AGENDA

CITY COUNCIL OF THE CITY OF MORENO VALLEY
MORENO VALLEY COMMUNITY SERVICES DISTRICT
COMMUNITY REDEVELOPMENT AGENCY OF THE CITY OF MORENO VALLEY

October 19, 2010

STUDY SESSION – 6:00 P.M.

City Council Closed Session
First Tuesday of each month – 6:00 p.m.
City Council Study Sessions
Third Tuesday of each month – 6:00 p.m.
City Council Meetings
Second and Fourth Tuesdays – 6:30 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 Mel Alonzo, ADA Coordinator at 951.413.3027 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.

AGENDA
CITY COUNCIL OF THE CITY OF MORENO VALLEY
MORENO VALLEY COMMUNITY SERVICES DISTRICT
COMMUNITY REDEVELOPMENT AGENCY OF THE CITY OF MORENO VALLEY

STUDY SESSION - 6:00 PM
OCTOBER 19, 2010

CALL TO ORDER

PLEDGE OF ALLEGIANCE

INVOCATION

ROLL CALL

INTRODUCTIONS

PUBLIC COMMENTS ON MATTERS UNDER THE JURISDICTION OF THE CITY COUNCIL

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

SPECIAL ORDER OF BUSINESS

1. WRCOG 4-CITY NEIGHBORHOOD ELECTRIC VEHICLE PLAN (PRESENTATION BY CONSULTANT) (CDD/10 Min.)

2. PLANNING COMMISSION APPOINTMENT DISCUSSION (Mayor Flickinger/10 Min.) ❖

3. CITY COUNCIL REQUESTS AND COMMUNICATIONS

(Times shown are only estimates for staff presentation. Items may be deferred by Council if time does not permit full review.)

❖ Oral Presentation only – No written material provided

***Materials related to an item on this Agenda submitted to the City Council/Community Services District/Community Redevelopment Agency after**

distribution of the agenda packet are available for public inspection in the City Clerk's office at 14177 Frederick Street during normal business hours.

CLOSED SESSION

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

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

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

The Closed Session will be held pursuant to Government Code:

1 SECTION 54956.9(b)(1) - CONFERENCE WITH LEGAL COUNSEL - SIGNIFICANT EXPOSURE TO LITIGATION

Number of Cases: 2

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

Number of Cases: 2

3 SECTION 54956.8 - CONFERENCE WITH REAL PROPERTY NEGOTIATOR

a) Property: SR-60/Moreno Beach Drive Interchange Project
City Negotiator: Chris A. Vogt
Under Negotiation: Price and terms of payment

APN/Caltrans Parcel No.	Owner	Site Address	Site Location
488-080-014 488-080-017	Equitable Moreno Valley II Partnership	None	Northeast quadrant of SR-60 and Moreno Beach Drive
21447	Kenneth E. Williams, Successor Trustee of the Lila M. Jones Trust	None	South side of SR-60, east of Moreno Beach Dr., between Eucalyptus Ave. and SR-60 (between Auto Mall and

			SR-60)
488-080-016	Thomas J. Chen, Glendy Liu Chen and Theresa B. Chen	None	North side of SR-60 adjacent to Moreno Beach westbound off-ramp
488-090-008	Strebor Land Holdings LLC	None	East side of Moreno Beach Dr. Between Eucalyptus Ave. and SR-60 right-of-way
488-270-021	Jocelyn Sarte McGinness	None	North side of SR-60 adjacent to Moreno Beach Dr. westbound off-ramp
488-270-022 488-270-023	Julie Yu Chu	None	North side of SR-60 adjacent to Moreno Beach Dr. westbound Off-ramp
488-100-011 488-100-012	Moreno H & S	12611 Moreno Beach Dr.	Southwest corner of Moreno Beach Dr. and Eucalyptus Ave.
21884	Robert Getz, Anita May Rosenstein, Gloria May Offerman – Trustees of the David May II – Dorothy Duffy May Trust and David May II, Trustee of the David May II Revocable Trust	None	South side of SR-60, east of Moreno Beach Dr. between Eucalyptus Ave. and SR-60 (between Auto Mall and SR-60)
488-080-013	Chado & Chado Moreno Valley Ltd.	None	West side of Moreno Beach Dr. between Hemlock Ave. and SR-60 right-of-way

4 SECTION 54957 - PUBLIC EMPLOYEE APPOINTMENT/PUBLIC EMPLOYMENT

a) City Manager Recruitment

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

ADJOURNMENT

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APPROVALS	
BUDGET OFFICER	caf
CITY ATTORNEY	Rut
CITY MANAGER	WJS

Report to City Council

TO: Mayor and City Council

FROM: Kyle A. Kollar, Interim Community Development Director

AGENDA DATE: October 19, 2010

TITLE: 4-City Neighborhood Electric Vehicle Study

RECOMMENDED ACTION

Staff recommends that the City Council review the 4-City Neighborhood Electric Vehicle (NEV) Transportation Plan prepared for the Western Riverside Council of Governments (WRCOG).

BACKGROUND

At the June 15, 2010, City Council Study Session, the City Council and Planning Commission reviewed the concept draft of the Energy Efficiency and Climate Action Strategy. One of the proposed programs is to investigate the potential for neighborhood electric vehicles in Moreno Valley. The City Council requested that a briefing be scheduled on the WRCOG NEV plan. That plan was reviewed and approved on August 2, 2010, by the WRCOG Executive Committee. The plan was prepared for WRCOG by Urban Crossroads, and funded by the Southern California Association of Governments (SCAG) Compass Program. City Transportation Engineering and Planning staff participated with the consultant team and peers from the cities of Riverside and Corona, Riverside County, and the Riverside County Transportation Commission to review and prepare the plan. The attached plan demonstrates potential routing for neighborhood electric vehicles in and between the four contiguous jurisdictions of Moreno Valley, Riverside, Norco and Corona.

NEVs are small, electric-powered, personal vehicles intended for short, local trips. While they may look like a golf cart, NEVs are motor vehicles that can be driven on public streets with certain restrictions which include vehicle registration, insurance, and adherence to adopted safety standards. The operator must also possess a valid driver's license.

In 1994, the Federal Department of Transportation defined the street-legal Low Speed Vehicle (LSV) in the Code of Federal Regulations. The NEV is a federally-recognized sub-class of LSV. NEVs are limited to 25 miles per hour by federal requirements, and may be driven on streets with speed limits of 35 mph or less. NEVs are 100% battery-electric powered vehicles. Used under proper conditions, NEVs can travel approximately 30 miles on fully charged batteries. The benefits from expanding NEV use include energy and cost savings, improved air quality, alternative mobility options, community cohesion, and support of local businesses. NEVs produce no tailpipe or evaporative emissions that contribute to air pollution and global warming. The energy required to operate an NEV is less than one-fifth used by a conventional automobile.

DISCUSSION

The NEV plan reviewed a range of opportunities and constraints to use of such vehicles in and between the contiguous cities of Moreno Valley, Riverside, Corona and Norco. Given the low speeds and intended use for short, local trips, the plan identifies potential routes that connect residential neighborhoods to schools, shopping areas, and employment centers. The plan also identifies potential connecting routes between the four jurisdictions.

In Moreno Valley, the suggested routes provide for connections to major community attractions such as the Moreno Valley Mall, Riverside County Regional Medical Center, and March Air Reserve Base. The routes would also provide for connections to nearby attractions such as the University of California – Riverside, Meridian Business Park and the future March/Moreno Valley Metrolink Station. Most of the suggested routes are along streets with posted speed limits of 35 miles per hour or less. Establishing routes on these streets would only require signs and promotional activities. Some routes, especially those connecting to attractions outside the City are on higher speed streets. These routes would require dedicated NEV lanes, shared bicycle/NEV lanes, or paths separated from the street.

Neither the City, nor WRCOG currently has funding available to implement the study.

ATTACHMENTS/EXHIBITS

1. 4-City Neighborhood Electric Vehicle Transportation Plan
2. PowerPoint presentation

Prepared By:
John C. Terell AICP
Planning Official

Department Head Approval:
Kyle A. Kollar
Interim Community Development Director

Concurred By:
Eric Lewis PE
City Traffic Engineer

Council Action	
Approved as requested:	Referred to:
Approved as amended:	For:
Denied:	Continued until:
Other:	Hearing set for:

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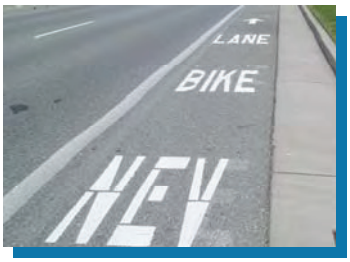

SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

COMPASS BLUEPRINT
building partnerships, serving communities.

WRCOG
WESTERN RIVERSIDE COUNCIL OF GOVERNMENTS

URBAN CROSSROADS

BEN|EN

Western Riverside Council Of Governments 4-City Neighborhood Electric Vehicle Transportation Plan

CORONA ▪ NORCO ▪ RIVERSIDE ▪ MORENO VALLEY

June 2010

Urban Crossroads | Bennett Engineering Services

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NOTICES

This is a project of the Western Riverside Council of Governments with funding provided by the Southern California Association of Governments' (SCAG) Compass Blueprint Demonstration Project Program. Compass Blueprint assists Southern California cities and other organizations in evaluating planning options and stimulating development consistent with the region's goals.

The preparation of this report was funded in part through grants from the United States Department of Transportation (USDOT)—Federal Highway Administration and Federal Transit Administration, in accordance with the Metropolitan Planning Program, Section 104(f) of Title 23 of the U.S. Code.

ACKNOWLEDGEMENTS

This project was a collaborative effort involving the participation of representatives from the cities of Corona, Norco, Riverside and Moreno Valley. In addition, a variety of stakeholder agencies participated in the Plan development process including Caltrans, Riverside Transit Agency (RTA), Riverside County Transportation Commission (RCTC), March Joint Powers Authority (JPA), and County of Riverside Transportation Department. The insights and input provided by these participants was invaluable.

Prepared by:

Urban Crossroads | 41 Corporate Park, Suite 300, Irvine, California 92606 | T: 949.660.1994 | Contact: John Kain, AICP and Paul Rodriguez

Bennett Engineering Services | 1082 Sunrise Avenue, Suite 100, Roseville, California 95661 | T: 916.783.4100 | Contact: Leo Rubio, PE

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Executive Summary

Purpose

Neighborhood Electric Vehicles (NEV) provide a low speed, zero emission transportation option that can assist communities and regions in improving mobility while reducing carbon-based vehicle emissions and related pollution. Plans are needed to overcome connection issues, identify safe routes, and enable clear communication about where residents can go in low speed vehicles. The Western Riverside Council of Governments (WRCOG) 4-City NEV Transportation Plan (Plan) presents a multi-jurisdiction transportation planning approach to leverage existing and future public street networks for maximum transportation benefit. This Plan identifies low speed connectors and potential NEV/bike lane backbone facilities within and between the cities of Corona, Norco, Riverside and Moreno Valley. The Plan also benefits unincorporated communities within the study area.

The Plan provides the necessary tools for local jurisdiction Plan adoption and may be used as a template for other communities contemplating similar transportation network enhancements. NEVs have the following key benefits:

- Enabling broad use of zero emission vehicles aids in attainment of greenhouse gas (GHG) emission reductions outlined in Senate Bill 375 (SB 375) and Assembly Bill 32 (AB 32);
- Reduce reliance upon fossil fuels;
- Improve utilization of existing Class I and Class II bicycle lanes through shared use where appropriate;
- Provide safe and efficient transportation alternatives for short trips; and
- Offer sustainable/livable community planning tool.

The Plan has been prepared through a grant from Southern California Association of Governments (SCAG). The role of WRCOG in the preparation of the Plan is to identify transportation benefits and potential NEV routes for consideration and to develop a useful sub-regional planning tool. Adoption of the plan by participating jurisdictions is not required. However, the Plan has been prepared to accommodate adoption by one or more jurisdictions and enable NEV usage as outlined in the Plan. Furthermore, each jurisdiction may elect to use the Plan as a basis for development and adoption of a locally prepared Plan.

The Plan includes Near Term and Long Range (Future) routes as shown on Exhibit ES-1. Near Term routes are assumed as an initial implementation phase in the one to three year time frame. Near Term routes rely on existing or planned Class II bike lanes suitable for shared use with NEVs. These routes can be converted for NEV use with little or no capital cost. Not all Class II bike lanes are appropriate for shared use with safety as a primary determining factor. Long Range (Future) routes include select existing and planned Class II bike lanes to complete the backbone NEV network. Long range routes can be implemented over time and concurrent with future road improvements. The Backbone network map also includes low speed connector roads. These low speed connectors also provide easy transition to potential NEV / bike lanes leading to more places and increased mobility.

Plan Management Structure

The project consultant team and WRCOG Project Manager utilized an Oversight Committee and a Working Group to assist with development of the Plan. The Oversight Committee functioned as a steering committee in the early stages of Plan development and was comprised of technical representatives from each of the four participating cities. The Working Group represented stakeholders within each jurisdiction, including Oversight Committee members, and was comprised of Planning Commissioners, a public safety representative, and staff

from Caltrans, Riverside County Transportation Commission (RCTC), Riverside Transit Agency (RTA), March Joint Powers Authority (JPA), and the County of Riverside Transportation department. Working Group membership was based upon recommendations from the Oversight Committee. Two Oversight Committee meetings and two Working Group meetings were held during the Plan development process.

Plan Elements

The Plan relies upon several components to provide a carefully considered, well crafted foundation for NEV operations. With their emphasis on short trips and top speed capabilities limited to 25 miles per hour (mph), NEVs are generally restricted to streets with posted speed limits of 35 mph or less. These vehicles are quiet and light weight compared to most cars and this raises legitimate safety questions. NEV operational concerns need to be addressed in the unique context of each community.

Population and Land Use (housing, employment, activity centers)

NEVs are suited for trips of less than 10 miles with a "sweet spot" of 1-5 miles. An examination of existing and project land uses was necessary to ensure that routes were identified to connect potential origin and destination points. Proposed routes connect residential areas, schools, parks, job centers, retail and other activity centers to the greatest degree possible.

Street / Travel Characteristics (speed limit, volumes, classifications, modal usage, potential for safety conflict)

NEVs will typically operate in auto travel lanes with conventional vehicle traffic on streets with posted speed limits of 35 mph or less. Streets with posted limits of 40 mph or greater require separate lanes for NEV operation. A review of posted speed limits with each city in the study area was required to identify areas where NEV routes were needed to interconnect low speed routes.

Public Input (survey, open houses, media)

NEVs are more likely to be used if safe and practical routes are provided where people want to go. The Plan relies upon stakeholder input, an online survey and a series of public open houses to identify important Plan features, address concerns and shape future actions.

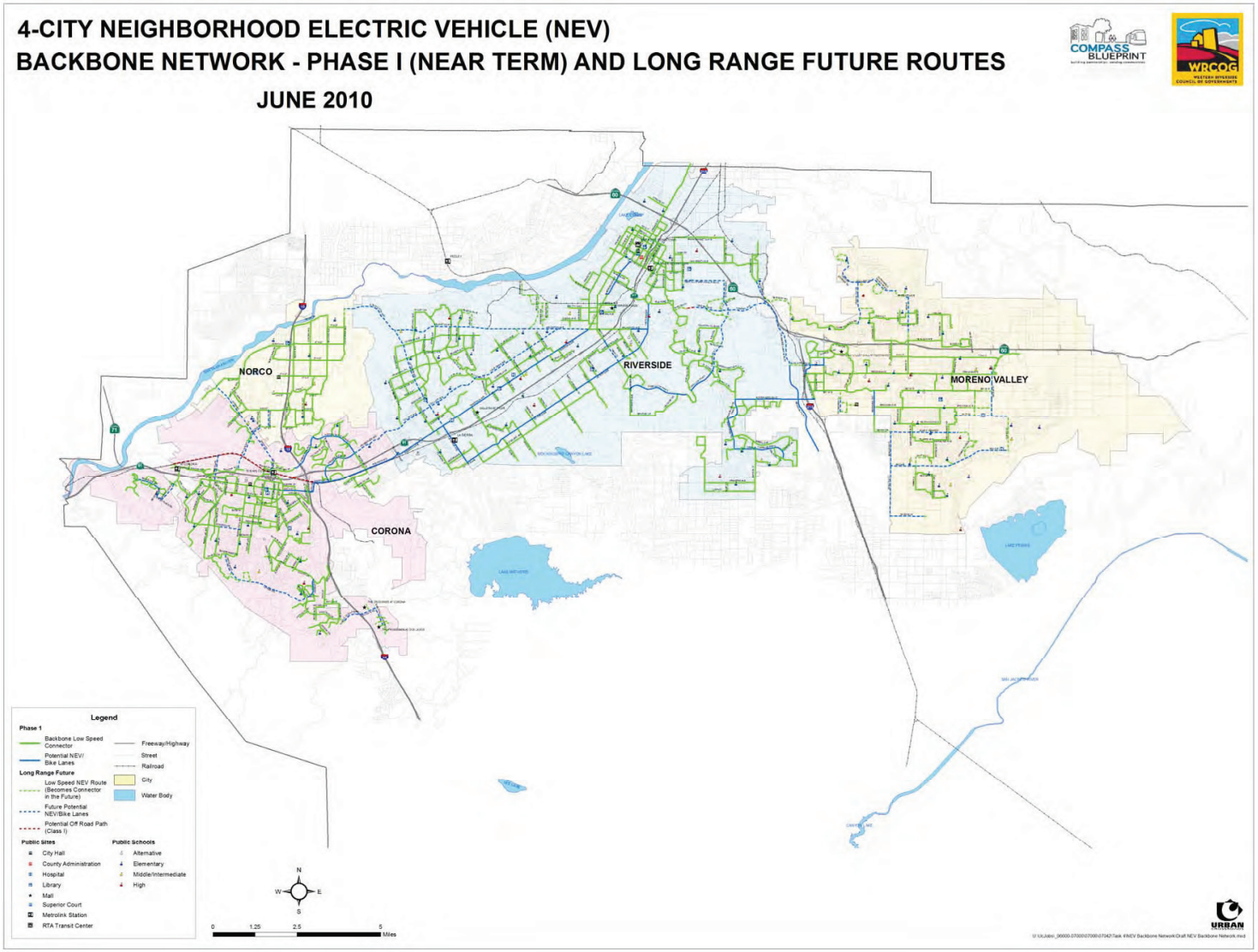
Potential for Implementation (cost, environmental,socio-political)

A plan is only good if it can be implemented. The WRCOG 4-City NEV Transportation Plan includes low impact Near Term routes designed to enable immediate adoption and use of NEVs with the study area. Long Term routes provide additional expansion options for the future.

Primary Findings

- Neighborhood Electric Vehicles provide a flexible alternative to traditional travel mode options;
- Study area can easily integrate NEVs onto existing transportation network with little or no capital cost (Near Term routes);
- Public Awareness Campaigns will be needed to increase awareness of NEVs and assure safety for all vehicle operators;
- A basic Long Term Backbone Network is achievable over time;
- Additional NEV routes can be included in future Plans to supplement the initial Backbone Network; and
- The process used to develop this Plan can be easily replicated in other communities.

Exhibit ES-1: Backbone Network



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Chapter 1 NEVs Demystified

What is an NEV?

Neighborhood Electric Vehicles (NEVs) are small, electric-powered, personal vehicles suitable for short, local trips. While they may look like a golf cart to the casual observer, NEVs are actually motor vehicles that can be driven on public streets with certain restrictions which include: a driver's license, Vehicle Identification Number (VIN), registration, insurance, and adherence to vehicle safety standards. In 1994, the Federal Department of Transportation defined the street-legal Low Speed Vehicle (LSV) in the Code of Federal Regulations. The NEV is a federally-recognized sub-class of LSV. NEVs are limited to 25 miles per hour (mph) by federal requirements, and may be driven on streets with speed limits of 35 mph or less. Operations on roadways with posted speed limits greater than 35 mph are permitted within specially marked lanes as identified in a qualified NEV Transportation Plan and pursuant to enabling state law.

The benefits from expanding NEV use include, but are not limited to: energy savings (no gasoline consumption), improved air quality, operating cost savings, alternative mobility option, reduced congestion on freeways, community cohesion, and support of local businesses.

NEVs are 100% battery-electric powered vehicles. Factors that can affect the driving range include: ambient temperature, terrain, driving conditions, payload, driving habits, battery age, and tire pressure. It is difficult to estimate an exact driving range distance, but a typical vehicle (pictured right) used under proper conditions with fully charged batteries, can travel approximately 30 miles on a charge.

Photo courtesy of Global Electric Motorcars: www.gemcars.com

Why an NEV?

An NEV can be a valued local transportation component of most communities. NEVs provide an easy to maneuver, environment friendly, compact vehicle ideal for short trips on an existing roadway network. The NEV can be a fun alternative mode of transportation to reach nearby commercial and activity centers in the local area, and to visit neighbors. Some of the benefits of utilizing NEVs are listed below.

- NEVs are relatively inexpensive to own and operate.
- NEVs are particularly well suited to trip lengths of less than 10 miles.
- NEVs provide mobility for people who cannot drive an automobile, including some disabled drivers[1].
- NEVs have a great safety record; they have been used in California since 1991 with no reported fatalities.
- NEVs have an assortment of safety features including seatbelts, headlights, and bumpers.
- The emergence of NEV friendly communities allows home builders and community planners to customize new developments to accommodate NEVs. NEV Transportation Planning is consistent with the Smart Growth multimodal approach to transportation planning and minimizing land use.
- NEV usage provides for a more cohesive community due to their limited travel range, and encourages residents to support their local businesses.
- NEV lanes double as bicycle routes with proper design, thus expanding the network of bike trails.
- NEVs are zero-emission vehicles. Unlike typical high-speed vehicles, NEVs do not contribute to the air pollution caused by cold-starts.
- NEVs achieve an "energy equivalent" of at least 150 mpg (based upon 2002 California Energy Commission report).

[1] A valid drivers license is required.

- NEVs have the potential to run fossil fuel free by using solar or wind power to generate electricity.
- NEVs are ideal as a second vehicle, or for teenage drivers who need local inexpensive transportation to and from school and related activities, and may lessen the chances of teenage driving fatalities.

It is not difficult to envision a future which includes an expanded array of mobility options for residents to travel within their community. In some cities, the NEV can play a central role in reaching the community's transit nodes and to conveniently access other mobility extensions such as train stations and airports.

Ideal Applications

General Public

For many communities the automobile remains the dominant mode of travel, even though many car trips are less than one mile. NEVs provide a clean transportation option, particularly for short trips on low-speed and low-volume roads. NEVs can also provide an important mobility option for people who do not prefer, or are not able to walk, ride a bike, or drive a conventional automobile.

NEVs are ideally suited for local errands, such as trips to the store, to and from school, and to local financial and medical centers. The most common use for NEVs is for recreation such as golfing, club activities, visiting, dining, and trips to fitness centers.

Student Pickup - Elementary School - City of Lincoln, CA

Business, Government and Institutional

Photo courtesy of Columbia ParCar: www.parcar.com

Military bases, garrisons, and installations can use battery-electric vehicles for a variety of base transportation needs. NEVs are a type of Fleet Operations Vehicle that can help achieve the 20% fuel reduction directive required by Executive Order 13149 because they are electric and require no fuel.

Large industrial campuses such as city water and wastewater treatment facilities, cover many acres. The use of an NEV, which produces no tailpipe emissions, is ideal for transporting around sensitive areas, ponds, and even indoor warehouses.

University and large school campuses can use NEVs to address a variety of transport needs, such as security and on-campus goods transport, and as a general people mover.

Chapter 2 Setting

Transportation Environment

Within the Plan study area, auto travel is the dominant transportation mode. A robust roadway and freeway network is used to address travel related to work and personal trips throughout the region. The state highway system also accommodates substantial pass through traffic for goods movement and travel to neighboring counties. Commuter rail and fixed route bus travel is successful with expansion plans underway subject to funding availability.

Each jurisdiction in the study area has adopted bicycle and trail plans. The existing bike route network has been implemented over time and was carefully considered for shared use opportunities during development of this Plan.

Corona

Streets: Primarily constructed with few missing segments.
Transit: Two Metrolink stations, fixed route and express bus service through RTA and Corona Shuttle.
Bike/Trail: Extensive network of Class I and Class II existing and future bike routes.

Norco

Streets: Most of the system is comprised of existing low speed, residential/rural streets.
Transit: Fixed route bus service provided by RTA.
Bike/Trail: Extensive trail system designed for horses and comprised of unimproved shoulders and class I routes to enable safe horse travel.

Riverside

Streets: Primarily constructed with few missing segments.
Transit: Two existing Metrolink stations with future stations planned, fixed route and express bus service through RTA, City-run demand response service.
Bike/Trail: Extensive network of Class I and Class II existing and future bike routes.

Moreno Valley

Streets: Primarily constructed with few missing segments with future work planned in eastern part of city.
Transit: Fixed route bus service provided by RTA.
Bike/Trail: Extensive network of Class I and Class II existing and future bike routes.

Unincorporated Communities (March JPA, Home Gardens, Coronita, and El Cerrito)

Streets: Unincorporated islands have a combination of existing and future roads.
Transit: Fixed route bus service provided by RTA and Corona Shuttle. March JPA is exploring opportunities for future transit center/Metrolink station.
Bike/Trail: Bike/trail network in study area is focused upon regional travel and connections to major routes within incorporated boundaries.

Opportunities and Constraints

The purpose of the WRCOG 4-City NEV Transportation Plan is to create near term and long range transportation network plans, and scalable implementation strategies for deployment of NEVs in the cities of Corona, Norco, Riverside, and Moreno Valley. An Opportunities and Constraints Memorandum (O&C Memo) was drafted in February 2010 and is included as **Appendix A**. GIS datasets were compiled to begin the mapping and planning process. Utilizing these datasets, the O&C Memo served as a brief inventory and analysis of existing local and regional destinations - including population density, employment density, and places of interest; circulation – posted speed limits, bicycle, and transit plans; existing Plans; and summaries of opportunities and constraints in the Cities of Corona, Norco Riverside, and Moreno Valley (4-Cities). The O&C Memo, and all data gathered was used during discussions of goals and objectives at Oversight Committee and Working Group meetings.

The O&C Memo also included a section with a summary of other similar Alternative Transportation and NEV Transportation Plans around the country, such as the Cities of Lincoln, Rocklin, Palm Desert, and Rancho Mission Viejo in California, and the City of Peachtree City in Georgia.

Opportunities are conditions that support or enhance the development of NEV transportation within a city. These include, but are not limited to, roadway networks with posted speed limit of 35 mph and under; available right of way width to retrofit lanes or add Class II NEV/bike lanes especially on those streets with posted speed limits above 35 mph; proximity to activity centers such as shopping, medical facilities, schools, colleges, parks, and golf courses. A suggested list of site opportunities to build upon for the 4-Cities was provided in the O&C Memo.

Constraints are conditions that may hinder the functionality of an NEV route. These include, but are not limited to, higher speed roads (above 35 mph), rail and freeway crossings, insufficient right of way to retrofit streets with posted speed limits over 35 mph, and high volume/high speed roadways that make NEV travel unsafe. A suggested list of constraints that could be overcome or minimized was provided in the O&C Memo.

During the preliminary planning stages, the team identified specific constraints and opportunities that were relevant to each community. The following characteristics were used as general guidelines to identify constraints and opportunities along roads and highways:

Constraints:

- Major intersections
- Roads with speed limits over 35 mph
- Heavily traveled roads that are at or below 35 mph
- Narrow bridges
- Roads with steep inclines
- Services not available within a 15 mile radius, due to the vehicle's range

Opportunities:

- Roads with speeds posted at or less than 35 mph
- Services within a 15 mile radius
- Identification of feasible paths and routes to provide multiple connections to key destinations
- Potential for integration of NEV operations and facilities with established bicycle facilities
- Placement of signage and lane markings for use in the NEV route plan
- Connections with existing public transportation options

Legislative Guidance

Over the last decade there has been a growing concern regarding the effect greenhouse gases (GHG) have had on our climate and how these gasses, particularly CO2 may affect our future climate. As a result of these concerns, several actions have taken place including Executive Orders, Senate bills and Assembly bills, all of which include efforts to reduce GHG emissions through land use policies leading to fewer trips and reduced trip lengths, increased reliance on transit and promoting alternative modes of transportation. While none of the legislation specifically requires local jurisdictions to adopt policies, the legislation does require that regional GHG reduction targets be established and that local planning policies address the regionally established targets. An NEV Transportation Plan will assist local jurisdictions in meeting these goals.

It should also be noted that it is expected that federal transportation re-authorization legislation will include language modeled on California GHG legislation which may affect the ability of local jurisdictions to be eligible for future federal funding.

At the local level, a comprehensive, coordinated effort will result in more opportunity for funding, lessen overall costs and will provide a better program that meets the collective goals of the four participating cities in this Plan.

Planning and Policy Considerations

The Plan must consider a variety of planning and policy implications and solutions. It is the legislature's intent that development of the plan will explore and address transportation issues relevant to the community. Within the context of this Plan, the following topics were considered as they relate to the participating jurisdictions:

- Multi-model integration;
- Senior mobility;
- Economic development;
- Community involvement;
- Data collection and surveys;
- Long-range planning;
- Route selection;
- Signing and striping;
- Charging stations;
- Parking; and
- Circulation map.

Intra- and Inter-Jurisdictional Coordination

Establishing an intra- and inter-jurisdictional coordinated network is desirable to facilitate NEV use. The jurisdictions are working together to:

1. Coordinate / develop an initial plan.

2. Form a Technical Advisory Committee to make recommendations to respective councils.

3. Coordinate with local stakeholders and involve the public to:

    - Determine routes that provide the best connectivity between jurisdictions;
    - Determine if there are roads which are desirable to include in an NEV route that have overlapping or shared areas of authority.
    - Provide consistency in signing and striping between jurisdictions; and
    - Provide consistency in community design standards regarding location and design of charging stations

Long Range Planning

Issues related to air quality, GHG, transit, traffic congestion, and community design are important topics for the state as a whole, but in particular for cities and counties. Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006, was passed to implement air pollution reduction measures, and direct the State Air Resources Board to coordinate with state agencies and other stakeholders in implementing the bill's provisions requiring California to reduce GHG emissions to 1990 levels by 2020. Senate Bill (SB) 375 provides direction for guidelines on transportation planning, travel demand models, sustainable communities strategy, and environmental review. Local jurisdictions will be required to execute local planning efforts and prepare general plans with community design and transportation elements (AB 1358) that will fit into the Regional Transportation Plans (RTP) and the Metropolitan Transportation Plan (MTP). At the Federal level, Complete Streets design and Sustainable Communities Strategies language is being considered for addition to federal transportation guidelines to address GHG emissions, and will certainly affect future planning efforts at the local level.

Many cities and counties are migrating toward more compact development and smart neighborhood design features that have traditionally included examining the alternative modes of transportation that include walking, bicycling and transit. While these alternative modes help move communities toward improved air quality and reduced GHG, policies and design criteria that meets these goals and provides for mobility should be reviewed and strengthened to promote the use of non-auto modes, including NEVs.

AB 32

Governor Schwarzenegger set an aggressive goal of reducing climate change emissions within the State of California by signing Executive Order (EO) S-3-05, and the Climate Action Team (CAT) was formed. The State Legislature then passed Assembly Bill 32: California Global Warming Act of 2006; a comprehensive program of regulatory and market mechanisms to achieve real, quantifiable, cost-effective reductions of GHG. EO S-17-06 was then signed by the Governor directing state agencies to begin implementing AB 32 and recommendations from the CAT. Since then, many local and state agencies have adopted their own Climate Action Plans which outline strategies to meet the California Climate Change Emissions Reduction Targets. Programs designed to inform the public, and in particular, local and regional jurisdictions, of the benefits of incorporating alternative modes of transportation, and particularly NEVs into their transportation plans, will help to accomplish the goals set forth in AB 32.

NEV Transportation Plans provide a fun, alternative mode of transportation that takes people out of an automobile, and helps to reduce GHG emissions.

SB 375

Senate Bill 375 was passed in September 2008. It includes requirements for: transportation planning; travel demand models; Sustainable Communities Strategy (SCS); and environmental review. SB 375 states "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." Under SB 375, planning agencies are required to, among other things, "…prepare an alternative planning strategy to the SCS showing how the targets would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies. The bill would require the State Air Resources Board to review each metropolitan planning organization's SCS and alternative planning strategy to determine whether the strategy, if implemented, would achieve the greenhouse gas emission reduction targets."

Although trip reduction targets are not positively impacted by NEV use, they replace the automobile; therefore incorporating NEVs into community development planning will help meet goals of SCS, and reduce environmental impacts.

AB 1358

Assembly Bill 1358 was passed in September 2008. It includes requirements for: planning, circulation element, and transportation. "This bill would require, commencing January 1, 2011, that the legislative body of a city or county, upon any substantive revision of the circulation element of the general plan, modify the circulation element to plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways, defined to include motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation, in a manner that is suitable to the rural, suburban, or urban context of the general plan."

Encouraging NEV use through implementation of safe NEV routes provides a mobility choice to include in a City's circulation element that will help meet the goals of AB 1358 and develop a balanced, multimodal transportation network.

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Chapter 3 Process

Project Oversight

Preparation of the WRCOG 4-City NEV Transportation Plan was a cooperative effort between the consultant team, project sponsors, potential implementing agencies and interested stakeholders. With guidance from WRCOG, an Oversight Committee and stakeholder's Working Group were used to review and provide input regarding data collection, design consideration and route selection.

The Oversight Committee acted as a steering committee and was comprised of representatives from WRCOG, SCAG and each of the four cities. Membership included the following:

WRCOG:	Danielle Coats (Project Manager)
SCAG:	Peter Brandenburg (Contract Administrator)
Corona:	Bob Morin and Rafael Martinez
Norco:	Steve King
Riverside:	Steve Libring and Diane Jenkins
Moreno Valley:	Jon Terell and Eric Lewis

The Working Group was comprised of Oversight Committee members and select stakeholders from each jurisdiction as well as other relevant entities. Participants included:

County:	Lawrence Tai and Dennis Acuna
Riverside:	Sgt. Dwayne May and Brandi Becker
Moreno Valley:	Planning Commissioners Rick DeJong, Richard Dozier and George Salas
March JPA:	Dan Fairbanks and Brett Dawson
Caltrans:	Milele Robertson
RCTC:	Tanya Love and Henry Nickel
RTA:	Scott Richardson

Route development with Working Group

Reference Materials Review

The consultant team, project manager and project participants provide a wealth of experience in transportation and policy related issues. External reference materials, case studies and GIS datasets enhance the collective understanding study participants regarding neighborhood electric vehicles and the role they can play within the study area. An assortment of regulatory actions, articles, and technical information were evaluated and considered during the Plan development process. More than 70 documents and 20 GIS datasets were referenced for background information or direct use within the Plan. A list of these documents and datasets is included in Appendix B.

Public Input

NEVs are relatively new in Riverside County. Although the City of Riverside uses these vehicles extensively in the downtown area for community outreach and parking management, low speed vehicle operations are larger restricted to golf carts in certain communities. The public input process was largely devoted to education and outreach. Local print, television, and radio coverage provided broad exposure. Additionally, an online survey, three public open houses and participation in a panel discussion/presentation at WRCOG's 11th Annual Advancing the Choice alternative fuel vehicle expo provided additional opportunities to share information and gather feedback.

Online Survey

An online survey was developed to gather basic information related to respondents' trip characteristics, NEV knowledge, and preferred Plan features. The survey was also distributed at the open house events and is attached as Appendix C. The results were useful in helping to shape the final Plan.

- NEVs and golf carts have been seen in public use by half of respondents;
- Majority of respondents use traditional vehicles (excluding transit) for travel;
- 44% of all trips identified were less than 4 miles in length while nearly 60% were 7 miles or less; 65% of shopping trips were 4 miles or less;
- More than half of trips to school were 2 miles or less;
- Cost of vehicles and [long] trip distance were ranked high as concerns for potential NEV users to adopt;
- Cost of Electricity does not appear to be a significant limiting factor;
- Concern for safety and lack of available driving lanes should be addressed in Plan implementation to ensure success;
- Short trip length and low environmental impacts are most appealing NEV characteristics identified in the survey;
- Anticipated low operating cost identified by less than half of respondents as most appealing (suggests usage cost are not a primary concern); and
- Linkage preferences are highest for shopping centers, parks and schools followed by employment centers while transit access (Metrolink, bus depots and park & ride lots) rated relatively low – suggests non-work trips are viewed as most likely NEV trip types.

Public Open Houses

Open House events were held in Corona, Moreno Valley and Riverside. Each event included representatives from the host city as well as information boards that provided background, context and draft route maps. Hard copy versions of the online survey were distributed to attendees for additional input. Large reprints of the draft Backbone route map were used as a basis for one-on-one discussion and identification or potential revisions. Input received at the open houses proved useful. In particular, route and phasing suggestions gathered during the Riverside Open House directly resulted in revisions to the proposed network.

Receiving input during an open house

Route Selection Methodology

With their emphasis on short trips and speed capabilities limited to 25 mph, NEVs are generally restricted to streets with posted speed limits of 35 mph or less. These vehicles are quiet and lightweight compared to most cars and this raises legitimate safety questions. Operations on higher speed streets require special accommodations which adhere to strict design guidelines. A survey of speed limits within each jurisdiction was necessary to assess potential for successful and effective NEV routes. An inventory of key activity centers (employment, shopping, entertainment, recreation, etc.) was prepared to help identify key connection opportunities. Design guidelines and limitations must be considered as a critical component of the route selection process.

Design Guidelines

These guidelines are not exhaustive, and depending on the particular characteristics of a roadway, additional site-specific information and professional expertise may be considered. At a minimum, NEV routes on roadways with a posted speed greater than 35 mph are proposed on separate NEV/Bike lanes.

The following are suggested guidelines:

- NEV may operate on 2-lane roadways classified as minor arterial, minor and major collectors, and local roads. Use of NEV upon major arterial roadways is discouraged.
- NEVs are not recommended to operate on roadways with an average daily traffic volume greater than 24,000 vehicles.
- NEVs on roadways with medium or high levels of heavy vehicle (commercial, industrial, etc.) use may not be appropriate. Roadways with low volumes of heavy vehicle use (less than 5%) may be more desirable.
- NEVs operating on roadways with sustained grades of more than 5 percent and over 800 feet in length makes it difficult for NEVs to climb at normal speeds.
- NEVs are not recommended to operate in areas where the collision rate and collision frequency is greater than the critical collision rate.
- With the approval of the Department of Transportation (Caltrans), NEVs may be able to operate on state highways that pass through cities and towns (i.e. main streets) posted 35 mph or less.
- NEV turning movements at major intersections: Left turn movements, much like bicyclists are allowed to make, can be achieved (when safe to do so) by making the NEV user merge into the same left lane used by other motor vehicles.
- Universal signage: Recommend use of CTCDC Experimental Approved Signage (from Cities of Lincoln and Rocklin, California). Due to growing interest from several California communities, Caltrans is considering implementing statewide standards.
- For Roadways posted above 35mph, recommend 7’ minimum shared Bike/NEV lanes.
  Shared Lane Interaction: The speed differentials of bicycling (15 mph) and NEVs (25 mph maximum) are within a close range, therefore conflicts are minimal. For example, in the City of Lincoln, bikes and NEVs (over 800 NEVs) have shared facilities since 2006 with no reported incidents. Also note, Bike/NEV interaction is minimized by the underutilization of these facilities by both users.
- During NEV implementation stages, potential impacts to visually impaired community should be considered.

Roadway Classifications

The following guidelines provide general design recommendations for NEV and multimodal facilities at various service levels. These guidelines are not intended to be a substitute for site-specific design and engineering that would consider, among other details, local conditions, development requirements, and safety considerations. These guidelines are to be used in conjunction with local improvement standards and procedures.

Class I, II, and III Facilities

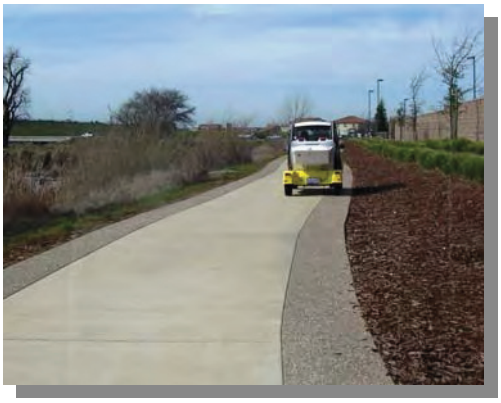
Multimodal facilities have various design specifications to consider. Classifications for NEV facilities were developed in a similar fashion to bicycle route facilities. Class I NEV routes provide a completely separate right-of-way for the exclusive use of NEVs, pedestrians and bicycles with cross-flow minimized. Class II NEV routes are designated as a separate striped lane adjacent to traffic. Class III NEV routes provide for shared use with automobile traffic on streets with a posted speed limit of 35 mph or less. Residential streets are generally Class III NEV routes. See **Exhibit 3-1** for cross section examples and summary of descriptions.

When choosing the facility classification, the design objectives should always be kept in mind to develop the best possible connections between residential neighborhoods, civic center destinations, parks, educational facilities, shopping and recreational facilities.

Class I Facilities

Class I NEV routes provide a completely separate right-of-way for the exclusive use of NEVs Shared use with pedestrians and bicycles is typical due to limited right of way availability. Off-street Class I NEV paths may consider such areas as open space corridors, utility easements including adjacent to railroads or other areas. This will minimize cross traffic conflicts with automobiles. Ideally, A Class I two-way path should consist of a 14-foot wide path, plus 2 foot shoulders, for an approximate 18 foot wide corridor. Several design options are presented in **Exhibit 3-2**.

Elements to consider when designing a Class I paved trail include, but are not limited to: safety, vegetation clearance, sign placement, trail shapes, sight distance, gradients, ramps, surfacing, grade crossings, and other geometric considerations.



NEV on Class I separate pathway
Lincoln, California

Class II Facilities

Class II NEV routes are designated as a separate, single-striped lane adjacent to traffic on streets with posted speed limits in excess of 35 mph. NEVs, bicycle, and pedestrian facilities will interface on local, residential and collector streets and therefore must be designated with appropriate signage alerting residents to the shared use function of the street and separated NEV/bike lanes.

Within the City of Lincoln, CA a width of 7-feet on Class II NEV facilities was appropriate on collector streets that meet the following design criteria:

- Collector streets should be capable of providing a high level of service to insure that adequate capacity exists for automobiles, bicyclists and NEVs. The City of Lincoln requires that two lane collector streets operate at level of service (LOS) C but this requirement is somewhat arbitrary and can vary depending on jurisdiction and location and type of facility. In the City of Lincoln, for two-lane collector streets, a target volume threshold of 24,000 vehicles per day was used.

NEV on Class II facility
Lincoln, California

Class III Facilities

Class III NEV routes provide for shared use with automobile traffic on roads with a posted speed limit of up to 35 mph.

Shared NEV routes are normally designated on residential streets and low-volume neighborhood roads, resort communities, ferry terminals, airports, universities, and other low-speed areas. The maximum allowed speed limit is 35 mph. Although NEVs are legally permitted to operate on these streets, jurisdictions may elect to limit operations by statute where community or safety concerns dictate.

NEV in Class III residential neighborhood.
Lincoln, California

Exhibit 3-1: NEV Cross-Sections

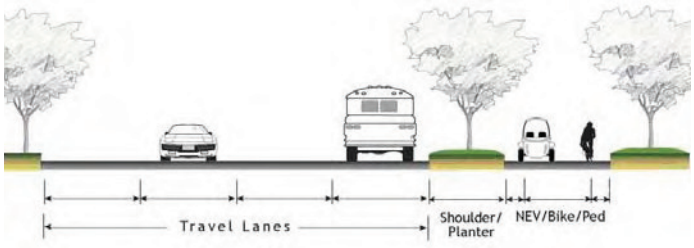
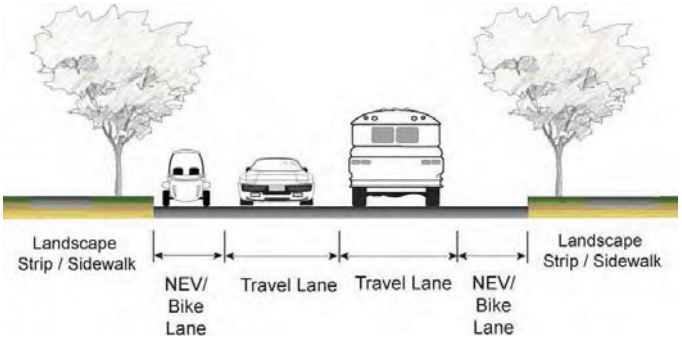
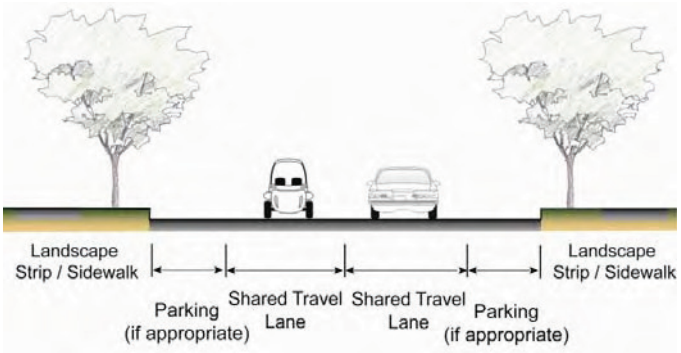
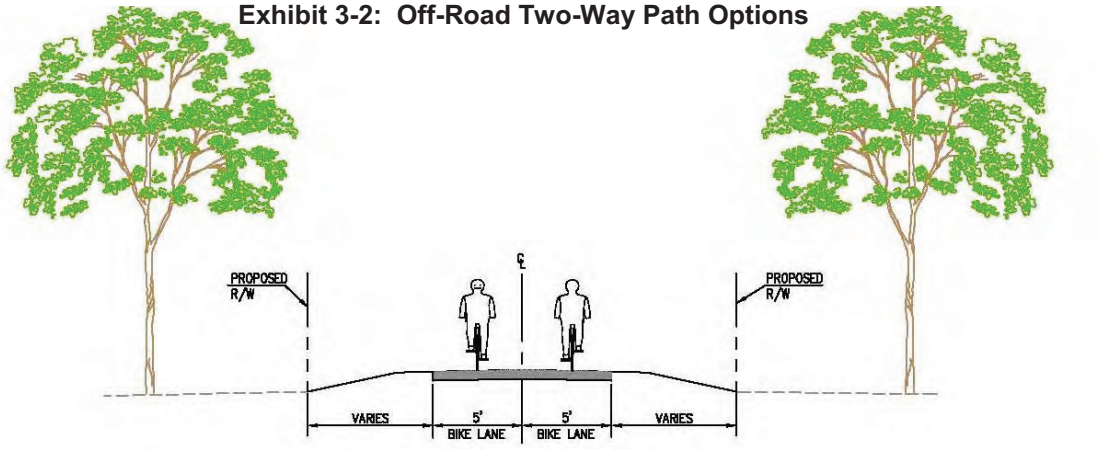
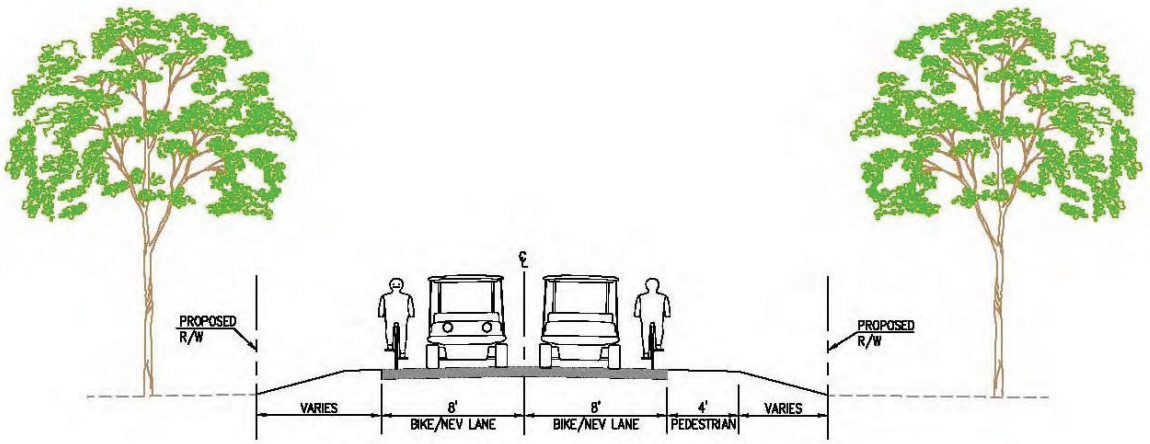
Classification	Description	Example Cross-Section
Class I	Completely separate pathway; adjacent to major roadways. NEVs can share a path with bicycles and pedestrians. See **Exhibit 3-2** for path options.	
Class II	Collector streets and minor arterials where speeds are typically greater than 35 mph. NEVs share lane with bicycles.	
Class III	Shared travel lane. Residential and low volume roads, low-speed commercial streets. Posted speed limits of up to 35 mph.	

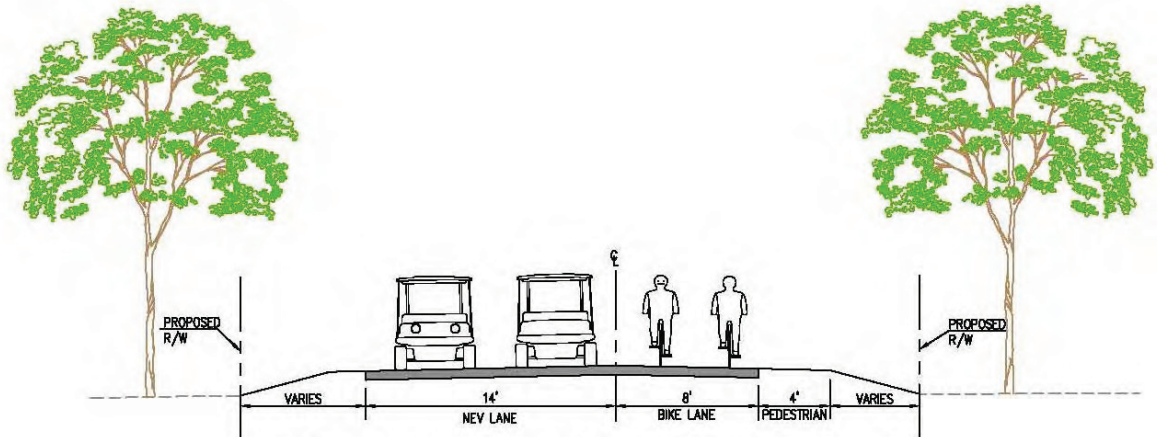
Exhibit 3-2: Off-Road Two-Way Path Options



OPTION A: OFF ROAD BIKE PATH



OPTION B: OFF ROAD SHARED BIKE/NEV PATH (CONSTRAINED R/W)



OPTION C: OFF ROAD BIKE/NEV PATH (UNCONSTRAINED R/W)

Modal Integration

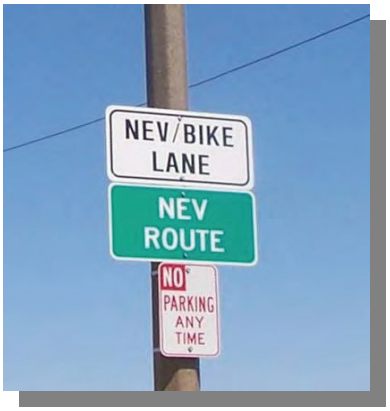
The traffic mix on a given roadway may limit route choices during design. A multimodal facility would be best served by restricting NEVs from truck routes, for example. This restriction will help lessen the vehicle conflicts between smaller slower modes and large heavy vehicles.

Multimodal Facilities

NEV routes may in some circumstances be utilized as bicycle lanes, thereby increasing the miles of bicycle lanes throughout a city. A separated multimodal facility would increase safety for various types of users.

NEV Route signs can be placed on local streets, which have been designated as NEV Routes. Signs may be placed at the far side of collector street intersections at 1/2 mile intervals on all continuous residential streets.

Combination NEV/Bike Lane signs can be placed on NEV lanes where a Class II bicycle lane is also provided. The sign should be placed at the far side of a collector street.



Combination Lane/Route Sign Example from Lincoln, CA

Experience in the City of Lincoln indicated that a minimum 7-foot lane is recommended to accommodate an NEV or bicycle passing movements and to provide a reasonable sense of safety adjacent to auto travel lanes where speeds are typically greater than 35 mph. Caution should be taken to properly stripe the lanes to avoid making lanes too wide so as to attract autos into it. For example, if the 7-foot NEV lane was combined with the 4-foot bicycle lane the result would be an 11-foot travel lane for both NEVs and bicycles. However, this lane width may invite automobiles to use the lane, thus encroaching on NEV and bicycle travel.

Multimodal Considerations

The Plan is designed to lessen potential conflicts between modes while maximizing the benefits from expanded choice in travel. The following items were considered as part of the development of the Plan:

- Location of transit stops and transfer stations;
- Potential parking at transit locations;
- NEV integration with bicycles on the same facility;
- NEV and bicycle parking at transfer locations; and
- Charging stations at multimodal transportation connection points.

System Upgrades

NEV Charging Stations

NEVs are easily charged, using a standard 20 amp 115 volt outlet. Locate charging stations in local and regional destinations including:

- Retail centers
- Commercial centers
- Medical facilities
- Educational facilities
- Neighborhood parks and recreation facilities

Existing light poles can be retrofitted and used as charging stations in most cases, however specially designed charging stations have been used successfully in other communities.

Parking lot designs can vary greatly, however recommendations for accommodating charging stations are as follows:

- For newly designed parking lots, stand-alone charging station pedestals as shown at right are recommended.
- Landscaping around charging stations should consider minimal or low growth plant varieties, so as to not obstruct access to the outlet.

NEV Charging Station

NEV Parking

NEV parking encourages residents to support their local businesses.

NEV Parking and Charging Station Signage

Adopting Standard Signage has many benefits. Lincoln discovered that utilizing a uniform design type, for both parking and charging stations, would assist NEV users in locating them. It is also beneficial to locate parking and charging stations in close proximity to the store entrance.

Examples of possible parking and charging station Standards are included in **Appendix D**.

NEV Parking Signage and Pavement Marking

At-Grade Crossings

The design of NEV facilities or guidelines for crossing intersections is accomplished in a manner that is consistent with the normal rules of the road. An NEV is allowed to cross a roadway with a speed limit in excess of 35 mph if the crossing begins and ends on roadways with a speed limit of 35 mph or less and occurs at an intersection of approximately 90 degrees. An NEV is not allowed to traverse an uncontrolled intersection with any State highway unless that intersection has been approved and authorized by the agency having primary traffic enforcement responsibilities for that crossing.

Pavement Markings

Combination NEV/Bike Lane Pavement Marking (pictured below) is designed to be placed on NEV lanes where a Class II bicycle lane is also provided. NEV pavement markings are designed to be placed on local streets, which have been designated as NEV Routes.

NEV/Bike Lane Pavement Marking and Striping in Lincoln, CA

NEV Lane Striping used is a 6-inch white line designed to be placed between the traffic lane and the NEV/Bike lane.

NEVs require less physical space than traditional automobiles, so accommodations can be made to existing roadways without much cost, simply by restriping and adding signage where appropriate. The preparation of construction documents can be as simple as signing and striping plans, to more complex plans if the NEV facility requires the construction of bridges, retaining walls, or acquiring right-of-way.

Other Signage

"NEVs prohibited beyond this point" sign was used in the City of Lincoln, as appropriate, to designate roadway sections where NEV travel was prohibited.

For example, NEV travel was prohibited on roadways with posted speeds above 35mph that were not part of the NEV Transportation Plan and/or did not have separate NEV lanes.

Pictorial Signs

Within the U.S., Federal guidelines and procedures for the design and posting of pictorial signs must be followed. As NEVs are a relatively new form of transportation, there are no federally approved pictorial standards for NEVs

NEV Development and Retrofit of Existing Areas

Opportunities to provide a multimodal circulation plan within established neighborhoods and communities will not require extensive construction efforts to retrofit existing facilities to accommodate NEV travel.

In most cases, designating safe routes for NEV travel can be accomplished by designating existing city streets with posted speeds up to 35 mph. Existing commercial centers can retrofit parking areas and provide charging stations at minimal costs. A few parking stalls can be restriped to accommodate NEV parking and charging stations installed as described in earlier sections of this document.

Maintenance

Jurisdictions will need to consider the maintenance costs of the NEV facilities in their operational budget. Facilities that are unmaintained can accumulate debris and provide an unsafe riding surface for the facility users. In addition, in time, the existing pavement will deteriorate and require repair. All NEV facilities will have common maintenance needs that may include, but not limited to:

- Regularly scheduled sweeping;
- Signs and pavement marking inspections performed on a regular basis;
- Drainage system inspections and debris removal; and
- Inspect landscaping and vegetation encroaching onto NEV travel areas.

Local Improvement Standards

Once an NEV Transportation Plan is adopted, consider including NEV signage, striping, pavement markings, parking, and charging recommendations into the local improvement standards and specification manuals. These standards will not only provide guidance for internal staff, but to commercial and retail developers who wish to incorporate this infrastructure into their projects.

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Chapter 4 Routes

This Plan proposes an effective network of NEV routes, however minor modifications to proposed routes are often made as the plan begins to be implemented. The Plan will continue to evolve once it is underway, so modifications to the Plan are anticipated and encouraged. Travel patterns are dynamic and affected by growth outside of the City, changing land use patterns, and changing travel behaviors.

Near Term and Long Range Considerations

An important feature of the Plan is identification of Near Term (Phase I) and Long Range Future Routes. Near Term facilities can be provided within the first 1-3 years of Plan adoption. These Phase I routes represent low speed connectors and shared NEV/bike lanes with little to no cost for capital improvements. Low speed connectors are streets that have posted speed limits of 35 mph or less that either provide direct connection to key destinations or link to NEV/bike lanes on higher speed routes. Shared NEV/bike lanes are proposed for higher speed routes in conjunction with existing Class II bike lanes. Restriping may be necessary where these bike lanes are less than 7 feet wide.

Long Range routes refer to time frame rather than distance. The routes are long term with implementation occurring over time. In most instances, future road widening or other operational improvements will be necessary. Local agency and regional bike plans were carefully considered to maximize opportunities to leverage future transportation investments effectively.

The resulting proposed Backbone Network provides a basic NEV system that can be modified or embellished upon as needed. Connections between jurisdictions are included where appropriate and recognize that travel is rarely restricted by city boundaries.

Route Descriptions

Each community is unique and their transportation needs should be considered within the appropriate context. Travel patterns within and between these communities is similarly affected by current and future land uses. The Plan takes a comprehensive look at NEV routes over a broad area and adopts a macro view. Individual jurisdictions will find the resulting routes useful but may elect to embellish upon the proposed network to address the needs and desires of specific neighborhoods. Opportunities and constraints were explored early in the route selection process and are included as **Appendix A** of this Plan. The following discussion highlights potential routes for consideration.

Corona

The City has extensive residential development, several commercial corridors, two Metrolink stations, major recreation facilities, and office/industrial land uses. Many streets in the City have posted speed limits of 35 mph or less and can legally host NEVs without further planning. However, there are a number of connections that cannot be made without the use of NEV lanes. The p roposed Backbone Network for Corona is shown on **Exhibit 4-1**. Potential NEV lanes are on the exhibit as "Blue" lines and are described below. Low speed connectors are shown on the exhibit as "Green" and are depicted for context and to illustrate the level of coverage attainable through the Plan.

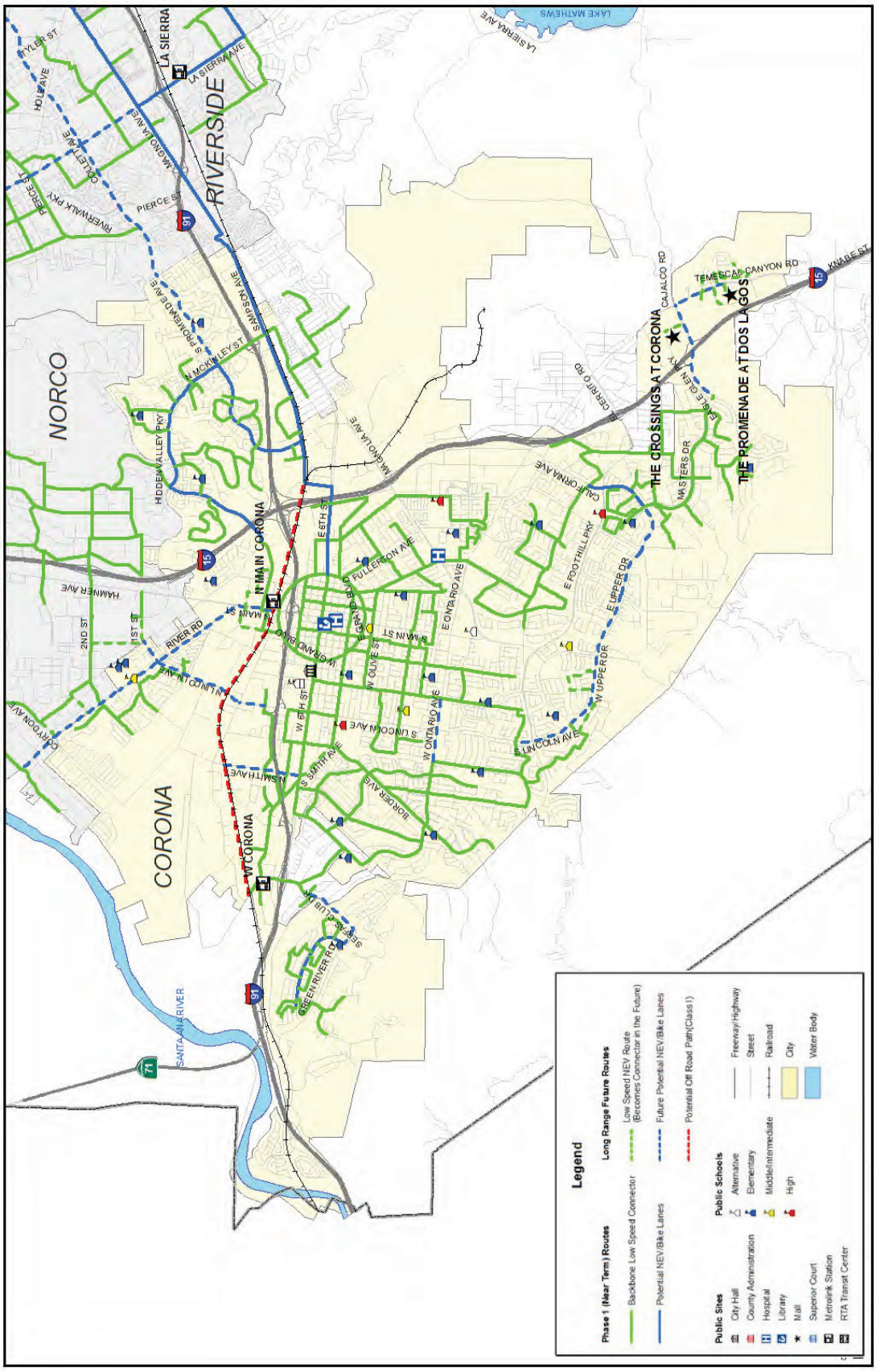
Near Term Phase I Routes

- Ridgeline Drive (Summit View to Via Corozon)
- California Avenue (Masters to Chase)
- Sixth Street (E. Grand to Radio)
- Radio Road (Sixth to Sampson)
- Sampson Avenue (Radio to Buchanan)
- Parkridge Avenue (Harrison to Hidden Valley)
- Hidden Valley Parkway (Parkridge to Promenade)
- Promenade Avenue (Sampson to Hidden Valley)

Long Range Future Routes (all Class II except BNSF as Class I)

- Ridgeline Drive (Via Corozon to Green River)
- Green River Road (Ridgeline to Serfas Club)
- Serfas Club Drive (Green River to Monterey Peninsula)
- Ontario Avenue (Oak to Buena Vista)
- Lincoln Avenue (Silver Creek to Foothill)
- Lincoln Avenue (Pomona to Parkridge)
- Upper Drive (Foothill to Lemon)
- California Avenue (Lemon to Masters)
- Eagle Glen Parkway (Masters to Bedford Canyon)
- Cajalco Road (Bedford Canyon to Temescal Canyon)
- Temescal Canyon (Cajalco to Pronio)
- Smith Avenue (Sixth to BNSF)
- Main Street (Grand to Railroad)
- River Road (Corydon to Main)
- Promenade Avenue (Hidden Valley to Buchanan)
- BNSF Railroad (Auto Center to Radio/Samson)

Exhibit 4-1: Backbone Network for Corona and Surrounding Area



Norco

The City has extensive residential development, primarily in a rural setting, with one major commercial corridor. Many streets in the City have posted speed limits of 35 mph or less and can legally host NEVs without further planning. However, connections to neighboring cities are limited without the use of NEV lanes at key locations. The proposed Backbone Network for Norco is shown on Exhibit 4-2. Potential NEV lanes are on the exhibit as "Blue" lines and are described below. Low speed connectors are shown on the exhibit as "Green" and are depicted for context and to illustrate the level of coverage attainable through the Plan.

Near Term Phase I Routes

- All Near Term Routes are low speed connectors on streets with posted speed limits of 35 mph or less

Long Range Future Routes (all Class II)

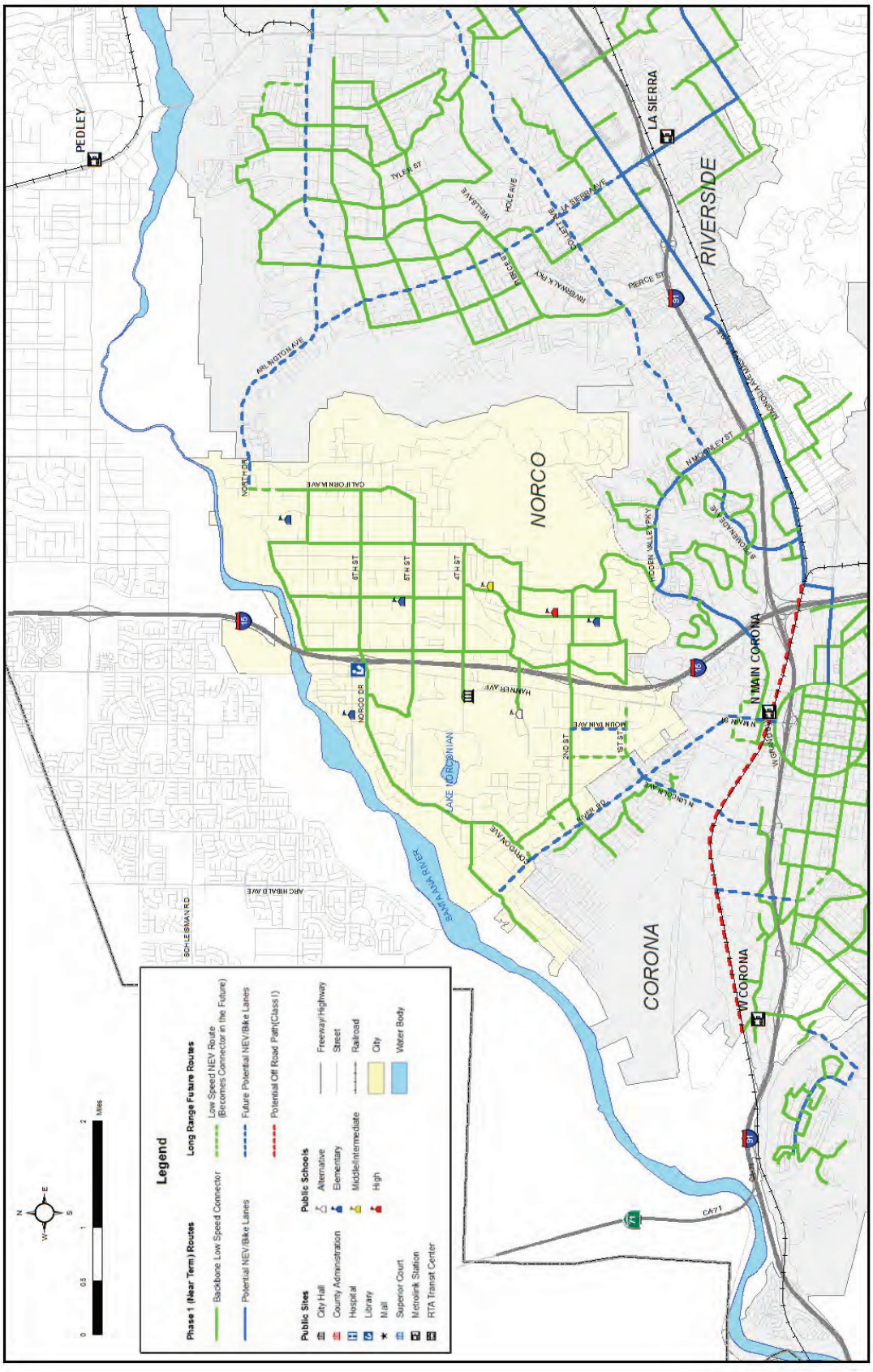
- Arlington Avenue (California to east city limit)
- Mountain Avenue (First to Second)
- River Road (Bluff to Corydon)

Unique Challenges and Opportunities

The City of Norco is an active equestrian community. Safe NEV operations in close proximity to horses will need to be explored prior to expansion of the proposed network within city limits. The Plan includes a number of low speed connectors where NEVs can legally operate today. Golf carts and all terrain vehicles are common in many of the areas. NEVs are quiet and capable of speeds in excess of common, unmodified golf carts. This differential in speed and the near stealth operations, from a sound perspective, should be an important feature of any public awareness campaign for potential users. NEVs are not inherently unsafe. Operators should be sensitive to the potential to "spook" horses and behave accordingly. Currently residents chose Norco for the lifestyle and are likely to be sensitive to the issue.

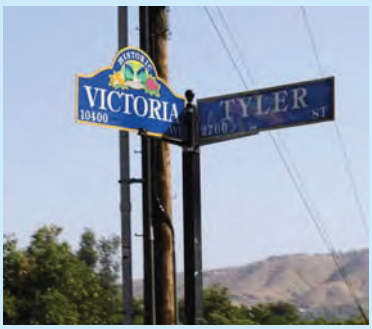
Hamner Avenue serves as the most visible "Main Street" for commercial activity with connections to neighboring jurisdictions. Future Plans should explore the possibility of a Class II NEV/bike lane on this backbone facility to extend the reach and enable more direct access to major retail, dining and recreational destinations within the city.

Exhibit 4-2: Backbone Network for Norco and Surrounding Area



Riverside

The City has a mature and extensive mix of residential, commercial and office/industrial land uses. There are two Metrolink stations, a downtown transit center, and a network of existing Class I and Class II bike lanes. Many streets in the City have posted speed limits of 35 mph or less and can legally host NEVs without further planning. However, connections to neighboring cities are limited without the use of NEV lanes at key locations. The proposed Backbone Network for Riverside is shown on Exhibit 4-3. Potential NEV lanes are on the exhibit as "Blue" lines and are described below. Low speed connectors are shown on the exhibit as "Green" and are depicted for context and to illustrate the level of coverage attainable through the Plan.



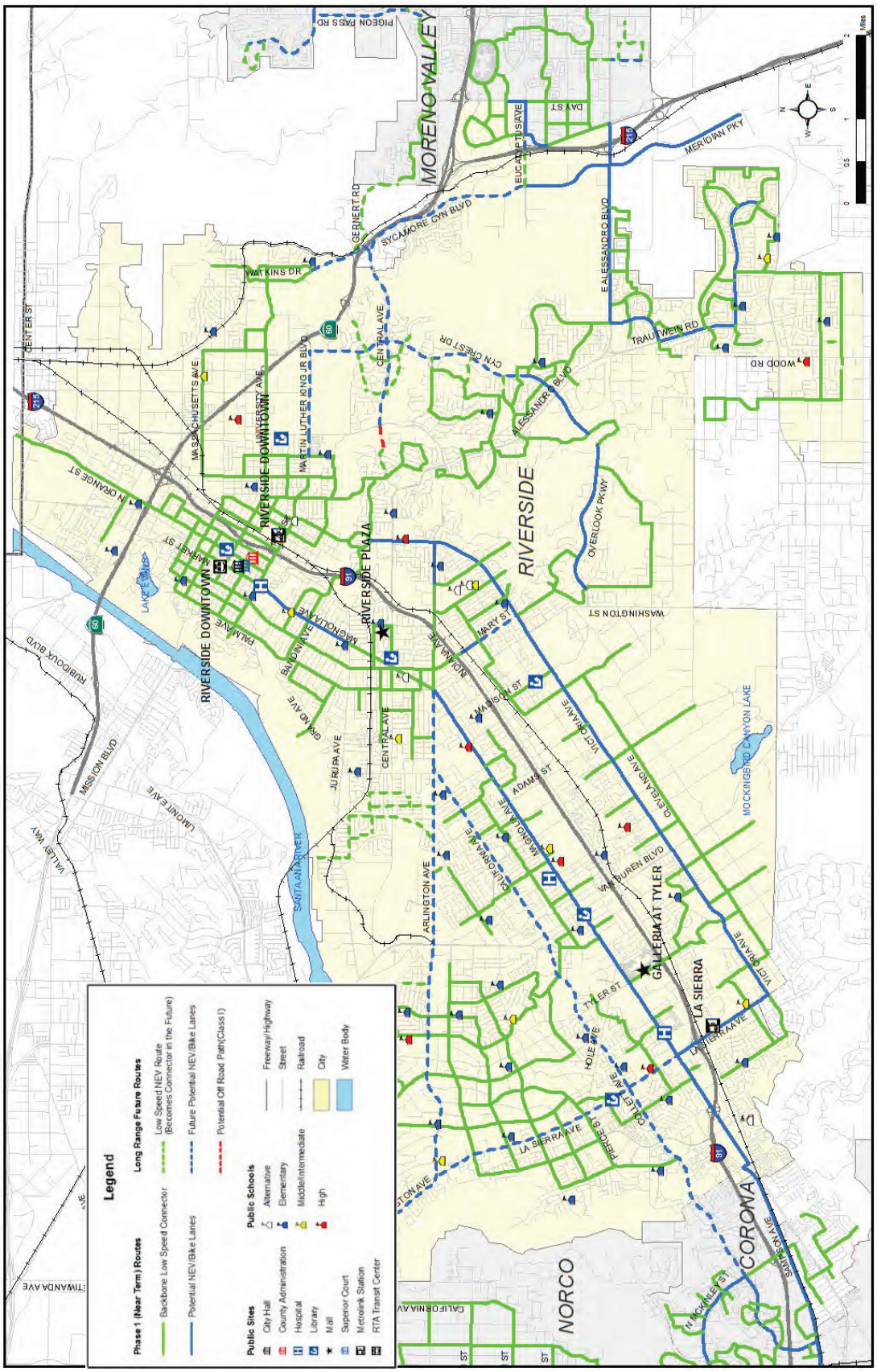
Near Term Phase I Routes (all Class II)

- Arlington Avenue (Horace to Victoria)
- Sampson Avenue (west city limit to Buchanan)
- Buchanan Avenue (Sampson to Magnolia)
- Magnolia Avenue (Buchanan to Arlington)
- Victoria Avenue (Las Sierra to Myrtle)
- La Sierra (Magnolia to Victoria)
- Mary Street (Indiana to Marguerita)
- Alessandro Boulevard (Mission Grove to Old I-215)
- Mission Grove Parkway (Alessandro to Trautwein)
- Trautwein Road (Mission Grove to Orange Terrace)
- Orange Terrace Parkway (Trautwein to Sandhill)
- Sycamore Canyon (Eucalyptus to Alessandro)
- Meridian Parkway (Alessandro to southern terminus):

Long Range Future Routes (all Class II except Central West as Class I)

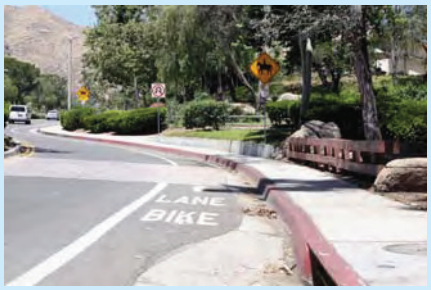
- Arlington Avenue (west city limit to Magnolia)
- La Sierra Avenue (Arlington to Magnolia)
- Collett Avenue (west city limit to Hole)
- California Avenue (Hole to Arlington)
- Magnolia Avenue (Jurupa to 14th)
- Mary Street (Marguerita to Victoria)
- Martin Luther King (Ottawa to Canyon Crest)
- Overlook Parkway (Muirfield to Crystal View Terrace)
- Overlook Parkway (Via Vista to Alessandro)
- Canyon Crest Drive (Alessandro to Martin Luther King)
- Central Avenue "West" (Fairview to Chicago)
- Central Avenue (Chicago to Sycamore Canyon)
- Watkins Drive (Mount Vernon to Central)
- Sycamore Canyon (Central to Eucalyptus)

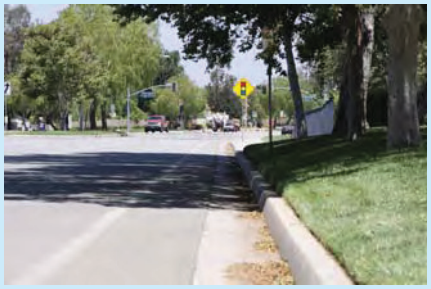
Exhibit 4-3: Backbone Network for Riverside and Surrounding Area



Moreno Valley

The City has an extensive mix of residential, commercial and office/industrial land uses. Future development opportunities are most prevalent in the eastern part of the City. There is a network of existing and planned Class I and Class II bike lanes. The street network is a typical grid with many roads having a posted speed limit greater than 35 mph. However, there are several key parallel roads at or below 35 mph that can serve as a basic NEV low speed connector network. The proposed Backbone Network for Moreno Valley is shown on Exhibit 4-4. Potential NEV lanes are on the exhibit as "Blue" lines and are described below. Low speed connectors are shown on the exhibit as "Green" and are depicted for context and to illustrate the level of coverage attainable through the Plan.





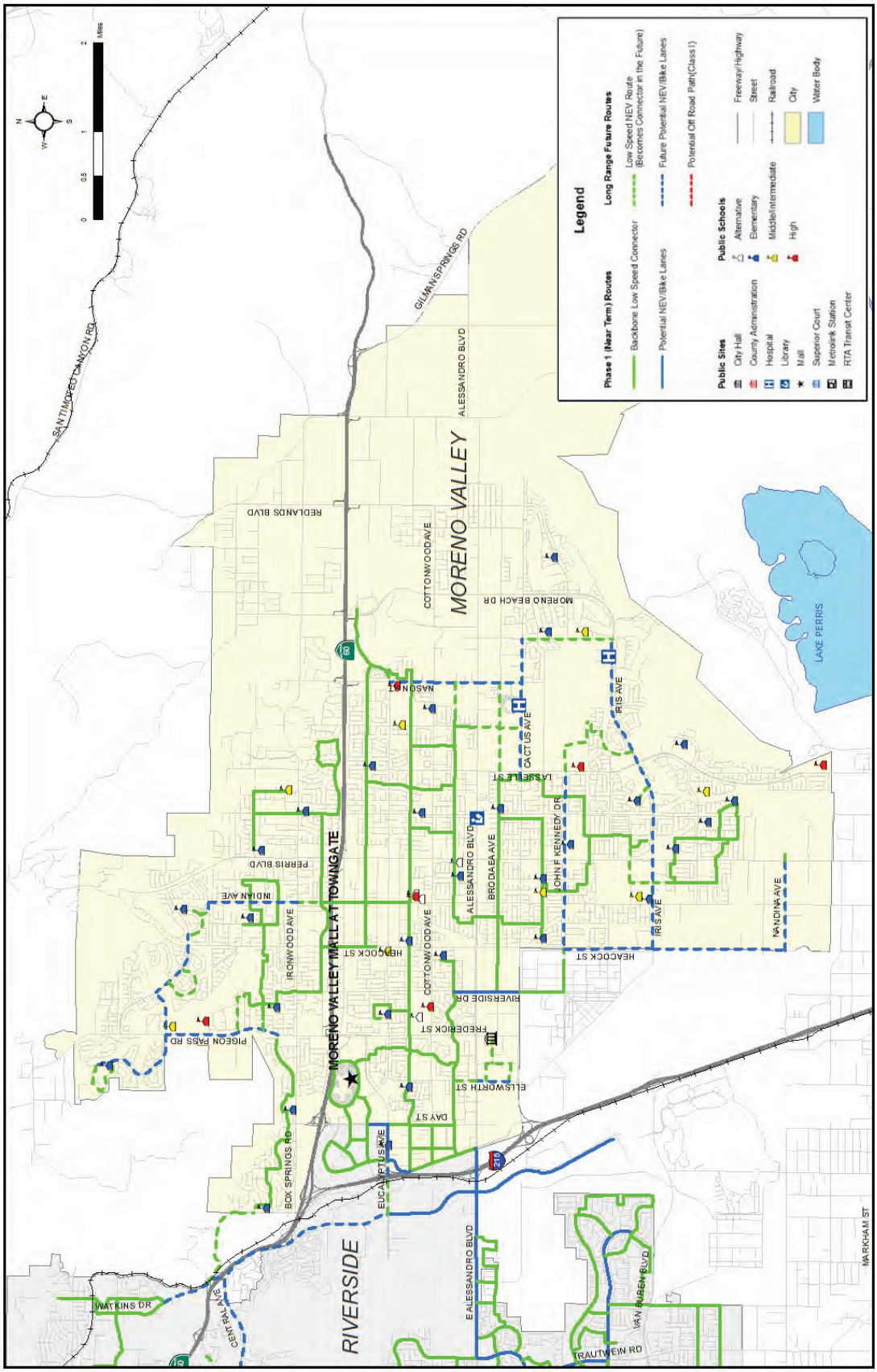
Near Term Phase I Routes (all Class II)

- Eucalyptus Avenue (Valley Springs to Day)
- Day Street (Gateway to Eucalyptus)
- Old 215 Frontage Road (Eucalyptus to Dracaea)
- Riverside Drive (Bay to Cactus)

Long Range Future Routes (all Class II)

- Hidden Springs Drive (Greenridge to Pigeon Pass)
- Old Lake Drive (Pigeon Pass to Sunnymead Ranch)
- Sunnymead Ranch Parkway (Old Lake to Canyon Vista)
- Pigeon Pass Road (Hidden Springs to Climbing Rose)
- Manzanita Avenue (Duckbill to Indian)
- Indian Street (Manzanita to Ironwood)
- Eucalyptus Avenue (I-215 to Valley Springs)
- Ellsworth Street (Alessandro to Golden Crest)
- John F Kennedy Drive (Heacock to Lasselle)
- Cactus Avenue (Sylvester to Oliver)
- Iris Avenue (Heacock to Oliver)
- Nandina Avenue (Heacock to Perris)
- Heacock Street (John F Kennedy to Nandina)
- Nason Street (Eucalyptus to Cactus)

Exhibit 4-4: Backbone Network for Moreno Valley and Surrounding Area



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Chapter 5 Implementation

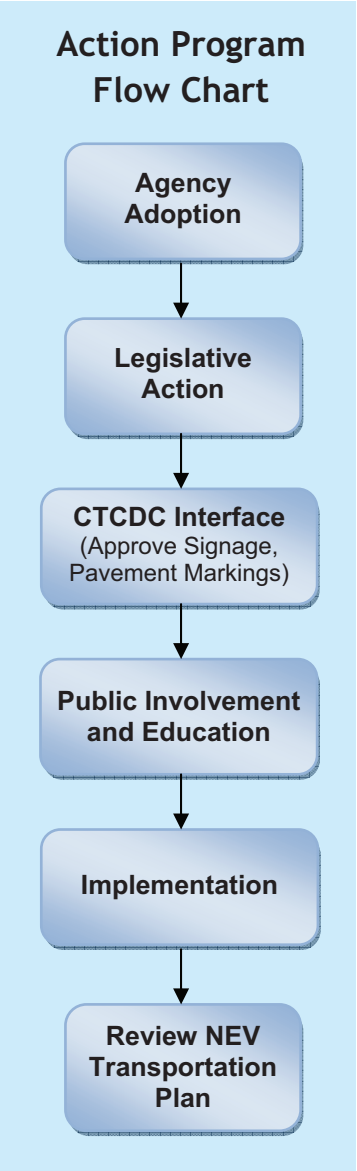
Overview

The WRCOG 4-City NEV Transportation Plan provides sufficient guidance for the cities of Corona, Norco, Riverside, and Moreno Valley to individually or collectively enable expanded use of NEVs in their respective communities through adoption of the Plan. The affected jurisdictions have participated in the planning process but are under no obligation to implement the Plan. The Plan can also serve as a template for other communities to consider NEVs in their transportation and lifestyle mix and development of their own local Plan.

Action Program

Implementation of the Plan is a multi-step process. This chapter outlines the following elements required for successful integration of NEVs:

- **Agency Adoption**. Local jurisdiction adopts WRCOG 4-City NEV Transportation Plan or their own locally prepared Plan for their respective community;
- **Legislative Action.** Legislative Bill (draft included as **Appendix E**) submitted to Legislature for approval, with an appropriate sponsor;
- **CTCDC Interface.** Signage, pavement markings approval obtained through CTCDC;
- **Public Involvement and Education.** Public Awareness Campaign outlining Plan, implementation schedule, education materials and policies;
- **Implementation.** Install any necessary street improvements (striping, signage, etc.) and opportunity charging stations as needed; and
- **Review Plan.** Commitment to revisit plan and assess effectiveness within an appropriate time frame (usually five years)



Agency Adoption

The WRCOG 4-City NEV Transportation Plan provides the basic information as a first step to broad NEV usage within the Plan area. Establishment of a Backbone Network is the most critical component of any Plan. This Plan was prepared with the intent, but not a requirement, that the participating jurisdictions support NEVs within their respective communities through adoption of this or a locally prepared Plan.

The Plan has been prepared consistent with standard practices. The recommended Backbone Network will function with individual City adoption but has the greatest effectiveness if all four jurisdictions embrace the Plan. Plan adoption is a multi-step process as outlined in the Action Program section above. Agency adoption consists of a formal Council action through Ordinance or Resolution as determined by local governance policies. Public input has been received through the process outlined in Chapter 3. An additional public hearing or workshop may be held if desired. The adopting agency's General Plan Circulation Element should be updated, when practical, to acknowledge NEVs and the planned Backbone Network.

Legislative Action

Template Legislation/Resolutions

Similar NEV legislative bills have been approved in the recent past, but each bill will have its own issues and concerns that need to be addressed or that may arise during the political process of passage of the bill. With the end of the two-year political session near, legislation to implement this plan should be introduced at the beginning of the next session. Consider the following:

- The legislation should include the 4-cities, Corona, Norco, Riverside and Moreno Valley.
- Contact local legislators and provide copies of this report and draft legislation. (see **Appendix E)**
- Determine which legislator will introduce the legislation.
- Legislation should state that this is a joint plan, but each jurisdiction may develop independently.
- Identify any potential opposition.
- Adoption of the plan for implementation by jurisdictions.

CTCDC Interface

If the jurisdictions implement an NEV transportation program and wish to establish uniform traffic control devices to inform pedestrians, bicyclists, and motorists of the presence of NEV traffic, then the California Traffic Control Devices Committee (CTCDC) approved experimental standards, as shown below are recommended.

Prior to implementation, approval from the CTCDC regarding usage of experimental signage and pavement markings within the 4-City area will be required.

Initial discussions with CTCDC staff have begun regarding the NEV Transportation Planning efforts. The CTCDC meets approximately quarterly to consult with local agencies and the public before adopting and approving rules and regulations prescribing uniform standards and specifications for all official traffic control devices in California.

In order to obtain approval from the CTCDC for these traffic control devices, a formal request and presentation must be made (concurrently or soon after NEV Transportation Plan Legislation for the 4-City Plan is obtained) before the CTCDC at one of their regular meetings. The next CTCDC meeting is scheduled for September 2, 2010 in Southern California. The deadline to submit an agenda item is July 12, 2010.

Public Involvement and Education

The development and implementation of a NEV Transportation Plan will be more successful if it garners community support. Public education and engagement are effective tools in developing this support.

Actions which can enhance community support of a NEV Transportation Plan include:

- Publish NEV route maps
- Engaging any current NEV users within the community
- Stakeholder group meetings between bicycle community, NEV users, and any other interested groups
- Holding community meetings to educate the public
- Inviting NEV manufacturers to provide test drives
- Developing online resources and brochures as educational tools which contain information on designated routes, parking and charging stations
- Involving local officials and law enforcement

Implementation

Each jurisdiction may have different options to fund the improvements necessary to implement a Plan. If Federal funds are used, prior to final design/implementation of a Plan, an environmental determination may be required by the administering agency. It has been our experience that for Phase I types of improvements that only require signage and striping, the project qualifies for a Programmatic Categorical Exclusion (PCE) under National Environmental Policy Act (NEPA), since it is usually evident that no significant environmental impacts could occur as a result of this type of road improvement. Typically, if the funds are administered through Caltrans, a Preliminary Environmental Study (PES) form with a description of the work proposed and an NEV Route Map is prepared and submitted to Caltrans for approval. Caltrans will in turn provide the jurisdiction with an approved PCE. Locally funded projects may require a different process based on each jurisdiction's internal procedures.

Review Plan

In this final step, the adopting jurisdiction(s) commit to revisit their Plan and assess the effectiveness of what's been implemented within an appropriate time frame (usually five years). A formal evaluation can be performed and information compiled in a NEV Transportation Plan Evaluation Report document distributed to governmental and local stakeholders for review. Included in the report would be various surveys (transportation analyses, and surveys of residents) to perform a formal evaluation of the effectiveness of the Plan elements, including their impact on traffic flows and safety.

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Study Appendices

Appendix A: Opportunities & Constraints Memorandum

Appendix B: List of Documents with Summaries

Appendix C: Stakeholder Survey

Appendix D: EXAMPLE NEV Parking and Charging Station Standards

Appendix E: Draft NEV Legislation for the 4-City NEV Transportation Plan

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Appendix A: Opportunities & Constraints Memorandum

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Stakeholder Presentation

WRCOG 4-City Neighborhood Electric Vehicle Plan

URBAN CROSSROADS

BEN|EN
TRUSTED ENGINEERING ADVISORS

CORONA

NORCO

CITY OF RIVERSIDE

MORENO VALLEY
WHERE DREAMS SOAR

COMPASS BLUEPRINT
building partnerships, serving communities.

WRCOG
WESTERN RIVERSIDE COUNCIL OF GOVERNMENTS

SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS
Resolving Regional Challenges

Remove obstacles, create incentives and regulate the safe operation of neighborhood electric vehicles (NEVs) within and between the cities of Corona, Moreno Valley, Norco and Riverside

Project Emphasis

- Federally-approved street-legal vehicle classification.
- Four-wheeled motor vehicles.
- Top speed at least 20 mph, no more than 25 mph.
- Well defined safety features.
- In California, they are **legal to drive on streets with speed limits 35 mph and under.**
- The operator must have a drivers license.
- May be operated in designated lanes on higher speed roadways, subject to legislative action.

Neighborhood Electric Vehicles

- Relatively inexpensive travel option (to own and operate) for students, seniors, parents, and workforce
- Particularly well suited to trip lengths of 10 miles or less.
- NEV's do not contribute to the air pollution caused by the cold-starts and operation of typical high speed autos.
- NEV's achieve an "energy equivalent" of 150 mpg (based upon 2002 California Energy Commission report).
- By using solar or wind power to generate the electricity for these vehicles, they have the potential to run fossil fuel free.

Benefits of NEVs

NEVs are a street legal, low cost, energy efficient, zero emissions mode of local travel that is here to stay – but impediments to widespread usage include the following:

- **Lack of interconnected low speed routes** – NEV plans are needed to overcome connection issues and identify safe routes.

- **Driver confusion** – NEV plans enable clear communication about which routes to take.

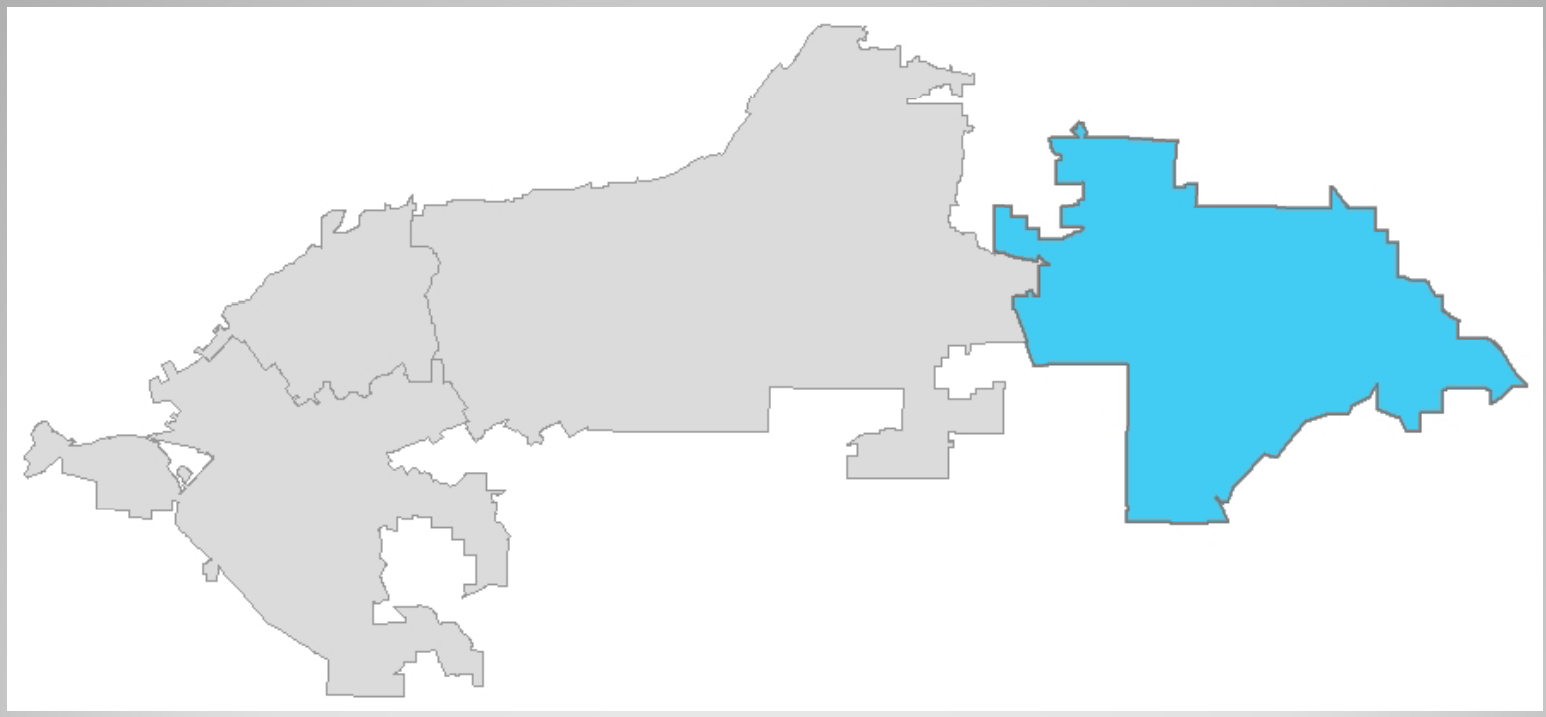
These problems can be solved in established cities and contiguous groups of cities by the implementation of integrated local NEV plans.

Challenges

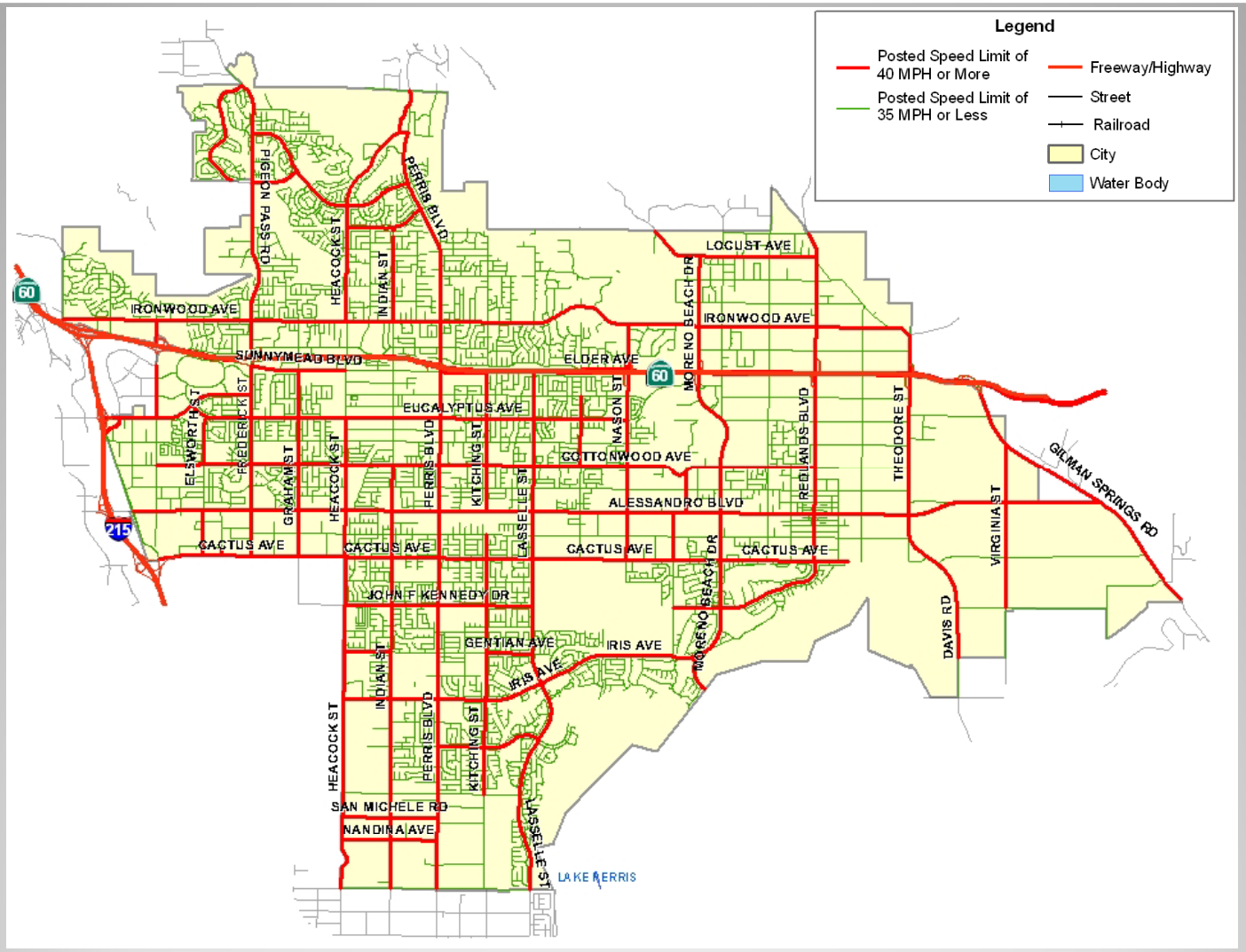
NEV/Bikeway, Class II (On Road, Striped Lanes)

Class II NEV routes provide for a separate striped lane adjacent to roadways with speed limits of 55 miles per hour or less.

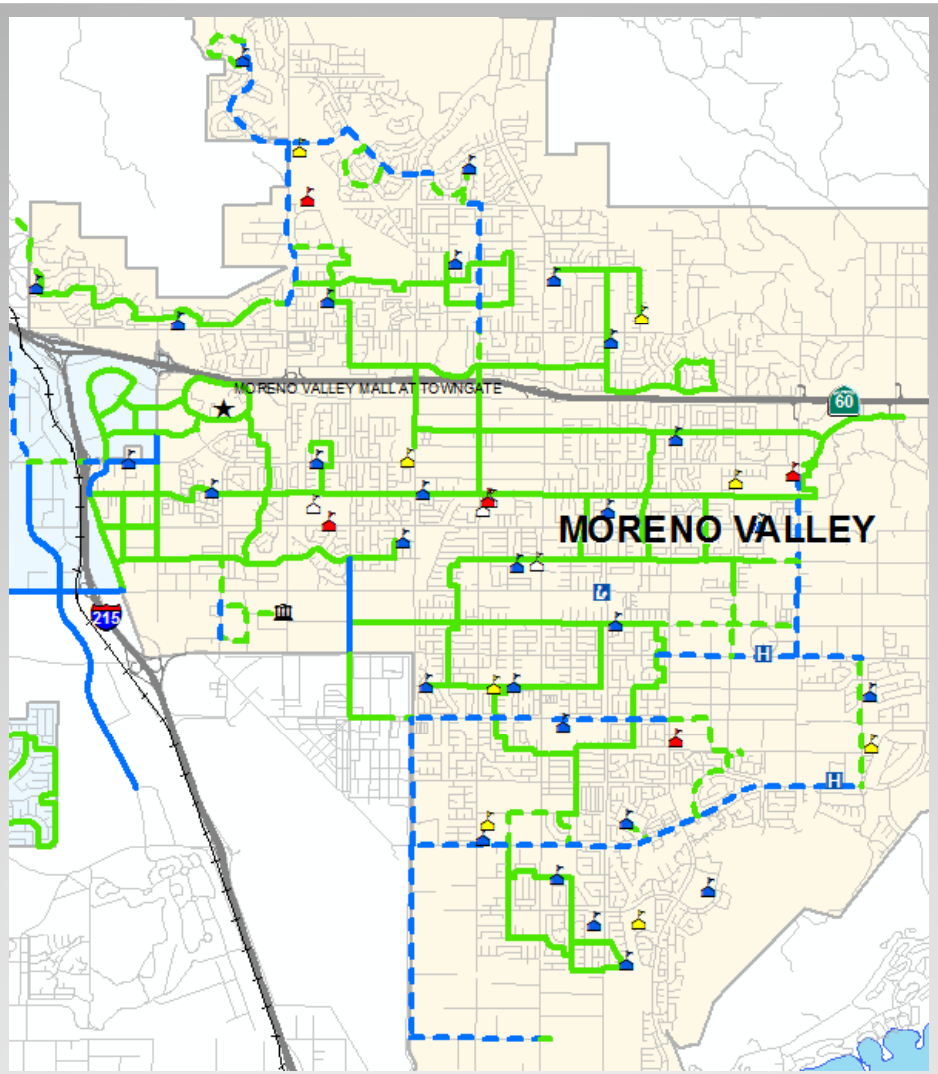
Near Term Focus on Class II Lanes



City of Moreno Valley



Existing Posted Speed Limit Issues



Draft NEV Plan

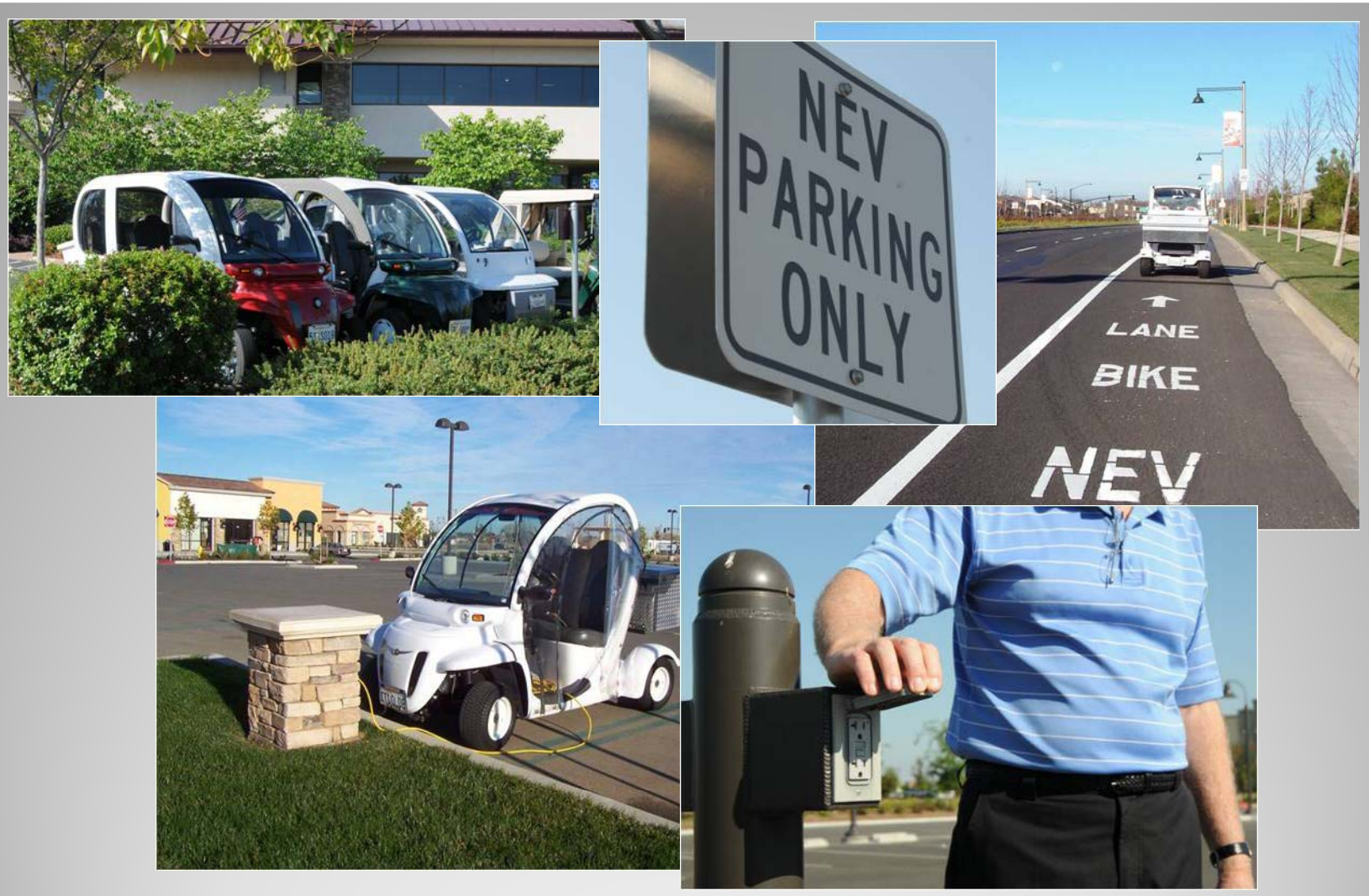
WRCOG 4-City Neighborhood Electric Vehicle Plan

URBAN CROSSROADS

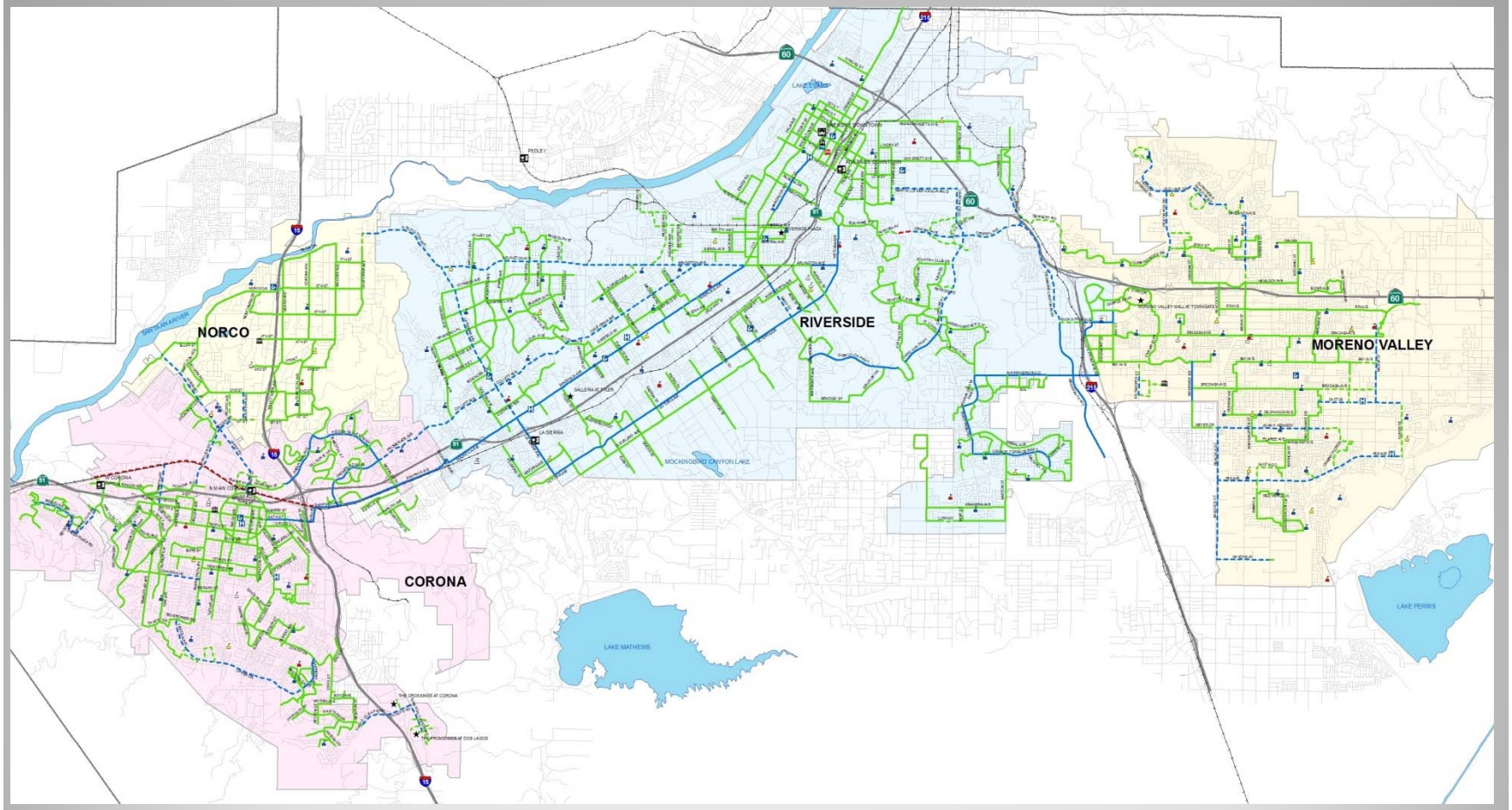
COMPASS BLUEPRINT

SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

WRCOG



Overcoming Connections Issues



Draft NEV Plan - Composite

WRCOG 4-City Neighborhood Electric Vehicle Plan

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SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

WRCOG

- Draft NEV route map has been developed
- NEV Plan Complete
  - ✓ Phasing
  - ✓ Amenity recommendations
  - ✓ Legal actions required to accommodate NEVs on certain roads
- Cities have jurisdiction over local NEV/bike lanes and will make independent determination regarding NEV Plan
- WRCOG exploring regional legislation to enable NEV usage

Project Status