)	0.60	0.63	0.22	0.38	0.62	0.44	0.47	0.73	0.08	0.75	0.79	0.22
Avail Cap(c_a), veh/h	220	529	450	220	529	450	220	1193	534	220	1304	583
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.2	20.2	18.3	25.7	21.9	21.2	24.7	16.4	12.7	24.2	15.8	12.2
Incr Delay (d2), s/veh	3.2	1.7	0.3	2.5	2.0	1.2	2.4	3.9	0.3	11.7	4.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	3.7	1.0	0.6	2.9	1.7	1.1	6.6	0.5	2.9	7.9	1.5
LnGrp Delay(d),s/veh	27.5	21.9	18.6	28.2	23.9	22.3	27.1	20.3	13.0	35.9	20.8	13.1
LnGrp LOS	C	C	B	C	C	C	C	C	B	D	C	B
Approach Vol, veh/h		433			342			980			1304	
Approach Delay, s/veh		22.7			23.8			20.5			21.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	23.0	7.1	16.0	8.5	24.8	9.7	13.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.6	14.2	3.1	8.9	4.0	16.6	5.3	7.3
Green Ext Time (p_c), s	0.0	4.1	0.0	1.7	0.0	2.1	0.0	2.0

Intersection Summary			
HCM 2010 Ctrl Delay			21.7
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	224	52	28	197	39	28	259	17	35	261	18
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	20	277	64	30	214	42	32	294	19	37	275	19
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.81	0.81	0.81	0.92	0.92	0.92	0.88	0.88	0.88	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	401	341	85	426	362	89	1217	78	100	1232	85
Arrive On Green	0.03	0.22	0.22	0.05	0.23	0.23	0.05	0.36	0.36	0.06	0.37	0.37
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3377	217	1774	3361	231
Grp Volume(v), veh/h	20	277	64	30	214	42	32	153	160	37	144	150
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1824	1774	1770	1822
Q Serve(g_s), s	0.5	6.8	1.7	0.8	5.0	1.0	0.9	3.0	3.1	1.0	2.8	2.8
Cycle Q Clear(g_c), s	0.5	6.8	1.7	0.8	5.0	1.0	0.9	3.0	3.1	1.0	2.8	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		0.13
Lane Grp Cap(c), veh/h	60	401	341	85	426	362	89	638	658	100	649	668
V/C Ratio(X)	0.33	0.69	0.19	0.35	0.50	0.12	0.36	0.24	0.24	0.37	0.22	0.22
Avail Cap(c_a), veh/h	249	634	539	249	634	539	249	638	658	249	649	668
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	18.1	16.0	23.0	16.8	15.3	22.9	11.2	11.2	22.7	10.9	10.9
Incr Delay (d2), s/veh	3.2	2.1	0.3	2.5	0.9	0.1	2.4	0.9	0.9	2.3	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.7	0.7	0.5	2.7	0.5	0.5	1.6	1.7	0.6	1.5	1.6
LnGrp Delay(d),s/veh	26.7	20.2	16.3	25.5	17.7	15.4	25.4	12.1	12.1	25.0	11.7	11.7
LnGrp LOS	C	C	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		361			286			345			331	
Approach Delay, s/veh		19.9			18.2			13.3			13.2	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	22.0	6.4	14.7	6.5	22.3	5.7	15.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	18.0	7.0	17.0	7.0	18.0	7.0	17.0
Max Q Clear Time (g_c+I1), s	3.0	5.1	2.8	8.8	2.9	4.8	2.5	7.0
Green Ext Time (p_c), s	0.0	2.7	0.0	1.9	0.0	2.7	0.0	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	16.1
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	47	40	19	40	42	41	865	50	68	966	28
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	25	53	45	23	48	50	44	920	53	73	1039	30
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.84	0.84	0.84	0.94	0.94	0.94	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	131	111	68	116	120	115	1348	78	161	1494	669
Arrive On Green	0.04	0.14	0.14	0.04	0.14	0.14	0.06	0.40	0.40	0.09	0.42	0.42
Sat Flow, veh/h	1774	932	791	1774	837	872	1774	3402	196	1774	3539	1583
Grp Volume(v), veh/h	25	0	98	23	0	98	44	479	494	73	1039	30
Grp Sat Flow(s),veh/h/ln	1774	0	1723	1774	0	1709	1774	1770	1828	1774	1770	1583
Q Serve(g_s), s	0.7	0.0	2.5	0.6	0.0	2.5	1.1	10.7	10.7	1.9	11.5	0.5
Cycle Q Clear(g_c), s	0.7	0.0	2.5	0.6	0.0	2.5	1.1	10.7	10.7	1.9	11.5	0.5
Prop In Lane	1.00		0.46	1.00		0.51	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	73	0	243	68	0	236	115	701	724	161	1494	669
V/C Ratio(X)	0.34	0.00	0.40	0.34	0.00	0.42	0.38	0.68	0.68	0.45	0.70	0.04
Avail Cap(c_a), veh/h	259	0	575	259	0	570	259	701	724	259	1494	669
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.4	0.0	18.8	22.5	0.0	18.9	21.5	12.0	12.0	20.7	11.3	8.2
Incr Delay (d2), s/veh	2.7	0.0	1.1	2.9	0.0	1.2	2.1	5.3	5.2	2.0	2.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.2	0.3	0.0	1.2	0.6	6.2	6.4	1.0	6.0	0.3
LnGrp Delay(d),s/veh	25.1	0.0	19.8	25.3	0.0	20.1	23.6	17.3	17.1	22.7	14.0	8.3
LnGrp LOS	C		B	C		C	C	B	B	C	B	A
Approach Vol, veh/h		123			121			1017			1142	
Approach Delay, s/veh		20.9			21.1			17.5			14.4	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	23.0	5.8	10.8	7.1	24.2	6.0	10.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	3.9	12.7	2.6	4.5	3.1	13.5	2.7	4.5
Green Ext Time (p_c), s	0.0	5.1	0.0	0.7	0.0	4.5	0.0	0.7

Intersection Summary			
HCM 2010 Ctrl Delay			16.4
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	402	761	273	168	502	97	241	551	106	140	709	129
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	428	810	290	195	584	113	265	605	116	154	779	142
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.86	0.86	0.86	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	461	898	402	317	909	173	305	1172	524	193	949	424
Arrive On Green	0.13	0.25	0.25	0.09	0.21	0.21	0.17	0.33	0.33	0.11	0.27	0.27
Sat Flow, veh/h	3442	3539	1583	3442	4292	817	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	428	810	290	195	459	238	265	605	116	154	779	142
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1719	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.2	16.5	12.5	4.1	9.2	9.4	10.9	10.3	3.9	6.3	15.4	5.4
Cycle Q Clear(g_c), s	9.2	16.5	12.5	4.1	9.2	9.4	10.9	10.3	3.9	6.3	15.4	5.4
Prop In Lane	1.00		1.00	1.00		0.48	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	461	898	402	317	718	364	305	1172	524	193	949	424
V/C Ratio(X)	0.93	0.90	0.72	0.61	0.64	0.65	0.87	0.52	0.22	0.80	0.82	0.33
Avail Cap(c_a), veh/h	461	901	403	323	727	369	309	1172	524	285	949	424
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	27.0	25.4	32.6	26.8	26.9	30.1	20.1	18.0	32.5	25.6	22.0
Incr Delay (d2), s/veh	25.1	12.2	6.2	3.4	1.9	4.0	22.2	1.6	1.0	9.4	7.9	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	9.5	6.1	2.1	4.5	4.9	7.2	5.3	1.8	3.6	8.5	2.6
LnGrp Delay(d),s/veh	57.1	39.1	31.7	36.0	28.7	30.9	52.3	21.8	19.0	41.9	33.6	24.1
LnGrp LOS	E	D	C	D	C	C	D	C	B	D	C	C
Approach Vol, veh/h		1528			892			986			1075	
Approach Delay, s/veh		42.7			30.9			29.6			33.5	
Approach LOS		D			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.1	28.7	10.9	22.9	16.8	24.0	14.0	19.8				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	12.0	21.0	7.0	19.0	13.0	20.0	10.0	16.0				
Max Q Clear Time (g_c+I1), s	8.3	12.3	6.1	18.5	12.9	17.4	11.2	11.4				
Green Ext Time (p_c), s	0.1	5.8	0.1	0.4	0.0	2.0	0.0	3.5				
Intersection Summary												
HCM 2010 Ctrl Delay			35.3									
HCM 2010 LOS			D									

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	14	3	36	2	1	11	36	968	2	43	1212	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	58	58	58	97	97	97	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	4	46	3	2	19	41	1098	2	44	1237	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1966	2517	629	1889	2526	550	1257	0	0	1100	0	0
Stage 1	1335	1335	-	1181	1181	-	-	-	-	-	-	-
Stage 2	631	1182	-	708	1345	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	37	28	425	43	27	479	549	-	-	630	-	-
Stage 1	162	221	-	202	262	-	-	-	-	-	-	-
Stage 2	436	262	-	392	218	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	31	24	425	33	23	479	549	-	-	630	-	-
Mov Cap-2 Maneuver	107	103	-	116	99	-	-	-	-	-	-	-
Stage 1	150	206	-	187	242	-	-	-	-	-	-	-
Stage 2	385	242	-	319	203	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	29	19.2	0.4	0.4
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	549	-	-	217	278	630	-	-
HCM Lane V/C Ratio	0.074	-	-	0.313	0.087	0.07	-	-
HCM Control Delay (s)	12.1	-	-	29	19.2	11.1	-	-
HCM Lane LOS	B	-	-	D	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.3	0.3	0.2	-	-

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	16	303	50	14	217	8	28	5	8	6	2	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	88	88	88	60	60	60	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	309	51	16	247	9	47	8	13	8	3	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	247	0	0	309	0	0	628	620	309	631	620	247
Stage 1	-	-	-	-	-	-	342	342	-	278	278	-
Stage 2	-	-	-	-	-	-	286	278	-	353	342	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1319	-	-	1252	-	-	395	404	731	394	404	792
Stage 1	-	-	-	-	-	-	673	638	-	728	680	-
Stage 2	-	-	-	-	-	-	721	680	-	664	638	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1319	-	-	1252	-	-	379	394	731	373	394	792
Mov Cap-2 Maneuver	-	-	-	-	-	-	379	394	-	373	394	-
Stage 1	-	-	-	-	-	-	665	630	-	719	671	-
Stage 2	-	-	-	-	-	-	697	671	-	635	630	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.5	15.2	12.1
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	420	1319	-	-	1252	-	-	533
HCM Lane V/C Ratio	0.163	0.012	-	-	0.013	-	-	0.045
HCM Control Delay (s)	15.2	7.8	-	-	7.9	-	-	12.1
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	0.1

HCM 2010 TWSC
10: Driveway & Cottonwood Ave

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	381	12	0	263	0	4	0	4	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	81	81	81	33	33	33	25	25	25
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	419	13	0	325	0	12	0	12	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	325	0	0	432	0	0	750	750	425
Stage 1	-	-	-	-	-	-	425	425	-
Stage 2	-	-	-	-	-	-	325	325	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1235	-	-	1128	-	-	379	340	629
Stage 1	-	-	-	-	-	-	659	586	-
Stage 2	-	-	-	-	-	-	732	649	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1235	-	-	1128	-	-	379	0	629
Mov Cap-2 Maneuver	-	-	-	-	-	-	379	0	-
Stage 1	-	-	-	-	-	-	659	0	-
Stage 2	-	-	-	-	-	-	732	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	473	1235	-	-	1128	-	-
HCM Lane V/C Ratio	0.051	-	-	-	-	-	-
HCM Control Delay (s)	13	0	-	-	0	-	-
HCM Lane LOS	B	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	11	0	67	0	0	0	49	955	0	0	1148	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	25	25	25	95	95	95	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	0	93	0	0	0	52	1005	0	0	1234	37

Major/Minor	Minor2						Major1			Major2		
Conflicting Flow All	1859	2361	635				1271	0	0	1005	0	0
Stage 1	1253	1253	-				-	-	-	-	-	-
Stage 2	606	1108	-				-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94				4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-				-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32				2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	65	35	421				542	-	-	685	-	-
Stage 1	232	242	-				-	-	-	-	-	-
Stage 2	507	284	-				-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	59	0	421				542	-	-	685	-	-
Mov Cap-2 Maneuver	59	0	-				-	-	-	-	-	-
Stage 1	232	0	-				-	-	-	-	-	-
Stage 2	458	0	-				-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	34.8	0.6	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	542	-	-	226	685	-	-
HCM Lane V/C Ratio	0.095	-	-	0.479	-	-	-
HCM Control Delay (s)	12.3	-	-	34.8	0	-	-
HCM Lane LOS	B	-	-	D	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	2.4	0	-	-

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	78	31	29	61	73	46	870	32	62	816	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	56	87	34	35	73	88	51	956	35	69	907	49
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.83	0.83	0.83	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	298	253	96	258	219	126	1344	601	153	1398	626
Arrive On Green	0.08	0.16	0.16	0.05	0.14	0.14	0.07	0.38	0.38	0.09	0.40	0.40
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	56	87	34	35	73	88	51	956	35	69	907	49
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	1.5	2.1	0.9	1.0	1.8	2.5	1.4	11.5	0.7	1.8	10.4	1.0
Cycle Q Clear(g_c), s	1.5	2.1	0.9	1.0	1.8	2.5	1.4	11.5	0.7	1.8	10.4	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	134	298	253	96	258	219	126	1344	601	153	1398	626
V/C Ratio(X)	0.42	0.29	0.13	0.37	0.28	0.40	0.40	0.71	0.06	0.45	0.65	0.08
Avail Cap(c_a), veh/h	248	596	507	248	596	507	248	1344	601	248	1398	626
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.1	18.5	18.0	22.8	19.3	19.7	22.2	13.2	9.8	21.7	12.3	9.4
Incr Delay (d2), s/veh	2.1	0.5	0.2	2.3	0.6	1.2	2.1	3.2	0.2	2.1	2.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.1	0.4	0.5	0.9	1.2	0.7	6.2	0.3	1.0	5.5	0.5
LnGrp Delay(d),s/veh	24.1	19.0	18.3	25.2	19.9	20.9	24.3	16.4	10.0	23.8	14.6	9.7
LnGrp LOS	C	B	B	C	B	C	C	B	B	C	B	A
Approach Vol, veh/h		177			196			1042			1025	
Approach Delay, s/veh		20.5			21.3			16.6			15.0	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	23.0	6.7	12.0	7.6	23.8	7.8	10.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	3.8	13.5	3.0	4.1	3.4	12.4	3.5	4.5
Green Ext Time (p_c), s	0.0	4.5	0.0	0.9	0.0	5.3	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	16.6
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	71	82	24	34	59	57	22	825	24	26	779	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	82	94	28	39	68	66	26	982	29	30	906	60
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.84	0.84	0.84	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	95	76	456	88	114	456	74	1579	47	83	1609	720
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.04	0.45	0.45	0.05	0.45	0.45
Sat Flow, veh/h	0	265	1583	0	395	1583	1774	3510	104	1774	3539	1583
Grp Volume(v), veh/h	176	0	28	107	0	66	26	495	516	30	906	60
Grp Sat Flow(s),veh/h/ln	265	0	1583	395	0	1583	1774	1770	1844	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.7	0.0	0.0	1.7	0.8	11.9	11.9	0.9	10.4	1.2
Cycle Q Clear(g_c), s	16.0	0.0	0.7	16.0	0.0	1.7	0.8	11.9	11.9	0.9	10.4	1.2
Prop In Lane	0.47		1.00	0.36		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	171	0	456	202	0	456	74	796	829	83	1609	720
V/C Ratio(X)	1.03	0.00	0.06	0.53	0.00	0.14	0.35	0.62	0.62	0.36	0.56	0.08
Avail Cap(c_a), veh/h	171	0	456	202	0	456	223	796	829	223	1609	720
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	0.0	14.4	16.4	0.0	14.7	25.9	11.7	11.7	25.7	11.1	8.6
Incr Delay (d2), s/veh	76.3	0.0	0.1	2.6	0.0	0.1	2.8	3.6	3.5	2.6	1.4	0.2
Initial Q Delay(d3),s/veh	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	0.3	1.4	0.0	0.8	0.4	6.6	6.8	0.5	5.4	0.6
LnGrp Delay(d),s/veh	97.7	0.0	14.4	19.0	0.0	14.9	28.7	15.3	15.2	28.3	12.5	8.8
LnGrp LOS	F		B	B		B	C	B	B	C	B	A
Approach Vol, veh/h		204			173			1037			996	
Approach Delay, s/veh		86.3			17.4			15.6			12.8	
Approach LOS		F			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.6	29.0		20.0	6.3	29.3		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	25.0		16.0	7.0	25.0		16.0
Max Q Clear Time (g_c+I1), s	2.9	13.9		18.0	2.8	12.4		18.0
Green Ext Time (p_c), s	0.0	8.1		0.0	0.0	9.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	20.6
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	195	104	44	243	24	88	213	43	20	171	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	21	250	133	52	289	29	91	220	44	22	184	22
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.78	0.78	0.78	0.84	0.84	0.84	0.97	0.97	0.97	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	383	325	126	449	382	173	1132	222	65	1028	121
Arrive On Green	0.04	0.21	0.21	0.07	0.24	0.24	0.10	0.38	0.38	0.04	0.32	0.32
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	2950	580	1774	3189	377
Grp Volume(v), veh/h	21	250	133	52	289	29	91	130	134	22	101	105
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1760	1774	1770	1796
Q Serve(g_s), s	0.6	6.5	3.8	1.5	7.3	0.7	2.6	2.6	2.7	0.6	2.2	2.2
Cycle Q Clear(g_c), s	0.6	6.5	3.8	1.5	7.3	0.7	2.6	2.6	2.7	0.6	2.2	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.33	1.00		0.21
Lane Grp Cap(c), veh/h	62	383	325	126	449	382	173	679	675	65	571	579
V/C Ratio(X)	0.34	0.65	0.41	0.41	0.64	0.08	0.52	0.19	0.20	0.34	0.18	0.18
Avail Cap(c_a), veh/h	236	601	511	236	601	511	269	679	675	236	571	579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.8	19.2	18.2	23.4	18.0	15.5	22.6	10.8	10.8	24.8	12.8	12.9
Incr Delay (d2), s/veh	3.1	1.9	0.8	2.2	1.5	0.1	2.4	0.6	0.7	3.0	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.5	1.7	0.8	4.0	0.3	1.4	1.4	1.4	0.4	1.1	1.2
LnGrp Delay(d),s/veh	28.0	21.1	19.0	25.6	19.5	15.5	25.1	11.4	11.5	27.8	13.5	13.5
LnGrp LOS	C	C	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		404			370			355			228	
Approach Delay, s/veh		20.8			20.1			15.0			14.9	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.9	24.2	7.7	14.8	9.2	21.0	5.9	16.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	18.0	7.0	17.0	8.0	17.0	7.0	17.0
Max Q Clear Time (g_c+I1), s	2.6	4.7	3.5	8.5	4.6	4.2	2.6	9.3
Green Ext Time (p_c), s	0.0	2.2	0.0	2.3	0.1	2.1	0.0	2.2

Intersection Summary		
HCM 2010 Ctrl Delay		18.1
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	80	125	51	51	157	153	72	743	54	122	650	96
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	101	158	65	89	275	268	79	816	59	140	747	110
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.79	0.79	0.79	0.57	0.57	0.57	0.91	0.91	0.91	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	171	418	355	162	408	347	153	1083	484	190	1156	517
Arrive On Green	0.10	0.22	0.22	0.09	0.22	0.22	0.09	0.31	0.31	0.11	0.33	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	101	158	65	89	275	268	79	816	59	140	747	110
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.2	4.2	2.0	2.8	8.0	9.4	2.5	12.2	1.6	4.5	10.6	3.0
Cycle Q Clear(g_c), s	3.2	4.2	2.0	2.8	8.0	9.4	2.5	12.2	1.6	4.5	10.6	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	171	418	355	162	408	347	153	1083	484	190	1156	517
V/C Ratio(X)	0.59	0.38	0.18	0.55	0.67	0.77	0.52	0.75	0.12	0.74	0.65	0.21
Avail Cap(c_a), veh/h	211	506	431	211	506	431	211	1083	484	241	1156	517
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	19.4	18.5	25.6	21.0	21.6	25.7	18.4	14.7	25.5	16.9	14.3
Incr Delay (d2), s/veh	3.3	0.6	0.2	2.9	2.5	6.7	2.7	4.9	0.5	8.5	2.8	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.2	0.9	1.5	4.3	4.7	1.3	6.6	0.8	2.7	5.6	1.4
LnGrp Delay(d),s/veh	28.7	19.9	18.7	28.5	23.6	28.3	28.4	23.3	15.2	34.0	19.7	15.3
LnGrp LOS	C	B	B	C	C	C	C	C	B	C	B	B
Approach Vol, veh/h		324			632			954			997	
Approach Delay, s/veh		22.4			26.3			23.2			21.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	22.0	9.4	17.2	9.1	23.2	9.7	16.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	18.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.5	14.2	4.8	6.2	4.5	12.6	5.2	11.4
Green Ext Time (p_c), s	0.0	3.0	0.0	2.5	0.0	4.7	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	23.1
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	32	169	58	9	189	28	31	157	14	25	170	17
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	57	302	104	13	278	41	37	187	17	29	195	20
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.56	0.56	0.56	0.68	0.68	0.68	0.84	0.84	0.84	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	135	515	438	41	416	354	99	1123	101	82	1077	109
Arrive On Green	0.08	0.28	0.28	0.02	0.22	0.22	0.06	0.34	0.34	0.05	0.33	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3284	296	1774	3245	329
Grp Volume(v), veh/h	57	302	104	13	278	41	37	100	104	29	105	110
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1811	1774	1770	1805
Q Serve(g_s), s	1.6	7.2	2.6	0.4	7.0	1.1	1.0	2.0	2.1	0.8	2.2	2.2
Cycle Q Clear(g_c), s	1.6	7.2	2.6	0.4	7.0	1.1	1.0	2.0	2.1	0.8	2.2	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.18
Lane Grp Cap(c), veh/h	135	515	438	41	416	354	99	605	619	82	588	599
V/C Ratio(X)	0.42	0.59	0.24	0.32	0.67	0.12	0.37	0.17	0.17	0.35	0.18	0.18
Avail Cap(c_a), veh/h	243	655	557	243	655	557	243	605	619	243	588	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	16.0	14.3	24.6	18.1	15.8	23.3	11.8	11.8	23.7	12.1	12.2
Incr Delay (d2), s/veh	2.1	1.1	0.3	4.4	1.9	0.1	2.3	0.6	0.6	2.6	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	3.8	1.2	0.2	3.8	0.5	0.6	1.1	1.1	0.5	1.2	1.2
LnGrp Delay(d),s/veh	24.7	17.1	14.6	29.0	20.0	16.0	25.6	12.3	12.4	26.2	12.8	12.8
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		463			332			241			244	
Approach Delay, s/veh		17.5			19.8			14.4			14.4	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	21.5	5.2	18.2	6.9	21.0	7.9	15.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	18.0	7.0	17.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	2.8	4.1	2.4	9.2	3.0	4.2	3.6	9.0
Green Ext Time (p_c), s	0.0	1.8	0.0	2.4	0.0	1.8	0.0	2.5

Intersection Summary			
HCM 2010 Ctrl Delay			16.9
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	37	27	24	31	59	30	766	35	60	723	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	25	44	32	31	40	77	31	798	36	67	812	29
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.77	0.77	0.77	0.96	0.96	0.96	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	138	100	88	83	160	88	1361	61	153	1527	683
Arrive On Green	0.04	0.14	0.14	0.05	0.15	0.15	0.05	0.39	0.39	0.09	0.43	0.43
Sat Flow, veh/h	1774	1004	730	1774	571	1098	1774	3449	156	1774	3539	1583
Grp Volume(v), veh/h	25	0	76	31	0	117	31	409	425	67	812	29
Grp Sat Flow(s),veh/h/ln	1774	0	1734	1774	0	1669	1774	1770	1835	1774	1770	1583
Q Serve(g_s), s	0.7	0.0	1.9	0.8	0.0	3.1	0.8	8.8	8.8	1.7	8.1	0.5
Cycle Q Clear(g_c), s	0.7	0.0	1.9	0.8	0.0	3.1	0.8	8.8	8.8	1.7	8.1	0.5
Prop In Lane	1.00		0.42	1.00		0.66	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	73	0	238	88	0	243	88	698	724	153	1527	683
V/C Ratio(X)	0.34	0.00	0.32	0.35	0.00	0.48	0.35	0.59	0.59	0.44	0.53	0.04
Avail Cap(c_a), veh/h	258	0	576	258	0	555	258	698	724	258	1527	683
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.4	0.0	18.7	22.1	0.0	18.9	22.1	11.5	11.5	20.9	10.1	7.9
Incr Delay (d2), s/veh	2.7	0.0	0.8	2.4	0.0	1.5	2.4	3.6	3.5	2.0	1.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.0	0.5	0.0	1.5	0.5	4.9	5.1	0.9	4.2	0.2
LnGrp Delay(d),s/veh	25.2	0.0	19.5	24.6	0.0	20.4	24.6	15.1	14.9	22.9	11.4	8.0
LnGrp LOS	C		B	C		C	C	B	B	C	B	A
Approach Vol, veh/h		101			148			865			908	
Approach Delay, s/veh		20.9			21.3			15.3			12.2	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	23.0	6.4	10.6	6.4	24.8	6.0	11.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	3.7	10.8	2.8	3.9	2.8	10.1	2.7	5.1
Green Ext Time (p_c), s	0.0	5.7	0.0	0.8	0.0	6.0	0.0	0.7

Intersection Summary		
HCM 2010 Ctrl Delay		14.6
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	329	396	206	157	370	87	274	521	68	112	475	153
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	366	440	229	183	430	101	301	573	75	122	516	166
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.86	0.86	0.86	0.91	0.91	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	415	732	328	350	780	178	344	1260	564	167	906	405
Arrive On Green	0.12	0.21	0.21	0.10	0.19	0.19	0.19	0.36	0.36	0.09	0.26	0.26
Sat Flow, veh/h	3442	3539	1583	3442	4142	944	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	366	440	229	183	350	181	301	573	75	122	516	166
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1696	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	6.9	7.5	8.9	3.3	6.2	6.5	10.9	8.3	2.1	4.4	8.4	5.8
Cycle Q Clear(g_c), s	6.9	7.5	8.9	3.3	6.2	6.5	10.9	8.3	2.1	4.4	8.4	5.8
Prop In Lane	1.00		1.00	1.00		0.56	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	415	732	328	350	638	319	344	1260	564	167	906	405
V/C Ratio(X)	0.88	0.60	0.70	0.52	0.55	0.57	0.87	0.45	0.13	0.73	0.57	0.41
Avail Cap(c_a), veh/h	415	853	382	415	817	409	347	1260	564	267	906	405
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.7	23.8	24.4	28.3	24.4	24.5	26.0	16.4	14.5	29.2	21.5	20.5
Incr Delay (d2), s/veh	19.4	0.9	4.6	1.2	0.7	1.6	20.9	1.2	0.5	6.0	2.6	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	3.8	4.3	1.6	2.9	3.2	7.4	4.2	1.0	2.4	4.4	2.9
LnGrp Delay(d),s/veh	48.2	24.7	29.0	29.5	25.1	26.1	46.9	17.6	14.9	35.2	24.1	23.6
LnGrp LOS	D	C	C	C	C	C	D	B	B	D	C	C
Approach Vol, veh/h		1035			714			949			804	
Approach Delay, s/veh		34.0			26.5			26.7			25.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	27.6	10.8	17.7	16.9	21.0	12.0	16.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	20.0	8.0	16.0	13.0	17.0	8.0	16.0
Max Q Clear Time (g_c+I1), s	6.4	10.3	5.3	10.9	12.9	10.4	8.9	8.5
Green Ext Time (p_c), s	0.1	5.2	0.1	2.8	0.0	3.9	0.0	3.8

Intersection Summary		
HCM 2010 Ctrl Delay		28.6
HCM 2010 LOS		C

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	4	27	3	6	14	37	916	3	34	824	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	72	72	72	89	89	89	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	6	42	4	8	19	46	1132	4	39	947	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1697	2262	483	1780	2270	568	967	0	0	1136	0	0
Stage 1	1035	1035	-	1225	1225	-	-	-	-	-	-	-
Stage 2	662	1227	-	555	1045	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	60	40	530	52	40	466	708	-	-	611	-	-
Stage 1	248	307	-	190	249	-	-	-	-	-	-	-
Stage 2	417	249	-	484	304	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	49	35	530	42	35	466	708	-	-	611	-	-
Mov Cap-2 Maneuver	145	121	-	126	124	-	-	-	-	-	-	-
Stage 1	232	287	-	178	233	-	-	-	-	-	-	-
Stage 2	360	233	-	409	285	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	27.4	23.6	0.4	0.4
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	708	-	-	235	225	611	-	-
HCM Lane V/C Ratio	0.065	-	-	0.321	0.142	0.064	-	-
HCM Control Delay (s)	10.4	-	-	27.4	23.6	11.3	-	-
HCM Lane LOS	B	-	-	D	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.3	0.5	0.2	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	23	258	42	3	229	4	31	4	9	2	2	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	58	58	58	79	79	79	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	453	74	5	395	7	39	5	11	3	3	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	395	0	0	453	0	0	947	938	453	947	938	395
Stage 1	-	-	-	-	-	-	533	533	-	405	405	-
Stage 2	-	-	-	-	-	-	414	405	-	542	533	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1164	-	-	1108	-	-	241	264	607	241	264	654
Stage 1	-	-	-	-	-	-	531	525	-	622	598	-
Stage 2	-	-	-	-	-	-	616	598	-	525	525	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1164	-	-	1108	-	-	227	254	607	226	254	654
Mov Cap-2 Maneuver	-	-	-	-	-	-	227	254	-	226	254	-
Stage 1	-	-	-	-	-	-	513	507	-	601	595	-
Stage 2	-	-	-	-	-	-	597	595	-	492	507	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	22.3	13.9
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	263	1164	-	-	1108	-	-	426
HCM Lane V/C Ratio	0.212	0.035	-	-	0.005	-	-	0.047
HCM Control Delay (s)	22.3	8.2	-	-	8.3	-	-	13.9
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0	-	-	0.1

HCM 2010 TWSC
10: Driveway & Cottonwood Ave

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	222	121	19	293	0	47	0	39	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	81	81	81	52	52	52	25	25	25
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	288	157	23	362	0	90	0	75	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	362	0	0	445	0	0	776	776	367
Stage 1	-	-	-	-	-	-	367	367	-
Stage 2	-	-	-	-	-	-	409	409	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1197	-	-	1115	-	-	366	328	678
Stage 1	-	-	-	-	-	-	701	622	-
Stage 2	-	-	-	-	-	-	671	596	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1197	-	-	1115	-	-	358	0	678
Mov Cap-2 Maneuver	-	-	-	-	-	-	358	0	-
Stage 1	-	-	-	-	-	-	701	0	-
Stage 2	-	-	-	-	-	-	657	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	17.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	455	1197	-	-	1115	-	-
HCM Lane V/C Ratio	0.363	-	-	-	0.021	-	-
HCM Control Delay (s)	17.4	0	-	-	8.3	-	-
HCM Lane LOS	C	A	-	-	A	-	-
HCM 95th %tile Q(veh)	1.6	0	-	-	0.1	-	-

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	19	0	71	0	0	0	63	910	0	0	796	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	25	25	25	82	82	82	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	0	89	0	0	0	77	1110	0	0	926	40
Major/Minor	Minor2						Major1			Major2		
Conflicting Flow All	1654	2208	483				965	0	0	1110	0	0
Stage 1	945	945	-				-	-	-	-	-	-
Stage 2	709	1263	-				-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94				4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-				-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32				2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	89	44	530				709	-	-	625	-	-
Stage 1	338	339	-				-	-	-	-	-	-
Stage 2	449	239	-				-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	79	0	530				709	-	-	625	-	-
Mov Cap-2 Maneuver	79	0	-				-	-	-	-	-	-
Stage 1	338	0	-				-	-	-	-	-	-
Stage 2	400	0	-				-	-	-	-	-	-
Approach	EB						NB			SB		
HCM Control Delay, s	32.6						0.7			0		
HCM LOS	D											

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	709	-	-	240	625	-	-
HCM Lane V/C Ratio	0.108	-	-	0.469	-	-	-
HCM Control Delay (s)	10.7	-	-	32.6	0	-	-
HCM Lane LOS	B	-	-	D	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	2.3	0	-	-

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	76	55	83	127	177	57	1031	53	70	844	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	35	110	80	94	144	201	66	1185	61	80	959	30
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.69	0.69	0.69	0.88	0.88	0.88	0.87	0.87	0.87	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	252	214	166	330	280	140	1452	650	154	1482	663
Arrive On Green	0.05	0.14	0.14	0.09	0.18	0.18	0.08	0.41	0.41	0.09	0.42	0.42
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	35	110	80	94	144	201	66	1185	61	80	959	30
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	1.1	3.2	2.7	3.0	4.0	7.0	2.1	17.4	1.4	2.5	12.6	0.7
Cycle Q Clear(g_c), s	1.1	3.2	2.7	3.0	4.0	7.0	2.1	17.4	1.4	2.5	12.6	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	92	252	214	166	330	280	140	1452	650	154	1482	663
V/C Ratio(X)	0.38	0.44	0.37	0.57	0.44	0.72	0.47	0.82	0.09	0.52	0.65	0.05
Avail Cap(c_a), veh/h	212	510	433	212	510	433	212	1452	650	212	1482	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	23.2	23.0	25.4	21.5	22.7	25.8	15.3	10.6	25.5	13.6	10.1
Incr Delay (d2), s/veh	2.6	1.2	1.1	3.0	0.9	3.4	2.5	5.2	0.3	2.7	2.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.7	1.2	1.6	2.2	3.3	1.1	9.4	0.7	1.3	6.6	0.3
LnGrp Delay(d),s/veh	29.4	24.4	24.1	28.4	22.4	26.1	28.2	20.5	10.9	28.2	15.7	10.2
LnGrp LOS	C	C	C	C	C	C	C	C	B	C	B	B
Approach Vol, veh/h		225			439			1312			1069	
Approach Delay, s/veh		25.1			25.4			20.4			16.5	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	28.0	9.5	11.9	8.6	28.5	7.0	14.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.5	19.4	5.0	5.2	4.1	14.6	3.1	9.0
Green Ext Time (p_c), s	0.0	4.1	0.0	1.7	0.0	7.8	0.0	1.4

Intersection Summary			
HCM 2010 Ctrl Delay			20.1
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	67	70	45	61	92	56	31	1032	25	32	885	72
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	77	80	52	81	123	75	36	1200	29	38	1054	86
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.75	0.75	0.75	0.86	0.86	0.86	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	96	69	451	90	99	451	95	1573	38	99	1584	709
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.05	0.45	0.45	0.06	0.45	0.45
Sat Flow, veh/h	0	241	1583	0	347	1583	1774	3532	85	1774	3539	1583
Grp Volume(v), veh/h	157	0	52	204	0	75	36	601	628	38	1054	86
Grp Sat Flow(s),veh/h/ln	241	0	1583	347	0	1583	1774	1770	1848	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	1.4	0.0	0.0	2.0	1.1	16.0	16.0	1.2	13.2	1.8
Cycle Q Clear(g_c), s	16.0	0.0	1.4	16.0	0.0	2.0	1.1	16.0	16.0	1.2	13.2	1.8
Prop In Lane	0.49		1.00	0.40		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	164	0	451	189	0	451	95	788	823	99	1584	709
V/C Ratio(X)	0.96	0.00	0.12	1.08	0.00	0.17	0.38	0.76	0.76	0.38	0.67	0.12
Avail Cap(c_a), veh/h	164	0	451	189	0	451	221	788	823	221	1584	709
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.5	0.0	14.8	20.4	0.0	15.1	25.7	13.1	13.1	25.6	12.2	9.1
Incr Delay (d2), s/veh	57.1	0.0	0.1	88.9	0.0	0.2	2.5	6.9	6.6	2.4	2.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	0.6	7.5	0.0	0.9	0.6	9.2	9.5	0.6	6.8	0.8
LnGrp Delay(d),s/veh	78.6	0.0	14.9	109.3	0.0	15.2	28.1	20.0	19.7	28.0	14.4	9.4
LnGrp LOS	E		B	F		B	C	B	B	C	B	A
Approach Vol, veh/h		209			279			1265			1178	
Approach Delay, s/veh		62.8			84.0			20.1			14.5	
Approach LOS		E			F			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.1	29.0		20.0	7.0	29.1		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	25.0		16.0	7.0	25.0		16.0
Max Q Clear Time (g_c+I1), s	3.2	18.0		18.0	3.1	15.2		18.0
Green Ext Time (p_c), s	0.0	6.0		0.0	0.0	8.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	27.0
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	45	291	125	44	360	83	93	237	29	53	248	47
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	53	342	147	58	474	109	118	300	37	61	285	54
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.76	0.76	0.76	0.79	0.79	0.79	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	121	547	465	128	554	471	178	930	114	132	795	149
Arrive On Green	0.07	0.29	0.29	0.07	0.30	0.30	0.10	0.29	0.29	0.07	0.27	0.27
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3176	388	1774	2977	557
Grp Volume(v), veh/h	53	342	147	58	474	109	118	166	171	61	168	171
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1794	1774	1770	1765
Q Serve(g_s), s	1.7	9.5	4.3	1.9	14.4	3.1	3.8	4.4	4.5	2.0	4.6	4.7
Cycle Q Clear(g_c), s	1.7	9.5	4.3	1.9	14.4	3.1	3.8	4.4	4.5	2.0	4.6	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		0.32
Lane Grp Cap(c), veh/h	121	547	465	128	554	471	178	518	525	132	472	471
V/C Ratio(X)	0.44	0.63	0.32	0.45	0.86	0.23	0.66	0.32	0.33	0.46	0.36	0.36
Avail Cap(c_a), veh/h	207	590	502	207	590	502	207	518	525	207	472	471
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	18.3	16.5	26.7	19.8	15.9	26.0	16.5	16.6	26.6	17.8	17.8
Incr Delay (d2), s/veh	2.5	1.9	0.4	2.5	11.3	0.2	6.2	1.6	1.6	2.5	2.1	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.1	1.9	1.0	9.1	1.4	2.2	2.4	2.4	1.1	2.5	2.6
LnGrp Delay(d),s/veh	29.3	20.2	16.9	29.1	31.2	16.1	32.2	18.2	18.2	29.1	19.9	20.0
LnGrp LOS	C	C	B	C	C	B	C	B	B	C	B	C
Approach Vol, veh/h		542			641			455			400	
Approach Delay, s/veh		20.2			28.4			21.8			21.3	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	21.6	8.3	21.6	10.0	20.0	8.1	21.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	4.0	6.5	3.9	11.5	5.8	6.7	3.7	16.4
Green Ext Time (p_c), s	0.0	2.7	0.0	3.4	0.0	2.7	0.0	1.4

Intersection Summary		
HCM 2010 Ctrl Delay		23.4
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	83	187	66	59	220	170	70	843	66	112	811	89
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	104	234	82	80	297	230	85	1028	80	133	965	106
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.80	0.80	0.80	0.74	0.74	0.74	0.82	0.82	0.82	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	171	417	354	153	398	338	157	1125	503	185	1181	528
Arrive On Green	0.10	0.22	0.22	0.09	0.21	0.21	0.09	0.32	0.32	0.10	0.33	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	104	234	82	80	297	230	85	1028	80	133	965	106
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.4	6.7	2.5	2.6	8.9	8.0	2.7	16.7	2.2	4.3	14.9	2.9
Cycle Q Clear(g_c), s	3.4	6.7	2.5	2.6	8.9	8.0	2.7	16.7	2.2	4.3	14.9	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	171	417	354	153	398	338	157	1125	503	185	1181	528
V/C Ratio(X)	0.61	0.56	0.23	0.52	0.75	0.68	0.54	0.91	0.16	0.72	0.82	0.20
Avail Cap(c_a), veh/h	208	499	424	208	499	424	208	1125	503	208	1181	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.9	20.6	19.0	26.1	22.0	21.6	26.1	19.6	14.6	25.9	18.2	14.2
Incr Delay (d2), s/veh	3.5	1.2	0.3	2.8	4.7	3.1	2.9	12.7	0.7	10.0	6.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	3.5	1.1	1.4	5.1	3.7	1.5	10.1	1.0	2.6	8.3	1.4
LnGrp Delay(d),s/veh	29.4	21.8	19.3	28.9	26.6	24.7	28.9	32.3	15.3	36.0	24.6	15.1
LnGrp LOS	C	C	B	C	C	C	C	C	B	D	C	B
Approach Vol, veh/h		420			607			1193			1204	
Approach Delay, s/veh		23.2			26.2			30.9			25.0	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	23.0	9.1	17.4	9.3	23.9	9.8	16.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.3	18.7	4.6	8.7	4.7	16.9	5.4	10.9
Green Ext Time (p_c), s	0.0	0.3	0.0	2.4	0.0	1.9	0.0	1.9

Intersection Summary		
HCM 2010 Ctrl Delay		27.1
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	95	230	72	43	323	129	99	297	27	31	201	41
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	134	324	101	63	475	190	115	345	31	42	275	56
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.71	0.71	0.71	0.68	0.68	0.68	0.86	0.86	0.86	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	180	585	497	132	535	455	172	973	87	103	756	152
Arrive On Green	0.10	0.31	0.31	0.07	0.29	0.29	0.10	0.30	0.30	0.06	0.26	0.26
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3287	294	1774	2939	590
Grp Volume(v), veh/h	134	324	101	63	475	190	115	185	191	42	164	167
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1811	1774	1770	1759
Q Serve(g_s), s	4.6	9.0	2.9	2.1	15.2	6.0	3.9	5.1	5.2	1.4	4.7	4.9
Cycle Q Clear(g_c), s	4.6	9.0	2.9	2.1	15.2	6.0	3.9	5.1	5.2	1.4	4.7	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.34
Lane Grp Cap(c), veh/h	180	585	497	132	535	455	172	524	536	103	455	452
V/C Ratio(X)	0.74	0.55	0.20	0.48	0.89	0.42	0.67	0.35	0.36	0.41	0.36	0.37
Avail Cap(c_a), veh/h	200	585	497	200	569	483	200	524	536	200	455	452
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.2	17.7	15.6	27.6	21.2	18.0	27.1	17.2	17.2	28.3	18.9	19.0
Incr Delay (d2), s/veh	12.8	1.1	0.2	2.6	15.2	0.6	6.7	1.9	1.8	2.6	2.2	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	4.8	1.3	1.1	10.0	2.7	2.2	2.7	2.8	0.8	2.6	2.7
LnGrp Delay(d),s/veh	39.9	18.9	15.8	30.3	36.4	18.6	33.9	19.1	19.1	30.8	21.1	21.3
LnGrp LOS	D	B	B	C	D	B	C	B	B	C	C	C
Approach Vol, veh/h		559			728			491			373	
Approach Delay, s/veh		23.4			31.2			22.5			22.3	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	22.4	8.6	23.5	10.0	20.0	10.3	21.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.4	7.2	4.1	11.0	5.9	6.9	6.6	17.2
Green Ext Time (p_c), s	0.0	2.6	0.0	3.4	0.0	2.7	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	25.6
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	82	47	80	40	57	94	55	856	54	89	759	75
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	111	64	108	47	67	111	59	920	58	110	937	93
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.74	0.74	0.74	0.85	0.85	0.85	0.93	0.93	0.93	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	184	123	208	116	100	166	134	1164	73	183	1317	589
Arrive On Green	0.10	0.20	0.20	0.07	0.16	0.16	0.08	0.34	0.34	0.10	0.37	0.37
Sat Flow, veh/h	1774	624	1053	1774	632	1046	1774	3382	213	1774	3539	1583
Grp Volume(v), veh/h	111	0	172	47	0	178	59	481	497	110	937	93
Grp Sat Flow(s),veh/h/ln	1774	0	1677	1774	0	1678	1774	1770	1825	1774	1770	1583
Q Serve(g_s), s	3.3	0.0	5.1	1.4	0.0	5.5	1.8	13.5	13.5	3.3	12.5	2.2
Cycle Q Clear(g_c), s	3.3	0.0	5.1	1.4	0.0	5.5	1.8	13.5	13.5	3.3	12.5	2.2
Prop In Lane	1.00		0.63	1.00		0.62	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	184	0	331	116	0	267	134	609	628	183	1317	589
V/C Ratio(X)	0.60	0.00	0.52	0.41	0.00	0.67	0.44	0.79	0.79	0.60	0.71	0.16
Avail Cap(c_a), veh/h	225	0	486	225	0	486	225	609	628	225	1317	589
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.7	0.0	19.8	24.8	0.0	21.8	24.4	16.3	16.3	23.7	14.8	11.6
Incr Delay (d2), s/veh	3.2	0.0	1.3	2.3	0.0	2.9	2.3	10.1	9.8	3.1	3.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	2.5	0.8	0.0	2.7	0.9	8.3	8.5	1.7	6.6	1.0
LnGrp Delay(d),s/veh	26.8	0.0	21.1	27.1	0.0	24.7	26.7	26.4	26.1	26.8	18.1	12.1
LnGrp LOS	C		C	C		C	C	C	C	C	B	B
Approach Vol, veh/h		283			225			1037			1140	
Approach Delay, s/veh		23.3			25.2			26.3			18.5	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	23.0	7.6	14.9	8.2	24.5	9.7	12.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	5.3	15.5	3.4	7.1	3.8	14.5	5.3	7.5
Green Ext Time (p_c), s	0.0	2.9	0.0	1.3	0.0	3.7	0.0	1.3

Intersection Summary			
HCM 2010 Ctrl Delay			22.5
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	174	369	89	132	659	114	240	726	140	175	506	162
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	212	450	109	155	775	134	255	772	149	208	602	193
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.94	0.94	0.94	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	369	848	379	353	1027	176	278	998	446	222	887	397
Arrive On Green	0.11	0.24	0.24	0.10	0.24	0.24	0.16	0.28	0.28	0.13	0.25	0.25
Sat Flow, veh/h	3442	3539	1583	3442	4371	750	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	212	450	109	155	600	309	255	772	149	208	602	193
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1730	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.7	7.1	3.6	2.7	10.5	10.6	9.0	12.8	4.8	7.4	9.8	6.6
Cycle Q Clear(g_c), s	3.7	7.1	3.6	2.7	10.5	10.6	9.0	12.8	4.8	7.4	9.8	6.6
Prop In Lane	1.00		1.00	1.00		0.43	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	369	848	379	353	797	407	278	998	446	222	887	397
V/C Ratio(X)	0.58	0.53	0.29	0.44	0.75	0.76	0.92	0.77	0.33	0.94	0.68	0.49
Avail Cap(c_a), veh/h	377	887	397	377	850	434	278	998	446	222	887	397
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	21.2	19.8	26.9	22.7	22.7	26.5	21.1	18.2	27.7	21.6	20.4
Incr Delay (d2), s/veh	2.0	0.5	0.4	0.9	3.6	7.2	33.2	5.8	2.0	42.8	4.2	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	3.5	1.6	1.3	5.3	5.9	7.0	7.0	2.3	6.2	5.3	3.4
LnGrp Delay(d),s/veh	29.2	21.7	20.2	27.8	26.3	30.0	59.7	26.9	20.2	70.4	25.8	24.6
LnGrp LOS	C	C	C	C	C	C	E	C	C	E	C	C
Approach Vol, veh/h		771			1064			1176			1003	
Approach Delay, s/veh		23.5			27.6			33.1			34.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	22.0	10.6	19.3	14.0	20.0	10.8	19.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	18.0	7.0	16.0	10.0	16.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	9.4	14.8	4.7	9.1	11.0	11.8	5.7	12.6
Green Ext Time (p_c), s	0.0	2.5	0.1	4.4	0.0	3.2	0.1	2.4

Intersection Summary			
HCM 2010 Ctrl Delay			30.2
HCM 2010 LOS			C

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	12	2	37	2	1	16	34	1111	4	13	954	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	68	68	68	87	87	87	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	3	55	3	1	24	43	1405	5	15	1084	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1913	2620	552	2066	2627	705	1105	0	0	1410	0	0
Stage 1	1124	1124	-	1493	1493	-	-	-	-	-	-	-
Stage 2	789	1496	-	573	1134	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	41	24	477	31	23	379	628	-	-	480	-	-
Stage 1	219	279	-	129	185	-	-	-	-	-	-	-
Stage 2	350	184	-	472	276	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	35	22	477	25	21	379	628	-	-	480	-	-
Mov Cap-2 Maneuver	124	99	-	90	98	-	-	-	-	-	-	-
Stage 1	204	270	-	120	172	-	-	-	-	-	-	-
Stage 2	303	171	-	400	267	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.3	20.8	0.3	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	628	-	-	262	255	480	-	-
HCM Lane V/C Ratio	0.068	-	-	0.291	0.11	0.031	-	-
HCM Control Delay (s)	11.2	-	-	24.3	20.8	12.7	-	-
HCM Lane LOS	B	-	-	C	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.2	0.4	0.1	-	-

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	9	307	12	33	423	17	27	10	38	31	11	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	70	70	70	67	67	67	64	64	64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	399	16	47	604	24	40	15	57	48	17	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	604	0	0	399	0	0	1140	1121	399	1157	1121	604
Stage 1	-	-	-	-	-	-	422	422	-	699	699	-
Stage 2	-	-	-	-	-	-	718	699	-	458	422	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	974	-	-	1160	-	-	178	206	651	173	206	498
Stage 1	-	-	-	-	-	-	609	588	-	430	442	-
Stage 2	-	-	-	-	-	-	420	442	-	583	588	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	974	-	-	1160	-	-	152	195	651	143	195	498
Mov Cap-2 Maneuver	-	-	-	-	-	-	152	195	-	143	195	-
Stage 1	-	-	-	-	-	-	601	581	-	425	424	-
Stage 2	-	-	-	-	-	-	370	424	-	512	581	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	28.8	40.5
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	261	974	-	-	1160	-	-	186
HCM Lane V/C Ratio	0.429	0.012	-	-	0.041	-	-	0.47
HCM Control Delay (s)	28.8	8.7	-	-	8.2	-	-	40.5
HCM Lane LOS	D	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	2	0	-	-	0.1	-	-	2.3

HCM 2010 TWSC
10: Driveway & Cottonwood Ave

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	19	310	27	9	444	9	3	0	1	12	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	78	78	78	50	50	50	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	413	36	12	569	12	6	0	2	13	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	581	0	0	449	0	0	1091	1086	431	1081	1098	575
Stage 1	-	-	-	-	-	-	482	482	-	598	598	-
Stage 2	-	-	-	-	-	-	609	604	-	483	500	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	993	-	-	1111	-	-	192	216	624	195	213	518
Stage 1	-	-	-	-	-	-	565	553	-	489	491	-
Stage 2	-	-	-	-	-	-	482	488	-	565	543	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	993	-	-	1111	-	-	177	206	624	188	204	518
Mov Cap-2 Maneuver	-	-	-	-	-	-	177	206	-	188	204	-
Stage 1	-	-	-	-	-	-	546	534	-	472	486	-
Stage 2	-	-	-	-	-	-	456	483	-	544	525	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.2	22.3	17.8
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	216	993	-	-	1111	-	-	316
HCM Lane V/C Ratio	0.037	0.026	-	-	0.01	-	-	0.114
HCM Control Delay (s)	22.3	8.7	0	-	8.3	-	-	17.8
HCM Lane LOS	C	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.4

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	10	30	0	31	13	1056	34	35	968	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	62	62	62	92	92	92	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	16	33	0	34	15	1242	40	41	1139	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1875	2536	571	1945	2518	641	1142	0	0	1282	0	0
Stage 1	1223	1223	-	1293	1293	-	-	-	-	-	-	-
Stage 2	652	1313	-	652	1225	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	44	27	464	39	28	417	608	-	-	537	-	-
Stage 1	190	250	-	172	231	-	-	-	-	-	-	-
Stage 2	423	226	-	423	249	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	37	24	464	35	25	417	608	-	-	537	-	-
Mov Cap-2 Maneuver	37	24	-	35	25	-	-	-	-	-	-	-
Stage 1	185	231	-	168	225	-	-	-	-	-	-	-
Stage 2	379	220	-	377	230	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13	224.4	0.1	0.4
HCM LOS	B	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	608	-	-	464	65	537	-	-
HCM Lane V/C Ratio	0.025	-	-	0.035	1.02	0.077	-	-
HCM Control Delay (s)	11.1	-	-	13	224.4	12.3	-	-
HCM Lane LOS	B	-	-	B	F	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	5.1	0.2	-	-

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	54	161	67	48	106	84	60	879	59	105	1186	56
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	64	189	79	69	151	120	62	916	61	109	1235	58
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.70	0.70	0.70	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	290	246	141	296	251	133	1416	634	173	1496	669
Arrive On Green	0.08	0.16	0.16	0.08	0.16	0.16	0.08	0.40	0.40	0.10	0.42	0.42
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	64	189	79	69	151	120	62	916	61	109	1235	58
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.1	5.7	2.7	2.2	4.5	4.1	2.0	12.6	1.4	3.5	18.6	1.3
Cycle Q Clear(g_c), s	2.1	5.7	2.7	2.2	4.5	4.1	2.0	12.6	1.4	3.5	18.6	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	136	290	246	141	296	251	133	1416	634	173	1496	669
V/C Ratio(X)	0.47	0.65	0.32	0.49	0.51	0.48	0.46	0.65	0.10	0.63	0.83	0.09
Avail Cap(c_a), veh/h	207	497	422	207	497	422	207	1416	634	207	1496	669
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	23.8	22.5	26.4	23.1	23.0	26.6	14.6	11.2	26.0	15.4	10.4
Incr Delay (d2), s/veh	2.5	2.5	0.7	2.6	1.4	1.4	2.5	2.3	0.3	4.4	5.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.1	1.2	1.2	2.4	1.9	1.1	6.6	0.7	1.9	10.0	0.6
LnGrp Delay(d),s/veh	29.1	26.3	23.2	29.0	24.5	24.4	29.1	16.9	11.5	30.4	20.7	10.6
LnGrp LOS	C	C	C	C	C	C	C	B	B	C	C	B
Approach Vol, veh/h		332			340			1039			1402	
Approach Delay, s/veh		26.1			25.3			17.3			21.0	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	28.0	8.8	13.3	8.5	29.4	8.6	13.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	5.5	14.6	4.2	7.7	4.0	20.6	4.1	6.5
Green Ext Time (p_c), s	0.0	7.9	0.0	1.6	0.0	3.1	0.0	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	20.8
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	58	92	26	29	85	58	15	910	43	72	1130	81
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	65	103	29	33	96	65	16	948	45	74	1165	84
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.96	0.96	0.96	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	86	100	438	78	170	438	49	1486	71	149	1730	774
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.03	0.43	0.43	0.08	0.49	0.49
Sat Flow, veh/h	0	362	1583	0	614	1583	1774	3440	163	1774	3539	1583
Grp Volume(v), veh/h	168	0	29	129	0	65	16	488	505	74	1165	84
Grp Sat Flow(s),veh/h/ln	362	0	1583	614	0	1583	1774	1770	1834	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.8	0.0	0.0	1.8	0.5	12.5	12.5	2.3	14.5	1.7
Cycle Q Clear(g_c), s	16.0	0.0	0.8	16.0	0.0	1.8	0.5	12.5	12.5	2.3	14.5	1.7
Prop In Lane	0.39		1.00	0.26		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	186	0	438	248	0	438	49	764	792	149	1730	774
V/C Ratio(X)	0.90	0.00	0.07	0.52	0.00	0.15	0.33	0.64	0.64	0.50	0.67	0.11
Avail Cap(c_a), veh/h	186	0	438	248	0	438	215	764	792	215	1730	774
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.3	0.0	15.4	17.3	0.0	15.8	27.6	12.9	12.9	25.3	11.3	8.0
Incr Delay (d2), s/veh	39.6	0.0	0.1	1.9	0.0	0.2	3.9	4.0	3.9	2.5	2.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	0.3	1.7	0.0	0.8	0.3	7.0	7.2	1.2	7.5	0.8
LnGrp Delay(d),s/veh	60.0	0.0	15.5	19.2	0.0	15.9	31.5	16.9	16.8	27.9	13.4	8.3
LnGrp LOS	E		B	B		B	C	B	B	C	B	A
Approach Vol, veh/h		197			194			1009			1323	
Approach Delay, s/veh		53.4			18.1			17.1			13.9	
Approach LOS		D			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.9	29.0		20.0	5.6	32.3		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	25.0		16.0	7.0	25.0		16.0
Max Q Clear Time (g_c+I1), s	4.3	14.5		18.0	2.5	16.5		18.0
Green Ext Time (p_c), s	0.0	8.4		0.0	0.0	7.0		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			18.2
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	42	324	147	41	253	37	80	263	54	28	268	43
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	49	381	173	50	309	45	96	317	65	29	282	45
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.82	0.82	0.82	0.83	0.83	0.83	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	117	488	415	119	490	417	170	1017	206	80	908	143
Arrive On Green	0.07	0.26	0.26	0.07	0.26	0.26	0.10	0.35	0.35	0.05	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	2934	594	1774	3064	483
Grp Volume(v), veh/h	49	381	173	50	309	45	96	190	192	29	161	166
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1758	1774	1770	1777
Q Serve(g_s), s	1.5	10.9	5.2	1.6	8.4	1.2	3.0	4.5	4.6	0.9	4.1	4.1
Cycle Q Clear(g_c), s	1.5	10.9	5.2	1.6	8.4	1.2	3.0	4.5	4.6	0.9	4.1	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.34	1.00		0.27
Lane Grp Cap(c), veh/h	117	488	415	119	490	417	170	614	610	80	524	527
V/C Ratio(X)	0.42	0.78	0.42	0.42	0.63	0.11	0.57	0.31	0.32	0.36	0.31	0.31
Avail Cap(c_a), veh/h	216	584	497	216	584	497	216	614	610	216	524	527
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.7	19.6	17.5	25.7	18.7	16.0	24.8	13.7	13.7	26.6	15.6	15.7
Incr Delay (d2), s/veh	2.4	5.6	0.7	2.4	1.6	0.1	2.9	1.3	1.4	2.7	1.5	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	6.4	2.4	0.8	4.5	0.6	1.6	2.4	2.4	0.5	2.2	2.3
LnGrp Delay(d),s/veh	28.1	25.2	18.2	28.0	20.3	16.1	27.8	15.0	15.1	29.3	17.2	17.2
LnGrp LOS	C	C	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		603			404			478			356	
Approach Delay, s/veh		23.5			20.8			17.6			18.2	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	23.9	7.8	19.0	9.5	21.0	7.8	19.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	18.0	7.0	17.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	2.9	6.6	3.6	12.9	5.0	6.1	3.5	10.4
Green Ext Time (p_c), s	0.0	3.0	0.0	2.2	0.0	3.1	0.0	2.9

Intersection Summary			
HCM 2010 Ctrl Delay			20.3
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	97	217	62	37	155	96	63	830	45	145	975	119
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	114	255	73	47	199	123	67	883	48	154	1037	127
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.78	0.78	0.78	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	387	329	114	316	269	143	1182	529	199	1295	579
Arrive On Green	0.10	0.21	0.21	0.06	0.17	0.17	0.08	0.33	0.33	0.11	0.37	0.37
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	114	255	73	47	199	123	67	883	48	154	1037	127
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.5	7.1	2.2	1.4	5.6	4.0	2.1	12.6	1.2	4.8	14.9	3.1
Cycle Q Clear(g_c), s	3.5	7.1	2.2	1.4	5.6	4.0	2.1	12.6	1.2	4.8	14.9	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	182	387	329	114	316	269	143	1182	529	199	1295	579
V/C Ratio(X)	0.63	0.66	0.22	0.41	0.63	0.46	0.47	0.75	0.09	0.77	0.80	0.22
Avail Cap(c_a), veh/h	218	524	445	218	524	445	218	1182	529	218	1295	579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	20.7	18.7	25.6	22.0	21.3	25.0	16.8	13.0	24.5	16.2	12.4
Incr Delay (d2), s/veh	4.0	1.9	0.3	2.3	2.1	1.2	2.4	4.3	0.3	14.5	5.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	3.9	1.0	0.8	3.1	1.8	1.1	6.8	0.6	3.2	8.2	1.5
LnGrp Delay(d),s/veh	28.5	22.6	19.0	27.9	24.0	22.5	27.4	21.1	13.3	39.1	21.4	13.3
LnGrp LOS	C	C	B	C	C	C	C	C	B	D	C	B
Approach Vol, veh/h		442			369			998			1318	
Approach Delay, s/veh		23.5			24.0			21.2			22.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	23.0	7.7	15.8	8.6	24.8	9.8	13.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.8	14.6	3.4	9.1	4.1	16.9	5.5	7.6
Green Ext Time (p_c), s	0.0	3.8	0.0	1.8	0.0	1.8	0.0	2.0

Intersection Summary		
HCM 2010 Ctrl Delay		22.5
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	229	52	28	202	39	28	259	17	35	261	18
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	20	283	64	30	220	42	32	294	19	37	275	19
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.81	0.81	0.81	0.92	0.92	0.92	0.88	0.88	0.88	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	406	345	85	432	367	89	1212	78	100	1227	84
Arrive On Green	0.03	0.22	0.22	0.05	0.23	0.23	0.05	0.36	0.36	0.06	0.36	0.36
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3377	217	1774	3361	231
Grp Volume(v), veh/h	20	283	64	30	220	42	32	153	160	37	144	150
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1824	1774	1770	1822
Q Serve(g_s), s	0.6	7.0	1.7	0.8	5.2	1.0	0.9	3.1	3.1	1.0	2.8	2.9
Cycle Q Clear(g_c), s	0.6	7.0	1.7	0.8	5.2	1.0	0.9	3.1	3.1	1.0	2.8	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		0.13
Lane Grp Cap(c), veh/h	60	406	345	85	432	367	89	635	655	100	646	665
V/C Ratio(X)	0.33	0.70	0.19	0.35	0.51	0.11	0.36	0.24	0.24	0.37	0.22	0.23
Avail Cap(c_a), veh/h	248	631	537	248	631	537	248	635	655	248	646	665
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.7	18.1	16.0	23.1	16.8	15.2	23.0	11.3	11.3	22.8	11.0	11.0
Incr Delay (d2), s/veh	3.2	2.2	0.3	2.5	0.9	0.1	2.4	0.9	0.9	2.3	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.9	0.7	0.5	2.7	0.5	0.5	1.6	1.7	0.6	1.5	1.6
LnGrp Delay(d),s/veh	26.8	20.2	16.2	25.6	17.7	15.3	25.5	12.2	12.2	25.1	11.8	11.8
LnGrp LOS	C	C	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		367			292			345			331	
Approach Delay, s/veh		19.9			18.2			13.4			13.3	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	22.0	6.4	14.9	6.5	22.3	5.7	15.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	18.0	7.0	17.0	7.0	18.0	7.0	17.0
Max Q Clear Time (g_c+I1), s	3.0	5.1	2.8	9.0	2.9	4.9	2.6	7.2
Green Ext Time (p_c), s	0.0	2.7	0.0	1.9	0.0	2.7	0.0	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	16.2
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	47	40	19	40	43	41	880	50	69	980	29
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	27	53	45	23	48	51	44	936	53	74	1054	31
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.84	0.84	0.84	0.94	0.94	0.94	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	78	134	113	68	114	121	115	1344	76	162	1491	667
Arrive On Green	0.04	0.14	0.14	0.04	0.14	0.14	0.06	0.39	0.39	0.09	0.42	0.42
Sat Flow, veh/h	1774	932	791	1774	828	880	1774	3405	193	1774	3539	1583
Grp Volume(v), veh/h	27	0	98	23	0	99	44	486	503	74	1054	31
Grp Sat Flow(s),veh/h/ln	1774	0	1723	1774	0	1708	1774	1770	1829	1774	1770	1583
Q Serve(g_s), s	0.7	0.0	2.5	0.6	0.0	2.6	1.1	11.0	11.0	1.9	11.8	0.6
Cycle Q Clear(g_c), s	0.7	0.0	2.5	0.6	0.0	2.6	1.1	11.0	11.0	1.9	11.8	0.6
Prop In Lane	1.00		0.46	1.00		0.52	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	78	0	247	68	0	235	115	698	722	162	1491	667
V/C Ratio(X)	0.35	0.00	0.40	0.34	0.00	0.42	0.38	0.70	0.70	0.46	0.71	0.05
Avail Cap(c_a), veh/h	258	0	573	258	0	567	258	698	722	258	1491	667
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.3	0.0	18.7	22.5	0.0	19.0	21.6	12.2	12.2	20.7	11.5	8.2
Incr Delay (d2), s/veh	2.6	0.0	1.0	2.9	0.0	1.2	2.1	5.7	5.5	2.0	2.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.2	0.3	0.0	1.3	0.6	6.4	6.5	1.0	6.3	0.3
LnGrp Delay(d),s/veh	24.9	0.0	19.8	25.4	0.0	20.2	23.7	17.8	17.7	22.7	14.3	8.4
LnGrp LOS	C		B	C		C	C	B	B	C	B	A
Approach Vol, veh/h		125			122			1033			1159	
Approach Delay, s/veh		20.9			21.2			18.0			14.7	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	23.0	5.9	10.9	7.1	24.3	6.1	10.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	3.9	13.0	2.6	4.5	3.1	13.8	2.7	4.6
Green Ext Time (p_c), s	0.0	4.9	0.0	0.7	0.0	4.3	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	16.7
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	406	761	273	168	502	99	241	561	106	141	719	132
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	432	810	290	195	584	115	265	616	116	155	790	145
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.86	0.86	0.86	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	461	898	402	317	906	175	305	1170	523	194	949	424
Arrive On Green	0.13	0.25	0.25	0.09	0.21	0.21	0.17	0.33	0.33	0.11	0.27	0.27
Sat Flow, veh/h	3442	3539	1583	3442	4278	828	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	432	810	290	195	461	238	265	616	116	155	790	145
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1717	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.3	16.5	12.5	4.1	9.2	9.5	10.9	10.5	3.9	6.4	15.7	5.5
Cycle Q Clear(g_c), s	9.3	16.5	12.5	4.1	9.2	9.5	10.9	10.5	3.9	6.4	15.7	5.5
Prop In Lane	1.00		1.00	1.00		0.48	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	461	898	402	317	718	364	305	1170	523	194	949	424
V/C Ratio(X)	0.94	0.90	0.72	0.61	0.64	0.66	0.87	0.53	0.22	0.80	0.83	0.34
Avail Cap(c_a), veh/h	461	901	403	323	727	368	309	1170	523	285	949	424
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	27.0	25.4	32.6	26.8	26.9	30.1	20.2	18.0	32.4	25.7	22.0
Incr Delay (d2), s/veh	26.8	12.2	6.2	3.4	1.9	4.1	22.2	1.7	1.0	9.6	8.5	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	9.5	6.1	2.1	4.5	4.9	7.2	5.4	1.8	3.6	8.8	2.7
LnGrp Delay(d),s/veh	58.8	39.1	31.7	36.0	28.7	31.0	52.3	21.9	19.0	42.0	34.2	24.2
LnGrp LOS	E	D	C	D	C	C	D	C	B	D	C	C
Approach Vol, veh/h		1532			894			997			1090	
Approach Delay, s/veh		43.3			30.9			29.7			34.0	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	28.7	10.9	22.9	16.8	24.0	14.0	19.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	21.0	7.0	19.0	13.0	20.0	10.0	16.0
Max Q Clear Time (g_c+I1), s	8.4	12.5	6.1	18.5	12.9	17.7	11.3	11.5
Green Ext Time (p_c), s	0.1	5.7	0.1	0.4	0.0	1.8	0.0	3.4

Intersection Summary	
HCM 2010 Ctrl Delay	35.6
HCM 2010 LOS	D

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	14	3	36	2	1	11	36	985	2	43	1230	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	58	58	58	97	97	97	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	4	46	3	2	19	41	1117	2	44	1255	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1994	2554	638	1917	2563	560	1276	0	0	1119	0	0
Stage 1	1353	1353	-	1200	1200	-	-	-	-	-	-	-
Stage 2	641	1201	-	717	1363	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	36	26	419	41	26	472	540	-	-	620	-	-
Stage 1	158	216	-	196	256	-	-	-	-	-	-	-
Stage 2	430	256	-	387	214	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	30	22	419	32	22	472	540	-	-	620	-	-
Mov Cap-2 Maneuver	104	100	-	113	96	-	-	-	-	-	-	-
Stage 1	146	201	-	181	237	-	-	-	-	-	-	-
Stage 2	379	237	-	314	199	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	29.8	19.5	0.4	0.4
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	540	-	-	212	272	620	-	-
HCM Lane V/C Ratio	0.076	-	-	0.321	0.089	0.071	-	-
HCM Control Delay (s)	12.2	-	-	29.8	19.5	11.2	-	-
HCM Lane LOS	B	-	-	D	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.3	0.3	0.2	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	16	308	50	14	222	8	28	5	8	6	2	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	88	88	88	60	60	60	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	314	51	16	252	9	47	8	13	8	3	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	252	0	0	314	0	0	639	631	314	642	631	252
Stage 1	-	-	-	-	-	-	347	347	-	284	284	-
Stage 2	-	-	-	-	-	-	292	284	-	358	347	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1313	-	-	1246	-	-	389	398	726	387	398	787
Stage 1	-	-	-	-	-	-	669	635	-	723	676	-
Stage 2	-	-	-	-	-	-	716	676	-	660	635	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1313	-	-	1246	-	-	373	388	726	367	388	787
Mov Cap-2 Maneuver	-	-	-	-	-	-	373	388	-	367	388	-
Stage 1	-	-	-	-	-	-	661	627	-	714	667	-
Stage 2	-	-	-	-	-	-	692	667	-	631	627	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.5	15.4	12.2
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	414	1313	-	-	1246	-	-	526
HCM Lane V/C Ratio	0.165	0.012	-	-	0.013	-	-	0.046
HCM Control Delay (s)	15.4	7.8	-	-	7.9	-	-	12.2
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	0.1

HCM 2010 TWSC
10: Driveway & Cottonwood Ave

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	22	373	12	0	258	10	4	0	4	13	0	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	81	81	81	33	33	33	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	410	13	0	319	12	12	0	12	14	0	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	331	0	0	423	0	0	804	796	416	796	796	325
Stage 1	-	-	-	-	-	-	465	465	-	325	325	-
Stage 2	-	-	-	-	-	-	339	331	-	471	471	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1228	-	-	1136	-	-	301	320	637	305	320	716
Stage 1	-	-	-	-	-	-	578	563	-	687	649	-
Stage 2	-	-	-	-	-	-	676	645	-	573	560	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1228	-	-	1136	-	-	283	312	637	293	312	716
Mov Cap-2 Maneuver	-	-	-	-	-	-	283	312	-	293	312	-
Stage 1	-	-	-	-	-	-	563	548	-	669	649	-
Stage 2	-	-	-	-	-	-	649	645	-	547	545	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	14.8	13.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	392	1228	-	-	1136	-	-	483
HCM Lane V/C Ratio	0.062	0.02	-	-	-	-	-	0.088
HCM Control Delay (s)	14.8	8	0	-	0	-	-	13.2
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.3

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	10.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	11	0	67	34	0	35	49	938	40	40	1128	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	92	92	92	95	95	95	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	0	93	37	0	38	52	987	42	43	1213	37

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1914	2450	625	1804	2447	515	1249	0	0	1029	0	0
Stage 1	1317	1317	-	1112	1112	-	-	-	-	-	-	-
Stage 2	597	1133	-	692	1335	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	41	31	428	50	31	505	553	-	-	671	-	-
Stage 1	166	225	-	223	282	-	-	-	-	-	-	-
Stage 2	456	276	-	400	221	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	33	26	428	~ 35	26	505	553	-	-	671	-	-
Mov Cap-2 Maneuver	33	26	-	~ 35	26	-	-	-	-	-	-	-
Stage 1	150	211	-	202	255	-	-	-	-	-	-	-
Stage 2	382	250	-	293	207	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	65.9	260	0.6	0.4
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	553	-	-	159	66	671	-	-
HCM Lane V/C Ratio	0.093	-	-	0.681	1.136	0.064	-	-
HCM Control Delay (s)	12.2	-	-	65.9	260	10.7	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	4	5.9	0.2	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	78	36	31	61	73	51	887	34	62	833	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	56	87	40	37	73	88	56	975	37	69	926	49
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.83	0.83	0.83	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	294	250	100	258	219	134	1344	601	153	1382	618
Arrive On Green	0.08	0.16	0.16	0.06	0.14	0.14	0.08	0.38	0.38	0.09	0.39	0.39
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	56	87	40	37	73	88	56	975	37	69	926	49
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	1.5	2.1	1.1	1.0	1.8	2.5	1.5	11.8	0.7	1.8	10.8	1.0
Cycle Q Clear(g_c), s	1.5	2.1	1.1	1.0	1.8	2.5	1.5	11.8	0.7	1.8	10.8	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	134	294	250	100	258	219	134	1344	601	153	1382	618
V/C Ratio(X)	0.42	0.30	0.16	0.37	0.28	0.40	0.42	0.73	0.06	0.45	0.67	0.08
Avail Cap(c_a), veh/h	248	596	506	248	596	506	248	1344	601	248	1382	618
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.1	18.6	18.2	22.8	19.3	19.7	22.1	13.3	9.9	21.7	12.6	9.6
Incr Delay (d2), s/veh	2.1	0.6	0.3	2.3	0.6	1.2	2.1	3.4	0.2	2.1	2.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.1	0.5	0.6	0.9	1.2	0.8	6.3	0.4	1.0	5.6	0.5
LnGrp Delay(d),s/veh	24.1	19.2	18.5	25.0	19.9	20.8	24.1	16.7	10.0	23.8	15.2	9.8
LnGrp LOS	C	B	B	C	B	C	C	B	B	C	B	A
Approach Vol, veh/h		183			198			1068			1044	
Approach Delay, s/veh		20.5			21.3			16.9			15.5	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	23.0	6.8	11.9	7.8	23.5	7.8	10.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	3.8	13.8	3.0	4.1	3.5	12.8	3.5	4.5
Green Ext Time (p_c), s	0.0	4.3	0.0	0.9	0.0	5.1	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	16.9
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	71	82	26	35	59	57	24	849	25	26	803	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	82	94	30	40	68	66	29	1011	30	30	934	60
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.84	0.84	0.84	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	95	76	456	89	111	456	81	1578	47	83	1596	714
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.05	0.45	0.45	0.05	0.45	0.45
Sat Flow, veh/h	0	265	1583	0	386	1583	1774	3510	104	1774	3539	1583
Grp Volume(v), veh/h	176	0	30	108	0	66	29	510	531	30	934	60
Grp Sat Flow(s),veh/h/ln	265	0	1583	386	0	1583	1774	1770	1844	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.8	0.0	0.0	1.7	0.9	12.4	12.4	0.9	10.9	1.2
Cycle Q Clear(g_c), s	16.0	0.0	0.8	16.0	0.0	1.7	0.9	12.4	12.4	0.9	10.9	1.2
Prop In Lane	0.47		1.00	0.37		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	171	0	456	200	0	456	81	796	829	83	1596	714
V/C Ratio(X)	1.03	0.00	0.07	0.54	0.00	0.14	0.36	0.64	0.64	0.36	0.59	0.08
Avail Cap(c_a), veh/h	171	0	456	200	0	456	223	796	829	223	1596	714
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	0.0	14.4	16.4	0.0	14.7	25.7	11.8	11.8	25.7	11.4	8.7
Incr Delay (d2), s/veh	76.3	0.0	0.1	2.9	0.0	0.1	2.7	3.9	3.8	2.6	1.6	0.2
Initial Q Delay(d3),s/veh	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	0.3	1.4	0.0	0.8	0.5	6.8	7.1	0.5	5.7	0.6
LnGrp Delay(d),s/veh	97.7	0.0	14.4	19.3	0.0	14.9	28.4	15.8	15.6	28.3	13.0	8.9
LnGrp LOS	F		B	B		B	C	B	B	C	B	A
Approach Vol, veh/h		206			174			1070			1024	
Approach Delay, s/veh		85.6			17.6			16.0			13.2	
Approach LOS		F			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	29.0		20.0	6.5	29.1		20.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	7.0	25.0		16.0	7.0	25.0		16.0				
Max Q Clear Time (g_c+I1), s	2.9	14.4		18.0	2.9	12.9		18.0				
Green Ext Time (p_c), s	0.0	8.0		0.0	0.0	8.9		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			20.8									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	205	104	44	253	24	88	213	43	20	171	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	21	263	133	52	301	29	91	220	44	22	184	22
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.78	0.78	0.78	0.84	0.84	0.84	0.97	0.97	0.97	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	394	335	125	460	391	173	1122	221	65	1019	120
Arrive On Green	0.04	0.21	0.21	0.07	0.25	0.25	0.10	0.38	0.38	0.04	0.32	0.32
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	2950	580	1774	3189	377
Grp Volume(v), veh/h	21	263	133	52	301	29	91	130	134	22	101	105
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1760	1774	1770	1796
Q Serve(g_s), s	0.6	6.9	3.8	1.5	7.7	0.7	2.6	2.6	2.7	0.6	2.2	2.2
Cycle Q Clear(g_c), s	0.6	6.9	3.8	1.5	7.7	0.7	2.6	2.6	2.7	0.6	2.2	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.33	1.00		0.21
Lane Grp Cap(c), veh/h	62	394	335	125	460	391	173	673	670	65	566	574
V/C Ratio(X)	0.34	0.67	0.40	0.42	0.65	0.07	0.53	0.19	0.20	0.34	0.18	0.18
Avail Cap(c_a), veh/h	233	595	506	233	595	506	267	673	670	233	566	574
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	19.2	18.0	23.7	18.0	15.4	22.8	11.0	11.0	25.0	13.1	13.1
Incr Delay (d2), s/veh	3.1	1.9	0.8	2.2	1.6	0.1	2.5	0.6	0.7	3.1	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.7	1.7	0.8	4.1	0.3	1.4	1.4	1.4	0.4	1.2	1.2
LnGrp Delay(d),s/veh	28.2	21.2	18.8	25.9	19.6	15.4	25.3	11.7	11.7	28.1	13.7	13.8
LnGrp LOS	C	C	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		417			382			355			228	
Approach Delay, s/veh		20.8			20.2			15.2			15.1	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.9	24.2	7.8	15.3	9.2	21.0	5.9	17.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	18.0	7.0	17.0	8.0	17.0	7.0	17.0
Max Q Clear Time (g_c+I1), s	2.6	4.7	3.5	8.9	4.6	4.2	2.6	9.7
Green Ext Time (p_c), s	0.0	2.2	0.0	2.4	0.1	2.1	0.0	2.2

Intersection Summary		
HCM 2010 Ctrl Delay		18.2
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	85	130	51	63	167	162	72	761	60	131	662	96
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	108	165	65	111	293	284	79	836	66	151	761	110
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.79	0.79	0.79	0.57	0.57	0.57	0.91	0.91	0.91	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	173	420	357	175	422	358	152	1065	477	191	1143	511
Arrive On Green	0.10	0.23	0.23	0.10	0.23	0.23	0.09	0.30	0.30	0.11	0.32	0.32
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	108	165	65	111	293	284	79	836	66	151	761	110
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.5	4.5	2.0	3.6	8.6	10.1	2.5	12.9	1.8	5.0	11.1	3.0
Cycle Q Clear(g_c), s	3.5	4.5	2.0	3.6	8.6	10.1	2.5	12.9	1.8	5.0	11.1	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	173	420	357	175	422	358	152	1065	477	191	1143	511
V/C Ratio(X)	0.62	0.39	0.18	0.63	0.70	0.79	0.52	0.78	0.14	0.79	0.67	0.22
Avail Cap(c_a), veh/h	208	498	424	208	498	424	208	1065	477	237	1143	511
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.9	19.7	18.7	25.9	21.2	21.8	26.2	19.1	15.2	26.0	17.5	14.7
Incr Delay (d2), s/veh	4.2	0.6	0.2	4.7	3.4	8.5	2.7	5.8	0.6	13.4	3.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	2.4	0.9	2.0	4.8	5.2	1.4	7.1	0.9	3.1	5.9	1.4
LnGrp Delay(d),s/veh	30.1	20.3	19.0	30.6	24.6	30.3	28.9	24.9	15.9	39.5	20.5	15.7
LnGrp LOS	C	C	B	C	C	C	C	C	B	D	C	B
Approach Vol, veh/h		338			688			981			1022	
Approach Delay, s/veh		23.2			27.9			24.6			22.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	22.0	9.9	17.5	9.1	23.3	9.8	17.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	18.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	7.0	14.9	5.6	6.5	4.5	13.1	5.5	12.1
Green Ext Time (p_c), s	0.0	2.5	0.0	2.6	0.0	4.5	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	24.6
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	32	176	58	9	196	28	31	157	14	25	170	17
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	57	314	104	13	288	41	37	187	17	29	195	20
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.56	0.56	0.56	0.68	0.68	0.68	0.84	0.84	0.84	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	524	445	41	426	362	99	1114	100	82	1070	109
Arrive On Green	0.08	0.28	0.28	0.02	0.23	0.23	0.06	0.34	0.34	0.05	0.33	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3284	296	1774	3245	329
Grp Volume(v), veh/h	57	314	104	13	288	41	37	100	104	29	105	110
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1811	1774	1770	1805
Q Serve(g_s), s	1.6	7.5	2.6	0.4	7.3	1.1	1.0	2.0	2.1	0.8	2.2	2.2
Cycle Q Clear(g_c), s	1.6	7.5	2.6	0.4	7.3	1.1	1.0	2.0	2.1	0.8	2.2	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.18
Lane Grp Cap(c), veh/h	134	524	445	41	426	362	99	600	614	82	583	595
V/C Ratio(X)	0.42	0.60	0.23	0.32	0.68	0.11	0.37	0.17	0.17	0.35	0.18	0.18
Avail Cap(c_a), veh/h	241	650	553	241	650	553	241	600	614	241	583	595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.8	16.0	14.3	24.8	18.2	15.8	23.5	11.9	11.9	23.9	12.3	12.3
Incr Delay (d2), s/veh	2.1	1.1	0.3	4.4	1.9	0.1	2.3	0.6	0.6	2.6	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	4.0	1.2	0.2	3.9	0.5	0.6	1.1	1.1	0.5	1.2	1.2
LnGrp Delay(d),s/veh	24.9	17.1	14.5	29.2	20.0	15.9	25.8	12.5	12.5	26.4	13.0	13.0
LnGrp LOS	C	B	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		475			342			241			244	
Approach Delay, s/veh		17.5			19.9			14.6			14.6	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	21.5	5.2	18.5	6.9	21.0	7.9	15.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	18.0	7.0	17.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	2.8	4.1	2.4	9.5	3.0	4.2	3.6	9.3
Green Ext Time (p_c), s	0.0	1.8	0.0	2.5	0.0	1.8	0.0	2.5

Intersection Summary		
HCM 2010 Ctrl Delay		17.0
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	23	37	27	24	31	60	30	786	35	61	743	28
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	27	44	32	31	40	78	31	819	36	69	835	31
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.77	0.77	0.77	0.96	0.96	0.96	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	78	138	100	88	81	158	88	1360	60	155	1529	684
Arrive On Green	0.04	0.14	0.14	0.05	0.14	0.14	0.05	0.39	0.39	0.09	0.43	0.43
Sat Flow, veh/h	1774	1004	730	1774	565	1103	1774	3454	152	1774	3539	1583
Grp Volume(v), veh/h	27	0	76	31	0	118	31	420	435	69	835	31
Grp Sat Flow(s),veh/h/ln	1774	0	1734	1774	0	1668	1774	1770	1836	1774	1770	1583
Q Serve(g_s), s	0.7	0.0	1.9	0.8	0.0	3.1	0.8	9.1	9.1	1.8	8.5	0.5
Cycle Q Clear(g_c), s	0.7	0.0	1.9	0.8	0.0	3.1	0.8	9.1	9.1	1.8	8.5	0.5
Prop In Lane	1.00		0.42	1.00		0.66	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	78	0	239	88	0	238	88	697	723	155	1529	684
V/C Ratio(X)	0.35	0.00	0.32	0.35	0.00	0.50	0.35	0.60	0.60	0.44	0.55	0.05
Avail Cap(c_a), veh/h	257	0	575	257	0	553	257	697	723	257	1529	684
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.4	0.0	18.8	22.2	0.0	19.1	22.2	11.6	11.6	20.9	10.2	7.9
Incr Delay (d2), s/veh	2.6	0.0	0.8	2.4	0.0	1.6	2.4	3.8	3.7	2.0	1.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.0	0.5	0.0	1.5	0.5	5.2	5.3	0.9	4.4	0.3
LnGrp Delay(d),s/veh	25.0	0.0	19.5	24.6	0.0	20.7	24.6	15.4	15.3	22.9	11.6	8.1
LnGrp LOS	C		B	C		C	C	B	B	C	B	A
Approach Vol, veh/h		103			149			886			935	
Approach Delay, s/veh		21.0			21.5			15.7			12.3	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	23.0	6.4	10.6	6.4	24.8	6.1	10.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	16.0	7.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	3.8	11.1	2.8	3.9	2.8	10.5	2.7	5.1
Green Ext Time (p_c), s	0.0	5.6	0.0	0.8	0.0	6.0	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	14.8
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	334	396	206	157	370	89	274	535	68	114	489	158
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	371	440	229	183	430	103	301	588	75	124	532	172
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.86	0.86	0.86	0.91	0.91	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	415	732	328	350	777	180	344	1258	563	168	906	405
Arrive On Green	0.12	0.21	0.21	0.10	0.19	0.19	0.19	0.36	0.36	0.09	0.26	0.26
Sat Flow, veh/h	3442	3539	1583	3442	4125	958	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	371	440	229	183	351	182	301	588	75	124	532	172
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1694	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	7.1	7.5	8.9	3.3	6.2	6.5	10.9	8.5	2.1	4.5	8.7	6.0
Cycle Q Clear(g_c), s	7.1	7.5	8.9	3.3	6.2	6.5	10.9	8.5	2.1	4.5	8.7	6.0
Prop In Lane	1.00		1.00	1.00		0.57	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	415	732	328	350	638	319	344	1258	563	168	906	405
V/C Ratio(X)	0.89	0.60	0.70	0.52	0.55	0.57	0.87	0.47	0.13	0.74	0.59	0.42
Avail Cap(c_a), veh/h	415	853	382	415	817	408	347	1258	563	267	906	405
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.8	23.8	24.4	28.3	24.4	24.5	26.0	16.5	14.5	29.2	21.6	20.6
Incr Delay (d2), s/veh	21.2	0.9	4.6	1.2	0.7	1.6	20.9	1.2	0.5	6.2	2.8	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	3.8	4.3	1.6	3.0	3.2	7.4	4.4	1.0	2.5	4.6	3.0
LnGrp Delay(d),s/veh	50.0	24.7	29.0	29.5	25.1	26.1	46.9	17.8	15.0	35.4	24.4	23.8
LnGrp LOS	D	C	C	C	C	C	D	B	B	D	C	C
Approach Vol, veh/h		1040			716			964			828	
Approach Delay, s/veh		34.7			26.5			26.7			25.9	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	27.6	10.8	17.7	16.9	21.0	12.0	16.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	20.0	8.0	16.0	13.0	17.0	8.0	16.0
Max Q Clear Time (g_c+I1), s	6.5	10.5	5.3	10.9	12.9	10.7	9.1	8.5
Green Ext Time (p_c), s	0.1	5.2	0.1	2.8	0.0	3.8	0.0	3.8

Intersection Summary			
HCM 2010 Ctrl Delay			28.8
HCM 2010 LOS			C

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	4	27	3	6	14	37	940	3	34	848	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	72	72	72	89	89	89	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	6	42	4	8	19	46	1162	4	39	975	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1740	2320	497	1824	2327	583	994	0	0	1166	0	0
Stage 1	1063	1063	-	1255	1255	-	-	-	-	-	-	-
Stage 2	677	1257	-	569	1072	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	56	37	519	48	37	456	692	-	-	595	-	-
Stage 1	238	298	-	182	241	-	-	-	-	-	-	-
Stage 2	409	241	-	474	295	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	46	32	519	38	32	456	692	-	-	595	-	-
Mov Cap-2 Maneuver	139	116	-	120	118	-	-	-	-	-	-	-
Stage 1	222	278	-	170	225	-	-	-	-	-	-	-
Stage 2	352	225	-	398	276	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	28.5	24.5	0.4	0.4
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	692	-	-	227	216	595	-	-
HCM Lane V/C Ratio	0.066	-	-	0.332	0.148	0.066	-	-
HCM Control Delay (s)	10.6	-	-	28.5	24.5	11.5	-	-
HCM Lane LOS	B	-	-	D	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.4	0.5	0.2	-	-

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	23	265	42	3	236	4	31	4	9	2	2	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	58	58	58	79	79	79	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	465	74	5	407	7	39	5	11	3	3	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	407	0	0	465	0	0	972	963	465	971	963	407
Stage 1	-	-	-	-	-	-	546	546	-	417	417	-
Stage 2	-	-	-	-	-	-	426	417	-	554	546	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1152	-	-	1096	-	-	232	256	597	232	256	644
Stage 1	-	-	-	-	-	-	522	518	-	613	591	-
Stage 2	-	-	-	-	-	-	606	591	-	517	518	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1152	-	-	1096	-	-	218	246	597	217	246	644
Mov Cap-2 Maneuver	-	-	-	-	-	-	218	246	-	217	246	-
Stage 1	-	-	-	-	-	-	504	500	-	592	588	-
Stage 2	-	-	-	-	-	-	587	588	-	485	500	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	23.1	14.1
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	254	1152	-	-	1096	-	-	415
HCM Lane V/C Ratio	0.219	0.035	-	-	0.005	-	-	0.048
HCM Control Delay (s)	23.1	8.2	-	-	8.3	-	-	14.1
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	31	211	121	19	286	14	47	0	39	18	0	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	81	81	81	52	52	52	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	274	157	23	353	17	90	0	75	20	0	41

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	370	0	0	431	0	0	862	850	353	880	921	362
Stage 1	-	-	-	-	-	-	433	433	-	409	409	-
Stage 2	-	-	-	-	-	-	429	417	-	471	512	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1189	-	-	1129	-	-	275	298	691	268	270	683
Stage 1	-	-	-	-	-	-	601	582	-	619	596	-
Stage 2	-	-	-	-	-	-	604	591	-	573	536	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1189	-	-	1129	-	-	246	279	691	227	253	683
Mov Cap-2 Maneuver	-	-	-	-	-	-	246	279	-	227	253	-
Stage 1	-	-	-	-	-	-	574	556	-	591	584	-
Stage 2	-	-	-	-	-	-	556	579	-	488	512	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.5	24.5	15.2
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	347	1189	-	-	1129	-	-	415
HCM Lane V/C Ratio	0.477	0.034	-	-	0.021	-	-	0.147
HCM Control Delay (s)	24.5	8.1	0	-	8.3	-	-	15.2
HCM Lane LOS	C	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	2.5	0.1	-	-	0.1	-	-	0.5

Intersection	
Int Delay, s/veh	26

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	19	0	71	49	0	50	63	887	55	55	768	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	92	92	92	82	82	82	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	0	89	53	0	54	77	1082	67	64	893	40

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1736	2343	466	1843	2329	574	933	0	0	1149	0	0
Stage 1	1041	1041	-	1269	1269	-	-	-	-	-	-	-
Stage 2	695	1302	-	574	1060	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	56	36	543	~ 46	37	462	729	-	-	604	-	-
Stage 1	246	305	-	178	238	-	-	-	-	-	-	-
Stage 2	399	229	-	471	299	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	42	29	543	~ 33	30	462	729	-	-	604	-	-
Mov Cap-2 Maneuver	42	29	-	~ 33	30	-	-	-	-	-	-	-
Stage 1	220	273	-	159	213	-	-	-	-	-	-	-
Stage 2	315	205	-	352	267	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	74.3	$ 498.3	0.7	0.7
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	729	-	-	154	62	604	-	-
HCM Lane V/C Ratio	0.105	-	-	0.731	1.736	0.106	-	-
HCM Control Delay (s)	10.5	-	-	74.3	$ 498.3	11.7	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0.4	-	-	4.4	9.8	0.4	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	39	92	59	111	158	199	61	1385	65	78	1125	32
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	57	133	86	126	180	226	70	1592	75	89	1278	36
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.69	0.69	0.69	0.88	0.88	0.88	0.87	0.87	0.87	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	276	235	145	315	268	117	1813	811	127	1833	820
Arrive On Green	0.06	0.15	0.15	0.08	0.17	0.17	0.07	0.51	0.51	0.07	0.52	0.52
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	57	133	86	126	180	226	70	1592	75	89	1278	36
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.7	5.6	4.2	6.0	7.6	11.9	3.3	34.3	2.1	4.2	23.4	1.0
Cycle Q Clear(g_c), s	2.7	5.6	4.2	6.0	7.6	11.9	3.3	34.3	2.1	4.2	23.4	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	107	276	235	145	315	268	117	1813	811	127	1833	820
V/C Ratio(X)	0.53	0.48	0.37	0.87	0.57	0.84	0.60	0.88	0.09	0.70	0.70	0.04
Avail Cap(c_a), veh/h	145	347	295	145	347	295	165	1813	811	145	1833	820
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	33.6	32.9	39.0	32.8	34.6	39.0	18.6	10.7	39.0	15.6	10.2
Incr Delay (d2), s/veh	4.0	1.3	1.0	39.9	1.9	18.3	4.8	6.4	0.2	12.0	2.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.0	1.9	4.5	4.1	6.5	1.8	18.2	1.0	2.5	11.9	0.4
LnGrp Delay(d),s/veh	43.2	34.9	33.9	78.9	34.7	52.8	43.8	25.0	11.0	51.0	17.9	10.3
LnGrp LOS	D	C	C	E	C	D	D	C	B	D	B	B
Approach Vol, veh/h		276			532			1737			1403	
Approach Delay, s/veh		36.3			52.9			25.1			19.8	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	48.0	11.0	16.7	9.7	48.5	9.2	18.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	44.0	7.0	16.0	8.0	43.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.2	36.3	8.0	7.6	5.3	25.4	4.7	13.9
Green Ext Time (p_c), s	0.0	7.3	0.0	1.8	0.0	15.8	0.0	0.6

Intersection Summary		
HCM 2010 Ctrl Delay		27.7
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	74	77	49	66	102	62	33	1390	26	35	1188	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	85	89	56	88	136	83	38	1616	30	42	1414	94
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.75	0.75	0.75	0.86	0.86	0.86	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	58	379	75	72	379	94	1863	35	101	1868	836
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.05	0.52	0.52	0.06	0.53	0.53
Sat Flow, veh/h	0	243	1583	0	299	1583	1774	3555	66	1774	3539	1583
Grp Volume(v), veh/h	174	0	56	224	0	83	38	803	843	42	1414	94
Grp Sat Flow(s),veh/h/ln	243	0	1583	299	0	1583	1774	1770	1851	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	1.9	0.0	0.0	2.8	1.4	26.4	26.6	1.5	21.0	2.0
Cycle Q Clear(g_c), s	16.0	0.0	1.9	16.0	0.0	2.8	1.4	26.4	26.6	1.5	21.0	2.0
Prop In Lane	0.49		1.00	0.39		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	138	0	379	147	0	379	94	927	970	101	1868	836
V/C Ratio(X)	1.26	0.00	0.15	1.53	0.00	0.22	0.40	0.87	0.87	0.42	0.76	0.11
Avail Cap(c_a), veh/h	138	0	379	147	0	379	186	927	970	186	1868	836
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	0.0	20.0	26.2	0.0	20.4	30.6	13.9	13.9	30.4	12.4	7.9
Incr Delay (d2), s/veh	161.5	0.0	0.2	268.5	0.0	0.3	2.8	10.7	10.4	2.7	2.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	0.0	0.8	13.6	0.0	1.2	0.7	15.5	16.2	0.8	10.8	0.9
LnGrp Delay(d),s/veh	188.6	0.0	20.2	294.7	0.0	20.7	33.4	24.5	24.3	33.2	15.3	8.2
LnGrp LOS	F		C	F		C	C	C	C	C	B	A
Approach Vol, veh/h		230			307			1684			1550	
Approach Delay, s/veh		147.6			220.6			24.6			15.4	
Approach LOS		F			F			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.8	39.0		20.0	7.5	39.2		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	35.0		16.0	7.0	35.0		16.0
Max Q Clear Time (g_c+I1), s	3.5	28.6		18.0	3.4	23.0		18.0
Green Ext Time (p_c), s	0.0	6.2		0.0	0.0	11.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	44.3
HCM 2010 LOS	D

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	327	138	49	407	92	103	330	32	59	408	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	59	385	162	64	536	121	130	418	41	68	469	60
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.76	0.76	0.76	0.79	0.79	0.79	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	567	482	134	574	488	180	920	90	139	819	104
Arrive On Green	0.07	0.30	0.30	0.08	0.31	0.31	0.10	0.28	0.28	0.08	0.26	0.26
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3258	318	1774	3159	402
Grp Volume(v), veh/h	59	385	162	64	536	121	130	226	233	68	262	267
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1807	1774	1770	1792
Q Serve(g_s), s	2.0	11.2	4.9	2.1	17.3	3.5	4.4	6.5	6.6	2.3	7.9	8.0
Cycle Q Clear(g_c), s	2.0	11.2	4.9	2.1	17.3	3.5	4.4	6.5	6.6	2.3	7.9	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		0.22
Lane Grp Cap(c), veh/h	128	567	482	134	574	488	180	500	510	139	459	465
V/C Ratio(X)	0.46	0.68	0.34	0.48	0.93	0.25	0.72	0.45	0.46	0.49	0.57	0.58
Avail Cap(c_a), veh/h	201	574	488	201	574	488	201	500	510	201	459	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	18.8	16.6	27.3	20.7	16.0	26.9	18.2	18.2	27.3	19.9	19.9
Incr Delay (d2), s/veh	2.6	3.2	0.4	2.6	22.7	0.3	10.8	2.9	2.9	2.7	5.1	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	6.2	2.2	1.1	12.4	1.6	2.7	3.5	3.6	1.2	4.5	4.6
LnGrp Delay(d),s/veh	30.0	22.0	17.0	30.0	43.4	16.3	37.6	21.2	21.2	29.9	24.9	25.0
LnGrp LOS	C	C	B	C	D	B	D	C	C	C	C	C
Approach Vol, veh/h		606			721			589			597	
Approach Delay, s/veh		21.4			37.7			24.8			25.5	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	21.4	8.7	22.8	10.2	20.0	8.5	23.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	4.3	8.6	4.1	13.2	6.4	10.0	4.0	19.3
Green Ext Time (p_c), s	0.0	3.4	0.0	3.1	0.0	2.9	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		27.9
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	88	204	75	69	243	205	79	1162	74	124	1108	98
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	110	255	94	93	328	277	96	1417	90	148	1319	117
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.80	0.80	0.80	0.74	0.74	0.74	0.82	0.82	0.82	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	380	323	125	366	311	126	1581	707	178	1685	754
Arrive On Green	0.08	0.20	0.20	0.07	0.20	0.20	0.07	0.45	0.45	0.10	0.48	0.48
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	110	255	94	93	328	277	96	1417	90	148	1319	117
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.5	11.3	4.5	4.6	15.4	15.3	4.8	33.1	3.0	7.3	27.9	3.7
Cycle Q Clear(g_c), s	5.5	11.3	4.5	4.6	15.4	15.3	4.8	33.1	3.0	7.3	27.9	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	138	380	323	125	366	311	126	1581	707	178	1685	754
V/C Ratio(X)	0.80	0.67	0.29	0.74	0.90	0.89	0.76	0.90	0.13	0.83	0.78	0.16
Avail Cap(c_a), veh/h	139	380	323	139	374	318	139	1581	707	178	1685	754
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.6	32.9	30.2	40.8	35.1	35.1	40.9	22.9	14.5	39.5	19.6	13.3
Incr Delay (d2), s/veh	26.6	4.6	0.5	17.6	23.0	25.0	20.0	8.4	0.4	26.8	3.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	6.3	2.0	2.9	10.3	8.8	3.0	18.0	1.4	4.9	14.4	1.7
LnGrp Delay(d),s/veh	67.2	37.5	30.7	58.4	58.1	60.0	60.9	31.2	14.9	66.3	23.3	13.7
LnGrp LOS	E	D	C	E	E	E	E	C	B	E	C	B
Approach Vol, veh/h		459			698			1603			1584	
Approach Delay, s/veh		43.2			58.9			32.1			26.6	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	44.0	10.3	22.3	10.4	46.6	11.0	21.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	40.0	7.0	18.0	7.0	42.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	9.3	35.1	6.6	13.3	6.8	29.9	7.5	17.4
Green Ext Time (p_c), s	0.0	4.7	0.0	2.0	0.0	11.0	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	35.6
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	105	259	79	47	361	142	109	347	30	34	281	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	148	365	111	69	531	209	127	403	35	47	385	62
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.71	0.71	0.71	0.68	0.68	0.68	0.86	0.86	0.86	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	186	604	514	137	553	470	174	944	82	110	765	122
Arrive On Green	0.10	0.32	0.32	0.08	0.30	0.30	0.10	0.29	0.29	0.06	0.25	0.25
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3297	285	1774	3058	489
Grp Volume(v), veh/h	148	365	111	69	531	209	127	215	223	47	222	225
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1812	1774	1770	1777
Q Serve(g_s), s	5.2	10.5	3.3	2.4	17.9	6.8	4.4	6.3	6.4	1.6	6.9	7.0
Cycle Q Clear(g_c), s	5.2	10.5	3.3	2.4	17.9	6.8	4.4	6.3	6.4	1.6	6.9	7.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.27
Lane Grp Cap(c), veh/h	186	604	514	137	553	470	174	506	519	110	443	444
V/C Ratio(X)	0.80	0.60	0.22	0.50	0.96	0.44	0.73	0.43	0.43	0.43	0.50	0.51
Avail Cap(c_a), veh/h	194	604	514	194	553	470	194	506	519	194	443	444
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.0	18.2	15.7	28.3	22.1	18.2	28.0	18.6	18.6	28.9	20.6	20.6
Incr Delay (d2), s/veh	19.7	1.7	0.2	2.8	28.3	0.7	11.7	2.6	2.6	2.6	4.0	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	5.7	1.5	1.3	13.5	3.0	2.8	3.4	3.5	0.9	3.8	3.9
LnGrp Delay(d),s/veh	47.7	19.9	15.9	31.2	50.4	18.9	39.7	21.2	21.2	31.5	24.6	24.7
LnGrp LOS	D	B	B	C	D	B	D	C	C	C	C	C
Approach Vol, veh/h		624			809			565			494	
Approach Delay, s/veh		25.7			40.6			25.3			25.3	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	22.3	8.9	24.7	10.3	20.0	10.7	23.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.6	8.4	4.4	12.5	6.4	9.0	7.2	19.9
Green Ext Time (p_c), s	0.0	3.0	0.0	3.3	0.0	2.8	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	30.4
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	89	52	88	44	63	103	61	1182	60	97	1057	82
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	120	70	119	52	74	121	66	1271	65	120	1305	101
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.74	0.74	0.74	0.85	0.85	0.85	0.93	0.93	0.93	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	163	115	195	114	100	164	130	1454	74	163	1569	702
Arrive On Green	0.09	0.19	0.19	0.06	0.16	0.16	0.07	0.42	0.42	0.09	0.44	0.44
Sat Flow, veh/h	1774	621	1056	1774	637	1042	1774	3426	175	1774	3539	1583
Grp Volume(v), veh/h	120	0	189	52	0	195	66	656	680	120	1305	101
Grp Sat Flow(s),veh/h/ln	1774	0	1676	1774	0	1679	1774	1770	1832	1774	1770	1583
Q Serve(g_s), s	4.5	0.0	7.1	1.9	0.0	7.6	2.4	23.1	23.2	4.5	22.2	2.6
Cycle Q Clear(g_c), s	4.5	0.0	7.1	1.9	0.0	7.6	2.4	23.1	23.2	4.5	22.2	2.6
Prop In Lane	1.00		0.63	1.00		0.62	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	163	0	310	114	0	264	130	751	778	163	1569	702
V/C Ratio(X)	0.74	0.00	0.61	0.46	0.00	0.74	0.51	0.87	0.87	0.74	0.83	0.14
Avail Cap(c_a), veh/h	182	0	393	182	0	393	182	751	778	182	1569	702
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.2	0.0	25.6	30.8	0.0	27.4	30.5	18.0	18.0	30.2	16.8	11.3
Incr Delay (d2), s/veh	12.9	0.0	1.9	2.8	0.0	4.0	3.1	13.3	13.1	12.9	5.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	3.4	1.0	0.0	3.8	1.3	14.1	14.6	2.8	11.8	1.2
LnGrp Delay(d),s/veh	43.1	0.0	27.5	33.6	0.0	31.4	33.5	31.3	31.1	43.1	22.1	11.7
LnGrp LOS	D		C	C		C	C	C	C	D	C	B
Approach Vol, veh/h		309			247			1402			1526	
Approach Delay, s/veh		33.6			31.9			31.3			23.1	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	33.0	8.4	16.6	9.0	34.3	10.3	14.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	29.0	7.0	16.0	7.0	29.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.5	25.2	3.9	9.1	4.4	24.2	6.5	9.6
Green Ext Time (p_c), s	0.0	3.5	0.0	1.3	0.0	4.5	0.0	1.2

Intersection Summary		
HCM 2010 Ctrl Delay		27.9
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	203	458	100	205	891	244	267	910	211	238	677	237
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	248	559	122	241	1048	287	284	968	224	283	806	282
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.94	0.94	0.94	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	321	887	397	331	1007	275	308	991	443	284	944	422
Arrive On Green	0.09	0.25	0.25	0.10	0.25	0.25	0.17	0.28	0.28	0.16	0.27	0.27
Sat Flow, veh/h	3442	3539	1583	3442	3974	1087	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	248	559	122	241	894	441	284	968	224	283	806	282
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1671	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.3	10.5	4.7	5.1	19.0	19.0	11.8	20.3	8.9	12.0	16.2	11.9
Cycle Q Clear(g_c), s	5.3	10.5	4.7	5.1	19.0	19.0	11.8	20.3	8.9	12.0	16.2	11.9
Prop In Lane	1.00		1.00	1.00		0.65	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	321	887	397	331	859	423	308	991	443	284	944	422
V/C Ratio(X)	0.77	0.63	0.31	0.73	1.04	1.04	0.92	0.98	0.51	1.00	0.85	0.67
Avail Cap(c_a), veh/h	321	887	397	413	859	423	308	991	443	284	944	422
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.2	25.0	22.8	32.9	28.0	28.0	30.5	26.8	22.6	31.5	26.1	24.5
Incr Delay (d2), s/veh	11.0	1.4	0.4	4.9	41.9	55.0	32.2	23.5	4.1	52.5	9.7	8.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	5.3	2.1	2.6	13.8	15.2	8.5	13.1	4.4	10.0	9.1	6.1
LnGrp Delay(d),s/veh	44.2	26.5	23.3	37.8	69.9	83.0	62.7	50.3	26.7	84.0	35.8	32.7
LnGrp LOS	D	C	C	D	F	F	E	D	C	F	D	C
Approach Vol, veh/h		929			1576			1476			1371	
Approach Delay, s/veh		30.8			68.7			49.1			45.1	
Approach LOS		C			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	25.0	11.2	22.8	17.0	24.0	11.0	23.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	21.0	9.0	17.0	13.0	20.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	14.0	22.3	7.1	12.5	13.8	18.2	7.3	21.0
Green Ext Time (p_c), s	0.0	0.0	0.1	3.7	0.0	1.6	0.0	0.0

Intersection Summary			
HCM 2010 Ctrl Delay			50.7
HCM 2010 LOS			D

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	13	2	41	2	1	18	38	1477	4	14	1264	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	68	68	68	87	87	87	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	3	61	3	1	26	48	1867	5	16	1436	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2511	3449	730	2717	3457	936	1459	0	0	1873	0	0
Stage 1	1480	1480	-	1966	1966	-	-	-	-	-	-	-
Stage 2	1031	1969	-	751	1491	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 14	7	365	10	7	266	459	-	-	317	-	-
Stage 1	132	188	-	65	107	-	-	-	-	-	-	-
Stage 2	249	107	-	369	185	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 11	6	365	7	6	266	459	-	-	317	-	-
Mov Cap-2 Maneuver	70	53	-	45	53	-	-	-	-	-	-	-
Stage 1	118	179	-	58	96	-	-	-	-	-	-	-
Stage 2	198	96	-	287	176	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	46.4	32.8	0.3	0.2
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	459	-	-	167	160	317	-	-
HCM Lane V/C Ratio	0.105	-	-	0.5	0.193	0.05	-	-
HCM Control Delay (s)	13.8	-	-	46.4	32.8	17	-	-
HCM Lane LOS	B	-	-	E	D	C	-	-
HCM 95th %tile Q(veh)	0.3	-	-	2.4	0.7	0.2	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	346	13	36	472	19	30	11	42	34	12	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	70	70	70	67	67	67	64	64	64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	449	17	51	674	27	45	16	63	53	19	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	674	0	0	449	0	0	1273	1252	449	1292	1252	674
Stage 1	-	-	-	-	-	-	475	475	-	777	777	-
Stage 2	-	-	-	-	-	-	798	777	-	515	475	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	917	-	-	1111	-	-	144	172	610	140	172	455
Stage 1	-	-	-	-	-	-	570	557	-	390	407	-
Stage 2	-	-	-	-	-	-	380	407	-	543	557	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	917	-	-	1111	-	-	119	162	610	111	162	455
Mov Cap-2 Maneuver	-	-	-	-	-	-	119	162	-	111	162	-
Stage 1	-	-	-	-	-	-	562	549	-	384	388	-
Stage 2	-	-	-	-	-	-	327	388	-	466	549	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	43	65.3
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	213	917	-	-	1111	-	-	148
HCM Lane V/C Ratio	0.582	0.014	-	-	0.046	-	-	0.644
HCM Control Delay (s)	43	9	-	-	8.4	-	-	65.3
HCM Lane LOS	E	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	3.2	0	-	-	0.1	-	-	3.5

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	11	0	0	0	14	1449	0	0	1316	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	62	62	62	92	92	92	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	18	0	0	0	16	1705	0	0	1548	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2435	3288	776	2512	3290	852	1552	0	0	1705	0	0
Stage 1	1550	1550	-	1738	1738	-	-	-	-	-	-	-
Stage 2	885	1738	-	774	1552	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	16	9	340	14	9	303	423	-	-	369	-	-
Stage 1	119	173	-	90	140	-	-	-	-	-	-	-
Stage 2	306	140	-	357	173	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	16	9	340	13	9	303	423	-	-	369	-	-
Mov Cap-2 Maneuver	16	9	-	13	9	-	-	-	-	-	-	-
Stage 1	114	173	-	87	135	-	-	-	-	-	-	-
Stage 2	294	135	-	338	173	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.2	0	0.1	0
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	423	-	-	340	-	369	-	-
HCM Lane V/C Ratio	0.039	-	-	0.052	-	-	-	-
HCM Control Delay (s)	13.9	-	-	16.2	0	0	-	-
HCM Lane LOS	B	-	-	C	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	-	0	-	-

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	68	199	72	67	131	95	65	1268	88	121	1617	75
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	80	234	85	96	187	136	68	1321	92	126	1684	78
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.70	0.70	0.70	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	124	293	249	131	301	256	116	1743	780	157	1825	816
Arrive On Green	0.07	0.16	0.16	0.07	0.16	0.16	0.07	0.49	0.49	0.09	0.52	0.52
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	80	234	85	96	187	136	68	1321	92	126	1684	78
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.7	10.3	4.1	4.5	8.0	6.7	3.2	25.8	2.7	5.9	37.5	2.1
Cycle Q Clear(g_c), s	3.7	10.3	4.1	4.5	8.0	6.7	3.2	25.8	2.7	5.9	37.5	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	124	293	249	131	301	256	116	1743	780	157	1825	816
V/C Ratio(X)	0.65	0.80	0.34	0.74	0.62	0.53	0.58	0.76	0.12	0.80	0.92	0.10
Avail Cap(c_a), veh/h	146	349	297	146	349	297	146	1743	780	187	1825	816
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.7	34.6	32.0	38.7	33.3	32.8	38.7	17.5	11.7	38.1	19.1	10.5
Incr Delay (d2), s/veh	7.5	10.4	0.8	15.8	2.6	1.7	4.6	3.1	0.3	18.6	9.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	6.2	1.8	2.8	4.3	3.1	1.7	13.2	1.2	3.7	20.6	1.0
LnGrp Delay(d),s/veh	46.1	45.1	32.8	54.5	36.0	34.5	43.3	20.7	12.0	56.7	28.4	10.8
LnGrp LOS	D	D	C	D	D	C	D	C	B	E	C	B
Approach Vol, veh/h		399			419			1481			1888	
Approach Delay, s/veh		42.7			39.7			21.2			29.5	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	46.0	10.3	17.4	9.6	48.0	9.9	17.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	42.0	7.0	16.0	7.0	44.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	7.9	27.8	6.5	12.3	5.2	39.5	5.7	10.0
Green Ext Time (p_c), s	0.0	13.2	0.0	1.1	0.0	4.3	0.0	1.6

Intersection Summary			
HCM 2010 Ctrl Delay			28.9
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	64	102	26	31	94	64	15	1323	46	79	1568	89
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	72	115	29	35	106	72	16	1378	48	81	1616	92
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.96	0.96	0.96	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	92	400	71	160	400	48	1653	58	149	1878	840
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.03	0.47	0.47	0.08	0.53	0.53
Sat Flow, veh/h	0	364	1583	0	633	1583	1774	3490	121	1774	3539	1583
Grp Volume(v), veh/h	187	0	29	141	0	72	16	698	728	81	1616	92
Grp Sat Flow(s),veh/h/ln	364	0	1583	633	0	1583	1774	1770	1841	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.9	0.0	0.0	2.3	0.6	21.7	21.8	2.8	25.0	1.8
Cycle Q Clear(g_c), s	16.0	0.0	0.9	16.0	0.0	2.3	0.6	21.7	21.8	2.8	25.0	1.8
Prop In Lane	0.39		1.00	0.25		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	171	0	400	231	0	400	48	838	872	149	1878	840
V/C Ratio(X)	1.09	0.00	0.07	0.61	0.00	0.18	0.33	0.83	0.83	0.54	0.86	0.11
Avail Cap(c_a), veh/h	171	0	400	231	0	400	196	838	872	196	1878	840
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.9	0.0	18.0	20.0	0.0	18.5	30.2	14.5	14.5	27.8	12.8	7.4
Incr Delay (d2), s/veh	96.5	0.0	0.1	4.6	0.0	0.2	4.0	9.5	9.3	3.1	5.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	0.0	0.4	2.3	0.0	1.0	0.3	12.7	13.2	1.5	13.3	0.9
LnGrp Delay(d),s/veh	120.4	0.0	18.1	24.6	0.0	18.7	34.2	23.9	23.8	30.9	18.3	7.7
LnGrp LOS	F		B	C		B	C	C	C	C	B	A
Approach Vol, veh/h		216			213			1442			1789	
Approach Delay, s/veh		106.6			22.6			24.0			18.3	
Approach LOS		F			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.3	34.0		20.0	5.7	37.6		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	30.0		16.0	7.0	30.0		16.0
Max Q Clear Time (g_c+I1), s	4.8	23.8		18.0	2.6	27.0		18.0
Green Ext Time (p_c), s	0.0	5.9		0.0	0.0	2.9		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		26.0
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	376	162	45	296	41	88	438	60	31	374	47
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	54	442	191	55	361	50	106	528	72	33	394	49
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.82	0.82	0.82	0.83	0.83	0.83	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	124	539	458	125	540	459	173	1000	136	88	860	106
Arrive On Green	0.07	0.29	0.29	0.07	0.29	0.29	0.10	0.32	0.32	0.05	0.27	0.27
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3132	426	1774	3171	392
Grp Volume(v), veh/h	54	442	191	55	361	50	106	298	302	33	219	224
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1788	1774	1770	1794
Q Serve(g_s), s	1.7	13.0	5.8	1.8	10.1	1.4	3.4	8.1	8.2	1.1	6.1	6.1
Cycle Q Clear(g_c), s	1.7	13.0	5.8	1.8	10.1	1.4	3.4	8.1	8.2	1.1	6.1	6.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.22
Lane Grp Cap(c), veh/h	124	539	458	125	540	459	173	565	571	88	480	487
V/C Ratio(X)	0.44	0.82	0.42	0.44	0.67	0.11	0.61	0.53	0.53	0.38	0.46	0.46
Avail Cap(c_a), veh/h	211	600	510	211	600	510	211	565	571	211	480	487
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.3	19.5	16.9	26.3	18.4	15.4	25.5	16.4	16.4	27.1	17.9	17.9
Incr Delay (d2), s/veh	2.4	8.1	0.6	2.4	2.5	0.1	3.5	3.5	3.5	2.6	3.1	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	7.8	2.6	0.9	5.5	0.6	1.8	4.5	4.6	0.6	3.3	3.5
LnGrp Delay(d),s/veh	28.7	27.7	17.5	28.7	20.9	15.5	29.1	19.9	19.9	29.8	21.0	21.0
LnGrp LOS	C	C	B	C	C	B	C	B	B	C	C	C
Approach Vol, veh/h		687			466			706			476	
Approach Delay, s/veh		24.9			21.3			21.3			21.6	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	22.8	8.2	21.1	9.8	20.0	8.1	21.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	10.2	3.8	15.0	5.4	8.1	3.7	12.1
Green Ext Time (p_c), s	0.0	3.0	0.0	2.0	0.0	3.7	0.0	3.1

Intersection Summary	
HCM 2010 Ctrl Delay	22.4
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	103	241	72	44	166	112	74	1226	59	176	1385	131
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	121	284	85	56	213	144	79	1304	63	187	1473	139
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.78	0.78	0.78	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	153	347	295	113	306	260	133	1490	667	210	1645	736
Arrive On Green	0.09	0.19	0.19	0.06	0.16	0.16	0.07	0.42	0.42	0.12	0.46	0.46
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	121	284	85	56	213	144	79	1304	63	187	1473	139
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.1	11.1	3.5	2.3	8.2	6.4	3.3	25.7	1.8	7.9	29.0	3.9
Cycle Q Clear(g_c), s	5.1	11.1	3.5	2.3	8.2	6.4	3.3	25.7	1.8	7.9	29.0	3.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	153	347	295	113	306	260	133	1490	667	210	1645	736
V/C Ratio(X)	0.79	0.82	0.29	0.49	0.70	0.55	0.60	0.88	0.09	0.89	0.90	0.19
Avail Cap(c_a), veh/h	163	392	333	163	392	333	163	1490	667	210	1645	736
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	29.7	26.6	34.4	30.0	29.2	34.1	20.2	13.3	33.0	18.7	11.9
Incr Delay (d2), s/veh	21.8	11.6	0.5	3.3	3.7	1.8	4.2	7.5	0.3	34.0	8.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	6.8	1.6	1.2	4.5	2.9	1.8	14.0	0.8	5.8	15.9	1.8
LnGrp Delay(d),s/veh	55.9	41.3	27.1	37.7	33.7	31.1	38.3	27.6	13.5	67.1	26.7	12.5
LnGrp LOS	E	D	C	D	C	C	D	C	B	E	C	B
Approach Vol, veh/h		490			413			1446			1799	
Approach Delay, s/veh		42.5			33.3			27.6			29.8	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	36.0	8.9	18.2	9.7	39.3	10.5	16.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	32.0	7.0	16.0	7.0	34.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	9.9	27.7	4.3	13.1	5.3	31.0	7.1	10.2
Green Ext Time (p_c), s	0.0	4.1	0.0	1.0	0.0	2.9	0.0	1.8

Intersection Summary			
HCM 2010 Ctrl Delay			30.9
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	259	57	31	230	43	31	355	19	39	322	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	22	320	70	34	250	47	35	403	22	41	339	21
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.81	0.81	0.81	0.92	0.92	0.92	0.88	0.88	0.88	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	456	387	94	485	412	96	1095	60	108	1110	68
Arrive On Green	0.04	0.24	0.24	0.05	0.26	0.26	0.05	0.32	0.32	0.06	0.33	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3414	186	1774	3387	209
Grp Volume(v), veh/h	22	320	70	34	250	47	35	208	217	41	176	184
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1830	1774	1770	1826
Q Serve(g_s), s	0.6	7.8	1.7	0.9	5.7	1.1	0.9	4.5	4.5	1.1	3.7	3.7
Cycle Q Clear(g_c), s	0.6	7.8	1.7	0.9	5.7	1.1	0.9	4.5	4.5	1.1	3.7	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		0.11
Lane Grp Cap(c), veh/h	65	456	387	94	485	412	96	568	587	108	580	599
V/C Ratio(X)	0.34	0.70	0.18	0.36	0.52	0.11	0.37	0.37	0.37	0.38	0.30	0.31
Avail Cap(c_a), veh/h	249	710	603	249	710	603	249	568	587	249	580	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	17.2	14.9	22.8	15.7	14.1	22.8	13.0	13.0	22.5	12.5	12.5
Incr Delay (d2), s/veh	3.0	2.0	0.2	2.4	0.8	0.1	2.3	1.8	1.8	2.2	1.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.3	0.8	0.5	3.0	0.5	0.5	2.5	2.6	0.6	2.0	2.1
LnGrp Delay(d),s/veh	26.4	19.2	15.1	25.2	16.6	14.2	25.1	14.9	14.8	24.7	13.9	13.8
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		412			331			460			401	
Approach Delay, s/veh		18.9			17.1			15.6			15.0	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	20.0	6.6	16.2	6.7	20.3	5.8	17.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	6.5	2.9	9.8	2.9	5.7	2.6	7.7
Green Ext Time (p_c), s	0.0	3.0	0.0	2.4	0.0	3.2	0.0	2.7

Intersection Summary			
HCM 2010 Ctrl Delay			16.6
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	52	44	21	44	46	45	1298	55	75	1400	31
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	27	59	50	25	52	55	48	1381	59	81	1505	33
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.84	0.84	0.84	0.94	0.94	0.94	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	74	101	86	69	88	93	111	1810	77	147	1924	861
Arrive On Green	0.04	0.11	0.11	0.04	0.11	0.11	0.06	0.52	0.52	0.08	0.54	0.54
Sat Flow, veh/h	1774	933	790	1774	830	878	1774	3459	148	1774	3539	1583
Grp Volume(v), veh/h	27	0	109	25	0	107	48	705	735	81	1505	33
Grp Sat Flow(s),veh/h/ln	1774	0	1723	1774	0	1708	1774	1770	1837	1774	1770	1583
Q Serve(g_s), s	1.0	0.0	3.9	0.9	0.0	3.9	1.7	20.5	20.7	2.9	21.9	0.6
Cycle Q Clear(g_c), s	1.0	0.0	3.9	0.9	0.0	3.9	1.7	20.5	20.7	2.9	21.9	0.6
Prop In Lane	1.00		0.46	1.00		0.51	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	74	0	187	69	0	182	111	926	961	147	1924	861
V/C Ratio(X)	0.37	0.00	0.58	0.36	0.00	0.59	0.43	0.76	0.76	0.55	0.78	0.04
Avail Cap(c_a), veh/h	191	0	424	191	0	420	191	926	961	191	1924	861
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	27.6	30.4	0.0	27.7	29.4	12.3	12.3	28.6	11.8	6.9
Incr Delay (d2), s/veh	3.0	0.0	2.8	3.1	0.0	3.0	2.7	5.9	5.8	3.2	3.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	2.0	0.5	0.0	2.0	0.9	11.3	11.7	1.5	11.3	0.3
LnGrp Delay(d),s/veh	33.3	0.0	30.4	33.6	0.0	30.7	32.0	18.2	18.1	31.9	15.0	7.0
LnGrp LOS	C		C	C		C	C	B	B	C	B	A
Approach Vol, veh/h		136			132			1488			1619	
Approach Delay, s/veh		31.0			31.2			18.6			15.7	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	38.0	6.5	11.1	8.1	39.3	6.7	10.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	34.0	7.0	16.0	7.0	34.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.9	22.7	2.9	5.9	3.7	23.9	3.0	5.9
Green Ext Time (p_c), s	0.0	10.4	0.0	0.8	0.0	9.3	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	18.2
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	504	1029	305	260	658	216	270	782	193	309	945	159
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	536	1095	324	302	765	251	297	859	212	340	1038	175
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.86	0.86	0.86	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	590	1062	475	313	834	271	290	933	417	355	1062	475
Arrive On Green	0.17	0.30	0.30	0.09	0.22	0.22	0.16	0.26	0.26	0.20	0.30	0.30
Sat Flow, veh/h	3442	3539	1583	3442	3800	1235	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	536	1095	324	302	682	334	297	859	212	340	1038	175
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1645	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	16.8	33.0	19.8	9.6	21.6	21.9	18.0	26.0	12.5	20.9	32.0	9.6
Cycle Q Clear(g_c), s	16.8	33.0	19.8	9.6	21.6	21.9	18.0	26.0	12.5	20.9	32.0	9.6
Prop In Lane	1.00		1.00	1.00		0.75	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	590	1062	475	313	744	361	290	933	417	355	1062	475
V/C Ratio(X)	0.91	1.03	0.68	0.97	0.92	0.93	1.02	0.92	0.51	0.96	0.98	0.37
Avail Cap(c_a), veh/h	594	1062	475	313	744	361	290	933	417	355	1062	475
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.7	38.5	33.9	49.8	41.9	42.1	46.0	39.4	34.4	43.5	38.1	30.3
Incr Delay (d2), s/veh	17.8	36.0	4.0	41.4	16.1	29.4	58.9	15.6	4.4	36.8	22.7	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	21.4	9.2	6.4	11.8	12.9	13.5	14.7	6.0	13.8	18.9	4.5
LnGrp Delay(d),s/veh	62.6	74.5	37.9	91.2	58.0	71.4	104.9	55.0	38.8	80.3	60.9	32.5
LnGrp LOS	E	F	D	F	E	E	F	D	D	F	E	C
Approach Vol, veh/h		1955			1318			1368			1553	
Approach Delay, s/veh		65.1			69.0			63.3			61.9	
Approach LOS		E			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	33.0	14.0	37.0	22.0	37.0	22.9	28.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	29.0	10.0	33.0	18.0	33.0	19.0	24.0
Max Q Clear Time (g_c+I1), s	22.9	28.0	11.6	35.0	20.0	34.0	18.8	23.9
Green Ext Time (p_c), s	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.1

Intersection Summary			
HCM 2010 Ctrl Delay			64.8
HCM 2010 LOS			E

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	63	101	36	50	81	84	53	1169	54	71	1117	58
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	70	112	40	60	98	101	58	1285	59	79	1241	64
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.83	0.83	0.83	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	222	188	129	210	178	126	1652	739	149	1697	759
Arrive On Green	0.08	0.12	0.12	0.07	0.11	0.11	0.07	0.47	0.47	0.08	0.48	0.48
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	70	112	40	60	98	101	58	1285	59	79	1241	64
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.3	3.5	1.4	2.0	3.1	3.8	1.9	18.9	1.3	2.7	17.5	1.4
Cycle Q Clear(g_c), s	2.3	3.5	1.4	2.0	3.1	3.8	1.9	18.9	1.3	2.7	17.5	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	140	222	188	129	210	178	126	1652	739	149	1697	759
V/C Ratio(X)	0.50	0.51	0.21	0.47	0.47	0.57	0.46	0.78	0.08	0.53	0.73	0.08
Avail Cap(c_a), veh/h	200	480	408	200	480	408	200	1652	739	200	1697	759
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	25.6	24.7	27.6	25.8	26.1	27.7	13.9	9.2	27.3	13.0	8.8
Incr Delay (d2), s/veh	2.7	1.8	0.6	2.6	1.6	2.8	2.6	3.7	0.2	2.9	2.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.9	0.6	1.1	1.7	1.8	1.0	9.9	0.6	1.4	9.1	0.6
LnGrp Delay(d),s/veh	30.2	27.4	25.3	30.2	27.4	28.9	30.3	17.5	9.4	30.2	15.8	9.0
LnGrp LOS	C	C	C	C	C	C	C	B	A	C	B	A
Approach Vol, veh/h		222			259			1402			1384	
Approach Delay, s/veh		27.9			28.7			17.7			16.3	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	33.0	8.5	11.4	8.4	33.8	8.9	11.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	29.0	7.0	16.0	7.0	29.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.7	20.9	4.0	5.5	3.9	19.5	4.3	5.8
Green Ext Time (p_c), s	0.0	7.3	0.0	1.1	0.0	8.5	0.0	1.1

Intersection Summary		
HCM 2010 Ctrl Delay		18.7
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	78	91	26	38	65	63	24	1141	26	29	1096	57
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	90	105	30	44	75	72	29	1358	31	34	1274	66
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.84	0.84	0.84	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	94	77	453	88	111	453	81	1583	36	91	1605	718
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.05	0.45	0.45	0.05	0.45	0.45
Sat Flow, veh/h	0	270	1583	0	387	1583	1774	3537	81	1774	3539	1583
Grp Volume(v), veh/h	195	0	30	119	0	72	29	679	710	34	1274	66
Grp Sat Flow(s),veh/h/ln	270	0	1583	387	0	1583	1774	1770	1849	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.8	0.0	0.0	1.9	0.9	19.2	19.3	1.0	17.2	1.3
Cycle Q Clear(g_c), s	16.0	0.0	0.8	16.0	0.0	1.9	0.9	19.2	19.3	1.0	17.2	1.3
Prop In Lane	0.46		1.00	0.37		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	171	0	453	199	0	453	81	792	827	91	1605	718
V/C Ratio(X)	1.14	0.00	0.07	0.60	0.00	0.16	0.36	0.86	0.86	0.37	0.79	0.09
Avail Cap(c_a), veh/h	171	0	453	199	0	453	222	792	827	222	1605	718
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	0.0	14.5	16.6	0.0	14.9	25.9	13.8	13.8	25.6	13.0	8.7
Incr Delay (d2), s/veh	110.5	0.0	0.1	4.8	0.0	0.2	2.7	11.6	11.2	2.5	4.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	0.0	0.3	1.7	0.0	0.8	0.5	11.8	12.2	0.6	9.2	0.6
LnGrp Delay(d),s/veh	131.8	0.0	14.6	21.5	0.0	15.1	28.6	25.4	25.1	28.1	17.2	9.0
LnGrp LOS	F		B	C		B	C	C	C	C	B	A
Approach Vol, veh/h		225			191			1418			1374	
Approach Delay, s/veh		116.1			19.1			25.3			17.1	
Approach LOS		F			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.9	29.0		20.0	6.5	29.3		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	25.0		16.0	7.0	25.0		16.0
Max Q Clear Time (g_c+I1), s	3.0	21.3		18.0	2.9	19.2		18.0
Green Ext Time (p_c), s	0.0	3.5		0.0	0.0	5.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	27.8
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	261	115	49	315	26	97	278	47	22	239	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	23	335	147	58	375	31	100	287	48	24	257	24
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.78	0.78	0.78	0.84	0.84	0.84	0.97	0.97	0.97	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	459	390	131	527	448	174	1091	180	69	982	91
Arrive On Green	0.04	0.25	0.25	0.07	0.28	0.28	0.10	0.36	0.36	0.04	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3041	503	1774	3275	303
Grp Volume(v), veh/h	23	335	147	58	375	31	100	166	169	24	138	143
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1774	1774	1770	1809
Q Serve(g_s), s	0.7	9.4	4.4	1.8	10.3	0.8	3.1	3.8	3.8	0.7	3.4	3.4
Cycle Q Clear(g_c), s	0.7	9.4	4.4	1.8	10.3	0.8	3.1	3.8	3.8	0.7	3.4	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.28	1.00		0.17
Lane Grp Cap(c), veh/h	67	459	390	131	527	448	174	635	637	69	530	542
V/C Ratio(X)	0.35	0.73	0.38	0.44	0.71	0.07	0.58	0.26	0.27	0.35	0.26	0.26
Avail Cap(c_a), veh/h	219	591	503	219	591	503	219	635	637	219	530	542
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.6	19.6	17.8	25.1	18.3	14.9	24.5	12.9	12.9	26.6	15.1	15.1
Incr Delay (d2), s/veh	3.1	3.3	0.6	2.3	3.5	0.1	3.0	1.0	1.0	3.0	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	5.2	2.0	1.0	5.7	0.4	1.6	2.0	2.1	0.4	1.8	1.9
LnGrp Delay(d),s/veh	29.7	23.0	18.4	27.5	21.8	14.9	27.4	13.9	13.9	29.5	16.3	16.3
LnGrp LOS	C	C	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		505			464			435			305	
Approach Delay, s/veh		21.9			22.0			17.0			17.3	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	24.3	8.2	18.0	9.6	21.0	6.1	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	18.0	7.0	17.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	2.7	5.8	3.8	11.4	5.1	5.4	2.7	12.3
Green Ext Time (p_c), s	0.0	2.7	0.0	2.6	0.0	2.7	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	19.9
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	88	153	65	71	190	189	87	1030	75	154	936	106
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	111	194	82	125	333	332	96	1132	82	177	1076	122
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.79	0.79	0.79	0.57	0.57	0.57	0.91	0.91	0.91	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	150	394	335	157	401	341	144	1286	575	215	1427	639
Arrive On Green	0.08	0.21	0.21	0.09	0.22	0.22	0.08	0.36	0.36	0.12	0.40	0.40
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	111	194	82	125	333	332	96	1132	82	177	1076	122
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.5	6.8	3.2	5.1	12.7	15.5	3.9	22.2	2.6	7.2	19.4	3.7
Cycle Q Clear(g_c), s	4.5	6.8	3.2	5.1	12.7	15.5	3.9	22.2	2.6	7.2	19.4	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	150	394	335	157	401	341	144	1286	575	215	1427	639
V/C Ratio(X)	0.74	0.49	0.25	0.79	0.83	0.97	0.67	0.88	0.14	0.82	0.75	0.19
Avail Cap(c_a), veh/h	167	401	341	167	401	341	167	1286	575	215	1427	639
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.2	25.8	24.4	33.2	27.8	28.9	33.1	22.1	15.9	31.9	19.0	14.3
Incr Delay (d2), s/veh	14.3	1.0	0.4	21.6	13.6	41.5	7.9	8.8	0.5	22.2	3.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	3.6	1.4	3.4	8.0	10.7	2.2	12.4	1.2	4.9	10.2	1.7
LnGrp Delay(d),s/veh	47.5	26.7	24.7	54.8	41.5	70.4	41.0	31.0	16.4	54.0	22.7	15.0
LnGrp LOS	D	C	C	D	D	E	D	C	B	D	C	B
Approach Vol, veh/h		387			790			1310			1375	
Approach Delay, s/veh		32.3			55.8			30.8			26.1	
Approach LOS		C			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	31.0	10.6	19.7	10.0	34.0	10.3	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	27.0	7.0	16.0	7.0	29.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	9.2	24.2	7.1	8.8	5.9	21.4	6.5	17.5
Green Ext Time (p_c), s	0.0	2.5	0.0	2.6	0.0	6.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.4
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑↱		↰	↑↱	
Volume (veh/h)	35	214	64	10	238	31	34	206	15	28	223	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	62	382	114	15	350	46	40	245	18	32	256	22
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.56	0.56	0.56	0.68	0.68	0.68	0.84	0.84	0.84	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	587	499	46	488	415	104	1035	76	88	991	85
Arrive On Green	0.08	0.31	0.31	0.03	0.26	0.26	0.06	0.31	0.31	0.05	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3345	244	1774	3301	282
Grp Volume(v), veh/h	62	382	114	15	350	46	40	129	134	32	136	142
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1820	1774	1770	1813
Q Serve(g_s), s	1.8	9.4	2.8	0.4	9.1	1.2	1.2	2.9	2.9	0.9	3.1	3.2
Cycle Q Clear(g_c), s	1.8	9.4	2.8	0.4	9.1	1.2	1.2	2.9	2.9	0.9	3.1	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		0.16
Lane Grp Cap(c), veh/h	140	587	499	46	488	415	104	547	563	88	531	544
V/C Ratio(X)	0.44	0.65	0.23	0.32	0.72	0.11	0.38	0.24	0.24	0.36	0.26	0.26
Avail Cap(c_a), veh/h	233	664	564	233	664	564	233	547	563	233	531	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	15.7	13.5	25.5	17.9	14.9	24.2	13.7	13.7	24.5	14.1	14.2
Incr Delay (d2), s/veh	2.2	1.9	0.2	4.0	2.4	0.1	2.3	1.0	1.0	2.5	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.1	1.3	0.3	5.0	0.5	0.6	1.5	1.6	0.5	1.7	1.7
LnGrp Delay(d),s/veh	25.6	17.6	13.7	29.4	20.2	15.1	26.5	14.7	14.7	27.0	15.3	15.3
LnGrp LOS	C	B	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		558			411			303			310	
Approach Delay, s/veh		17.7			20.0			16.3			16.5	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	20.5	5.4	20.8	7.1	20.0	8.2	18.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	2.9	4.9	2.4	11.4	3.2	5.2	3.8	11.1
Green Ext Time (p_c), s	0.0	2.2	0.0	2.8	0.0	2.2	0.0	2.9

Intersection Summary		
HCM 2010 Ctrl Delay		17.8
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↑↱		↰	↑↑	↱
Volume (veh/h)	23	41	30	26	34	65	33	1084	39	66	1048	29
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	27	48	35	34	44	84	34	1129	41	74	1178	33
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.77	0.77	0.77	0.96	0.96	0.96	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	76	126	92	92	77	147	92	1539	56	154	1687	755
Arrive On Green	0.04	0.13	0.13	0.05	0.13	0.13	0.05	0.44	0.44	0.09	0.48	0.48
Sat Flow, veh/h	1774	1003	731	1774	574	1096	1774	3484	126	1774	3539	1583
Grp Volume(v), veh/h	27	0	83	34	0	128	34	573	597	74	1178	33
Grp Sat Flow(s),veh/h/ln	1774	0	1734	1774	0	1669	1774	1770	1840	1774	1770	1583
Q Serve(g_s), s	0.8	0.0	2.4	1.0	0.0	3.9	1.0	14.5	14.5	2.2	14.2	0.6
Cycle Q Clear(g_c), s	0.8	0.0	2.4	1.0	0.0	3.9	1.0	14.5	14.5	2.2	14.2	0.6
Prop In Lane	1.00		0.42	1.00		0.66	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	76	0	217	92	0	224	92	782	813	154	1687	755
V/C Ratio(X)	0.35	0.00	0.38	0.37	0.00	0.57	0.37	0.73	0.73	0.48	0.70	0.04
Avail Cap(c_a), veh/h	229	0	511	229	0	492	229	782	813	229	1687	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.3	0.0	21.8	24.9	0.0	22.1	24.9	12.5	12.5	23.6	11.1	7.6
Incr Delay (d2), s/veh	2.7	0.0	1.1	2.5	0.0	2.3	2.5	6.0	5.8	2.3	2.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.2	0.6	0.0	1.9	0.6	8.3	8.6	1.1	7.4	0.3
LnGrp Delay(d),s/veh	28.0	0.0	22.9	27.4	0.0	24.4	27.4	18.6	18.3	26.0	13.6	7.7
LnGrp LOS	C		C	C		C	C	B	B	C	B	A
Approach Vol, veh/h		110			162			1204			1285	
Approach Delay, s/veh		24.2			25.0			18.7			14.1	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	28.0	6.8	10.8	6.8	29.9	6.3	11.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.2	16.5	3.0	4.4	3.0	16.2	2.8	5.9
Green Ext Time (p_c), s	0.0	6.5	0.0	0.8	0.0	6.8	0.0	0.8

Intersection Summary			
HCM 2010 Ctrl Delay			17.2
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	370	519	232	239	489	177	308	725	140	209	679	178
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	411	577	258	278	569	206	338	797	154	227	738	193
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.86	0.86	0.86	0.91	0.91	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	435	765	342	360	722	255	375	1157	517	266	940	420
Arrive On Green	0.13	0.22	0.22	0.10	0.19	0.19	0.21	0.33	0.33	0.15	0.27	0.27
Sat Flow, veh/h	3442	3539	1583	3442	3712	1310	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	411	577	258	278	518	257	338	797	154	227	738	193
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1632	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.4	12.1	12.1	6.2	11.5	11.9	14.7	15.5	5.7	9.9	15.3	8.1
Cycle Q Clear(g_c), s	9.4	12.1	12.1	6.2	11.5	11.9	14.7	15.5	5.7	9.9	15.3	8.1
Prop In Lane	1.00		1.00	1.00		0.80	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	435	765	342	360	660	317	375	1157	517	266	940	420
V/C Ratio(X)	0.94	0.75	0.75	0.77	0.79	0.81	0.90	0.69	0.30	0.85	0.79	0.46
Avail Cap(c_a), veh/h	435	765	342	392	686	330	381	1157	517	292	940	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	29.0	29.0	34.5	30.3	30.4	30.4	23.1	19.9	32.8	27.0	24.3
Incr Delay (d2), s/veh	29.5	4.3	9.1	8.5	5.8	13.5	23.6	3.4	1.5	19.8	6.6	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	6.3	6.1	3.4	5.9	6.5	9.6	8.1	2.7	6.3	8.3	3.9
LnGrp Delay(d),s/veh	63.8	33.3	38.1	43.0	36.1	43.9	54.0	26.5	21.3	52.6	33.5	27.9
LnGrp LOS	E	C	D	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		1246			1053			1289			1158	
Approach Delay, s/veh		44.4			39.8			33.1			36.3	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	29.9	12.3	21.1	20.7	25.0	14.0	19.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	25.0	9.0	17.0	17.0	21.0	10.0	16.0
Max Q Clear Time (g_c+I1), s	11.9	17.5	8.2	14.1	16.7	17.3	11.4	13.9
Green Ext Time (p_c), s	0.1	5.6	0.1	2.2	0.0	3.0	0.0	1.5

Intersection Summary			
HCM 2010 Ctrl Delay			38.3
HCM 2010 LOS			D

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	15	3	40	2	1	12	40	1406	2	47	1678	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	58	58	58	97	97	97	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	4	51	3	2	21	45	1594	2	48	1712	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2708	3506	867	2640	3517	798	1735	0	0	1597	0	0
Stage 1	1819	1819	-	1686	1686	-	-	-	-	-	-	-
Stage 2	889	1687	-	954	1831	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 10	6	296	11	6	329	359	-	-	406	-	-
Stage 1	80	127	-	98	149	-	-	-	-	-	-	-
Stage 2	304	148	-	278	126	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 7	5	296	7	5	329	359	-	-	406	-	-
Mov Cap-2 Maneuver	50	45	-	53	42	-	-	-	-	-	-	-
Stage 1	70	112	-	86	130	-	-	-	-	-	-	-
Stage 2	246	129	-	196	111	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	79.7	33.3	0.5	0.4
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	359	-	-	116	153	406	-	-
HCM Lane V/C Ratio	0.126	-	-	0.641	0.169	0.118	-	-
HCM Control Delay (s)	16.5	-	-	79.7	33.3	15.1	-	-
HCM Lane LOS	C	-	-	F	D	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-	3.3	0.6	0.4	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	378	55	15	252	9	31	6	9	7	2	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	88	88	88	60	60	60	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	386	56	17	286	10	52	10	15	9	3	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	286	0	0	386	0	0	751	742	386	755	742	286
Stage 1	-	-	-	-	-	-	422	422	-	320	320	-
Stage 2	-	-	-	-	-	-	329	320	-	435	422	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1276	-	-	1172	-	-	327	344	662	325	344	753
Stage 1	-	-	-	-	-	-	609	588	-	692	652	-
Stage 2	-	-	-	-	-	-	684	652	-	600	588	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1276	-	-	1172	-	-	312	334	662	304	334	753
Mov Cap-2 Maneuver	-	-	-	-	-	-	312	334	-	304	334	-
Stage 1	-	-	-	-	-	-	600	580	-	682	643	-
Stage 2	-	-	-	-	-	-	658	643	-	568	580	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.4	18.1	13.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	351	1276	-	-	1172	-	-	458
HCM Lane V/C Ratio	0.218	0.014	-	-	0.015	-	-	0.058
HCM Control Delay (s)	18.1	7.9	-	-	8.1	-	-	13.3
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.8	0	-	-	0	-	-	0.2

HCM 2010 TWSC
10: Cottonwood Ave & Driveway

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	464	318	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	81	81	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	510	393	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	393	0	-	0	903	393
Stage 1	-	-	-	-	393	-
Stage 2	-	-	-	-	510	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1166	-	-	-	308	656
Stage 1	-	-	-	-	682	-
Stage 2	-	-	-	-	603	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1166	-	-	-	308	656
Mov Cap-2 Maneuver	-	-	-	-	308	-
Stage 1	-	-	-	-	682	-
Stage 2	-	-	-	-	603	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1166	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	22.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	12	0	74	0	0	0	54	1391	0	0	1608	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	92	92	92	95	95	95	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	0	103	0	0	0	57	1464	0	0	1729	41

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2595	3327	885	2443	3348	732	1770	0	0	1464	0	0
Stage 1	1749	1749	-	1578	1578	-	-	-	-	-	-	-
Stage 2	846	1578	-	865	1770	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 12	8	288	16	8	364	348	-	-	457	-	-
Stage 1	89	138	-	114	168	-	-	-	-	-	-	-
Stage 2	323	168	-	315	135	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 10	7	288	9	7	364	348	-	-	457	-	-
Mov Cap-2 Maneuver	~ 10	7	-	9	7	-	-	-	-	-	-	-
Stage 1	74	138	-	95	140	-	-	-	-	-	-	-
Stage 2	270	140	-	203	135	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 626.3	0	0.6	0
HCM LOS	F	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	348	-	-	59	-	457	-	-
HCM Lane V/C Ratio	0.163	-	-	2.024	-	-	-	-
HCM Control Delay (s)	17.4	-	-	$ 626.3	0	0	-	-
HCM Lane LOS	C	-	-	F	A	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	11.5	-	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s   +: Computation Not Defined   *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	63	101	36	50	81	84	53	1169	54	71	1117	58
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	70	112	40	60	98	101	58	1285	59	79	1241	64
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.83	0.83	0.83	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	222	188	129	210	178	126	1652	739	149	1697	759
Arrive On Green	0.08	0.12	0.12	0.07	0.11	0.11	0.07	0.47	0.47	0.08	0.48	0.48
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	70	112	40	60	98	101	58	1285	59	79	1241	64
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.3	3.5	1.4	2.0	3.1	3.8	1.9	18.9	1.3	2.7	17.5	1.4
Cycle Q Clear(g_c), s	2.3	3.5	1.4	2.0	3.1	3.8	1.9	18.9	1.3	2.7	17.5	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	140	222	188	129	210	178	126	1652	739	149	1697	759
V/C Ratio(X)	0.50	0.51	0.21	0.47	0.47	0.57	0.46	0.78	0.08	0.53	0.73	0.08
Avail Cap(c_a), veh/h	200	480	408	200	480	408	200	1652	739	200	1697	759
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	25.6	24.7	27.6	25.8	26.1	27.7	13.9	9.2	27.3	13.0	8.8
Incr Delay (d2), s/veh	2.7	1.8	0.6	2.6	1.6	2.8	2.6	3.7	0.2	2.9	2.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.9	0.6	1.1	1.7	1.8	1.0	9.9	0.6	1.4	9.1	0.6
LnGrp Delay(d),s/veh	30.2	27.4	25.3	30.2	27.4	28.9	30.3	17.5	9.4	30.2	15.8	9.0
LnGrp LOS	C	C	C	C	C	C	C	B	A	C	B	A
Approach Vol, veh/h		222			259			1402			1384	
Approach Delay, s/veh		27.9			28.7			17.7			16.3	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	33.0	8.5	11.4	8.4	33.8	8.9	11.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	29.0	7.0	16.0	7.0	29.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.7	20.9	4.0	5.5	3.9	19.5	4.3	5.8
Green Ext Time (p_c), s	0.0	7.3	0.0	1.1	0.0	8.5	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	18.7
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	78	91	26	38	65	63	24	1141	26	29	1096	57
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	90	105	30	44	75	72	29	1358	31	34	1274	66
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.84	0.84	0.84	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	94	77	453	88	111	453	81	1583	36	91	1605	718
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.05	0.45	0.45	0.05	0.45	0.45
Sat Flow, veh/h	0	270	1583	0	387	1583	1774	3537	81	1774	3539	1583
Grp Volume(v), veh/h	195	0	30	119	0	72	29	679	710	34	1274	66
Grp Sat Flow(s),veh/h/ln	270	0	1583	387	0	1583	1774	1770	1849	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.8	0.0	0.0	1.9	0.9	19.2	19.3	1.0	17.2	1.3
Cycle Q Clear(g_c), s	16.0	0.0	0.8	16.0	0.0	1.9	0.9	19.2	19.3	1.0	17.2	1.3
Prop In Lane	0.46		1.00	0.37		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	171	0	453	199	0	453	81	792	827	91	1605	718
V/C Ratio(X)	1.14	0.00	0.07	0.60	0.00	0.16	0.36	0.86	0.86	0.37	0.79	0.09
Avail Cap(c_a), veh/h	171	0	453	199	0	453	222	792	827	222	1605	718
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	0.0	14.5	16.6	0.0	14.9	25.9	13.8	13.8	25.6	13.0	8.7
Incr Delay (d2), s/veh	110.5	0.0	0.1	4.8	0.0	0.2	2.7	11.6	11.2	2.5	4.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	0.0	0.3	1.7	0.0	0.8	0.5	11.8	12.2	0.6	9.2	0.6
LnGrp Delay(d),s/veh	131.8	0.0	14.6	21.5	0.0	15.1	28.6	25.4	25.1	28.1	17.2	9.0
LnGrp LOS	F		B	C		B	C	C	C	C	B	A
Approach Vol, veh/h		225			191			1418			1374	
Approach Delay, s/veh		116.1			19.1			25.3			17.1	
Approach LOS		F			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.9	29.0		20.0	6.5	29.3		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	25.0		16.0	7.0	25.0		16.0
Max Q Clear Time (g_c+I1), s	3.0	21.3		18.0	2.9	19.2		18.0
Green Ext Time (p_c), s	0.0	3.5		0.0	0.0	5.4		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			27.8
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	261	115	49	315	26	97	278	47	22	239	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	23	335	147	58	375	31	100	287	48	24	257	24
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.78	0.78	0.78	0.84	0.84	0.84	0.97	0.97	0.97	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	459	390	131	527	448	174	1091	180	69	982	91
Arrive On Green	0.04	0.25	0.25	0.07	0.28	0.28	0.10	0.36	0.36	0.04	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3041	503	1774	3275	303
Grp Volume(v), veh/h	23	335	147	58	375	31	100	166	169	24	138	143
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1774	1774	1770	1809
Q Serve(g_s), s	0.7	9.4	4.4	1.8	10.3	0.8	3.1	3.8	3.8	0.7	3.4	3.4
Cycle Q Clear(g_c), s	0.7	9.4	4.4	1.8	10.3	0.8	3.1	3.8	3.8	0.7	3.4	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.28	1.00		0.17
Lane Grp Cap(c), veh/h	67	459	390	131	527	448	174	635	637	69	530	542
V/C Ratio(X)	0.35	0.73	0.38	0.44	0.71	0.07	0.58	0.26	0.27	0.35	0.26	0.26
Avail Cap(c_a), veh/h	219	591	503	219	591	503	219	635	637	219	530	542
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.6	19.6	17.8	25.1	18.3	14.9	24.5	12.9	12.9	26.6	15.1	15.1
Incr Delay (d2), s/veh	3.1	3.3	0.6	2.3	3.5	0.1	3.0	1.0	1.0	3.0	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	5.2	2.0	1.0	5.7	0.4	1.6	2.0	2.1	0.4	1.8	1.9
LnGrp Delay(d),s/veh	29.7	23.0	18.4	27.5	21.8	14.9	27.4	13.9	13.9	29.5	16.3	16.3
LnGrp LOS	C	C	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		505			464			435			305	
Approach Delay, s/veh		21.9			22.0			17.0			17.3	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	24.3	8.2	18.0	9.6	21.0	6.1	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	18.0	7.0	17.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	2.7	5.8	3.8	11.4	5.1	5.4	2.7	12.3
Green Ext Time (p_c), s	0.0	2.7	0.0	2.6	0.0	2.7	0.0	2.3

Intersection Summary			
HCM 2010 Ctrl Delay			19.9
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	88	153	65	71	190	189	87	1030	75	154	936	106
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	111	194	82	125	333	332	96	1132	82	177	1076	122
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.79	0.79	0.79	0.57	0.57	0.57	0.91	0.91	0.91	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	150	394	335	157	401	341	144	1286	575	215	1427	639
Arrive On Green	0.08	0.21	0.21	0.09	0.22	0.22	0.08	0.36	0.36	0.12	0.40	0.40
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	111	194	82	125	333	332	96	1132	82	177	1076	122
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.5	6.8	3.2	5.1	12.7	15.5	3.9	22.2	2.6	7.2	19.4	3.7
Cycle Q Clear(g_c), s	4.5	6.8	3.2	5.1	12.7	15.5	3.9	22.2	2.6	7.2	19.4	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	150	394	335	157	401	341	144	1286	575	215	1427	639
V/C Ratio(X)	0.74	0.49	0.25	0.79	0.83	0.97	0.67	0.88	0.14	0.82	0.75	0.19
Avail Cap(c_a), veh/h	167	401	341	167	401	341	167	1286	575	215	1427	639
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.2	25.8	24.4	33.2	27.8	28.9	33.1	22.1	15.9	31.9	19.0	14.3
Incr Delay (d2), s/veh	14.3	1.0	0.4	21.6	13.6	41.5	7.9	8.8	0.5	22.2	3.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	3.6	1.4	3.4	8.0	10.7	2.2	12.4	1.2	4.9	10.2	1.7
LnGrp Delay(d),s/veh	47.5	26.7	24.7	54.8	41.5	70.4	41.0	31.0	16.4	54.0	22.7	15.0
LnGrp LOS	D	C	C	D	D	E	D	C	B	D	C	B
Approach Vol, veh/h		387			790			1310			1375	
Approach Delay, s/veh		32.3			55.8			30.8			26.1	
Approach LOS		C			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	31.0	10.6	19.7	10.0	34.0	10.3	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	27.0	7.0	16.0	7.0	29.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	9.2	24.2	7.1	8.8	5.9	21.4	6.5	17.5
Green Ext Time (p_c), s	0.0	2.5	0.0	2.6	0.0	6.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.4
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	214	64	10	238	31	34	206	15	28	223	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	62	382	114	15	350	46	40	245	18	32	256	22
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.56	0.56	0.56	0.68	0.68	0.68	0.84	0.84	0.84	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	587	499	46	488	415	104	1035	76	88	991	85
Arrive On Green	0.08	0.31	0.31	0.03	0.26	0.26	0.06	0.31	0.31	0.05	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3345	244	1774	3301	282
Grp Volume(v), veh/h	62	382	114	15	350	46	40	129	134	32	136	142
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1820	1774	1770	1813
Q Serve(g_s), s	1.8	9.4	2.8	0.4	9.1	1.2	1.2	2.9	2.9	0.9	3.1	3.2
Cycle Q Clear(g_c), s	1.8	9.4	2.8	0.4	9.1	1.2	1.2	2.9	2.9	0.9	3.1	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		0.16
Lane Grp Cap(c), veh/h	140	587	499	46	488	415	104	547	563	88	531	544
V/C Ratio(X)	0.44	0.65	0.23	0.32	0.72	0.11	0.38	0.24	0.24	0.36	0.26	0.26
Avail Cap(c_a), veh/h	233	664	564	233	664	564	233	547	563	233	531	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	15.7	13.5	25.5	17.9	14.9	24.2	13.7	13.7	24.5	14.1	14.2
Incr Delay (d2), s/veh	2.2	1.9	0.2	4.0	2.4	0.1	2.3	1.0	1.0	2.5	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.1	1.3	0.3	5.0	0.5	0.6	1.5	1.6	0.5	1.7	1.7
LnGrp Delay(d),s/veh	25.6	17.6	13.7	29.4	20.2	15.1	26.5	14.7	14.7	27.0	15.3	15.3
LnGrp LOS	C	B	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		558			411			303			310	
Approach Delay, s/veh		17.7			20.0			16.3			16.5	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.6	20.5	5.4	20.8	7.1	20.0	8.2	18.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0				
Max Q Clear Time (g_c+I1), s	2.9	4.9	2.4	11.4	3.2	5.2	3.8	11.1				
Green Ext Time (p_c), s	0.0	2.2	0.0	2.8	0.0	2.2	0.0	2.9				
Intersection Summary												
HCM 2010 Ctrl Delay			17.8									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	23	41	30	26	34	65	33	1084	39	66	1048	29
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	27	48	35	34	44	84	34	1129	41	74	1178	33
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.77	0.77	0.77	0.96	0.96	0.96	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	76	126	92	92	77	147	92	1539	56	154	1687	755
Arrive On Green	0.04	0.13	0.13	0.05	0.13	0.13	0.05	0.44	0.44	0.09	0.48	0.48
Sat Flow, veh/h	1774	1003	731	1774	574	1096	1774	3484	126	1774	3539	1583
Grp Volume(v), veh/h	27	0	83	34	0	128	34	573	597	74	1178	33
Grp Sat Flow(s),veh/h/ln	1774	0	1734	1774	0	1669	1774	1770	1840	1774	1770	1583
Q Serve(g_s), s	0.8	0.0	2.4	1.0	0.0	3.9	1.0	14.5	14.5	2.2	14.2	0.6
Cycle Q Clear(g_c), s	0.8	0.0	2.4	1.0	0.0	3.9	1.0	14.5	14.5	2.2	14.2	0.6
Prop In Lane	1.00		0.42	1.00		0.66	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	76	0	217	92	0	224	92	782	813	154	1687	755
V/C Ratio(X)	0.35	0.00	0.38	0.37	0.00	0.57	0.37	0.73	0.73	0.48	0.70	0.04
Avail Cap(c_a), veh/h	229	0	511	229	0	492	229	782	813	229	1687	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.3	0.0	21.8	24.9	0.0	22.1	24.9	12.5	12.5	23.6	11.1	7.6
Incr Delay (d2), s/veh	2.7	0.0	1.1	2.5	0.0	2.3	2.5	6.0	5.8	2.3	2.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.2	0.6	0.0	1.9	0.6	8.3	8.6	1.1	7.4	0.3
LnGrp Delay(d),s/veh	28.0	0.0	22.9	27.4	0.0	24.4	27.4	18.6	18.3	26.0	13.6	7.7
LnGrp LOS	C		C	C		C	C	B	B	C	B	A
Approach Vol, veh/h		110			162			1204			1285	
Approach Delay, s/veh		24.2			25.0			18.7			14.1	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	28.0	6.8	10.8	6.8	29.9	6.3	11.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.2	16.5	3.0	4.4	3.0	16.2	2.8	5.9
Green Ext Time (p_c), s	0.0	6.5	0.0	0.8	0.0	6.8	0.0	0.8

Intersection Summary		
HCM 2010 Ctrl Delay		17.2
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	370	519	232	239	489	177	308	725	140	209	679	178
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	411	577	258	278	569	206	338	797	154	227	738	193
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.86	0.86	0.86	0.91	0.91	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	435	765	342	360	722	255	375	1157	517	266	940	420
Arrive On Green	0.13	0.22	0.22	0.10	0.19	0.19	0.21	0.33	0.33	0.15	0.27	0.27
Sat Flow, veh/h	3442	3539	1583	3442	3712	1310	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	411	577	258	278	518	257	338	797	154	227	738	193
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1632	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.4	12.1	12.1	6.2	11.5	11.9	14.7	15.5	5.7	9.9	15.3	8.1
Cycle Q Clear(g_c), s	9.4	12.1	12.1	6.2	11.5	11.9	14.7	15.5	5.7	9.9	15.3	8.1
Prop In Lane	1.00		1.00	1.00		0.80	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	435	765	342	360	660	317	375	1157	517	266	940	420
V/C Ratio(X)	0.94	0.75	0.75	0.77	0.79	0.81	0.90	0.69	0.30	0.85	0.79	0.46
Avail Cap(c_a), veh/h	435	765	342	392	686	330	381	1157	517	292	940	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	29.0	29.0	34.5	30.3	30.4	30.4	23.1	19.9	32.8	27.0	24.3
Incr Delay (d2), s/veh	29.5	4.3	9.1	8.5	5.8	13.5	23.6	3.4	1.5	19.8	6.6	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	6.3	6.1	3.4	5.9	6.5	9.6	8.1	2.7	6.3	8.3	3.9
LnGrp Delay(d),s/veh	63.8	33.3	38.1	43.0	36.1	43.9	54.0	26.5	21.3	52.6	33.5	27.9
LnGrp LOS	E	C	D	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		1246			1053			1289			1158	
Approach Delay, s/veh		44.4			39.8			33.1			36.3	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	29.9	12.3	21.1	20.7	25.0	14.0	19.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	25.0	9.0	17.0	17.0	21.0	10.0	16.0
Max Q Clear Time (g_c+I1), s	11.9	17.5	8.2	14.1	16.7	17.3	11.4	13.9
Green Ext Time (p_c), s	0.1	5.6	0.1	2.2	0.0	3.0	0.0	1.5

Intersection Summary			
HCM 2010 Ctrl Delay			38.3
HCM 2010 LOS			D

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	4	30	3	7	15	41	1241	3	38	1146	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	72	72	72	89	89	89	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	6	46	4	10	21	51	1534	4	44	1317	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2289	3055	670	2386	3063	769	1339	0	0	1538	0	0
Stage 1	1416	1416	-	1637	1637	-	-	-	-	-	-	-
Stage 2	873	1639	-	749	1426	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 21	12	399	18	12	344	511	-	-	428	-	-
Stage 1	144	202	-	105	157	-	-	-	-	-	-	-
Stage 2	311	157	-	370	199	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 15	10	399	13	10	344	511	-	-	428	-	-
Mov Cap-2 Maneuver	79	62	-	66	66	-	-	-	-	-	-	-
Stage 1	130	181	-	95	141	-	-	-	-	-	-	-
Stage 2	245	141	-	284	179	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	65.2	43.3	0.4	0.5
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	511	-	-	137	128	428	-	-
HCM Lane V/C Ratio	0.099	-	-	0.606	0.271	0.102	-	-
HCM Control Delay (s)	12.8	-	-	65.2	43.3	14.4	-	-
HCM Lane LOS	B	-	-	F	E	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	3.1	1	0.3	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	25	336	46	3	282	4	34	4	10	2	2	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	58	58	58	79	79	79	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	44	589	81	5	486	7	43	5	13	3	3	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	486	0	0	589	0	0	1183	1174	589	1183	1174	486
Stage 1	-	-	-	-	-	-	677	677	-	497	497	-
Stage 2	-	-	-	-	-	-	506	497	-	686	677	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1077	-	-	986	-	-	166	192	508	166	192	581
Stage 1	-	-	-	-	-	-	443	452	-	555	545	-
Stage 2	-	-	-	-	-	-	549	545	-	438	452	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1077	-	-	986	-	-	154	183	508	153	183	581
Mov Cap-2 Maneuver	-	-	-	-	-	-	154	183	-	153	183	-
Stage 1	-	-	-	-	-	-	425	434	-	532	542	-
Stage 2	-	-	-	-	-	-	529	542	-	405	434	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	34.2	16.3
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	183	1077	-	-	986	-	-	340
HCM Lane V/C Ratio	0.332	0.041	-	-	0.005	-	-	0.063
HCM Control Delay (s)	34.2	8.5	-	-	8.7	-	-	16.3
HCM Lane LOS	D	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.4	0.1	-	-	0	-	-	0.2

HCM 2010 TWSC
10: Cottonwood Ave & Driveway

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	294	376	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	77	77	81	81	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	382	464	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	464	0	-	0	846	464
Stage 1	-	-	-	-	464	-
Stage 2	-	-	-	-	382	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1097	-	-	-	333	598
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	690	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1097	-	-	-	333	598
Mov Cap-2 Maneuver	-	-	-	-	333	-
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	690	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1097	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	16.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	21	0	78	0	0	0	70	1235	0	0	1116	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	92	92	92	82	82	82	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	0	98	0	0	0	85	1506	0	0	1298	44

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2244	2997	671	2326	3019	753	1342	0	0	1506	0	0
Stage 1	1320	1320	-	1677	1677	-	-	-	-	-	-	-
Stage 2	924	1677	-	649	1342	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 23	13	399	20	13	352	509	-	-	441	-	-
Stage 1	166	225	-	99	150	-	-	-	-	-	-	-
Stage 2	290	150	-	425	219	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 20	11	399	13	11	352	509	-	-	441	-	-
Mov Cap-2 Maneuver	~ 20	11	-	13	11	-	-	-	-	-	-	-
Stage 1	138	225	-	82	125	-	-	-	-	-	-	-
Stage 2	242	125	-	321	219	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 397.9	0	0.7	0
HCM LOS	F	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	509	-	-	79	-	441	-	-
HCM Lane V/C Ratio	0.168	-	-	1.566	-	-	-	-
HCM Control Delay (s)	13.5	-	-	$ 397.9	0	0	-	-
HCM Lane LOS	B	-	-	F	A	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	10.2	-	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s   +: Computation Not Defined   *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	39	92	62	112	158	199	63	1394	66	78	1134	32
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	57	133	90	127	180	226	72	1602	76	89	1289	36
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.69	0.69	0.69	0.88	0.88	0.88	0.87	0.87	0.87	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	276	235	145	315	268	119	1813	811	127	1830	819
Arrive On Green	0.06	0.15	0.15	0.08	0.17	0.17	0.07	0.51	0.51	0.07	0.52	0.52
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	57	133	90	127	180	226	72	1602	76	89	1289	36
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.7	5.6	4.4	6.1	7.6	11.9	3.4	34.6	2.1	4.2	23.8	1.0
Cycle Q Clear(g_c), s	2.7	5.6	4.4	6.1	7.6	11.9	3.4	34.6	2.1	4.2	23.8	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	107	276	235	145	315	268	119	1813	811	127	1830	819
V/C Ratio(X)	0.53	0.48	0.38	0.88	0.57	0.84	0.61	0.88	0.09	0.70	0.70	0.04
Avail Cap(c_a), veh/h	145	347	295	145	347	295	145	1813	811	145	1830	819
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	33.6	33.0	39.0	32.8	34.6	39.0	18.7	10.7	39.0	15.8	10.2
Incr Delay (d2), s/veh	4.0	1.3	1.0	41.4	1.8	18.2	4.9	6.7	0.2	12.0	2.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.0	2.0	4.6	4.1	6.5	1.8	18.4	1.0	2.5	12.0	0.4
LnGrp Delay(d),s/veh	43.2	34.9	34.1	80.5	34.7	52.8	43.9	25.4	11.0	51.0	18.1	10.3
LnGrp LOS	D	C	C	F	C	D	D	C	B	D	B	B
Approach Vol, veh/h		280			533			1750			1414	
Approach Delay, s/veh		36.3			53.3			25.5			19.9	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	48.0	11.0	16.7	9.7	48.4	9.2	18.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	44.0	7.0	16.0	7.0	44.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.2	36.6	8.1	7.6	5.4	25.8	4.7	13.9
Green Ext Time (p_c), s	0.0	7.0	0.0	1.8	0.0	16.3	0.0	0.6

Intersection Summary			
HCM 2010 Ctrl Delay			28.0
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	74	77	50	67	102	62	34	1402	27	35	1201	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	85	89	57	89	136	83	40	1630	31	42	1430	94
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.75	0.75	0.75	0.86	0.86	0.86	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	58	379	75	70	379	97	1862	35	101	1861	833
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.05	0.52	0.52	0.06	0.53	0.53
Sat Flow, veh/h	0	243	1583	0	294	1583	1774	3553	67	1774	3539	1583
Grp Volume(v), veh/h	174	0	57	225	0	83	40	811	850	42	1430	94
Grp Sat Flow(s),veh/h/ln	243	0	1583	294	0	1583	1774	1770	1851	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	1.9	0.0	0.0	2.8	1.5	26.9	27.0	1.5	21.5	2.0
Cycle Q Clear(g_c), s	16.0	0.0	1.9	16.0	0.0	2.8	1.5	26.9	27.0	1.5	21.5	2.0
Prop In Lane	0.49		1.00	0.40		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	138	0	379	146	0	379	97	927	970	101	1861	833
V/C Ratio(X)	1.26	0.00	0.15	1.55	0.00	0.22	0.41	0.87	0.88	0.42	0.77	0.11
Avail Cap(c_a), veh/h	138	0	379	146	0	379	186	927	970	186	1861	833
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	0.0	20.0	26.3	0.0	20.4	30.5	14.0	14.0	30.4	12.6	8.0
Incr Delay (d2), s/veh	161.5	0.0	0.2	276.7	0.0	0.3	2.8	11.2	11.0	2.7	3.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	0.0	0.8	13.8	0.0	1.2	0.8	15.7	16.4	0.8	11.1	0.9
LnGrp Delay(d),s/veh	188.6	0.0	20.2	302.9	0.0	20.7	33.3	25.2	25.0	33.2	15.7	8.3
LnGrp LOS	F		C	F		C	C	C	C	C	B	A
Approach Vol, veh/h		231			308			1701			1566	
Approach Delay, s/veh		147.0			226.9			25.3			15.7	
Approach LOS		F			F			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.8	39.0		20.0	7.7	39.1		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	35.0		16.0	7.0	35.0		16.0
Max Q Clear Time (g_c+I1), s	3.5	29.0		18.0	3.5	23.5		18.0
Green Ext Time (p_c), s	0.0	5.7		0.0	0.0	10.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	45.1
HCM 2010 LOS	D

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	333	138	49	412	92	103	330	32	59	408	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	59	392	162	64	542	121	130	418	41	68	469	60
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.76	0.76	0.76	0.79	0.79	0.79	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	567	482	134	574	488	180	920	90	139	819	104
Arrive On Green	0.07	0.30	0.30	0.08	0.31	0.31	0.10	0.28	0.28	0.08	0.26	0.26
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3258	318	1774	3159	402
Grp Volume(v), veh/h	59	392	162	64	542	121	130	226	233	68	262	267
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1807	1774	1770	1792
Q Serve(g_s), s	2.0	11.4	4.9	2.1	17.5	3.5	4.4	6.5	6.6	2.3	7.9	8.0
Cycle Q Clear(g_c), s	2.0	11.4	4.9	2.1	17.5	3.5	4.4	6.5	6.6	2.3	7.9	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		0.22
Lane Grp Cap(c), veh/h	128	567	482	134	574	488	180	500	510	139	459	465
V/C Ratio(X)	0.46	0.69	0.34	0.48	0.94	0.25	0.72	0.45	0.46	0.49	0.57	0.58
Avail Cap(c_a), veh/h	201	574	488	201	574	488	201	500	510	201	459	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	18.9	16.6	27.3	20.8	16.0	26.9	18.2	18.2	27.3	19.9	19.9
Incr Delay (d2), s/veh	2.6	3.5	0.4	2.6	24.6	0.3	10.8	2.9	2.9	2.7	5.1	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	6.4	2.2	1.1	12.8	1.6	2.7	3.5	3.6	1.2	4.5	4.6
LnGrp Delay(d),s/veh	30.0	22.4	17.0	30.0	45.5	16.3	37.6	21.2	21.2	29.9	24.9	25.0
LnGrp LOS	C	C	B	C	D	B	D	C	C	C	C	C
Approach Vol, veh/h		613			727			589			597	
Approach Delay, s/veh		21.7			39.3			24.8			25.5	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	21.4	8.7	22.8	10.2	20.0	8.5	23.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	4.3	8.6	4.1	13.4	6.4	10.0	4.0	19.5
Green Ext Time (p_c), s	0.0	3.4	0.0	3.0	0.0	2.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	28.4
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	91	207	75	75	248	209	79	1172	77	129	1114	98
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	114	259	94	101	335	282	96	1429	94	154	1326	117
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.80	0.80	0.80	0.74	0.74	0.74	0.82	0.82	0.82	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	381	324	128	370	315	126	1575	705	178	1679	751
Arrive On Green	0.08	0.20	0.20	0.07	0.20	0.20	0.07	0.45	0.45	0.10	0.47	0.47
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	114	259	94	101	335	282	96	1429	94	154	1326	117
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.7	11.5	4.5	5.0	15.8	15.6	4.8	33.8	3.1	7.7	28.3	3.8
Cycle Q Clear(g_c), s	5.7	11.5	4.5	5.0	15.8	15.6	4.8	33.8	3.1	7.7	28.3	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	138	381	324	128	370	315	126	1575	705	178	1679	751
V/C Ratio(X)	0.82	0.68	0.29	0.79	0.90	0.90	0.76	0.91	0.13	0.87	0.79	0.16
Avail Cap(c_a), veh/h	138	381	324	138	373	317	138	1575	705	178	1679	751
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	33.0	30.2	41.0	35.2	35.1	41.0	23.2	14.7	39.8	19.8	13.4
Incr Delay (d2), s/veh	31.7	4.8	0.5	24.5	24.6	26.1	20.3	9.1	0.4	33.5	3.9	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	6.4	2.0	3.3	10.6	9.1	3.1	18.5	1.5	5.4	14.7	1.7
LnGrp Delay(d),s/veh	72.6	37.8	30.7	65.5	59.8	61.2	61.3	32.4	15.1	73.3	23.7	13.8
LnGrp LOS	E	D	C	E	E	E	E	C	B	E	C	B
Approach Vol, veh/h		467			718			1619			1597	
Approach Delay, s/veh		44.9			61.2			33.1			27.8	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	44.0	10.5	22.4	10.4	46.6	11.0	21.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	40.0	7.0	18.0	7.0	42.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	9.7	35.8	7.0	13.5	6.8	30.3	7.7	17.8
Green Ext Time (p_c), s	0.0	4.0	0.0	1.9	0.0	10.7	0.0	0.1

Intersection Summary		
HCM 2010 Ctrl Delay		37.0
HCM 2010 LOS		D

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	105	263	79	47	365	142	109	347	30	34	281	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	148	370	111	69	537	209	127	403	35	47	385	62
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.71	0.71	0.71	0.68	0.68	0.68	0.86	0.86	0.86	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	647	550	133	595	505	166	931	81	107	763	122
Arrive On Green	0.10	0.35	0.35	0.07	0.32	0.32	0.09	0.28	0.28	0.06	0.25	0.25
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3297	285	1774	3058	489
Grp Volume(v), veh/h	148	370	111	69	537	209	127	215	223	47	222	225
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1812	1774	1770	1777
Q Serve(g_s), s	5.6	11.0	3.4	2.5	18.8	7.1	4.8	6.8	6.8	1.7	7.3	7.4
Cycle Q Clear(g_c), s	5.6	11.0	3.4	2.5	18.8	7.1	4.8	6.8	6.8	1.7	7.3	7.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.27
Lane Grp Cap(c), veh/h	182	647	550	133	595	505	166	500	512	107	442	443
V/C Ratio(X)	0.81	0.57	0.20	0.52	0.90	0.41	0.77	0.43	0.43	0.44	0.50	0.51
Avail Cap(c_a), veh/h	182	647	550	182	629	535	182	500	512	182	442	443
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.9	18.1	15.6	30.3	22.2	18.2	30.1	20.0	20.0	30.9	21.9	22.0
Incr Delay (d2), s/veh	23.5	1.2	0.2	3.1	15.9	0.5	16.1	2.7	2.7	2.8	4.0	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	5.9	1.5	1.4	12.2	3.1	3.1	3.7	3.8	0.9	4.1	4.1
LnGrp Delay(d),s/veh	53.4	19.3	15.8	33.4	38.1	18.7	46.3	22.7	22.7	33.7	26.0	26.1
LnGrp LOS	D	B	B	C	D	B	D	C	C	C	C	C
Approach Vol, veh/h		629			815			565			494	
Approach Delay, s/veh		26.7			32.7			28.0			26.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	23.2	9.1	27.6	10.4	21.0	11.0	25.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	23.0	7.0	17.0	7.0	23.0
Max Q Clear Time (g_c+I1), s	3.7	8.8	4.5	13.0	6.8	9.4	7.6	20.8
Green Ext Time (p_c), s	0.0	3.1	0.0	4.5	0.0	3.0	0.0	1.0

Intersection Summary		
HCM 2010 Ctrl Delay		29.0
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	52	88	44	63	104	61	1193	60	98	1068	83
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	122	70	119	52	74	122	66	1283	65	121	1319	102
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.74	0.74	0.74	0.85	0.85	0.85	0.93	0.93	0.93	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	164	115	196	114	100	165	130	1453	74	163	1567	701
Arrive On Green	0.09	0.19	0.19	0.06	0.16	0.16	0.07	0.42	0.42	0.09	0.44	0.44
Sat Flow, veh/h	1774	621	1056	1774	634	1045	1774	3428	173	1774	3539	1583
Grp Volume(v), veh/h	122	0	189	52	0	196	66	661	687	121	1319	102
Grp Sat Flow(s),veh/h/ln	1774	0	1676	1774	0	1678	1774	1770	1832	1774	1770	1583
Q Serve(g_s), s	4.6	0.0	7.1	1.9	0.0	7.6	2.5	23.5	23.6	4.5	22.6	2.6
Cycle Q Clear(g_c), s	4.6	0.0	7.1	1.9	0.0	7.6	2.5	23.5	23.6	4.5	22.6	2.6
Prop In Lane	1.00		0.63	1.00		0.62	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	164	0	312	114	0	265	130	750	777	163	1567	701
V/C Ratio(X)	0.75	0.00	0.61	0.46	0.00	0.74	0.51	0.88	0.88	0.74	0.84	0.15
Avail Cap(c_a), veh/h	182	0	392	182	0	393	182	750	777	182	1567	701
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	25.5	30.9	0.0	27.5	30.5	18.1	18.2	30.3	16.9	11.4
Incr Delay (d2), s/veh	14.0	0.0	1.9	2.8	0.0	4.0	3.1	14.1	13.9	13.5	5.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	3.4	1.0	0.0	3.8	1.3	14.3	14.8	2.8	12.2	1.2
LnGrp Delay(d),s/veh	44.2	0.0	27.4	33.7	0.0	31.5	33.6	32.3	32.1	43.7	22.6	11.8
LnGrp LOS	D		C	C		C	C	C	C	D	C	B
Approach Vol, veh/h		311			248			1414			1542	
Approach Delay, s/veh		34.0			32.0			32.2			23.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	33.0	8.4	16.7	9.0	34.3	10.3	14.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	29.0	7.0	16.0	7.0	29.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.5	25.6	3.9	9.1	4.5	24.6	6.6	9.6
Green Ext Time (p_c), s	0.0	3.2	0.0	1.3	0.0	4.1	0.0	1.2

Intersection Summary		
HCM 2010 Ctrl Delay		28.6
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	206	458	100	205	891	245	267	917	211	239	684	239
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	251	559	122	241	1048	288	284	976	224	285	814	285
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.94	0.94	0.94	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	301	861	385	325	993	273	322	1018	455	310	995	445
Arrive On Green	0.09	0.24	0.24	0.09	0.25	0.25	0.18	0.29	0.29	0.17	0.28	0.28
Sat Flow, veh/h	3442	3539	1583	3442	3970	1090	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	251	559	122	241	895	441	284	976	224	285	814	285
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1670	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.7	11.4	5.1	5.5	20.0	20.0	12.5	21.7	9.4	12.6	17.2	12.6
Cycle Q Clear(g_c), s	5.7	11.4	5.1	5.5	20.0	20.0	12.5	21.7	9.4	12.6	17.2	12.6
Prop In Lane	1.00		1.00	1.00		0.65	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	301	861	385	325	848	418	322	1018	455	310	995	445
V/C Ratio(X)	0.83	0.65	0.32	0.74	1.06	1.06	0.88	0.96	0.49	0.92	0.82	0.64
Avail Cap(c_a), veh/h	301	861	385	387	848	418	333	1018	455	310	995	445
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.9	27.2	24.8	35.3	30.0	30.0	31.9	28.0	23.7	32.4	26.8	25.2
Incr Delay (d2), s/veh	17.9	1.7	0.5	6.2	46.7	59.7	22.7	19.9	3.8	30.8	7.5	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	5.7	2.2	2.9	14.8	16.1	8.1	13.4	4.6	8.8	9.4	6.4
LnGrp Delay(d),s/veh	53.8	28.9	25.3	41.5	76.7	89.7	54.6	48.0	27.4	63.3	34.3	32.1
LnGrp LOS	D	C	C	D	F	F	D	D	C	E	C	C
Approach Vol, veh/h		932			1577			1484			1384	
Approach Delay, s/veh		35.1			75.0			46.1			39.8	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	27.0	11.5	23.5	18.5	26.5	11.0	24.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	23.0	9.0	18.0	15.0	22.0	7.0	20.0
Max Q Clear Time (g_c+I1), s	14.6	23.7	7.5	13.4	14.5	19.2	7.7	22.0
Green Ext Time (p_c), s	0.0	0.0	0.1	3.8	0.0	2.5	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		51.1
HCM 2010 LOS		D

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	13	2	41	2	1	18	38	1489	4	14	1277	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	68	68	68	87	87	87	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	3	61	3	1	26	48	1883	5	16	1451	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2532	3478	737	2740	3487	944	1474	0	0	1888	0	0
Stage 1	1494	1494	-	1981	1981	-	-	-	-	-	-	-
Stage 2	1038	1984	-	759	1506	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 14	6	361	9	6	263	453	-	-	313	-	-
Stage 1	129	185	-	63	106	-	-	-	-	-	-	-
Stage 2	247	105	-	365	182	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 11	5	361	6	5	263	453	-	-	313	-	-
Mov Cap-2 Maneuver	69	51	-	43	52	-	-	-	-	-	-	-
Stage 1	115	176	-	56	95	-	-	-	-	-	-	-
Stage 2	196	94	-	283	173	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	47.8	33.5	0.3	0.2
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	453	-	-	164	157	313	-	-
HCM Lane V/C Ratio	0.106	-	-	0.51	0.197	0.051	-	-
HCM Control Delay (s)	13.9	-	-	47.8	33.5	17.1	-	-
HCM Lane LOS	B	-	-	E	D	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-	2.5	0.7	0.2	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	8.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	350	13	36	476	19	30	11	42	34	12	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	70	70	70	67	67	67	64	64	64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	455	17	51	680	27	45	16	63	53	19	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	680	0	0	455	0	0	1285	1264	455	1303	1264	680
Stage 1	-	-	-	-	-	-	481	481	-	783	783	-
Stage 2	-	-	-	-	-	-	804	783	-	520	481	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	912	-	-	1106	-	-	142	169	605	138	169	451
Stage 1	-	-	-	-	-	-	566	554	-	387	404	-
Stage 2	-	-	-	-	-	-	377	404	-	539	554	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	912	-	-	1106	-	-	117	159	605	109	159	451
Mov Cap-2 Maneuver	-	-	-	-	-	-	117	159	-	109	159	-
Stage 1	-	-	-	-	-	-	558	546	-	381	385	-
Stage 2	-	-	-	-	-	-	324	385	-	462	546	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	44.2	68
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	210	912	-	-	1106	-	-	145
HCM Lane V/C Ratio	0.59	0.014	-	-	0.046	-	-	0.657
HCM Control Delay (s)	44.2	9	-	-	8.4	-	-	68
HCM Lane LOS	E	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	3.3	0	-	-	0.1	-	-	3.6

HCM 2010 TWSC
10: Cottonwood Ave

Intersection							
Int Delay, s/veh	0.7						

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	19	354	529	9	12	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	78	78	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	472	678	12	13	23

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	690	0	-	0	1207	684
Stage 1	-	-	-	-	684	-
Stage 2	-	-	-	-	523	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	905	-	-	-	203	449
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	595	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	905	-	-	-	195	449
Mov Cap-2 Maneuver	-	-	-	-	195	-
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	573	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	18.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	905	-	-	-	305
HCM Lane V/C Ratio	0.028	-	-	-	0.118
HCM Control Delay (s)	9.1	0	-	-	18.4
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	25.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	11	30	0	31	14	1432	34	35	1296	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	62	62	62	92	92	92	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	18	33	0	34	16	1685	40	41	1525	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2484	3367	764	2583	3349	862	1528	0	0	1725	0	0
Stage 1	1609	1609	-	1738	1738	-	-	-	-	-	-	-
Stage 2	875	1758	-	845	1611	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	15	8	346	~ 13	8	298	432	-	-	362	-	-
Stage 1	109	162	-	90	140	-	-	-	-	-	-	-
Stage 2	310	137	-	324	162	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	12	7	346	~ 11	7	298	432	-	-	362	-	-
Mov Cap-2 Maneuver	12	7	-	~ 11	7	-	-	-	-	-	-	-
Stage 1	105	144	-	87	135	-	-	-	-	-	-	-
Stage 2	265	132	-	273	144	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16	$ 1275.4	0.1	0.4
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	432	-	-	346	22	362	-	-
HCM Lane V/C Ratio	0.038	-	-	0.051	3.014	0.114	-	-
HCM Control Delay (s)	13.7	-	-	16	$ 1275.4	16.2	-	-
HCM Lane LOS	B	-	-	C	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	8.5	0.4	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	68	199	76	69	131	95	68	1280	89	121	1630	75
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	80	234	89	99	187	136	71	1333	93	126	1698	78
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.70	0.70	0.70	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	124	293	249	131	302	256	118	1743	780	157	1821	815
Arrive On Green	0.07	0.16	0.16	0.07	0.16	0.16	0.07	0.49	0.49	0.09	0.51	0.51
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	80	234	89	99	187	136	71	1333	93	126	1698	78
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.8	10.3	4.3	4.7	8.0	6.7	3.3	26.2	2.7	6.0	38.3	2.2
Cycle Q Clear(g_c), s	3.8	10.3	4.3	4.7	8.0	6.7	3.3	26.2	2.7	6.0	38.3	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	124	293	249	131	302	256	118	1743	780	157	1821	815
V/C Ratio(X)	0.65	0.80	0.36	0.75	0.62	0.53	0.60	0.76	0.12	0.80	0.93	0.10
Avail Cap(c_a), veh/h	145	349	296	145	349	296	145	1743	780	187	1821	815
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.8	34.7	32.2	38.8	33.4	32.8	38.8	17.7	11.7	38.2	19.4	10.6
Incr Delay (d2), s/veh	7.6	10.5	0.9	18.0	2.6	1.7	4.8	3.3	0.3	18.6	10.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	6.2	1.9	2.9	4.3	3.1	1.8	13.6	1.2	3.7	21.2	1.0
LnGrp Delay(d),s/veh	46.3	45.2	33.0	56.8	36.0	34.5	43.6	20.9	12.0	56.9	29.6	10.8
LnGrp LOS	D	D	C	E	D	C	D	C	B	E	C	B
Approach Vol, veh/h		403			422			1497			1902	
Approach Delay, s/veh		42.7			40.4			21.4			30.6	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	46.1	10.3	17.5	9.7	48.0	10.0	17.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	42.0	7.0	16.0	7.0	44.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	8.0	28.2	6.7	12.3	5.3	40.3	5.8	10.0
Green Ext Time (p_c), s	0.0	12.9	0.0	1.1	0.0	3.6	0.0	1.6

Intersection Summary		
HCM 2010 Ctrl Delay		29.5
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	64	102	28	32	94	64	16	1340	47	79	1586	89
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	72	115	31	36	106	72	17	1396	49	81	1635	92
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.96	0.96	0.96	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	92	400	71	157	400	51	1653	58	149	1873	838
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.03	0.47	0.47	0.08	0.53	0.53
Sat Flow, veh/h	0	364	1583	0	619	1583	1774	3488	122	1774	3539	1583
Grp Volume(v), veh/h	187	0	31	142	0	72	17	707	738	81	1635	92
Grp Sat Flow(s),veh/h/ln	364	0	1583	619	0	1583	1774	1770	1841	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.9	0.0	0.0	2.3	0.6	22.2	22.3	2.8	25.6	1.8
Cycle Q Clear(g_c), s	16.0	0.0	0.9	16.0	0.0	2.3	0.6	22.2	22.3	2.8	25.6	1.8
Prop In Lane	0.39		1.00	0.25		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	171	0	400	228	0	400	51	838	872	149	1873	838
V/C Ratio(X)	1.09	0.00	0.08	0.62	0.00	0.18	0.34	0.84	0.85	0.54	0.87	0.11
Avail Cap(c_a), veh/h	171	0	400	228	0	400	196	838	872	196	1873	838
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.9	0.0	18.0	20.0	0.0	18.5	30.2	14.6	14.6	27.8	13.0	7.4
Incr Delay (d2), s/veh	96.5	0.0	0.1	5.2	0.0	0.2	3.8	10.1	9.9	3.1	6.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	0.0	0.4	2.3	0.0	1.0	0.3	13.0	13.7	1.5	13.8	0.9
LnGrp Delay(d),s/veh	120.4	0.0	18.1	25.2	0.0	18.7	34.0	24.7	24.5	30.9	19.0	7.7
LnGrp LOS	F		B	C		B	C	C	C	C	B	A
Approach Vol, veh/h		218			214			1462			1808	
Approach Delay, s/veh		105.8			23.0			24.7			19.0	
Approach LOS		F			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.3	34.0		20.0	5.8	37.5		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	30.0		16.0	7.0	30.0		16.0
Max Q Clear Time (g_c+I1), s	4.8	24.3		18.0	2.6	27.6		18.0
Green Ext Time (p_c), s	0.0	5.5		0.0	0.0	2.3		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			26.6
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑↑↱		↰	↑↑↱	
Volume (veh/h)	46	384	162	45	303	41	88	438	60	31	374	47
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	54	452	191	55	370	50	106	528	72	33	394	49
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.82	0.82	0.82	0.83	0.83	0.83	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	123	544	463	125	546	464	173	996	135	88	856	106
Arrive On Green	0.07	0.29	0.29	0.07	0.29	0.29	0.10	0.32	0.32	0.05	0.27	0.27
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3132	426	1774	3171	392
Grp Volume(v), veh/h	54	452	191	55	370	50	106	298	302	33	219	224
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1788	1774	1770	1794
Q Serve(g_s), s	1.7	13.4	5.8	1.8	10.4	1.4	3.4	8.2	8.2	1.1	6.1	6.2
Cycle Q Clear(g_c), s	1.7	13.4	5.8	1.8	10.4	1.4	3.4	8.2	8.2	1.1	6.1	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.22
Lane Grp Cap(c), veh/h	123	544	463	125	546	464	173	563	568	88	478	484
V/C Ratio(X)	0.44	0.83	0.41	0.44	0.68	0.11	0.61	0.53	0.53	0.38	0.46	0.46
Avail Cap(c_a), veh/h	210	597	508	210	597	508	210	563	568	210	478	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	19.6	16.9	26.4	18.5	15.3	25.7	16.6	16.6	27.3	18.0	18.1
Incr Delay (d2), s/veh	2.4	9.0	0.6	2.4	2.7	0.1	3.6	3.5	3.5	2.6	3.1	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	8.3	2.6	0.9	5.8	0.6	1.8	4.5	4.6	0.6	3.4	3.5
LnGrp Delay(d),s/veh	28.9	28.6	17.5	28.9	21.2	15.4	29.3	20.1	20.1	29.9	21.2	21.2
LnGrp LOS	C	C	B	C	C	B	C	C	C	C	C	C
Approach Vol, veh/h		697			475			706			476	
Approach Delay, s/veh		25.5			21.5			21.5			21.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	22.8	8.2	21.3	9.8	20.0	8.1	21.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	10.2	3.8	15.4	5.4	8.2	3.7	12.4
Green Ext Time (p_c), s	0.0	2.9	0.0	1.9	0.0	3.7	0.0	3.1

Intersection Summary		
HCM 2010 Ctrl Delay		22.8
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	107	245	72	52	173	118	74	1239	63	182	1393	131
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	126	288	85	67	222	151	79	1318	67	194	1482	139
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.78	0.78	0.78	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	158	349	297	123	312	265	132	1477	661	208	1629	729
Arrive On Green	0.09	0.19	0.19	0.07	0.17	0.17	0.07	0.42	0.42	0.12	0.46	0.46
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	126	288	85	67	222	151	79	1318	67	194	1482	139
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.3	11.4	3.5	2.8	8.6	6.7	3.3	26.5	2.0	8.3	29.8	4.0
Cycle Q Clear(g_c), s	5.3	11.4	3.5	2.8	8.6	6.7	3.3	26.5	2.0	8.3	29.8	4.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	158	349	297	123	312	265	132	1477	661	208	1629	729
V/C Ratio(X)	0.80	0.83	0.29	0.54	0.71	0.57	0.60	0.89	0.10	0.93	0.91	0.19
Avail Cap(c_a), veh/h	162	389	330	162	389	330	162	1477	661	208	1629	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.2	30.0	26.8	34.5	30.2	29.4	34.4	20.7	13.6	33.5	19.2	12.2
Incr Delay (d2), s/veh	23.2	12.5	0.5	3.7	4.5	1.9	4.3	8.6	0.3	43.6	9.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	7.1	1.6	1.5	4.8	3.1	1.8	14.6	0.9	6.6	16.5	1.8
LnGrp Delay(d),s/veh	57.4	42.4	27.3	38.2	34.7	31.3	38.7	29.3	13.9	77.1	28.3	12.8
LnGrp LOS	E	D	C	D	C	C	D	C	B	E	C	B
Approach Vol, veh/h		499			440			1464			1815	
Approach Delay, s/veh		43.6			34.1			29.1			32.3	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	36.0	9.3	18.4	9.7	39.3	10.8	16.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	32.0	7.0	16.0	7.0	34.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	10.3	28.5	4.8	13.4	5.3	31.8	7.3	10.6
Green Ext Time (p_c), s	0.0	3.4	0.0	1.0	0.0	2.1	0.0	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	32.7
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	264	57	31	235	43	31	355	19	39	322	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	22	326	70	34	255	47	35	403	22	41	339	21
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.81	0.81	0.81	0.92	0.92	0.92	0.88	0.88	0.88	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	461	392	93	491	417	96	1091	59	108	1105	68
Arrive On Green	0.04	0.25	0.25	0.05	0.26	0.26	0.05	0.32	0.32	0.06	0.33	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3414	186	1774	3387	209
Grp Volume(v), veh/h	22	326	70	34	255	47	35	208	217	41	176	184
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1830	1774	1770	1826
Q Serve(g_s), s	0.6	8.0	1.7	0.9	5.9	1.1	1.0	4.5	4.6	1.1	3.7	3.8
Cycle Q Clear(g_c), s	0.6	8.0	1.7	0.9	5.9	1.1	1.0	4.5	4.6	1.1	3.7	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		0.11
Lane Grp Cap(c), veh/h	65	461	392	93	491	417	96	565	585	108	578	596
V/C Ratio(X)	0.34	0.71	0.18	0.36	0.52	0.11	0.37	0.37	0.37	0.38	0.31	0.31
Avail Cap(c_a), veh/h	248	707	601	248	707	601	248	565	585	248	578	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	17.2	14.8	22.9	15.7	14.0	22.9	13.1	13.2	22.6	12.6	12.6
Incr Delay (d2), s/veh	3.0	2.0	0.2	2.4	0.9	0.1	2.3	1.8	1.8	2.2	1.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.3	0.8	0.5	3.1	0.5	0.5	2.5	2.6	0.6	2.0	2.1
LnGrp Delay(d),s/veh	26.5	19.2	15.0	25.3	16.6	14.1	25.2	15.0	15.0	24.8	14.0	14.0
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		418			336			460			401	
Approach Delay, s/veh		18.9			17.1			15.7			15.1	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	20.0	6.6	16.4	6.7	20.3	5.8	17.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	6.6	2.9	10.0	3.0	5.8	2.6	7.9
Green Ext Time (p_c), s	0.0	3.0	0.0	2.4	0.0	3.2	0.0	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	16.7
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	26	52	44	21	44	47	45	1313	55	76	1414	32
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	30	59	50	25	52	56	48	1397	59	82	1520	34
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.84	0.84	0.84	0.94	0.94	0.94	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	104	88	69	87	94	111	1803	76	147	1917	858
Arrive On Green	0.04	0.11	0.11	0.04	0.11	0.11	0.06	0.52	0.52	0.08	0.54	0.54
Sat Flow, veh/h	1774	933	790	1774	822	885	1774	3461	146	1774	3539	1583
Grp Volume(v), veh/h	30	0	109	25	0	108	48	713	743	82	1520	34
Grp Sat Flow(s),veh/h/ln	1774	0	1723	1774	0	1707	1774	1770	1837	1774	1770	1583
Q Serve(g_s), s	1.1	0.0	3.9	0.9	0.0	3.9	1.7	21.1	21.2	2.9	22.5	0.7
Cycle Q Clear(g_c), s	1.1	0.0	3.9	0.9	0.0	3.9	1.7	21.1	21.2	2.9	22.5	0.7
Prop In Lane	1.00		0.46	1.00		0.52	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	80	0	193	69	0	181	111	922	957	147	1917	858
V/C Ratio(X)	0.38	0.00	0.57	0.36	0.00	0.60	0.43	0.77	0.78	0.56	0.79	0.04
Avail Cap(c_a), veh/h	190	0	422	190	0	418	190	922	957	190	1917	858
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	27.5	30.6	0.0	27.8	29.5	12.5	12.6	28.8	12.0	7.0
Incr Delay (d2), s/veh	2.9	0.0	2.6	3.1	0.0	3.1	2.7	6.3	6.1	3.3	3.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	2.0	0.5	0.0	2.0	0.9	11.7	12.2	1.5	11.7	0.3
LnGrp Delay(d),s/veh	33.2	0.0	30.1	33.7	0.0	31.0	32.2	18.8	18.7	32.0	15.5	7.1
LnGrp LOS	C		C	C		C	C	B	B	C	B	A
Approach Vol, veh/h		139			133			1504			1636	
Approach Delay, s/veh		30.7			31.5			19.2			16.1	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	38.0	6.6	11.3	8.1	39.3	6.9	10.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	34.0	7.0	16.0	7.0	34.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.9	23.2	2.9	5.9	3.7	24.5	3.1	5.9
Green Ext Time (p_c), s	0.0	10.0	0.0	0.8	0.0	8.8	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	18.7
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	508	1029	305	260	658	218	270	792	193	310	955	162
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	540	1095	324	302	765	253	297	870	212	341	1049	178
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.86	0.86	0.86	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	563	1062	475	313	862	282	290	933	417	355	1062	475
Arrive On Green	0.16	0.30	0.30	0.09	0.23	0.23	0.16	0.26	0.26	0.20	0.30	0.30
Sat Flow, veh/h	3442	3539	1583	3442	3792	1242	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	540	1095	324	302	683	335	297	870	212	341	1049	178
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1644	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	17.1	33.0	19.8	9.6	21.5	21.7	18.0	26.4	12.5	20.9	32.4	9.8
Cycle Q Clear(g_c), s	17.1	33.0	19.8	9.6	21.5	21.7	18.0	26.4	12.5	20.9	32.4	9.8
Prop In Lane	1.00		1.00	1.00		0.76	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	563	1062	475	313	770	374	290	933	417	355	1062	475
V/C Ratio(X)	0.96	1.03	0.68	0.97	0.89	0.90	1.02	0.93	0.51	0.96	0.99	0.37
Avail Cap(c_a), veh/h	563	1062	475	313	770	374	290	933	417	355	1062	475
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	38.5	33.9	49.8	41.1	41.2	46.0	39.5	34.4	43.6	38.3	30.4
Incr Delay (d2), s/veh	27.8	36.0	4.0	41.4	12.1	23.3	58.9	17.1	4.4	37.5	24.9	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	21.4	9.2	6.4	11.4	12.3	13.5	15.1	6.0	13.9	19.5	4.5
LnGrp Delay(d),s/veh	73.5	74.5	37.9	91.2	53.3	64.5	104.9	56.6	38.8	81.0	63.2	32.6
LnGrp LOS	E	F	D	F	D	E	F	E	D	F	E	C
Approach Vol, veh/h		1959			1320			1379			1568	
Approach Delay, s/veh		68.1			64.8			64.3			63.6	
Approach LOS		E			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	33.0	14.0	37.0	22.0	37.0	22.0	29.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	29.0	10.0	33.0	18.0	33.0	18.0	25.0
Max Q Clear Time (g_c+I1), s	22.9	28.4	11.6	35.0	20.0	34.4	19.1	23.7
Green Ext Time (p_c), s	0.0	0.6	0.0	0.0	0.0	0.0	0.0	1.2

Intersection Summary		
HCM 2010 Ctrl Delay		65.4
HCM 2010 LOS		E

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	15	3	40	2	1	12	40	1423	2	47	1696	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	58	58	58	97	97	97	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	4	51	3	2	21	45	1614	2	48	1731	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2736	3545	877	2669	3555	808	1753	0	0	1616	0	0
Stage 1	1838	1838	-	1706	1706	-	-	-	-	-	-	-
Stage 2	898	1707	-	963	1849	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 10	6	292	11	6	324	353	-	-	399	-	-
Stage 1	78	125	-	95	145	-	-	-	-	-	-	-
Stage 2	301	145	-	274	123	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 7	5	292	7	5	324	353	-	-	399	-	-
Mov Cap-2 Maneuver	48	44	-	51	40	-	-	-	-	-	-	-
Stage 1	68	110	-	83	127	-	-	-	-	-	-	-
Stage 2	243	127	-	192	108	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	85.3	34.4	0.5	0.4
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	353	-	-	112	148	399	-	-
HCM Lane V/C Ratio	0.129	-	-	0.664	0.175	0.12	-	-
HCM Control Delay (s)	16.7	-	-	85.3	34.4	15.3	-	-
HCM Lane LOS	C	-	-	F	D	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-	3.4	0.6	0.4	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	383	55	15	257	9	31	6	9	7	2	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	88	88	88	60	60	60	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	391	56	17	292	10	52	10	15	9	3	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	292	0	0	391	0	0	763	754	391	766	754	292
Stage 1	-	-	-	-	-	-	428	428	-	326	326	-
Stage 2	-	-	-	-	-	-	335	326	-	440	428	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1270	-	-	1168	-	-	321	338	658	320	338	747
Stage 1	-	-	-	-	-	-	605	585	-	687	648	-
Stage 2	-	-	-	-	-	-	679	648	-	596	585	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1270	-	-	1168	-	-	306	328	658	299	328	747
Mov Cap-2 Maneuver	-	-	-	-	-	-	306	328	-	299	328	-
Stage 1	-	-	-	-	-	-	596	577	-	677	639	-
Stage 2	-	-	-	-	-	-	653	639	-	564	577	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.4	18.4	13.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	345	1270	-	-	1168	-	-	452
HCM Lane V/C Ratio	0.222	0.014	-	-	0.015	-	-	0.059
HCM Control Delay (s)	18.4	7.9	-	-	8.1	-	-	13.5
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.8	0	-	-	0	-	-	0.2

HCM 2010 TWSC
10: Cottonwood Ave & Driveway

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	22	456	313	10	13	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	81	81	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	501	386	12	14	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	399	0	-	0	942	393
Stage 1	-	-	-	-	393	-
Stage 2	-	-	-	-	549	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1160	-	-	-	292	656
Stage 1	-	-	-	-	682	-
Stage 2	-	-	-	-	579	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1160	-	-	-	284	656
Mov Cap-2 Maneuver	-	-	-	-	284	-
Stage 1	-	-	-	-	682	-
Stage 2	-	-	-	-	562	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	13.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1160	-	-	-	457
HCM Lane V/C Ratio	0.021	-	-	-	0.093
HCM Control Delay (s)	8.2	0	-	-	13.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	81.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	12	0	74	34	0	35	54	1374	40	40	1588	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	92	92	92	95	95	95	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	0	103	37	0	38	57	1446	42	43	1708	41

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2651	3416	874	2521	3415	744	1748	0	0	1488	0	0
Stage 1	1814	1814	-	1581	1581	-	-	-	-	-	-	-
Stage 2	837	1602	-	940	1834	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 11	7	293	~ 14	7	357	355	-	-	448	-	-
Stage 1	81	128	-	114	167	-	-	-	-	-	-	-
Stage 2	327	163	-	283	125	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 8	5	293	~ 7	5	357	355	-	-	448	-	-
Mov Cap-2 Maneuver	~ 8	5	-	~ 7	5	-	-	-	-	-	-	-
Stage 1	68	116	-	96	140	-	-	-	-	-	-	-
Stage 2	245	137	-	166	113	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 832.3	$ 2499.9	0.6	0.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	355	-	-	49	14	448	-	-
HCM Lane V/C Ratio	0.16	-	-	2.438	5.357	0.096	-	-
HCM Control Delay (s)	17.1	-	-	$ 832.3	$ 2499.9	13.9	-	-
HCM Lane LOS	C	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0.6	-	-	12.4	10.3	0.3	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	4	30	3	7	15	41	1265	3	38	1170	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	72	72	72	89	89	89	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	6	46	4	10	21	51	1563	4	44	1345	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2331	3112	683	2430	3121	784	1367	0	0	1567	0	0
Stage 1	1443	1443	-	1667	1667	-	-	-	-	-	-	-
Stage 2	888	1669	-	763	1454	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 20	11	392	17	11	336	498	-	-	417	-	-
Stage 1	139	196	-	100	152	-	-	-	-	-	-	-
Stage 2	305	151	-	363	193	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 14	9	392	12	~ 9	336	498	-	-	417	-	-
Mov Cap-2 Maneuver	75	59	-	63	63	-	-	-	-	-	-	-
Stage 1	125	175	-	90	136	-	-	-	-	-	-	-
Stage 2	238	136	-	276	173	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	71.1	45.4	0.4	0.5
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	498	-	-	131	123	417	-	-
HCM Lane V/C Ratio	0.102	-	-	0.634	0.282	0.105	-	-
HCM Control Delay (s)	13	-	-	71.1	45.4	14.6	-	-
HCM Lane LOS	B	-	-	F	E	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	3.3	1.1	0.3	-	-

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	25	343	46	3	289	4	34	4	10	2	2	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	58	58	58	79	79	79	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	44	602	81	5	498	7	43	5	13	3	3	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	498	0	0	602	0	0	1207	1198	602	1207	1198	498
Stage 1	-	-	-	-	-	-	689	689	-	509	509	-
Stage 2	-	-	-	-	-	-	518	509	-	698	689	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1066	-	-	975	-	-	160	186	500	160	186	572
Stage 1	-	-	-	-	-	-	436	446	-	547	538	-
Stage 2	-	-	-	-	-	-	541	538	-	431	446	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1066	-	-	975	-	-	148	177	500	147	177	572
Mov Cap-2 Maneuver	-	-	-	-	-	-	148	177	-	147	177	-
Stage 1	-	-	-	-	-	-	418	428	-	524	535	-
Stage 2	-	-	-	-	-	-	521	535	-	398	428	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	35.9	16.7
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	176	1066	-	-	975	-	-	330
HCM Lane V/C Ratio	0.345	0.041	-	-	0.005	-	-	0.065
HCM Control Delay (s)	35.9	8.5	-	-	8.7	-	-	16.7
HCM Lane LOS	E	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.4	0.1	-	-	0	-	-	0.2

HCM 2010 TWSC
10: Cottonwood Ave & Driveway

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	31	283	369	14	18	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	77	77	81	81	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	40	368	456	17	20	41

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	473	0	-	0	912	464
Stage 1	-	-	-	-	464	-
Stage 2	-	-	-	-	448	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1089	-	-	-	304	598
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	644	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1089	-	-	-	290	598
Mov Cap-2 Maneuver	-	-	-	-	290	-
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	614	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	14.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1089	-	-	-	446
HCM Lane V/C Ratio	0.037	-	-	-	0.136
HCM Control Delay (s)	8.4	0	-	-	14.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	117.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	21	0	78	49	0	50	70	1212	55	55	1088	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	92	92	92	82	82	82	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	0	98	53	0	54	85	1478	67	64	1265	44

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2325	3131	655	2442	3119	773	1309	0	0	1545	0	0
Stage 1	1415	1415	-	1682	1682	-	-	-	-	-	-	-
Stage 2	910	1716	-	760	1437	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 20	11	409	~ 16	11	342	524	-	-	426	-	-
Stage 1	144	202	-	98	149	-	-	-	-	-	-	-
Stage 2	296	143	-	364	197	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 13	8	409	~ 9	8	342	524	-	-	426	-	-
Mov Cap-2 Maneuver	~ 13	8	-	~ 9	8	-	-	-	-	-	-	-
Stage 1	121	172	-	82	125	-	-	-	-	-	-	-
Stage 2	209	120	-	236	167	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 733	$ 2664	0.7	0.7
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	524	-	-	55	18	426	-	-
HCM Lane V/C Ratio	0.163	-	-	2.25	5.978	0.15	-	-
HCM Control Delay (s)	13.2	-	-	$ 733	$ 2664	14.9	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0.6	-	-	12.4	14.1	0.5	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	63	101	41	52	81	84	58	1186	56	71	1134	58
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	70	112	46	63	98	101	64	1303	62	79	1260	64
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.83	0.83	0.83	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	218	185	133	210	178	134	1652	739	149	1683	753
Arrive On Green	0.08	0.12	0.12	0.07	0.11	0.11	0.08	0.47	0.47	0.08	0.48	0.48
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	70	112	46	63	98	101	64	1303	62	79	1260	64
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.3	3.5	1.6	2.1	3.1	3.8	2.1	19.3	1.3	2.7	18.0	1.4
Cycle Q Clear(g_c), s	2.3	3.5	1.6	2.1	3.1	3.8	2.1	19.3	1.3	2.7	18.0	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	140	218	185	133	210	178	134	1652	739	149	1683	753
V/C Ratio(X)	0.50	0.51	0.25	0.48	0.47	0.57	0.48	0.79	0.08	0.53	0.75	0.09
Avail Cap(c_a), veh/h	200	480	408	200	480	408	200	1652	739	200	1683	753
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	25.8	24.9	27.6	25.8	26.1	27.5	14.0	9.2	27.3	13.3	8.9
Incr Delay (d2), s/veh	2.7	1.9	0.7	2.6	1.6	2.8	2.6	3.9	0.2	2.9	3.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.9	0.7	1.1	1.7	1.8	1.1	10.1	0.6	1.4	9.5	0.6
LnGrp Delay(d),s/veh	30.2	27.6	25.6	30.2	27.4	28.9	30.2	17.9	9.4	30.2	16.4	9.1
LnGrp LOS	C	C	C	C	C	C	C	B	A	C	B	A
Approach Vol, veh/h		228			262			1429			1403	
Approach Delay, s/veh		28.0			28.7			18.1			16.8	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	33.0	8.6	11.3	8.7	33.5	8.9	11.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	29.0	7.0	16.0	7.0	29.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.7	21.3	4.1	5.5	4.1	20.0	4.3	5.8
Green Ext Time (p_c), s	0.0	7.0	0.0	1.1	0.0	8.1	0.0	1.1

Intersection Summary		
HCM 2010 Ctrl Delay		19.1
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	78	91	28	39	65	63	26	1165	27	29	1120	57
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	90	105	32	45	75	72	31	1387	32	34	1302	66
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.84	0.84	0.84	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	94	77	453	89	109	453	85	1582	36	91	1596	714
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.05	0.45	0.45	0.05	0.45	0.45
Sat Flow, veh/h	0	270	1583	0	379	1583	1774	3536	82	1774	3539	1583
Grp Volume(v), veh/h	195	0	32	120	0	72	31	693	726	34	1302	66
Grp Sat Flow(s),veh/h/ln	270	0	1583	379	0	1583	1774	1770	1848	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.8	0.0	0.0	1.9	0.9	19.9	19.9	1.0	17.9	1.3
Cycle Q Clear(g_c), s	16.0	0.0	0.8	16.0	0.0	1.9	0.9	19.9	19.9	1.0	17.9	1.3
Prop In Lane	0.46		1.00	0.37		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	171	0	453	197	0	453	85	792	827	91	1596	714
V/C Ratio(X)	1.14	0.00	0.07	0.61	0.00	0.16	0.37	0.88	0.88	0.37	0.82	0.09
Avail Cap(c_a), veh/h	171	0	453	197	0	453	222	792	827	222	1596	714
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	0.0	14.5	16.7	0.0	14.9	25.8	14.0	14.0	25.6	13.3	8.8
Incr Delay (d2), s/veh	110.5	0.0	0.1	5.3	0.0	0.2	2.6	13.0	12.7	2.5	4.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	0.0	0.4	1.7	0.0	0.8	0.5	12.5	13.0	0.6	9.5	0.6
LnGrp Delay(d),s/veh	131.8	0.0	14.6	22.0	0.0	15.1	28.4	27.0	26.7	28.1	18.0	9.0
LnGrp LOS	F		B	C		B	C	C	C	C	B	A
Approach Vol, veh/h		227			192			1450			1402	
Approach Delay, s/veh		115.3			19.4			26.9			17.9	
Approach LOS		F			B			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.9	29.0		20.0	6.7	29.2		20.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	7.0	25.0		16.0	7.0	25.0		16.0				
Max Q Clear Time (g_c+I1), s	3.0	21.9		18.0	2.9	19.9		18.0				
Green Ext Time (p_c), s	0.0	2.9		0.0	0.0	4.8		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			28.7									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	271	115	49	325	26	97	278	47	22	239	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	23	347	147	58	387	31	100	287	48	24	257	24
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.78	0.78	0.78	0.84	0.84	0.84	0.97	0.97	0.97	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	468	398	131	535	455	173	1084	179	69	975	90
Arrive On Green	0.04	0.25	0.25	0.07	0.29	0.29	0.10	0.36	0.36	0.04	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3041	503	1774	3275	303
Grp Volume(v), veh/h	23	347	147	58	387	31	100	166	169	24	138	143
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1774	1774	1770	1809
Q Serve(g_s), s	0.7	9.8	4.4	1.8	10.7	0.8	3.1	3.8	3.9	0.8	3.4	3.4
Cycle Q Clear(g_c), s	0.7	9.8	4.4	1.8	10.7	0.8	3.1	3.8	3.9	0.8	3.4	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.28	1.00		0.17
Lane Grp Cap(c), veh/h	66	468	398	131	535	455	173	630	632	69	527	538
V/C Ratio(X)	0.35	0.74	0.37	0.44	0.72	0.07	0.58	0.26	0.27	0.35	0.26	0.27
Avail Cap(c_a), veh/h	217	587	499	217	587	499	217	630	632	217	527	538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	19.7	17.7	25.3	18.3	14.8	24.7	13.1	13.1	26.7	15.3	15.3
Incr Delay (d2), s/veh	3.1	3.8	0.6	2.3	4.0	0.1	3.0	1.0	1.0	3.0	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	5.5	2.0	1.0	6.1	0.4	1.6	2.0	2.1	0.4	1.8	1.9
LnGrp Delay(d),s/veh	29.9	23.5	18.2	27.7	22.3	14.9	27.7	14.1	14.1	29.7	16.5	16.5
LnGrp LOS	C	C	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		517			476			435			305	
Approach Delay, s/veh		22.3			22.5			17.2			17.5	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	24.4	8.2	18.3	9.6	21.0	6.1	20.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	18.0	7.0	17.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	2.8	5.9	3.8	11.8	5.1	5.4	2.7	12.7
Green Ext Time (p_c), s	0.0	2.7	0.0	2.5	0.0	2.7	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	20.2
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	93	158	65	83	200	198	87	1048	81	163	948	106
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	118	200	82	146	351	347	96	1152	89	187	1090	122
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.79	0.79	0.79	0.57	0.57	0.57	0.91	0.91	0.91	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	149	366	311	178	397	338	137	1333	596	223	1503	672
Arrive On Green	0.08	0.20	0.20	0.10	0.21	0.21	0.08	0.38	0.38	0.13	0.42	0.42
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	118	200	82	146	351	347	96	1152	89	187	1090	122
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.2	7.7	3.5	6.4	14.6	17.0	4.2	24.0	3.0	8.2	20.4	3.8
Cycle Q Clear(g_c), s	5.2	7.7	3.5	6.4	14.6	17.0	4.2	24.0	3.0	8.2	20.4	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	149	366	311	178	397	338	137	1333	596	223	1503	672
V/C Ratio(X)	0.79	0.55	0.26	0.82	0.88	1.03	0.70	0.86	0.15	0.84	0.73	0.18
Avail Cap(c_a), veh/h	156	374	318	178	397	338	156	1333	596	223	1503	672
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	28.8	27.1	35.1	30.4	31.3	35.9	23.0	16.4	34.1	19.1	14.3
Incr Delay (d2), s/veh	23.2	1.6	0.4	25.1	20.2	56.1	11.2	7.7	0.5	23.8	3.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	4.1	1.6	4.4	9.7	12.6	2.5	13.1	1.4	5.5	10.5	1.8
LnGrp Delay(d),s/veh	59.0	30.4	27.6	60.3	50.6	87.4	47.1	30.6	16.9	57.9	22.1	14.9
LnGrp LOS	E	C	C	E	D	F	D	C	B	E	C	B
Approach Vol, veh/h		400			844			1337			1399	
Approach Delay, s/veh		38.2			67.4			30.9			26.3	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	34.0	12.0	19.7	10.2	37.8	10.7	21.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	30.0	8.0	16.0	7.0	33.0	7.0	17.0
Max Q Clear Time (g_c+I1), s	10.2	26.0	8.4	9.7	6.2	22.4	7.2	19.0
Green Ext Time (p_c), s	0.0	3.7	0.0	2.5	0.0	9.0	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		37.7
HCM 2010 LOS		D

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	221	64	10	245	31	34	206	15	28	223	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	62	395	114	15	360	46	40	245	18	32	256	22
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.56	0.56	0.56	0.68	0.68	0.68	0.84	0.84	0.84	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	594	505	46	497	422	104	1028	75	88	984	84
Arrive On Green	0.08	0.32	0.32	0.03	0.27	0.27	0.06	0.31	0.31	0.05	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3345	244	1774	3301	282
Grp Volume(v), veh/h	62	395	114	15	360	46	40	129	134	32	136	142
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1820	1774	1770	1813
Q Serve(g_s), s	1.8	9.8	2.8	0.4	9.4	1.2	1.2	2.9	3.0	0.9	3.1	3.2
Cycle Q Clear(g_c), s	1.8	9.8	2.8	0.4	9.4	1.2	1.2	2.9	3.0	0.9	3.1	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		0.16
Lane Grp Cap(c), veh/h	140	594	505	46	497	422	104	544	559	88	527	540
V/C Ratio(X)	0.44	0.66	0.23	0.32	0.72	0.11	0.38	0.24	0.24	0.36	0.26	0.26
Avail Cap(c_a), veh/h	231	659	560	231	659	560	231	544	559	231	527	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	15.8	13.4	25.7	17.9	14.9	24.3	13.9	13.9	24.7	14.3	14.3
Incr Delay (d2), s/veh	2.2	2.2	0.2	4.0	2.7	0.1	2.3	1.0	1.0	2.5	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.4	1.3	0.3	5.2	0.5	0.6	1.6	1.6	0.5	1.7	1.8
LnGrp Delay(d),s/veh	25.8	18.0	13.6	29.6	20.6	15.0	26.7	14.9	14.9	27.2	15.5	15.5
LnGrp LOS	C	B	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		571			421			303			310	
Approach Delay, s/veh		18.0			20.3			16.5			16.7	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	20.5	5.4	21.1	7.1	20.0	8.2	18.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	2.9	5.0	2.4	11.8	3.2	5.2	3.8	11.4
Green Ext Time (p_c), s	0.0	2.2	0.0	2.8	0.0	2.2	0.0	2.9

Intersection Summary			
HCM 2010 Ctrl Delay			18.1
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	25	41	30	26	34	66	33	1104	39	67	1068	31
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	29	48	35	34	44	86	34	1150	41	75	1200	35
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.77	0.77	0.77	0.96	0.96	0.96	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	81	126	92	92	74	145	92	1539	55	155	1688	755
Arrive On Green	0.05	0.13	0.13	0.05	0.13	0.13	0.05	0.44	0.44	0.09	0.48	0.48
Sat Flow, veh/h	1774	1003	731	1774	565	1103	1774	3486	124	1774	3539	1583
Grp Volume(v), veh/h	29	0	83	34	0	130	34	584	607	75	1200	35
Grp Sat Flow(s),veh/h/ln	1774	0	1734	1774	0	1668	1774	1770	1841	1774	1770	1583
Q Serve(g_s), s	0.9	0.0	2.4	1.0	0.0	4.0	1.0	14.9	15.0	2.2	14.6	0.6
Cycle Q Clear(g_c), s	0.9	0.0	2.4	1.0	0.0	4.0	1.0	14.9	15.0	2.2	14.6	0.6
Prop In Lane	1.00		0.42	1.00		0.66	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	81	0	217	92	0	219	92	781	812	155	1688	755
V/C Ratio(X)	0.36	0.00	0.38	0.37	0.00	0.59	0.37	0.75	0.75	0.48	0.71	0.05
Avail Cap(c_a), veh/h	228	0	510	228	0	491	228	781	812	228	1688	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.2	0.0	21.8	24.9	0.0	22.2	24.9	12.7	12.7	23.6	11.3	7.6
Incr Delay (d2), s/veh	2.7	0.0	1.1	2.5	0.0	2.5	2.5	6.4	6.2	2.3	2.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.2	0.6	0.0	2.0	0.6	8.5	8.8	1.2	7.6	0.3
LnGrp Delay(d),s/veh	27.8	0.0	22.9	27.4	0.0	24.8	27.4	19.1	18.9	26.0	13.8	7.7
LnGrp LOS	C		C	C		C	C	B	B	C	B	A
Approach Vol, veh/h		112			164			1225			1310	
Approach Delay, s/veh		24.2			25.3			19.2			14.4	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	28.0	6.8	10.8	6.8	29.9	6.5	11.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.2	17.0	3.0	4.4	3.0	16.6	2.9	6.0
Green Ext Time (p_c), s	0.0	6.2	0.0	0.8	0.0	6.5	0.0	0.8

Intersection Summary			
HCM 2010 Ctrl Delay			17.5
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	375	519	232	239	489	179	308	739	140	211	693	183
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	417	577	258	278	569	208	338	812	154	229	753	199
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.86	0.86	0.86	0.91	0.91	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	435	765	342	360	720	257	375	1153	516	268	939	420
Arrive On Green	0.13	0.22	0.22	0.10	0.19	0.19	0.21	0.33	0.33	0.15	0.27	0.27
Sat Flow, veh/h	3442	3539	1583	3442	3701	1319	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	417	577	258	278	520	257	338	812	154	229	753	199
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1630	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.5	12.1	12.1	6.2	11.5	11.9	14.7	15.9	5.7	10.0	15.7	8.4
Cycle Q Clear(g_c), s	9.5	12.1	12.1	6.2	11.5	11.9	14.7	15.9	5.7	10.0	15.7	8.4
Prop In Lane	1.00		1.00	1.00		0.81	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	435	765	342	360	660	317	375	1153	516	268	939	420
V/C Ratio(X)	0.96	0.75	0.75	0.77	0.79	0.81	0.90	0.70	0.30	0.85	0.80	0.47
Avail Cap(c_a), veh/h	435	765	342	392	686	330	381	1153	516	292	939	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	29.0	29.0	34.5	30.3	30.5	30.4	23.3	19.9	32.7	27.1	24.4
Incr Delay (d2), s/veh	32.6	4.3	9.1	8.5	5.9	13.7	23.6	3.6	1.5	20.1	7.2	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	6.3	6.1	3.4	6.0	6.6	9.6	8.4	2.7	6.4	8.6	4.1
LnGrp Delay(d),s/veh	66.9	33.3	38.1	43.0	36.2	44.1	54.0	27.0	21.4	52.8	34.3	28.2
LnGrp LOS	E	C	D	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		1252			1055			1304			1181	
Approach Delay, s/veh		45.5			39.9			33.3			36.8	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	29.8	12.3	21.1	20.7	25.0	14.0	19.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	25.0	9.0	17.0	17.0	21.0	10.0	16.0
Max Q Clear Time (g_c+I1), s	12.0	17.9	8.2	14.1	16.7	17.7	11.5	13.9
Green Ext Time (p_c), s	0.1	5.4	0.1	2.2	0.0	2.7	0.0	1.5

Intersection Summary		
HCM 2010 Ctrl Delay		38.8
HCM 2010 LOS		D

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	39	92	62	112	158	199	63	1394	66	78	1134	32
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	57	133	90	127	180	226	72	1602	76	89	1289	36
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.69	0.69	0.69	0.88	0.88	0.88	0.87	0.87	0.87	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	276	235	145	315	268	119	1813	811	127	1830	819
Arrive On Green	0.06	0.15	0.15	0.08	0.17	0.17	0.07	0.51	0.51	0.07	0.52	0.52
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	57	133	90	127	180	226	72	1602	76	89	1289	36
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.7	5.6	4.4	6.1	7.6	11.9	3.4	34.6	2.1	4.2	23.8	1.0
Cycle Q Clear(g_c), s	2.7	5.6	4.4	6.1	7.6	11.9	3.4	34.6	2.1	4.2	23.8	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	107	276	235	145	315	268	119	1813	811	127	1830	819
V/C Ratio(X)	0.53	0.48	0.38	0.88	0.57	0.84	0.61	0.88	0.09	0.70	0.70	0.04
Avail Cap(c_a), veh/h	145	347	295	145	347	295	145	1813	811	145	1830	819
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	33.6	33.0	39.0	32.8	34.6	39.0	18.7	10.7	39.0	15.8	10.2
Incr Delay (d2), s/veh	4.0	1.3	1.0	41.4	1.8	18.2	4.9	6.7	0.2	12.0	2.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.0	2.0	4.6	4.1	6.5	1.8	18.4	1.0	2.5	12.0	0.4
LnGrp Delay(d),s/veh	43.2	34.9	34.1	80.5	34.7	52.8	43.9	25.4	11.0	51.0	18.1	10.3
LnGrp LOS	D	C	C	F	C	D	D	C	B	D	B	B
Approach Vol, veh/h		280			533			1750			1414	
Approach Delay, s/veh		36.3			53.3			25.5			19.9	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	48.0	11.0	16.7	9.7	48.4	9.2	18.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	44.0	7.0	16.0	7.0	44.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.2	36.6	8.1	7.6	5.4	25.8	4.7	13.9
Green Ext Time (p_c), s	0.0	7.0	0.0	1.8	0.0	16.3	0.0	0.6

Intersection Summary		
HCM 2010 Ctrl Delay		28.0
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	74	77	50	67	102	62	47	1402	27	35	1201	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	85	89	57	89	136	83	55	1630	31	42	1430	94
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.75	0.75	0.75	0.86	0.86	0.86	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	58	375	74	68	375	118	1878	36	100	1835	821
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.07	0.53	0.53	0.06	0.52	0.52
Sat Flow, veh/h	0	243	1583	0	289	1583	1774	3553	67	1774	3539	1583
Grp Volume(v), veh/h	174	0	57	225	0	83	55	811	850	42	1430	94
Grp Sat Flow(s),veh/h/ln	243	0	1583	289	0	1583	1774	1770	1851	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	1.9	0.0	0.0	2.8	2.0	26.9	27.0	1.5	22.0	2.1
Cycle Q Clear(g_c), s	16.0	0.0	1.9	16.0	0.0	2.8	2.0	26.9	27.0	1.5	22.0	2.1
Prop In Lane	0.49		1.00	0.40		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	137	0	375	143	0	375	118	936	979	100	1835	821
V/C Ratio(X)	1.27	0.00	0.15	1.58	0.00	0.22	0.46	0.87	0.87	0.42	0.78	0.11
Avail Cap(c_a), veh/h	137	0	375	143	0	375	184	936	979	184	1835	821
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	0.0	20.4	26.7	0.0	20.7	30.3	13.8	13.9	30.8	13.1	8.3
Incr Delay (d2), s/veh	167.0	0.0	0.2	289.8	0.0	0.3	2.8	10.6	10.4	2.8	3.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	0.0	0.9	14.1	0.0	1.3	1.1	15.8	16.5	0.8	11.6	1.0
LnGrp Delay(d),s/veh	194.5	0.0	20.6	316.5	0.0	21.0	33.2	24.4	24.3	33.5	16.5	8.6
LnGrp LOS	F		C	F		C	C	C	C	C	B	A
Approach Vol, veh/h		231			308			1716			1566	
Approach Delay, s/veh		151.6			236.9			24.6			16.5	
Approach LOS		F			F			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.8	39.7		20.0	8.5	39.0		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	35.0		16.0	7.0	35.0		16.0
Max Q Clear Time (g_c+I1), s	3.5	29.0		18.0	4.0	24.0		18.0
Green Ext Time (p_c), s	0.0	5.7		0.0	0.0	10.3		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		46.1
HCM 2010 LOS		D

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	333	138	49	412	92	103	330	32	59	408	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	59	392	162	64	542	121	130	418	41	68	469	60
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.76	0.76	0.76	0.79	0.79	0.79	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	567	482	134	574	488	180	920	90	139	819	104
Arrive On Green	0.07	0.30	0.30	0.08	0.31	0.31	0.10	0.28	0.28	0.08	0.26	0.26
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3258	318	1774	3159	402
Grp Volume(v), veh/h	59	392	162	64	542	121	130	226	233	68	262	267
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1807	1774	1770	1792
Q Serve(g_s), s	2.0	11.4	4.9	2.1	17.5	3.5	4.4	6.5	6.6	2.3	7.9	8.0
Cycle Q Clear(g_c), s	2.0	11.4	4.9	2.1	17.5	3.5	4.4	6.5	6.6	2.3	7.9	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		0.22
Lane Grp Cap(c), veh/h	128	567	482	134	574	488	180	500	510	139	459	465
V/C Ratio(X)	0.46	0.69	0.34	0.48	0.94	0.25	0.72	0.45	0.46	0.49	0.57	0.58
Avail Cap(c_a), veh/h	201	574	488	201	574	488	201	500	510	201	459	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	18.9	16.6	27.3	20.8	16.0	26.9	18.2	18.2	27.3	19.9	19.9
Incr Delay (d2), s/veh	2.6	3.5	0.4	2.6	24.6	0.3	10.8	2.9	2.9	2.7	5.1	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	6.4	2.2	1.1	12.8	1.6	2.7	3.5	3.6	1.2	4.5	4.6
LnGrp Delay(d),s/veh	30.0	22.4	17.0	30.0	45.5	16.3	37.6	21.2	21.2	29.9	24.9	25.0
LnGrp LOS	C	C	B	C	D	B	D	C	C	C	C	C
Approach Vol, veh/h		613			727			589			597	
Approach Delay, s/veh		21.7			39.3			24.8			25.5	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	21.4	8.7	22.8	10.2	20.0	8.5	23.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	4.3	8.6	4.1	13.4	6.4	10.0	4.0	19.5
Green Ext Time (p_c), s	0.0	3.4	0.0	3.0	0.0	2.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	28.4
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	103	195	75	104	248	209	79	1175	74	175	1084	98
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	129	244	94	141	335	282	96	1433	90	208	1290	117
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.80	0.80	0.80	0.74	0.74	0.74	0.82	0.82	0.82	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	331	281	158	352	299	125	1534	686	217	1716	768
Arrive On Green	0.08	0.18	0.18	0.09	0.19	0.19	0.07	0.43	0.43	0.12	0.48	0.48
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	129	244	94	141	335	282	96	1433	90	208	1290	117
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	6.5	11.2	4.7	7.1	16.0	15.8	4.8	34.7	3.1	10.5	26.6	3.7
Cycle Q Clear(g_c), s	6.5	11.2	4.7	7.1	16.0	15.8	4.8	34.7	3.1	10.5	26.6	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	138	331	281	158	352	299	125	1534	686	217	1716	768
V/C Ratio(X)	0.93	0.74	0.33	0.89	0.95	0.94	0.77	0.93	0.13	0.96	0.75	0.15
Avail Cap(c_a), veh/h	138	331	281	158	352	299	138	1534	686	217	1716	768
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.3	35.0	32.3	40.6	36.1	36.0	41.1	24.3	15.3	39.3	18.8	12.9
Incr Delay (d2), s/veh	57.1	8.3	0.7	42.5	35.5	37.1	20.5	11.9	0.4	49.5	3.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	6.5	2.1	5.3	11.7	10.0	3.1	19.5	1.4	8.1	13.6	1.7
LnGrp Delay(d),s/veh	98.3	43.4	33.0	83.1	71.6	73.1	61.6	36.2	15.7	88.8	21.9	13.3
LnGrp LOS	F	D	C	F	E	E	E	D	B	F	C	B
Approach Vol, veh/h		467			758			1619			1615	
Approach Delay, s/veh		56.5			74.3			36.6			29.9	
Approach LOS		E			E			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	43.0	12.0	20.0	10.4	47.6	11.0	21.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	39.0	8.0	16.0	7.0	43.0	7.0	17.0
Max Q Clear Time (g_c+I1), s	12.5	36.7	9.1	13.2	6.8	28.6	8.5	18.0
Green Ext Time (p_c), s	0.0	2.2	0.0	1.3	0.0	12.9	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		42.6
HCM 2010 LOS		D

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	105	263	79	47	365	142	109	347	30	34	281	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	148	370	111	69	537	209	127	403	35	47	385	62
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.71	0.71	0.71	0.68	0.68	0.68	0.86	0.86	0.86	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	647	550	133	595	505	166	931	81	107	763	122
Arrive On Green	0.10	0.35	0.35	0.07	0.32	0.32	0.09	0.28	0.28	0.06	0.25	0.25
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3297	285	1774	3058	489
Grp Volume(v), veh/h	148	370	111	69	537	209	127	215	223	47	222	225
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1812	1774	1770	1777
Q Serve(g_s), s	5.6	11.0	3.4	2.5	18.8	7.1	4.8	6.8	6.8	1.7	7.3	7.4
Cycle Q Clear(g_c), s	5.6	11.0	3.4	2.5	18.8	7.1	4.8	6.8	6.8	1.7	7.3	7.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.27
Lane Grp Cap(c), veh/h	182	647	550	133	595	505	166	500	512	107	442	443
V/C Ratio(X)	0.81	0.57	0.20	0.52	0.90	0.41	0.77	0.43	0.43	0.44	0.50	0.51
Avail Cap(c_a), veh/h	182	647	550	182	629	535	182	500	512	182	442	443
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.9	18.1	15.6	30.3	22.2	18.2	30.1	20.0	20.0	30.9	21.9	22.0
Incr Delay (d2), s/veh	23.5	1.2	0.2	3.1	15.9	0.5	16.1	2.7	2.7	2.8	4.0	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	5.9	1.5	1.4	12.2	3.1	3.1	3.7	3.8	0.9	4.1	4.1
LnGrp Delay(d),s/veh	53.4	19.3	15.8	33.4	38.1	18.7	46.3	22.7	22.7	33.7	26.0	26.1
LnGrp LOS	D	B	B	C	D	B	D	C	C	C	C	C
Approach Vol, veh/h		629			815			565			494	
Approach Delay, s/veh		26.7			32.7			28.0			26.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	23.2	9.1	27.6	10.4	21.0	11.0	25.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	23.0	7.0	17.0	7.0	23.0
Max Q Clear Time (g_c+I1), s	3.7	8.8	4.5	13.0	6.8	9.4	7.6	20.8
Green Ext Time (p_c), s	0.0	3.1	0.0	4.5	0.0	3.0	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	29.0
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	52	88	44	63	104	61	1193	60	98	1068	83
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	122	70	119	52	74	122	66	1283	65	121	1319	102
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.74	0.74	0.74	0.85	0.85	0.85	0.93	0.93	0.93	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	164	115	196	114	100	165	130	1453	74	163	1567	701
Arrive On Green	0.09	0.19	0.19	0.06	0.16	0.16	0.07	0.42	0.42	0.09	0.44	0.44
Sat Flow, veh/h	1774	621	1056	1774	634	1045	1774	3428	173	1774	3539	1583
Grp Volume(v), veh/h	122	0	189	52	0	196	66	661	687	121	1319	102
Grp Sat Flow(s),veh/h/ln	1774	0	1676	1774	0	1678	1774	1770	1832	1774	1770	1583
Q Serve(g_s), s	4.6	0.0	7.1	1.9	0.0	7.6	2.5	23.5	23.6	4.5	22.6	2.6
Cycle Q Clear(g_c), s	4.6	0.0	7.1	1.9	0.0	7.6	2.5	23.5	23.6	4.5	22.6	2.6
Prop In Lane	1.00		0.63	1.00		0.62	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	164	0	312	114	0	265	130	750	777	163	1567	701
V/C Ratio(X)	0.75	0.00	0.61	0.46	0.00	0.74	0.51	0.88	0.88	0.74	0.84	0.15
Avail Cap(c_a), veh/h	182	0	392	182	0	393	182	750	777	182	1567	701
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	25.5	30.9	0.0	27.5	30.5	18.1	18.2	30.3	16.9	11.4
Incr Delay (d2), s/veh	14.0	0.0	1.9	2.8	0.0	4.0	3.1	14.1	13.9	13.5	5.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	3.4	1.0	0.0	3.8	1.3	14.3	14.8	2.8	12.2	1.2
LnGrp Delay(d),s/veh	44.2	0.0	27.4	33.7	0.0	31.5	33.6	32.3	32.1	43.7	22.6	11.8
LnGrp LOS	D		C	C		C	C	C	C	D	C	B
Approach Vol, veh/h		311			248			1414			1542	
Approach Delay, s/veh		34.0			32.0			32.2			23.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	33.0	8.4	16.7	9.0	34.3	10.3	14.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	29.0	7.0	16.0	7.0	29.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.5	25.6	3.9	9.1	4.5	24.6	6.6	9.6
Green Ext Time (p_c), s	0.0	3.2	0.0	1.3	0.0	4.1	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	28.6
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	206	458	100	205	891	245	267	917	211	239	684	239
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	251	559	122	241	1048	288	284	976	224	285	814	285
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.94	0.94	0.94	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	301	861	385	325	993	273	322	1018	455	310	995	445
Arrive On Green	0.09	0.24	0.24	0.09	0.25	0.25	0.18	0.29	0.29	0.17	0.28	0.28
Sat Flow, veh/h	3442	3539	1583	3442	3970	1090	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	251	559	122	241	895	441	284	976	224	285	814	285
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1670	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.7	11.4	5.1	5.5	20.0	20.0	12.5	21.7	9.4	12.6	17.2	12.6
Cycle Q Clear(g_c), s	5.7	11.4	5.1	5.5	20.0	20.0	12.5	21.7	9.4	12.6	17.2	12.6
Prop In Lane	1.00		1.00	1.00		0.65	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	301	861	385	325	848	418	322	1018	455	310	995	445
V/C Ratio(X)	0.83	0.65	0.32	0.74	1.06	1.06	0.88	0.96	0.49	0.92	0.82	0.64
Avail Cap(c_a), veh/h	301	861	385	387	848	418	333	1018	455	310	995	445
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.9	27.2	24.8	35.3	30.0	30.0	31.9	28.0	23.7	32.4	26.8	25.2
Incr Delay (d2), s/veh	17.9	1.7	0.5	6.2	46.7	59.7	22.7	19.9	3.8	30.8	7.5	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	5.7	2.2	2.9	14.8	16.1	8.1	13.4	4.6	8.8	9.4	6.4
LnGrp Delay(d),s/veh	53.8	28.9	25.3	41.5	76.7	89.7	54.6	48.0	27.4	63.3	34.3	32.1
LnGrp LOS	D	C	C	D	F	F	D	D	C	E	C	C
Approach Vol, veh/h		932			1577			1484			1384	
Approach Delay, s/veh		35.1			75.0			46.1			39.8	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	27.0	11.5	23.5	18.5	26.5	11.0	24.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	23.0	9.0	18.0	15.0	22.0	7.0	20.0
Max Q Clear Time (g_c+I1), s	14.6	23.7	7.5	13.4	14.5	19.2	7.7	22.0
Green Ext Time (p_c), s	0.0	0.0	0.1	3.8	0.0	2.5	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		51.1
HCM 2010 LOS		D

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	13	2	41	2	1	18	38	1489	4	14	1277	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	68	68	68	87	87	87	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	3	61	3	1	26	48	1883	5	16	1451	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2532	3478	737	2740	3487	944	1474	0	0	1888	0	0
Stage 1	1494	1494	-	1981	1981	-	-	-	-	-	-	-
Stage 2	1038	1984	-	759	1506	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 14	6	361	9	6	263	453	-	-	313	-	-
Stage 1	129	185	-	63	106	-	-	-	-	-	-	-
Stage 2	247	105	-	365	182	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 11	5	361	6	5	263	453	-	-	313	-	-
Mov Cap-2 Maneuver	69	51	-	43	52	-	-	-	-	-	-	-
Stage 1	115	176	-	56	95	-	-	-	-	-	-	-
Stage 2	196	94	-	283	173	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	47.8	33.5	0.3	0.2
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	453	-	-	164	157	313	-	-
HCM Lane V/C Ratio	0.106	-	-	0.51	0.197	0.051	-	-
HCM Control Delay (s)	13.9	-	-	47.8	33.5	17.1	-	-
HCM Lane LOS	B	-	-	E	D	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-	2.5	0.7	0.2	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	8.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	350	13	36	476	19	30	11	42	34	12	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	70	70	70	67	67	67	64	64	64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	455	17	51	680	27	45	16	63	53	19	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	680	0	0	455	0	0	1285	1264	455	1303	1264	680
Stage 1	-	-	-	-	-	-	481	481	-	783	783	-
Stage 2	-	-	-	-	-	-	804	783	-	520	481	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	912	-	-	1106	-	-	142	169	605	138	169	451
Stage 1	-	-	-	-	-	-	566	554	-	387	404	-
Stage 2	-	-	-	-	-	-	377	404	-	539	554	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	912	-	-	1106	-	-	117	159	605	109	159	451
Mov Cap-2 Maneuver	-	-	-	-	-	-	117	159	-	109	159	-
Stage 1	-	-	-	-	-	-	558	546	-	381	385	-
Stage 2	-	-	-	-	-	-	324	385	-	462	546	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	44.2	68
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	210	912	-	-	1106	-	-	145
HCM Lane V/C Ratio	0.59	0.014	-	-	0.046	-	-	0.657
HCM Control Delay (s)	44.2	9	-	-	8.4	-	-	68
HCM Lane LOS	E	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	3.3	0	-	-	0.1	-	-	3.6

HCM 2010 TWSC
10: Cottonwood Ave

Intersection						
Int Delay, s/veh	0.6					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	366	528	10	0	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	78	78	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	488	677	13	0	54

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	690	0	-	0	1171	683
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	488	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	905	-	-	-	213	449
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	617	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	905	-	-	-	213	449
Mov Cap-2 Maneuver	-	-	-	-	213	-
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	617	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	905	-	-	-	449
HCM Lane V/C Ratio	-	-	-	-	0.121
HCM Control Delay (s)	0	-	-	-	14.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	11	0	0	43	14	1432	87	0	1334	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	62	62	62	92	92	92	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	18	0	0	47	16	1685	102	0	1569	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2446	3391	786	2554	3342	894	1573	0	0	1787	0	0
Stage 1	1571	1571	-	1769	1769	-	-	-	-	-	-	-
Stage 2	875	1820	-	785	1573	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	16	7	335	13	8	284	415	-	-	343	-	-
Stage 1	115	169	-	86	135	-	-	-	-	-	-	-
Stage 2	310	127	-	352	169	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	13	7	335	12	8	284	415	-	-	343	-	-
Mov Cap-2 Maneuver	13	7	-	12	8	-	-	-	-	-	-	-
Stage 1	111	169	-	83	130	-	-	-	-	-	-	-
Stage 2	249	122	-	333	169	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.3	20.2	0.1	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	415	-	-	335	284	343	-	-
HCM Lane V/C Ratio	0.04	-	-	0.053	0.165	-	-	-
HCM Control Delay (s)	14	-	-	16.3	20.2	0	-	-
HCM Lane LOS	B	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.6	0	-	-

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	68	199	76	69	131	95	68	1280	89	121	1630	75
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	80	234	89	99	187	136	71	1333	93	126	1698	78
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.70	0.70	0.70	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	124	293	249	131	302	256	118	1743	780	157	1821	815
Arrive On Green	0.07	0.16	0.16	0.07	0.16	0.16	0.07	0.49	0.49	0.09	0.51	0.51
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	80	234	89	99	187	136	71	1333	93	126	1698	78
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.8	10.3	4.3	4.7	8.0	6.7	3.3	26.2	2.7	6.0	38.3	2.2
Cycle Q Clear(g_c), s	3.8	10.3	4.3	4.7	8.0	6.7	3.3	26.2	2.7	6.0	38.3	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	124	293	249	131	302	256	118	1743	780	157	1821	815
V/C Ratio(X)	0.65	0.80	0.36	0.75	0.62	0.53	0.60	0.76	0.12	0.80	0.93	0.10
Avail Cap(c_a), veh/h	145	349	296	145	349	296	145	1743	780	187	1821	815
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.8	34.7	32.2	38.8	33.4	32.8	38.8	17.7	11.7	38.2	19.4	10.6
Incr Delay (d2), s/veh	7.6	10.5	0.9	18.0	2.6	1.7	4.8	3.3	0.3	18.6	10.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	6.2	1.9	2.9	4.3	3.1	1.8	13.6	1.2	3.7	21.2	1.0
LnGrp Delay(d),s/veh	46.3	45.2	33.0	56.8	36.0	34.5	43.6	20.9	12.0	56.9	29.6	10.8
LnGrp LOS	D	D	C	E	D	C	D	C	B	E	C	B
Approach Vol, veh/h		403			422			1497			1902	
Approach Delay, s/veh		42.7			40.4			21.4			30.6	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	46.1	10.3	17.5	9.7	48.0	10.0	17.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	42.0	7.0	16.0	7.0	44.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	8.0	28.2	6.7	12.3	5.3	40.3	5.8	10.0
Green Ext Time (p_c), s	0.0	12.9	0.0	1.1	0.0	3.6	0.0	1.6

Intersection Summary		
HCM 2010 Ctrl Delay		29.5
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	64	102	28	32	94	64	30	1340	47	79	1586	89
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	72	115	31	36	106	72	31	1396	49	81	1635	92
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.96	0.96	0.96	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	92	400	71	157	400	82	1653	58	149	1810	810
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.05	0.47	0.47	0.08	0.51	0.51
Sat Flow, veh/h	0	364	1583	0	619	1583	1774	3488	122	1774	3539	1583
Grp Volume(v), veh/h	187	0	31	142	0	72	31	707	738	81	1635	92
Grp Sat Flow(s),veh/h/ln	364	0	1583	619	0	1583	1774	1770	1841	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.9	0.0	0.0	2.3	1.1	22.2	22.3	2.8	26.6	1.9
Cycle Q Clear(g_c), s	16.0	0.0	0.9	16.0	0.0	2.3	1.1	22.2	22.3	2.8	26.6	1.9
Prop In Lane	0.39		1.00	0.25		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	171	0	400	228	0	400	82	838	872	149	1810	810
V/C Ratio(X)	1.09	0.00	0.08	0.62	0.00	0.18	0.38	0.84	0.85	0.54	0.90	0.11
Avail Cap(c_a), veh/h	171	0	400	228	0	400	196	838	872	196	1810	810
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.9	0.0	18.0	20.0	0.0	18.5	29.3	14.6	14.6	27.8	14.1	8.0
Incr Delay (d2), s/veh	96.5	0.0	0.1	5.2	0.0	0.2	2.8	10.1	9.9	3.1	7.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	0.0	0.4	2.3	0.0	1.0	0.6	13.0	13.7	1.5	14.7	0.9
LnGrp Delay(d),s/veh	120.4	0.0	18.1	25.2	0.0	18.7	32.1	24.7	24.5	30.9	21.9	8.3
LnGrp LOS	F		B	C		B	C	C	C	C	C	A
Approach Vol, veh/h		218			214			1476			1808	
Approach Delay, s/veh		105.8			23.0			24.8			21.6	
Approach LOS		F			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.3	34.0		20.0	6.9	36.4		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	30.0		16.0	7.0	30.0		16.0
Max Q Clear Time (g_c+I1), s	4.8	24.3		18.0	3.1	28.6		18.0
Green Ext Time (p_c), s	0.0	5.5		0.0	0.0	1.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	27.9
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	384	162	45	303	41	88	438	60	31	374	47
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	54	452	191	55	370	50	106	528	72	33	394	49
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.82	0.82	0.82	0.83	0.83	0.83	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	123	544	463	125	546	464	173	996	135	88	856	106
Arrive On Green	0.07	0.29	0.29	0.07	0.29	0.29	0.10	0.32	0.32	0.05	0.27	0.27
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3132	426	1774	3171	392
Grp Volume(v), veh/h	54	452	191	55	370	50	106	298	302	33	219	224
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1788	1774	1770	1794
Q Serve(g_s), s	1.7	13.4	5.8	1.8	10.4	1.4	3.4	8.2	8.2	1.1	6.1	6.2
Cycle Q Clear(g_c), s	1.7	13.4	5.8	1.8	10.4	1.4	3.4	8.2	8.2	1.1	6.1	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.22
Lane Grp Cap(c), veh/h	123	544	463	125	546	464	173	563	568	88	478	484
V/C Ratio(X)	0.44	0.83	0.41	0.44	0.68	0.11	0.61	0.53	0.53	0.38	0.46	0.46
Avail Cap(c_a), veh/h	210	597	508	210	597	508	210	563	568	210	478	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	19.6	16.9	26.4	18.5	15.3	25.7	16.6	16.6	27.3	18.0	18.1
Incr Delay (d2), s/veh	2.4	9.0	0.6	2.4	2.7	0.1	3.6	3.5	3.5	2.6	3.1	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	8.3	2.6	0.9	5.8	0.6	1.8	4.5	4.6	0.6	3.4	3.5
LnGrp Delay(d),s/veh	28.9	28.6	17.5	28.9	21.2	15.4	29.3	20.1	20.1	29.9	21.2	21.2
LnGrp LOS	C	C	B	C	C	B	C	C	C	C	C	C
Approach Vol, veh/h		697			475			706			476	
Approach Delay, s/veh		25.5			21.5			21.5			21.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	22.8	8.2	21.3	9.8	20.0	8.1	21.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	10.2	3.8	15.4	5.4	8.2	3.7	12.4
Green Ext Time (p_c), s	0.0	2.9	0.0	1.9	0.0	3.7	0.0	3.1

Intersection Summary			
HCM 2010 Ctrl Delay			22.8
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	120	232	72	85	173	117	74	1244	59	235	1360	131
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	141	273	85	109	222	150	79	1323	63	250	1447	139
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.78	0.78	0.78	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	161	325	277	137	301	256	120	1484	664	261	1765	790
Arrive On Green	0.09	0.17	0.17	0.08	0.16	0.16	0.07	0.42	0.42	0.15	0.50	0.50
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	141	273	85	109	222	150	79	1323	63	250	1447	139
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	6.9	12.5	4.1	5.3	10.0	7.7	3.8	30.6	2.1	12.3	30.6	4.3
Cycle Q Clear(g_c), s	6.9	12.5	4.1	5.3	10.0	7.7	3.8	30.6	2.1	12.3	30.6	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	161	325	277	137	301	256	120	1484	664	261	1765	790
V/C Ratio(X)	0.88	0.84	0.31	0.79	0.74	0.59	0.66	0.89	0.09	0.96	0.82	0.18
Avail Cap(c_a), veh/h	161	359	305	141	338	287	141	1484	664	261	1765	790
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	35.2	31.8	40.0	35.2	34.3	40.1	23.8	15.5	37.3	18.8	12.2
Incr Delay (d2), s/veh	38.1	14.9	0.6	25.7	7.4	2.5	8.4	8.5	0.3	43.7	4.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	7.8	1.9	3.6	5.7	3.6	2.2	16.6	1.0	9.2	16.0	2.0
LnGrp Delay(d),s/veh	77.7	50.1	32.4	65.7	42.6	36.8	48.6	32.2	15.8	81.0	23.2	12.6
LnGrp LOS	E	D	C	E	D	D	D	C	B	F	C	B
Approach Vol, veh/h		499			481			1465			1836	
Approach Delay, s/veh		54.9			46.0			32.4			30.2	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	41.0	10.8	19.4	10.0	48.0	12.0	18.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	37.0	7.0	17.0	7.0	43.0	8.0	16.0
Max Q Clear Time (g_c+I1), s	14.3	32.6	7.3	14.5	5.8	32.6	8.9	12.0
Green Ext Time (p_c), s	0.0	4.2	0.0	0.9	0.0	9.6	0.0	1.3

Intersection Summary			
HCM 2010 Ctrl Delay			35.6
HCM 2010 LOS			D

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	264	57	31	235	43	31	355	19	39	322	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	22	326	70	34	255	47	35	403	22	41	339	21
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.81	0.81	0.81	0.92	0.92	0.92	0.88	0.88	0.88	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	461	392	93	491	417	96	1091	59	108	1105	68
Arrive On Green	0.04	0.25	0.25	0.05	0.26	0.26	0.05	0.32	0.32	0.06	0.33	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3414	186	1774	3387	209
Grp Volume(v), veh/h	22	326	70	34	255	47	35	208	217	41	176	184
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1830	1774	1770	1826
Q Serve(g_s), s	0.6	8.0	1.7	0.9	5.9	1.1	1.0	4.5	4.6	1.1	3.7	3.8
Cycle Q Clear(g_c), s	0.6	8.0	1.7	0.9	5.9	1.1	1.0	4.5	4.6	1.1	3.7	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		0.11
Lane Grp Cap(c), veh/h	65	461	392	93	491	417	96	565	585	108	578	596
V/C Ratio(X)	0.34	0.71	0.18	0.36	0.52	0.11	0.37	0.37	0.37	0.38	0.31	0.31
Avail Cap(c_a), veh/h	248	707	601	248	707	601	248	565	585	248	578	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	17.2	14.8	22.9	15.7	14.0	22.9	13.1	13.2	22.6	12.6	12.6
Incr Delay (d2), s/veh	3.0	2.0	0.2	2.4	0.9	0.1	2.3	1.8	1.8	2.2	1.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.3	0.8	0.5	3.1	0.5	0.5	2.5	2.6	0.6	2.0	2.1
LnGrp Delay(d),s/veh	26.5	19.2	15.0	25.3	16.6	14.1	25.2	15.0	15.0	24.8	14.0	14.0
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		418			336			460			401	
Approach Delay, s/veh		18.9			17.1			15.7			15.1	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	20.0	6.6	16.4	6.7	20.3	5.8	17.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	6.6	2.9	10.0	3.0	5.8	2.6	7.9
Green Ext Time (p_c), s	0.0	3.0	0.0	2.4	0.0	3.2	0.0	2.7

Intersection Summary			
HCM 2010 Ctrl Delay			16.7
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	26	52	44	21	44	47	45	1313	55	76	1414	32
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	30	59	50	25	52	56	48	1397	59	82	1520	34
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.84	0.84	0.84	0.94	0.94	0.94	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	104	88	69	87	94	111	1803	76	147	1917	858
Arrive On Green	0.04	0.11	0.11	0.04	0.11	0.11	0.06	0.52	0.52	0.08	0.54	0.54
Sat Flow, veh/h	1774	933	790	1774	822	885	1774	3461	146	1774	3539	1583
Grp Volume(v), veh/h	30	0	109	25	0	108	48	713	743	82	1520	34
Grp Sat Flow(s),veh/h/ln	1774	0	1723	1774	0	1707	1774	1770	1837	1774	1770	1583
Q Serve(g_s), s	1.1	0.0	3.9	0.9	0.0	3.9	1.7	21.1	21.2	2.9	22.5	0.7
Cycle Q Clear(g_c), s	1.1	0.0	3.9	0.9	0.0	3.9	1.7	21.1	21.2	2.9	22.5	0.7
Prop In Lane	1.00		0.46	1.00		0.52	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	80	0	193	69	0	181	111	922	957	147	1917	858
V/C Ratio(X)	0.38	0.00	0.57	0.36	0.00	0.60	0.43	0.77	0.78	0.56	0.79	0.04
Avail Cap(c_a), veh/h	190	0	422	190	0	418	190	922	957	190	1917	858
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	27.5	30.6	0.0	27.8	29.5	12.5	12.6	28.8	12.0	7.0
Incr Delay (d2), s/veh	2.9	0.0	2.6	3.1	0.0	3.1	2.7	6.3	6.1	3.3	3.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	2.0	0.5	0.0	2.0	0.9	11.7	12.2	1.5	11.7	0.3
LnGrp Delay(d),s/veh	33.2	0.0	30.1	33.7	0.0	31.0	32.2	18.8	18.7	32.0	15.5	7.1
LnGrp LOS	C		C	C		C	C	B	B	C	B	A
Approach Vol, veh/h		139			133			1504			1636	
Approach Delay, s/veh		30.7			31.5			19.2			16.1	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	38.0	6.6	11.3	8.1	39.3	6.9	10.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	34.0	7.0	16.0	7.0	34.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.9	23.2	2.9	5.9	3.7	24.5	3.1	5.9
Green Ext Time (p_c), s	0.0	10.0	0.0	0.8	0.0	8.8	0.0	0.8

Intersection Summary		
HCM 2010 Ctrl Delay		18.7
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	508	1029	305	260	658	218	270	792	193	310	955	162
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	540	1095	324	302	765	253	297	870	212	341	1049	178
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.86	0.86	0.86	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	593	1062	475	313	829	271	290	933	417	355	1062	475
Arrive On Green	0.17	0.30	0.30	0.09	0.22	0.22	0.16	0.26	0.26	0.20	0.30	0.30
Sat Flow, veh/h	3442	3539	1583	3442	3792	1242	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	540	1095	324	302	683	335	297	870	212	341	1049	178
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1644	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	16.9	33.0	19.8	9.6	21.7	22.0	18.0	26.4	12.5	20.9	32.4	9.8
Cycle Q Clear(g_c), s	16.9	33.0	19.8	9.6	21.7	22.0	18.0	26.4	12.5	20.9	32.4	9.8
Prop In Lane	1.00		1.00	1.00		0.76	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	593	1062	475	313	741	359	290	933	417	355	1062	475
V/C Ratio(X)	0.91	1.03	0.68	0.97	0.92	0.93	1.02	0.93	0.51	0.96	0.99	0.37
Avail Cap(c_a), veh/h	594	1062	475	313	741	359	290	933	417	355	1062	475
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.7	38.5	33.9	49.8	42.1	42.2	46.0	39.5	34.4	43.6	38.3	30.4
Incr Delay (d2), s/veh	18.2	36.0	4.0	41.4	17.0	30.7	58.9	17.1	4.4	37.5	24.9	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.5	21.4	9.2	6.4	11.9	13.0	13.5	15.1	6.0	13.9	19.5	4.5
LnGrp Delay(d),s/veh	62.9	74.5	37.9	91.2	59.0	72.8	104.9	56.6	38.8	81.0	63.2	32.6
LnGrp LOS	E	F	D	F	E	E	F	E	D	F	E	C
Approach Vol, veh/h		1959			1320			1379			1568	
Approach Delay, s/veh		65.2			69.9			64.3			63.6	
Approach LOS		E			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	33.0	14.0	37.0	22.0	37.0	23.0	28.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	29.0	10.0	33.0	18.0	33.0	19.0	24.0
Max Q Clear Time (g_c+I1), s	22.9	28.4	11.6	35.0	20.0	34.4	18.9	24.0
Green Ext Time (p_c), s	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary			
HCM 2010 Ctrl Delay			65.6
HCM 2010 LOS			E

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	15	3	40	2	1	12	40	1423	2	47	1696	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	58	58	58	97	97	97	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	4	51	3	2	21	45	1614	2	48	1731	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2736	3545	877	2669	3555	808	1753	0	0	1616	0	0
Stage 1	1838	1838	-	1706	1706	-	-	-	-	-	-	-
Stage 2	898	1707	-	963	1849	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 10	6	292	11	6	324	353	-	-	399	-	-
Stage 1	78	125	-	95	145	-	-	-	-	-	-	-
Stage 2	301	145	-	274	123	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 7	5	292	7	5	324	353	-	-	399	-	-
Mov Cap-2 Maneuver	48	44	-	51	40	-	-	-	-	-	-	-
Stage 1	68	110	-	83	127	-	-	-	-	-	-	-
Stage 2	243	127	-	192	108	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	85.3	34.4	0.5	0.4
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	353	-	-	112	148	399	-	-
HCM Lane V/C Ratio	0.129	-	-	0.664	0.175	0.12	-	-
HCM Control Delay (s)	16.7	-	-	85.3	34.4	15.3	-	-
HCM Lane LOS	C	-	-	F	D	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-	3.4	0.6	0.4	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	383	55	15	257	9	31	6	9	7	2	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	88	88	88	60	60	60	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	391	56	17	292	10	52	10	15	9	3	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	292	0	0	391	0	0	763	754	391	766	754	292
Stage 1	-	-	-	-	-	-	428	428	-	326	326	-
Stage 2	-	-	-	-	-	-	335	326	-	440	428	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1270	-	-	1168	-	-	321	338	658	320	338	747
Stage 1	-	-	-	-	-	-	605	585	-	687	648	-
Stage 2	-	-	-	-	-	-	679	648	-	596	585	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1270	-	-	1168	-	-	306	328	658	299	328	747
Mov Cap-2 Maneuver	-	-	-	-	-	-	306	328	-	299	328	-
Stage 1	-	-	-	-	-	-	596	577	-	677	639	-
Stage 2	-	-	-	-	-	-	653	639	-	564	577	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.4	18.4	13.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	345	1270	-	-	1168	-	-	452
HCM Lane V/C Ratio	0.222	0.014	-	-	0.015	-	-	0.059
HCM Control Delay (s)	18.4	7.9	-	-	8.1	-	-	13.5
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.8	0	-	-	0	-	-	0.2

HCM 2010 TWSC
10: Cottonwood Ave & Driveway

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	469	312	11	0	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	81	81	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	515	385	14	0	65

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	399	0	-	0	907	392
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	515	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1160	-	-	-	306	657
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	600	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1160	-	-	-	306	657
Mov Cap-2 Maneuver	-	-	-	-	306	-
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	600	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1160	-	-	-	657
HCM Lane V/C Ratio	-	-	-	-	0.099
HCM Control Delay (s)	0	-	-	-	11.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	24.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	12	0	74	0	0	50	54	1374	102	0	1633	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	92	92	92	95	95	95	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	0	103	0	0	54	57	1446	107	0	1756	41

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2613	3443	898	2492	3411	777	1797	0	0	1554	0	0
Stage 1	1776	1776	-	1614	1614	-	-	-	-	-	-	-
Stage 2	837	1667	-	878	1797	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 12	7	282	15	7	340	340	-	-	422	-	-
Stage 1	86	134	-	108	161	-	-	-	-	-	-	-
Stage 2	327	152	-	309	131	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 9	6	282	8	6	340	340	-	-	422	-	-
Mov Cap-2 Maneuver	~ 9	6	-	8	6	-	-	-	-	-	-	-
Stage 1	72	134	-	90	134	-	-	-	-	-	-	-
Stage 2	229	127	-	196	131	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 719.5	17.6	0.6	0
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	340	-	-	54	340	422	-	-
HCM Lane V/C Ratio	0.167	-	-	2.212	0.16	-	-	-
HCM Control Delay (s)	17.7	-	-	$ 719.5	17.6	0	-	-
HCM Lane LOS	C	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	11.9	0.6	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	63	101	41	52	81	84	58	1186	56	71	1134	58
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	70	112	46	63	98	101	64	1303	62	79	1260	64
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.83	0.83	0.83	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	218	185	133	210	178	134	1652	739	149	1683	753
Arrive On Green	0.08	0.12	0.12	0.07	0.11	0.11	0.08	0.47	0.47	0.08	0.48	0.48
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	70	112	46	63	98	101	64	1303	62	79	1260	64
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.3	3.5	1.6	2.1	3.1	3.8	2.1	19.3	1.3	2.7	18.0	1.4
Cycle Q Clear(g_c), s	2.3	3.5	1.6	2.1	3.1	3.8	2.1	19.3	1.3	2.7	18.0	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	140	218	185	133	210	178	134	1652	739	149	1683	753
V/C Ratio(X)	0.50	0.51	0.25	0.48	0.47	0.57	0.48	0.79	0.08	0.53	0.75	0.09
Avail Cap(c_a), veh/h	200	480	408	200	480	408	200	1652	739	200	1683	753
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	25.8	24.9	27.6	25.8	26.1	27.5	14.0	9.2	27.3	13.3	8.9
Incr Delay (d2), s/veh	2.7	1.9	0.7	2.6	1.6	2.8	2.6	3.9	0.2	2.9	3.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.9	0.7	1.1	1.7	1.8	1.1	10.1	0.6	1.4	9.5	0.6
LnGrp Delay(d),s/veh	30.2	27.6	25.6	30.2	27.4	28.9	30.2	17.9	9.4	30.2	16.4	9.1
LnGrp LOS	C	C	C	C	C	C	C	B	A	C	B	A
Approach Vol, veh/h		228			262			1429			1403	
Approach Delay, s/veh		28.0			28.7			18.1			16.8	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	33.0	8.6	11.3	8.7	33.5	8.9	11.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	29.0	7.0	16.0	7.0	29.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.7	21.3	4.1	5.5	4.1	20.0	4.3	5.8
Green Ext Time (p_c), s	0.0	7.0	0.0	1.1	0.0	8.1	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	19.1
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	78	91	28	39	65	63	46	1165	27	29	1120	57
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	90	105	32	45	75	72	55	1387	32	34	1302	66
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.84	0.84	0.84	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	76	444	87	106	444	127	1621	37	91	1550	694
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.07	0.46	0.46	0.05	0.44	0.44
Sat Flow, veh/h	0	270	1583	0	379	1583	1774	3536	82	1774	3539	1583
Grp Volume(v), veh/h	195	0	32	120	0	72	55	693	726	34	1302	66
Grp Sat Flow(s),veh/h/ln	270	0	1583	379	0	1583	1774	1770	1848	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.8	0.0	0.0	2.0	1.7	19.9	20.0	1.1	18.7	1.4
Cycle Q Clear(g_c), s	16.0	0.0	0.8	16.0	0.0	2.0	1.7	19.9	20.0	1.1	18.7	1.4
Prop In Lane	0.46		1.00	0.37		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	168	0	444	193	0	444	127	811	847	91	1550	694
V/C Ratio(X)	1.16	0.00	0.07	0.62	0.00	0.16	0.43	0.86	0.86	0.38	0.84	0.10
Avail Cap(c_a), veh/h	168	0	444	193	0	444	218	811	847	218	1550	694
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	0.0	15.1	17.2	0.0	15.5	25.4	13.8	13.8	26.2	14.3	9.4
Incr Delay (d2), s/veh	119.8	0.0	0.1	6.0	0.0	0.2	2.3	11.2	10.9	2.6	5.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	0.0	0.4	1.8	0.0	0.9	0.9	12.2	12.6	0.6	10.3	0.7
LnGrp Delay(d),s/veh	141.6	0.0	15.2	23.2	0.0	15.7	27.7	25.0	24.6	28.7	19.9	9.7
LnGrp LOS	F		B	C		B	C	C	C	C	B	A
Approach Vol, veh/h		227			192			1474			1402	
Approach Delay, s/veh		123.8			20.4			24.9			19.6	
Approach LOS		F			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.9	30.2		20.0	8.1	29.0		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	25.0		16.0	7.0	25.0		16.0
Max Q Clear Time (g_c+I1), s	3.1	22.0		18.0	3.7	20.7		18.0
Green Ext Time (p_c), s	0.0	2.9		0.0	0.0	4.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	29.2
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	271	115	49	325	26	97	278	47	22	239	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	23	347	147	58	387	31	100	287	48	24	257	24
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.78	0.78	0.78	0.84	0.84	0.84	0.97	0.97	0.97	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	468	398	131	535	455	173	1084	179	69	975	90
Arrive On Green	0.04	0.25	0.25	0.07	0.29	0.29	0.10	0.36	0.36	0.04	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3041	503	1774	3275	303
Grp Volume(v), veh/h	23	347	147	58	387	31	100	166	169	24	138	143
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1774	1774	1770	1809
Q Serve(g_s), s	0.7	9.8	4.4	1.8	10.7	0.8	3.1	3.8	3.9	0.8	3.4	3.4
Cycle Q Clear(g_c), s	0.7	9.8	4.4	1.8	10.7	0.8	3.1	3.8	3.9	0.8	3.4	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.28	1.00		0.17
Lane Grp Cap(c), veh/h	66	468	398	131	535	455	173	630	632	69	527	538
V/C Ratio(X)	0.35	0.74	0.37	0.44	0.72	0.07	0.58	0.26	0.27	0.35	0.26	0.27
Avail Cap(c_a), veh/h	217	587	499	217	587	499	217	630	632	217	527	538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	19.7	17.7	25.3	18.3	14.8	24.7	13.1	13.1	26.7	15.3	15.3
Incr Delay (d2), s/veh	3.1	3.8	0.6	2.3	4.0	0.1	3.0	1.0	1.0	3.0	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	5.5	2.0	1.0	6.1	0.4	1.6	2.0	2.1	0.4	1.8	1.9
LnGrp Delay(d),s/veh	29.9	23.5	18.2	27.7	22.3	14.9	27.7	14.1	14.1	29.7	16.5	16.5
LnGrp LOS	C	C	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		517			476			435			305	
Approach Delay, s/veh		22.3			22.5			17.2			17.5	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	24.4	8.2	18.3	9.6	21.0	6.1	20.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	18.0	7.0	17.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	2.8	5.9	3.8	11.8	5.1	5.4	2.7	12.7
Green Ext Time (p_c), s	0.0	2.7	0.0	2.5	0.0	2.7	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	20.2
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	111	140	65	130	200	196	87	1054	75	236	901	106
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	141	177	82	228	351	344	96	1158	82	271	1036	122
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.79	0.79	0.79	0.57	0.57	0.57	0.91	0.91	0.91	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	158	331	281	237	414	352	125	1258	563	276	1559	697
Arrive On Green	0.09	0.18	0.18	0.13	0.22	0.22	0.07	0.36	0.36	0.16	0.44	0.44
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	141	177	82	228	351	344	96	1158	82	271	1036	122
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	7.1	7.8	4.0	11.5	16.3	19.4	4.8	28.2	3.2	13.7	20.8	4.2
Cycle Q Clear(g_c), s	7.1	7.8	4.0	11.5	16.3	19.4	4.8	28.2	3.2	13.7	20.8	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	158	331	281	237	414	352	125	1258	563	276	1559	697
V/C Ratio(X)	0.89	0.53	0.29	0.96	0.85	0.98	0.77	0.92	0.15	0.98	0.66	0.17
Avail Cap(c_a), veh/h	158	331	281	237	414	352	177	1258	563	276	1559	697
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.6	33.6	32.1	38.8	33.5	34.8	41.1	27.8	19.7	37.9	19.9	15.3
Incr Delay (d2), s/veh	42.5	1.7	0.6	48.3	15.1	41.9	11.8	12.3	0.5	49.0	2.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	4.1	1.8	8.8	10.1	12.6	2.8	15.8	1.5	10.5	10.6	1.9
LnGrp Delay(d),s/veh	83.1	35.3	32.7	87.1	48.7	76.6	52.9	40.1	20.3	86.9	22.2	15.8
LnGrp LOS	F	D	C	F	D	E	D	D	C	F	C	B
Approach Vol, veh/h		400			923			1336			1429	
Approach Delay, s/veh		51.6			68.6			39.8			33.9	
Approach LOS		D			E			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	36.0	16.0	20.0	10.4	43.6	12.0	24.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	32.0	12.0	16.0	9.0	37.0	8.0	20.0
Max Q Clear Time (g_c+I1), s	15.7	30.2	13.5	9.8	6.8	22.8	9.1	21.4
Green Ext Time (p_c), s	0.0	1.7	0.0	2.4	0.0	11.4	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		45.4
HCM 2010 LOS		D

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	221	64	10	245	31	34	206	15	28	223	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	62	395	114	15	360	46	40	245	18	32	256	22
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.56	0.56	0.56	0.68	0.68	0.68	0.84	0.84	0.84	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	594	505	46	497	422	104	1028	75	88	984	84
Arrive On Green	0.08	0.32	0.32	0.03	0.27	0.27	0.06	0.31	0.31	0.05	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3345	244	1774	3301	282
Grp Volume(v), veh/h	62	395	114	15	360	46	40	129	134	32	136	142
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1820	1774	1770	1813
Q Serve(g_s), s	1.8	9.8	2.8	0.4	9.4	1.2	1.2	2.9	3.0	0.9	3.1	3.2
Cycle Q Clear(g_c), s	1.8	9.8	2.8	0.4	9.4	1.2	1.2	2.9	3.0	0.9	3.1	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		0.16
Lane Grp Cap(c), veh/h	140	594	505	46	497	422	104	544	559	88	527	540
V/C Ratio(X)	0.44	0.66	0.23	0.32	0.72	0.11	0.38	0.24	0.24	0.36	0.26	0.26
Avail Cap(c_a), veh/h	231	659	560	231	659	560	231	544	559	231	527	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	15.8	13.4	25.7	17.9	14.9	24.3	13.9	13.9	24.7	14.3	14.3
Incr Delay (d2), s/veh	2.2	2.2	0.2	4.0	2.7	0.1	2.3	1.0	1.0	2.5	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.4	1.3	0.3	5.2	0.5	0.6	1.6	1.6	0.5	1.7	1.8
LnGrp Delay(d),s/veh	25.8	18.0	13.6	29.6	20.6	15.0	26.7	14.9	14.9	27.2	15.5	15.5
LnGrp LOS	C	B	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		571			421			303			310	
Approach Delay, s/veh		18.0			20.3			16.5			16.7	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	20.5	5.4	21.1	7.1	20.0	8.2	18.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	2.9	5.0	2.4	11.8	3.2	5.2	3.8	11.4
Green Ext Time (p_c), s	0.0	2.2	0.0	2.8	0.0	2.2	0.0	2.9

Intersection Summary			
HCM 2010 Ctrl Delay			18.1
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	25	41	30	26	34	66	33	1104	39	67	1068	31
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	29	48	35	34	44	86	34	1150	41	75	1200	35
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.77	0.77	0.77	0.96	0.96	0.96	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	81	126	92	92	74	145	92	1539	55	155	1688	755
Arrive On Green	0.05	0.13	0.13	0.05	0.13	0.13	0.05	0.44	0.44	0.09	0.48	0.48
Sat Flow, veh/h	1774	1003	731	1774	565	1103	1774	3486	124	1774	3539	1583
Grp Volume(v), veh/h	29	0	83	34	0	130	34	584	607	75	1200	35
Grp Sat Flow(s),veh/h/ln	1774	0	1734	1774	0	1668	1774	1770	1841	1774	1770	1583
Q Serve(g_s), s	0.9	0.0	2.4	1.0	0.0	4.0	1.0	14.9	15.0	2.2	14.6	0.6
Cycle Q Clear(g_c), s	0.9	0.0	2.4	1.0	0.0	4.0	1.0	14.9	15.0	2.2	14.6	0.6
Prop In Lane	1.00		0.42	1.00		0.66	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	81	0	217	92	0	219	92	781	812	155	1688	755
V/C Ratio(X)	0.36	0.00	0.38	0.37	0.00	0.59	0.37	0.75	0.75	0.48	0.71	0.05
Avail Cap(c_a), veh/h	228	0	510	228	0	491	228	781	812	228	1688	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.2	0.0	21.8	24.9	0.0	22.2	24.9	12.7	12.7	23.6	11.3	7.6
Incr Delay (d2), s/veh	2.7	0.0	1.1	2.5	0.0	2.5	2.5	6.4	6.2	2.3	2.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.2	0.6	0.0	2.0	0.6	8.5	8.8	1.2	7.6	0.3
LnGrp Delay(d),s/veh	27.8	0.0	22.9	27.4	0.0	24.8	27.4	19.1	18.9	26.0	13.8	7.7
LnGrp LOS	C		C	C		C	C	B	B	C	B	A
Approach Vol, veh/h		112			164			1225			1310	
Approach Delay, s/veh		24.2			25.3			19.2			14.4	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	28.0	6.8	10.8	6.8	29.9	6.5	11.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.2	17.0	3.0	4.4	3.0	16.6	2.9	6.0
Green Ext Time (p_c), s	0.0	6.2	0.0	0.8	0.0	6.5	0.0	0.8

Intersection Summary			
HCM 2010 Ctrl Delay			17.5
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	375	519	232	239	489	179	308	739	140	211	693	183
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	417	577	258	278	569	208	338	812	154	229	753	199
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.86	0.86	0.86	0.91	0.91	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	435	765	342	360	720	257	375	1153	516	268	939	420
Arrive On Green	0.13	0.22	0.22	0.10	0.19	0.19	0.21	0.33	0.33	0.15	0.27	0.27
Sat Flow, veh/h	3442	3539	1583	3442	3701	1319	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	417	577	258	278	520	257	338	812	154	229	753	199
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1630	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.5	12.1	12.1	6.2	11.5	11.9	14.7	15.9	5.7	10.0	15.7	8.4
Cycle Q Clear(g_c), s	9.5	12.1	12.1	6.2	11.5	11.9	14.7	15.9	5.7	10.0	15.7	8.4
Prop In Lane	1.00		1.00	1.00		0.81	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	435	765	342	360	660	317	375	1153	516	268	939	420
V/C Ratio(X)	0.96	0.75	0.75	0.77	0.79	0.81	0.90	0.70	0.30	0.85	0.80	0.47
Avail Cap(c_a), veh/h	435	765	342	392	686	330	381	1153	516	292	939	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	29.0	29.0	34.5	30.3	30.5	30.4	23.3	19.9	32.7	27.1	24.4
Incr Delay (d2), s/veh	32.6	4.3	9.1	8.5	5.9	13.7	23.6	3.6	1.5	20.1	7.2	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	6.3	6.1	3.4	6.0	6.6	9.6	8.4	2.7	6.4	8.6	4.1
LnGrp Delay(d),s/veh	66.9	33.3	38.1	43.0	36.2	44.1	54.0	27.0	21.4	52.8	34.3	28.2
LnGrp LOS	E	C	D	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		1252			1055			1304			1181	
Approach Delay, s/veh		45.5			39.9			33.3			36.8	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	29.8	12.3	21.1	20.7	25.0	14.0	19.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	25.0	9.0	17.0	17.0	21.0	10.0	16.0
Max Q Clear Time (g_c+I1), s	12.0	17.9	8.2	14.1	16.7	17.7	11.5	13.9
Green Ext Time (p_c), s	0.1	5.4	0.1	2.2	0.0	2.7	0.0	1.5

Intersection Summary			
HCM 2010 Ctrl Delay			38.8
HCM 2010 LOS			D

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	4	30	3	7	15	41	1265	3	38	1170	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	72	72	72	89	89	89	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	6	46	4	10	21	51	1563	4	44	1345	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2331	3112	683	2430	3121	784	1367	0	0	1567	0	0
Stage 1	1443	1443	-	1667	1667	-	-	-	-	-	-	-
Stage 2	888	1669	-	763	1454	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 20	11	392	17	11	336	498	-	-	417	-	-
Stage 1	139	196	-	100	152	-	-	-	-	-	-	-
Stage 2	305	151	-	363	193	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 14	9	392	12	~ 9	336	498	-	-	417	-	-
Mov Cap-2 Maneuver	75	59	-	63	63	-	-	-	-	-	-	-
Stage 1	125	175	-	90	136	-	-	-	-	-	-	-
Stage 2	238	136	-	276	173	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	71.1	45.4	0.4	0.5
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	498	-	-	131	123	417	-	-
HCM Lane V/C Ratio	0.102	-	-	0.634	0.282	0.105	-	-
HCM Control Delay (s)	13	-	-	71.1	45.4	14.6	-	-
HCM Lane LOS	B	-	-	F	E	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	3.3	1.1	0.3	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	25	343	46	3	289	4	34	4	10	2	2	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	58	58	58	79	79	79	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	44	602	81	5	498	7	43	5	13	3	3	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	498	0	0	602	0	0	1207	1198	602	1207	1198	498
Stage 1	-	-	-	-	-	-	689	689	-	509	509	-
Stage 2	-	-	-	-	-	-	518	509	-	698	689	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1066	-	-	975	-	-	160	186	500	160	186	572
Stage 1	-	-	-	-	-	-	436	446	-	547	538	-
Stage 2	-	-	-	-	-	-	541	538	-	431	446	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1066	-	-	975	-	-	148	177	500	147	177	572
Mov Cap-2 Maneuver	-	-	-	-	-	-	148	177	-	147	177	-
Stage 1	-	-	-	-	-	-	418	428	-	524	535	-
Stage 2	-	-	-	-	-	-	521	535	-	398	428	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	35.9	16.7
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	176	1066	-	-	975	-	-	330
HCM Lane V/C Ratio	0.345	0.041	-	-	0.005	-	-	0.065
HCM Control Delay (s)	35.9	8.5	-	-	8.7	-	-	16.7
HCM Lane LOS	E	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.4	0.1	-	-	0	-	-	0.2

HCM 2010 TWSC
10: Cottonwood Ave & Driveway

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	301	367	16	0	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	77	77	81	81	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	391	453	20	0	92

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	473	0	-	0	854	463
Stage 1	-	-	-	-	463	-
Stage 2	-	-	-	-	391	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1089	-	-	-	329	599
Stage 1	-	-	-	-	634	-
Stage 2	-	-	-	-	683	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1089	-	-	-	329	599
Mov Cap-2 Maneuver	-	-	-	-	329	-
Stage 1	-	-	-	-	634	-
Stage 2	-	-	-	-	683	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1089	-	-	-	599
HCM Lane V/C Ratio	-	-	-	-	0.154
HCM Control Delay (s)	0	-	-	-	12.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.5

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	26

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	21	0	78	0	0	71	70	1212	139	0	1150	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	92	92	92	82	82	82	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	0	98	0	0	77	85	1478	170	0	1337	44

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2269	3177	691	2403	3115	824	1381	0	0	1648	0	0
Stage 1	1359	1359	-	1734	1734	-	-	-	-	-	-	-
Stage 2	910	1818	-	669	1381	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 22	10	387	17	11	316	492	-	-	388	-	-
Stage 1	157	215	-	91	141	-	-	-	-	-	-	-
Stage 2	296	128	-	413	210	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 14	8	387	11	9	316	492	-	-	388	-	-
Mov Cap-2 Maneuver	~ 14	8	-	11	9	-	-	-	-	-	-	-
Stage 1	130	215	-	75	117	-	-	-	-	-	-	-
Stage 2	185	106	-	309	210	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 675.2	20	0.7	0
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	492	-	-	58	316	388	-	-
HCM Lane V/C Ratio	0.174	-	-	2.134	0.244	-	-	-
HCM Control Delay (s)	13.8	-	-	$ 675.2	20	0	-	-
HCM Lane LOS	B	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	12.1	0.9	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	39	92	62	112	158	199	63	1394	66	78	1134	32
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	57	133	90	127	180	226	72	1602	76	89	1289	36
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.69	0.69	0.69	0.88	0.88	0.88	0.87	0.87	0.87	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	276	235	145	315	268	119	1813	811	127	1830	819
Arrive On Green	0.06	0.15	0.15	0.08	0.17	0.17	0.07	0.51	0.51	0.07	0.52	0.52
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	57	133	90	127	180	226	72	1602	76	89	1289	36
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.7	5.6	4.4	6.1	7.6	11.9	3.4	34.6	2.1	4.2	23.8	1.0
Cycle Q Clear(g_c), s	2.7	5.6	4.4	6.1	7.6	11.9	3.4	34.6	2.1	4.2	23.8	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	107	276	235	145	315	268	119	1813	811	127	1830	819
V/C Ratio(X)	0.53	0.48	0.38	0.88	0.57	0.84	0.61	0.88	0.09	0.70	0.70	0.04
Avail Cap(c_a), veh/h	145	347	295	145	347	295	145	1813	811	145	1830	819
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	33.6	33.0	39.0	32.8	34.6	39.0	18.7	10.7	39.0	15.8	10.2
Incr Delay (d2), s/veh	4.0	1.3	1.0	41.4	1.8	18.2	4.9	6.7	0.2	12.0	2.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.0	2.0	4.6	4.1	6.5	1.8	18.4	1.0	2.5	12.0	0.4
LnGrp Delay(d),s/veh	43.2	34.9	34.1	80.5	34.7	52.8	43.9	25.4	11.0	51.0	18.1	10.3
LnGrp LOS	D	C	C	F	C	D	D	C	B	D	B	B
Approach Vol, veh/h		280			533			1750			1414	
Approach Delay, s/veh		36.3			53.3			25.5			19.9	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	48.0	11.0	16.7	9.7	48.4	9.2	18.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	44.0	7.0	16.0	7.0	44.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.2	36.6	8.1	7.6	5.4	25.8	4.7	13.9
Green Ext Time (p_c), s	0.0	7.0	0.0	1.8	0.0	16.3	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	28.0
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	74	77	50	67	102	62	47	1402	27	35	1201	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	85	89	57	89	136	83	55	1630	31	42	1430	94
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.75	0.75	0.75	0.86	0.86	0.86	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	58	375	74	68	375	118	1878	36	100	1835	821
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.07	0.53	0.53	0.06	0.52	0.52
Sat Flow, veh/h	0	243	1583	0	289	1583	1774	3553	67	1774	3539	1583
Grp Volume(v), veh/h	174	0	57	225	0	83	55	811	850	42	1430	94
Grp Sat Flow(s),veh/h/ln	243	0	1583	289	0	1583	1774	1770	1851	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	1.9	0.0	0.0	2.8	2.0	26.9	27.0	1.5	22.0	2.1
Cycle Q Clear(g_c), s	16.0	0.0	1.9	16.0	0.0	2.8	2.0	26.9	27.0	1.5	22.0	2.1
Prop In Lane	0.49		1.00	0.40		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	137	0	375	143	0	375	118	936	979	100	1835	821
V/C Ratio(X)	1.27	0.00	0.15	1.58	0.00	0.22	0.46	0.87	0.87	0.42	0.78	0.11
Avail Cap(c_a), veh/h	137	0	375	143	0	375	184	936	979	184	1835	821
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	0.0	20.4	26.7	0.0	20.7	30.3	13.8	13.9	30.8	13.1	8.3
Incr Delay (d2), s/veh	167.0	0.0	0.2	289.8	0.0	0.3	2.8	10.6	10.4	2.8	3.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	0.0	0.9	14.1	0.0	1.3	1.1	15.8	16.5	0.8	11.6	1.0
LnGrp Delay(d),s/veh	194.5	0.0	20.6	316.5	0.0	21.0	33.2	24.4	24.3	33.5	16.5	8.6
LnGrp LOS	F		C	F		C	C	C	C	C	B	A
Approach Vol, veh/h		231			308			1716			1566	
Approach Delay, s/veh		151.6			236.9			24.6			16.5	
Approach LOS		F			F			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.8	39.7		20.0	8.5	39.0		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	35.0		16.0	7.0	35.0		16.0
Max Q Clear Time (g_c+I1), s	3.5	29.0		18.0	4.0	24.0		18.0
Green Ext Time (p_c), s	0.0	5.7		0.0	0.0	10.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	46.1
HCM 2010 LOS	D

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	333	138	49	412	92	103	330	32	59	408	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	59	392	162	64	542	121	130	418	41	68	469	60
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.76	0.76	0.76	0.79	0.79	0.79	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	567	482	134	574	488	180	920	90	139	819	104
Arrive On Green	0.07	0.30	0.30	0.08	0.31	0.31	0.10	0.28	0.28	0.08	0.26	0.26
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3258	318	1774	3159	402
Grp Volume(v), veh/h	59	392	162	64	542	121	130	226	233	68	262	267
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1807	1774	1770	1792
Q Serve(g_s), s	2.0	11.4	4.9	2.1	17.5	3.5	4.4	6.5	6.6	2.3	7.9	8.0
Cycle Q Clear(g_c), s	2.0	11.4	4.9	2.1	17.5	3.5	4.4	6.5	6.6	2.3	7.9	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		0.22
Lane Grp Cap(c), veh/h	128	567	482	134	574	488	180	500	510	139	459	465
V/C Ratio(X)	0.46	0.69	0.34	0.48	0.94	0.25	0.72	0.45	0.46	0.49	0.57	0.58
Avail Cap(c_a), veh/h	201	574	488	201	574	488	201	500	510	201	459	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	18.9	16.6	27.3	20.8	16.0	26.9	18.2	18.2	27.3	19.9	19.9
Incr Delay (d2), s/veh	2.6	3.5	0.4	2.6	24.6	0.3	10.8	2.9	2.9	2.7	5.1	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	6.4	2.2	1.1	12.8	1.6	2.7	3.5	3.6	1.2	4.5	4.6
LnGrp Delay(d),s/veh	30.0	22.4	17.0	30.0	45.5	16.3	37.6	21.2	21.2	29.9	24.9	25.0
LnGrp LOS	C	C	B	C	D	B	D	C	C	C	C	C
Approach Vol, veh/h		613			727			589			597	
Approach Delay, s/veh		21.7			39.3			24.8			25.5	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	21.4	8.7	22.8	10.2	20.0	8.5	23.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	4.3	8.6	4.1	13.4	6.4	10.0	4.0	19.5
Green Ext Time (p_c), s	0.0	3.4	0.0	3.0	0.0	2.9	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		28.4
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	103	195	75	104	248	207	79	1175	74	137	1108	98
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	129	244	94	141	335	280	96	1433	90	163	1319	117
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.80	0.80	0.80	0.74	0.74	0.74	0.82	0.82	0.82	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	350	298	158	371	315	126	1575	704	178	1679	751
Arrive On Green	0.08	0.19	0.19	0.09	0.20	0.20	0.07	0.44	0.44	0.10	0.47	0.47
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	129	244	94	141	335	280	96	1433	90	163	1319	117
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	6.5	11.0	4.6	7.1	15.8	15.5	4.8	34.0	3.0	8.2	28.1	3.8
Cycle Q Clear(g_c), s	6.5	11.0	4.6	7.1	15.8	15.5	4.8	34.0	3.0	8.2	28.1	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	138	350	298	158	371	315	126	1575	704	178	1679	751
V/C Ratio(X)	0.93	0.70	0.32	0.89	0.90	0.89	0.76	0.91	0.13	0.92	0.79	0.16
Avail Cap(c_a), veh/h	138	352	299	158	373	317	138	1575	704	178	1679	751
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.2	34.1	31.5	40.5	35.2	35.0	41.0	23.3	14.7	40.1	19.8	13.4
Incr Delay (d2), s/veh	56.7	5.9	0.6	42.2	24.4	24.8	20.4	9.4	0.4	44.7	3.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	6.2	2.1	5.3	10.6	8.9	3.1	18.6	1.4	6.2	14.4	1.7
LnGrp Delay(d),s/veh	98.0	40.0	32.1	82.8	59.6	59.8	61.4	32.7	15.1	84.7	23.6	13.9
LnGrp LOS	F	D	C	F	E	E	E	C	B	F	C	B
Approach Vol, veh/h		467			756			1619			1599	
Approach Delay, s/veh		54.4			64.0			33.4			29.1	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	44.0	12.0	20.9	10.4	46.6	11.0	21.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	40.0	8.0	17.0	7.0	42.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	10.2	36.0	9.1	13.0	6.8	30.1	8.5	17.8
Green Ext Time (p_c), s	0.0	3.9	0.0	1.7	0.0	10.9	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	39.3
HCM 2010 LOS	D

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	105	263	79	47	365	142	109	347	30	34	281	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	148	370	111	69	537	209	127	403	35	47	385	62
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.71	0.71	0.71	0.68	0.68	0.68	0.86	0.86	0.86	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	647	550	133	595	505	166	931	81	107	763	122
Arrive On Green	0.10	0.35	0.35	0.07	0.32	0.32	0.09	0.28	0.28	0.06	0.25	0.25
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3297	285	1774	3058	489
Grp Volume(v), veh/h	148	370	111	69	537	209	127	215	223	47	222	225
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1812	1774	1770	1777
Q Serve(g_s), s	5.6	11.0	3.4	2.5	18.8	7.1	4.8	6.8	6.8	1.7	7.3	7.4
Cycle Q Clear(g_c), s	5.6	11.0	3.4	2.5	18.8	7.1	4.8	6.8	6.8	1.7	7.3	7.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.27
Lane Grp Cap(c), veh/h	182	647	550	133	595	505	166	500	512	107	442	443
V/C Ratio(X)	0.81	0.57	0.20	0.52	0.90	0.41	0.77	0.43	0.43	0.44	0.50	0.51
Avail Cap(c_a), veh/h	182	647	550	182	629	535	182	500	512	182	442	443
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.9	18.1	15.6	30.3	22.2	18.2	30.1	20.0	20.0	30.9	21.9	22.0
Incr Delay (d2), s/veh	23.5	1.2	0.2	3.1	15.9	0.5	16.1	2.7	2.7	2.8	4.0	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	5.9	1.5	1.4	12.2	3.1	3.1	3.7	3.8	0.9	4.1	4.1
LnGrp Delay(d),s/veh	53.4	19.3	15.8	33.4	38.1	18.7	46.3	22.7	22.7	33.7	26.0	26.1
LnGrp LOS	D	B	B	C	D	B	D	C	C	C	C	C
Approach Vol, veh/h		629			815			565			494	
Approach Delay, s/veh		26.7			32.7			28.0			26.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	23.2	9.1	27.6	10.4	21.0	11.0	25.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	23.0	7.0	17.0	7.0	23.0
Max Q Clear Time (g_c+I1), s	3.7	8.8	4.5	13.0	6.8	9.4	7.6	20.8
Green Ext Time (p_c), s	0.0	3.1	0.0	4.5	0.0	3.0	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	29.0
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	52	88	44	63	104	61	1193	60	98	1068	83
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	122	70	119	52	74	122	66	1283	65	121	1319	102
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.74	0.74	0.74	0.85	0.85	0.85	0.93	0.93	0.93	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	164	115	196	114	100	165	130	1453	74	163	1567	701
Arrive On Green	0.09	0.19	0.19	0.06	0.16	0.16	0.07	0.42	0.42	0.09	0.44	0.44
Sat Flow, veh/h	1774	621	1056	1774	634	1045	1774	3428	173	1774	3539	1583
Grp Volume(v), veh/h	122	0	189	52	0	196	66	661	687	121	1319	102
Grp Sat Flow(s),veh/h/ln	1774	0	1676	1774	0	1678	1774	1770	1832	1774	1770	1583
Q Serve(g_s), s	4.6	0.0	7.1	1.9	0.0	7.6	2.5	23.5	23.6	4.5	22.6	2.6
Cycle Q Clear(g_c), s	4.6	0.0	7.1	1.9	0.0	7.6	2.5	23.5	23.6	4.5	22.6	2.6
Prop In Lane	1.00		0.63	1.00		0.62	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	164	0	312	114	0	265	130	750	777	163	1567	701
V/C Ratio(X)	0.75	0.00	0.61	0.46	0.00	0.74	0.51	0.88	0.88	0.74	0.84	0.15
Avail Cap(c_a), veh/h	182	0	392	182	0	393	182	750	777	182	1567	701
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	25.5	30.9	0.0	27.5	30.5	18.1	18.2	30.3	16.9	11.4
Incr Delay (d2), s/veh	14.0	0.0	1.9	2.8	0.0	4.0	3.1	14.1	13.9	13.5	5.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	3.4	1.0	0.0	3.8	1.3	14.3	14.8	2.8	12.2	1.2
LnGrp Delay(d),s/veh	44.2	0.0	27.4	33.7	0.0	31.5	33.6	32.3	32.1	43.7	22.6	11.8
LnGrp LOS	D		C	C		C	C	C	C	D	C	B
Approach Vol, veh/h		311			248			1414			1542	
Approach Delay, s/veh		34.0			32.0			32.2			23.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	33.0	8.4	16.7	9.0	34.3	10.3	14.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	29.0	7.0	16.0	7.0	29.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.5	25.6	3.9	9.1	4.5	24.6	6.6	9.6
Green Ext Time (p_c), s	0.0	3.2	0.0	1.3	0.0	4.1	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	28.6
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	206	458	100	205	891	245	267	917	211	239	684	239
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	251	559	122	241	1048	288	284	976	224	285	814	285
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.94	0.94	0.94	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	301	861	385	325	993	273	322	1018	455	310	995	445
Arrive On Green	0.09	0.24	0.24	0.09	0.25	0.25	0.18	0.29	0.29	0.17	0.28	0.28
Sat Flow, veh/h	3442	3539	1583	3442	3970	1090	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	251	559	122	241	895	441	284	976	224	285	814	285
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1670	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.7	11.4	5.1	5.5	20.0	20.0	12.5	21.7	9.4	12.6	17.2	12.6
Cycle Q Clear(g_c), s	5.7	11.4	5.1	5.5	20.0	20.0	12.5	21.7	9.4	12.6	17.2	12.6
Prop In Lane	1.00		1.00	1.00		0.65	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	301	861	385	325	848	418	322	1018	455	310	995	445
V/C Ratio(X)	0.83	0.65	0.32	0.74	1.06	1.06	0.88	0.96	0.49	0.92	0.82	0.64
Avail Cap(c_a), veh/h	301	861	385	387	848	418	333	1018	455	310	995	445
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.9	27.2	24.8	35.3	30.0	30.0	31.9	28.0	23.7	32.4	26.8	25.2
Incr Delay (d2), s/veh	17.9	1.7	0.5	6.2	46.7	59.7	22.7	19.9	3.8	30.8	7.5	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	5.7	2.2	2.9	14.8	16.1	8.1	13.4	4.6	8.8	9.4	6.4
LnGrp Delay(d),s/veh	53.8	28.9	25.3	41.5	76.7	89.7	54.6	48.0	27.4	63.3	34.3	32.1
LnGrp LOS	D	C	C	D	F	F	D	D	C	E	C	C
Approach Vol, veh/h		932			1577			1484			1384	
Approach Delay, s/veh		35.1			75.0			46.1			39.8	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	27.0	11.5	23.5	18.5	26.5	11.0	24.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	23.0	9.0	18.0	15.0	22.0	7.0	20.0
Max Q Clear Time (g_c+I1), s	14.6	23.7	7.5	13.4	14.5	19.2	7.7	22.0
Green Ext Time (p_c), s	0.0	0.0	0.1	3.8	0.0	2.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	51.1
HCM 2010 LOS	D

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	13	2	41	2	1	18	38	1489	4	14	1277	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	68	68	68	87	87	87	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	3	61	3	1	26	48	1883	5	16	1451	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2532	3478	737	2740	3487	944	1474	0	0	1888	0	0
Stage 1	1494	1494	-	1981	1981	-	-	-	-	-	-	-
Stage 2	1038	1984	-	759	1506	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 14	6	361	9	6	263	453	-	-	313	-	-
Stage 1	129	185	-	63	106	-	-	-	-	-	-	-
Stage 2	247	105	-	365	182	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 11	5	361	6	5	263	453	-	-	313	-	-
Mov Cap-2 Maneuver	69	51	-	43	52	-	-	-	-	-	-	-
Stage 1	115	176	-	56	95	-	-	-	-	-	-	-
Stage 2	196	94	-	283	173	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	47.8	33.5	0.3	0.2
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	453	-	-	164	157	313	-	-
HCM Lane V/C Ratio	0.106	-	-	0.51	0.197	0.051	-	-
HCM Control Delay (s)	13.9	-	-	47.8	33.5	17.1	-	-
HCM Lane LOS	B	-	-	E	D	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-	2.5	0.7	0.2	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	8.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	350	13	36	476	19	30	11	42	34	12	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	70	70	70	67	67	67	64	64	64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	455	17	51	680	27	45	16	63	53	19	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	680	0	0	455	0	0	1285	1264	455	1303	1264	680
Stage 1	-	-	-	-	-	-	481	481	-	783	783	-
Stage 2	-	-	-	-	-	-	804	783	-	520	481	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	912	-	-	1106	-	-	142	169	605	138	169	451
Stage 1	-	-	-	-	-	-	566	554	-	387	404	-
Stage 2	-	-	-	-	-	-	377	404	-	539	554	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	912	-	-	1106	-	-	117	159	605	109	159	451
Mov Cap-2 Maneuver	-	-	-	-	-	-	117	159	-	109	159	-
Stage 1	-	-	-	-	-	-	558	546	-	381	385	-
Stage 2	-	-	-	-	-	-	324	385	-	462	546	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	44.2	68
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	210	912	-	-	1106	-	-	145
HCM Lane V/C Ratio	0.59	0.014	-	-	0.046	-	-	0.657
HCM Control Delay (s)	44.2	9	-	-	8.4	-	-	68
HCM Lane LOS	E	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	3.3	0	-	-	0.1	-	-	3.6

Intersection						
Int Delay, s/veh	0.6					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	366	528	10	0	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	78	78	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	488	677	13	0	53

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	690	0	-	0	1171	683
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	488	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	905	-	-	-	213	449
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	617	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	905	-	-	-	213	449
Mov Cap-2 Maneuver	-	-	-	-	213	-
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	617	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	905	-	-	-	449
HCM Lane V/C Ratio	-	-	-	-	0.119
HCM Control Delay (s)	0	-	-	-	14.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection												
Int Delay, s/veh	0.6											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	11	0	0	44	14	1430	49	39	1296	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	62	62	62	92	92	92	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	18	0	0	48	16	1682	58	46	1525	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2492	3391	764	2598	3364	870	1528	0	0	1740	0	0
Stage 1	1618	1618	-	1744	1744	-	-	-	-	-	-	-
Stage 2	874	1773	-	854	1620	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	15	7	346	12	8	295	432	-	-	358	-	-
Stage 1	108	161	-	90	139	-	-	-	-	-	-	-
Stage 2	311	134	-	320	160	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	11	6	346	10	7	295	432	-	-	358	-	-
Mov Cap-2 Maneuver	11	6	-	10	7	-	-	-	-	-	-	-
Stage 1	104	140	-	87	134	-	-	-	-	-	-	-
Stage 2	251	129	-	265	139	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16	19.6	0.1	0.5
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	432	-	-	346	295	358	-	-
HCM Lane V/C Ratio	0.038	-	-	0.051	0.162	0.128	-	-
HCM Control Delay (s)	13.7	-	-	16	19.6	16.5	-	-
HCM Lane LOS	B	-	-	C	C	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.6	0.4	-	-

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	68	199	76	69	131	95	68	1280	89	121	1630	75
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	80	234	89	99	187	136	71	1333	93	126	1698	78
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.70	0.70	0.70	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	124	293	249	131	302	256	118	1743	780	157	1821	815
Arrive On Green	0.07	0.16	0.16	0.07	0.16	0.16	0.07	0.49	0.49	0.09	0.51	0.51
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	80	234	89	99	187	136	71	1333	93	126	1698	78
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.8	10.3	4.3	4.7	8.0	6.7	3.3	26.2	2.7	6.0	38.3	2.2
Cycle Q Clear(g_c), s	3.8	10.3	4.3	4.7	8.0	6.7	3.3	26.2	2.7	6.0	38.3	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	124	293	249	131	302	256	118	1743	780	157	1821	815
V/C Ratio(X)	0.65	0.80	0.36	0.75	0.62	0.53	0.60	0.76	0.12	0.80	0.93	0.10
Avail Cap(c_a), veh/h	145	349	296	145	349	296	145	1743	780	187	1821	815
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.8	34.7	32.2	38.8	33.4	32.8	38.8	17.7	11.7	38.2	19.4	10.6
Incr Delay (d2), s/veh	7.6	10.5	0.9	18.0	2.6	1.7	4.8	3.3	0.3	18.6	10.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	6.2	1.9	2.9	4.3	3.1	1.8	13.6	1.2	3.7	21.2	1.0
LnGrp Delay(d),s/veh	46.3	45.2	33.0	56.8	36.0	34.5	43.6	20.9	12.0	56.9	29.6	10.8
LnGrp LOS	D	D	C	E	D	C	D	C	B	E	C	B
Approach Vol, veh/h		403			422			1497			1902	
Approach Delay, s/veh		42.7			40.4			21.4			30.6	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	46.1	10.3	17.5	9.7	48.0	10.0	17.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	42.0	7.0	16.0	7.0	44.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	8.0	28.2	6.7	12.3	5.3	40.3	5.8	10.0
Green Ext Time (p_c), s	0.0	12.9	0.0	1.1	0.0	3.6	0.0	1.6

Intersection Summary		
HCM 2010 Ctrl Delay		29.5
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	64	102	28	32	94	64	30	1340	47	79	1586	89
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	72	115	31	36	106	72	31	1396	49	81	1635	92
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.96	0.96	0.96	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	92	400	71	157	400	82	1653	58	149	1810	810
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.05	0.47	0.47	0.08	0.51	0.51
Sat Flow, veh/h	0	364	1583	0	619	1583	1774	3488	122	1774	3539	1583
Grp Volume(v), veh/h	187	0	31	142	0	72	31	707	738	81	1635	92
Grp Sat Flow(s),veh/h/ln	364	0	1583	619	0	1583	1774	1770	1841	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.9	0.0	0.0	2.3	1.1	22.2	22.3	2.8	26.6	1.9
Cycle Q Clear(g_c), s	16.0	0.0	0.9	16.0	0.0	2.3	1.1	22.2	22.3	2.8	26.6	1.9
Prop In Lane	0.39		1.00	0.25		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	171	0	400	228	0	400	82	838	872	149	1810	810
V/C Ratio(X)	1.09	0.00	0.08	0.62	0.00	0.18	0.38	0.84	0.85	0.54	0.90	0.11
Avail Cap(c_a), veh/h	171	0	400	228	0	400	196	838	872	196	1810	810
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.9	0.0	18.0	20.0	0.0	18.5	29.3	14.6	14.6	27.8	14.1	8.0
Incr Delay (d2), s/veh	96.5	0.0	0.1	5.2	0.0	0.2	2.8	10.1	9.9	3.1	7.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	0.0	0.4	2.3	0.0	1.0	0.6	13.0	13.7	1.5	14.7	0.9
LnGrp Delay(d),s/veh	120.4	0.0	18.1	25.2	0.0	18.7	32.1	24.7	24.5	30.9	21.9	8.3
LnGrp LOS	F		B	C		B	C	C	C	C	C	A
Approach Vol, veh/h		218			214			1476			1808	
Approach Delay, s/veh		105.8			23.0			24.8			21.6	
Approach LOS		F			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.3	34.0		20.0	6.9	36.4		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	30.0		16.0	7.0	30.0		16.0
Max Q Clear Time (g_c+I1), s	4.8	24.3		18.0	3.1	28.6		18.0
Green Ext Time (p_c), s	0.0	5.5		0.0	0.0	1.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	27.9
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	384	162	45	303	41	88	438	60	31	374	47
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	54	452	191	55	370	50	106	528	72	33	394	49
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.82	0.82	0.82	0.83	0.83	0.83	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	123	544	463	125	546	464	173	996	135	88	856	106
Arrive On Green	0.07	0.29	0.29	0.07	0.29	0.29	0.10	0.32	0.32	0.05	0.27	0.27
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3132	426	1774	3171	392
Grp Volume(v), veh/h	54	452	191	55	370	50	106	298	302	33	219	224
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1788	1774	1770	1794
Q Serve(g_s), s	1.7	13.4	5.8	1.8	10.4	1.4	3.4	8.2	8.2	1.1	6.1	6.2
Cycle Q Clear(g_c), s	1.7	13.4	5.8	1.8	10.4	1.4	3.4	8.2	8.2	1.1	6.1	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.22
Lane Grp Cap(c), veh/h	123	544	463	125	546	464	173	563	568	88	478	484
V/C Ratio(X)	0.44	0.83	0.41	0.44	0.68	0.11	0.61	0.53	0.53	0.38	0.46	0.46
Avail Cap(c_a), veh/h	210	597	508	210	597	508	210	563	568	210	478	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	19.6	16.9	26.4	18.5	15.3	25.7	16.6	16.6	27.3	18.0	18.1
Incr Delay (d2), s/veh	2.4	9.0	0.6	2.4	2.7	0.1	3.6	3.5	3.5	2.6	3.1	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	8.3	2.6	0.9	5.8	0.6	1.8	4.5	4.6	0.6	3.4	3.5
LnGrp Delay(d),s/veh	28.9	28.6	17.5	28.9	21.2	15.4	29.3	20.1	20.1	29.9	21.2	21.2
LnGrp LOS	C	C	B	C	C	B	C	C	C	C	C	C
Approach Vol, veh/h		697			475			706			476	
Approach Delay, s/veh		25.5			21.5			21.5			21.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	22.8	8.2	21.3	9.8	20.0	8.1	21.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	10.2	3.8	15.4	5.4	8.2	3.7	12.4
Green Ext Time (p_c), s	0.0	2.9	0.0	1.9	0.0	3.7	0.0	3.1

Intersection Summary			
HCM 2010 Ctrl Delay			22.8
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	120	232	72	85	173	115	74	1244	59	190	1385	131
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	141	273	85	109	222	147	79	1323	63	202	1473	139
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.78	0.78	0.78	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	161	326	277	137	300	255	121	1530	685	236	1761	788
Arrive On Green	0.09	0.17	0.17	0.08	0.16	0.16	0.07	0.43	0.43	0.13	0.50	0.50
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	141	273	85	109	222	147	79	1323	63	202	1473	139
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	6.9	12.5	4.1	5.3	10.0	7.5	3.8	29.8	2.1	9.8	31.5	4.2
Cycle Q Clear(g_c), s	6.9	12.5	4.1	5.3	10.0	7.5	3.8	29.8	2.1	9.8	31.5	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	161	326	277	137	300	255	121	1530	685	236	1761	788
V/C Ratio(X)	0.87	0.84	0.31	0.79	0.74	0.58	0.65	0.86	0.09	0.85	0.84	0.18
Avail Cap(c_a), veh/h	161	360	306	141	339	288	141	1530	685	242	1761	788
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.4	35.0	31.6	39.9	35.1	34.1	39.9	22.6	14.7	37.3	19.0	12.2
Incr Delay (d2), s/veh	37.2	14.7	0.6	25.5	7.3	2.2	8.3	6.8	0.3	24.1	4.9	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	7.7	1.9	3.6	5.7	3.5	2.1	16.0	1.0	6.4	16.3	2.0
LnGrp Delay(d),s/veh	76.7	49.8	32.2	65.4	42.4	36.3	48.2	29.4	15.0	61.4	23.9	12.6
LnGrp LOS	E	D	C	E	D	D	D	C	B	E	C	B
Approach Vol, veh/h		499			478			1465			1814	
Approach Delay, s/veh		54.4			45.8			29.8			27.2	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	42.0	10.8	19.4	10.0	47.7	12.0	18.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	38.0	7.0	17.0	7.0	43.0	8.0	16.0
Max Q Clear Time (g_c+I1), s	11.8	31.8	7.3	14.5	5.8	33.5	8.9	12.0
Green Ext Time (p_c), s	0.0	5.9	0.0	0.9	0.0	8.9	0.0	1.4

Intersection Summary		
HCM 2010 Ctrl Delay		33.4
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	264	57	31	235	43	31	355	19	39	322	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	22	326	70	34	255	47	35	403	22	41	339	21
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.81	0.81	0.81	0.92	0.92	0.92	0.88	0.88	0.88	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	461	392	93	491	417	96	1091	59	108	1105	68
Arrive On Green	0.04	0.25	0.25	0.05	0.26	0.26	0.05	0.32	0.32	0.06	0.33	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3414	186	1774	3387	209
Grp Volume(v), veh/h	22	326	70	34	255	47	35	208	217	41	176	184
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1830	1774	1770	1826
Q Serve(g_s), s	0.6	8.0	1.7	0.9	5.9	1.1	1.0	4.5	4.6	1.1	3.7	3.8
Cycle Q Clear(g_c), s	0.6	8.0	1.7	0.9	5.9	1.1	1.0	4.5	4.6	1.1	3.7	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		0.11
Lane Grp Cap(c), veh/h	65	461	392	93	491	417	96	565	585	108	578	596
V/C Ratio(X)	0.34	0.71	0.18	0.36	0.52	0.11	0.37	0.37	0.37	0.38	0.31	0.31
Avail Cap(c_a), veh/h	248	707	601	248	707	601	248	565	585	248	578	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	17.2	14.8	22.9	15.7	14.0	22.9	13.1	13.2	22.6	12.6	12.6
Incr Delay (d2), s/veh	3.0	2.0	0.2	2.4	0.9	0.1	2.3	1.8	1.8	2.2	1.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.3	0.8	0.5	3.1	0.5	0.5	2.5	2.6	0.6	2.0	2.1
LnGrp Delay(d),s/veh	26.5	19.2	15.0	25.3	16.6	14.1	25.2	15.0	15.0	24.8	14.0	14.0
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		418			336			460			401	
Approach Delay, s/veh		18.9			17.1			15.7			15.1	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	20.0	6.6	16.4	6.7	20.3	5.8	17.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	6.6	2.9	10.0	3.0	5.8	2.6	7.9
Green Ext Time (p_c), s	0.0	3.0	0.0	2.4	0.0	3.2	0.0	2.7

Intersection Summary		
HCM 2010 Ctrl Delay		16.7
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	26	52	44	21	44	47	45	1313	55	76	1414	32
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	30	59	50	25	52	56	48	1397	59	82	1520	34
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.84	0.84	0.84	0.94	0.94	0.94	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	104	88	69	87	94	111	1803	76	147	1917	858
Arrive On Green	0.04	0.11	0.11	0.04	0.11	0.11	0.06	0.52	0.52	0.08	0.54	0.54
Sat Flow, veh/h	1774	933	790	1774	822	885	1774	3461	146	1774	3539	1583
Grp Volume(v), veh/h	30	0	109	25	0	108	48	713	743	82	1520	34
Grp Sat Flow(s),veh/h/ln	1774	0	1723	1774	0	1707	1774	1770	1837	1774	1770	1583
Q Serve(g_s), s	1.1	0.0	3.9	0.9	0.0	3.9	1.7	21.1	21.2	2.9	22.5	0.7
Cycle Q Clear(g_c), s	1.1	0.0	3.9	0.9	0.0	3.9	1.7	21.1	21.2	2.9	22.5	0.7
Prop In Lane	1.00		0.46	1.00		0.52	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	80	0	193	69	0	181	111	922	957	147	1917	858
V/C Ratio(X)	0.38	0.00	0.57	0.36	0.00	0.60	0.43	0.77	0.78	0.56	0.79	0.04
Avail Cap(c_a), veh/h	190	0	422	190	0	418	190	922	957	190	1917	858
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	27.5	30.6	0.0	27.8	29.5	12.5	12.6	28.8	12.0	7.0
Incr Delay (d2), s/veh	2.9	0.0	2.6	3.1	0.0	3.1	2.7	6.3	6.1	3.3	3.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	2.0	0.5	0.0	2.0	0.9	11.7	12.2	1.5	11.7	0.3
LnGrp Delay(d),s/veh	33.2	0.0	30.1	33.7	0.0	31.0	32.2	18.8	18.7	32.0	15.5	7.1
LnGrp LOS	C		C	C		C	C	B	B	C	B	A
Approach Vol, veh/h		139			133			1504			1636	
Approach Delay, s/veh		30.7			31.5			19.2			16.1	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	38.0	6.6	11.3	8.1	39.3	6.9	10.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	34.0	7.0	16.0	7.0	34.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.9	23.2	2.9	5.9	3.7	24.5	3.1	5.9
Green Ext Time (p_c), s	0.0	10.0	0.0	0.8	0.0	8.8	0.0	0.8

Intersection Summary		
HCM 2010 Ctrl Delay		18.7
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	508	1029	305	260	658	218	270	792	193	310	955	162
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	540	1095	324	302	765	253	297	870	212	341	1049	178
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.86	0.86	0.86	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	563	1062	475	313	862	282	290	933	417	355	1062	475
Arrive On Green	0.16	0.30	0.30	0.09	0.23	0.23	0.16	0.26	0.26	0.20	0.30	0.30
Sat Flow, veh/h	3442	3539	1583	3442	3792	1242	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	540	1095	324	302	683	335	297	870	212	341	1049	178
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1644	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	17.1	33.0	19.8	9.6	21.5	21.7	18.0	26.4	12.5	20.9	32.4	9.8
Cycle Q Clear(g_c), s	17.1	33.0	19.8	9.6	21.5	21.7	18.0	26.4	12.5	20.9	32.4	9.8
Prop In Lane	1.00		1.00	1.00		0.76	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	563	1062	475	313	770	374	290	933	417	355	1062	475
V/C Ratio(X)	0.96	1.03	0.68	0.97	0.89	0.90	1.02	0.93	0.51	0.96	0.99	0.37
Avail Cap(c_a), veh/h	563	1062	475	313	770	374	290	933	417	355	1062	475
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	38.5	33.9	49.8	41.1	41.2	46.0	39.5	34.4	43.6	38.3	30.4
Incr Delay (d2), s/veh	27.8	36.0	4.0	41.4	12.1	23.3	58.9	17.1	4.4	37.5	24.9	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	21.4	9.2	6.4	11.4	12.3	13.5	15.1	6.0	13.9	19.5	4.5
LnGrp Delay(d),s/veh	73.5	74.5	37.9	91.2	53.3	64.5	104.9	56.6	38.8	81.0	63.2	32.6
LnGrp LOS	E	F	D	F	D	E	F	E	D	F	E	C
Approach Vol, veh/h		1959			1320			1379			1568	
Approach Delay, s/veh		68.1			64.8			64.3			63.6	
Approach LOS		E			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	33.0	14.0	37.0	22.0	37.0	22.0	29.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	29.0	10.0	33.0	18.0	33.0	18.0	25.0
Max Q Clear Time (g_c+I1), s	22.9	28.4	11.6	35.0	20.0	34.4	19.1	23.7
Green Ext Time (p_c), s	0.0	0.6	0.0	0.0	0.0	0.0	0.0	1.2

Intersection Summary			
HCM 2010 Ctrl Delay			65.4
HCM 2010 LOS			E

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	15	3	40	2	1	12	40	1423	2	47	1696	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	58	58	58	97	97	97	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	4	51	3	2	21	45	1614	2	48	1731	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2736	3545	877	2669	3555	808	1753	0	0	1616	0	0
Stage 1	1838	1838	-	1706	1706	-	-	-	-	-	-	-
Stage 2	898	1707	-	963	1849	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 10	6	292	11	6	324	353	-	-	399	-	-
Stage 1	78	125	-	95	145	-	-	-	-	-	-	-
Stage 2	301	145	-	274	123	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 7	5	292	7	5	324	353	-	-	399	-	-
Mov Cap-2 Maneuver	48	44	-	51	40	-	-	-	-	-	-	-
Stage 1	68	110	-	83	127	-	-	-	-	-	-	-
Stage 2	243	127	-	192	108	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	85.3	34.4	0.5	0.4
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	353	-	-	112	148	399	-	-
HCM Lane V/C Ratio	0.129	-	-	0.664	0.175	0.12	-	-
HCM Control Delay (s)	16.7	-	-	85.3	34.4	15.3	-	-
HCM Lane LOS	C	-	-	F	D	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-	3.4	0.6	0.4	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	383	55	15	257	9	31	6	9	7	2	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	88	88	88	60	60	60	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	391	56	17	292	10	52	10	15	9	3	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	292	0	0	391	0	0	763	754	391	766	754	292
Stage 1	-	-	-	-	-	-	428	428	-	326	326	-
Stage 2	-	-	-	-	-	-	335	326	-	440	428	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1270	-	-	1168	-	-	321	338	658	320	338	747
Stage 1	-	-	-	-	-	-	605	585	-	687	648	-
Stage 2	-	-	-	-	-	-	679	648	-	596	585	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1270	-	-	1168	-	-	306	328	658	299	328	747
Mov Cap-2 Maneuver	-	-	-	-	-	-	306	328	-	299	328	-
Stage 1	-	-	-	-	-	-	596	577	-	677	639	-
Stage 2	-	-	-	-	-	-	653	639	-	564	577	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.4	18.4	13.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	345	1270	-	-	1168	-	-	452
HCM Lane V/C Ratio	0.222	0.014	-	-	0.015	-	-	0.059
HCM Control Delay (s)	18.4	7.9	-	-	8.1	-	-	13.5
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.8	0	-	-	0	-	-	0.2

HCM 2010 TWSC
10: Cottonwood Ave & Driveway

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	469	312	11	0	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	81	81	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	515	385	14	0	63

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	399	0	-	0	907	392
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	515	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1160	-	-	-	306	657
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	600	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1160	-	-	-	306	657
Mov Cap-2 Maneuver	-	-	-	-	306	-
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	600	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1160	-	-	-	657
HCM Lane V/C Ratio	-	-	-	-	0.096
HCM Control Delay (s)	0	-	-	-	11.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	33.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	12	0	74	0	0	52	54	1372	57	45	1588	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	92	92	92	95	95	95	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	0	103	0	0	57	57	1444	60	48	1708	41

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2661	3443	874	2539	3433	752	1748	0	0	1504	0	0
Stage 1	1825	1825	-	1588	1588	-	-	-	-	-	-	-
Stage 2	836	1618	-	951	1845	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 11	7	293	14	7	353	355	-	-	441	-	-
Stage 1	80	127	-	113	166	-	-	-	-	-	-	-
Stage 2	328	161	-	279	124	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 7	5	293	7	5	353	355	-	-	441	-	-
Mov Cap-2 Maneuver	~ 7	5	-	7	5	-	-	-	-	-	-	-
Stage 1	67	113	-	95	139	-	-	-	-	-	-	-
Stage 2	231	135	-	161	111	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 971.4	17.1	0.6	0.4
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	355	-	-	44	353	441	-	-
HCM Lane V/C Ratio	0.16	-	-	2.715	0.16	0.11	-	-
HCM Control Delay (s)	17.1	-	-	$ 971.4	17.1	14.2	-	-
HCM Lane LOS	C	-	-	F	C	B	-	-
HCM 95th %tile Q(veh)	0.6	-	-	12.9	0.6	0.4	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	63	101	41	52	81	84	58	1186	56	71	1134	58
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	70	112	46	63	98	101	64	1303	62	79	1260	64
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.83	0.83	0.83	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	218	185	133	210	178	134	1652	739	149	1683	753
Arrive On Green	0.08	0.12	0.12	0.07	0.11	0.11	0.08	0.47	0.47	0.08	0.48	0.48
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	70	112	46	63	98	101	64	1303	62	79	1260	64
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.3	3.5	1.6	2.1	3.1	3.8	2.1	19.3	1.3	2.7	18.0	1.4
Cycle Q Clear(g_c), s	2.3	3.5	1.6	2.1	3.1	3.8	2.1	19.3	1.3	2.7	18.0	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	140	218	185	133	210	178	134	1652	739	149	1683	753
V/C Ratio(X)	0.50	0.51	0.25	0.48	0.47	0.57	0.48	0.79	0.08	0.53	0.75	0.09
Avail Cap(c_a), veh/h	200	480	408	200	480	408	200	1652	739	200	1683	753
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	25.8	24.9	27.6	25.8	26.1	27.5	14.0	9.2	27.3	13.3	8.9
Incr Delay (d2), s/veh	2.7	1.9	0.7	2.6	1.6	2.8	2.6	3.9	0.2	2.9	3.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.9	0.7	1.1	1.7	1.8	1.1	10.1	0.6	1.4	9.5	0.6
LnGrp Delay(d),s/veh	30.2	27.6	25.6	30.2	27.4	28.9	30.2	17.9	9.4	30.2	16.4	9.1
LnGrp LOS	C	C	C	C	C	C	C	B	A	C	B	A
Approach Vol, veh/h		228			262			1429			1403	
Approach Delay, s/veh		28.0			28.7			18.1			16.8	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	33.0	8.6	11.3	8.7	33.5	8.9	11.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	29.0	7.0	16.0	7.0	29.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.7	21.3	4.1	5.5	4.1	20.0	4.3	5.8
Green Ext Time (p_c), s	0.0	7.0	0.0	1.1	0.0	8.1	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	19.1
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	78	91	28	39	65	63	46	1165	27	29	1120	57
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	90	105	32	45	75	72	55	1387	32	34	1302	66
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.84	0.84	0.84	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	76	444	87	106	444	127	1621	37	91	1550	694
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.07	0.46	0.46	0.05	0.44	0.44
Sat Flow, veh/h	0	270	1583	0	379	1583	1774	3536	82	1774	3539	1583
Grp Volume(v), veh/h	195	0	32	120	0	72	55	693	726	34	1302	66
Grp Sat Flow(s),veh/h/ln	270	0	1583	379	0	1583	1774	1770	1848	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.8	0.0	0.0	2.0	1.7	19.9	20.0	1.1	18.7	1.4
Cycle Q Clear(g_c), s	16.0	0.0	0.8	16.0	0.0	2.0	1.7	19.9	20.0	1.1	18.7	1.4
Prop In Lane	0.46		1.00	0.37		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	168	0	444	193	0	444	127	811	847	91	1550	694
V/C Ratio(X)	1.16	0.00	0.07	0.62	0.00	0.16	0.43	0.86	0.86	0.38	0.84	0.10
Avail Cap(c_a), veh/h	168	0	444	193	0	444	218	811	847	218	1550	694
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	0.0	15.1	17.2	0.0	15.5	25.4	13.8	13.8	26.2	14.3	9.4
Incr Delay (d2), s/veh	119.8	0.0	0.1	6.0	0.0	0.2	2.3	11.2	10.9	2.6	5.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	0.0	0.4	1.8	0.0	0.9	0.9	12.2	12.6	0.6	10.3	0.7
LnGrp Delay(d),s/veh	141.6	0.0	15.2	23.2	0.0	15.7	27.7	25.0	24.6	28.7	19.9	9.7
LnGrp LOS	F		B	C		B	C	C	C	C	B	A
Approach Vol, veh/h		227			192			1474			1402	
Approach Delay, s/veh		123.8			20.4			24.9			19.6	
Approach LOS		F			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.9	30.2		20.0	8.1	29.0		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	25.0		16.0	7.0	25.0		16.0
Max Q Clear Time (g_c+I1), s	3.1	22.0		18.0	3.7	20.7		18.0
Green Ext Time (p_c), s	0.0	2.9		0.0	0.0	4.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	29.2
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	271	115	49	325	26	97	278	47	22	239	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	23	347	147	58	387	31	100	287	48	24	257	24
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.78	0.78	0.78	0.84	0.84	0.84	0.97	0.97	0.97	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	468	398	131	535	455	173	1084	179	69	975	90
Arrive On Green	0.04	0.25	0.25	0.07	0.29	0.29	0.10	0.36	0.36	0.04	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3041	503	1774	3275	303
Grp Volume(v), veh/h	23	347	147	58	387	31	100	166	169	24	138	143
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1774	1774	1770	1809
Q Serve(g_s), s	0.7	9.8	4.4	1.8	10.7	0.8	3.1	3.8	3.9	0.8	3.4	3.4
Cycle Q Clear(g_c), s	0.7	9.8	4.4	1.8	10.7	0.8	3.1	3.8	3.9	0.8	3.4	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.28	1.00		0.17
Lane Grp Cap(c), veh/h	66	468	398	131	535	455	173	630	632	69	527	538
V/C Ratio(X)	0.35	0.74	0.37	0.44	0.72	0.07	0.58	0.26	0.27	0.35	0.26	0.27
Avail Cap(c_a), veh/h	217	587	499	217	587	499	217	630	632	217	527	538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	19.7	17.7	25.3	18.3	14.8	24.7	13.1	13.1	26.7	15.3	15.3
Incr Delay (d2), s/veh	3.1	3.8	0.6	2.3	4.0	0.1	3.0	1.0	1.0	3.0	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	5.5	2.0	1.0	6.1	0.4	1.6	2.0	2.1	0.4	1.8	1.9
LnGrp Delay(d),s/veh	29.9	23.5	18.2	27.7	22.3	14.9	27.7	14.1	14.1	29.7	16.5	16.5
LnGrp LOS	C	C	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		517			476			435			305	
Approach Delay, s/veh		22.3			22.5			17.2			17.5	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	24.4	8.2	18.3	9.6	21.0	6.1	20.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	18.0	7.0	17.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	2.8	5.9	3.8	11.8	5.1	5.4	2.7	12.7
Green Ext Time (p_c), s	0.0	2.7	0.0	2.5	0.0	2.7	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	20.2
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	111	140	65	130	200	193	87	1054	75	174	936	106
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	141	177	82	228	351	339	96	1158	82	200	1076	122
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.79	0.79	0.79	0.57	0.57	0.57	0.91	0.91	0.91	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	173	327	278	258	416	354	126	1305	584	234	1520	680
Arrive On Green	0.10	0.18	0.18	0.15	0.22	0.22	0.07	0.37	0.37	0.13	0.43	0.43
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	141	177	82	228	351	339	96	1158	82	200	1076	122
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	7.0	7.7	4.0	11.3	16.1	18.9	4.8	27.5	3.1	9.9	22.3	4.3
Cycle Q Clear(g_c), s	7.0	7.7	4.0	11.3	16.1	18.9	4.8	27.5	3.1	9.9	22.3	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	173	327	278	258	416	354	126	1305	584	234	1520	680
V/C Ratio(X)	0.82	0.54	0.30	0.88	0.84	0.96	0.76	0.89	0.14	0.86	0.71	0.18
Avail Cap(c_a), veh/h	178	333	283	258	416	354	139	1305	584	238	1520	680
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	33.6	32.1	37.5	33.3	34.3	40.8	26.5	18.8	38.0	20.9	15.8
Incr Delay (d2), s/veh	24.2	1.7	0.6	28.4	14.6	36.8	19.9	9.2	0.5	24.7	2.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	4.1	1.8	7.5	10.0	11.9	3.0	15.0	1.4	6.4	11.4	2.0
LnGrp Delay(d),s/veh	63.8	35.3	32.7	65.9	47.8	71.2	60.8	35.7	19.3	62.8	23.7	16.4
LnGrp LOS	E	D	C	E	D	E	E	D	B	E	C	B
Approach Vol, veh/h		400			918			1336			1398	
Approach Delay, s/veh		44.8			60.9			36.5			28.7	
Approach LOS		D			E			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.8	37.0	17.0	19.7	10.4	42.4	12.7	24.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	33.0	13.0	16.0	7.0	38.0	9.0	20.0
Max Q Clear Time (g_c+I1), s	11.9	29.5	13.3	9.7	6.8	24.3	9.0	20.9
Green Ext Time (p_c), s	0.0	3.2	0.0	2.4	0.0	11.2	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		40.2
HCM 2010 LOS		D

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	221	64	10	245	31	34	206	15	28	223	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	62	395	114	15	360	46	40	245	18	32	256	22
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.56	0.56	0.56	0.68	0.68	0.68	0.84	0.84	0.84	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	594	505	46	497	422	104	1028	75	88	984	84
Arrive On Green	0.08	0.32	0.32	0.03	0.27	0.27	0.06	0.31	0.31	0.05	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3345	244	1774	3301	282
Grp Volume(v), veh/h	62	395	114	15	360	46	40	129	134	32	136	142
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1820	1774	1770	1813
Q Serve(g_s), s	1.8	9.8	2.8	0.4	9.4	1.2	1.2	2.9	3.0	0.9	3.1	3.2
Cycle Q Clear(g_c), s	1.8	9.8	2.8	0.4	9.4	1.2	1.2	2.9	3.0	0.9	3.1	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		0.16
Lane Grp Cap(c), veh/h	140	594	505	46	497	422	104	544	559	88	527	540
V/C Ratio(X)	0.44	0.66	0.23	0.32	0.72	0.11	0.38	0.24	0.24	0.36	0.26	0.26
Avail Cap(c_a), veh/h	231	659	560	231	659	560	231	544	559	231	527	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	15.8	13.4	25.7	17.9	14.9	24.3	13.9	13.9	24.7	14.3	14.3
Incr Delay (d2), s/veh	2.2	2.2	0.2	4.0	2.7	0.1	2.3	1.0	1.0	2.5	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.4	1.3	0.3	5.2	0.5	0.6	1.6	1.6	0.5	1.7	1.8
LnGrp Delay(d),s/veh	25.8	18.0	13.6	29.6	20.6	15.0	26.7	14.9	14.9	27.2	15.5	15.5
LnGrp LOS	C	B	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		571			421			303			310	
Approach Delay, s/veh		18.0			20.3			16.5			16.7	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	20.5	5.4	21.1	7.1	20.0	8.2	18.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	2.9	5.0	2.4	11.8	3.2	5.2	3.8	11.4
Green Ext Time (p_c), s	0.0	2.2	0.0	2.8	0.0	2.2	0.0	2.9

Intersection Summary			
HCM 2010 Ctrl Delay			18.1
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	25	41	30	26	34	66	33	1104	39	67	1068	31
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	29	48	35	34	44	86	34	1150	41	75	1200	35
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.77	0.77	0.77	0.96	0.96	0.96	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	81	126	92	92	74	145	92	1539	55	155	1688	755
Arrive On Green	0.05	0.13	0.13	0.05	0.13	0.13	0.05	0.44	0.44	0.09	0.48	0.48
Sat Flow, veh/h	1774	1003	731	1774	565	1103	1774	3486	124	1774	3539	1583
Grp Volume(v), veh/h	29	0	83	34	0	130	34	584	607	75	1200	35
Grp Sat Flow(s),veh/h/ln	1774	0	1734	1774	0	1668	1774	1770	1841	1774	1770	1583
Q Serve(g_s), s	0.9	0.0	2.4	1.0	0.0	4.0	1.0	14.9	15.0	2.2	14.6	0.6
Cycle Q Clear(g_c), s	0.9	0.0	2.4	1.0	0.0	4.0	1.0	14.9	15.0	2.2	14.6	0.6
Prop In Lane	1.00		0.42	1.00		0.66	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	81	0	217	92	0	219	92	781	812	155	1688	755
V/C Ratio(X)	0.36	0.00	0.38	0.37	0.00	0.59	0.37	0.75	0.75	0.48	0.71	0.05
Avail Cap(c_a), veh/h	228	0	510	228	0	491	228	781	812	228	1688	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.2	0.0	21.8	24.9	0.0	22.2	24.9	12.7	12.7	23.6	11.3	7.6
Incr Delay (d2), s/veh	2.7	0.0	1.1	2.5	0.0	2.5	2.5	6.4	6.2	2.3	2.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.2	0.6	0.0	2.0	0.6	8.5	8.8	1.2	7.6	0.3
LnGrp Delay(d),s/veh	27.8	0.0	22.9	27.4	0.0	24.8	27.4	19.1	18.9	26.0	13.8	7.7
LnGrp LOS	C		C	C		C	C	B	B	C	B	A
Approach Vol, veh/h		112			164			1225			1310	
Approach Delay, s/veh		24.2			25.3			19.2			14.4	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	28.0	6.8	10.8	6.8	29.9	6.5	11.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.2	17.0	3.0	4.4	3.0	16.6	2.9	6.0
Green Ext Time (p_c), s	0.0	6.2	0.0	0.8	0.0	6.5	0.0	0.8

Intersection Summary			
HCM 2010 Ctrl Delay			17.5
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	375	519	232	239	489	179	308	739	140	211	693	183
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	417	577	258	278	569	208	338	812	154	229	753	199
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.86	0.86	0.86	0.91	0.91	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	435	765	342	360	720	257	375	1153	516	268	939	420
Arrive On Green	0.13	0.22	0.22	0.10	0.19	0.19	0.21	0.33	0.33	0.15	0.27	0.27
Sat Flow, veh/h	3442	3539	1583	3442	3701	1319	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	417	577	258	278	520	257	338	812	154	229	753	199
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1630	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.5	12.1	12.1	6.2	11.5	11.9	14.7	15.9	5.7	10.0	15.7	8.4
Cycle Q Clear(g_c), s	9.5	12.1	12.1	6.2	11.5	11.9	14.7	15.9	5.7	10.0	15.7	8.4
Prop In Lane	1.00		1.00	1.00		0.81	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	435	765	342	360	660	317	375	1153	516	268	939	420
V/C Ratio(X)	0.96	0.75	0.75	0.77	0.79	0.81	0.90	0.70	0.30	0.85	0.80	0.47
Avail Cap(c_a), veh/h	435	765	342	392	686	330	381	1153	516	292	939	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	29.0	29.0	34.5	30.3	30.5	30.4	23.3	19.9	32.7	27.1	24.4
Incr Delay (d2), s/veh	32.6	4.3	9.1	8.5	5.9	13.7	23.6	3.6	1.5	20.1	7.2	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	6.3	6.1	3.4	6.0	6.6	9.6	8.4	2.7	6.4	8.6	4.1
LnGrp Delay(d),s/veh	66.9	33.3	38.1	43.0	36.2	44.1	54.0	27.0	21.4	52.8	34.3	28.2
LnGrp LOS	E	C	D	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		1252			1055			1304			1181	
Approach Delay, s/veh		45.5			39.9			33.3			36.8	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	29.8	12.3	21.1	20.7	25.0	14.0	19.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	25.0	9.0	17.0	17.0	21.0	10.0	16.0
Max Q Clear Time (g_c+I1), s	12.0	17.9	8.2	14.1	16.7	17.7	11.5	13.9
Green Ext Time (p_c), s	0.1	5.4	0.1	2.2	0.0	2.7	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	38.8
HCM 2010 LOS	D

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	4	30	3	7	15	41	1265	3	38	1170	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	72	72	72	89	89	89	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	6	46	4	10	21	51	1563	4	44	1345	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2331	3112	683	2430	3121	784	1367	0	0	1567	0	0
Stage 1	1443	1443	-	1667	1667	-	-	-	-	-	-	-
Stage 2	888	1669	-	763	1454	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 20	11	392	17	11	336	498	-	-	417	-	-
Stage 1	139	196	-	100	152	-	-	-	-	-	-	-
Stage 2	305	151	-	363	193	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 14	9	392	12	~ 9	336	498	-	-	417	-	-
Mov Cap-2 Maneuver	75	59	-	63	63	-	-	-	-	-	-	-
Stage 1	125	175	-	90	136	-	-	-	-	-	-	-
Stage 2	238	136	-	276	173	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	71.1	45.4	0.4	0.5
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	498	-	-	131	123	417	-	-
HCM Lane V/C Ratio	0.102	-	-	0.634	0.282	0.105	-	-
HCM Control Delay (s)	13	-	-	71.1	45.4	14.6	-	-
HCM Lane LOS	B	-	-	F	E	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	3.3	1.1	0.3	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	25	343	46	3	289	4	34	4	10	2	2	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	58	58	58	79	79	79	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	44	602	81	5	498	7	43	5	13	3	3	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	498	0	0	602	0	0	1207	1198	602	1207	1198	498
Stage 1	-	-	-	-	-	-	689	689	-	509	509	-
Stage 2	-	-	-	-	-	-	518	509	-	698	689	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1066	-	-	975	-	-	160	186	500	160	186	572
Stage 1	-	-	-	-	-	-	436	446	-	547	538	-
Stage 2	-	-	-	-	-	-	541	538	-	431	446	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1066	-	-	975	-	-	148	177	500	147	177	572
Mov Cap-2 Maneuver	-	-	-	-	-	-	148	177	-	147	177	-
Stage 1	-	-	-	-	-	-	418	428	-	524	535	-
Stage 2	-	-	-	-	-	-	521	535	-	398	428	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	35.9	16.7
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	176	1066	-	-	975	-	-	330
HCM Lane V/C Ratio	0.345	0.041	-	-	0.005	-	-	0.065
HCM Control Delay (s)	35.9	8.5	-	-	8.7	-	-	16.7
HCM Lane LOS	E	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.4	0.1	-	-	0	-	-	0.2

HCM 2010 TWSC
10: Cottonwood Ave & Driveway

Intersection						
Int Delay, s/veh	1.1					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	301	367	16	0	82
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	77	77	81	81	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	391	453	20	0	89

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	473	0	-	0	854	463
Stage 1	-	-	-	-	463	-
Stage 2	-	-	-	-	391	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1089	-	-	-	329	599
Stage 1	-	-	-	-	634	-
Stage 2	-	-	-	-	683	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1089	-	-	-	329	599
Mov Cap-2 Maneuver	-	-	-	-	329	-
Stage 1	-	-	-	-	634	-
Stage 2	-	-	-	-	683	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1089	-	-	-	599
HCM Lane V/C Ratio	-	-	-	-	0.149
HCM Control Delay (s)	0	-	-	-	12.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.5

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	36.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	21	0	78	0	0	74	70	1209	78	62	1088	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	92	92	92	82	82	82	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	0	98	0	0	80	85	1474	95	72	1265	44

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2339	3171	655	2470	3146	785	1309	0	0	1570	0	0
Stage 1	1431	1431	-	1693	1693	-	-	-	-	-	-	-
Stage 2	908	1740	-	777	1453	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 19	10	409	15	11	336	524	-	-	416	-	-
Stage 1	141	198	-	97	147	-	-	-	-	-	-	-
Stage 2	296	140	-	356	194	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 11	7	409	9	8	336	524	-	-	416	-	-
Mov Cap-2 Maneuver	~ 11	7	-	9	8	-	-	-	-	-	-	-
Stage 1	118	164	-	81	123	-	-	-	-	-	-	-
Stage 2	189	117	-	224	160	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 924.1	19.1	0.7	0.8
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	524	-	-	47	336	416	-	-
HCM Lane V/C Ratio	0.163	-	-	2.633	0.239	0.173	-	-
HCM Control Delay (s)	13.2	-	-	$ 924.1	19.1	15.5	-	-
HCM Lane LOS	B	-	-	F	C	C	-	-
HCM 95th %tile Q(veh)	0.6	-	-	13.1	0.9	0.6	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	39	92	62	112	158	199	63	1394	66	78	1134	32
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	57	133	90	127	180	226	72	1602	76	89	1289	36
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.69	0.69	0.69	0.88	0.88	0.88	0.87	0.87	0.87	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	276	235	145	315	268	119	1813	811	127	1830	819
Arrive On Green	0.06	0.15	0.15	0.08	0.17	0.17	0.07	0.51	0.51	0.07	0.52	0.52
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	57	133	90	127	180	226	72	1602	76	89	1289	36
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.7	5.6	4.4	6.1	7.6	11.9	3.4	34.6	2.1	4.2	23.8	1.0
Cycle Q Clear(g_c), s	2.7	5.6	4.4	6.1	7.6	11.9	3.4	34.6	2.1	4.2	23.8	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	107	276	235	145	315	268	119	1813	811	127	1830	819
V/C Ratio(X)	0.53	0.48	0.38	0.88	0.57	0.84	0.61	0.88	0.09	0.70	0.70	0.04
Avail Cap(c_a), veh/h	145	347	295	145	347	295	145	1813	811	145	1830	819
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	33.6	33.0	39.0	32.8	34.6	39.0	18.7	10.7	39.0	15.8	10.2
Incr Delay (d2), s/veh	4.0	1.3	1.0	41.4	1.8	18.2	4.9	6.7	0.2	12.0	2.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.0	2.0	4.6	4.1	6.5	1.8	18.4	1.0	2.5	12.0	0.4
LnGrp Delay(d),s/veh	43.2	34.9	34.1	80.5	34.7	52.8	43.9	25.4	11.0	51.0	18.1	10.3
LnGrp LOS	D	C	C	F	C	D	D	C	B	D	B	B
Approach Vol, veh/h		280			533			1750			1414	
Approach Delay, s/veh		36.3			53.3			25.5			19.9	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	48.0	11.0	16.7	9.7	48.4	9.2	18.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	44.0	7.0	16.0	7.0	44.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.2	36.6	8.1	7.6	5.4	25.8	4.7	13.9
Green Ext Time (p_c), s	0.0	7.0	0.0	1.8	0.0	16.3	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	28.0
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	74	77	50	67	102	62	34	1402	27	35	1201	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	85	89	57	89	136	83	40	1630	31	42	1430	94
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.75	0.75	0.75	0.86	0.86	0.86	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	58	379	75	70	379	97	1862	35	101	1861	833
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.05	0.52	0.52	0.06	0.53	0.53
Sat Flow, veh/h	0	243	1583	0	294	1583	1774	3553	67	1774	3539	1583
Grp Volume(v), veh/h	174	0	57	225	0	83	40	811	850	42	1430	94
Grp Sat Flow(s),veh/h/ln	243	0	1583	294	0	1583	1774	1770	1851	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	1.9	0.0	0.0	2.8	1.5	26.9	27.0	1.5	21.5	2.0
Cycle Q Clear(g_c), s	16.0	0.0	1.9	16.0	0.0	2.8	1.5	26.9	27.0	1.5	21.5	2.0
Prop In Lane	0.49		1.00	0.40		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	138	0	379	146	0	379	97	927	970	101	1861	833
V/C Ratio(X)	1.26	0.00	0.15	1.55	0.00	0.22	0.41	0.87	0.88	0.42	0.77	0.11
Avail Cap(c_a), veh/h	138	0	379	146	0	379	186	927	970	186	1861	833
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	0.0	20.0	26.3	0.0	20.4	30.5	14.0	14.0	30.4	12.6	8.0
Incr Delay (d2), s/veh	161.5	0.0	0.2	276.7	0.0	0.3	2.8	11.2	11.0	2.7	3.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	0.0	0.8	13.8	0.0	1.2	0.8	15.7	16.4	0.8	11.1	0.9
LnGrp Delay(d),s/veh	188.6	0.0	20.2	302.9	0.0	20.7	33.3	25.2	25.0	33.2	15.7	8.3
LnGrp LOS	F		C	F		C	C	C	C	C	B	A
Approach Vol, veh/h		231			308			1701			1566	
Approach Delay, s/veh		147.0			226.9			25.3			15.7	
Approach LOS		F			F			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.8	39.0		20.0	7.7	39.1		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	35.0		16.0	7.0	35.0		16.0
Max Q Clear Time (g_c+I1), s	3.5	29.0		18.0	3.5	23.5		18.0
Green Ext Time (p_c), s	0.0	5.7		0.0	0.0	10.8		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			45.1
HCM 2010 LOS			D

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	333	138	49	412	92	103	330	32	59	408	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	59	392	162	64	542	121	130	418	41	68	469	60
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.76	0.76	0.76	0.79	0.79	0.79	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	567	482	134	574	488	180	920	90	139	819	104
Arrive On Green	0.07	0.30	0.30	0.08	0.31	0.31	0.10	0.28	0.28	0.08	0.26	0.26
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3258	318	1774	3159	402
Grp Volume(v), veh/h	59	392	162	64	542	121	130	226	233	68	262	267
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1807	1774	1770	1792
Q Serve(g_s), s	2.0	11.4	4.9	2.1	17.5	3.5	4.4	6.5	6.6	2.3	7.9	8.0
Cycle Q Clear(g_c), s	2.0	11.4	4.9	2.1	17.5	3.5	4.4	6.5	6.6	2.3	7.9	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		0.22
Lane Grp Cap(c), veh/h	128	567	482	134	574	488	180	500	510	139	459	465
V/C Ratio(X)	0.46	0.69	0.34	0.48	0.94	0.25	0.72	0.45	0.46	0.49	0.57	0.58
Avail Cap(c_a), veh/h	201	574	488	201	574	488	201	500	510	201	459	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	18.9	16.6	27.3	20.8	16.0	26.9	18.2	18.2	27.3	19.9	19.9
Incr Delay (d2), s/veh	2.6	3.5	0.4	2.6	24.6	0.3	10.8	2.9	2.9	2.7	5.1	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	6.4	2.2	1.1	12.8	1.6	2.7	3.5	3.6	1.2	4.5	4.6
LnGrp Delay(d),s/veh	30.0	22.4	17.0	30.0	45.5	16.3	37.6	21.2	21.2	29.9	24.9	25.0
LnGrp LOS	C	C	B	C	D	B	D	C	C	C	C	C
Approach Vol, veh/h		613			727			589			597	
Approach Delay, s/veh		21.7			39.3			24.8			25.5	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	21.4	8.7	22.8	10.2	20.0	8.5	23.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	4.3	8.6	4.1	13.4	6.4	10.0	4.0	19.5
Green Ext Time (p_c), s	0.0	3.4	0.0	3.0	0.0	2.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	28.4
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	91	207	75	104	248	205	79	1175	74	163	1084	98
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	114	259	94	141	335	277	96	1433	90	194	1290	117
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.80	0.80	0.80	0.74	0.74	0.74	0.82	0.82	0.82	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	331	281	158	352	299	125	1573	704	197	1716	768
Arrive On Green	0.08	0.18	0.18	0.09	0.19	0.19	0.07	0.44	0.44	0.11	0.48	0.48
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	114	259	94	141	335	277	96	1433	90	194	1290	117
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.7	12.0	4.7	7.1	16.0	15.5	4.8	34.0	3.0	9.8	26.6	3.7
Cycle Q Clear(g_c), s	5.7	12.0	4.7	7.1	16.0	15.5	4.8	34.0	3.0	9.8	26.6	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	138	331	281	158	352	299	125	1573	704	197	1716	768
V/C Ratio(X)	0.83	0.78	0.33	0.89	0.95	0.93	0.77	0.91	0.13	0.98	0.75	0.15
Avail Cap(c_a), veh/h	138	331	281	158	352	299	138	1573	704	197	1716	768
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.9	35.3	32.3	40.6	36.1	35.9	41.1	23.3	14.7	39.9	18.8	12.9
Incr Delay (d2), s/veh	32.0	11.5	0.7	42.5	35.5	33.3	20.5	9.5	0.4	59.3	3.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	7.2	2.1	5.3	11.7	9.5	3.1	18.6	1.4	8.0	13.6	1.7
LnGrp Delay(d),s/veh	72.9	46.8	33.0	83.1	71.6	69.2	61.6	32.8	15.1	99.3	21.9	13.3
LnGrp LOS	E	D	C	F	E	E	E	C	B	F	C	B
Approach Vol, veh/h		467			753			1619			1601	
Approach Delay, s/veh		50.4			72.9			33.5			30.6	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	44.0	12.0	20.0	10.4	47.6	11.0	21.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	40.0	8.0	16.0	7.0	43.0	7.0	17.0
Max Q Clear Time (g_c+I1), s	11.8	36.0	9.1	14.0	6.8	28.6	7.7	18.0
Green Ext Time (p_c), s	0.0	3.8	0.0	1.0	0.0	12.9	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		40.9
HCM 2010 LOS		D

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	105	263	79	47	365	142	109	347	30	34	281	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	148	370	111	69	537	209	127	403	35	47	385	62
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.71	0.71	0.71	0.68	0.68	0.68	0.86	0.86	0.86	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	647	550	133	595	505	166	931	81	107	763	122
Arrive On Green	0.10	0.35	0.35	0.07	0.32	0.32	0.09	0.28	0.28	0.06	0.25	0.25
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3297	285	1774	3058	489
Grp Volume(v), veh/h	148	370	111	69	537	209	127	215	223	47	222	225
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1812	1774	1770	1777
Q Serve(g_s), s	5.6	11.0	3.4	2.5	18.8	7.1	4.8	6.8	6.8	1.7	7.3	7.4
Cycle Q Clear(g_c), s	5.6	11.0	3.4	2.5	18.8	7.1	4.8	6.8	6.8	1.7	7.3	7.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.27
Lane Grp Cap(c), veh/h	182	647	550	133	595	505	166	500	512	107	442	443
V/C Ratio(X)	0.81	0.57	0.20	0.52	0.90	0.41	0.77	0.43	0.43	0.44	0.50	0.51
Avail Cap(c_a), veh/h	182	647	550	182	629	535	182	500	512	182	442	443
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.9	18.1	15.6	30.3	22.2	18.2	30.1	20.0	20.0	30.9	21.9	22.0
Incr Delay (d2), s/veh	23.5	1.2	0.2	3.1	15.9	0.5	16.1	2.7	2.7	2.8	4.0	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	5.9	1.5	1.4	12.2	3.1	3.1	3.7	3.8	0.9	4.1	4.1
LnGrp Delay(d),s/veh	53.4	19.3	15.8	33.4	38.1	18.7	46.3	22.7	22.7	33.7	26.0	26.1
LnGrp LOS	D	B	B	C	D	B	D	C	C	C	C	C
Approach Vol, veh/h		629			815			565			494	
Approach Delay, s/veh		26.7			32.7			28.0			26.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	23.2	9.1	27.6	10.4	21.0	11.0	25.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	23.0	7.0	17.0	7.0	23.0
Max Q Clear Time (g_c+I1), s	3.7	8.8	4.5	13.0	6.8	9.4	7.6	20.8
Green Ext Time (p_c), s	0.0	3.1	0.0	4.5	0.0	3.0	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	29.0
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	52	88	44	63	104	61	1193	60	98	1068	83
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	122	70	119	52	74	122	66	1283	65	121	1319	102
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.74	0.74	0.74	0.85	0.85	0.85	0.93	0.93	0.93	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	164	115	196	114	100	165	130	1453	74	163	1567	701
Arrive On Green	0.09	0.19	0.19	0.06	0.16	0.16	0.07	0.42	0.42	0.09	0.44	0.44
Sat Flow, veh/h	1774	621	1056	1774	634	1045	1774	3428	173	1774	3539	1583
Grp Volume(v), veh/h	122	0	189	52	0	196	66	661	687	121	1319	102
Grp Sat Flow(s),veh/h/ln	1774	0	1676	1774	0	1678	1774	1770	1832	1774	1770	1583
Q Serve(g_s), s	4.6	0.0	7.1	1.9	0.0	7.6	2.5	23.5	23.6	4.5	22.6	2.6
Cycle Q Clear(g_c), s	4.6	0.0	7.1	1.9	0.0	7.6	2.5	23.5	23.6	4.5	22.6	2.6
Prop In Lane	1.00		0.63	1.00		0.62	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	164	0	312	114	0	265	130	750	777	163	1567	701
V/C Ratio(X)	0.75	0.00	0.61	0.46	0.00	0.74	0.51	0.88	0.88	0.74	0.84	0.15
Avail Cap(c_a), veh/h	182	0	392	182	0	393	182	750	777	182	1567	701
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	25.5	30.9	0.0	27.5	30.5	18.1	18.2	30.3	16.9	11.4
Incr Delay (d2), s/veh	14.0	0.0	1.9	2.8	0.0	4.0	3.1	14.1	13.9	13.5	5.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	3.4	1.0	0.0	3.8	1.3	14.3	14.8	2.8	12.2	1.2
LnGrp Delay(d),s/veh	44.2	0.0	27.4	33.7	0.0	31.5	33.6	32.3	32.1	43.7	22.6	11.8
LnGrp LOS	D		C	C		C	C	C	C	D	C	B
Approach Vol, veh/h		311			248			1414			1542	
Approach Delay, s/veh		34.0			32.0			32.2			23.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	33.0	8.4	16.7	9.0	34.3	10.3	14.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	29.0	7.0	16.0	7.0	29.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.5	25.6	3.9	9.1	4.5	24.6	6.6	9.6
Green Ext Time (p_c), s	0.0	3.2	0.0	1.3	0.0	4.1	0.0	1.2

Intersection Summary			
HCM 2010 Ctrl Delay			28.6
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	206	458	100	205	891	245	267	917	211	239	684	239
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	251	559	122	241	1048	288	284	976	224	285	814	285
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.94	0.94	0.94	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	301	861	385	325	993	273	322	1018	455	310	995	445
Arrive On Green	0.09	0.24	0.24	0.09	0.25	0.25	0.18	0.29	0.29	0.17	0.28	0.28
Sat Flow, veh/h	3442	3539	1583	3442	3970	1090	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	251	559	122	241	895	441	284	976	224	285	814	285
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1670	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.7	11.4	5.1	5.5	20.0	20.0	12.5	21.7	9.4	12.6	17.2	12.6
Cycle Q Clear(g_c), s	5.7	11.4	5.1	5.5	20.0	20.0	12.5	21.7	9.4	12.6	17.2	12.6
Prop In Lane	1.00		1.00	1.00		0.65	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	301	861	385	325	848	418	322	1018	455	310	995	445
V/C Ratio(X)	0.83	0.65	0.32	0.74	1.06	1.06	0.88	0.96	0.49	0.92	0.82	0.64
Avail Cap(c_a), veh/h	301	861	385	387	848	418	333	1018	455	310	995	445
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.9	27.2	24.8	35.3	30.0	30.0	31.9	28.0	23.7	32.4	26.8	25.2
Incr Delay (d2), s/veh	17.9	1.7	0.5	6.2	46.7	59.7	22.7	19.9	3.8	30.8	7.5	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	5.7	2.2	2.9	14.8	16.1	8.1	13.4	4.6	8.8	9.4	6.4
LnGrp Delay(d),s/veh	53.8	28.9	25.3	41.5	76.7	89.7	54.6	48.0	27.4	63.3	34.3	32.1
LnGrp LOS	D	C	C	D	F	F	D	D	C	E	C	C
Approach Vol, veh/h		932			1577			1484			1384	
Approach Delay, s/veh		35.1			75.0			46.1			39.8	
Approach LOS		D			E			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.0	27.0	11.5	23.5	18.5	26.5	11.0	24.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	14.0	23.0	9.0	18.0	15.0	22.0	7.0	20.0				
Max Q Clear Time (g_c+I1), s	14.6	23.7	7.5	13.4	14.5	19.2	7.7	22.0				
Green Ext Time (p_c), s	0.0	0.0	0.1	3.8	0.0	2.5	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			51.1									
HCM 2010 LOS			D									

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	13	2	41	2	1	18	38	1489	4	14	1277	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	68	68	68	87	87	87	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	3	61	3	1	26	48	1883	5	16	1451	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2532	3478	737	2740	3487	944	1474	0	0	1888	0	0
Stage 1	1494	1494	-	1981	1981	-	-	-	-	-	-	-
Stage 2	1038	1984	-	759	1506	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 14	6	361	9	6	263	453	-	-	313	-	-
Stage 1	129	185	-	63	106	-	-	-	-	-	-	-
Stage 2	247	105	-	365	182	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 11	5	361	6	5	263	453	-	-	313	-	-
Mov Cap-2 Maneuver	69	51	-	43	52	-	-	-	-	-	-	-
Stage 1	115	176	-	56	95	-	-	-	-	-	-	-
Stage 2	196	94	-	283	173	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	47.8	33.5	0.3	0.2
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	453	-	-	164	157	313	-	-
HCM Lane V/C Ratio	0.106	-	-	0.51	0.197	0.051	-	-
HCM Control Delay (s)	13.9	-	-	47.8	33.5	17.1	-	-
HCM Lane LOS	B	-	-	E	D	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-	2.5	0.7	0.2	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	8.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	350	13	36	476	19	30	11	42	34	12	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	70	70	70	67	67	67	64	64	64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	455	17	51	680	27	45	16	63	53	19	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	680	0	0	455	0	0	1285	1264	455	1303	1264	680
Stage 1	-	-	-	-	-	-	481	481	-	783	783	-
Stage 2	-	-	-	-	-	-	804	783	-	520	481	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	912	-	-	1106	-	-	142	169	605	138	169	451
Stage 1	-	-	-	-	-	-	566	554	-	387	404	-
Stage 2	-	-	-	-	-	-	377	404	-	539	554	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	912	-	-	1106	-	-	117	159	605	109	159	451
Mov Cap-2 Maneuver	-	-	-	-	-	-	117	159	-	109	159	-
Stage 1	-	-	-	-	-	-	558	546	-	381	385	-
Stage 2	-	-	-	-	-	-	324	385	-	462	546	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	44.2	68
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	210	912	-	-	1106	-	-	145
HCM Lane V/C Ratio	0.59	0.014	-	-	0.046	-	-	0.657
HCM Control Delay (s)	44.2	9	-	-	8.4	-	-	68
HCM Lane LOS	E	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	3.3	0	-	-	0.1	-	-	3.6

HCM 2010 TWSC
10: Cottonwood Ave & Driveway

Intersection						
Int Delay, s/veh	1.2					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	23	353	528	10	13	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	78	78	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	31	471	677	13	14	51

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	690	0	-	0	1215	683
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	532	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	905	-	-	-	200	449
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	589	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	905	-	-	-	191	449
Mov Cap-2 Maneuver	-	-	-	-	191	-
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	562	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	17.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	905	-	-	-	347
HCM Lane V/C Ratio	0.034	-	-	-	0.188
HCM Control Delay (s)	9.1	0	-	-	17.8
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	11	0	0	34	14	1428	64	0	1331	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	62	62	62	92	92	92	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	18	0	0	37	16	1680	75	0	1566	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2441	3356	785	2534	3320	878	1569	0	0	1755	0	0
Stage 1	1568	1568	-	1751	1751	-	-	-	-	-	-	-
Stage 2	873	1788	-	783	1569	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	16	8	336	14	8	291	417	-	-	353	-	-
Stage 1	116	170	-	89	138	-	-	-	-	-	-	-
Stage 2	311	132	-	353	170	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	14	8	336	13	8	291	417	-	-	353	-	-
Mov Cap-2 Maneuver	14	8	-	13	8	-	-	-	-	-	-	-
Stage 1	112	170	-	86	133	-	-	-	-	-	-	-
Stage 2	261	127	-	334	170	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.3	19.2	0.1	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	417	-	-	336	291	353	-	-
HCM Lane V/C Ratio	0.039	-	-	0.053	0.127	-	-	-
HCM Control Delay (s)	14	-	-	16.3	19.2	0	-	-
HCM Lane LOS	B	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.4	0	-	-

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	68	199	76	69	131	95	68	1280	89	121	1630	75
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	80	234	89	99	187	136	71	1333	93	126	1698	78
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.70	0.70	0.70	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	124	293	249	131	302	256	118	1743	780	157	1821	815
Arrive On Green	0.07	0.16	0.16	0.07	0.16	0.16	0.07	0.49	0.49	0.09	0.51	0.51
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	80	234	89	99	187	136	71	1333	93	126	1698	78
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.8	10.3	4.3	4.7	8.0	6.7	3.3	26.2	2.7	6.0	38.3	2.2
Cycle Q Clear(g_c), s	3.8	10.3	4.3	4.7	8.0	6.7	3.3	26.2	2.7	6.0	38.3	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	124	293	249	131	302	256	118	1743	780	157	1821	815
V/C Ratio(X)	0.65	0.80	0.36	0.75	0.62	0.53	0.60	0.76	0.12	0.80	0.93	0.10
Avail Cap(c_a), veh/h	145	349	296	145	349	296	145	1743	780	187	1821	815
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.8	34.7	32.2	38.8	33.4	32.8	38.8	17.7	11.7	38.2	19.4	10.6
Incr Delay (d2), s/veh	7.6	10.5	0.9	18.0	2.6	1.7	4.8	3.3	0.3	18.6	10.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	6.2	1.9	2.9	4.3	3.1	1.8	13.6	1.2	3.7	21.2	1.0
LnGrp Delay(d),s/veh	46.3	45.2	33.0	56.8	36.0	34.5	43.6	20.9	12.0	56.9	29.6	10.8
LnGrp LOS	D	D	C	E	D	C	D	C	B	E	C	B
Approach Vol, veh/h		403			422			1497			1902	
Approach Delay, s/veh		42.7			40.4			21.4			30.6	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	46.1	10.3	17.5	9.7	48.0	10.0	17.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	42.0	7.0	16.0	7.0	44.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	8.0	28.2	6.7	12.3	5.3	40.3	5.8	10.0
Green Ext Time (p_c), s	0.0	12.9	0.0	1.1	0.0	3.6	0.0	1.6

Intersection Summary			
HCM 2010 Ctrl Delay			29.5
HCM 2010 LOS			C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	64	102	28	32	94	64	16	1340	47	79	1586	89
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	72	115	31	36	106	72	17	1396	49	81	1635	92
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.96	0.96	0.96	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	92	400	71	157	400	51	1653	58	149	1873	838
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.03	0.47	0.47	0.08	0.53	0.53
Sat Flow, veh/h	0	364	1583	0	619	1583	1774	3488	122	1774	3539	1583
Grp Volume(v), veh/h	187	0	31	142	0	72	17	707	738	81	1635	92
Grp Sat Flow(s),veh/h/ln	364	0	1583	619	0	1583	1774	1770	1841	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.9	0.0	0.0	2.3	0.6	22.2	22.3	2.8	25.6	1.8
Cycle Q Clear(g_c), s	16.0	0.0	0.9	16.0	0.0	2.3	0.6	22.2	22.3	2.8	25.6	1.8
Prop In Lane	0.39		1.00	0.25		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	171	0	400	228	0	400	51	838	872	149	1873	838
V/C Ratio(X)	1.09	0.00	0.08	0.62	0.00	0.18	0.34	0.84	0.85	0.54	0.87	0.11
Avail Cap(c_a), veh/h	171	0	400	228	0	400	196	838	872	196	1873	838
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.9	0.0	18.0	20.0	0.0	18.5	30.2	14.6	14.6	27.8	13.0	7.4
Incr Delay (d2), s/veh	96.5	0.0	0.1	5.2	0.0	0.2	3.8	10.1	9.9	3.1	6.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	0.0	0.4	2.3	0.0	1.0	0.3	13.0	13.7	1.5	13.8	0.9
LnGrp Delay(d),s/veh	120.4	0.0	18.1	25.2	0.0	18.7	34.0	24.7	24.5	30.9	19.0	7.7
LnGrp LOS	F		B	C		B	C	C	C	C	B	A
Approach Vol, veh/h		218			214			1462			1808	
Approach Delay, s/veh		105.8			23.0			24.7			19.0	
Approach LOS		F			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.3	34.0		20.0	5.8	37.5		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	30.0		16.0	7.0	30.0		16.0
Max Q Clear Time (g_c+I1), s	4.8	24.3		18.0	2.6	27.6		18.0
Green Ext Time (p_c), s	0.0	5.5		0.0	0.0	2.3		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		26.6
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	384	162	45	303	41	88	438	60	31	374	47
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	54	452	191	55	370	50	106	528	72	33	394	49
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.82	0.82	0.82	0.83	0.83	0.83	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	123	544	463	125	546	464	173	996	135	88	856	106
Arrive On Green	0.07	0.29	0.29	0.07	0.29	0.29	0.10	0.32	0.32	0.05	0.27	0.27
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3132	426	1774	3171	392
Grp Volume(v), veh/h	54	452	191	55	370	50	106	298	302	33	219	224
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1788	1774	1770	1794
Q Serve(g_s), s	1.7	13.4	5.8	1.8	10.4	1.4	3.4	8.2	8.2	1.1	6.1	6.2
Cycle Q Clear(g_c), s	1.7	13.4	5.8	1.8	10.4	1.4	3.4	8.2	8.2	1.1	6.1	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.22
Lane Grp Cap(c), veh/h	123	544	463	125	546	464	173	563	568	88	478	484
V/C Ratio(X)	0.44	0.83	0.41	0.44	0.68	0.11	0.61	0.53	0.53	0.38	0.46	0.46
Avail Cap(c_a), veh/h	210	597	508	210	597	508	210	563	568	210	478	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	19.6	16.9	26.4	18.5	15.3	25.7	16.6	16.6	27.3	18.0	18.1
Incr Delay (d2), s/veh	2.4	9.0	0.6	2.4	2.7	0.1	3.6	3.5	3.5	2.6	3.1	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	8.3	2.6	0.9	5.8	0.6	1.8	4.5	4.6	0.6	3.4	3.5
LnGrp Delay(d),s/veh	28.9	28.6	17.5	28.9	21.2	15.4	29.3	20.1	20.1	29.9	21.2	21.2
LnGrp LOS	C	C	B	C	C	B	C	C	C	C	C	C
Approach Vol, veh/h		697			475			706			476	
Approach Delay, s/veh		25.5			21.5			21.5			21.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	22.8	8.2	21.3	9.8	20.0	8.1	21.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	10.2	3.8	15.4	5.4	8.2	3.7	12.4
Green Ext Time (p_c), s	0.0	2.9	0.0	1.9	0.0	3.7	0.0	3.1

Intersection Summary		
HCM 2010 Ctrl Delay		22.8
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	107	245	72	85	173	112	74	1244	59	221	1360	131
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	126	288	85	109	222	144	79	1323	63	235	1447	139
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.78	0.78	0.78	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	156	335	285	137	315	268	120	1474	659	260	1753	784
Arrive On Green	0.09	0.18	0.18	0.08	0.17	0.17	0.07	0.42	0.42	0.15	0.50	0.50
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	126	288	85	109	222	144	79	1323	63	235	1447	139
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	6.2	13.3	4.1	5.4	10.0	7.4	3.9	30.9	2.1	11.6	31.0	4.3
Cycle Q Clear(g_c), s	6.2	13.3	4.1	5.4	10.0	7.4	3.9	30.9	2.1	11.6	31.0	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	156	335	285	137	315	268	120	1474	659	260	1753	784
V/C Ratio(X)	0.81	0.86	0.30	0.79	0.71	0.54	0.66	0.90	0.10	0.91	0.83	0.18
Avail Cap(c_a), veh/h	160	356	303	140	335	285	140	1474	659	260	1753	784
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.8	35.3	31.6	40.3	34.8	33.7	40.4	24.2	15.8	37.3	19.1	12.4
Incr Delay (d2), s/veh	24.9	17.9	0.6	26.0	6.1	1.7	8.7	9.0	0.3	32.2	4.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	8.5	1.9	3.6	5.7	3.4	2.2	16.9	1.0	8.0	16.2	2.0
LnGrp Delay(d),s/veh	64.7	53.3	32.2	66.3	41.0	35.5	49.2	33.1	16.0	69.5	23.7	12.9
LnGrp LOS	E	D	C	E	D	D	D	C	B	E	C	B
Approach Vol, veh/h		499			475			1465			1821	
Approach Delay, s/veh		52.6			45.1			33.2			28.8	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	41.0	10.9	20.0	10.0	48.0	11.8	19.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	37.0	7.0	17.0	7.0	43.0	8.0	16.0
Max Q Clear Time (g_c+I1), s	13.6	32.9	7.4	15.3	5.9	33.0	8.2	12.0
Green Ext Time (p_c), s	0.0	3.9	0.0	0.7	0.0	9.2	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	34.9
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	264	57	31	235	43	31	355	19	39	322	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	22	326	70	34	255	47	35	403	22	41	339	21
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.81	0.81	0.81	0.92	0.92	0.92	0.88	0.88	0.88	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	461	392	93	491	417	96	1091	59	108	1105	68
Arrive On Green	0.04	0.25	0.25	0.05	0.26	0.26	0.05	0.32	0.32	0.06	0.33	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3414	186	1774	3387	209
Grp Volume(v), veh/h	22	326	70	34	255	47	35	208	217	41	176	184
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1830	1774	1770	1826
Q Serve(g_s), s	0.6	8.0	1.7	0.9	5.9	1.1	1.0	4.5	4.6	1.1	3.7	3.8
Cycle Q Clear(g_c), s	0.6	8.0	1.7	0.9	5.9	1.1	1.0	4.5	4.6	1.1	3.7	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		0.11
Lane Grp Cap(c), veh/h	65	461	392	93	491	417	96	565	585	108	578	596
V/C Ratio(X)	0.34	0.71	0.18	0.36	0.52	0.11	0.37	0.37	0.37	0.38	0.31	0.31
Avail Cap(c_a), veh/h	248	707	601	248	707	601	248	565	585	248	578	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	17.2	14.8	22.9	15.7	14.0	22.9	13.1	13.2	22.6	12.6	12.6
Incr Delay (d2), s/veh	3.0	2.0	0.2	2.4	0.9	0.1	2.3	1.8	1.8	2.2	1.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.3	0.8	0.5	3.1	0.5	0.5	2.5	2.6	0.6	2.0	2.1
LnGrp Delay(d),s/veh	26.5	19.2	15.0	25.3	16.6	14.1	25.2	15.0	15.0	24.8	14.0	14.0
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		418			336			460			401	
Approach Delay, s/veh		18.9			17.1			15.7			15.1	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	20.0	6.6	16.4	6.7	20.3	5.8	17.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	6.6	2.9	10.0	3.0	5.8	2.6	7.9
Green Ext Time (p_c), s	0.0	3.0	0.0	2.4	0.0	3.2	0.0	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	16.7
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	26	52	44	21	44	47	45	1313	55	76	1414	32
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	30	59	50	25	52	56	48	1397	59	82	1520	34
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.84	0.84	0.84	0.94	0.94	0.94	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	104	88	69	87	94	111	1803	76	147	1917	858
Arrive On Green	0.04	0.11	0.11	0.04	0.11	0.11	0.06	0.52	0.52	0.08	0.54	0.54
Sat Flow, veh/h	1774	933	790	1774	822	885	1774	3461	146	1774	3539	1583
Grp Volume(v), veh/h	30	0	109	25	0	108	48	713	743	82	1520	34
Grp Sat Flow(s),veh/h/ln	1774	0	1723	1774	0	1707	1774	1770	1837	1774	1770	1583
Q Serve(g_s), s	1.1	0.0	3.9	0.9	0.0	3.9	1.7	21.1	21.2	2.9	22.5	0.7
Cycle Q Clear(g_c), s	1.1	0.0	3.9	0.9	0.0	3.9	1.7	21.1	21.2	2.9	22.5	0.7
Prop In Lane	1.00		0.46	1.00		0.52	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	80	0	193	69	0	181	111	922	957	147	1917	858
V/C Ratio(X)	0.38	0.00	0.57	0.36	0.00	0.60	0.43	0.77	0.78	0.56	0.79	0.04
Avail Cap(c_a), veh/h	190	0	422	190	0	418	190	922	957	190	1917	858
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	27.5	30.6	0.0	27.8	29.5	12.5	12.6	28.8	12.0	7.0
Incr Delay (d2), s/veh	2.9	0.0	2.6	3.1	0.0	3.1	2.7	6.3	6.1	3.3	3.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	2.0	0.5	0.0	2.0	0.9	11.7	12.2	1.5	11.7	0.3
LnGrp Delay(d),s/veh	33.2	0.0	30.1	33.7	0.0	31.0	32.2	18.8	18.7	32.0	15.5	7.1
LnGrp LOS	C		C	C		C	C	B	B	C	B	A
Approach Vol, veh/h		139			133			1504			1636	
Approach Delay, s/veh		30.7			31.5			19.2			16.1	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	38.0	6.6	11.3	8.1	39.3	6.9	10.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	34.0	7.0	16.0	7.0	34.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.9	23.2	2.9	5.9	3.7	24.5	3.1	5.9
Green Ext Time (p_c), s	0.0	10.0	0.0	0.8	0.0	8.8	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	18.7
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	508	1029	305	260	658	218	270	792	193	310	955	162
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	540	1095	324	302	765	253	297	870	212	341	1049	178
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.86	0.86	0.86	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	563	1062	475	313	862	282	290	933	417	355	1062	475
Arrive On Green	0.16	0.30	0.30	0.09	0.23	0.23	0.16	0.26	0.26	0.20	0.30	0.30
Sat Flow, veh/h	3442	3539	1583	3442	3792	1242	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	540	1095	324	302	683	335	297	870	212	341	1049	178
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1644	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	17.1	33.0	19.8	9.6	21.5	21.7	18.0	26.4	12.5	20.9	32.4	9.8
Cycle Q Clear(g_c), s	17.1	33.0	19.8	9.6	21.5	21.7	18.0	26.4	12.5	20.9	32.4	9.8
Prop In Lane	1.00		1.00	1.00		0.76	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	563	1062	475	313	770	374	290	933	417	355	1062	475
V/C Ratio(X)	0.96	1.03	0.68	0.97	0.89	0.90	1.02	0.93	0.51	0.96	0.99	0.37
Avail Cap(c_a), veh/h	563	1062	475	313	770	374	290	933	417	355	1062	475
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	38.5	33.9	49.8	41.1	41.2	46.0	39.5	34.4	43.6	38.3	30.4
Incr Delay (d2), s/veh	27.8	36.0	4.0	41.4	12.1	23.3	58.9	17.1	4.4	37.5	24.9	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	21.4	9.2	6.4	11.4	12.3	13.5	15.1	6.0	13.9	19.5	4.5
LnGrp Delay(d),s/veh	73.5	74.5	37.9	91.2	53.3	64.5	104.9	56.6	38.8	81.0	63.2	32.6
LnGrp LOS	E	F	D	F	D	E	F	E	D	F	E	C
Approach Vol, veh/h		1959			1320			1379			1568	
Approach Delay, s/veh		68.1			64.8			64.3			63.6	
Approach LOS		E			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	33.0	14.0	37.0	22.0	37.0	22.0	29.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	29.0	10.0	33.0	18.0	33.0	18.0	25.0
Max Q Clear Time (g_c+I1), s	22.9	28.4	11.6	35.0	20.0	34.4	19.1	23.7
Green Ext Time (p_c), s	0.0	0.6	0.0	0.0	0.0	0.0	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	65.4
HCM 2010 LOS	E

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	15	3	40	2	1	12	40	1423	2	47	1696	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	58	58	58	97	97	97	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	4	51	3	2	21	45	1614	2	48	1731	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2736	3545	877	2669	3555	808	1753	0	0	1616	0	0
Stage 1	1838	1838	-	1706	1706	-	-	-	-	-	-	-
Stage 2	898	1707	-	963	1849	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 10	6	292	11	6	324	353	-	-	399	-	-
Stage 1	78	125	-	95	145	-	-	-	-	-	-	-
Stage 2	301	145	-	274	123	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 7	5	292	7	5	324	353	-	-	399	-	-
Mov Cap-2 Maneuver	48	44	-	51	40	-	-	-	-	-	-	-
Stage 1	68	110	-	83	127	-	-	-	-	-	-	-
Stage 2	243	127	-	192	108	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	85.3	34.4	0.5	0.4
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	353	-	-	112	148	399	-	-
HCM Lane V/C Ratio	0.129	-	-	0.664	0.175	0.12	-	-
HCM Control Delay (s)	16.7	-	-	85.3	34.4	15.3	-	-
HCM Lane LOS	C	-	-	F	D	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-	3.4	0.6	0.4	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	383	55	15	257	9	31	6	9	7	2	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	88	88	88	60	60	60	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	391	56	17	292	10	52	10	15	9	3	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	292	0	0	391	0	0	763	754	391	766	754	292
Stage 1	-	-	-	-	-	-	428	428	-	326	326	-
Stage 2	-	-	-	-	-	-	335	326	-	440	428	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1270	-	-	1168	-	-	321	338	658	320	338	747
Stage 1	-	-	-	-	-	-	605	585	-	687	648	-
Stage 2	-	-	-	-	-	-	679	648	-	596	585	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1270	-	-	1168	-	-	306	328	658	299	328	747
Mov Cap-2 Maneuver	-	-	-	-	-	-	306	328	-	299	328	-
Stage 1	-	-	-	-	-	-	596	577	-	677	639	-
Stage 2	-	-	-	-	-	-	653	639	-	564	577	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.4	18.4	13.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	345	1270	-	-	1168	-	-	452
HCM Lane V/C Ratio	0.222	0.014	-	-	0.015	-	-	0.059
HCM Control Delay (s)	18.4	7.9	-	-	8.1	-	-	13.5
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.8	0	-	-	0	-	-	0.2

HCM 2010 TWSC
10: Cottonwood Ave & Driveway

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	28	455	312	11	14	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	81	81	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	31	500	385	14	15	60

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	399	0	-	0	954	392
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	562	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1160	-	-	-	287	657
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	571	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1160	-	-	-	276	657
Mov Cap-2 Maneuver	-	-	-	-	276	-
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	550	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	13.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1160	-	-	-	513
HCM Lane V/C Ratio	0.027	-	-	-	0.146
HCM Control Delay (s)	8.2	0	-	-	13.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection												
Int Delay, s/veh	24.8											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	12	0	74	0	0	40	54	1369	73	0	1628	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	92	92	92	95	95	95	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	0	103	0	0	43	57	1441	77	0	1751	41

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2605	3403	896	2468	3384	759	1791	0	0	1518	0	0
Stage 1	1771	1771	-	1593	1593	-	-	-	-	-	-	-
Stage 2	834	1632	-	875	1791	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 12	7	283	15	7	349	342	-	-	436	-	-
Stage 1	86	135	-	112	165	-	-	-	-	-	-	-
Stage 2	329	158	-	310	132	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 9	6	283	8	6	349	342	-	-	436	-	-
Mov Cap-2 Maneuver	~ 9	6	-	8	6	-	-	-	-	-	-	-
Stage 1	72	135	-	93	138	-	-	-	-	-	-	-
Stage 2	240	132	-	197	132	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 719.5	16.8	0.6	0
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	342	-	-	54	349	436	-	-
HCM Lane V/C Ratio	0.166	-	-	2.212	0.125	-	-	-
HCM Control Delay (s)	17.6	-	-	$ 719.5	16.8	0	-	-
HCM Lane LOS	C	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	11.9	0.4	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
1: Perris Blvd & Eucalyptus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	63	101	41	52	81	84	58	1186	56	71	1134	58
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	70	112	46	63	98	101	64	1303	62	79	1260	64
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.83	0.83	0.83	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	218	185	133	210	178	134	1652	739	149	1683	753
Arrive On Green	0.08	0.12	0.12	0.07	0.11	0.11	0.08	0.47	0.47	0.08	0.48	0.48
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	70	112	46	63	98	101	64	1303	62	79	1260	64
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.3	3.5	1.6	2.1	3.1	3.8	2.1	19.3	1.3	2.7	18.0	1.4
Cycle Q Clear(g_c), s	2.3	3.5	1.6	2.1	3.1	3.8	2.1	19.3	1.3	2.7	18.0	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	140	218	185	133	210	178	134	1652	739	149	1683	753
V/C Ratio(X)	0.50	0.51	0.25	0.48	0.47	0.57	0.48	0.79	0.08	0.53	0.75	0.09
Avail Cap(c_a), veh/h	200	480	408	200	480	408	200	1652	739	200	1683	753
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	25.8	24.9	27.6	25.8	26.1	27.5	14.0	9.2	27.3	13.3	8.9
Incr Delay (d2), s/veh	2.7	1.9	0.7	2.6	1.6	2.8	2.6	3.9	0.2	2.9	3.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.9	0.7	1.1	1.7	1.8	1.1	10.1	0.6	1.4	9.5	0.6
LnGrp Delay(d),s/veh	30.2	27.6	25.6	30.2	27.4	28.9	30.2	17.9	9.4	30.2	16.4	9.1
LnGrp LOS	C	C	C	C	C	C	C	B	A	C	B	A
Approach Vol, veh/h		228			262			1429			1403	
Approach Delay, s/veh		28.0			28.7			18.1			16.8	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	33.0	8.6	11.3	8.7	33.5	8.9	11.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	29.0	7.0	16.0	7.0	29.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.7	21.3	4.1	5.5	4.1	20.0	4.3	5.8
Green Ext Time (p_c), s	0.0	7.0	0.0	1.1	0.0	8.1	0.0	1.1

Intersection Summary		
HCM 2010 Ctrl Delay		19.1
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Dracaea Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	78	91	28	39	65	63	26	1165	27	29	1120	57
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	90	105	32	45	75	72	31	1387	32	34	1302	66
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.84	0.84	0.84	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	94	77	453	89	109	453	85	1582	36	91	1596	714
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.05	0.45	0.45	0.05	0.45	0.45
Sat Flow, veh/h	0	270	1583	0	379	1583	1774	3536	82	1774	3539	1583
Grp Volume(v), veh/h	195	0	32	120	0	72	31	693	726	34	1302	66
Grp Sat Flow(s),veh/h/ln	270	0	1583	379	0	1583	1774	1770	1848	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.8	0.0	0.0	1.9	0.9	19.9	19.9	1.0	17.9	1.3
Cycle Q Clear(g_c), s	16.0	0.0	0.8	16.0	0.0	1.9	0.9	19.9	19.9	1.0	17.9	1.3
Prop In Lane	0.46		1.00	0.37		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	171	0	453	197	0	453	85	792	827	91	1596	714
V/C Ratio(X)	1.14	0.00	0.07	0.61	0.00	0.16	0.37	0.88	0.88	0.37	0.82	0.09
Avail Cap(c_a), veh/h	171	0	453	197	0	453	222	792	827	222	1596	714
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	0.0	14.5	16.7	0.0	14.9	25.8	14.0	14.0	25.6	13.3	8.8
Incr Delay (d2), s/veh	110.5	0.0	0.1	5.3	0.0	0.2	2.6	13.0	12.7	2.5	4.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	0.0	0.4	1.7	0.0	0.8	0.5	12.5	13.0	0.6	9.5	0.6
LnGrp Delay(d),s/veh	131.8	0.0	14.6	22.0	0.0	15.1	28.4	27.0	26.7	28.1	18.0	9.0
LnGrp LOS	F		B	C		B	C	C	C	C	B	A
Approach Vol, veh/h		227			192			1450			1402	
Approach Delay, s/veh		115.3			19.4			26.9			17.9	
Approach LOS		F			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.9	29.0		20.0	6.7	29.2		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	25.0		16.0	7.0	25.0		16.0
Max Q Clear Time (g_c+I1), s	3.0	21.9		18.0	2.9	19.9		18.0
Green Ext Time (p_c), s	0.0	2.9		0.0	0.0	4.8		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		28.7
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
4: Indian St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	271	115	49	325	26	97	278	47	22	239	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	23	347	147	58	387	31	100	287	48	24	257	24
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.78	0.78	0.78	0.84	0.84	0.84	0.97	0.97	0.97	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	468	398	131	535	455	173	1084	179	69	975	90
Arrive On Green	0.04	0.25	0.25	0.07	0.29	0.29	0.10	0.36	0.36	0.04	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3041	503	1774	3275	303
Grp Volume(v), veh/h	23	347	147	58	387	31	100	166	169	24	138	143
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1774	1774	1770	1809
Q Serve(g_s), s	0.7	9.8	4.4	1.8	10.7	0.8	3.1	3.8	3.9	0.8	3.4	3.4
Cycle Q Clear(g_c), s	0.7	9.8	4.4	1.8	10.7	0.8	3.1	3.8	3.9	0.8	3.4	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.28	1.00		0.17
Lane Grp Cap(c), veh/h	66	468	398	131	535	455	173	630	632	69	527	538
V/C Ratio(X)	0.35	0.74	0.37	0.44	0.72	0.07	0.58	0.26	0.27	0.35	0.26	0.27
Avail Cap(c_a), veh/h	217	587	499	217	587	499	217	630	632	217	527	538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	19.7	17.7	25.3	18.3	14.8	24.7	13.1	13.1	26.7	15.3	15.3
Incr Delay (d2), s/veh	3.1	3.8	0.6	2.3	4.0	0.1	3.0	1.0	1.0	3.0	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	5.5	2.0	1.0	6.1	0.4	1.6	2.0	2.1	0.4	1.8	1.9
LnGrp Delay(d),s/veh	29.9	23.5	18.2	27.7	22.3	14.9	27.7	14.1	14.1	29.7	16.5	16.5
LnGrp LOS	C	C	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		517			476			435			305	
Approach Delay, s/veh		22.3			22.5			17.2			17.5	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	24.4	8.2	18.3	9.6	21.0	6.1	20.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	18.0	7.0	17.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	2.8	5.9	3.8	11.8	5.1	5.4	2.7	12.7
Green Ext Time (p_c), s	0.0	2.7	0.0	2.5	0.0	2.7	0.0	2.3

Intersection Summary		
HCM 2010 Ctrl Delay		20.2
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
5: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	93	158	65	130	200	189	87	1054	75	216	901	106
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	118	200	82	228	351	332	96	1158	82	248	1036	122
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.79	0.79	0.79	0.57	0.57	0.57	0.91	0.91	0.91	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	147	314	267	259	431	366	127	1233	552	279	1537	688
Arrive On Green	0.08	0.17	0.17	0.15	0.23	0.23	0.07	0.35	0.35	0.16	0.43	0.43
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	118	200	82	228	351	332	96	1158	82	248	1036	122
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.8	8.9	4.0	11.2	15.9	18.1	4.7	28.2	3.2	12.2	20.8	4.2
Cycle Q Clear(g_c), s	5.8	8.9	4.0	11.2	15.9	18.1	4.7	28.2	3.2	12.2	20.8	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	147	314	267	259	431	366	127	1233	552	279	1537	688
V/C Ratio(X)	0.80	0.64	0.31	0.88	0.81	0.91	0.76	0.94	0.15	0.89	0.67	0.18
Avail Cap(c_a), veh/h	160	335	285	259	440	374	199	1233	552	279	1537	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.1	34.5	32.5	37.2	32.4	33.3	40.6	28.1	19.9	36.7	20.1	15.4
Incr Delay (d2), s/veh	23.1	3.6	0.6	27.4	11.1	24.7	8.9	14.7	0.6	27.4	2.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	4.9	1.8	7.5	9.5	10.4	2.6	16.2	1.5	8.1	10.6	1.9
LnGrp Delay(d),s/veh	63.1	38.1	33.1	64.6	43.5	58.0	49.5	42.7	20.5	64.1	22.5	16.0
LnGrp LOS	E	D	C	E	D	E	D	D	C	E	C	B
Approach Vol, veh/h		400			911			1336			1406	
Approach Delay, s/veh		44.5			54.0			41.9			29.3	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	35.0	17.0	19.0	10.3	42.7	11.4	24.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	31.0	13.0	16.0	10.0	35.0	8.0	21.0
Max Q Clear Time (g_c+I1), s	14.2	30.2	13.2	10.9	6.7	22.8	7.8	20.1
Green Ext Time (p_c), s	0.0	0.8	0.0	2.1	0.1	10.0	0.0	0.4

Intersection Summary		
HCM 2010 Ctrl Delay		40.5
HCM 2010 LOS		D

HCM 2010 Signalized Intersection Summary
7: Kitching St & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	221	64	10	245	31	34	206	15	28	223	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	62	395	114	15	360	46	40	245	18	32	256	22
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.56	0.56	0.56	0.68	0.68	0.68	0.84	0.84	0.84	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	594	505	46	497	422	104	1028	75	88	984	84
Arrive On Green	0.08	0.32	0.32	0.03	0.27	0.27	0.06	0.31	0.31	0.05	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3345	244	1774	3301	282
Grp Volume(v), veh/h	62	395	114	15	360	46	40	129	134	32	136	142
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1820	1774	1770	1813
Q Serve(g_s), s	1.8	9.8	2.8	0.4	9.4	1.2	1.2	2.9	3.0	0.9	3.1	3.2
Cycle Q Clear(g_c), s	1.8	9.8	2.8	0.4	9.4	1.2	1.2	2.9	3.0	0.9	3.1	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		0.16
Lane Grp Cap(c), veh/h	140	594	505	46	497	422	104	544	559	88	527	540
V/C Ratio(X)	0.44	0.66	0.23	0.32	0.72	0.11	0.38	0.24	0.24	0.36	0.26	0.26
Avail Cap(c_a), veh/h	231	659	560	231	659	560	231	544	559	231	527	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	15.8	13.4	25.7	17.9	14.9	24.3	13.9	13.9	24.7	14.3	14.3
Incr Delay (d2), s/veh	2.2	2.2	0.2	4.0	2.7	0.1	2.3	1.0	1.0	2.5	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.4	1.3	0.3	5.2	0.5	0.6	1.6	1.6	0.5	1.7	1.8
LnGrp Delay(d),s/veh	25.8	18.0	13.6	29.6	20.6	15.0	26.7	14.9	14.9	27.2	15.5	15.5
LnGrp LOS	C	B	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		571			421			303			310	
Approach Delay, s/veh		18.0			20.3			16.5			16.7	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	20.5	5.4	21.1	7.1	20.0	8.2	18.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	7.0	19.0	7.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	2.9	5.0	2.4	11.8	3.2	5.2	3.8	11.4
Green Ext Time (p_c), s	0.0	2.2	0.0	2.8	0.0	2.2	0.0	2.9

Intersection Summary			
HCM 2010 Ctrl Delay			18.1
HCM 2010 LOS			B

HCM 2010 Signalized Intersection Summary
8: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	25	41	30	26	34	66	33	1104	39	67	1068	31
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	29	48	35	34	44	86	34	1150	41	75	1200	35
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.77	0.77	0.77	0.96	0.96	0.96	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	81	126	92	92	74	145	92	1539	55	155	1688	755
Arrive On Green	0.05	0.13	0.13	0.05	0.13	0.13	0.05	0.44	0.44	0.09	0.48	0.48
Sat Flow, veh/h	1774	1003	731	1774	565	1103	1774	3486	124	1774	3539	1583
Grp Volume(v), veh/h	29	0	83	34	0	130	34	584	607	75	1200	35
Grp Sat Flow(s),veh/h/ln	1774	0	1734	1774	0	1668	1774	1770	1841	1774	1770	1583
Q Serve(g_s), s	0.9	0.0	2.4	1.0	0.0	4.0	1.0	14.9	15.0	2.2	14.6	0.6
Cycle Q Clear(g_c), s	0.9	0.0	2.4	1.0	0.0	4.0	1.0	14.9	15.0	2.2	14.6	0.6
Prop In Lane	1.00		0.42	1.00		0.66	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	81	0	217	92	0	219	92	781	812	155	1688	755
V/C Ratio(X)	0.36	0.00	0.38	0.37	0.00	0.59	0.37	0.75	0.75	0.48	0.71	0.05
Avail Cap(c_a), veh/h	228	0	510	228	0	491	228	781	812	228	1688	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.2	0.0	21.8	24.9	0.0	22.2	24.9	12.7	12.7	23.6	11.3	7.6
Incr Delay (d2), s/veh	2.7	0.0	1.1	2.5	0.0	2.5	2.5	6.4	6.2	2.3	2.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.2	0.6	0.0	2.0	0.6	8.5	8.8	1.2	7.6	0.3
LnGrp Delay(d),s/veh	27.8	0.0	22.9	27.4	0.0	24.8	27.4	19.1	18.9	26.0	13.8	7.7
LnGrp LOS	C		C	C		C	C	B	B	C	B	A
Approach Vol, veh/h		112			164			1225			1310	
Approach Delay, s/veh		24.2			25.3			19.2			14.4	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	28.0	6.8	10.8	6.8	29.9	6.5	11.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.2	17.0	3.0	4.4	3.0	16.6	2.9	6.0
Green Ext Time (p_c), s	0.0	6.2	0.0	0.8	0.0	6.5	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	17.5
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
9: Perris Blvd & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	375	519	232	239	489	179	308	739	140	211	693	183
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	417	577	258	278	569	208	338	812	154	229	753	199
Adj No. of Lanes	2	2	1	2	3	0	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.86	0.86	0.86	0.91	0.91	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	435	765	342	360	720	257	375	1153	516	268	939	420
Arrive On Green	0.13	0.22	0.22	0.10	0.19	0.19	0.21	0.33	0.33	0.15	0.27	0.27
Sat Flow, veh/h	3442	3539	1583	3442	3701	1319	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	417	577	258	278	520	257	338	812	154	229	753	199
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1630	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.5	12.1	12.1	6.2	11.5	11.9	14.7	15.9	5.7	10.0	15.7	8.4
Cycle Q Clear(g_c), s	9.5	12.1	12.1	6.2	11.5	11.9	14.7	15.9	5.7	10.0	15.7	8.4
Prop In Lane	1.00		1.00	1.00		0.81	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	435	765	342	360	660	317	375	1153	516	268	939	420
V/C Ratio(X)	0.96	0.75	0.75	0.77	0.79	0.81	0.90	0.70	0.30	0.85	0.80	0.47
Avail Cap(c_a), veh/h	435	765	342	392	686	330	381	1153	516	292	939	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	29.0	29.0	34.5	30.3	30.5	30.4	23.3	19.9	32.7	27.1	24.4
Incr Delay (d2), s/veh	32.6	4.3	9.1	8.5	5.9	13.7	23.6	3.6	1.5	20.1	7.2	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	6.3	6.1	3.4	6.0	6.6	9.6	8.4	2.7	6.4	8.6	4.1
LnGrp Delay(d),s/veh	66.9	33.3	38.1	43.0	36.2	44.1	54.0	27.0	21.4	52.8	34.3	28.2
LnGrp LOS	E	C	D	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		1252			1055			1304			1181	
Approach Delay, s/veh		45.5			39.9			33.3			36.8	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	29.8	12.3	21.1	20.7	25.0	14.0	19.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	25.0	9.0	17.0	17.0	21.0	10.0	16.0
Max Q Clear Time (g_c+I1), s	12.0	17.9	8.2	14.1	16.7	17.7	11.5	13.9
Green Ext Time (p_c), s	0.1	5.4	0.1	2.2	0.0	2.7	0.0	1.5

Intersection Summary			
HCM 2010 Ctrl Delay			38.8
HCM 2010 LOS			D

HCM 2010 TWSC
2: Perris Blvd & Atwood Ave

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	4	30	3	7	15	41	1265	3	38	1170	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	72	72	72	89	89	89	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	6	46	4	10	21	51	1563	4	44	1345	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2331	3112	683	2430	3121	784	1367	0	0	1567	0	0
Stage 1	1443	1443	-	1667	1667	-	-	-	-	-	-	-
Stage 2	888	1669	-	763	1454	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 20	11	392	17	11	336	498	-	-	417	-	-
Stage 1	139	196	-	100	152	-	-	-	-	-	-	-
Stage 2	305	151	-	363	193	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 14	9	392	12	~ 9	336	498	-	-	417	-	-
Mov Cap-2 Maneuver	75	59	-	63	63	-	-	-	-	-	-	-
Stage 1	125	175	-	90	136	-	-	-	-	-	-	-
Stage 2	238	136	-	276	173	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	71.1	45.4	0.4	0.5
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	498	-	-	131	123	417	-	-
HCM Lane V/C Ratio	0.102	-	-	0.634	0.282	0.105	-	-
HCM Control Delay (s)	13	-	-	71.1	45.4	14.6	-	-
HCM Lane LOS	B	-	-	F	E	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	3.3	1.1	0.3	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 TWSC
6: Crape Myrtle Dr & Cottonwood Ave

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	25	343	46	3	289	4	34	4	10	2	2	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	0	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	58	58	58	79	79	79	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	44	602	81	5	498	7	43	5	13	3	3	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	498	0	0	602	0	0	1207	1198	602	1207	1198	498
Stage 1	-	-	-	-	-	-	689	689	-	509	509	-
Stage 2	-	-	-	-	-	-	518	509	-	698	689	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1066	-	-	975	-	-	160	186	500	160	186	572
Stage 1	-	-	-	-	-	-	436	446	-	547	538	-
Stage 2	-	-	-	-	-	-	541	538	-	431	446	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1066	-	-	975	-	-	148	177	500	147	177	572
Mov Cap-2 Maneuver	-	-	-	-	-	-	148	177	-	147	177	-
Stage 1	-	-	-	-	-	-	418	428	-	524	535	-
Stage 2	-	-	-	-	-	-	521	535	-	398	428	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	35.9	16.7
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	176	1066	-	-	975	-	-	330
HCM Lane V/C Ratio	0.345	0.041	-	-	0.005	-	-	0.065
HCM Control Delay (s)	35.9	8.5	-	-	8.7	-	-	16.7
HCM Lane LOS	E	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.4	0.1	-	-	0	-	-	0.2

HCM 2010 TWSC
10: Cottonwood Ave & Driveway

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	39	281	367	16	20	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	77	77	81	81	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	365	453	20	22	85

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	473	0	-	0	929	463
Stage 1	-	-	-	-	463	-
Stage 2	-	-	-	-	466	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1089	-	-	-	297	599
Stage 1	-	-	-	-	634	-
Stage 2	-	-	-	-	632	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1089	-	-	-	279	599
Mov Cap-2 Maneuver	-	-	-	-	279	-
Stage 1	-	-	-	-	634	-
Stage 2	-	-	-	-	595	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	14.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1089	-	-	-	485
HCM Lane V/C Ratio	0.047	-	-	-	0.22
HCM Control Delay (s)	8.5	0	-	-	14.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8

HCM 2010 TWSC
11: Perris Blvd & Driveway

Intersection	
Int Delay, s/veh	22.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	21	0	78	0	0	57	70	1205	100	0	1143	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	92	92	92	82	82	82	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	0	98	0	0	62	85	1470	122	0	1329	44

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2256	3113	687	2366	3074	796	1373	0	0	1591	0	0
Stage 1	1351	1351	-	1701	1701	-	-	-	-	-	-	-
Stage 2	905	1762	-	665	1373	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 22	11	389	18	12	330	496	-	-	408	-	-
Stage 1	158	217	-	95	146	-	-	-	-	-	-	-
Stage 2	298	136	-	416	212	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 16	9	389	12	10	330	496	-	-	408	-	-
Mov Cap-2 Maneuver	~ 16	9	-	12	10	-	-	-	-	-	-	-
Stage 1	131	217	-	79	121	-	-	-	-	-	-	-
Stage 2	201	113	-	312	212	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 561.8	18.4	0.7	0
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	496	-	-	65	330	408	-	-
HCM Lane V/C Ratio	0.172	-	-	1.904	0.188	-	-	-
HCM Control Delay (s)	13.8	-	-	$ 561.8	18.4	0	-	-
HCM Lane LOS	B	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	11.4	0.7	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Queuing and Blocking Report
Cumulative WP AM

2/8/2016

Intersection: 10: Cottonwood Ave

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	181	264	70
Average Queue (ft)	7	39	21
95th Queue (ft)	30	179	50
Link Distance (ft)	163	1161	109
Upstream Blk Time (%)	1		
Queuing Penalty (veh)	5		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: Perris Blvd & Driveway

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	52	151	53	56	21	224	463	205
Average Queue (ft)	14	65	13	2	1	25	42	18
95th Queue (ft)	42	142	42	19	7	95	210	102
Link Distance (ft)	116	136		291	291		450	450
Upstream Blk Time (%)		12					0	
Queuing Penalty (veh)		0					0	
Storage Bay Dist (ft)			100			200		
Storage Blk Time (%)							2	
Queuing Penalty (veh)							1	

Zone Summary

Zone wide Queuing Penalty: 6

Queuing and Blocking Report
Cumulaitve WP PM

2/8/2016

Intersection: 10: Cottonwood Ave & Driveway

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	159	31	75
Average Queue (ft)	14	1	19
95th Queue (ft)	74	11	46
Link Distance (ft)	161	1162	58
Upstream Blk Time (%)	0		0
Queuing Penalty (veh)	0		0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: Perris Blvd & Driveway

Movement	EB	WB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	TR	L	T	TR
Maximum Queue (ft)	180	151	71	22	54	465	341
Average Queue (ft)	129	132	29	1	20	148	79
95th Queue (ft)	159	173	63	11	54	344	262
Link Distance (ft)	116	136		291		450	450
Upstream Blk Time (%)	90	90				0	
Queuing Penalty (veh)	0	0				0	
Storage Bay Dist (ft)			100		200		
Storage Blk Time (%)						7	
Queuing Penalty (veh)						3	

Zone Summary

Zone wide Queuing Penalty: 3

Queuing and Blocking Report
Cumulative WP Sunday 2/8/2016

Intersection: 10: Cottonwood Ave & Driveway

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	138	91	51
Average Queue (ft)	30	7	22
95th Queue (ft)	98	38	42
Link Distance (ft)	159	1163	26
Upstream Blk Time (%)			8
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: Perris Blvd & Driveway

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	151	151	125	308	299	94	257	216
Average Queue (ft)	77	146	53	17	8	27	34	17
95th Queue (ft)	140	180	99	122	78	65	160	101
Link Distance (ft)	116	136		291	291		450	450
Upstream Blk Time (%)	33	93		0	0			
Queuing Penalty (veh)	0	0		1	1			
Storage Bay Dist (ft)			100			200		
Storage Blk Time (%)			6				1	
Queuing Penalty (veh)			45				1	

Zone Summary

Zone wide Queuing Penalty: 48

Queuing and Blocking Report
Cumulative WP Alternative 1 AM

2/8/2016

Intersection: 10: Cottonwood Ave & Driveway

Movement	WB	SB
Directions Served	TR	LR
Maximum Queue (ft)	500	67
Average Queue (ft)	93	24
95th Queue (ft)	347	50
Link Distance (ft)	1161	109
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Perris Blvd & Driveway

Movement	EB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	T	TR	T	TR
Maximum Queue (ft)	50	74	31	50	76	286	211
Average Queue (ft)	8	31	8	2	3	88	29
95th Queue (ft)	31	55	29	17	26	234	134
Link Distance (ft)	116	136		291	291	450	450
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			100				
Storage Blk Time (%)						2	
Queuing Penalty (veh)						0	

Zone Summary

Zone wide Queuing Penalty: 0

Queuing and Blocking Report
Cumulaitve WP Alternative 1 PM 2/8/2016

Intersection: 10: Cottonwood Ave & Driveway

Movement	WB	SB
Directions Served	TR	LR
Maximum Queue (ft)	320	75
Average Queue (ft)	34	37
95th Queue (ft)	172	65
Link Distance (ft)	1162	58
Upstream Blk Time (%)		9
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Perris Blvd & Driveway

Movement	EB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	T	TR	T	TR
Maximum Queue (ft)	132	105	123	161	180	484	491
Average Queue (ft)	104	37	40	6	7	260	191
95th Queue (ft)	165	74	86	54	62	497	425
Link Distance (ft)	116	136		291	291	450	450
Upstream Blk Time (%)	60					4	3
Queuing Penalty (veh)	0					0	0
Storage Bay Dist (ft)			100				
Storage Blk Time (%)			4			21	
Queuing Penalty (veh)			27			0	

Zone Summary

Zone wide Queuing Penalty: 27

Queuing and Blocking Report
Cumulative WP Alternative 1 Sunday

2/8/2016

Intersection: 10: Cottonwood Ave & Driveway

Movement	WB	SB
Directions Served	TR	LR
Maximum Queue (ft)	372	60
Average Queue (ft)	57	33
95th Queue (ft)	237	50
Link Distance (ft)	1163	26
Upstream Blk Time (%)		27
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Perris Blvd & Driveway

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	T	TR
Maximum Queue (ft)	140	72	72	502	465
Average Queue (ft)	84	27	35	99	70
95th Queue (ft)	154	53	66	371	308
Link Distance (ft)	116	136		450	450
Upstream Blk Time (%)	37			2	1
Queuing Penalty (veh)	0			0	0
Storage Bay Dist (ft)			100		
Storage Blk Time (%)				12	
Queuing Penalty (veh)				0	

Zone Summary

Zone wide Queuing Penalty: 0

Queuing and Blocking Report
Cumulative WP Alternative 2 AM

2/8/2016

Intersection: 10: Cottonwood Ave & Driveway

Movement	WB	SB
Directions Served	TR	LR
Maximum Queue (ft)	465	124
Average Queue (ft)	73	38
95th Queue (ft)	274	90
Link Distance (ft)	1161	109
Upstream Blk Time (%)		9
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Perris Blvd & Driveway

Movement	EB	WB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	L	T	TR
Maximum Queue (ft)	30	74	55	55	54	252	241
Average Queue (ft)	11	29	12	2	17	37	24
95th Queue (ft)	34	59	38	19	44	146	121
Link Distance (ft)	116	136		291		450	450
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			100		200		
Storage Blk Time (%)						1	
Queuing Penalty (veh)						0	

Zone Summary

Zone wide Queuing Penalty: 0

Queuing and Blocking Report
Cumulaitve WP Alternative 2 PM

2/8/2016

Intersection: 10: Cottonwood Ave & Driveway

Movement	WB	SB
Directions Served	TR	LR
Maximum Queue (ft)	116	75
Average Queue (ft)	14	30
95th Queue (ft)	65	57
Link Distance (ft)	1162	58
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Perris Blvd & Driveway

Movement	EB	WB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	L	T	TR
Maximum Queue (ft)	169	54	102	224	358	313
Average Queue (ft)	123	33	38	32	89	50
95th Queue (ft)	149	60	84	97	264	202
Link Distance (ft)	116	136			450	450
Upstream Blk Time (%)	97					
Queuing Penalty (veh)	0					
Storage Bay Dist (ft)			100	200		
Storage Blk Time (%)			3		2	
Queuing Penalty (veh)			23		1	

Zone Summary

Zone wide Queuing Penalty: 24

Queuing and Blocking Report
Cumulative WP Alternative 2 Sunday

2/8/2016

Intersection: 10: Cottonwood Ave & Driveway

Movement	WB	SB
Directions Served	TR	LR
Maximum Queue (ft)	258	51
Average Queue (ft)	32	31
95th Queue (ft)	149	48
Link Distance (ft)	1163	26
Upstream Blk Time (%)		22
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Perris Blvd & Driveway

Movement	EB	WB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	TR	L	T	TR
Maximum Queue (ft)	156	122	96	22	76	182	21
Average Queue (ft)	88	38	36	1	36	14	1
95th Queue (ft)	151	76	72	10	74	90	7
Link Distance (ft)	116	136		291		450	450
Upstream Blk Time (%)	32	0					
Queuing Penalty (veh)	0	0					
Storage Bay Dist (ft)			100		200		
Storage Blk Time (%)			0			0	
Queuing Penalty (veh)			0			0	

Zone Summary

Zone wide Queuing Penalty: 0

Queuing and Blocking Report
Cumulative WP Alternative 3 AM

2/8/2016

Intersection: 10: Cottonwood Ave & Driveway

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	164	261	73
Average Queue (ft)	26	22	25
95th Queue (ft)	103	128	59
Link Distance (ft)	163	1161	109
Upstream Blk Time (%)	1		
Queuing Penalty (veh)	4		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: Perris Blvd & Driveway

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	T	TR
Maximum Queue (ft)	94	71	31	285	238
Average Queue (ft)	17	24	9	62	41
95th Queue (ft)	61	54	31	227	170
Link Distance (ft)	116	136		1114	1114
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		
Storage Blk Time (%)				2	
Queuing Penalty (veh)				0	

Zone Summary

Zone wide Queuing Penalty: 4

Queuing and Blocking Report
Cumulaitve WP Alternative 3 PM

2/8/2016

Intersection: 10: Cottonwood Ave & Driveway

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	162	94	52
Average Queue (ft)	23	4	29
95th Queue (ft)	80	34	55
Link Distance (ft)	161	1162	58
Upstream Blk Time (%)	0		0
Queuing Penalty (veh)	0		0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: Perris Blvd & Driveway

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	T	TR
Maximum Queue (ft)	180	115	72	489	484
Average Queue (ft)	116	31	36	248	186
95th Queue (ft)	158	76	71	520	480
Link Distance (ft)	116	136		450	450
Upstream Blk Time (%)	55			7	3
Queuing Penalty (veh)	0			0	0
Storage Bay Dist (ft)			100		
Storage Blk Time (%)				21	
Queuing Penalty (veh)				0	

Zone Summary

Zone wide Queuing Penalty: 0

Queuing and Blocking Report
Cumulative WP Alternative 3 Sunday

2/8/2016

Intersection: 10: Cottonwood Ave & Driveway

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	160	205	51
Average Queue (ft)	29	21	31
95th Queue (ft)	102	113	46
Link Distance (ft)	159	1163	26
Upstream Blk Time (%)	0		22
Queuing Penalty (veh)	0		0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: Perris Blvd & Driveway

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	T	TR
Maximum Queue (ft)	180	72	72	152	142
Average Queue (ft)	79	35	37	15	10
95th Queue (ft)	148	58	62	85	63
Link Distance (ft)	116	136		1114	1114
Upstream Blk Time (%)	30				
Queuing Penalty (veh)	0				
Storage Bay Dist (ft)			100		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Zone Summary

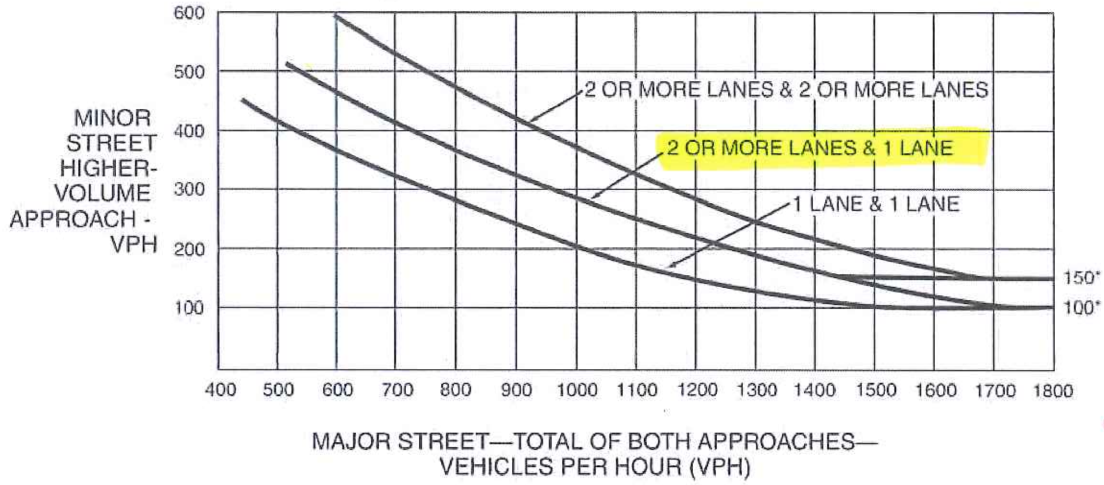
Zone wide Queuing Penalty: 0

APPENDIX E

SIGNAL WARRANT WORKSHEETS

Perris / Atwood

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

* Not warrented

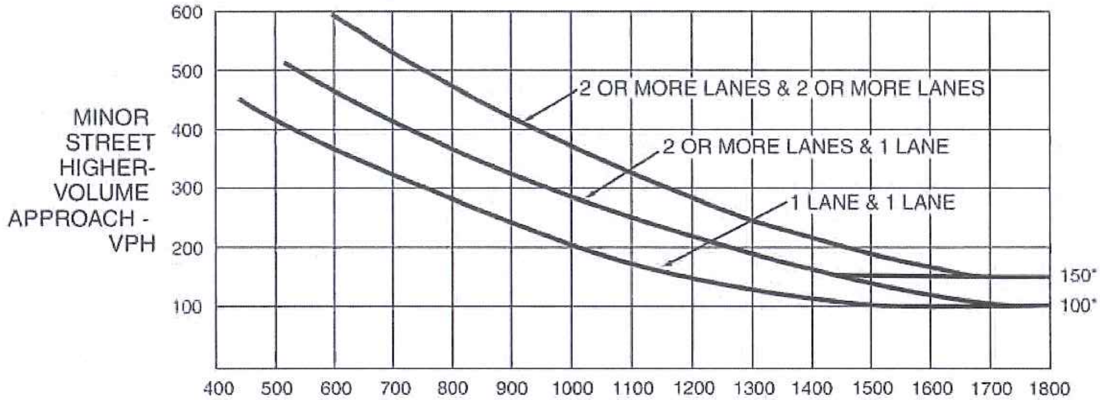
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Cottonwood / Crepe Myrtle

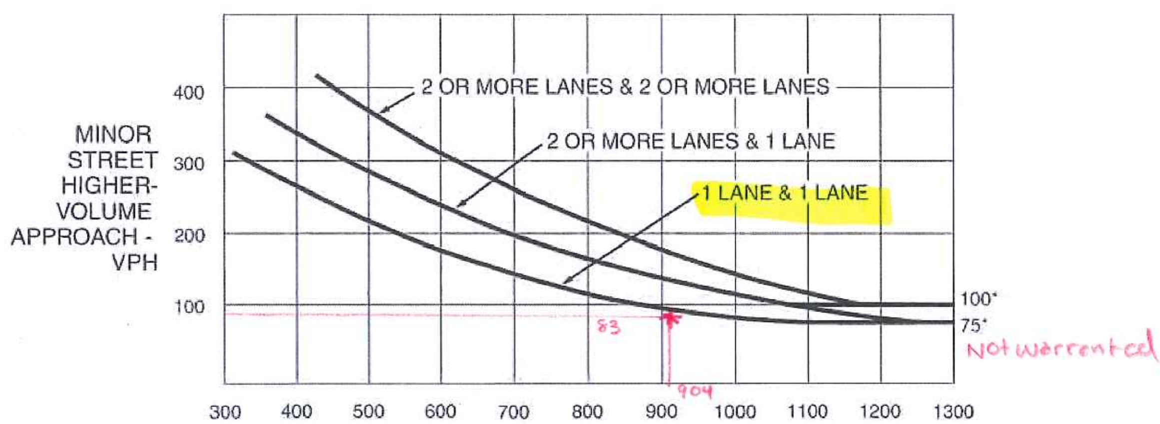
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

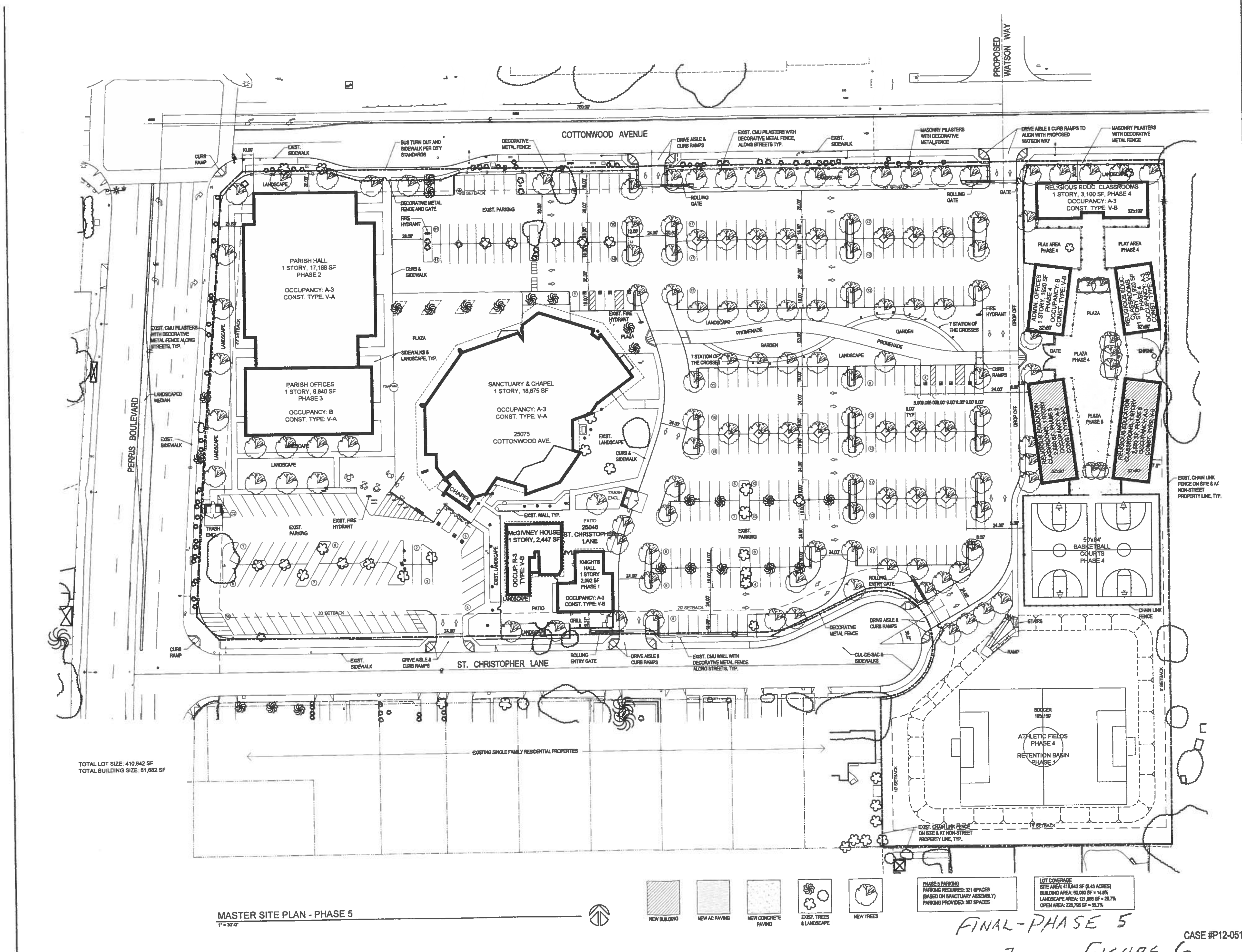
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

APPENDIX F

ADDITIONAL INFORMATION



FINAL-PHASE 5

7 FIGURE 6

CASE #P12-051

Lord Architecture Inc.

ST. CHRISTOPHER CATHOLIC CHURCH

PARISH MASTER PLAN

25075 COTTONWOOD AVENUE, MORENO VALLEY, CA 92553

No.	Issue	Date
	CUP SUBMITTAL #1	
	CUP SUBMITTAL #2	

Sheet Title: MASTER SITE PLAN - PHASE 5 NEW CLASSROOM BUILDINGS

Project Architect: BENNETT LORD

Project Number: 1011-101

Sheet Number: AS-1.7

Attachment: Traffic Impact Study (3224 : A GENERAL PLAN AMENDMENT, CHANGE OF ZONE, AND CONDITIONAL USE PERMIT FOR

By using the new Sanctuary size of 18.675 K from Figure 2, and by adding 3.2 K of additional assembly area because of the increased size of the new Parish Hall as discussed under Phase 2, Figure 3, the Total additional Sunday Peak Hour traffic due to the Master Plan, was determined as shown in Table 2

Table 2

St. Christopher Church Master Plan Sunday Peak Hour Traffic Generation

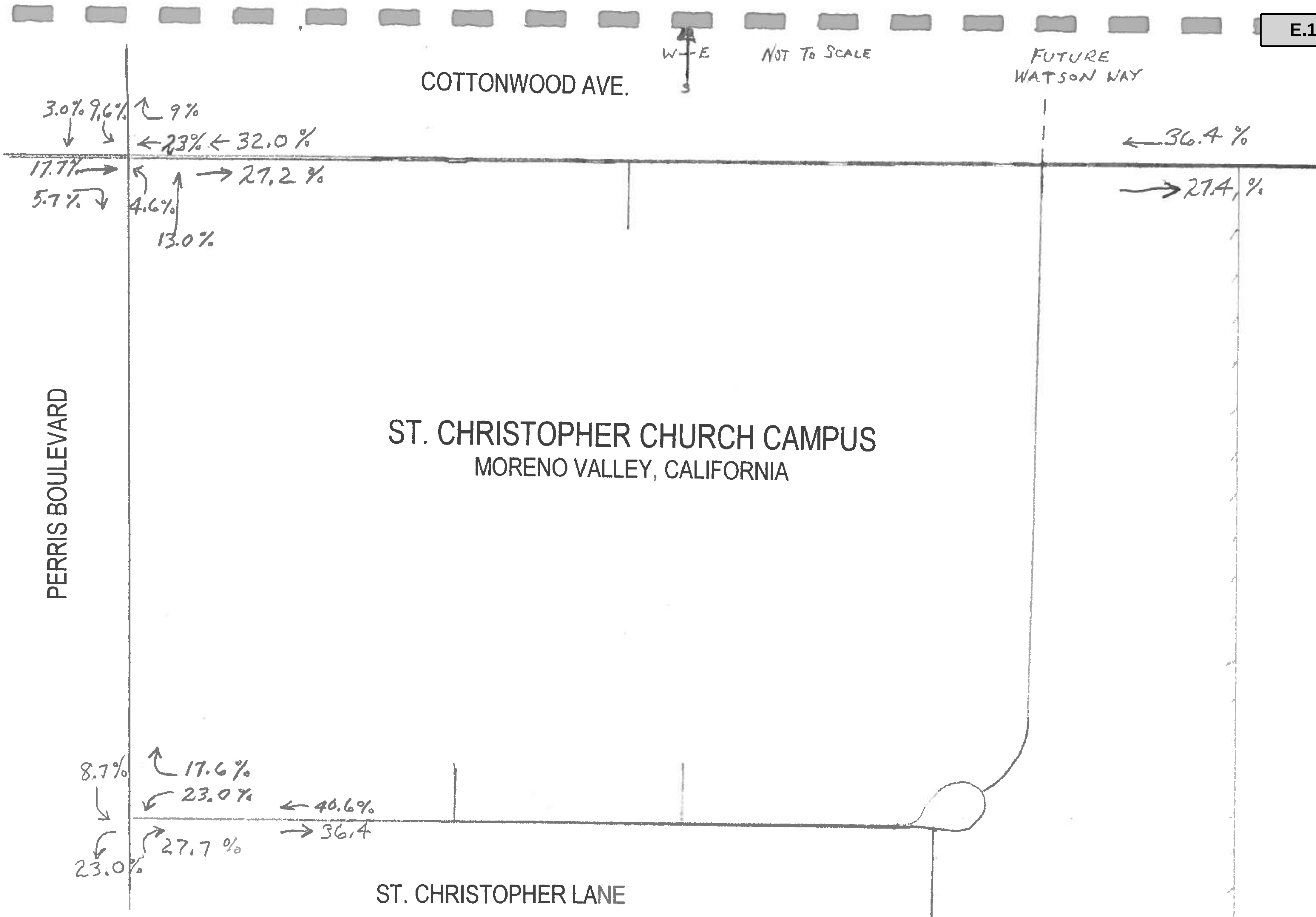
	Size	Rate / K		Peak Hour Vehicles	
		INBOUND	OUTBOUND	INBOUND	OUTBOUND
Improved Sanctuary	18.675 K				
New Parish Hall	9.400 K*				
Assembly Area					
Total =	28.075 K	16.87 K	17.68 K	474	496
Combined Master Plan Plus Existing Vehicles				474	496
Existing Peak Hour Vehicles				418	438
Vehicles added by Master Plan				56	58

*Old Parish Hall = 6200 K

Note that the Parish Master Plan will add 56 inbound and 58 outbound new, Sunday peak hour trips to the existing ones counted and shown on Figure 7.

Project Traffic Distribution And Assignment

Before starting on this study, this consultant, in a meeting with the City of Moreno Valley, Transportation Engineer, agreed that the volumes of the existing Sunday peak hour traffic counts would be used to estimate the future Sunday peak hour Master Plan distribution of new, forecasted, peak hour trips. Therefore, the peak hour volumes of Figure 7 were used for this future trip distribution. Figure 8 shows those trip distribution percentages on the various streets and intersections while Figure 9 shows the new trips, generated by the Master Plan, assigned to the streets and future driveways of the church campus.

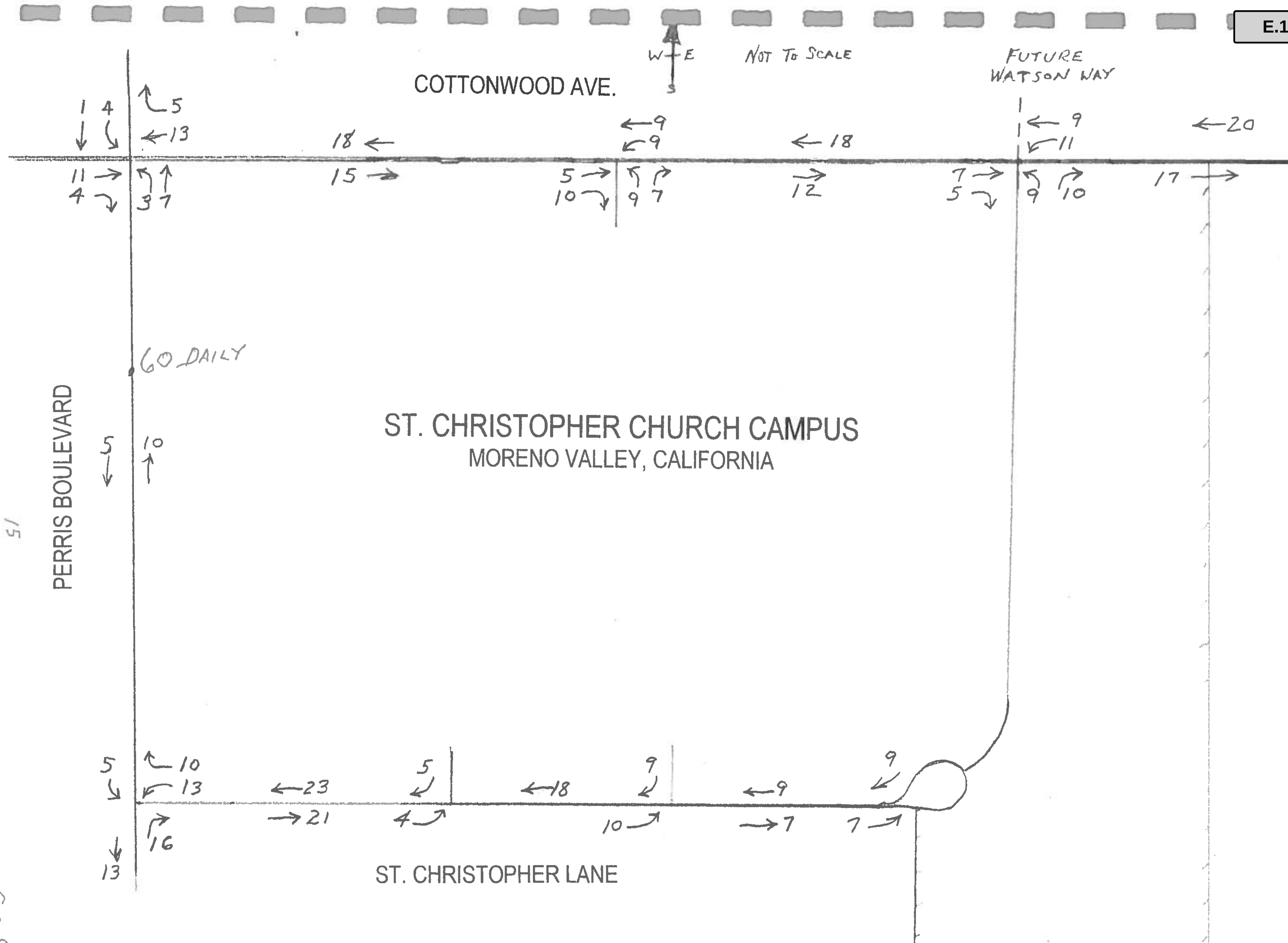


ESTIMATED DISTRIBUTION OF MASTER PLAN TRAFFIC
SUNDAY, SEPTEMBER 9, 2012 1:15 PM to 2:15 PM

FROM EXISTING = 418 INBOUND & 438 OUTBOUND TRIPS

FIG. 8

Attachment: Traffic Impact Study (3224 : A GENERAL PLAN AMENDMENT, CHANGE OF ZONE, AND CONDITIONAL USE PERMIT FOR DEVELOPMENT OF A DONUT STOR)



ASSIGNMENT OF SUNDAY PEAK HOUR MASTER PLAN TRAFFIC

NEW MASTER PLAN AFTER PHASE 5
ADDS 56 TRIPS INBOUND - 58 TRIPS OUT BOUND

FIG. 9

Kimley»Horn

February 27, 2017

Ahmad Ghaderi
A & S Engineering, Inc.
28405 Sand Canyon Rd., Suite "B"
Canyon Country, CA 91387

Subject: *Planning Case No. PA15-0030 Supplemental Traffic Assessment*

Dear Mr. Ghaderi:

This memorandum has been prepared to supplement the Traffic Impact Study, dated April 2016, for the Yum Yum Donut Shop and Gas Station with Car Wash Project ("the Project") at the northeast corner of Perris Boulevard and Cottonwood Avenue. The project application was previously submitted to City of Moreno Valley staff and included plans to develop this particular land use.

At the time the traffic study was prepared, the Project was a standalone component to an overall larger site. There are currently no immediate plans to develop the remainder of the property, which extends to the north and encompasses the adjacent northerly parcel. However, the applicant is requesting a zone change from the current Office Commercial (OC) zoning to Community Commercial (CC) zoning. At the request of City staff, this memorandum will assess the implications of this zone change on the current proposed land use, as well as on the remainder of the undeveloped site. This memorandum will discuss permitted uses under each zoning category, per the City of Moreno Valley Municipal Code, and will also provide a general trip generation characteristics of various land uses permitted within each zoning category for informational purposes.

DISCUSSION

Per Section 9.02.020 of the City of Moreno Valley Municipal Code, the permitted uses for each zoning district type are indicated. The Project is currently in compliance with both the existing OC and proposed CC zoning districts. Both zoning districts permit the development of automobile service stations with accessory uses, including convenience stores and car washes. Therefore, a zone change would not cause the Project to deviate from a permitted use.

There are no defined plans to develop the remaining portion of the site at this time. While the OC and CC zoning types districts permit similar uses, such as sit-down restaurants, medical clinics, hotels, and various stores, there are several additional uses that would be permitted only within a CC zone. For instance, fast-food with drive-through establishments are not allowed within an OC zone. The following section provides a trip generation comparison for various permitted uses.

TRIP GENERATION ASSESSMENT

A trip generation comparison has been prepared to provide, for informational purposes, the trip generating potential of various land use types within each district. Trip generation estimates are based on the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 9th Edition* (2012) and are shown in Table 1.

TABLE 1
COMPARISON OF TRIP GENERATION RATES

Land Use	ITE Code	Unit	Trip Generation Rates [1]						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Office Commercial (OC) District									
Gasoline Station w/ Conv. Mkt. & Car Wash	946	Fueling Position	152.84	6.038	5.802	11.84	7.069	6.791	13.86
Medical-Dental Office Building	720	KSF	36.13	1.888	0.502	2.39	1.000	2.570	3.57
High-Turnover (Sit-Down) Restaurant	932	KSF	127.15	5.946	4.865	10.81	5.910	3.940	9.85
Community Commercial (CC) District									
Fast-Food Restaurant w/ Drive-Through	934	KSF	496.12	23.164	22.256	45.42	16.978	15.672	32.65
Shopping Center	820	KSF	42.70	0.595	0.365	0.96	1.781	1.929	3.71
Apparel Store	876	KSF	66.40	0.800	0.200	1.00	1.915	1.915	3.83

[1] Source: Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition

The trip generation rates in Table 1 show a general picture of possible land uses to be developed on the vacant site. A gas station, which is permitted under both uses, generates a large amount of traffic; locations with up to 12 or 16 fueling positions is commonplace. A fast-food with drive-through restaurant, which would be exclusive to the CC district and which would have a generally small building footprint, would generate a similar or lower amount of traffic to a gas station. For instance, in a case where a fast-food restaurant is 3,000 square-feet, a gas station with twelve pumps would generate significantly more traffic on a daily and peak hour basis.

A full assessment would not be detailed without a planned development in mind. However, looking at and comparing the higher-generating land uses permitted under both zoning district shows similarities in trip generating potential.

FINDINGS AND CONCLUSIONS

The Project falls within a permitted use in both the existing OC and proposed CC zoning designations. The previously prepared traffic study would be consistent with the General Plan, and no new impacts are anticipated outside of what was analyzed.

The zone change from an OC to a CC district would provide greater options for the development of the remaining areas. However, there are numerous commercial land uses that are common amongst permitted uses in both zoning designations. Due to the uncertainty in defining land uses for the undeveloped portions of the site, traffic conditions should be assessed on an individual basis when subsequent project applications are submitted to the City.

Kimley»Horn

June 8, 2018

Eric Lewis
City of Moreno Valley
14177 Frederick Street
Moreno Valley, CA 92553

Attn: Vincent Tran

Subject: *Planning Case No. PA15-0030 – Cottonwood Avenue Striping Concept*

Dear Mr. Lewis:

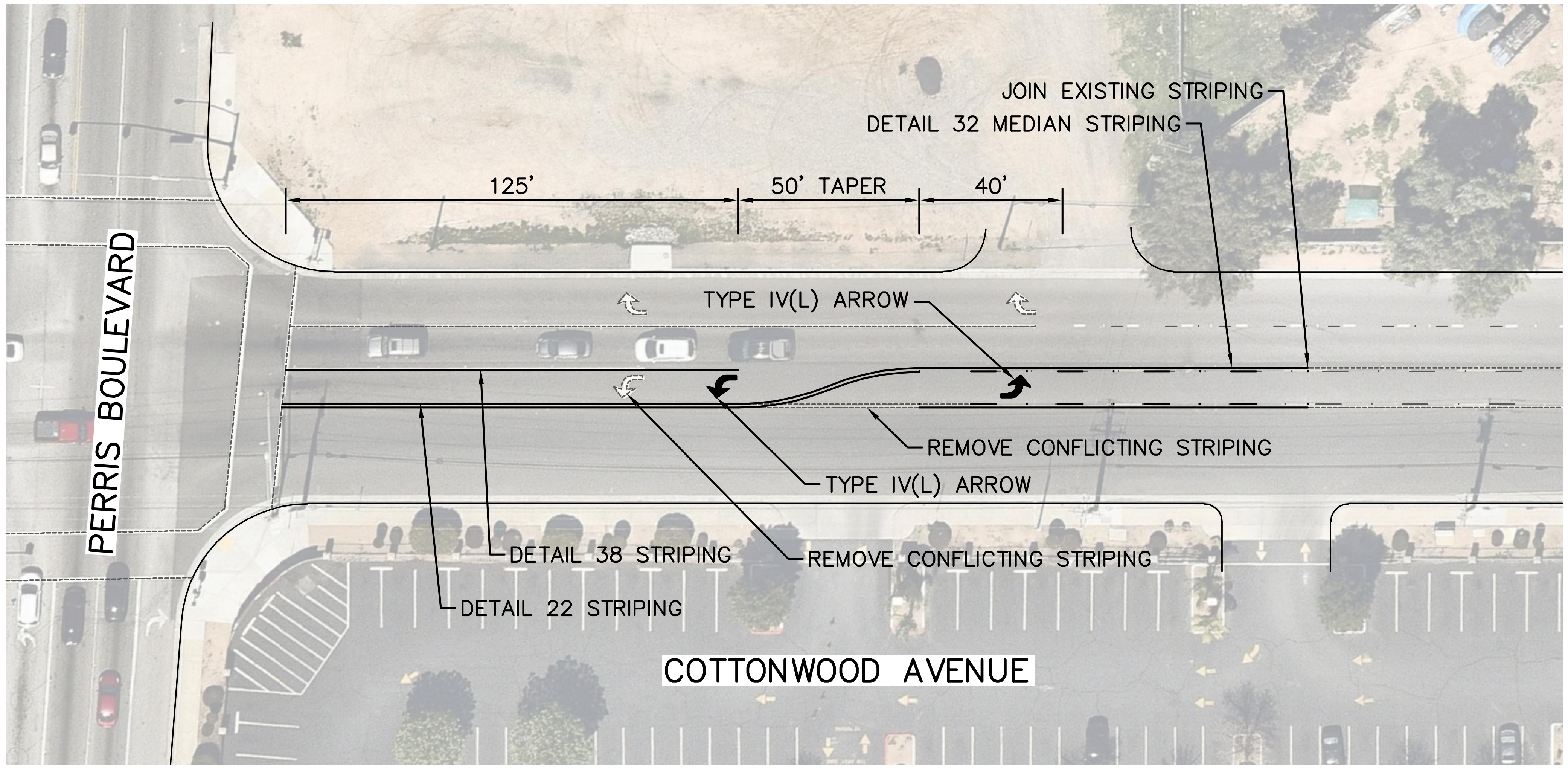
This letter has been prepared to supplement the Traffic Impact Study for the Yum Yum Donut Shop and Gas Station with Car Wash Project ("the Project") at the northeast corner of Perris Boulevard and Cottonwood Avenue. This letter will provide an assessment of queues on Cottonwood Avenue along the project frontage, and will provide a conceptual striping layout to facilitate site access from Cottonwood Avenue in the eastbound direction.

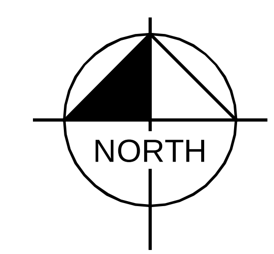
Queueing was based on volumes established in the Traffic Impact Study for the Cumulative (Opening Year 2020) scenario with Alternative 3 implemented. Average and Ninety-fifth percentile queuing were checked and reported for the westbound left-turn movement at the Perris Avenue and Cottonwood Avenue intersection, and for the eastbound left-turn movement turning into the proposed project site. The 95th-percentile queue is defined to be the queue length (in feet per lane) that has only a 5-percent probability of being exceeded during the analysis time period. It is a useful parameter for determining the appropriate length of turn pockets, but it is not typical of what an average driver would experience. Vehicle queuing was analyzed using the SimTraffic Software assuming each vehicle occupies a space of 25 feet. The queuing analysis worksheets are attached to this letter.

Table 1. Queueing Summary

	Queue Length (ft)		
	AM Peak	PM Peak	Sunday
Perris Boulevard/Cottonwood Avenue Intersection (Westbound Left)			
Average Queue	68	62	78
95th Percentile Queue	146	130	154
Cottonwood Avenue Driveway (Eastbound Left)			
Average Queue	11	8	15
95th Percentile Queue	38	33	44

Based on this queueing information, a conceptual striping exhibit was prepared and is shown on Figure 1. The westbound left-turn pocket at the intersection of Perris Boulevard and Cottonwood Avenue was sized to maximize the available storage length between the intersection and the project driveway. The eastbound left-turn movement into the project site was striped to accommodate approximately 40 feet of storage.





SCALE: 1" = 40'

FIGURE 1
COTTONWOOD AVENUE STRIPING CONCEPT

Kimley»Horn

APPENDIX

Intersection: 5: Perris Blvd & Cottonwood Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	T	R	L	T
Maximum Queue (ft)	124	338	70	172	220	176	120	579	534	125	225	425
Average Queue (ft)	68	122	23	68	119	61	75	328	276	39	130	235
95th Queue (ft)	131	262	52	146	215	132	136	549	496	118	233	391
Link Distance (ft)		1274	1274		204	204		617	617			404
Upstream Blk Time (%)					4	0		1	1			2
Queuing Penalty (veh)					14	1		0	0			0
Storage Bay Dist (ft)	100			125			95			100	200	
Storage Blk Time (%)	5	13		3	13		6	43	29	0	2	11
Queuing Penalty (veh)	13	12		12	19		33	34	22	0	14	19

Intersection: 5: Perris Blvd & Cottonwood Ave

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	378	120
Average Queue (ft)	180	48
95th Queue (ft)	320	127
Link Distance (ft)	404	
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		95
Storage Blk Time (%)	18	0
Queuing Penalty (veh)	18	0

Intersection: 10: Cottonwood Ave & Driveway

Movement	EB	EB	WB	WB	B4	SB
Directions Served	L	T	T	TR	T	LR
Maximum Queue (ft)	51	4	122	36	46	66
Average Queue (ft)	11	0	12	1	1	31
95th Queue (ft)	38	0	69	10	23	60
Link Distance (ft)		204	119	119	437	43
Upstream Blk Time (%)			1			6
Queuing Penalty (veh)			0			0
Storage Bay Dist (ft)	40					
Storage Blk Time (%)	1	0				
Queuing Penalty (veh)	4	0				

Network Summary

Network wide Queuing Penalty: 215

Intersection: 5: Perris Blvd & Cottonwood Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	T	R	L	T
Maximum Queue (ft)	124	526	79	165	215	123	120	622	606	125	225	437
Average Queue (ft)	85	202	27	62	92	38	71	374	329	34	176	311
95th Queue (ft)	150	464	62	130	177	88	136	630	590	113	269	481
Link Distance (ft)		1274	1274		207	207		617	617			404
Upstream Blk Time (%)					1			7	5			11
Queuing Penalty (veh)					1			0	0			0
Storage Bay Dist (ft)	100			125			95			100	200	
Storage Blk Time (%)	9	28		1	6		7	46	34	0	10	17
Queuing Penalty (veh)	24	32		3	8		42	34	20	0	71	37

Intersection: 5: Perris Blvd & Cottonwood Ave

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	423	120
Average Queue (ft)	261	56
95th Queue (ft)	444	137
Link Distance (ft)	404	
Upstream Blk Time (%)	6	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		95
Storage Blk Time (%)	26	0
Queuing Penalty (veh)	34	1

Intersection: 10: Cottonwood Ave & Driveway

Movement	EB	WB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (ft)	50	25	2	64
Average Queue (ft)	8	1	0	31
95th Queue (ft)	33	12	2	56
Link Distance (ft)		121	121	43
Upstream Blk Time (%)				3
Queuing Penalty (veh)				0
Storage Bay Dist (ft)	40			
Storage Blk Time (%)	0			
Queuing Penalty (veh)	2			

Network Summary

Network wide Queuing Penalty: 311

Queuing and Blocking Report
Cumulative WP Alternative 3 Sunday

Sunday
06/07/2018

Intersection: 5: Perris Blvd & Cottonwood Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	T	R	L	T
Maximum Queue (ft)	124	213	80	174	218	164	120	597	555	125	224	390
Average Queue (ft)	64	93	22	78	99	55	73	315	262	42	143	193
95th Queue (ft)	125	175	52	154	191	124	136	557	508	123	239	338
Link Distance (ft)		1274	1274		206	206		617	617			404
Upstream Blk Time (%)					1	0		4	3			0
Queuing Penalty (veh)					4	0		0	0			0
Storage Bay Dist (ft)	100			125			95			100	200	
Storage Blk Time (%)	3	8		5	7		6	43	28	0	4	5
Queuing Penalty (veh)	6	8		16	15		30	38	21	0	20	11

Intersection: 5: Perris Blvd & Cottonwood Ave

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	314	120
Average Queue (ft)	143	47
95th Queue (ft)	261	121
Link Distance (ft)	404	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		95
Storage Blk Time (%)	12	0
Queuing Penalty (veh)	14	0

Intersection: 10: Cottonwood Ave & Driveway

Movement	EB	WB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (ft)	52	64	6	64
Average Queue (ft)	15	2	0	39
95th Queue (ft)	44	21	3	63
Link Distance (ft)		117	117	43
Upstream Blk Time (%)		0		7
Queuing Penalty (veh)		0		0
Storage Bay Dist (ft)	40			
Storage Blk Time (%)	1			
Queuing Penalty (veh)	4			

Network Summary

Network wide Queuing Penalty: 188

Noise Mitigation Analysis for The Proposed Yum Yum Donuts Car Wash City of Moreno Valley, California

Project #0110.0026.001.0001
February 14, 2018

Prepared For:

A&S Engineering
28405 Sand Canyon Road, Suite B
Canyon Country, CA 91387

Prepared By:

Ted Lindberg, INCE Bd. Cert.
Mike Holritz, INCE
Landrum & Brown
19700 Fairchild Road, Suite 230
Irvine, CA 92612
949-349-0671

NOISE MITIGATION ANALYSIS FOR THE PROPOSED YUM YUM DONUTS CAR WASH CITY OF MORENO VALLEY

1.0 INTRODUCTION

A car wash is being proposed at the northeast corner of Perris Boulevard and Cottonwood Avenue in Moreno Valley, as shown in Exhibit 1. The car wash will be "self-serve" and is planned to be open 24 hours per day. The purpose of this report is to determine whether the noise levels from the proposed car wash will be consistent with the Noise Ordinance adopted by the City of Moreno Valley. The project calls for the addition of a tunnel-type car wash. The developer is planning to design and construct this car wash very similar to an existing car wash facility located in the City of San Diego. This report presents the results of the car wash noise measurements at the existing San Diego car wash, and determines whether that design is acceptable for the planned Yum Yum Donuts car wash in Moreno Valley.

The site plan is shown in Exhibit 2. The nearest residences are located directly to the east. Other residential areas are located much farther from the facility. The potential noise impacts on the nearest residential area are addressed in this report, and any required mitigation measures are identified.

2.0 BACKGROUND INFORMATION ON NOISE

Sound is technically described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquakes. In terms of human response to noise, a sound 10 dB higher than another is judged to be twice as loud; and 20 dB higher four times as loud; and so forth. Everyday sounds normally range from 30 dB (very quiet) to 100 dB (very loud).

Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. Community noise levels are measured in terms of the "A-weighted decibel" abbreviated dBA. Exhibit 3 provides examples of various noises and their typical A-weighted noise level.

Two commonly used metrics to describe fluctuating noise levels are Leq and Lmax. These metrics are described below. The noise level limits set forth in the City's Noise Ordinance are specified in terms of these metrics.

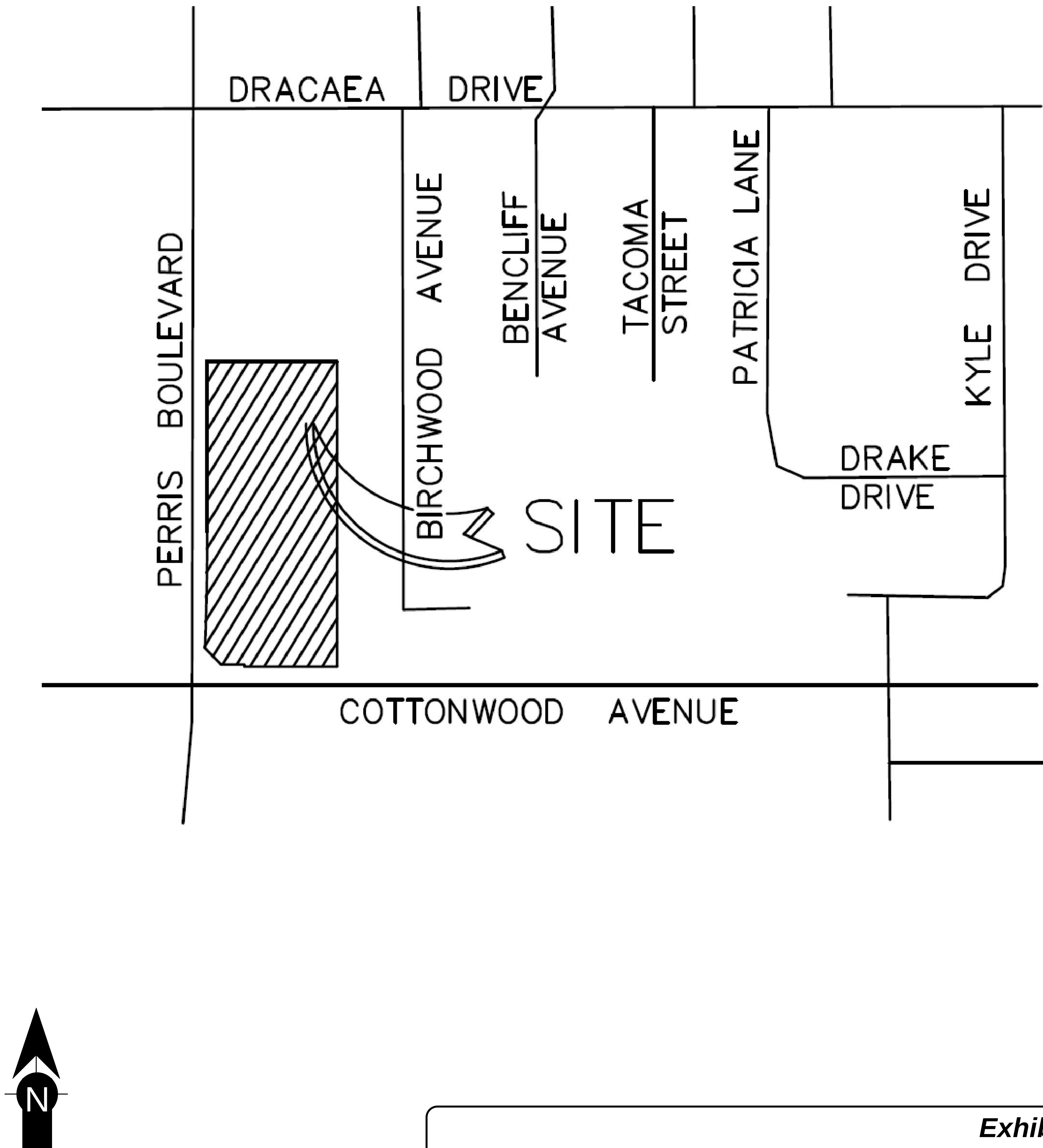


Exhibit 1

Vicinity Map

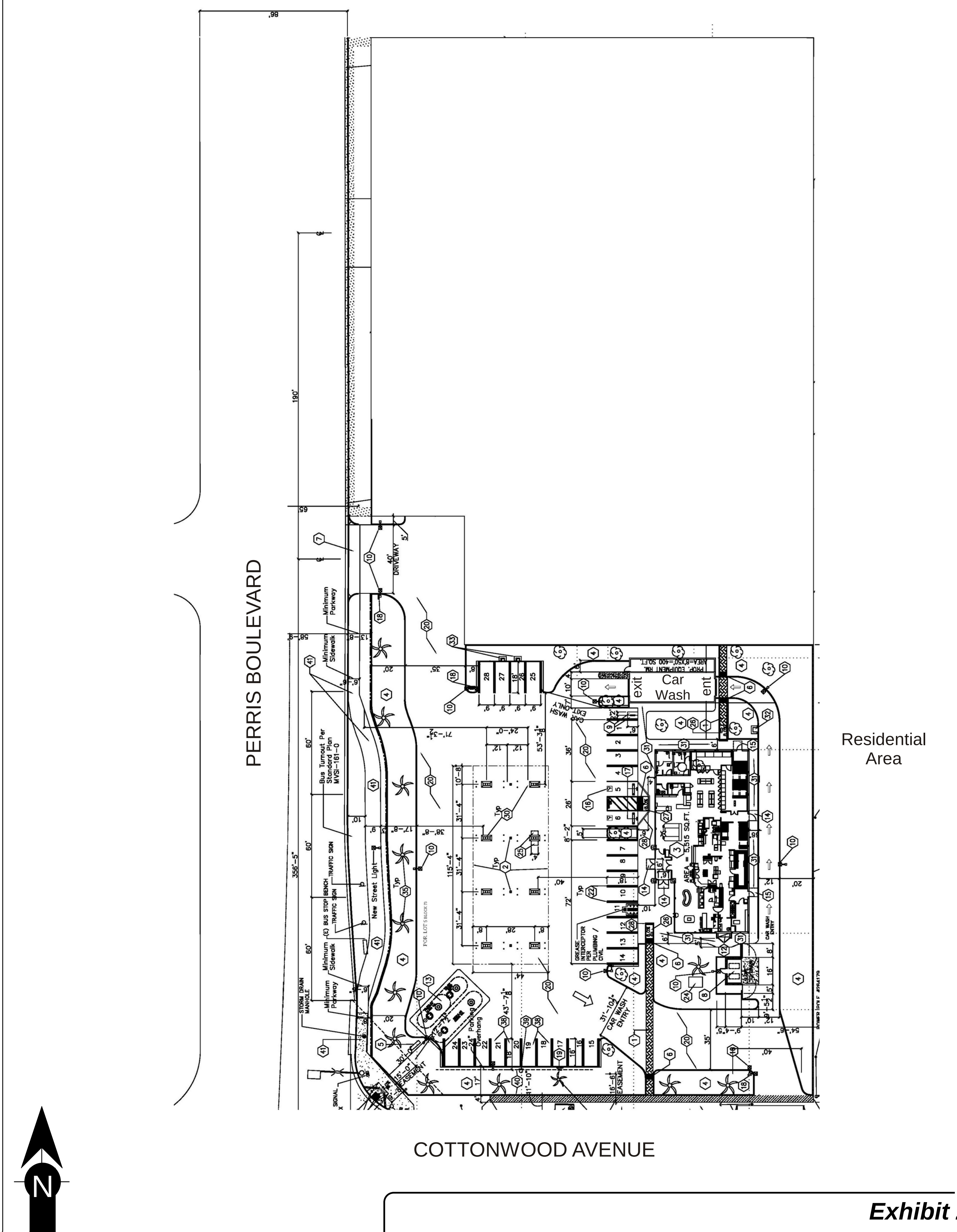
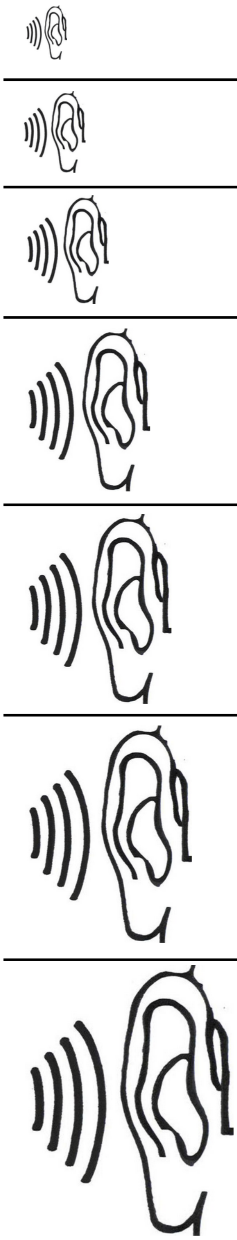


Exhibit 2

Site Plan



dBA	Outdoor	Indoor
0 dBA	threshold of hearing (0 dBA)	
20	rustling of leaves (20 dBA)	whispering at 5 feet (20 dBA)
40	quiet residential area (40 dBA)	refrigerator (50 dBA)
60	air-conditioner at 100 feet (60 dBA) car at 25 feet at 65 mph (77 dBA)	sewing machine (60 dBA) normal conversation (60 to 65 dBA) dishwasher (55-70 dBA) living room music or TV (70 -75 dBA)
80	diesel truck at 50 feet at 40 mph (84 dBA) propeller airplane flyover at 1000 feet (88 dBA) motorcycle at 25 feet (90 dBA) lawnmower (96 dBA) backhoe at 50 feet (75-95 dBA)	garbage disposal (80 dBA) ringing telephone (80 dBA) vacuum cleaner (60-85 dBA) shouted conversation (90 dBA)
100	snowmobile (100 dBA) pile driver at 50 feet (90-105 dBA) car horn (110 dBA) rock concert (110 dBA) leaf blower (110 dBA)	baby crying on shoulder (110 dBA)
120	ambulance siren (120 dBA) stock car races (130 dBA) jackhammer (130 dBA)	
140		

Sources: League for the Hard Of Hearing, www.lhh.org
Handbook of Noise Control, McGraw Hill, Edited by Cyril Harris, 1979
Measurements by Landrum & Brown

Exhibit J

Typical A-Weighted Sound Levels

Leq is the sound level corresponding to a steady-state sound level that would contain the same total energy as the time-varying signal over a given sample period. Leq is the "energy" average noise level during the time period of the sample. It is the energy average of all the events and background noise levels that occur during that time period.

Lmax is the loudest sound level measured during the time period of the sample.

Sound levels decrease as a function of distance from the source as a result of wave divergence, atmospheric absorption and ground attenuation. As the sound wave travels away from the source, the sound energy is dispersed over a greater area, thereby dispersing the sound power of the wave. Intervening topography or sound walls can also have a substantial effect on the effective perceived noise levels.

Noise has been defined as unwanted sound and it is known to have several adverse effects on people. From these known effects of noise, criteria have been established to help protect the public health and safety and prevent disruption of certain human activities. These criteria are based on such known impacts of noise on people as hearing loss, speech interference, sleep interference, physiological responses and annoyance. Each of these potential noise impacts on people are briefly discussed in the following narratives:

HEARING LOSS is not a concern in community noise situations of this type. The potential for noise induced hearing loss is more commonly associated with occupational noise exposures in heavy industry or very noisy work environments. Noise levels in neighborhoods, even in very noisy airport environs, are not sufficiently loud to cause hearing loss.

SPEECH INTERFERENCE is one of the primary concerns in environmental noise problems. Normal conversational speech is in the range of 60 to 65 dBA, and any noise in this range or louder may interfere with speech. There are specific methods of describing speech interference as a function of distance between speaker and listener and voice level.

SLEEP INTERFERENCE is a major noise concern for traffic noise. Sleep disturbance studies have identified interior noise levels that have the potential to cause sleep disturbance. Note that sleep disturbance does not necessarily mean awakening from sleep, but can refer to altering the pattern and stages of sleep.

PHYSIOLOGICAL RESPONSES are those measurable effects of noise on people that are realized as changes in pulse rate, blood pressure, etc. While such effects can be induced and observed, the extent is not known to which these physiological responses cause harm or are signs of harm.

ANNOYANCE is the most difficult of all noise responses to describe. Annoyance is a very individual characteristic and can vary widely from person to person. What one person considers tolerable can be quite unbearable to another of equal hearing capability.

3.0 MORENO VALLEY NOISE ORDINANCE STANDARDS

Noise ordinances are designed to protect adjacent noise-sensitive land uses from non-transportation related noise sources operating on private property (e.g., manufacturing facilities, music, and mechanical equipment). Many communities have developed noise ordinances to control these types of non-transportation related noise.

The City's noise level limits for car wash noise are shown in Section 9.10.140 of the City's Noise Ordinance. These standards are given in terms of maximum allowable noise levels. Higher noise levels are permitted during the daytime hours (8 a.m. to 10 p.m.) than are during nighttime hours (10 p.m. to 8 a.m.). The City of Moreno Valley Noise Ordinance levels are contained in Table 1, and they show the acceptable levels at outdoor residential land uses during each time period. The Lmax criterion applies to the highest noise level experienced at the receptor site.

Table 1
CITY OF MORENO VALLEY
EXTERIOR NOISE ORDINANCE STANDARDS

LAND USE	NOISE METRIC	NOISE LEVEL NOT TO BE EXCEEDED Daytime 8 a.m. to 10 p.m.	Nighttime 10 p.m. to 8 a.m.
Residential	Lmax	60 dBA	55 dBA

As the car wash is expected to operate 24 hours a day, the projected noise levels will be compared to the nighttime criteria, since meeting the nighttime criteria ensures that the daytime criteria will also be met. The City's Noise Ordinance does not contain any indoor noise standards. Therefore, compliance with the nighttime Lmax exterior standard in the Noise Ordinance is addressed.

4.0 PROJECTED CAR WASH NOISE LEVELS

The projected noise levels from the planned Yum Yum Donuts car wash are based on the measured noise levels at the existing Arco car wash facility at 3170 Carmel Valley Road in San Diego. This car wash is equipped with automatic doors at both the entrance and exit ends, and these doors are essential in reducing the noise levels from the car wash facility when they are closed. The noise levels at this facility were measured on August 12, 2016. Measurements were performed on-axis with the tunnel at a distance of 25 feet from the entrance end with both car wash doors closed. The measurements at this location were used to determine the noise levels at the nearest noise-sensitive receptors at the Moreno Valley site. The measurement site is shown in Exhibit 4. The car wash operations of interest (wash cycle, rinse cycle, and dry cycle) were measured. Truck passes in the parking lot passes were not able to be excluded from the measurements, and were edited out of the data in order to assess the car wash noise levels alone.

The sound level meter used for the measurements was a Brüel and Kjær Model 2236 sound level meter. This meter conforms to American National Standards Institute (ANSI) Type 1 specifications. The meter and calibrator are laboratory calibrated and certified annually with calibration traceable to the National Institute of Standards and Technology (NIST). The meter was field calibrated before and after the measurement period using a Brüel and Kjær Model 4231 acoustical calibrator. The measured Lmax was 65.7 dBA at a distance of 25 feet from the entrance end of the tunnel with the car wash doors closed.

Based upon the measured car wash source noise data and the proposed site plan, the noise level was calculated for the nearest observer at the adjacent residential area, at a distance of 57 feet from the entrance end of the tunnel. The resulting unmitigated noise level at the residential area is 58.5 dBA. This noise level would exceed the nighttime noise standard of 55 dBA. The developer plans to construct a 6-foot high masonry wall at the east property line. The wall will need to wrap around the northeast corner of the project and extend westward to the car wash tunnel. The required barrier location is shown in Exhibit 5. With this noise barrier, the resulting projected noise level is shown below in Table 2.

Table 2
PROJECTED NOISE LEVELS (dBA)

Location	**Projected Noise Level (Lmax)**	Comparison To Noise Level Limit
<u>With Yum Yum Donuts car wash designed like existing Arco facility and 6.0'-high noise barrier</u>		
Nearest Residence	**49.4**	Meets Ordinance

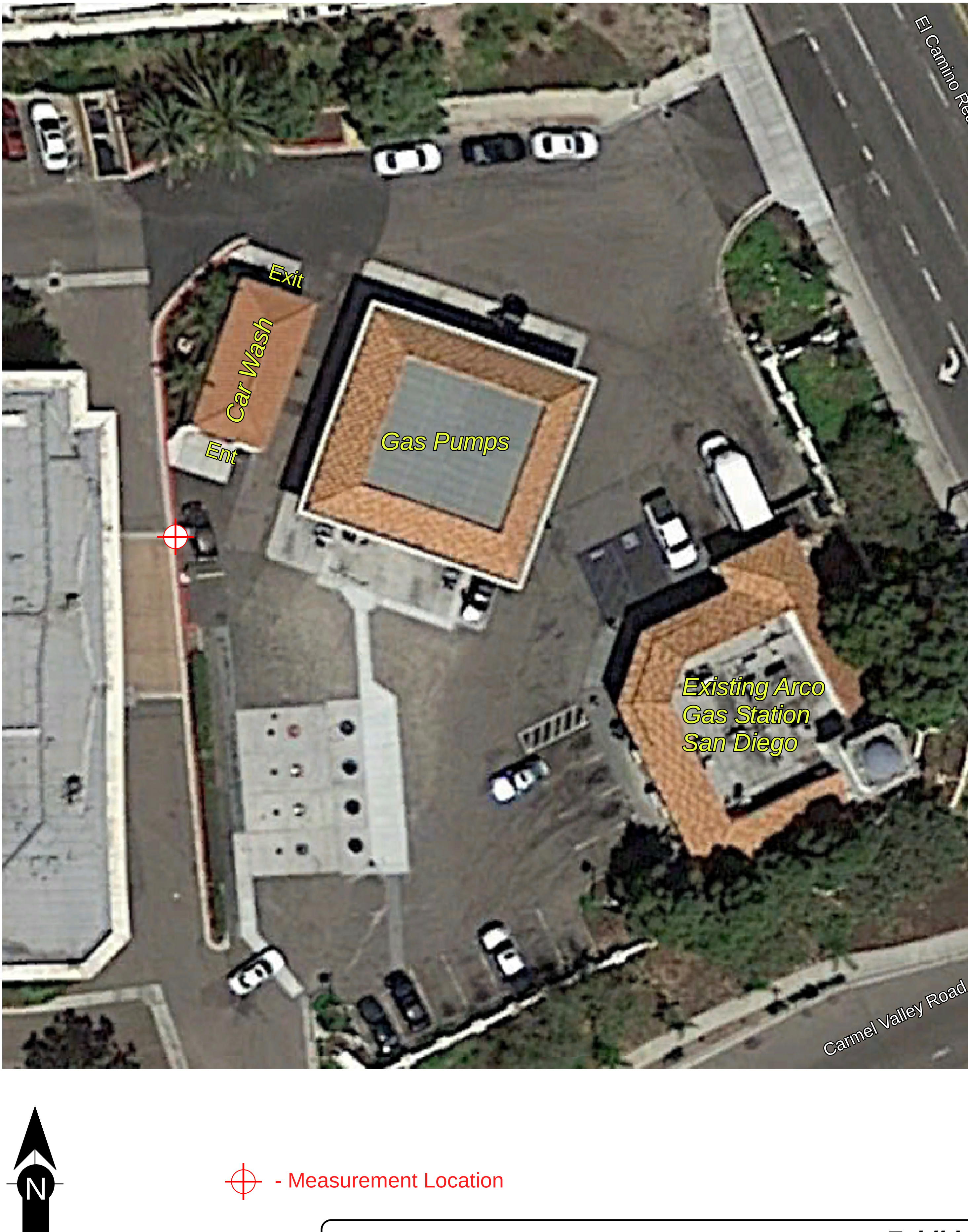


Exhibit 4

Existing Car Wash Measurement Locations

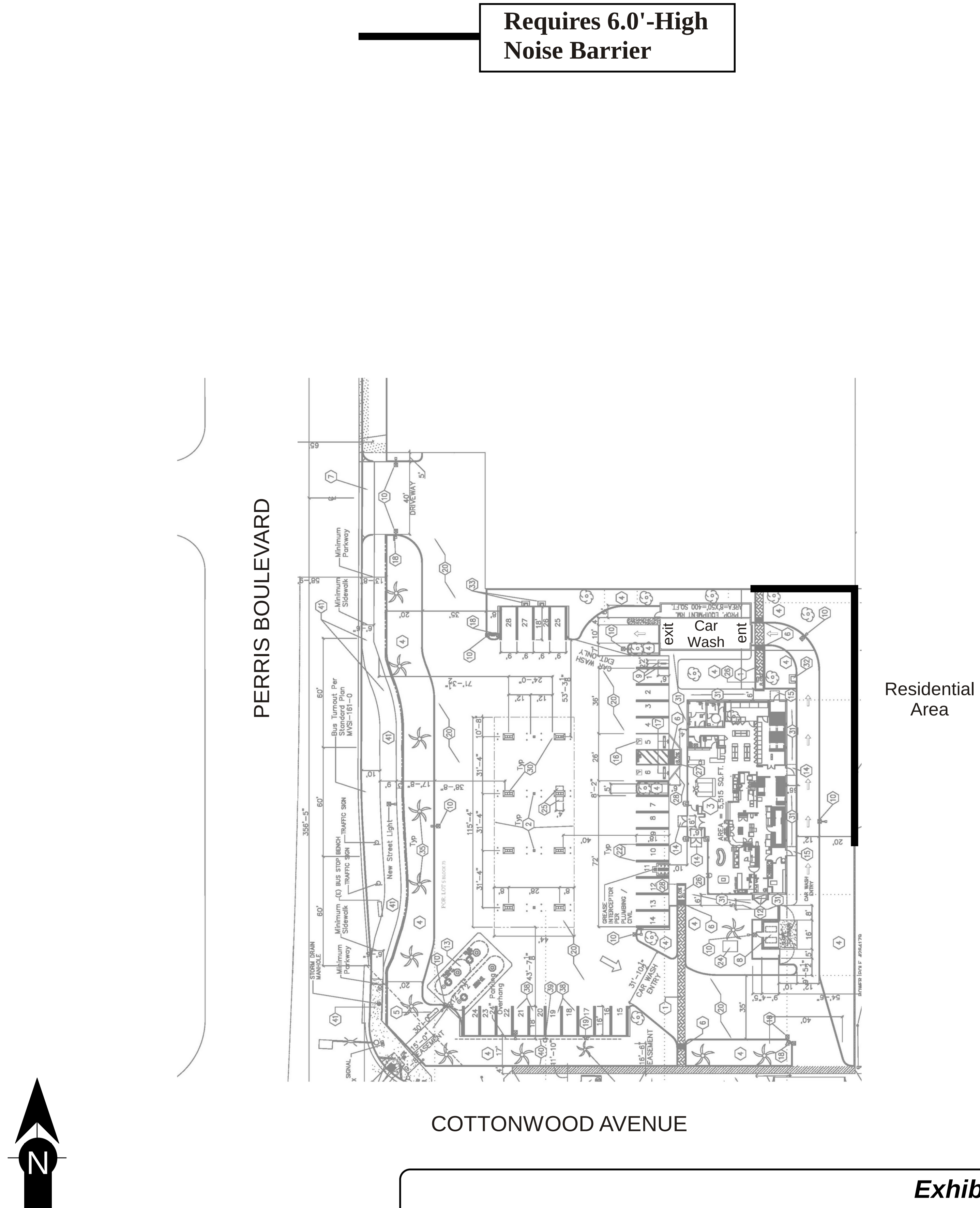


Exhibit J

Required Noise Barrier

The projected Lmax at the nearest residential receiver from the proposed car wash is 49.4 dBA. This meets the City's nighttime exterior Noise Ordinance limit of 55 dBA. The results of the analysis indicate that with the car wash designed like the existing Arco facility, the Lmax noise levels at all the nearest residential areas are projected to meet the daytime and nighttime Noise Ordinance limits. The proposed car wash must be designed, constructed, and operated the same as the existing Arco car wash in order for the noise level limits to be met. This includes such items as equipment types and locations, door types and configuration, and operational parameters such as when the doors open and close.

6.0 DESIGN MEASURES

Calculations have shown that with the car wash designed and operated like the existing Arco facility, the project will meet the City's daytime and nighttime Noise Ordinance limits. <u>The following design items must be adhered to in order for the noise level limits to be met.</u>

- The car wash equipment shall be the same as that used at the Arco facility, and placed in the same locations within the tunnel as at the Arco facility.

- The building design (walls and roof) shall be the same materials as used at the Arco facility.

- The roll-up doors shall be the same type, and shall be installed the same as the Arco facility.

- Both the entrance end and exit end doors need to be in the closed position when a car is being washed and dried.

- A noise barrier shall be constructed that meets or exceeds the barrier shown in Exhibit 5.

- The noise barrier must have a surface density of at least 3.5 pounds per square foot, and shall have no openings or gaps. The wall may be constructed of stud and stucco, 3/8-inch plate glass, 5/8-inch Plexiglas, any masonry material, or a combination of these materials.

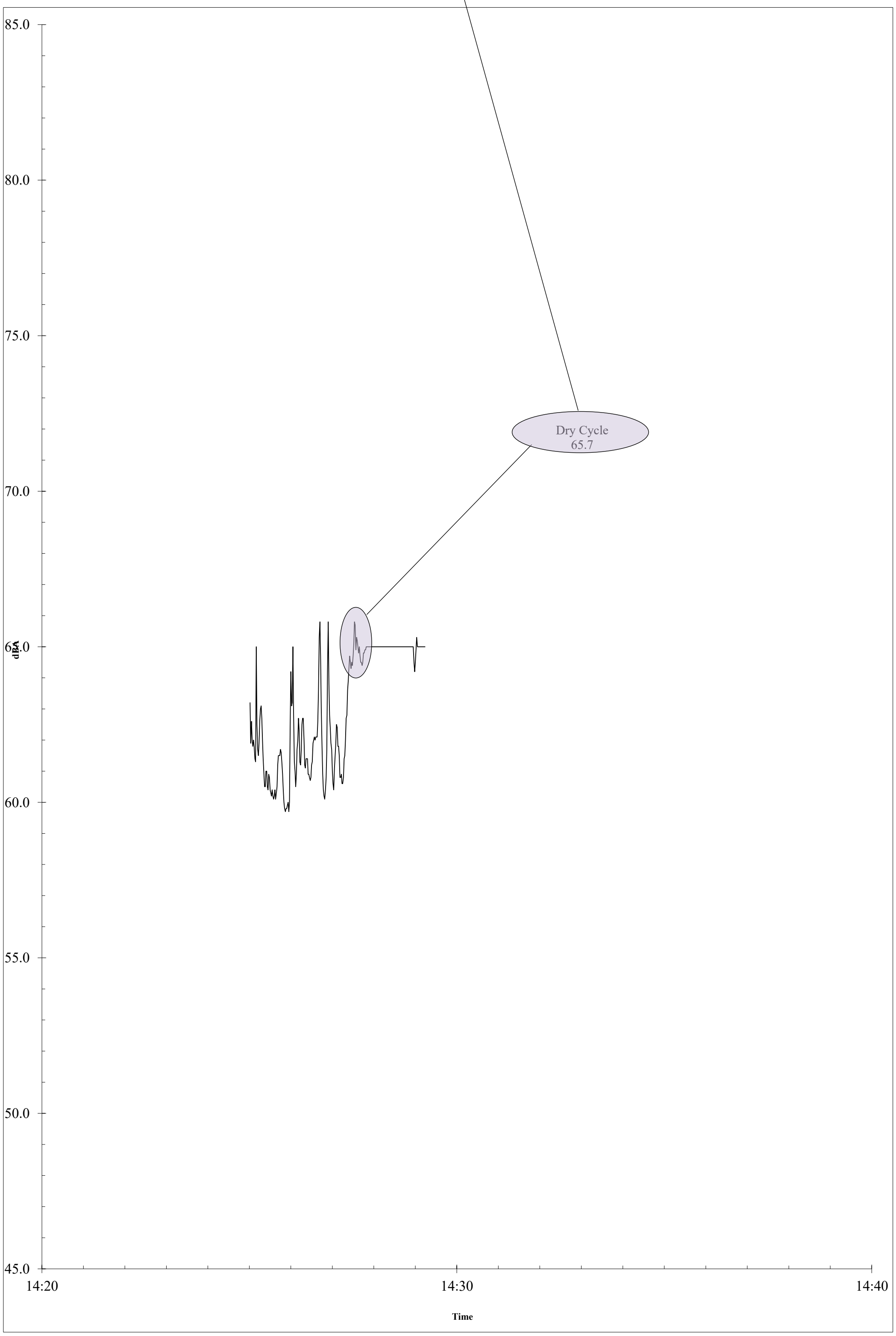
With these design measures in place, the noise levels at the nearest homes will meet the City's daytime and nighttime Noise Ordinance limits.

APPENDIX
Calculation Spreadsheets

Arco Car Wash
3170 Carmel Valley Road
San Diego
25' from Entrance End, Doors Closed
8-12-16

ref at 25' Distance, On-Axis

		Metric	Level	at 57'	
		LEQ	63.0		
Night STD =	55	Lmax	65.7	58.5	no wall
		L1.7	65.3		
		L8.3	65.0		
		L25	#NUM!		
		L50	62.7		
		L90	60.4		
		Lmin	59.7		



Source: Arco Car Wash SD, Entrance End, Door Closed
Reference Frequency (Hz): 500

Nighttime Lmax Standard
55

Residential property to the east

Source Height	Source Elevation	Source Level	Reference Distance	Source to Barrier	Barrier Height	Barrier Elevation	Barrier to Receiver	Receiver Height	Receiver Elevation	Barrier Reduction	**Lmax (dBA)**
8	0	65.7	25	57	0.0	0	1	5	0	0.000	58.4
8	0	65.7	25	57	**6.0** planned	0	1	5	0	9.139	49.2

Report to City Council

TO: Mayor and City Council

FROM: Marshall Eyerman, Chief Financial Officer

AGENDA DATE: September 4, 2018

TITLE: AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, ADDING CHAPTER 12.45 "PARKING REGULATIONS FOR VEHICLES CONNECTED FOR ELECTRIC CHARGING PURPOSES" TO THE MORENO VALLEY MUNICIPAL CODE

RECOMMENDED ACTION

Recommendation:

1. Introduce and conduct the first reading by title only of Ordinance No. XX. An Ordinance of the City Council of the City of Moreno Valley, California, adding Chapter 12.45 “Parking Regulations for Vehicles Connected for Electric Charging Purposes” to the Moreno Valley Municipal Code.

SUMMARY

This report recommends adoption of an Ordinance to regulate parking for vehicles parked in designated electric vehicle charging stalls owned and operated by the City of Moreno Valley. The Ordinance shall not apply to private property. The proposed Ordinance further establishes a maximum parking limit of four hours to allow for the greatest availability of the electric vehicle charging stalls.

DISCUSSION

In an effort to promote the use of electric vehicles in the City of Moreno Valley, three electric vehicle charging stations were installed in the parking lot at City Hall in 2017. These public charging stations include a Fast Charging unit, capable of charging an electric vehicle up to 80% within 30 minutes, and two Level 2 dual port units, capable of fully charging some electric vehicles in less than four hours. The Level 2 units average 111 sessions per month, with an average charging time of approximately 3 1/2 hours for each session.

Section 22511 of the California Vehicle Code states that a local authority may designate stalls or spaces in an offstreet parking facility owned or operated by the local authority for the exclusive purpose of charging and parking a vehicle that is connected for electric charging purposes. If the vehicle is not connected for electric charging purposes, the vehicle may be removed after notifying the police or sheriff's department.

The proposed Ordinance designates stalls at public electric vehicle charging stations for parking and charging electric vehicles only. Any electric vehicle in any designated public electric vehicle charging station space shall be subject to a fine and/or removal if a maximum parking limit of four hours has been exceeded.

ALTERNATIVES

1. Introduce and conduct the first reading by title only of the proposed Ordinance which would add Chapter 12.45 "Parking Regulations for Vehicles Connected for Electric Charging Purposes" to the Moreno Valley Municipal Code. Schedule the second reading and adoption for the next regular Council Meeting. *Approval will provide greater efficiency and ease of access for charging electric vehicles*. Staff recommends this alternative.

2. Do not approve the proposed Ordinance. *This will not provide greater efficiency and ease of access for charging electric vehicles*. Staff does not recommend this alternative.

FISCAL IMPACT

There is no fiscal impact associated with the proposed action.

NOTIFICATION

Publication of the Agenda.

PREPARATION OF STAFF REPORT

Prepared By: Jeannette Olko Electric Utility Division Manager	Department Head Approval: Marshall Eyerman Chief Financial Officer/City Treasurer

CITY COUNCIL GOALS

None

CITY COUNCIL STRATEGIC PRIORITIES

1. Economic Development
2. Public Safety

3. Library
4. Infrastructure
5. Beautification, Community Engagement, and Quality of Life
6. Youth Programs

ATTACHMENTS

1. Ordinance EV Parking

APPROVALS

Budget Officer Approval	✓ Approved	8/23/18 4:29 PM
City Attorney Approval	✓ Approved	8/23/18 7:58 AM
City Manager Approval	✓ Approved	8/27/18 3:04 PM

ORDINANCE NO.

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, ADDING CHAPTER 12.45 "PARKING REGULATIONS FOR VEHICLES CONNECTED FOR ELECTRIC CHARGING PURPOSES" TO THE MORENO VALLEY MUNICIPAL CODE.

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

SECTION 1: Chapter 12.45 of Title 12 of the Moreno Valley Municipal Code is hereby established as follows:

Section 12.45.010 Findings.

The City Council of the City of Moreno Valley finds as follows:

A. The City desires to promote the use of electric vehicles in the City of Moreno Valley under terms that are safe, lawful, and appropriate.
B. The City has installed and may install public electric vehicle charging stations located in offstreet parking facilities owned or operated by the City.
C. The City may install public electric vehicle charging stations on a public street within its jurisdiction for the exclusive purpose of charging and parking a vehicle that is connected for electric charging purposes.

Section 12.45.020 Authority.

This Chapter is adopted pursuant to the authority granted to the City of Moreno Valley by Article XI, Section 7 of the Constitution of the State of California and Sections 22511 and 22511.1 of the California Vehicle Code, which permits the designation of stalls or spaces for the exclusive purpose of charging and parking a vehicle that is connected for electric charging purposes.

Section 12.45.030 Definitions.

A. "City" means the City of Moreno Valley, California.
B. "Electric vehicle" means any motor vehicle registered to operate on California public roadways and operates, either partially or exclusively, on electrical energy from the grid, or an off-board source that is stored on-board for motive purposes. "Electric vehicle" includes, but is not limited to, battery-powered electric vehicles, plug-in hybrid electric vehicles, neighborhood electric vehicles, and electric motorcycles.
C. "Electric vehicle charging station" means a public parking space that is served

by battery charging station equipment that has as its primary purpose the transfer of electric energy (by conductive or inductive means) to a battery or other energy storage device in an electric vehicle.

Section 12.45.040 Electric vehicle charging stations on public property.

Public electric vehicle charging stations that are located on public property are reserved for parking and charging electric vehicles only. When a sign provides notice that a space is a designated public electric vehicle charging station, no person shall park or stand any nonelectric vehicle in that space per Section 12.45.060 below. Any electric vehicle in any designated public electric vehicle charging station space on public property that is not electrically charging beyond the four-hour maximum provision in Section 12.45.050 shall be subject to a fine and removal.

Section 12.45.050 Restrictions on parking electric vehicles in electric vehicle charging stations.

No person shall park or leave standing any electric vehicle, as defined in Section 12.45.030, in any space designated exclusively for electric vehicle charging, for longer than four hours. The vehicle must be plugged in and actively charging while parked in such space.

Section 12.45.060 Restrictions on parking non-electric vehicles in electric vehicle charging stations.

No person shall park or leave standing any non-electric vehicle in any space designated exclusively for electric vehicle charging at any time. Any such vehicle will be subject to fine and removal.

SECTION 2: SEVERABILITY

That the City Council declares that, should any provision, section, paragraph, sentence or word of this ordinance be rendered or declared invalid by any final court action in a court of competent jurisdiction or by reason of any preemptive legislation, the remaining provisions, sections, paragraphs, sentences or words of this ordinance as hereby adopted shall remain in full force and effect.

SECTION 3: REPEAL OF CONFLICTING PROVISIONS

That all the provisions of the Municipal Code as heretofore adopted by the City of Moreno Valley that are in conflict with the provisions of this ordinance are hereby repealed.

SECTION 4: EFFECT OF ENACTMENT:

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

SECTION 5: NOTICE OF ADOPTION:

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

SECTION 6: EFFECTIVE DATE:

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

APPROVED AND ADOPTED this _____ day of _______________, 2018.

____
Mayor

ATTEST:

____
City Clerk

APPROVED AS TO FORM:

____
City Attorney

ORDINANCE JURAT

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

I, _______________, City Clerk of the City of Moreno Valley, California, do hereby certify that Ordinance No. ________ had its first reading on ____________, _____ and had its second reading on ____________, _______, and was duly and regularly adopted by the City Council of the City of Moreno Valley at a regular meeting thereof held on the ______day of ____________, _______, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

(Council Members, Mayor Pro Tem and Mayor)

____
CITY CLERK

(SEAL)

Report to City Council

TO:	Mayor and City Council
FROM:	Marshall Eyerman, Chief Financial Officer
AGENDA DATE:	September 4, 2018
TITLE:	RESOLUTION OF THE CITY OF MORENO VALLEY SERVING AS THE SUCCESSOR AGENCY FOR THE COMMUNITY REDEVELOPMENT AGENCY OF THE CITY OF MORENO VALLEY APPROVING THE AMENDED RECOGNIZED OBLIGATION PAYMENT SCHEDULE FOR THE PERIOD OF JANUARY 1, 2019 THROUGH JUNE 30, 2019 (ROPS 18-19B)

RECOMMENDED ACTION

Recommendations: That the City Council as Successor Agency:

1. Adopt Resolution No. SA 2018-04. A Resolution of the City Council of the City of Moreno Valley, California, Serving as Successor Agency to the Community Redevelopment Agency of the City of Moreno Valley Approving the Amended Recognized Obligation Payment Schedule for the Period of January 1, 2019 through June 30, 2019 (ROPS 18-19B), and Authorizing the City Manager acting for the Successor Agency or her Designee to Make Modifications Thereto.

2. Authorize the City Manager acting for the Successor Agency or her Designee to make modifications to the Schedule.

3. Authorize the transmittal of the ROPS 18-19B, for the period of January 1, 2019 through June 30, 2019, (“Exhibit A”) to the Oversight Board for review and approval.

SUMMARY

This report recommends adoption of the Proposed Resolution approving the amended Recognized Obligation Payment Schedule (ROPS 18-19B), for the period of January 1, 2019 through June 30, 2019. The ROPS 18-19B amendment is being proposed to increase the payment to Robertson’s Ready Mix Inc. based on revenues received by

the City.

As successor agency ("Successor Agency") to the Community Redevelopment Agency (RDA) of the City of Moreno Valley, the City is responsible for winding down the affairs of the former RDA including disposing of its assets, making payments and performing other obligations owed for Enforceable Obligations. The Recognized Obligation Payment Schedules certain applicable periods provide the details necessary for the City serving as the Successor Agency to fulfill the former RDA's legally binding and enforceable agreements as required by law.

DISCUSSION

ABX1 26 requires the Successor Agency to approve a Recognized Obligation Payment Schedule ("ROPS") for each six-month period. The required content of the ROPS, set forth in Health and Safety Code Section 34177(l)(1), details all of the Successor Agency's legally binding and enforceable obligations, anticipated payments, and sources of payments. Recognized obligations include bonds, loans, judgments, settlements, any legally binding and enforceable agreements or contracts, and contracts and agreements for agency administration or operation. AB 1484 further clarifies certain matters associated with the dissolution of RDAs and addresses substantive issues related to administrative processes, affordable housing activities, and repayment of loans from communities, use of existing bond proceeds, and the disposition or retention of Successor Agency assets.

In order to facilitate the wind down process, on behalf of the Successor Agency, the City Council has adopted the following Resolutions:

- Resolution No. 2012-13, adopted on February 28, 2012, approving a Recognized Obligation Payment Schedule for the period of January 1, 2012 through June 30, 2012.

- Resolution No. 2012-22, adopted on April 10, 2012, approving a Second Recognized Obligation Payment Schedule for the period of July 1, 2012 through December 31, 2012.

- Resolution No. 2012-71, adopted on August 28, 2012, approving a Second Recognized Obligation Payment Schedule for the period of January 1, 2013 through June 30, 2013.

- Resolution No. SA 2013-02, adopted on February 26, 2013, approving a Recognized Obligation Payment Schedule (ROPS 13-14 A) for the period of July 1, 2013 through December 31, 2013.

- Resolution No. SA 2013-09, adopted on September 24, 2013, approving a Recognized Obligation Payment Schedule (ROPS 13-14 B) for the period of January 1, 2014 through June 30, 2014.

- Resolution No. SA 2014-01, adopted on February 25, 2014, approving a Recognized Obligation Payment Schedule (ROPS 14-15 A) for the period of July 1, 2014 through December 31, 2014.

- Resolution No. SA 2014-02, adopted on September 23, 2014, approving a Recognized Obligation Payment Schedule (ROPS 14-15 B) for the period of January 1, 2015 through June 30, 2015.

- Resolution No. SA 2015-01, adopted on February 24, 2015, approving a Recognized Obligation Payment Schedule (ROPS 15-16 A) for the period of July 1, 2015 through December 31, 2015.

- Resolution No. SA 2015-02, adopted on September 22, 2015, approving a Recognized Obligation Payment Schedule (ROPS 15-16 B) for the period of January 1, 2016 through June 30, 2016.

- Resolution No. SA 2016-01, adopted on January 19, 2016, approving a Recognized Obligation Payment Schedule (ROPS 16-17) for the period of July 1, 2016 through June 30, 2017.

- Resolution No. SA 2016-02, adopted on September 6, 2016, approving a Recognized Obligation Payment Schedule (ROPS 16-17B) for the period of January 1, 2017 through June 30, 2017.

- Resolution No. SA 2016-04, adopted on December 12, 2016, approving a Recognized Obligation Payment Schedule (ROPS 17-18) for the period of July 1, 2017 through June 30, 2018.

- Resolution No. SA 2017-05, adopted on September 19, 2017, approving a Recognized Obligation Payment Schedule (ROPS 17-18B) for the period of January 1, 2018 through June 30, 2018.

- Resolution No. SA 2018-01, adopted on January 16, 2018, approving a Recognized Obligation Payment Schedule (ROPS 18-19) for the period of July 1, 2018 through June 30, 2019.

Once approved, the ROPS 18-19B will be submitted to the Successor Agency's oversight board ("Oversight Board") for review and approval. Upon approval by the Oversight Board, a copy of the approved ROPS will be transmitted to the County-Auditor Controller, the State Controller's Office, the State Department of Finance, and posted to the City's website.

ALTERNATIVES

1. Adopt the attached proposed resolution, which approves the amended Recognized Obligation Payment Schedule, for the period of January 1, 2019

through June 30, 2019 and authorizing the transmittal of said Schedules to the Oversight Board for review and approval. *Staff recommends this alternative because it allows the City serving as the Successor Agency to make required debt service payments in accordance with the State legislation.*

2. Decline to adopt the attached proposed resolution which would not allow the City, serving as the Successor Agency, to maintain the operations, and fulfill debt obligations of the former RDA as required by law. *Staff does not recommend this alternative.*

FISCAL IMPACT

The Recognized Obligation Payment Schedule provides the details necessary for the City serving as the Successor Agency to fulfill the former RDA's legally binding and enforceable agreements. The ROPS 18-19B will serve as authorization to pay obligations listed during the noted period.

With the dissolution of the former RDA, there are continued risks that the payment of certain agreements may not be approved by the California Department of Finance, which will impact the General Fund. When these costs can be considered a short-term loan from the City to the Successor Agency and thus considered an enforceable obligation of the Successor Agency, the City shall seek reimbursement as available.

NOTIFICATION

The agenda for the meeting during which this item may be considered has been posted in the three locations that have been designated for the posting of City Council agendas, in compliance with the Brown Act.

PREPARATION OF STAFF REPORT

Prepared By:
Brian Mohan
Financial Resources Division Manager

Department Head Approval:
Marshall Eyerman
Chief Financial Officer

CITY COUNCIL GOALS

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

CITY COUNCIL STRATEGIC PRIORITIES

1. **Economic Development**
2. **Public Safety**
3. **Library**
4. **Infrastructure**
5. **Beautification, Community Engagement, and Quality of Life**

6. Youth Programs

ATTACHMENTS

1. SA Resolution 2018-04
2. Moreno Valley_Amended_ROPS_18-19B

APPROVALS

Budget Officer Approval	✓ Approved	8/24/18 3:24 PM
City Attorney Approval	✓ Approved	8/27/18 8:57 AM
City Manager Approval	✓ Approved	8/27/18 11:56 AM

RESOLUTION NO. SA 2018-04

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, SERVING AS SUCCESSOR AGENCY TO THE COMMUNITY REDEVELOPMENT AGENCY OF THE CITY OF MORENO VALLEY APPROVING THE RECOGNIZED OBLIGATION PAYMENT SCHEDULE FOR THE PERIOD OF JANAURY 1, 2019 THROUGH JUNE 30, 2019 (ROPS 18-19B), AND AUTHORIZING THE CITY MANAGER ACTING FOR THE SUCCESSOR AGENCY OR HIS/HER DESIGNEE TO MAKE MINOR MODIFICATIONS THERETO

WHEREAS, the City Council of the City of Moreno Valley agreed to serve as successor agency to the Community Redevelopment Agency of the City of Moreno Valley ("Former RDA") commencing upon dissolution of the Former RDA on February 1, 2012 pursuant to Assembly Bill x1 26, as amended by AB 1484; and

WHEREAS, pursuant to Health and Safety Code Section 34177(l), before each six-month fiscal period, the successor agency to a dissolved redevelopment agency such as the Former RDA is required to adopt a draft Recognized Obligation Payment Schedule ("ROPS") that lists all of the obligations that are "enforceable obligations" within the meaning of Health and Safety Code Section 34171, and which identifies a source of payment for each such obligation from among (i) the Low and Moderate Income Housing Fund; (ii) bond proceeds; (iii) reserve balances; (iv) the administrative cost allowance; (v) revenues from rents, concessions, interest earnings, and asset sales; and (vi) the Redevelopment Property Tax Trust Fund established by the County Auditor-Controller to the extent no other source of funding is available or payment from property tax is contractually or statutorily required; and

WHEREAS, the City of Moreno Valley ("City"), acting as the successor agency to the Former RDA ("Successor Agency") has prepared a ROPS covering the period January 1, 2019 through June 30, 2019 ("ROPS 18-19B"); and

WHEREAS, the draft ROPS must be concurrently submitted to the County Administrative Officer, the County Auditor-Controller, the State Department of Finance, and the Successor Agency's oversight board ("Oversight Board").

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, SERVING AS THE SUCCESSOR AGENCY, DOES HEREBY RESOLVE AS FOLLOWS:

SECTION 1. **RECITALS**

That the foregoing recitals are incorporated into this Resolution by this reference, and constitute a material part of this Resolution.

<u>SECTION 2</u>. **APPROVAL OF ROPS 18-19B**

That the City Council acting on behalf of the Successor Agency hereby approve and adopt ROPS 18-19B, in substantially the form attached hereto as Exhibit "A."

<u>SECTION 3</u>. **TRANSMITTAL**

That City staff, acting for the Successor Agency, is directed to transmit the ROPS 18-19B to the Oversight Board, County Administrative Officer, the County Auditor-Controller, and the State Department of Finance.

<u>Section 4</u>. **OTHER ACTS**

That the City Manager, acting for the Successor Agency, or his/her designee is hereby authorized to make minor modifications to the ROPS 18-19B, and each officer of the City, acting for the Successor Agency, is hereby authorized and directed, jointly and severally, to execute and deliver such documents and instruments and to do such things which may be necessary or proper to effectuate the purposes of this Resolution, and any such actions previously taken by such officers are hereby ratified, approved and confirmed. Such acts shall include, but shall not be limited to, reformatting of the ROPS 18-19B as may be required by the Department of Finance.

<u>Section 5</u>. **SEVERABILITY**

That if any provision of this Resolution or the application thereof to any person or circumstance is held invalid, such invalidity shall not affect other provisions or applications of this Resolution which can be given effect without the invalid provision or application, and to this end the provisions of this Resolution are severable. The City Council acting for the Successor Agency hereby declares that it would have adopted this Resolution irrespective of the invalidity of any particular portion thereof.

<u>Section 6</u>. **EFFECTIVE DATE**

That this Resolution shall take effect immediately upon adoption.

<u>Section 7</u>. **CERTIFICATION**

That the City Clerk acting for the Successor Agency shall certify to the passage of this Resolution and enter it into the book of original resolutions.

APPROVED AND ADOPTED this 4th day of September 2018.

____
Mayor acting for Successor Agency

ATTEST:

____
City Clerk acting for Successor Agency

APPROVED AS TO FORM:

____
City Attorney acting for Successor Agency

RESOLUTION JURAT

STATE OF CALIFORNIA)

COUNTY OF RIVERSIDE) ss.

CITY OF MORENO VALLEY)

I, ______________, City Clerk of the City of Moreno Valley, California, do hereby certify that Resolution No. SA 2018-04 was duly and regularly adopted by the City Council of the City of Moreno Valley at a regular meeting thereof held on the 4th day of September, 2018 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

(Council Members, Mayor Pro Tem and Mayor)

____

CITY CLERK

(SEAL)

EXHIBIT “A”

ROPS 18-19B COVERING JANUARY 1, 2019 THROUGH JUNE 30, 2019

SEE ATTACHED

Moreno Valley Amended Recognized Obligation Payment Schedule (ROPS 18-19B) - ROPS Detail

January 1, 2019 through June 30, 2019

(Report Amounts in Whole Dollars)

				AUTHORIZED AMOUNTS						REQUESTED ADJUSTMENTS						
				Fund Sources						Fund Sources						
Item #	Project Name/Debt Obligation	Obligation Type	Total Outstanding Balance	Bond Proceeds	Reserve Balance	Other Funds	RPTTF	Admin RPTTF	Total	Bond Proceeds	Reserve Balance	Other Funds	RPTTF	Admin RPTTF	Total	Notes
			$ 69,554,578	$ -	$ -	$ -	$ 2,414,701	$ 125,000	$ 2,539,701	$ -	$ -	$ -	$ 102,181	$ -	$ 102,181	
2	2007 Special Tax Refunding Bonds - Towngate 87-1	Bonds Issued On or Before	$ 2,845,000	-	-	-	597,842		$ 597,842						$ -	
3	Improvement Area No. 1 Special Tax Refunding Bonds	Bonds Issued On or Before 12/31/10	$ 1,580,000	-	-	-	141,532		$ 141,532						$ -	
5	2011 Refunding of 97 LRB Bonds	Revenue Bonds Issued After 12/31/10	$ 750,000	-	-	-	75,000		$ 75,000						$ -	
13	CalPERS Retirement Liability	Unfunded Liabilities	$ 193,971						$ -						$ -	
14	Retiree Medical Trust (CERBT)	Unfunded Liabilities	$ 62,466						$ -						$ -	
17	Towngate Acquisition Note	Third-Party Loans	$ 24,426,841	-	-	-	700,000		$ 700,000						$ -	
19	Robertson's Ready Mix, Inc. OPA	OPA/DDA/Construction	$ 1,401,300	-	-	-	144,887		$ 144,887				102,181		$ 102,181	Adjusted based on actual/projected sales tax
24	Payroll Costs/Operating Costs	Admin Costs	$ 250,000	-	-	-	-		$ -						$ -	
88	2017 Refunding of the 2007 Tax Allocation Bonds Series A	Refunding Bonds Issued After 6/27/12	$ 38,045,000	-	-	-	755,440		$ 755,440						$ -	
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Moreno Valley Amended Recognized Obligation Payment Schedule (ROPS 18-19B) - ROPS Detail

January 1, 2019 through June 30, 2019

(Report Amounts in Whole Dollars)

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