## Revisions to Original (December 2006) Document

<table>
<thead>
<tr>
<th>Page</th>
<th>Description</th>
<th>Date</th>
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<tbody>
<tr>
<td>Cover &amp; Headers</td>
<td>Title Changed to “NEV Transportation and Sustainable Circulation Plan” (to be consistent with SB 956)</td>
<td>6/8/2017</td>
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<tr>
<td>Cover &amp; Headers</td>
<td>Title date changed from “JUNE 2017 UPDATE” to “JULY 2017 UPDATE”</td>
<td>7/18/2017</td>
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<tr>
<td>i</td>
<td>Added bullets describing June 2017 revisions to the “Updates” page</td>
<td>6/8/2017</td>
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<tr>
<td>i</td>
<td>Changed Updates title from “June 2017” to “July 2017” and added a “Note” section.</td>
<td>7/18/2017</td>
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<tr>
<td>7</td>
<td>Modified NEV Facility Concepts table and text to offer preferred and maximum speed limits for automobile traffic on or adjacent to each facility type.</td>
<td>6/8/2017</td>
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<tr>
<td>8</td>
<td>Added updated cross-sections based on posted speed.</td>
<td>7/18/2017</td>
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<tr>
<td>10</td>
<td>Added NEV safety discussion based on available data.</td>
<td>7/18/2017</td>
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<tr>
<td>15</td>
<td>Updated “Trails, Bikeways and Pathways” map to include NEV lanes on new sections of K Street and Cow Camp Road and show Andaza Street as a shared Bike and NEV lane rather than a bike only lane.</td>
<td>6/8/2017</td>
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<tr>
<td>Appendices</td>
<td>Added Appendix 3: Senate Bill No. 956 (County of Orange NEV Legislation)</td>
<td>6/8/2017</td>
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<tr>
<td>Appendices</td>
<td>Added Legislation for SB 290 &amp; SB 241 in Appendix 3</td>
<td>7/18/2017</td>
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<tr>
<td>Appendices</td>
<td>Removed Appendix 4: Letter of Support: Orange County Transportation Authority</td>
<td>7/18/2017</td>
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<tr>
<td>Appendices</td>
<td>Added Appendix 4: NEV Design at Intersections</td>
<td>7/18/2017</td>
</tr>
</tbody>
</table>
August 2017

- Title Changed to “NEV Transportation and Sustainable Circulation Plan” (to be consistent with SB 956)
- Modified NEV Facility Concepts table and text to offer preferred and maximum speed limits for automobile traffic on our adjacent to each facility type.
- Updated facility design guidelines to be consistent with the California Vehicle Code (CVC 21260) by allowing NEVs in shared travel lanes on roads with posted speeds up to 35 mph and allowing NEVs on roadways up to 55 mph when dedicated lanes are provided.
- Updated “Trails, Bikeways and Pathways” map to include NEV lanes on new sections of K Street and Cow Camp Road.
- Added Appendix 3: Senate Bill No. 956 (County of Orange NEV Legislation), Senate Bill No. 290, and Senate Bill No. 241.
- Added Appendix 4: NEV Design at Intersection

Note: A future update will consider additional mobility innovations including the Ranch Ride transit service, shared mobility hubs and other sustainable transportation options.
The Ranch Plan
Sustainable Circulation Plan

Summary of Bicycle and Conceptual Neighborhood Electrical Vehicle Components

The Resources and Development Management Department (RDMD) has reviewed the Ranch Plan Sustainable Circulation Plan ("Plan") dated December 8, 2006 and supports the efforts of Rancho Mission Viejo (RMV) relative to the evaluation and implementation of the transportation system concepts described in the Plan. RDMD's support is intended to promote the on-going design work by Rancho Mission Viejo and Ranch Plan consultants, and to facilitate discussions between RMV and County of Orange staff concerning the design and achievement of sustainable transportation strategies for the Ranch Plan. Exact locations and sizes of proposed Sustainable Circulation Plan facilities will be reviewed and formally approved by RDMD upon County of Orange review and approval of Section J of the proposed Ranch Plan Alternative Development Standards (Sustainable Development Standards), and upon completion of one of the following two options: (a) adoption of enabling legislation by the California State legislature similar to AB 2353, the Lincoln/Rocklin NEV legislation; or (b) identification of, and compliance with, such other legal strategies, programs and procedures that would allow implementation of the Plan (including, but not limited to, State approval of an Orange County demonstration project for Sustainable Circulation Plans and improvements.

Bryan J. Goeglein, Director
Resources & Development Management Department

18-14-06 Date
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Appendix 2: NEV’s in Other Communities
Appendix 3: Senate Bill No. 956 (County of Orange NEV Legislation), Senate Bill No. 290, and Senate Bill No. 241
Appendix 4: NEV Design at Intersections
INTRODUCTION

BACKGROUND

This report presents details on two modes that are components of a sustainable circulation system for the Ranch Plan:

1. a Neighborhood Electric Vehicle (NEV) program, and
2. a comprehensive bicycle infrastructure system, with a distinction between local bikeways and regional bikeways. While not covered in this report, the sustainable circulation system also incorporates a transit system to connect planning areas within the development and provide access to key off-site destinations. Additionally, the Ranch Plan incorporates both functional and recreational pedestrian facilities throughout the development.

The NEV plan was designed to serve the entire Ranch Plan; however, the details in this report are limited primarily to Planning Area 1 and 2 and connections to Planning Areas 3 and 4. This report presents infrastructure elements and supporting strategies that the developer desires to implement but does not represent a binding commitment. These plans are subject to change depending upon government regulations, market forces, consumer preferences, and other factors. Rancho Mission Viejo, LLC (RMV) will monitor the performance of each Planning Area and adjust their plans accordingly.

SETTING

The Ranch Plan’s optimum transportation system is influenced by several factors regarding its location and context:

- It was approved with land use densities that are generally considered “suburban” in nature, with pockets of higher density.
- The development is surrounded by suburban development to the north, west, and south. Open space borders the eastern portion of the project.
- A significant portion of the residential population will be age-qualified.
- The terrain is mostly “rolling”, with some steep areas (with grades up to 10%).
- The climate is mild and conducive to outdoor activity.

Some of these characteristics (age-qualified portion, mild climate, rolling terrain) present opportunities for modes such as walking, bicycling, and neighborhood electric vehicles. Other characteristics (suburban densities and no surrounding urban nodes) present a challenge in creating an effective transit system.

SYSTEMS APPROACH

An effective transportation system will recognize the great variety of users in a community and their differing needs. Some of the variables that influence the best type of transportation for a given user are:

- Purpose of their trip (work, shopping, school, recreation, etc.)
- Location of their destination (within the planning area, within the Ranch Plan area, outside the Ranch Plan area)
- Physical condition and interest in exercise as a side-benefit of travel
- Family context (part of a multi-purpose trip or stand-alone)

At build-out, the Ranch Plan will generate up to 183,300 trips every day, and each trip will be unique with respect to the above characteristics. Consequently, the transportation system for the Ranch Plan area needs to address all of these trip types and user profiles. The table below shows the magnitude of trip types that will be generated by the Ranch Plan and the potential for alternative mode usage.

Providing a variety of viable options allows for individuals to make market-based choices that are best for them and their circumstances. These effective choices will also contribute to sustainable development by allowing users to satisfy their functional travel needs while supporting their environmental, social, and recreational interests.

SPECIFIC TRANSPORTATION GOALS

The Ranch Plan Sustainability Plan identifies voluntary goals for a variety of infrastructure elements. The goal for transportation is as follows:

Develop a transportation system that allows people to drive less, employs a variety of modes, and supports practical choice in the near-term but encourages evolution and expansion in the long-term.

This goal is supported by 5 principles (actions):

1. Develop a land use plan that allows people to drive less.
2. Explore a variety of transportation modes that foster a healthy community.
3. Pursue traffic calming devices to enhance pedestrian, bicycle and NEV movement and reduce impacts of automobiles.
4. Explore strategies to utilize alternative fuels.
5. Educate and attract residents to alternative systems with early-on programs (e.g., NEV clubs)

<table>
<thead>
<tr>
<th>Trip Type</th>
<th>Potential for Alternative Mode Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home-Based Work (one end of trip at home, other at work)</td>
<td>NEV</td>
</tr>
<tr>
<td>Home-Based Other (one end of trip at home)</td>
<td>Internal</td>
</tr>
<tr>
<td>School Trips (one end of trip at school)</td>
<td>Internal</td>
</tr>
<tr>
<td>Other-Based Work (non-home trips originating or ending at work location)</td>
<td>Internal</td>
</tr>
<tr>
<td>Other-Based Other (trips other than home or work trips)</td>
<td>Internal</td>
</tr>
<tr>
<td>All Trips</td>
<td>Internal</td>
</tr>
</tbody>
</table>

Key: - High | - Significant | - Modest | - Low

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2 Bicycle System

The purpose of creating a comprehensive bicycle system is to support bicycling in and around the Ranch Plan area. This system should encourage bicycle use for recreation and as a practical form of transportation. The following are three goals of developing and implementing a bikeway system:

- Provide a viable transportation alternative to the automobile
- Improve the safety of bicyclists
- Increase recreational amenities for residents.

These goals can be achieved by developing a bicycle (and pedestrian) system that meets the needs of commuter and recreational users. This includes maximizing multi-modal connections to the transit system and providing bicycle parking facilities at multi-modal stations. Bicycle safety and increased recreational amenities can be achieved by effective bikeway design.

The Ranch Plan bicycle system will connect with the planned OCTA bicycle network. Additionally, the Ranch Plan bicycle system will help to further the policies established by the County in the OCTA Commuter Bikeways Strategic Plan (2009).

The Bikeway Plan component of the Orange County General Plan Transportation Element (2014) also discusses existing and proposed bikeways within the Ranch Plan area. Its policies support a bikeway system that is integrated with planned facilities in the Bikeway Plan as well as the OCTA Commuter Bikeways Strategic Plan.

Both the OCTA plan and the Orange County General Plan seek to establish a bikeway system that enhances the quality of life for residents and visitors.

An Effective Bicycle System

An effective bicycle system will meet the needs of its users. The bikeways will be used by a wide range of people – children riding to school, commuters riding to work, people exercising, racing, or touring. With a wide range of users it is difficult to accommodate every bicyclist and bicycle trip.

Comprehensiveness is an attribute of an effective bicycle system. This means the system needs to accommodate all types of users. For example, an effective system would have a bike path for the recreational rider to enjoy a leisure ride while also providing commuter bicyclists with on-street bikeways so that they may reach their destinations safely and efficiently.

Another closely related attribute is completeness. A complete system includes a network of bikeways that cover the entire project, with connections to adjacent communities. Bikeway should not have gaps or break between sections.

Complementary facilities, such as bicycle parking, are part of an effective bicycle system. Bicycle parking facilities should be placed in public places at destinations.

Bicycle Facility Types

Bikeway planning and design in California typically relies on the guidelines and design standards established by Caltrans as documented in "Chapter 1000: Bikeway Planning and Design" of the Highway Design Manual (5th Edition, California Department of Transportation, January 2001). Chapter 1000 follows standards developed by the American Association of State Highway and Transportation Officials (AASHTO) and the Federal Highway Administration (FHWA), and identifies specific design standards for various conditions and bikeway-to-roadway relationships. Chapter 1000 of the Orange County Highway Design Manual also provides a basis for design of bicycle facilities within the Ranch Plan area.

Caltrans and Orange County standards provide for three distinct types of bikeway facilities, as generally described below and shown on the accompanying figures.

- **Class I Bikeway (Bike Path)** provides a completely separate right-of-way and is designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized.

- **Class II Bikeway (Bike Lane)** provides a restricted right-of-way and is designated for the use of bicycles with a striped lane on a street or highway. Bicycle lanes are generally five feet wide. Vehicle parking and vehicle/pedestrian cross-flow are permitted.

- **Class III Bikeway (Bike Route)** provides for a right-of-way designated by signs or pavement markings for shared use with pedestrians or motor vehicles.
**Location of Facilities**

A bikeway network consists of routes that are designed to be the primary system for bicyclists traveling through the area. It is important to recognize that, by law, bicyclists are allowed on all streets and roads regardless of whether they are a part of the bikeway network. The bikeway network is a tool that focuses on implementation of bikeways in locations where they will provide the greatest community benefit. Streets or corridors selected for inclusion in the network should be targeted for specific improvements, such as the installation of bicycle lanes or wide curb lanes. The bikeway network is based on local jurisdictional designated bikeways, supplemented with community trails/facilities.

The Bicycle Framework Map on the next page shows the locations of Class I, II, and III bikeways in the Ranch Plan area. The figure also shows locations of bicycle parking facilities which should be located near public transportation stops and town centers.

Segways, should they become popular among Ranch Plan area residents, can use bicycle facilities as their primary routing. Segways are comparable to bicycles in size and speed (max speed of 12 MPH); consequently, they are appropriate for use on any bicycle lane or path. State law allows for their use in such environments unless otherwise restricted by local ordinance.

**Supporting Elements**

This section focuses on the elements that enhance and improve the safety and effectiveness of the bicycle network. Those elements include, but are not limited to, signing, striping, and parking.

**Signing and Pavement Markings**

A summary of Caltrans Highway Design Manual Chapter 1000 signing and pavement marking guidelines is provided in the table below. These signs and markings could either be integrated with NEV signage or installed separately.

<table>
<thead>
<tr>
<th>Facility</th>
<th>Pavement Marking</th>
<th>Signing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bike Path (Class I)</td>
<td>A white edge line and a yellow centerline are optional.</td>
<td>Use standard highway regulatory, warning, and guide signs. Special signs and white painted markings may also be used for specific needs.</td>
</tr>
<tr>
<td>Bike Lanes (Class II)</td>
<td>A 6-inch-wide, solid white line between the outside traffic lane and the parking stall/curb/shoulder is required. At an intersection where right turns are permitted, the line terminates 100 to 200 feet prior to the intersection, or is substituted by a dashed line marked up to or near the intersection. Bicycle lane markings shall be placed at the beginning of all bike lanes, on the far side of arterial intersections, and at other desired locations.</td>
<td>Bike lane signs should be placed at the beginning of all bike lanes, on the far side of arterial intersections, at major changes in direction, and at a maximum of one-half mile intervals. Arrow signs may help provide directional and destination guidance.</td>
</tr>
<tr>
<td>Bike Route (Class III)</td>
<td>No pavement marking is required. A 4-inch-wide, white edge stripe separating the traffic lanes from the shoulder may provide for safer shared use on rural highways and major arterials where there is no on-street parking. An optional bike stencil (shown below) may be placed on the roadway, to delineate an approximate path of travel for bicyclists and raise motorists awareness.</td>
<td>Bike route signs should be placed periodically along the route and at points where the route changes direction along with arrow signs.</td>
</tr>
</tbody>
</table>

**Bicycle Parking**

This section provides guidance on the provision and placement of bicycle parking facilities. Below are descriptions of two different types of parking facilities.

**Short-term Bicycle Parking – Bicycle Racks**

Bicycle Racks are low-cost devices that provide a location to secure a bicycle. Ideally, bicyclists can lock both their frame and wheels. The bicycle rack should be in a highly visible location secured to the ground, preferably within 50 feet of a main entrance to a building or facility. Short-term bicycle parking is commonly used for short trips, when cyclists are planning to leave their bicycles for a few hours.

Cost of bicycle racks range from approximately $50-$100 per bike.

**Long-term Bicycle Parking – Bicycle Lockers**

Bicycle Lockers are covered storage units that can be locked individually, providing secure parking for one bicycle. Bicycle Cages are secure areas with limited-access doors. Occasionally, they are attended. Each of these means is designed to provide bicyclists with a high level of security so that they feel comfortable leaving their bicycles for long periods of time. They are appropriate for employees of large buildings and at Transit Centers.

Bicycle theft is an important concern in all communities. Measures should be taken to reduce theft as it is a major deterrent to promoting bicycle activities. The cost of bicycle lockers can range from approximately $500-$750 per bike.

**Other Treatments**

Other treatments for accommodating bicycles may include:

- Bicycle detectors at signalized intersections
- Bicycle refuge islands for high-traffic roadways
- Bicycle sensitive roadway drainage
- Bicycle signal heads where separate bicycle phases are needed
- High visibility or colored bicycle lanes
3 NEIGHBORHOOD ELECTRIC VEHICLE SYSTEM

PURPOSE
One of the key sustainability elements of the Ranch Plan is the inclusion of a Neighborhood Electric Vehicle (NEV) system.

The NEV system will support travel by low-speed (up to 25 mph) electric vehicles primarily within planning areas but also to some extent travel between planning areas and potentially external destinations.

DEFINITION
Section 385.5 of the California Vehicle Code (CVC) defines a Low Speed Vehicle (LSV) as a "motor vehicle, other than a motor truck, having four wheels on the ground and an unladen weight of 1,800 pounds or less, that is capable of propelling itself at a minimum speed of 20 miles per hour and a maximum speed of 25 miles per hour, on a paved level surface."

Note: Because only electric powered LSVs are sold in California, all LSVs in California are also referred to as "Neighborhood Electric Vehicles."

- CVC Section 21260 (a): LSVs cannot be operated on any roadway with a speed limit in excess of 35 miles per hour, except in areas where a neighborhood electric vehicle transportation plan has been adopted (see AB 2353 & SB 956 below).
- CVC Section 21260 (l): LSVs may cross a roadway with a speed limit in excess of 35 miles per hour if the crossing begins and ends on a roadway with a speed limit of 35 miles per hour or less and occurs at an intersection of approximately 90 degrees.
- CVC Section 21260 (b)(2): LSVs can only cross a state highway with the approval of the agency having primary traffic enforcement responsibilities.
- CVC Section 21266 (b): Local law enforcement or the CHP may prohibit the operation of LSVs on any roadway under its jurisdiction in the interest of public safety. Signs must be erected giving notice that LSVs are prohibited.
- Drivers of LSVs must hold a valid California Driver License.
- LSVs must be registered and licensed with DMV.
- Assembly Bill No. 2353 was enacted in September 2004 to allow specified cities to develop "Neighborhood Electric Vehicle Plans" so that the NEV’s could operate on public streets with speed limits greater than 35 miles per hour. NEV’s (or LSVs) operated on streets with speed limits greater than 35 mph must be operated in their own striped lane separate from general traffic.
- Cities that are interested in developing NEV plans allowing NEV’s to operate on streets with greater than 35 miles per hour limits, must have legislative approval. In Oct 2007, SB 956 became law, which authorized RMV to prepare an NEV plan, consistent with AB 2353. One of the requirements of this legislation is to prepare a performance report for the legislature. RMV has asked for, and received, an extension of the requirement to file this report.

Key Considerations for NEV’s

The NEV will be a valued local transportation component of the Ranch Plan. It will offer residents the ability to circulate the community without having to start an internal combustion powered automobile engine. The NEV will be an enjoyable mode to reach nearby commercial and activity centers in the Ranch Plan area. The age-qualified portion of the Ranch Plan area population will particularly benefit from a variety of available travel options. In the future, there will be an expanded array of mobility options for residents to travel beyond the community. The NEV will play a central role in reaching the community’s Transportation Center and to conveniently access these mobility extensions.

The following section discusses the physical characteristics of NEV’s including:
- Width
- Speed
- Body Type
- Range/Charging Characteristics

STATE LEGISLATION
The Ranch Plan’s NEV system has been developed in part by following examples of other communities that have established NEV programs, this includes State guidance for the following items:
- NEV Facility Concepts – As previously described, NEV’s are not currently allowed on roadways with speeds greater than 35 mph. Special State legislation is required to provide NEV facilities on roadways with speeds greater than 35 mph. This was granted via SB 956 (2007) and adoption of this plan will allow NEV’s to operate on higher speed roadways assuming specific roadway design requirements are met. ...
- NEV Roadway Signage – All roadway signs posted in California should meet the guidelines of the State’s Manual on Uniform Traffic Control Devices (California Department of Transportation, 2014). NEV-specific signage, as shown in the Alternative Design Standards, is not included in the in the State’s traffic control devices manual. SB 956 authorized the creation of these unique signs for this purpose as reflected in the ADS.
- NEV Roadway Striping – Similar to signage, roadway striping should meet the State’s guidelines. Currently the State does not have guidelines for NEV roadway striping. SB 956 authorized the creation of unique striping concepts for this purpose as reflected in the ADS.

[Image]
VEHICLE SPECIFICATIONS

NEV Dimensions

A typical golf cart is 47 inches wide. By comparison, the commonly-found NEV’s range in width from 51 inches (Columbia) to 59 inches (Zenn). As the NEV infrastructure (lanes and parking) is being designed to accommodate the current range of NEV’s, it is appropriate to limit the width of future NEV’s that will use this infrastructure. The preferred limit on vehicle width is 55 inches, with an absolute maximum of 60 inches. The Master Homeowners Association will be responsible for communicating, to residents and employers, the acceptable vehicle types within the community. The Master HOA may also conduct annual inspections of vehicles to be sure they have the minimum required safety equipment) for certification within the community.

NEV Speeds

On-Street

The NEV travels at a top speed of 25 mph. While there may be interest in allowing golf carts, that travel between 12 and 18 miles per hour, to be included in the Ranch Plan NEV Plan, this would raise concerns for on-street usage. When a NEV travels at this speed, it will not hold up other traffic in shared-lane conditions (25 mph streets). If it travels slower, it may encourage inappropriate passing by vehicles from the rear that could disrupt neighborhood safety. There are several models of NEV today that travel at 25 mph and should offer a reasonable variety to Ranch Plan area residents.

Off-Street

It may be appropriate to limit the speed of NEV’s on certain facilities within the Ranch Plan area. Circumstances that might warrant a speed limit below 25 mph include:

- Areas where an NEV pathway crosses another path
- In areas with a lot of pedestrian or automobile activity (such as near retail or community centers)
- Adjacent to a regional trail (such as Section CC on Page 11)
- Along a heavily used local (non-regional) off-street facility

In the above circumstances, it may be appropriate to limit speeds to 10, 15, or 20 mph.

NEV Body Type

There is a growing range of NEV types becoming commercially available. The range is from open body golf-cart style to more automobile-like versions. The automobile style poses a concern for RMV in that the sealed cabins remove much of the “driving porch” feel of carts and NEV’s, which can reduce driver awareness. It is anticipated the more open body style NEV’s will offer more harmonious integration with pedestrians and cyclists. Pedestrians can see more of the approaching person / NEV driver and can continue to see more of the natural surroundings.

NEV Range / Charging

The modern NEV can travel 30 miles between charges. They plug into any 110V outlet, in a garage, or at an outlet at a neighborhood commercial center. Any NEV parking site that would have NEV’s parked for several hours would likely benefit from available charging infrastructure. Visitors driving their NEV to a neighbor’s house for an afternoon party would enjoy having an external electric outlet to charge from as well.

There are also opportunities to utilize solar photovoltaically-integrated parking shade structures or home systems to charge NEV’s. Structures could be located at destinations where NEV’s park during the day (opportunity charging) increasing the vehicle’s range and yet not impacting daytime peak loads on the grid. These types of systems are described later in this section.
<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Dimensions H x W x L (in.)</th>
<th># of Seats</th>
<th>Weight (lbs.)</th>
<th>Top Speed</th>
<th>Approximate Cost</th>
<th>Suggested for Ranch Plan</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Golf Cart</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Yamaha Drive</td>
<td>-- x 47.2 x 94.3</td>
<td>2</td>
<td>700 (w/o batteries)</td>
<td>15 mph</td>
<td>$8,500</td>
<td>Standard Golf Car</td>
<td></td>
</tr>
<tr>
<td>B. EZ-GO Freedom</td>
<td>-- x 47.0 x 94.5</td>
<td>2</td>
<td>635 (w/o batteries)</td>
<td>17.5-19.5 mph</td>
<td>$7,600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Columbia Eagle</td>
<td>-- x 45 x 98</td>
<td>2</td>
<td>750 (w/o batteries)</td>
<td>19 mph</td>
<td>$11,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Yamaha Desert Classic</td>
<td>-- x 47.2 x 97</td>
<td>2</td>
<td>NA</td>
<td>18 mph</td>
<td>$11,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NEV</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. GEM E2</td>
<td>70 x 55 x 99</td>
<td>2</td>
<td>1,145</td>
<td>25 mph</td>
<td>$8,000</td>
<td>Most popular NEV currently</td>
<td>X</td>
</tr>
<tr>
<td>F. GEM E4</td>
<td>70 x 55 x 128</td>
<td>4</td>
<td>1290</td>
<td>25 mph</td>
<td>$11,000</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>G. Columbia Summit 2</td>
<td>72 x 51 x 99</td>
<td>2</td>
<td>1475</td>
<td>25 mph</td>
<td>$10,000</td>
<td>Credible golf cart based NEV</td>
<td>X</td>
</tr>
<tr>
<td>H. Columbia Summit 4</td>
<td>72 x 51 x 130</td>
<td>4</td>
<td>1800</td>
<td>25 mph</td>
<td>$14,000</td>
<td>Credible golf cart based NEV</td>
<td>X</td>
</tr>
<tr>
<td>I. Hummer H3</td>
<td>55 x 51 x 124</td>
<td>2 / 4</td>
<td>541 (w/o batteries)</td>
<td>19 mph</td>
<td>$11,500</td>
<td>New to market / note lower top speed</td>
<td></td>
</tr>
<tr>
<td>J. Zenn</td>
<td>56 x 58.8 x 109/120</td>
<td>2 / 4</td>
<td>1200</td>
<td>25 mph</td>
<td>$7,200</td>
<td>See note Automotive look, not compatible with low-speed vehicle environment</td>
<td></td>
</tr>
<tr>
<td><strong>Additional Electric Powered Transportation Options</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K. NEV Transit Vehicle</td>
<td>varies</td>
<td>~ 6-12</td>
<td>varies</td>
<td>25 mph</td>
<td>varies</td>
<td>Design would depend on need for Ranch Plan area</td>
<td>X</td>
</tr>
<tr>
<td>L. Segway</td>
<td>~ 19 x 25</td>
<td>-</td>
<td>~ 105</td>
<td>12 mph</td>
<td>$ 6,500</td>
<td>Range of 24 miles</td>
<td>X</td>
</tr>
</tbody>
</table>
NEV FACILITIES & FEATURES

This plan adopts the following:

CA STR & HWY Section 1965.3

(a) Route selection, which includes a finding that the route will accommodate NEVs without an adverse impact upon traffic safety, and will consider, among other things, the travel needs of commuters and other users.

(b) Transportation interfacing, which shall include, but not be limited to, coordination with other modes of transportation so that a NEV driver may employ multiple modes of transportation in reaching a destination in the plan area.

(c) Provision for NEV related facilities including, but not limited to, special access points and NEV crossings.

(d) Provisions for parking facilities, including, but not limited to, community commercial centers, golf courses, public areas, parks, and other destination locations.

(e) Provisions for special paving, road markings, signage and striping for NEV travel lanes, road crossings, parking, and circulation.

(f) Provisions for NEV electrical charging stations.

(g) NEV lanes for the purposes of the transportation plan shall be classified as follows:

1) Class I NEV routes provide for a completely separate right-of-way for the use of NEVs.

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

3) Class III NEV routes provide for shared use by NEVs with conventional vehicle traffic on streets with a speed limit of 35 miles per hour or less.

CA STR & HWY Section 1965.5

(a) NEVs eligible to use NEV lanes shall meet the safety requirements for low-speed vehicles as set forth in Section 571.500 of Title 49 of the Code of Federal Regulations.

(b) Minimum safety criteria for NEV operators, including, but not limited to, requirements relating to NEV maintenance and NEV safety. Operators shall be required to possess a valid California driver's license and to comply with the financial responsibility requirements established pursuant to Chapter 1 (commencing with Section 16000) of Division 7 of the Vehicle Code.

(c) Restrictions limiting the operation of NEVs to separated NEV lanes on those roadways identified in the transportation plan, and allowing only those NEVs and golf carts that meet the safety equipment requirements specified in the plan to be operated on separated NEV lanes of approved roadways in the plan area.

1) Any person operating a NEV in the plan area in violation of this subdivision is guilty of an infraction punishable by a fine not exceeding one hundred dollars ($100).

NEV On-Street Element

The on-street NEV element would consist of both Class II and Class III facilities. Class III facilities would typically be located on lower-volume streets with travel speeds at or below 25 miles per hour, but may be designated on streets with posted speeds up to 35 miles per hour.

Class II facilities are recommended for roadways with posted speeds between 30-55 miles per hour and higher automobile traffic volumes. The Class II cross sections shown below illustrate the design parameters for accommodating NEVs on streets with travel speeds between 30-35 miles per hour, 40-45 miles per hour, and 50-55 miles per hour. In the configuration shown, the NEV's travel in a separate lane from automobile travel on roadways with speeds less than 40 miles per hour. On roadways with posted speeds between 40 and 45 miles per hour, the NEV's travel in a separate lane from automobiles with a minimum striped buffer of two feet. When roadway speeds are greater than 45 miles per hour the minimum buffer width increases to 3 feet. These cross sections can generally be accommodated within curb-to-curb width provided by the traditional County standard, which includes an 8 foot shoulder and 12 foot travel lanes.

Class I facilities are recommended for corridors with sufficient right-of-way to have NEVs on a path separate from vehicular traffic. Intersection treatments and signing/striping are shown in Appendix 5.

NEV Off-Street Element

The off-street NEV element would consist of Class I facilities. These trails would provide connections between adjacent Planning Areas as well as facilitate internal local circulation within Planning Areas.

The off-street NEV facilities adjacent to higher speed roadways (Class I A) would largely serve shorter trips within the Ranch Plan. These facilities would be for combined use by bicyclists, pedestrians, and NEV's. The off-street NEV facilities, when adjacent to a regional bikeway (Class I B), are intended to serve trips between Planning Areas. The NEV's would be physically separate from the regional bikeway as described in more detail on the following pages.
# Neighborhood Electric Vehicle (NEV) Roadway Design Guidelines

<table>
<thead>
<tr>
<th>Posted Speed (mph)</th>
<th>Lincoln, CA¹</th>
<th>Coachella Valley, CA (CVAG)²</th>
<th>2006 RMV NEV Plan</th>
<th>Facility Type</th>
<th>Current Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-25</td>
<td>Class III (shared)</td>
<td>Class III (shared)</td>
<td>Class III</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>30-35</td>
<td>Class III (shared)</td>
<td>Class II (7' NEV lane)</td>
<td>Class III or Class III¹</td>
<td>7</td>
<td>N/A</td>
</tr>
<tr>
<td>40-45</td>
<td>Class II (7' NEV/bike lane) + buffer where feasible⁶</td>
<td>Class I (NEV/ped/bike path)</td>
<td>Class II² or Class I</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>50+⁷</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Class II³ or Class I</td>
<td>7</td>
<td>3</td>
</tr>
</tbody>
</table>

**Notes:**

1) The City of Lincoln pioneered the first NEV plan, which was granted permanent status by the California State Legislature in 2015.

2) Coachella Valley has established a plan for multiple areas within Riverside County and has interim status, similar to this transportation plan for the Ranch Plan.

3) Includes 18” gutter pan. The California Highway Design Manual requires 3’ minimum bike lane width excluding the gutter pan to mitigate against the hazard of a “lip” forming as a result of asphalt next to the more rigid concrete gutter. The NEV/bike lane widths proposed here exceed this standard.

4) NEVs in shared lanes with vehicles are acceptable on streets with posted speeds up to 35 mph. State law (CVC 21260) allows NEVs to use streets with posted speeds up to 35 mph.

5) For roadways posted speed between 40 and 45 miles per hour a minimum striping 2’ buffer will be provided, the minimum striping buffer will increase to 3’ on roadways with posted speeds greater than 50 miles per hour.

6) THE CVAG Neighborhood Electric Vehicle Transportation Plan (2015/16) Design Guidelines calls for a 7’ NEV/bike lane with a longitudinal marked buffer (width not specified) in the “Preferred Cross Section” and a 7’ NEV/bike lane with no buffer in the “Constrained Cross Section.”

7) A 55 mph maximum speed limit for Class II NEV facilities is permissible by CA state law and specifically articulated as a design criterion in SB 956. Under this scenario we are requiring Class II NEV/bike lanes where posted speeds are 40-45 mph and Class II NEV/bike lanes with buffers where posted speeds exceed 45 mph based on the data presented in a 2012 USDOT Report to Congress on the “Operation of Neighborhood Electric Vehicles on Roadway with a Maximum Speed Limit of 40 mph”. It is the intent of this Transportation Plan and the County to maintain a 55 MPH or less posted speed on Cow Camp Road through traffic calming measures and operational treatments (signal progression, for example). If, at the time of turnover to the County of public facility improvements, the County determines that current measures are not sufficient to support a maximum posted 55 MPH speed limit. While the strong preference is to support a 55 MPH or less posted speed, the design concept does not preclude the option of installing a physical barrier within the buffer zone between autos and NEVs/bikes. The option of adding a physical barrier may require special modification to the state legislation (SB 956).
A Class I shared pathway will provide a pleasant environment for users along a portion of the north side of San Juan Creek, away from general vehicular traffic.

Maintenance vehicles (including employee vehicles) will be allowed to use a portion of the pathway to service the adjacent SMWD and related facilities. Gates will prohibit general auto traffic from using the facility.

The shared pathway will be 24' of paved surface with adjacent safety fencing at key locations. The operational intent is for pedestrians to stay to the right, with bicycles and NEV's (which travel at a more comparable speed) staying to the left. A centerline would be marked to designate the two directions of travel. Maintenance vehicles will be expected to operate very slowly and cautiously in this environment.

In addition to the Centerline, the following additional treatments would inform users of the proper location for each mode:

- gateway signs (A) to reinforce shared use and preclude general auto traffic
- peds keep right sign (B) - every 1000'
- ped pavement stencil (C) to reinforce keeping to right – every 500'
- "watch for maintenance vehicles" sign (D) at the entry points for those vehicles
- trail crossing signs (E) at junction points
**NEV Safety Element**

Collision data for neighborhood electric vehicles (NEVs) and low-speed vehicles (LSVs) is currently limited. The most recent collision data is found in the 2008 the Neighborhood Electric Vehicle Transportation Plan Evaluation: A Report to the California State Legislature. This report evaluated NEV safety in the city of Lincoln, California.

This is a community in which NEV use is common and was accounted for at the planning level, similar to planned NEV use as part of the Ranch Plan. Roadways in the City of Lincoln appear to be flat and curvy as compared to the curvy and rolling terrain in South Orange County. Population per square mile in Lincoln is approximately 2,100 people, while the Rancho Mission Viejo population density is higher at approximately 5,300 people per square mile. There is no evidence that either of these factors impact NEV safety. Data was requested from the Lincoln Police Department and California Highway Patrol (SWITRS database) to determine if a common theme existed among incidents involving NEVs, or if common themes existed among moving traffic violations.

The City of Lincoln currently has NEV facilities on several different facility types throughout the city. Some of the current facilities include:

- Venture Drive – this is a two-lane collector with a posted speed of 45 MPH and a 7' shared lane for NEVs and bicyclists.
- Nicolaus Road – this is a two-lane collector with a posted speed of 30 MPH and an 8' shared lane for NEVs and bicyclists.
- Joiner Parkway - this is a four-lane major roadway with a posted speed of 40 MPH and an 8' shared lane for NEVs and bicyclists.

Findings in this report concluded that collision records for the City of Lincoln do not show safety conflicts between bicycles, NEVs, and automobiles. As part of the findings in this report the California Highway Patrol states that there have not been documented incidents involving NEVs in the Statewide Integrated Traffic Records System (SWITRS).

The Coachella Valley has also completed an NEV Master Plan for the area. Facilities in that area that have been implemented as part of the plan are:

- County Club Drive – this facility, located in Palm Desert, is a four-lane arterial with a posted speed limit of 50 MPH and an 8' shared lane for NEVs and bicyclists.
- Portola Avenue- this facility, located in Palm Desert, is a four-lane arterial with a 8' shared lane for NEVs and bicyclists.

Some facilities proposed as part of the NEV Master Plan for the Coachella Valley include:

- Jefferson Street- currently a six-lane arterial with a posted 50 MPH speed limit proposed to have a 12' shared path for NEV and bicyclists.
- Jackson Street- currently a four-lane arterial with a posted speed of 50 MPH proposed to have a 12' shared path for NEVs and bicyclists.
- Avenue 44- currently a four-lane arterial with a posted speed limit of 45 MPH proposed to have a 12' shared path for NEVs and bicyclists.
- Fred Waring Drive- currently a six-lane arterial with a posted speed limit of 50 MPH proposed to have a 7' shared lane for NEVs and bicyclists.
- Gerald Ford Drive- currently a four-lane arterial with a posted speed limit of 50 MPH proposed to have a shared 12' path for NEVs and bicyclists.

A barrier to accurate collision data for NEVs/LSVs is the current coding rules of vehicle body types. The nationwide Fatality Analysis Reporting System (FARS) uses “other” to classify NEVs/LSVs. The National Highway Traffic Safety Administration (NHTSA) State Data System program, which collects computerized data for 34 participating states, including California, gathers collision data from State Police Accident Reports (PARS). California uses an LSV body type code for the CA Highway Patrol, but does not for local police jurisdictions. Even with LSV body type codes available, NEV/LSV safety evaluation is not optimal.

To illustrate the barrier of accurate evaluation of NEV/LSV safety, NHTSA conducted a review of FARS and State Data System collision data for the State of Florida, which uses LSV classifications in their PARS as part of the Report to Congress—Operation of Neighborhood Electric Vehicles (NEVs) on Roadways with Maximum Speed Limit of 40 mph (64kph): Fuel Consumption Savings and Safety Ramifications published in 2012. The goal was to identify crashes involving NEVs/LSVs, especially on roads with speed limits above 25 mph. Using six state and national data sources, NHTSA evaluated Florida data files for the years 2003 through 2007 and found a possible 942 LSVs in police-reported collisions with different types of severity. After a cross-check with Vehicle Identification Numbers (VIN) and police-reported vehicle make, NHTSA found that a large number of vehicles were not LSVs, but instead golf carts and other similar vehicles. After further investigation of VIN numbers and incomplete PARS data, only 21 vehicles matched VIN patterns for LSVs. The breakdown of crash severity for all persons involved in the 21 crashes are below:

- 19 No Injuries
- 1 Possible Injury
- 10 Non-incapacitating Injuries
- 3 Incapacitating Injuries
- 4 Injuries, Severity Unknown

The available data shows that a majority of persons involved in LSV collisions are not injured, and that the majority of reported injuries are not severe. A report to Congress on NEVs concluded that it is difficult to know how many other LSVs may be involved in collisions, with data limitations and the small share of LSVs on public roads. Identifying LSV specific crashes in these conditions and large databases creates more barriers.
NEV SUPPORT FACILITIES

Solar Charging Stations

Rancho Mission Viejo’s climate offers opportunities to employ solar photovoltaic facilities to charge NEV’s. Solar facilities can be located in many areas:

- On building roofs
- Integrated into a building’s fabric (BIPV), e.g. in building roofing, walls and glass
- On building-related site features, such as walkways, pergolas, pool shades, and other “out buildings”
- At-grade parking lots and top levels of parking structures
- On hillsides, in large scale “ground-mounts”

Parking Shade Structures

There are also opportunities to utilize solar photovoltaically-integrated parking shade structures for NEV charging. Structures could be located at destinations where NEV’s park during the day (opportunity charging) to increase the vehicle’s range and yet not impact daytime peak loads on the power grid.

Parking shade structures can accomplish the following:

- Shade trucks, vans, automobiles, and/or personal mobility vehicles (“city cars,” NEV’s, scooters, bicycles)
- Daytime or “opportunity charge” any of the preceding vehicles that are battery powered, increasing daily range by as much as a factor of two
- Light the shaded parking area and surrounding streetscape, if grid connected or equipped with a battery array
- Put electrical energy into adjacent buildings
- Put electrical energy into the utility grid as “distributed generation” – green power marketing
- Any combination of the above

Shade Structure Types

Parking shade structures fall into three categories:

1. Modular and free-standing, covering individual parking spaces - one or several, to grow in number as the number of vehicles to be shaded and charged grows
2. Parking Bays - single or double rows, back-to-back, or cantilevered from columns
3. Clear spanning all parking bays, aisles between, access/egress ramps, and landscape areas, etc.

Charging Requirements

On average, daytime opportunity charging can as much as double a NEV’s range.

For example, a GEM NEV carries a 10 kilowatt hour (kwh) battery pack. A 3 – space charging structure has a 2 kilowatt solar roof capable of 5 collecting hours/day (average in Southern California). This equals 10 kilowatt hours / day, charging:

- One vehicle fully if parked for five hours, or
- Partially charging that vehicle for shorter stays, or
- Partially charging more than one vehicle on a fractional basis

In the GEM’s case, the range would increase from 25 to 50 miles.

Example of a solar shade structure at a multi-family residential parking area

An example of a commercial/office parking area with parking bay solar shade structures

1 The number of peak collecting hours per day varies between winter and summer months. In general, summer months average 5-7 peak collecting hours per day, while winter months average 3-4.
**Mode Usage**

The following table shows the expected mode usage for Ranch Plan trips when compared to average baseline Ranch Plan EIR conditions (based on typical Orange County suburban development). These percentages are projections and not a mandate. RMV will collect necessary data for reporting required by the state legislation.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Ranch Plan EIR Baseline</th>
<th>Scenario A: 10% NEV Ownership</th>
<th>Scenario B: 5% NEV Ownership</th>
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<tbody>
<tr>
<td></td>
<td>Total Trips</td>
<td>Internal Trips</td>
<td>External Trips</td>
</tr>
<tr>
<td>NEV</td>
<td>0%</td>
<td>6%</td>
<td>1%</td>
</tr>
<tr>
<td>Transit</td>
<td>1%</td>
<td>8%</td>
<td>5%</td>
</tr>
<tr>
<td>Bike</td>
<td>1%</td>
<td>6%</td>
<td>2%</td>
</tr>
<tr>
<td>Pedestrian</td>
<td>7%</td>
<td>23%</td>
<td>1%</td>
</tr>
<tr>
<td>Auto (driver or passenger)</td>
<td>89%</td>
<td>54%</td>
<td>90%</td>
</tr>
<tr>
<td>Other (e.g. school bus, motorcycle)</td>
<td>2%</td>
<td>3%</td>
<td>1%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Reduction in Emissions and Energy Savings**

The adjacent mode split estimates represent the aggregate of estimates by trip purpose. The disaggregated information was used to estimate reductions in vehicle trips (a good indicator of mobile emissions) and vehicle-miles-traveled (a good indicator of transportation energy usage). Assuming Scenario A (10% NEV ownership), the estimated benefits from the strategies included in the Ranch Plan multimodal transportation system are:

- 13% reduction in vehicle trips when compared to a typical suburban development in Orange County
- 10% reduction in vehicle-miles traveled compared to a typical suburban development in Orange County
- 9% reduction in greenhouse gases when compared to typical suburban development in Orange County

**Daily Vehicle Trip Estimates**

- Ranch Plan EIR Baseline: 142,700 trips, 183,300 trip ends
- Ranch Plan NEV Scenario A: 124,600 trips, 154,000 trip ends
- Ranch Plan NEV Scenario B: 133,650 trips, 168,650 trip ends

**Notes:**
- Ranch Plan “Baseline” trips based on B-12 (settlement plan) land uses
- Total vehicle trips account for internal trips as one trip (rather than two trips “ends”)
- Total vehicle trip “ends” account for internal trips such that a single trip that both originated and ended in the Ranch Plan area counts as two trip ends

2 Based on Draft Sustainable Community Model Transportation Analysis by CTG Energetics, Feb 23, 2006.
Existing Multi-Use Trail near Cow Camp Road from Ribera Road to Esencia Drive
The following provides information on communities that have experience with golf cart and neighborhood electric vehicle usage.

Electric golf carts have been used in California communities for years, largely on low-speed residential streets in golf course communities. In the early 1990s, cities began establishing guidelines for on-road use of golf carts as their value in replacing automobiles for short trips became apparent. In California, golf carts are allowed on roadways with a speed limit of 25 MPH or lower in communities that have a golf cart transportation plan (California Vehicle Code, section 21115). A neighborhood electric vehicle (NEV) is not a golf cart. The California Vehicle Code classifies NEV’s, labeled “low-speed vehicles,” as an electric vehicle capable of traveling at a minimum speed of 20 MPH and a maximum speed of 25 MPH. NEV’s are permitted to travel on roadways with speed limits of 35 MPH or less (Title 49 of the Code of Federal Regulations, section 571.500).

The following California communities have established golf cart and/or NEV uses:

- City of Lincoln (City of Rocklin)
- City of Palm Desert
- Sun City Roseville
- Rancho Murieta
- City of Avalon
- North Natomas (Sacramento)
- County of Nevada
- City of Laguna Woods
- Otay Ranch
- Playa Vista
- City of Mesa, Arizona
- City of Phoenix, Arizona
- City of Peachtree, Georgia

The City of Lincoln was concerned with allowing shared use of NEV lanes before implementation of a NEV transportation plan in the city. As part of their plan development we conducted interviews specific to the concerns of safety. Questions of safety and liability were raised during interviews with five of the communities:

- City of Lincoln
- City of Palm Desert
- City of Avalon
- City of Mesa, Arizona
- City of Phoenix, Arizona

In all cases, the response was that no safety issues had arisen. The communities believe that development and approval of a NEV plan significantly reduces their liability. The City of Lincoln’s NEV Transportation Program clearly states that “bicycles are permitted to travel on NEV lanes.” This establishes dual uses for the travel lanes in much the same way that bicyclists and pedestrians are simultaneously allowed to use open space trails.

The five cities listed above and the City of Peachtree, Georgia were contacted again in June 2006 to identify safety issues that had arose since the previous interview. None of the cities reported significant safety or liability concerns.

City of Palm Desert has not had significant safety issues with golf carts on their path network. The city official could only recall one collision involving a golf cart and does not consider there to be a problem.

City of Avalon attributes the low number of collisions to slow speeds.

City of Mesa, Arizona attributes their good safety record to the low volume and speed of automobiles on the streets the golf carts use. The streets are contained within communities and on-street lanes are shared with bikes and golf carts (although not specifically striped as such)

City of Phoenix, Arizona has not reported problems with on-street golf cart use, which occurs mostly on low speed roadways within in residential communities.

City of Peachtree, Georgia has an extensive network of shared off-street facilities and has not had safety problems, nor are they concerned with liability issues.

There are many planned but few constructed off-street pathways shared by NEV’s, bicyclists, and pedestrians within the U.S. However, paved recreational trails shared by bicyclists and pedestrians are common in communities across California, with cyclists traveling at speeds comparable to NEV’s. The following are examples of paved mixed use trails in Orange County that experience significant usage levels:

- Santa Ana River Path
- San Diego Creek Path
- Huntington Beach Ocean Front Path (along the beach)
- Newport Beach Ocean Front Path (along the beach)
- Aliso Creek Trail

The Aliso Creek Trail in southern Orange County is an example of a trail in a setting similar to Rancho Mission Viejo. This trail is used for both recreation and commuting by pedestrians and bicyclists. The pathways along the beaches in Newport and Huntington are examples of very popular off-street paved pathways. These pathways experience a high volume of pedestrian and bicycle activity with frequent pedestrian and bicycle crossing locations.

City of Lincoln/City of Rocklin

In September 2004, an assembly bill (Attachment B) was signed into law which allowed the two neighboring cities to develop formal NEV plans to facilitate NEV travel. The plan includes providing space for NEV’s on roadways with a speed limit greater than 35 MPH and on state highways. The City of Lincoln has provided golf carts/NEV’s own on-street travel lanes and off-street paths to connect residential areas to shopping centers. Golf carts and NEV’s are commonly seen traveling on roadways with automobiles in and around the residential areas of the City. The City has implemented Class I off-street paths and Class II on-street lanes for golf carts and NEV’s. Class I paths are shared with bicyclists and pedestrians. Class II lanes can be shared with bicyclists.

City of Palm Desert

In the early 1990s, the City of Palm Desert developed a Golf Cart Transportation Program as part of a five year pilot program for the on-road use of golf carts to access not only golf and recreational amenities, but also schools, colleges, parks, shopping centers, employment centers, and governmental offices. The goal of the study was to establish a golf cart circulation system that would provide safe and convenient transportation for golf carts within the City.

The City’s program had the following objectives:

- Golf cart facilities should provide linkages between residential neighborhoods, civic center, parks, educational, shopping and recreational facilities.
- Develop designated routes on or adjacent to local roadways with proper striping and signing within the City of Palm Desert.
- Off-street golf cart paths should use open space corridors, flood control and utility easements where possible and minimize cross traffic conflicts with automobiles.
In the City of Palm Desert golf carts are allowed to use a designated striped golf cart lane on streets posted 35 MPH or greater. In some cases, golf carts are allowed to share sidewalks that are wide enough to accommodate bicyclists and pedestrians.

An extensive network of Class I off-street paths and Class II on-street lanes are provided in the City. Class I paths are shared with bicyclists and pedestrians. Portions of the designated golf cart routes cross a state highway at four locations in the City.

Sun City, Roseville

Sun City is an age-qualified community in the City of Roseville. The community has implemented Class I paths and Class II on-street lanes. Class I off-street paths are only located near the community’s golf course. Class II on-street lanes have a separate travel lane for bicyclists.

Rancho Murieta

Rancho Murieta is a gated community located in the County of Sacramento. The community has a population of approximately 6,000 persons, is built around two golf courses, and is comprised of private roads. Residents have been using golf carts, and more recently NEV’s, to travel around the community for more than 30 years. In addition to traveling within the community, residents use their golf carts and NEV’s to travel to adjacent shopping centers outside of the community. In 2002 residents were informed that their trips outside of the community on golf carts and NEV’s were illegal because they needed to cross a state highway and had no golf cart transportation plan. The community developed a golf cart/NEV circulation plan to allow residents the ability to legally travel to adjacent shopping centers with their golf carts/NEV’s. As part of the plan, Class II on-street lanes were proposed for roadways within the shopping center area (outside of the gated community).

City of Avalon

Automobiles are restricted on Catalina Island and golf carts are a vital form of transportation. All streets in the downtown area are posted with a 25 MPH limit and open for golf cart use. There are no special designated lanes for golf carts and they share the road with bicyclists, pedestrians, and automobilies.

North Natomas (Sacramento)

The community of North Natomas, located in Sacramento, is planned to incorporate NEV’s as a part of their transportation network. Currently NEV’s are only allowed on low-speed roadways within the community. The lack of NEV activity is partly due to an unfinished roadway network. The community also operates its own transportation services and hopes to increase NEV usage after full buildout.

County of Nevada

The County of Nevada in Northern California has encouraged golf cart use in residential areas by installing signage indicating a shared automobile-golf cart roadway.

City of Laguna Woods

Golf carts are used in and around a gated age-qualified community within the City of Laguna Woods. Private roadways within the gated community are shared automobile-golf cart roadways. Land uses adjacent to the gated community include shopping centers and golf course facilities and golf carts can be driven to these land uses. To make this possible, the City has permitted golf cart crossings of major six-lane arterials. Special signage has been used to advise the motorists that the intersection is a golf cart crossing. The City has also constructed a Class I off-street golf cart path adjacent to an arterial roadway to provide golf cart access to a local shopping center. The Class I off-street path is separated from bicyclists and pedestrians.

Otay Ranch and Playa Vista

Otay Ranch and Playa Vista are two of the “GEM Communities.” These communities were provided Global Electric Motorcars (GEM), a brand of NEV, to use in their community as a method of replacing the automobile for everyday short distance trips. The Otay Ranch Plan specifically states that NEV’s can be used on all roads with a speed limit of 35 MPH or less. The plan also states that separate trails will be provided for NEV’s on roadways with speed limits exceeding 35 MPH.

City of Mesa, Arizona

The City of Mesa has promoted the use of golf carts/NEV’s for its retirement communities. Golf carts and NEV’s travel within the vehicle right-of-way, usually along the right-hand side of the road. They also share facilities with pedestrians and bicyclists. The City has not experienced a problem with golf cart/NEV safety.

The City has passed revised statutes as part of the transportation section of their Municipal Code (28.966 – Neighborhood Electric Vehicles: speed restrictions). The following restrictions are taken directly from Section 28.966:

- A neighborhood electric vehicle shall not be operated at a speed of more than 25 MPH
- A neighborhood electric vehicle shall not be driven on a highway that has a posted speed limit of more than 35 MPH. This subsection does not prohibit a neighborhood electric vehicle from crossing a highway that has a posted speed limit of more than 35 MPH at an intersection.
- A neighborhood electric vehicle shall have a notice of the operational restrictions applying to the vehicle permanently attached to or painted on the vehicle in a location that is in clear view of the driver.

City of Phoenix, Arizona

Golf carts are allowed on all residential streets within the age-qualified Del Webb community in the City of Phoenix. Golf carts are also allowed on collector streets within the facility to access golf course facilities. Class II on-street lanes for golf carts are provided on arterials and collectors within the community. No striped cart lanes exist in the City outside of the facility. Residents do use their golf carts to access adjacent areas and cross a major six-lane arterial not striped or signed for golf cart use. Golf carts in the City of Phoenix must be operated by a licensed driver and the cart must comply with Arizona Vehicle Code.

City of Peachtree, Georgia

Peachtree City allows golf cart/NEV use on their established network of Class I off-street paths. The paths are shared with bicyclists and pedestrians. The City enforces operating rules for carts, some of which include:

- Registration of all carts
- Age restrictions of drivers (minimum age is 12 years old with licensed supervision)
- 20 MPH speed limit on Class I off-street paths
- DUI laws similar to automobile laws
- Double fines for littering on paths

Violations in golf carts/NEV’s count toward a driver’s history and may prevent underage drivers from obtaining a driver’s license.

The City also allows golf carts/NEV’s to be used on all City roadways with a speed limit of 35 MPH or less.

Registration of all carts
- Age restrictions of drivers (minimum age is 12 years old with licensed supervision)
- 20 MPH speed limit on Class I off-street paths
- DUI laws similar to automobile laws
- Double fines for littering on paths
<table>
<thead>
<tr>
<th>Community</th>
<th>Proposed/Implemented</th>
<th>Class I: Off-Street</th>
<th>Class II: Separate On-Street Lane</th>
<th>Class III: Shared On-Street Lane</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Y/N Width Comments</td>
<td>Y/N Width Comments</td>
<td>Y/N Width Comments</td>
<td>Y/N Width Comments</td>
</tr>
<tr>
<td></td>
<td>Y</td>
<td></td>
<td>Y</td>
<td>Varies</td>
</tr>
<tr>
<td></td>
<td>14' paved 1' shoulders</td>
<td></td>
<td>Shared with bikes/peds</td>
<td>Low volume streets at 35 MPH or less</td>
</tr>
<tr>
<td></td>
<td>Lincoln, CA</td>
<td>Partially</td>
<td>Y</td>
<td>Varies</td>
</tr>
<tr>
<td></td>
<td>Implemented</td>
<td>Implemented</td>
<td>Y</td>
<td>7'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12' paved 2'</td>
<td>Shared with bikes/peds</td>
<td>12'</td>
</tr>
<tr>
<td></td>
<td>Palm Desert, CA</td>
<td>Implemented</td>
<td>Y</td>
<td>Varies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12' paved 2'</td>
<td>Shared with bikes/peds</td>
<td>Varies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Only near golf course</td>
<td>Y</td>
<td>Varies</td>
</tr>
<tr>
<td></td>
<td>Sun City Roseville, CA</td>
<td>Implemented</td>
<td>Y</td>
<td>Varies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12' paved</td>
<td>Only near golf course</td>
<td>Varies</td>
</tr>
<tr>
<td></td>
<td>Avalon, CA</td>
<td>Implemented</td>
<td>Y</td>
<td>Varies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12' paved</td>
<td>Only near golf course</td>
<td>25 MPH or less</td>
</tr>
<tr>
<td></td>
<td>Brentwood, CA</td>
<td>Implemented</td>
<td>Y</td>
<td>Varies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12' paved</td>
<td>Only near golf course</td>
<td>25 MPH or less</td>
</tr>
<tr>
<td></td>
<td>North Natomas (Sacramento), CA</td>
<td>Implemented</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>12' paved</td>
<td>Only near golf course</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Seaside, FL</td>
<td>Implemented</td>
<td>Y</td>
<td>Varies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12' paved</td>
<td>Only near golf course</td>
<td>Only on a small number of streets</td>
</tr>
<tr>
<td></td>
<td>Peachtree, GA</td>
<td>Implemented</td>
<td>Y</td>
<td>Varies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12' paved</td>
<td>Allowed with operational speeds of 20 MPH or less</td>
<td>Allowed with operational speeds of 35 MPH or less</td>
</tr>
<tr>
<td></td>
<td>Rancho Murieta, CA</td>
<td>Implemented</td>
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<td>Varies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12' paved</td>
<td>Road design speed between 25 and 45 MPH</td>
<td>25 MPH or less</td>
</tr>
<tr>
<td></td>
<td>Nevada County, CA</td>
<td>Implemented</td>
<td>N</td>
<td>Varies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12' paved</td>
<td>Signage indicating a shared roadway</td>
<td>Within retirement community</td>
</tr>
<tr>
<td></td>
<td>Laguna Woods, CA</td>
<td>Implemented</td>
<td>Y</td>
<td>Varies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10'</td>
<td>Separated from bikes/peds</td>
<td>Within retirement community</td>
</tr>
</tbody>
</table>

Notes: 1 Known to have NEV facilities – further information unavailable. 2 Transportation management association provides community transportation services. 3 Golf cart path only (no NEV usage). 4 Enforcement of NEV’s in California is part of the CVC and likely handled by local police or CHP. Specific NEV plans may designate a non-police department or agency to handle permitting and equipment checks.
### NEV’s in Other Communities (cont.)

<table>
<thead>
<tr>
<th>Community</th>
<th>Proposed/ Implemented</th>
<th>Class I: Off-Street</th>
<th>Class II: Separate On-Street Lane</th>
<th>Class III: Shared On-Street Lane</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>Y/N</td>
<td>Width</td>
<td>Comments</td>
</tr>
<tr>
<td>GEM Communities:</td>
<td></td>
<td>Y/N</td>
<td>Width</td>
<td>Comments</td>
</tr>
<tr>
<td>Otay Ranch, CA</td>
<td>Implemented</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Playa Vista, CA</td>
<td>Implemented</td>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Celebration, FL</td>
<td>Implemented</td>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bay Harbor, MI</td>
<td>Implemented</td>
<td>N</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Enforcement of NEV’s in California is part of the CVC and likely handled by local police or CHP. Specific NEV plans may designate a non-police department or agency to handle permitting and equipment checks.
SUPPORTING LEGISLATION

Neighborhood Electric Vehicles are classified as “low speed vehicles.” A low-speed vehicle (LSV) is a relatively new motor vehicle classification created by the National Highway Traffic Safety Administration (NHTSA) in 1998.

Low Speed Vehicle Classification

The LSV classification was created to permit the manufacture and circulation of small, four-wheeled motor vehicles with top speeds of 20-25 miles per hour. This new classification is codified as Section 571.500 Title 49 code of Federal Regulations and California Vehicle Code Section 385.5.

The California Department of Motor Vehicles registers low-speed vehicles for on-road use if the vehicle is going to be operated on public streets. LSVs must meet applicable federal safety standards and be certified by the California Air Resources Board as a zero emission vehicle. LSVs are registered as passenger vehicles and issued automobile license plates through the Department of Motor Vehicles. Owners of registered LSVs must comply with financial responsibility laws require a driver’s license for vehicle operation. LSVs are restricted from roadways where the speed limit is greater than 35 mph. Manufacturers are required to affix a decal to the vehicle indicating that the maximum speed is 25 mph and that it may be a hazard on the roadways if it impedes traffic.

NEV’s as Low Speed Vehicles

In September 2004, California Assembly Bill 2353 was signed into law to permit two communities in Placer County (Rocklin and Lincoln) to develop formal NEV Plans to facilitate NEV travel. Travel is permitted on all roadways with posted speed limits of 35 miles per hour or less and on roads with greater than 35 mph speed limits if a Class II NEV lane is provided. Under certain conditions, the use of State Highways by NEV’s is also permitted.

The full text to AB 2353 is provided in Appendix 2 as a reference.

CVC Section 385.5

A "low-speed vehicle" is a motor vehicle, other than a motor truck, having four wheels on the ground and an unladen weight of 1,800 pounds or less, that is capable of propelling itself at a minimum speed of 20 miles per hour and a maximum speed of 25 miles per hour, on a paved level surface. For the purposes of this section, a "low-speed vehicle" is not a golf cart, except when operated pursuant to Section 21115 or 21115.1. A "low-speed vehicle" is also known as a "neighborhood electric vehicle."
APPENDIX 3: SENATE BILL NO. 956 (COUNTY OF ORANGE NEV LEGISLATION), SENATE BILL NO. 290, AND SENATE BILL 241
Existing law authorizes a city or county to establish a golf cart infraction, unless otherwise specified. Defines "neighborhood electric vehicle" for these purposes to have the review process established for a golf cart transportation plan, and Lincoln and the City of Rocklin in the County of Placer to establish a transportation planning agency and traffic law enforcement agency. Existing law provides that operating a golf cart other than on a transportation planning agency and traffic law enforcement agency. To have a driver's license. A violation of the Vehicle Code is an vehicle weight rating of less than 3,000 pounds. Existing law imposes is capable of a minimum speed of 20 miles per hour and a maximum speed 21251 and 21260 of the Vehicle Code, relating to neighborhood electric vehicles. LEGISLATIVE COUNSEL'S DIGEST SB 956, Correa. Neighborhood electric vehicles. Existing law defines "low-speed vehicle" for purposes of the Vehicle Code as a motor vehicle, other than a motor truck, with 4 wheels that is capable of a minimum speed of 20 miles per hour and a maximum speed of 25 miles per hour on a paved level surface and that has a gross vehicle weight rating of less than 4,500 pounds. Existing law imposes certain restrictions on the use of low-speed vehicles on public streets and highways, and generally requires an operator of a low-speed vehicle to have a Driver's license. A violation of the Vehicle Code is an infraction, unless otherwise specified. Existing law authorizes a city or county to establish a golf cart transportation plan subject to the review of the appropriate transportation planning agency and traffic law enforcement agency. Existing law provides that operating a golf cart other than on an authorized roadway is an infraction punishable by a fine not exceeding $100. Existing law authorizes the City of Lincoln and the City of Rocklin in the County of Placer to establish a neighborhood electric vehicle transportation plan subject to the same review process established for a golf cart transportation plan, and defines "neighborhood electric vehicle" for these purposes to have the same meaning as the above definition of low-speed vehicle. A person operating a neighborhood electric vehicle in the plan area in violation of certain provisions is guilty of an infraction punishable by a fine not exceeding $100.

This bill, until January 1, 2013, would enact similar provisions authorizing the County of Orange to establish a neighborhood electric vehicle transportation plan for the Ranch Plan Planned Community in that county, subject to similar penalties. The bill would require a report to the Legislature by November 1, 2011. Because the bill would create a new crime, it would impose a state-mandated local program. The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement. This bill would provide that no reimbursement is required by this act for a specified reason. THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS: SECTION 1. Chapter 6 (commencing with Section 1965) of Division 2.5 of the Streets and Highways Code, to read:

CHAPTER 6. NEIGHBORHOOD ELECTRIC VEHICLE TRANSPORTATION PLAN FOR RANCH PLAN PLANNED COMMUNITY IN ORANGE COUNTY

1965. It is the intent of the Legislature, in enacting this chapter, to authorize the County of Orange to establish a neighborhood electric vehicle (NEV) transportation plan for the Ranch Plan Planned Community in the county. The purpose of this NEV transportation plan is to furnish the community's need for creating a sustainable transportation system that reduces gasoline demand and vehicle emissions by offering a cleaner, more economical means of local transportation within the plan area. It is the further intent of the Legislature that this NEV transportation plan be designed and developed to best serve the functional travel needs of the plan area, to have the physical safety of the NEV driver's person and property as a major planning component, and to have the capacity to accommodate NEV drivers of every legal age and range of skills. 1961.1. The following definitions apply to this chapter:

(a) "Plan area" means the Ranch Plan Planned Community project area and all streets located within the project area.

(b) "Neighborhood electric vehicle" or "NEV" means a low-speed vehicle as defined by Section 1965.2 of the Vehicle Code.

(c) "NEV lanes" means all publicly or privately owned facilities that provide for NEV travel including roadways designated by signs or permanent markers which are shared with pedestrians, bicyclists, and other motorists in the plan area.

(d) "Ranch Plan Planned Community" means the Orange County Planning Agency and traffic law enforcement agency. A violation of the Vehicle Code is an infraction punishable by a fine not exceeding $100. Existing law authorizes the City of Lincoln and the City of Rocklin in the County of Placer to establish a neighborhood electric vehicle transportation plan subject to the same review process established for a golf cart transportation plan, and defines "neighborhood electric vehicle" for these purposes to have the same meaning as the above definition of low-speed vehicle. A person operating a neighborhood electric vehicle in the plan area in violation of certain provisions is guilty of an infraction punishable by a fine not exceeding $100.

This bill, until January 1, 2013, would enact similar provisions authorizing the County of Orange to establish a neighborhood electric vehicle transportation plan for the Ranch Plan Planned Community in that county, subject to similar penalties. The bill would require a report to the Legislature by November 1, 2011. Because the bill would create a new crime, it would impose a state-mandated local program. The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement. This bill would provide that no reimbursement is required by this act for a specified reason. THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS: SECTION 1. Chapter 6 (commencing with Section 1965) is added to Division 2.5 of the Streets and Highways Code, to read:

CHAPTER 6. NEIGHBORHOOD ELECTRIC VEHICLE TRANSPORTATION PLAN FOR RANCH PLAN PLANNED COMMUNITY IN ORANGE COUNTY

1965. It is the intent of the Legislature, in enacting this chapter, to authorize the County of Orange to establish a neighborhood electric vehicle (NEV) transportation plan for the Ranch Plan Planned Community in the county. The purpose of this NEV transportation plan is to furnish the community's need for creating a sustainable transportation system that reduces gasoline demand and vehicle emissions by offering a cleaner, more economical means of local transportation within the plan area. It is the further intent of the Legislature that this NEV transportation plan be designed and developed to best serve the functional travel needs of the plan area, to have the physical safety of the NEV driver's person and property as a major planning component, and to have the capacity to accommodate NEV drivers of every legal age and range of skills. 1961. The following definitions apply to this chapter:

(a) "Plan area" means the Ranch Plan Planned Community project area and all streets located within the project area.

(b) "Neighborhood electric vehicle" or "NEV" means a low-speed vehicle as defined by Section 1965.2 of the Vehicle Code.

(c) "NEV lanes" means all publicly or privately owned facilities that provide for NEV travel including roadways designated by signs or permanent markers which are shared with pedestrians, bicyclists, and other motorists in the plan area.

(d) "Ranch Plan Planned Community" means the Orange County Planning Authority.

1962. (a) The County of Orange may, by ordinance or resolution, adopt a NEV transportation plan for the Ranch Plan Planned Community.

(b) The transportation plan shall have received a prior review and the comments of the transportation planning agency and any agency having traffic law enforcement responsibilities in the County of Orange.

(c) The transportation plan may include the use of a state highway, or any crossing of the highway, subject to the approval of the Department of Transportation.

1963. The transportation plan shall include, but is not limited to, all of the following elements:

(a) Route selection, which includes a finding that the route will accommodate NEVs without an adverse impact upon traffic safety, and will consider, among other things, the travel needs of commuters and other users.

(b) Transportation interfacing, which shall include, but not be limited to, coordination with other modes of transportation so that a NEV driver may employ multiple modes of transportation in reaching a destination in the plan area.

(c) Provision for NEV related facilities including, but not limited to, special access points and NEV crossings.

(d) Provisions for parking facilities, including, but not limited to, community commercial centers, golf courses, public areas, parks, and other destination locations.

(e) Provisions for special paving, road markings, signage and striping for NEV travel lanes, road crossings, parking, and circulation.

(f) Provisions for NEV electrical charging stations.

(g) NEV lanes for the purposes of the transportation plan shall be classified as follows:

(1) Class I NEV routes provide for a completely separate right-of-way for the use of NEVs.

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

(3) Class III NEV routes provide for public-shared use by NEVs with conventional vehicle traffic on streets with a speed limit of 25 miles per hour or less.

1964. If the County of Orange adopts a NEV transportation plan for the Ranch Plan Planned Community, it shall do both of the following:

(a) Establish minimum general design criteria for the development, planning, and construction of separate NEV lanes, including, but not limited to, the design speed of the facility, the space requirements of the NEV, and roadway design criteria.

(b) In cooperation with the department, establish uniform specifications and design standards for signs, markers, and traffic control devices to control NEV traffic; to warn of dangerous conditions, obstacles, or hazards; to designate the right-of-way between NEVs, other vehicles, and bicycles; to state the nature and destination of the NEV lane; and, to the extent practicable, to have the capacity to accommodate NEV drivers of every legal age and range of skills.

1965. If the County of Orange adopts a NEV transportation plan for the Ranch Plan Planned Community, it shall also adopt all of the following as part of the plan:

(a) NEVs eligible to use NEV lanes shall meet the safety requirements for low-speed vehicles as set forth in Section 571.500 of Title 49 of the Code of Federal Regulations.

(b) Minimum safety criteria for NEV operators, including, but not limited to, requirements relating to NEV maintenance and NEV safety. Operators shall be required to possess a valid California driver's license and to comply with the financial responsibility requirements established pursuant to Chapter 1 (commencing with Section 16000) of Division 7 of the Vehicle Code.

(c) (1) Restrictions limiting the operation of NEVs to separated NEV lanes on those roadways identified in the transportation plan, and allowing only those NEVs and golf carts that meet the safety equipment
requirements specified in the plan to be operated on separated NEV lanes of approved roadways in the plan area.

(2) Any person operating a NEV in the plan area in violation of this subdivision is guilty of an infraction punishable by a fine not exceeding one hundred dollars ($100).

1965.6. (a) If the County of Orange adopts a NEV transportation plan for the Ranch Plan Planned Community pursuant to this chapter, the county shall submit a report to the legislature on or before November 1, 2011, in consultation with the Department of Transportation, the Department of the California Highway Patrol, and local law enforcement agencies.

(b) The report shall include all of the following:

(1) A description of the NEV transportation plan and its elements that have been authorized up to that time.

(2) An evaluation of the effectiveness of the NEV transportation plan, including its impact on traffic flows and safety.

(3) A recommendation as to whether this chapter should be terminated, continued in existence and applicable solely to the Ranch Plan Planned Community, or expanded statewide.

1965.7. This chapter shall remain in effect only until January 1, 2013, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2013, deletes or extends that date.

SEC. 2. Section 21251 of the Vehicle Code is amended to read:

21251. Except as provided in Chapter 7 (commencing with Section 1963) and Chapter 8 (commencing with Section 1965) of Division 2 of the Streets and Highways Code, and Sections 4023, 21115, and 21115.1, a low-speed vehicle is subject to all the provisions applicable to a motor vehicle, and the driver of a low-speed vehicle is subject to all the provisions applicable to the driver of a motor vehicle or other vehicle, when applicable, by this code or any other code, with the exception of those provisions which, by their very nature, can have no application.

SEC. 3. Section 21260 of the Vehicle Code is amended to read:

21260. (a) Except as provided in paragraph (1) of subdivision (b), or in an area where a neighborhood electric vehicle transportation plan has been adopted pursuant to Chapter 7 (commencing with Section 1963) or Chapter 8 (commencing with Section 1965) of Division 2.5 of the Streets and Highways Code, the operator of a low-speed vehicle shall not operate the vehicle on any roadway with a speed limit in excess of 35 miles per hour.

(b) (1) The operator of a low-speed vehicle may cross a roadway with a speed limit in excess of 35 miles per hour if the crossing begins and ends on a roadway with a speed limit of 35 miles per hour or less and occurs at an intersection of approximately 90 degrees.

(2) Notwithstanding paragraph (1), the operator of a low-speed vehicle shall not 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 by a low-speed vehicle.

SEC. 4. No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because the only costs that may be incurred by a local agency or school district will be incurred because this act creates a new crime or infraction, eliminates a crime or infraction, or changes the penalty for a crime or infraction, within the meaning of Section 17956 of the Government Code, or changes the definition of a crime within the meaning of Section 6 of Article XIII B of the California Constitution.
ATTACHMENT C

STATE OF CALIFORNIA
IN THE ASSEMBLY
1965.3 of the Streets and Highways Code, relating to neighborhood electric vehicles.

LEGISLATIVE COUNCIL'S DIGEST


Existing law, until January 1, 2017, authorizes the County of Orange to establish a neighborhood electric vehicle plan for the Ranch Plan Planned Community in that county. Under existing law, operation of a neighborhood electric vehicle in violation of certain provisions is an infraction.

This bill would extend the operative period of these provisions until January 1, 2022. By extending the operative period of a crime, the bill would impose a state-mandated local program.

Existing law requires NEV lanes to be classified, as specified, for the purposes of the NEV transportation plan for the Ranch Plan Planned Community. Existing law requires that a lane used by both NEVs and conventional vehicle traffic on a street with a speed limit of 25 miles per hour or less be classified as a Class III NEV route.

This bill would, instead, require that a lane used by NEVs and conventional vehicle traffic on a street with a speed limit of 35 miles per hour or less be classified as a Class III NEV route. Existing law requires the county to provide a report to the Legislature, by November 1, 2020. Under existing law, the report must include all of the following:

1. A description of the NEV transportation plan and its elements.
2. A description of the NEV transportation plan for the Ranch Plan Planned Community, including its impact on traffic flows and safety.
3. A recommendation as to whether this chapter should be terminated, continued in existence and applicable solely to the Ranch Plan Planned Community, or expanded statewide.
4. This bill would provide that no reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because this act creates a new crime or infraction, eliminates a crime or infraction, or changes the definition of a crime within the meaning of Section 6 of Article XIII B of the California Constitution.
Low-speed vehicles are also known as neighborhood electric vehicles, with a gross vehicle weight rating of less than 3,000 pounds, no more than 25 MPH on a paved, level surface; and has a motor vehicle that is four-wheeled; can attain a speed of no more than 35 MPH only where dedicated lanes are provided for NEVs. Existing law generally prohibits NEVs from being operated on any roadway with a speed limit in excess of 35 MPH, but a number of bills have provided exceptions for several communities to run pilot projects, provided that the following conditions are met:

1. Each local government establishes a "neighborhood electric vehicle transportation plan" for its jurisdiction or some part of it. Existing law puts numerous requirements on the adoption of the plan, including consultation with local law enforcement and transportation planning officials. The plan must accommodate the travel of NEVs by identifying routes and providing for NEV facilities (separate lanes, trails, street crossings, parking, charging stations, etc.), and it may allow NEVs on streets with speed limits over 35 MPH only where dedicated lanes are provided for NEVs.

2. Each jurisdiction works with the Department of Transportation (Caltrans) to establish uniform specifications and symbols for signs, traffic control devices, and rights-of-way designation in the plan areas and have Caltrans approval in any instance where an NEV route in the plan will cross or use a state highway.

3. If a jurisdiction adopts a NEV transportation plan, it reports to the Legislature on the plan, its effectiveness, and its impact on traffic flows and safety, and the jurisdiction makes a recommendation to the Legislature in extending the sunset date or expanding the authorization for NEV transportation plans statewide. These reports are due to the Legislature about a year before the jurisdiction's NEV plan authority sunsets.

Communities statutorily authorized to adopt NEV plans are:

- Lincoln and Rocklin - AB 2353 (Leelee), Chapter 422, Statutes of 2004, authorized the NEV transportation plan pilot projects until January 1, 2009, for the Cities of Lincoln and Rocklin, and AB 2963 ( Gaines), Chapter 195, Statutes of 2008, extended the sunset date on the Lincoln and Rocklin pilot projects until January 1, 2012.
- Amador County and the cities of Jackson, Sutter Creek, and Amador City - AB 584 (Huber), Chapter 437, Statutes of 2010, allowed until 2016, the County of Amador and the cities of Jackson, Amador City, and Sutter Creek to establish a neighborhood electric vehicle transportation plan or plans.
- Fresno - AB 1781 (Villines), Chapter 450, Statutes of 2010, authorizes until 2016 the City of Fresno to establish a NEV plan.
- Ranch Plan Planned Community in Orange County - SB 956 (Correa), Chapter 442, Statutes of 2007, authorizes the Orange County to establish a NEV transportation plan for Ranch Plan Planned Community under essentially the same criteria as the Lincoln and Rocklin pilot projects, except with a sunset date of January 1, 2013.
- Amador County and the cities of Jackson, Sutter Creek, and Amador City - AB 584 (Huber), Chapter 437, Statutes of 2010, allowed until 2016, the County of Amador and the cities of Jackson, Amador City, and Sutter Creek to establish a neighborhood electric vehicle transportation plan or plans.

This bill extends the sunset date on the NEV transportation plan authority in Orange County to January 1, 2017, and requires that the county submit its report to the Legislature by November 1, 2015.

**ARGUMENTS IN SUPPORT**: The author's office states that the bill, authorizing the Ranch Plan Planned Community NEV plan, passed in 2007 at the peak of the real estate market. The real estate market subsequently collapsed and new housing starts statewide declined to the lowest numbers on record. The author's office reports that, as a result, the Ranch Plan development has just recently begun mass grading and that the current development schedule calls for the first neighborhoods and homes to be built in 2012, with the first residents arriving in early 2013. The developer of Ranch Plan Planned Community, who is the sponsor of this bill and of SB 956 in 2007, remains committed to building a complete system of NEV trails and facilities throughout the new community to provide an environmentally beneficial alternative to automobiles, but an extension in the report and sunset dates is required to do so. The proposed 2015 report and 2017 sunset dates will provide sufficient NEV transportation experience for NEV users, transportation managers, and law enforcement officials to provide meaningful information in a report to the Legislature. The author's office further notes that the information in this report should differ from some other NEV transportation plans because NEVs in this instance are being incorporated into a new community trail system rather than being added to existing roads and trails.
APPENDIX 4: NEV DESIGN AT INTERSECTIONS
The following intersection design treatments have been included to illustrate how NEVs will be accommodated at intersections along streets with posted speeds greater than 35 mph. The designs were developed based on NEV facility designs from Lincoln, CA and on federal, state and local design standards. Consideration should be given to alternative crosswalk markings, including color, subject to OC Public Works approval.

CLASS I NEV CROSSING

NOTES:
- NEV headlight sign to be used when necessary.
- Trimming of NEV lane markings is optional.
- Bollards or similar design to apply on four-lane intersections with four-lane medians.
- Crosswalk markings are optional and may include painted, striped concrete, raised pavement markers, or V high-visibility striping, etc.

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attachment C

Page 34 of 39
Class I NEV Facility (Off-Road NEV Path)

Legend:
- NEV Loop Detector
  (all signalized intersections)
- NEV Route
- Bollards

NOTES:
- Striped crosswalks only needed if intersection is signalized
- Tracking of NEV lane through intersection used only if needed based on geometry
- NEV Prohibited sign to be used when necessary
- All ramps to meet minimum ADA standards as indicated on RMDF Std. Plan 1115
- Crosswalk ramps should be 5 feet wide to accommodate a two-way NEV facility. A reduced 5-foot wide ramp could be used in constrained locations of one-way NEV travel with direct routes to and from the curb ramp.