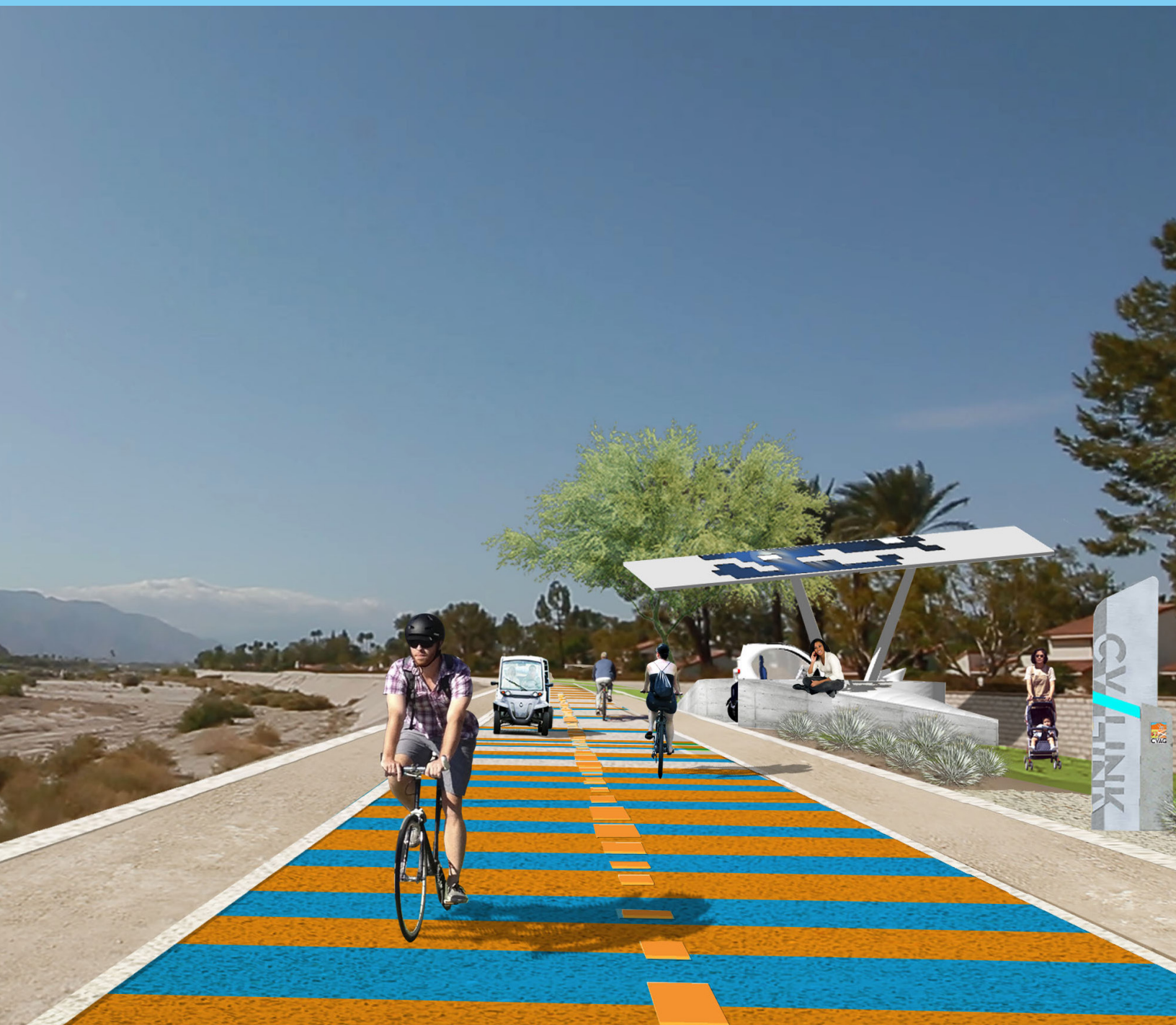
CV/LINK

CONNECTING THE COACHELLA VALLEY

MASTER PLAN VOLUME 4:

NEIGHBORHOOD ELECTRIC VEHICLE TRANSPORTATION PLAN

JANUARY 2016



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1 Introduction

1.1 Context and Definitions

Volume IV of the CV Link Master Plan, the Neighborhood Electric Vehicle Transportation Plan, was developed in conjunction with the planning and design of CV Link, a new alternative transportation pathway that will generally follow the Whitewater River flood channel between Palm Springs and Coachella. CV Link is anticipated to become a backbone for the further development of pathways throughout the valley. Neighborhood Electric Vehicles (NEVs) are one of several types of Low Speed Vehicle (LSV, also known as Low Speed Electric Vehicle or LSEV) that are anticipated to use the new facility.

This Plan will describe the specific duties required of NEV operators and the key design parameters that will make NEVs a practical option for mobility throughout the Coachella Valley. For the purposes of this plan, three principal types of LSVs with 3 or more wheels are considered:

- Golf cars (carts) that are factory designed to travel up to 15 mph within golf course environments. Golf cars that are not modified for on-street use may be used on roadways or paths designated for such use by local jurisdictions.
- Golf cars that are modified after manufacture for use on public streets and can travel up to 25 mph (Figure 1). While increasingly common, DMV guidance (FFVR37) requires owners to register them as motor vehicles that meet regular passenger vehicle standards or risk a citation.
- NEVs that are designed and manufactured to be used on streets with posted speed limits up to 35 mph and can travel up to 25 mph (Figure 2).

Figure 1: Golf Car Modified for On-Road Use

Figure 2: Four and Six-seat NEVs

The following links provide more information on the differences in golf cars and NEVs.

National Highway Traffic Safety Administration publication on the Code of Federal Regulations (CFR) for Low Speed Vehicles (LSVs) that are capable of at least 20 mph but not more than 25 mph):

http://www.nhtsa.gov/cars/rules/rulings/lsv/lsv.html#lsv3

Alternative vehicles definitions and information from Newport Beach Police Department, with comprehensive list of California Vehicle Code references:

http://www.nbpd.org/community/altveh.asp

California Department of Motor Vehicles (DMV) fact sheet on LSVs and golf carts:

http://apps.dmv.ca.gov/pubs/brochures/fast_facts/ffvr37.pdf

Golf Car Portal's clear definition of the differences between golf cars and NEVs:

http://golfcarportal.com/education/defference_between.php

1.2 CV Link Master Plan Volume IV: NEV Plan Development Process

Elements of the NEV Plan were informed by a series of public meetings related to CV Link. The cities of Cathedral City, Indio, Palm Desert, and Rancho Mirage returned detailed stakeholder surveys that assessed their current efforts, existing conditions, and future interest in NEV facility implementation. Meetings were held with a number of agency staff:

- April 30, 2014 – Indio with the Principal Engineer
- May 6, 2014 – Cathedral City with the City Engineer
- May 6, 2014 – Palm Desert with the Director of Community Development
- May 12, 2014 – Rancho Mirage with the Planning Manager
- May 13, 2014 – Palm Springs with the City Engineer
- June 9, 2014 – La Quinta with the Director of Community Development
- June 11, 2014 – Coachella with the Community Development Director
- Meeting with the Agua Caliente Tribe Director of Planning and Natural Resources

Table 1 shows how City staff input has been incorporated into this plan.

Table 1: Summary of City Staff Input

Key Themes	Where Covered in This Plan
Inconsistent policies and laws; prohibitions on use; confusion on definitions	Section 0 City Municipal Codes Section 5 Recommended Education, Legislation, and Enforcement
Roadway speed limits are too high for use of NEVs	Appendix C Roadway Speed Limit Maps presents city-provided or published information that was used in the route planning.
NEVs travel too fast to share designated golf cart paths	Section 4 Design Guidelines recommends path widths likely to minimize user conflicts. Signage (e.g. Figure 22) may be used to identify where NEVs may operate at reduced speed or prohibited.
Concern about reducing 12-foot-wide wide car lanes to accommodate 7-foot- wide NEV/bike lanes	Section 4.4 Class II NEV Lane refers to the key resources for city engineers to reference for narrower lanes.

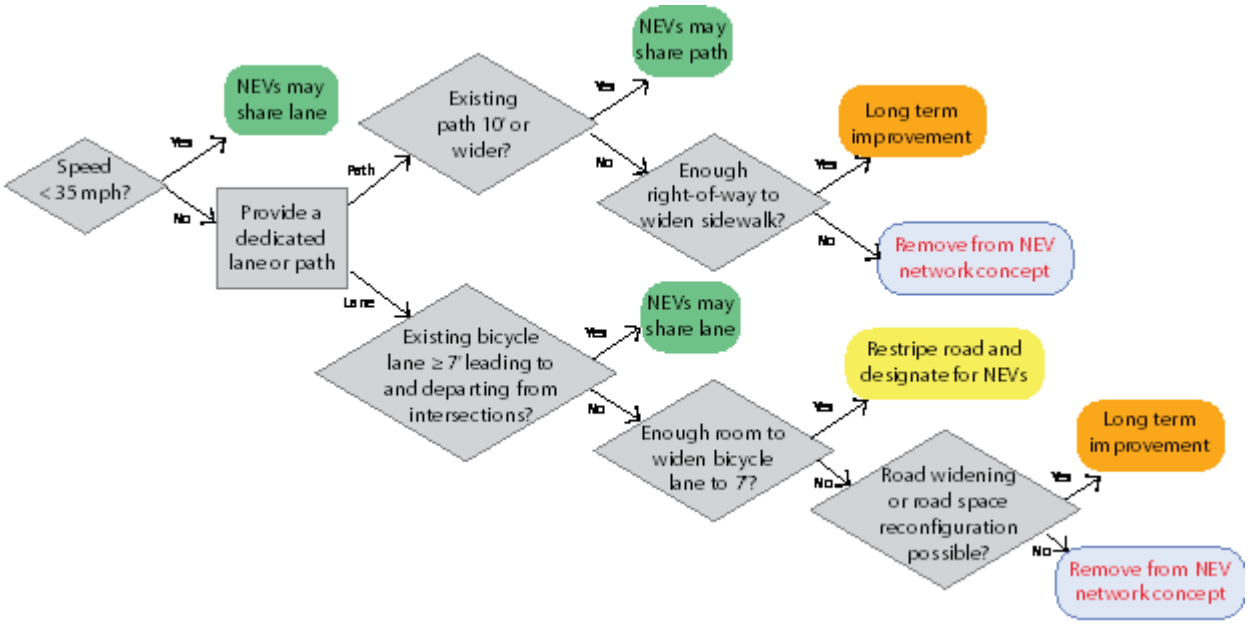
California Assembly Bill 61 stipulates that this transportation plan must be submitted to the director for approval following a review and recommendation by the California Traffic Control Devices Committee (CTCDC). This plan has been placed on the agenda for the March 5, 2015 committee meeting.

1.3 NEV Network Development Process

This NEV Plan has been based on the GIS NEV Suitability Analysis (NEVSA) described in Chapter 3 where the inputs are demographics (population, jobs, and land uses). The outputs are shown in the maps in this plan, which should be seen as the ultimate vision.

This analysis did not have the benefit of roadway information such as right of way width, curb-to-curb roadway width, and existing and proposed number of lanes at and between intersections. As a next step, a NEV Plan Implementation Program should be developed based on assessment of each roadway and intersection to determine how NEVs can be accommodated. The Implementation Program would follow a general process as outlined below.

Figure 3: Generalized NEV Plan Network Development Process



The proposed standards in this document represent the desirable widths and conditions for Neighborhood Electric Vehicle (NEV) travel. It is recommended that the maximum possible number of streets and paths be made accessible to NEV and golf cart operators, even if the desirable widths cannot be achieved initially. Once the number of users has grown, higher geometric standards can be implemented on a segment-by-segment basis to permit more comfortable routes for all users.

2 Legislative Context

2.1 Introduction

Recent California climate change and air quality legislation (including Assembly Bill 32, Senate Bill 375, and Assembly Bill 1358) has strengthened transportation and land use policies aimed at reducing single occupancy vehicle trips through multimodal transportation options. Local policy and planning efforts must make progress toward reduction targets set forth by state climate change legislation and a growing number of communities have identified Neighborhood Electric Vehicles as an effective means of attaining those goals. A number of local cities and counties in California (Lincoln, Rocklin, Western Riverside County, Rancho Mission Viejo, Coronado, and Playa Vista), have developed NEV Plans with various

goals such as reducing reliance on gasoline, reducing vehicle emissions, reducing roadway wear and tear, and creating more sustainable communities.

2.2 Federal Register: 49 CFR 571.500, 1998

In 1998, the National Highway Transportation Safety Administration (NHTSA) created a new Federal Motor Vehicle Safety Standard (FMVSS-500) category for low speed vehicles (LSVs) in response to their growing popularity. The intent of 49 CFR Part 571 was to establish consistent treatment of LSVs at the federal, state, and local levels with respect to on-street operations, speed, and safety standards. By definition, the new LSV class includes "small, 4-wheeled vehicles with top speeds of 20-25 mph." This effectively removed conventional golf carts with a top speed of 15 mph from the classification and provided a more appropriate set of safety standards specific to LSVs (as compared to the umbrella "Passenger Car" class designation).

Consistent rulemaking specific to LSVs enabled manufacturers of these electric vehicles to bring new technologies to the market. 49 CFR 571.500 did not affect state and local decision making concerning permission of on-street LSV operation or require existing LSV owners to retrofit their vehicles to meet the safety standards established. In subsequent years, NHTSA amended the definition of LSVs to allow for commercial vehicle utility and an increase in the maximum gross vehicle weight restriction from 2,500 lbs. to 3,000 lbs.

2.3 California Assembly Bill no. 61, Chapter 170, 2011

AB-61 authorizes the County of Riverside or any of its jurisdictions to develop an NEV Transportation plan for a designated plan area. The California Streets and Highway Code sections 1962-1962.8 were established to implement the bill.

Section 1 of AB-61 establishes the scope of NEV Transportation plans, which includes route selection and provisions for "NEV Lanes," parking and turnouts, signage, striping and roadway markings, roadway crossings, connections to other travel modes, and electrical charging stations. The bill further requires the development of facility design criteria, traffic control devices, safety criteria, route restrictions, and plan evaluation measures. Sections 2 and 3 amend the California State Vehicle Code language with respect to vehicle class provisions, operation of LSVs on roadways with operating speeds in excess of 35 mph and the operation of LSVs at certain roadway crossings. Section 4 absolves the State of California from responsibility for reimbursing jurisdictions for expenses incurred as a result of the state mandated local program. All NEV transportation plans must be submitted for review and approval by Caltrans.

2.4 California Streets and Highways Code

The California Streets and Highways Code Division 2.5 City Streets, Chapter 6 Section 1950-1961 establishes a framework for any county or city to establish a Golf Cart Transportation Plan. Golf carts are defined as:

> "Golf Cart" means a motor vehicle having not less than three wheels in contact with the ground and unladen weight less than 1,300 pounds which is designed to be and is operated at not more than 25 miles per hour and is designated to carry golf equipment and not more than two persons, including the driver.

In the context of code Section 1962.1 authorizing the County of Riverside or cities contained within to establish NEV Plans, the code defines NEVs as:

> (b) "Neighborhood electric vehicle" or "NEV" means a low-speed vehicle as defined by Section 385.5 of the Vehicle Code

2.5 California Vehicle Code

2.5.1 Definitions

According to California State Vehicle Code Section 385.5, NEVs are defined as "low-speed vehicles" that have:

- four wheels
- a maximum speed of 20-25 mph on a paved level surface
- a maximum gross vehicle weight of 3,000 pounds

NEV drivers must be licensed as motor vehicle drivers and abide by the California State Vehicle Code when operating on street.

2.5.2 Lane Use

The California Vehicle Code (CVC)[1] permits NEVs on all roadways with posted speed limits of 35 mph and under. NEVs are also permitted on roadways up to 55 mph within on-street Class II NEV striped lanes. For roadways with posted speed limits above 55 mph, NEV travel can only be accommodated with a separated off-street path. Table 2 summarizes lane use allowed by the CVC. Please refer to Chapter 4 of this document for more information on how this legislation will impact route development.

Table 2: Vehicle Access Permitted by Legislation

Traffic Condition	≤ 25 mph	≤ 35 mph	40-50 mph	≥ 55 mph
Shared general traffic lanes	NEVs Golf carts* Bicycles	NEVs Bicycles	Bicycles permitted	Bicycles not advised but may be permitted
Separate lane or shoulder	NEVs Golf carts* Bicycles	NEVs Golf carts* Bicycles		Bicycles
Separate path	NEVs Golf carts* Bicycles			NEVs Golf Carts

* Generally, golf carts are found in close proximity to golf courses and on facilities designated in a golf cart plan approved by the jurisdiction

2.5.3 Crossings

NEV crossings at roadways with speed limits above 35 mph must be orthogonal (90 degree intersection angles). If such crossings are a major part of the NEV network and the crossing is not orthogonal, there may be opportunities to reconfigure the geometry of the intersection to meet this requirement. Caltrans must approve any uncontrolled crossing of a state highway. The code states:

> (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.

However, the CVC also permits NEVs on roadways with a posted speed of 40, 45, or 50 mph where that roadway has a dedicated NEV / bike lane. Such use would be impractical if turning or crossing movements were not continuous. The CVC is interpreted to mean that at an intersection, as long as the NEV / bike lane is carried all the way through the approach up to the stop line, and again on the

[1] http://www.dmv.ca.gov/pubs/vctop/d11/vc21260.htm

departure side of any leg that a NEV would be permitted to travel to, the movement would be permitted. If the movement is a left turn, then the NEV driver could perform:

- A two-stage turn (with or without special provisions) although at higher volumes there could be an issue with queuing space for NEVs
- A vehicular style left turn, where an NEV/bike lane is available to turn into on the departure side. The NEV driver would not be in a designated NEV lane on the approach; like a vehicular bicyclist, they would be in the general traffic left turn lane. Even on a green indication, there should not be an issue with this because a NEV has similar acceleration and cornering capabilities as an automobile.

2.6 City Municipal Codes

This section provides relevant golf cart and NEV vehicles and traffic regulations obtained from each jurisdiction's municipal code available from the www.qcode.us, www.municode.com or www.amlegal.com websites.

2.6.1 Desert Hot Springs

No applicable municipal code.

2.6.2 Palm Springs

Definitions

Chapter 12.84 sets out the following definitions.

- "Golf cart" means a motor vehicle having not less than three wheels in contact with the ground, having an unladen weight less than one thousand three hundred pounds, which is designed to be and is operated at not more than fifteen miles per hour and designed to carry golf equipment and not more than two persons, including the driver.
- "Darkness" means any time from one-half hour after sunset to one-half hour before sunrise and any other time when visibility is not sufficient to render clearly discernible any person or vehicle on the highway at a distance of one thousand feet.
- "Real estate development offering golf facilities" means an area of single-family or multiple-family residences, the owners or occupants of which are eligible for membership in, or the use of, one or

more golf courses within the development by virtue of their ownership or occupancy of a residential dwelling unit in the development. (Ord. 1405 § 1, 1991)

Operation

- Any person operating a golf cart on designated city streets shall abide by all applicable traffic laws of the city and state.
- No person shall operate a golf cart on a designated city street after darkness unless the golf cart conforms with the equipment requirements of the California Vehicle Code.
- No person shall operate a golf cart on a designated city street for any other purpose than transporting persons and golfing equipment to or from a golf course. (Ord. 1405 § 1, 1991)

Routes

Chapter 12.84.030 designates thirteen streets are for operation of golf carts. No NEV routes have been established in the municipal code, but the City published a NEV network map in 2009 (although this is no longer readily found on the city website). The map is provided in Appendix D to this plan.

Discussion

The Palm Springs definition of a golf cart (1300 lb / 15 mph) excludes NEVs and prohibits non-golfing purposes of travel, severely limiting the transportation utility of such vehicles. The city code does define an electric personal assistive mobility device (EPAMD, popularized by the "Segway" scooter, but does not define electric bicycles or NEVs.

2.6.3 Cathedral City

Although city staff have advised that golf carts and NEVs are prohibited, no such prohibition is found in the municipal code.

2.6.4 Rancho Mirage

Definitions

Chapter 10.70 sets out the following definitions.

"Golf cart" means a four-wheeled motor vehicle with an unladen weight of less than one thousand three hundred pounds, which is designed to be and is operated at not more than twenty miles per hour and is designed to carry golf equipment and not more than two persons, including the driver, and can be utilized on local golf courses for the purpose of playing golf.

"Golf cart" facility means all travel ways, as designated by the city, that provide for golf cart travel. There shall be three categories of golf cart facility:

- Class I golf cart paths provide an area separate from the roadway used by automobile traffic for shared one-way or two-way use by golf carts, bicycles, and pedestrians.
- Class II golf cart lanes provide a striped eight-foot lane for one-way golf cart and bicycle travel on a street or highway.
- Class III golf cart routes provide for shared use with automobile and bicycle traffic. Class III facilities are established by placing golf cart route signs along roadways with speed limits of 25 mph or less in order to link them to Class I or Class II facilities.

Golf cart circulation plan means the adopted map depicting routes and crossing that will be constructed, posted and designated for use by permitted golf carts. (Ord. 713 § 3, 1999)

Operation

Those operating golf carts on any golf cart facility in the city must conform to the following operator requirements and safety criteria:

- Golf cart operators must be licensed drivers in the State of California with valid California driver's license, or a driver's license issued by another state.
- Golf cart operators must comply with the financial responsibility requirements established pursuant to Chapter 1 (commencing with Section 16000) of Division 7 of the California Vehicle Code.
- Golf cart operators must maintain golf cart in a safe condition.
- Golf carts are limited to daytime operation and are not permitted before one-half hour prior to sunrise or after one-half hour after sunset.
- Golf cart operators must yield the right-of-way to automobiles, pedestrians and bicyclists.
- Golf cart operators may only travel on designated golf cart facilities, and only in those golf carts that meet the minimum design criteria required by Section 10.70.030 and that are also properly permitted by the city. (Ord. 713 § 3, 1999)

Routes

The city has developed a golf cart map, last updated March 2012, identifying class 1 paths and class 2 on-street lanes between Dinah Shore Drive and Highway 111. This is provided in Appendix D.

Discussion

The Rancho Mirage definition of a golf cart (1300 lb / 20 mph) excludes NEVs and, unlike Palm Springs, also prohibits night-time use of golf carts regardless of whether they are equipped for such use.

The lack of a connection between the Eisenhower Medical Center at Country Club Drive and The River at Highway 111 along Bob Hope Drive is a significant barrier to CV Link access.

2.6.5 Palm Desert

Definitions

"Golf cart" means an electric powered motor vehicle having not less than four wheels in contact with the ground and an unladen weight of less than three thousand pounds which is designed to be and is operated at not more than 25 mph and is designed to carry not more than six persons, including the driver.

"Golf cart lanes" is synonymous with "golf cart routes" and means all publicly owned facilities that provide for golf cart travel including roadways designated by signs or permanent markings which are shared with pedestrians, bicyclists, and other motorists in the plan area. There shall be three categories of golf cart lanes:

- Class I golf cart lanes provide a right-of-way completely separated from any highway, with cross traffic by other motorists minimized, and designated for the exclusive use of golf carts, or, where feasibly safe and when no parallel improvements for pedestrians and bicyclists are available, designated for the shared use of golf carts, bicyclists, and pedestrians.
- Class II golf cart lanes provide a restricted right-of-way on a highway designated by striping and signage for the exclusive or semi-exclusive use of golf carts, with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and cross traffic by pedestrians and other motorists permitted.
- Class III golf cart lanes are lanes on local streets with speed limits of forty-five miles per hour or less and are shared with pedestrians, bicyclists, and other motorists. (Ord. 1174 § 1, 2008; Ord. 895 § 2, 1998; Ord. 703 § 1, 1993)

Routes

The city's golf cart map was last updated in September 2010 and is provided in Appendix D.

Discussion

The Palm Desert definition of a golf cart (3,000 lb / 25 mph) effectively includes NEVs. The exclusion of lanes on roadways with a posted speed of 50 mph is in variance with the California Vehicle Code which permits operation of NEVs within a designated lane on such roadways.

2.6.6 Indian Wells

No applicable municipal code.

2.6.7 La Quinta

Definitions

Chapter 12.69 sets out the following definitions. "Golf cart" means a four-wheeled electric motor vehicle with an unladen weight of less than one thousand three hundred pounds, which is designed to be, and is operated at not more than twenty-five miles per hour, and is designed to carry golf equipment and no more than two persons, including the driver.

"Golf cart paths" or "golf cart routes" means all city-owned travel ways that allow golf cart travel, including roadways.

There shall be three categories of golf cart paths:

- Class I golf cart paths provide an area separate from the roadway used by automobile traffic for shared one-way or two-way golf carts, bicycles, pedestrians, and equestrians.
- Class II golf cart paths provide a striped eight-foot lane for one-way golf cart and bicycle travel on a street or highway.
- Class III golf cart paths provide for shared use with automobile and bicycle traffic. Class III paths are established by placing golf cart route signs along roadways with speed limits of 25 mph or less in order to link them to Class I or Class II paths.

"Golf cart route" means the map depicting routes and crossings that will be constructed, posted and designated for use by permitted golf carts. (Ord. 474 § 1, 2009)

Operation

All golf cart operators operating golf carts on any golf cart path in the city must conform to the following operator requirements and safety criteria:

- Golf cart operators must be licensed drivers in the state of California with valid California driver's license, or have a valid driver's license issued by a jurisdiction in accordance with Vehicles Code Sections 12502 through 12505.
- Golf cart operators must comply with the financial responsibility requirements (insurance) established pursuant to Chapter 1 (commencing with Section 16000) of Division 7 of the California Vehicle Code.
- No golf cart shall be operated on golf cart paths or golf cart routes within the city without a current golf cart permit decal visibly displayed on the right rear fender of the golf cart.
- The golf cart permit shall be valid for two years from the date of issuance.
- Golf cart operators must maintain the golf cart in a safe condition and be properly loaded to conform with CVC Section 24002.
- Golf cart operators may only travel in those golf carts that meet the minimum design criteria required by Section 12.69.030.
- Golf carts are limited to daytime operation and are permitted on public streets only during the time period between one hour prior to sunrise and one hour after sunset.
- A maximum of two persons may ride in the golf cart and may only ride in the main passenger compartment equipped with safety belts. Both driver and passenger must wear safety belts at all times while the golf cart is being operated on Class I, II, or III golf cart paths.
- Golf cart operators must yield the right-of-way to pedestrians, bicyclists, and equestrians.
- Golf cart operators may only travel on designated golf cart routes or along streets with speed limits of 25 mph or less.
- Golf cart operators may not travel on or along streets with speed limits in excess of 25 mph except on designated golf cart routes and shall only cross at controlled intersections as designated on the golf cart route map.
- Golf carts modified by removing any of the above safety equipment or a modification that in any way creates an unsafe cart will result in the immediate revocation of the golf cart permit and will be subject to any violations that apply under the California Vehicle Code. Should a golf cart be impounded pursuant to a violation under the State Vehicle Code, the registered owner shall be subject to any regulations imposed by the impounding authority pursuant to Section 22850.5 of the California Vehicle Code.

- No person shall operate or move a golf cart upon a sidewalk except those persons who in the course of their employment by a state, federal, or local government, or school district maintenance crew. (Ord. 474 § 1, 2009)

Routes

Undated map; includes specification of 8-foot-wide lanes; included in a detailed brochure.

Discussion

The La Quinta definition of a golf cart (1,300 lb / 25 mph) effectively includes some NEVs, but excludes others with the two person occupancy restriction. La Quinta has substantially more regulations beyond those provided in the California Vehicle Code.

2.6.8 Indio

Definitions

"Golf cart" is a motor vehicle having not less than three wheels in contact with the ground that is designed to be and is operated at not more than 25 miles per hour and carries golf equipment, food/beverages for golfers, and one or more people, including a driver, and can be utilized on a golf course for play, service to golfers or maintenance.

"Golf cart circulation plan" is the plan presented by city staff concurrent with this chapter's approval or such plan as may supersede same by determination of the Planning Commission. The golf cart circulation plan shall be a public record maintained by the City Clerk.

"Golf cart facility" is all travel ways, as designated by and located in the city within public right-of-way, that provide for golf cart travel. There shall be three categories of golf cart facilities:

- Class I golf cart paths provide an area separate from the roadway used by automobile traffic for shared one-way or two-way use by golf carts, bicycles and pedestrians.
- Class II golf cart lanes provide a striped lane for one-way golf cart and bicycle travel on a street or highway.
- Class III golf cart routes provide for shared use with automobile and bicycle traffic. Class III facilities are established by placing golf cart route signs along roadways with speed limits of 25 miles per hour or less in order to link them to Class I or Class II facilities.

"Golf cart operator" is any person that operates a golf cart within public right-of-way per this chapter.

"Golf club" is a public or private golf course owned by an institutional golf cart operator and located in its entirety on private or city-owned property with the sole exception of city street crossings identified in § 72.06.

"Institutional golf cart" is a golf cart owned by an institutional golf cart operator and operated exclusively within a golf club.

"Institutional golf cart operator" is any entity, e.g., a company, corporation, homeowners' association, management association, etc., that owns and allows usage of golf carts at a golf club by persons who are playing golf, and are:

- Members of the entity in question, or
- Residents or guests of residents of a community related to the entity in question, or
- Otherwise affiliated with, paying fees to, or in receipt of consent from the entity in question to do so. (Ord. 1583, passed 12-15-10)

Operation

- A golf cart operator must be possess a valid California driver's license, a driver's license issued by another state, or other proof of legal authority to operate a motor vehicle in California;
- A golf cart operator must have insurance that complies with the financial responsibility requirements established pursuant to Cal. Vehicle Code Chapter 1, Division 7, §§ 16000 et seq.;
- Each golf cart must be maintained in a safe condition;
- In the case of an institutional golf cart, the party responsible to fulfill this duty to maintain the golf cart in question is the institutional golf cart operator, not an individual golf cart operator;
- Operation of a golf cart that does not meet the design criteria specified in § 72.03 is prohibited between one-half hour after sunset and one-half hour before sunrise at designated crossings;
- Golf cart operators must yield the right-of-way to automobiles, pedestrians and bicyclists;
- Golf cart operators may only travel on a designated golf cart facility, a golf club crossing conforming to § 72.06, or a public street with a speed limit of 25 miles per hour or less; and
- Except as otherwise provided in this chapter, each golf cart operated in the city shall comply with the design criteria required by § 72.03 and be properly permitted as required by § 72.05. (Ord. 1583, passed 12-15-10) Penalty see § 72.99

Routes

Eight streets are identified for golf cart operation in the March 2011 map, provided in Appendix D.

Discussion

Indio's definitions are less proscriptive than other jurisdictions and could effectively include NEVs. The speed limit restriction to 25 mph roadways varies from the California Vehicle Code, which permits operation in mixed traffic lanes up to and including 35 mph posted speeds. The route map does not identify many local streets that could serve as Class III mixed traffic routes, and an explicit approval for such neighborhood street operation could clarify the bylaw.

2.6.9 Coachella

No applicable municipal code. As an aside related to the CV Link Master Plan, the code provides for bicycle licensing by the Chief of Police, applicable to resident operation of bicycles on city streets.

2.6.10 Summary

A summary of City Ordinances Relevant to Golf Carts and NEVs is provided in Table 3, showing that there are no two cities with the same definition of a golf cart. By permitting golf cart operation up to 25 mph on designated city streets, three cities effectively permit NEVs. No city explicitly defines or prohibits an NEV.

Table 3: Summary of City Ordinances

Jurisdiction	Weight (lb)	Speed (mph)	Maximum Occupants	Prohibitions	Routes
Desert Hot Springs	N/A				
Palm Springs	1300	15	2	Non-golf use	Separate golf cart and NEV maps
Cathedral City	N/A				
Rancho Mirage	1300	20	2	Night use	Golf cart map
Palm Desert	3000	25	6		Golf cart map
Indian Wells	N/A				
La Quinta	1300	25			Golf cart brochure
Indio	not defined	25	not defined		Golf cart map
Coachalla	N/A				

2.6.11 Executive Order B-16-2012 and ZEV Action Plan, 2013

In March 2012, California State Governor Edmund (Jerry) Brown issued Executive Order B-16-2012 requiring all state agencies and entities to make efforts toward the rapid deployment of Zero-Emissions Vehicles (ZEV) in the state of California. This order also required that state agencies – including the California Air Resources Board, California Energy Commission and Public Utilities Commission – partner with the Plug-in Electric Vehicle Collaborative and California Fuel Cell Partnership to develop zero-emissions benchmarks for the state to achieve by 2015, 2020, and 2025. ZEVs as defined here include the broad range of electric vehicles including NEVs, but also other plug-in Battery Electric Vehicles (BEV), Plug-in Hybrid Vehicles (PHEV) and hydrogen fuel cell vehicles.

The 2013 ZEV Action Plan drafted in response outlines the strategies and actions necessary to meet the benchmarks set forth in EO B-16-2012. The Action Plan places emphasis on the market conditions and charging/fueling infrastructure necessary for large-scale deployment of ZEVs and the public-private partnership opportunities that will enable these developments. The plan consists of four general goals:

- Complete necessary infrastructure and planning
- Expand consumer awareness and demand
- Transform fleets
- Grow jobs and investment in the private sector

3 Existing Conditions

As the Coachella Valley region continues to expand, the mobility and accessibility needs of its residents will also increase. Neighborhood Electric Vehicles (NEVs) can contribute to a more livable and sustainable region. The purpose of this chapter is outline the current state of NEV development and the plans for future NEV infrastructure development in the Coachella Valley region.

This chapter begins with summaries of existing local plans and relevant reports for NEV system design and policy in the Coachella Valley. Residential density, employment density, and key local destinations are used to complete an NEV Suitability Analysis (NEVSA). The chapter concludes with a summary of identified opportunities and constraints to NEV network development. Additional NEVSA documentation is provided in Appendix A and existing network maps are provided in Appendices B and C.

3.1 Document Review

Several local NEV plans and reports have been published in recent years. These plans and reports provide a number of effective approaches towards NEV system development directly applicable to the Coachella Valley region.

3.1.2 Draft CVAG PEV Readiness Plan

The recently published draft CVAG Plug-in Electric Vehicle (PEV) Readiness Plan provides the foundation for a regional NEV transportation network in the Coachella Valley. The purpose of the plan was to prepare for system-wide deployment and adoption of PEVs over the next decade. The plan is the result of close coordination between local communities, local, regional, state, and federal agencies, members of the California PEV Coordinating Council, electric vehicle industry representatives, and numerous stakeholder groups.

The plan estimates that up to 13,000 PEVs will be on Coachella Valley roads by 2025. These projections were based on current vehicle registration data (there are currently about 148 PHEVs, 76 BEVs and 440 NEVs registered in the Coachella Valley). The plan notes that the NEV fleet has not grown over the last decade, which may be due to the current road network limitations. These projections were also used to generate demand estimates for non-residential charging stations. Several indicators of adoption were identified through surveys and market data. These indicators were then used to develop a weighted scoring methodology for charging station siting throughout the region. This was further refined to identify workplace and opportunity charging locations.

The PEV Readiness Plan considers the broad range of both Plug-in Hybrid Electric Vehicles (PHEVs) and Battery Electric Vehicles (BEVs). As a result of this general scope, the PEV Readiness Plan focuses primarily on vehicle technology and Electric Vehicle Supply Equipment (EVSE) infrastructure and the corresponding market and policy/regulatory drivers necessary for deployment. It does not specifically address the infrastructure required for NEV adoption, i.e. NEV Class I, II, and III facilities.

3.1.2 WRCOG NEV Plan

The Western Riverside Council of Governments Neighborhood Electric Vehicle Plan (WRCOG NEV Plan) was drafted to develop the "backbone" network of NEV facilities between the cities of Corona, Norco, Riverside, and Moreno Valley in 2010. It was designed as a model plan for cities to consult in developing local NEV Plans. Most of the backbone network is based on existing and planned routes with Class II bike facilities, as these can be relatively easy and cost-effective to convert for NEV use.

The WRCOG NEV Plan provides a model design guide section with guidance on NEV facility types, signage and pavement markings, wayfinding, charging stations, parking, and facility maintenance. This guidance informed the CVAG NEV Transportation Plan.

3.1.3 City of Lincoln NEV Transportation Plan

The City of Lincoln was the first city in California to adopt a NEV Transportation Plan. The Lincoln plan was primarily created to accommodate high usage of NEVs in the Sun City Lincoln Hills development and expand the NEV network to meet increasing demand in the greater Lincoln area. Much of that demand is generated from the large and growing retirement community in Lincoln. This provides a similar context for cities across the Coachella Valley. The plan was intended to prescribe relatively "minor modifications" to existing facilities including signing and striping improvements, parking, charging stations, and crossings.

The environmental justice element of the plan estimates that the cost of owning and operating an NEV is only 20% of the cost of owning a passenger automobile, suggesting that NEVs provide an affordable transportation options for low-income drivers. The plan establishes a special driver's permit to improve the safety and independence of aging or disabled drivers that can no longer hold a driver's license.

3.1.4 Local Support and Opposition to NEVs

NEVs provide mobility options for a wide range of trip purposes, including commute trips, school, shopping, errands, and recreation. The replacement of short passenger vehicle trips with NEV trips will reduce fuel consumption and emissions. Because of lower new vehicle purchase prices and reduced long-term maintenance costs, NEVs can be attractive to those with a wide range of household incomes, and have the potential to increase independence and mobility options of older residents who are no longer able to operate a motor vehicle. As the infrastructure and market develop, the barriers to NEV ownership and operation are further reduced.

As documented in the draft CVAG PEV Readiness Report, the opportunities for NEV development in the Coachella Valley are abundant. Many valley residents are already accustomed to travel by golf cart, and PEVs have been on the road in the region for over a decade. Current PEV and golf cart use has contributed to a general understanding of the need for improved facilities and safer, more convenient connections to local and regional destinations. Several of the cities in the region have begun to invest more heavily in NEV infrastructure in recent years. For example, the City of Palm Springs has an electric vehicle fleet and has installed electric vehicle charging stations throughout the city.

The majority of local and regional policy makers are supportive of NEV development efforts including CVAG, Riverside County Supervisors, and the mayors of most of the cities in Coachella Valley. In recent years, local and regional support for NEV development has centered on CV Link. While not necessarily specific to NEV vehicles or the infrastructure, this media attention has simultaneously elevated the profile of the project and reaffirmed the region's goals toward NEV development.

Despite the many opportunities and benefits of NEV development, support has not been unanimous. Outreach conducted for CV Link has indicated concern about the safety of mixing NEVs, bicyclists, and pedestrians on existing and constrained new pathways. This NEV Plan and the CV Link Master Plan will help guide the development of facilities that minimize path user conflicts. However, the cities will also need to consider widening existing paths and/or traffic control devices where widening is not feasible.

3.2 NEV Demand and Access Analysis

The purpose of this NEV Suitability Analysis (NEVSA) is to identify areas of high current and potential activity as well as patterns of land use and demographics that will generate NEV travel within the study area. This analysis will help guide route selection and infrastructure decisions.

The analysis provides the following benefits:

- Quantifies factors that impact NEV activity, objectively identifying areas where NEV users might want to be, while focusing on destinations like schools, and parks
- Provides the basis for a geographically based alternative alignment analysis
- Quantifies the economic benefits that are derived from construction of various alignment alternatives
- Guides community leaders and the public on alternative alignment analyses

3.2.1 Development of NEVSA

The analytical methods in NEVSA provide an objective, data-driven process for identifying clusters of high potential NEV activity and areas with poor existing network connectivity.

Background, Overview of NEVSA, and Use Considerations

This NEVSA has its basis in a technique devised by prominent landscape architect, Ian McHarg. His influential book Design with Nature (1969) highlighted the importance of considering the natural environment when introducing new development and infrastructure. McHarg was an early pioneer of GIS analysis and established innovative techniques for route planning using photographic map overlays. McHarg asserted that in order to find the most suitable route, one must determine the least social cost, i.e., consider factors that would impact social values. Once identified, each factor was mapped on a transparent sheet using three different color shades representing the level of social cost. The sheets were then stacked, revealing the most suitable route location. McHarg's photographic map overlay analysis paved the way for the foundation of modern day GIS models.

By providing a simplified version of the system for study, models serve as an effective means to understand how factors in a complex system interact. However, models are constrained by the quality of available data and the complexity of the system under consideration.

NEVSA provides a general understanding of expected activity in the environment by combining categories representative of where people live, work, play, and go to school into a composite sketch of

regional demand. Area specific land use and demographic factors, as well as transportation factors, such as transit service, local retail and service destinations, and schools are considered. This analysis will form the basis of the route selection process, because it predicts where there will be a high demand for trip making. Subsequent to completing this demand model, the likely routes, based on average NEV trip length and roadway suitability, can be prioritized.

NEVSA Demand Analysis Development

NEVSA's Demand Analysis relies on spatial consistency in order to generate logical distance and density patterns. All scores are aggregated to a central location at the census block level, the census block corner, referred to as "NEVSA Point". Census blocks closely represent the street network and therefore Census block corners closely represent street corners where NEV traffic is prevalent. This method is based on the "Low-Stress Bicycling and Network Connectivity" report.[2] The report discusses the benefits of using a smaller geographic setting for pedestrian and bicycle demand analyses rather than using more traditional traffic model features such as census block groups, census tracts or traffic analysis zones (TAZs). Due to the current lower range of NEV movement relative to automobiles, this smaller geographic unit of analysis is also suitable.

3.2.2 Utilization of NEVSA – Demand Analysis

Demand Analysis Scoring Method

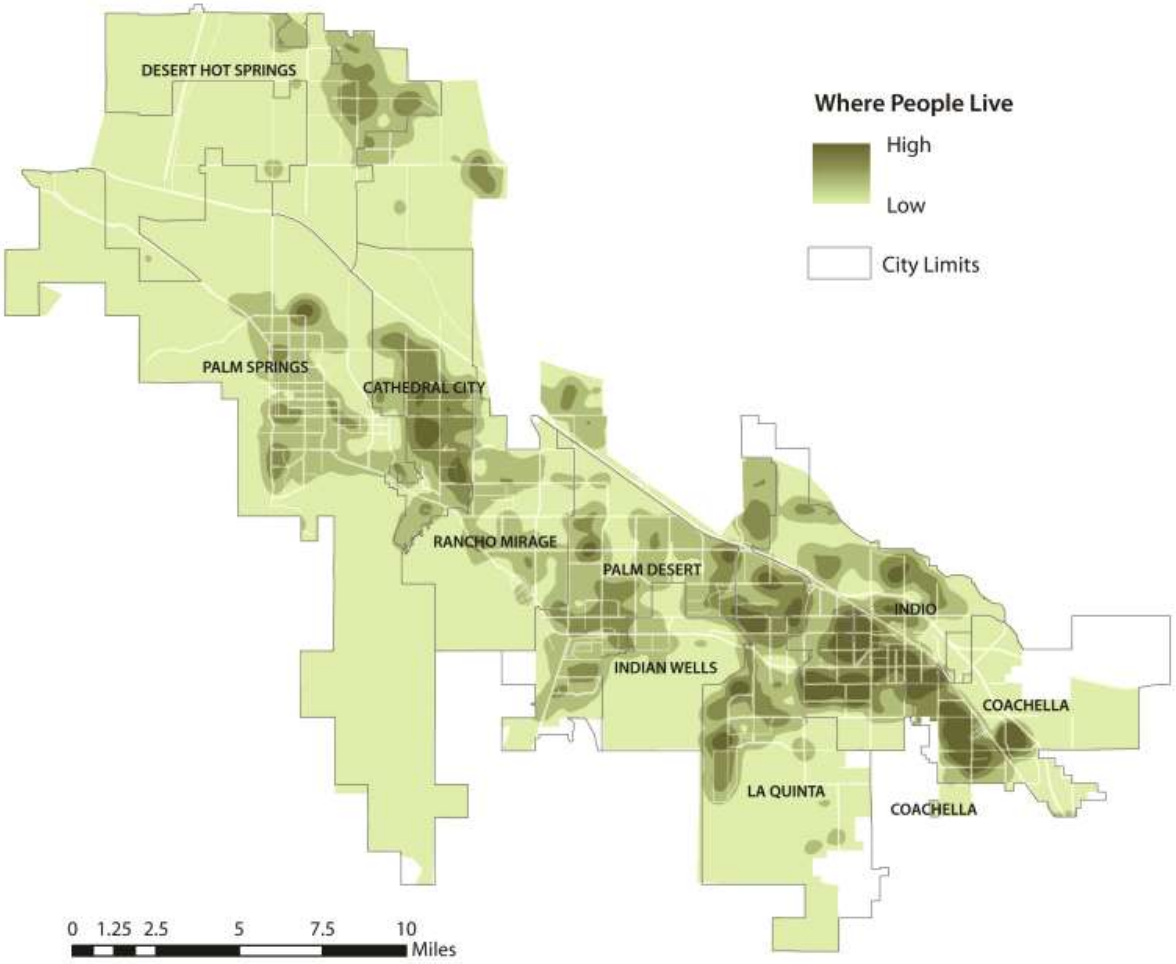
Generally speaking, the scoring method for the demand analysis is a function of density and proximity of trip generators. Areas with a large number of destinations close to each other score highly. Similarly, areas that are expected to generate more NEV trips score highly. Appendix A provides further detail on destination types and feature scores and weights.

Results of Demand Analysis

The following thematic maps illustrate where people live, work, play, learn, and access transit. For the purposes of this analysis, shopping centers are considered locations where people play.

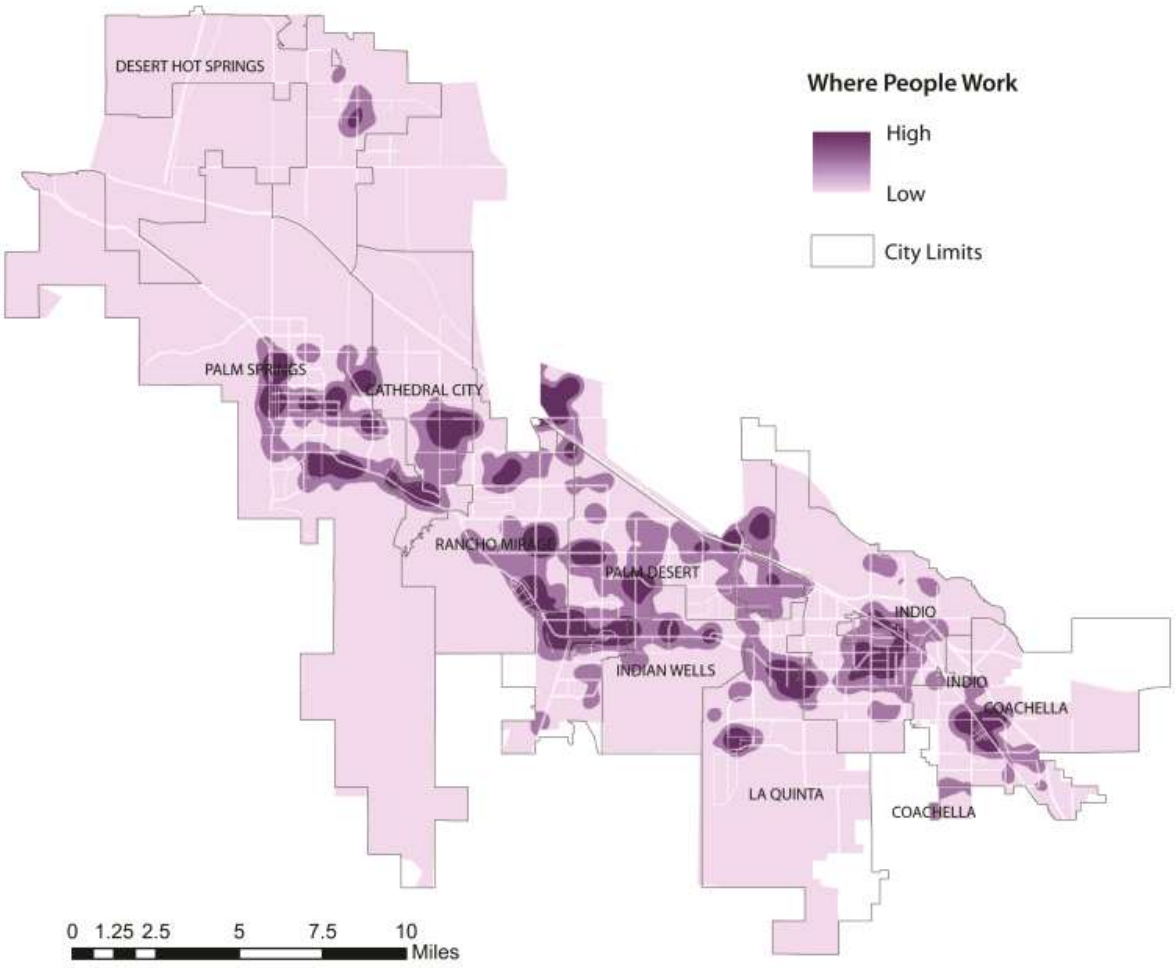
[2] Maaza, Mekuria, P. Furth, and H. Nixon. *Low Stress Bicycling and Network Connectivity*. Mineta Transportation Institute. May, 2012.

Map 1: Where People Live



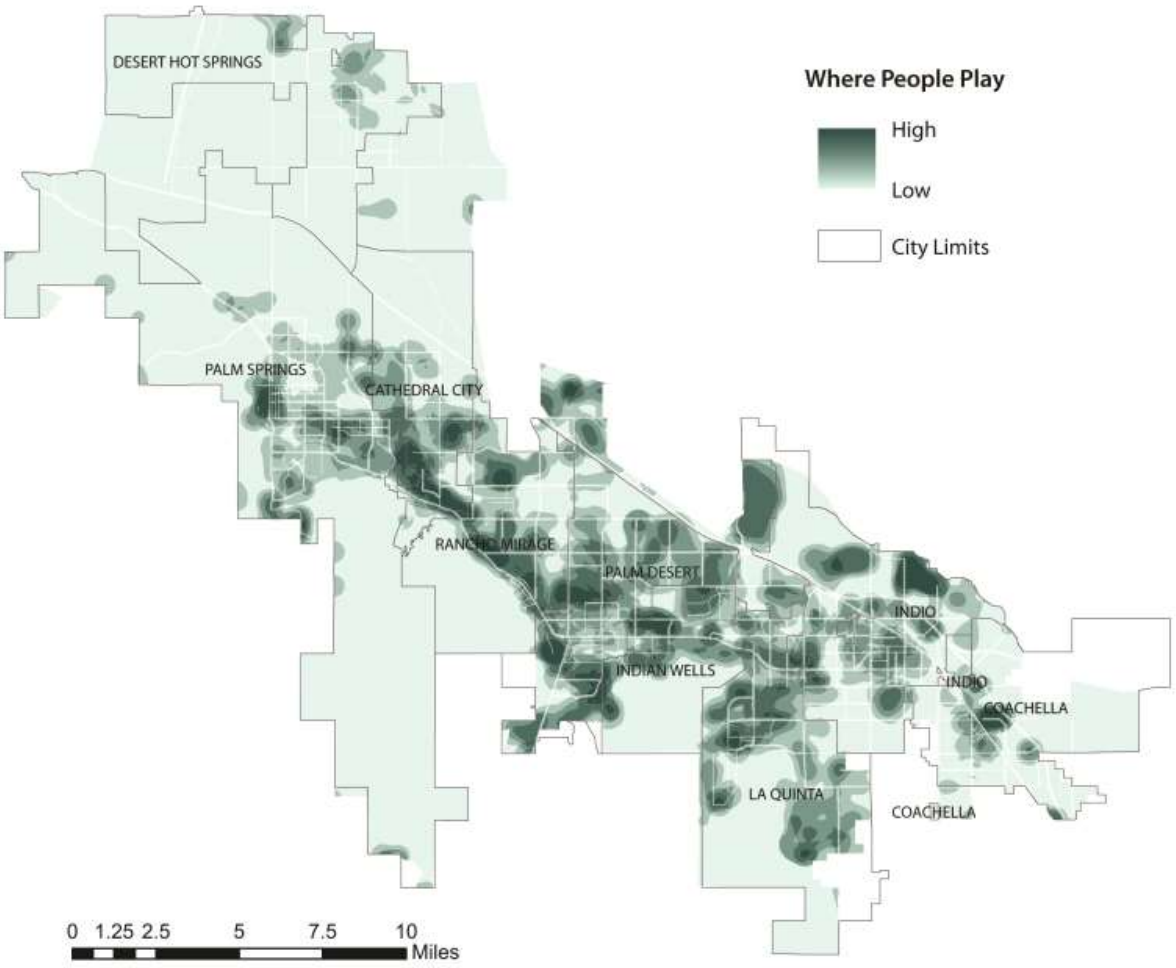
Where People Live includes 2010 census block level population density information. These locations represent potential trip origin locations. More trips can be made in areas with higher population density if conditions are right. Areas with the densest populations are found in the southeast portion of the region, in Indio and Coachella. This category is a function of the number of NEVSA points within a half-mile of each other. As for all maps, the more deeply shaded areas represent higher demand areas relative to lighter colors. See Appendix A for scoring details.

Map 2: Where People Work



Where People Work represents trip ends for people working within the Coachella Valley region. Its basis is 2010 total employment by census block. Areas of dense employment are found in Palm Springs, Palm Desert along Highway 111, Thousand Palms, Indio, and Coachella. Depending on the type of job, this category can represent both trip attractors (i.e., retail stores or cafes) and trip generators (i.e., office parks and office buildings) in terms of base employment population. It is therefore also used in the where people play category by overlaying with specific job types, such as retail. This category accounts for the number of employees per NEVSA Point within a half-mile. See Appendix A for scoring details.

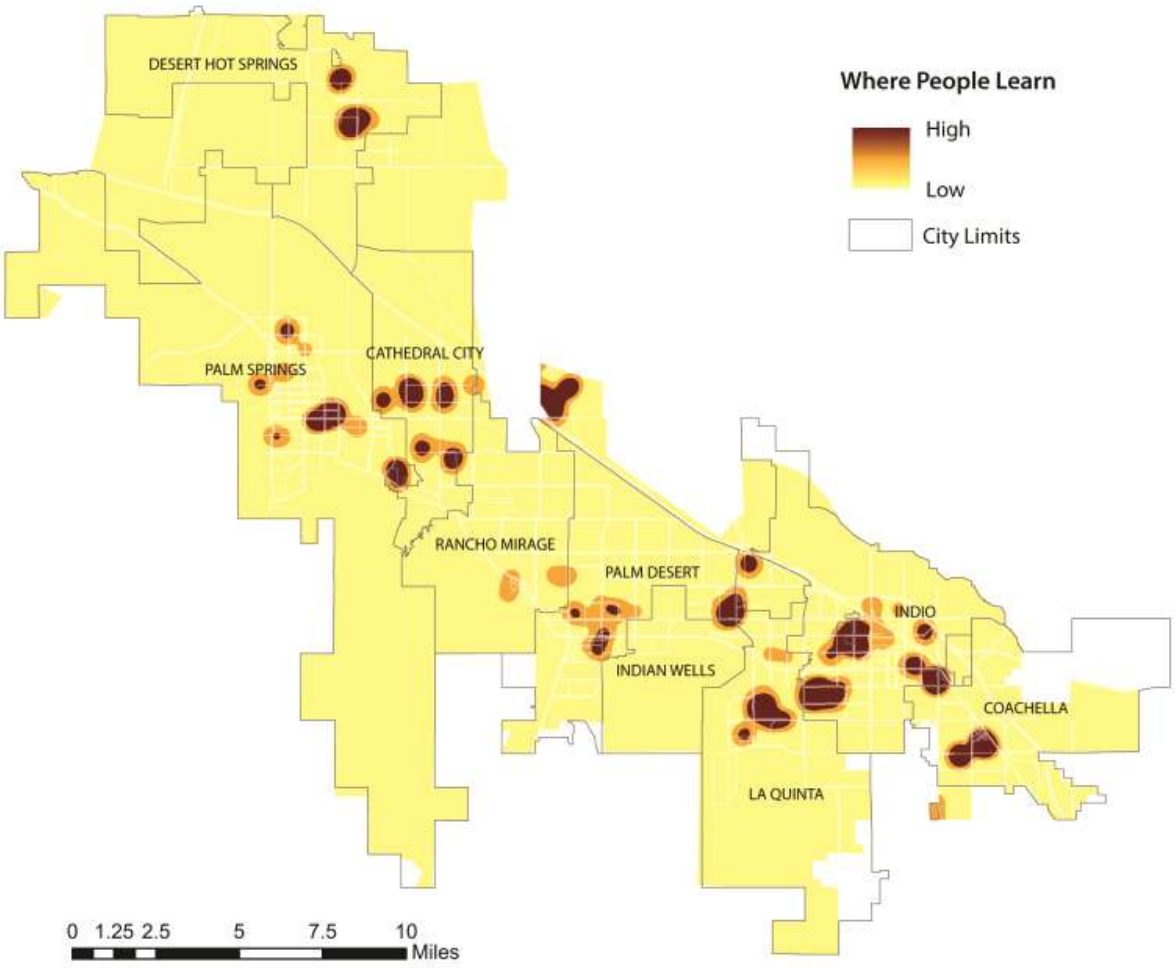
Map 3: Where People Play



Where People Play is a combination of varied land use types and destinations. Overlays such as golf courses, retail destinations, parks and services and hospitals all contribute to this category. While hospitals and services are not exactly where one would expect to "play," these civic amenities are still destinations of importance and are reflected in this category due to the temporary nature of the visit. As shown above, the greatest concentration of play destinations in the valley is found along Highway 111, in downtown Palm Springs and the northern portion of Indio.

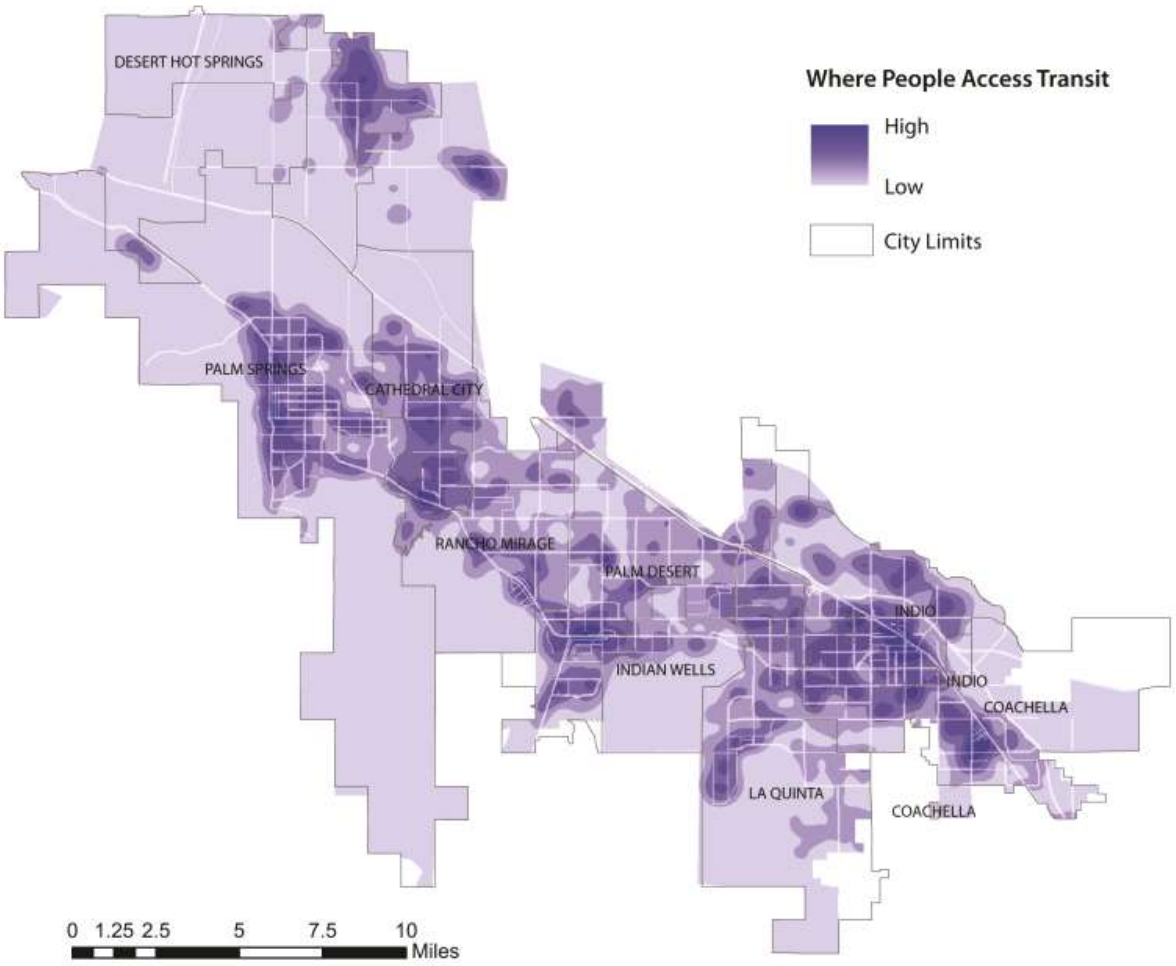
This category accounts for the number of destinations per NEVSA Point as well as the relative importance of each destination. See Appendix A for scoring details.

Map 4: Where People Learn



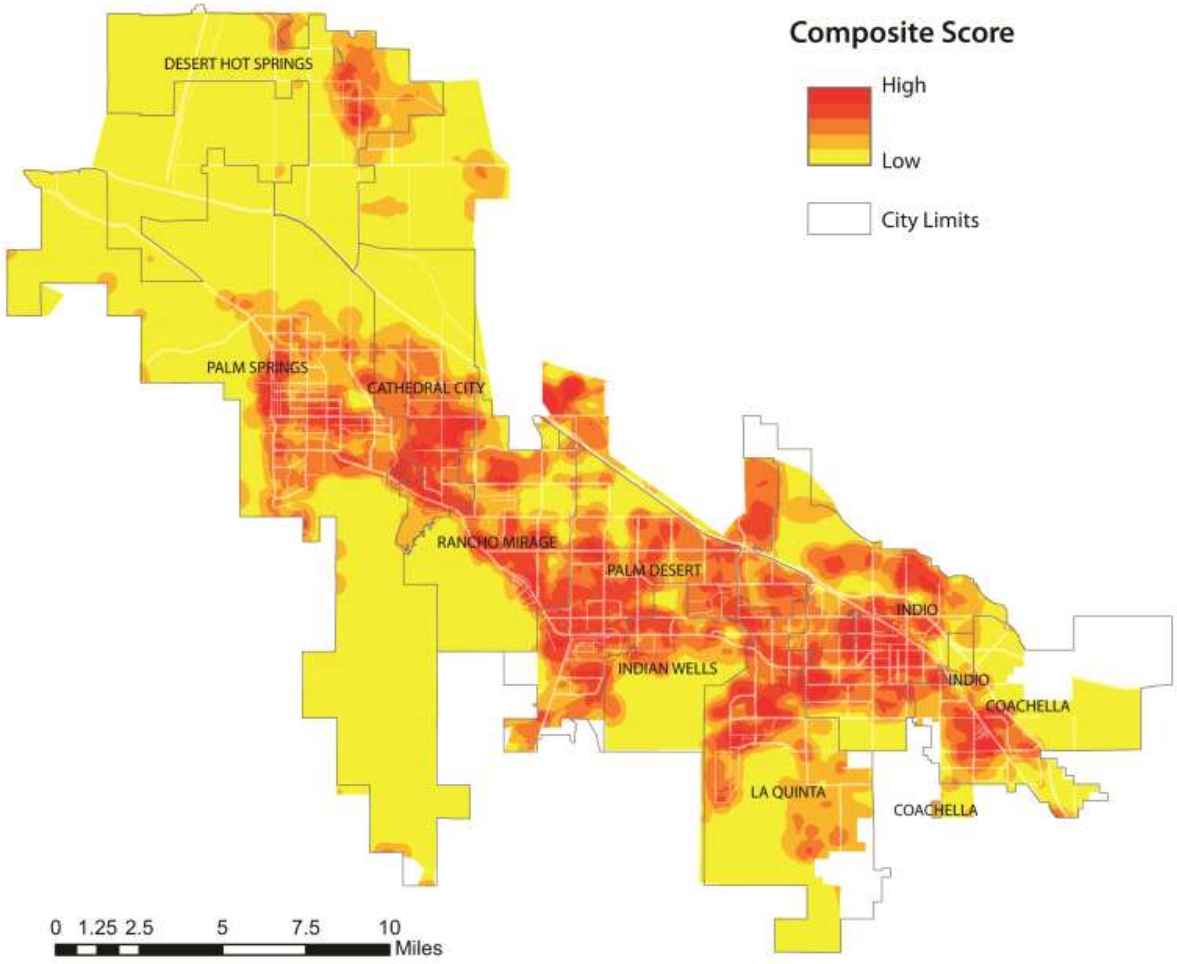
Where People Learn is important due to the number of children that could receive rides to school and the role schools play as civic destinations for all types of activities. Darker shading indicates areas where learning destinations are closer together and parents or other family members would have an easier time accessing multiple schools. Schools with the greatest proximity are found in population centers within the valley. See Appendix A for scoring details.

Map 5: Where People Access Transit



Where People Access Transit is assessed using transit stop locations. This category accounts for the transit stops within a half-mile of each other. Areas with the greatest density of transit stations are typically in commercial areas, where roadways are served by multiple transit lines. This category is included in the model, because it is specified in the legislation prescribing the considerations for NEV plans in California. See Appendix A for scoring details.

Map 6: Composite NEV Demand Map



After independently processing the features, the composite model is created and grouped into five demand classes using natural breaks in the data values. Estimated demand is highest along Highway 111, between Palm Springs and Indian Wells, along Indio Boulevard in Indio, and at the confluence of retail land uses, 'play destinations,' residences and places of work. Moderate demand is seen between high demand areas, representing movement between destinations in these areas. Areas with moderate demand are often characterized by a single dominant land use (e.g., employment centers). The route selection process draws from this demand analysis to recommend the high priority NEV routes that can connect the areas in high demand using the appropriate street types.

See Appendix A for a description of the extent to which each feature influences the composite demand model. By comparing the total possible score (per NEVSA Point) with the actual scores one can see both

how social and cultural features affect demand and how increasing distance between origins and destinations reduces demand.

Areas with Poor Existing Network Connectivity

Areas with poor connectivity have barriers and gaps such as roadways with posted speed limits greater than 35 mph. In these cases, NEVs must either travel in an exclusive NEV/bike lane, travel along a designated grade-separated path or travel greater distances to arrive at their intended destination via lower speed, lower-stress local streets. These high speed roadways are listed in Table 4 below and are further illustrated in Appendix B and C. This table may include roads that currently have some segments marked for bike or golf cart lanes.

Table 4: Barriers to Connectivity

Road	Speed Limit (mph)	Road	Speed Limit (mph)
Palm Springs			
Highway 111	50	Alejo Road	45
Gene Autry Trail	50	Mesquite Avenue	45
Indian Canyon Drive	45	Palm Canyon Drive	40-45
San Rafael Drive	45	Tachevah Drive	40
Racquet Club Road	45	Amado Road	40
Farrell Drive	45	Baristo Road	40
Vista Chino	45	Escoba Drive	40
Sunrise Way	45	Ramon Road	40
Crossley Road	45	Sunny Dunes Road	40
Cathedral City			
I-10	70	Ramon Road	45
Date Palm Drive	45-55	Perez Road	45
Highway 111	50	Dinah Shore Drive	40
Gerald Ford Drive	50		
Rancho Mirage			
Bob Hope Drive	40	Morningside Drive	50
Highway 111	50	Da Vall Drive	45
Frank Sinatra Drive	50	Country Club Drive	45
Dinah Shore Drive	50	Parkview Drive	45
Monterey Avenue	50		
Indian Wells			
Highway 111	45-55	Fred Waring Drive	45-50

Road	Speed Limit (mph)	Road	Speed Limit (mph)
Washington Street	50	Cook Street	45-50
Miles Avenue	50	Eldorado Drive	40
La Quinta			
Avenue 53	55	Avenue 42	45-50
Avenue 54	55	Dune Palms Road	40-50
Highway 111	50-55	Washington Street	40-50
Jefferson Street	45-55	Adams Avenue	45
Miles Avenue	50	Avenue 52	45
Fred Waring Drive	50	Madison Street	45
Avenue 50	50	Eisenhower Drive	40
Palm Desert			
I-10	70	Portola Avenue	40-50
Highway 74	55	Highway 111	45
Frank Sinatra Drive	55	Fred Waring Drive	45
Gerald Ford Drive	55	Parkview Drive	45
Oasis Club Drive	55	Hovely Lane	45
Magnesia Falls Drive	50	Country Club Drive	45
Monterey Avenue	50	Haystack Road	45
Eldorado Drive	50	Cook Street	50
Washington Street	50	Mesa View	40
Indio			
I-10	70	Avenue 52	45
Avenue 50	55	Avenue 44	45
Jefferson Street	40-55	Monroe Street	40-45
Indio Boulevard	50	Dr Carreon Boulevard	40
Fred Waring Drive	50	49th Avenue	40
Hjorth Street	50	Burr Street	40
Avenue 48	40-50	Clinton Street	40
Madison Street	45-50	Arabia Street	40
Jackson Street	40-50	Oasis Street	40
Miles Avenue	45	46th Avenue	40
Cabazon Avenue	45	Market Street	40
Golf Center Parkway	45	45th Avenue	40
Dillon Road	45	Calhoun Street	40
Highway 111	45	Van Buren Street	40

Road	Speed Limit (mph)	Road	Speed Limit (mph)
Coachella			
I-10	70	Fillmore Street	40-50
Highway 86 S	65	Avenue 53	45
Highway 111	40-55	Jackson Street	45
Van Buren Street	50	Dillon Road	45
Harrison Street	50	Tyler Street	40-45
Avenue 54	50	Polk	40
Avenue 52	50	Avenue 49	40
Avenue 48	40-50	Avenue 50	40
Desert Hot Springs			
I-10	70	Palm Drive	40-50
Highway 62	65	Dillon Road	45
Indian Avenue	55	Mission Lakes Boulevard	40
Fairview Road	55	Hacienda Avenue	40
Pierson Boulevard	50-55	Camino Aventura	40
Little Morongo Road	40-55		

Other network gaps occur at many of the Whitewater River Channel bridge crossings. These locations are constrained by limited space for new, NEV-specific facilities (outward expansion being cost prohibitive). In some cases existing golf cart or bike lanes exist and narrowing existing travel lanes can be a cost-effective way of accommodating shared Class II NEV lanes or an NEV path. As mentioned above, roadway speeds and right-of-way widths will determine whether Class II NEV lanes are possible on these bridges. These opportunities and constraints are explored in further detail in Table 2 of this chapter.

3.3 Opportunities and Constraints

This section identifies general opportunities and challenges for the development and implementation of a comprehensive NEV network in the Coachella Valley. Some of the opportunities and constraints identified here may apply more to some jurisdictions than others, but Riverside County and CVAG have a key role in coordinating NEV development efforts and ensuring that plans and development strategies are consistent throughout the region.

3.3.1 Connectivity and Circulation

Coachella Valley street networks are generally characterized by grids of multi-lane arterials on one mile spacing with curvilinear suburban residential streets within. The suburban style road networks create disconnected street patterns, which present major challenges for through transportation, because they limit route options and increase travel distances for all roadway users.

Fewer route choices, due to lower street and intersection densities, means that there are decreased opportunities for individuals to use low-stress streets to reach their destination. In general, the routes that do connect to key destinations (e.g. commercial centers, schools, and parks) are on more heavily travelled, high speed arterial streets. On streets with a posted speed limit greater than 35 mph and no separate NEV accessible lane, NEV users are legally prohibited from completing their journey. Even where a NEV accessible lane is present, many would-be users may not feel safe or comfortable alongside much faster vehicles

A second symptom of a disconnected street network is that street connections are often indirect. Traveling to an adjacent neighborhood, a local park, or a commercial area may be a short distance "as the crow flies", but taking the existing street network will lead to longer travel times due to out-of-direction travel. Since NEVs are generally slower than passenger automobiles, travel by NEV is at a competitive disadvantage to travel by automobile. This can be addressed through the design of roadways and intersections. For example, CV Link will improve the level of service for NEV users by providing an alternative to the street network. Access to various roadway types permitted by legislation is summarized in Table 2 earlier in this document.

Street connectivity varies throughout each city in the Coachella Valley as a result of a unique mix of land uses including golf courses, limited access gated communities, drainage channels, major roads and highways, larger block sizes, and areas with lower residential densities. These constraints are illustrated in further detail in city profile maps in Appendices B and C.

There are also some areas within Desert Hot Springs, Indian Wells, La Quinta, Rancho Mirage, Cathedral City and Palm Springs where the residential street network includes lower speed streets, smaller blocks sizes, and an orthogonal grid. Roadways in these mostly residential areas have tremendous potential to serve as low-speed, low-stress NEV routes that connect to other NEV facilities and destinations.

In the long term, NEV connections to transit may provide residents with a "first and last mile" trip solution. SunLine Transit Agency provides bus service for the entire Coachella Valley region. Having a single regional transit provider offers the advantage of simplifying coordination between neighboring

jurisdictions, allowing for a more seamless and convenient transit user experience. NEV Park and Ride facilities at local bus stations can offer residents a multimodal connection point for longer trips.

3.3.2 Integration with Existing Bike Network

Similar to Caltrans bicycle facility classifications, three classes of NEV facilities are proposed. These are described in detail in Chapter 5 and briefly described below.

- Class I NEV paths are off-street facilities where standard passenger cars are prohibited.
- Class II NEV lanes are travel lanes for the shared use of bicycles, NEVs, and golf carts, adjacent to the right or left-most motor vehicle lane.
- Class III NEV Routes are shared lanes on low speed streets.

Planned Class II facilities listed in local bike plans and in the Coachella Valley Non-motorized Transportation Plan should be assessed for future shared NEV/bike lane use.

With minor roadway striping modifications, many NEV focused facilities can be shared with bicycles. Maps of existing bike networks in each city are provided in Appendix B. In other cases, existing streets can be considered for future NEV route and NEV lane designations. Maps of street speed limits for each city are provided in Appendix C.

3.3.3 Integration with Existing Golf Cart Network

The cities of Rancho Mirage, Palm Desert, La Quinta, and Indio all have existing golf cart transportation plans and policies. Existing public pathways designated for golf cart use may present opportunities for conversion to shared-NEV paths. However, many of these paths are constrained by geometries (widths and curve radii) more suited to the typical top speed of a golf cart (under 15 mph). Because NEVs are capable of travelling up to 25 mph, the route planning may suggest upgrades to existing golf cart facilities, or the use of other routes. NEV operators may also simply decrease their speed when using constrained paths. The existing width of the path, presence of shoulders (and potential for expansion of the path) will dictate whether the path can be used as one-way or two-way, whether there is sufficient space for passing and turnouts and shared-use with bikes and pedestrians. The opportunities and constraints listed for Class II shared NEV/bike lanes apply to shared NEV/golf cart lanes.

NEV users are likely to prioritize routes that offer the most direct connection between points, so consideration should be given to minimizing of out-of-way travel and potential congestion points. These opportunities will need to be assessed in further detail during the implementation of the network.

Existing golf cart networks are typically designed around golf courses as the primary destination. Because golf cart paths are designed for golf course access and circulation, they may not offer direct transportation connections to other destinations. When integrating these pathways into the larger NEV network, providing safe and convenient connections to a variety of destinations should be the top priority.

3.3.4 Wayfinding

Wayfinding signage provides NEV drivers with valuable travel information, including direction, travel distance, and estimated travel time. Signs help people reach destinations via optimal routes, with minimal uncertainty. The lack of consistent NEV wayfinding throughout the Coachella Valley limits the number of people who know how to access local destinations (e.g. parks, schools, and commercial centers) using existing low-stress routes, on-street lanes, and paths.

Basic Wayfinding Signage

The cities of Lincoln and Rocklin have already initiated a California Traffic Control Device Committee Request to Experiment process for the design of NEV wayfinding signage. A simple potential wayfinding sign based on their design is presented as Figure 33 on page 80 of this document.

Custom Wayfinding Signage

Designing more personalized wayfinding could effectively provide CVAG and/or the cities in the Valley the opportunity to use wayfinding as a branding tool. Establishing a unique style of wayfinding signage that will clearly differentiate each city's Class I, II and III NEV facilities from other kinds of facilities could improve the visibility of the network as a whole. Unique branding will also help users navigate transitions between facilities. For example, if an on-street Class III NEV route transitions to an existing NEV/shared-use path, the path may already have a sign identifying it as such. However, a second sign of a differing color and/or shape will allow users to quickly identify it as being part of the Class III network. It is recommended that CVAG work with cities that adopt this plan during the implementation phase to design a custom wayfinding signage program.

3.3.5 High-Speed Road Crossings

Even with marked crossings, some roads feel too uncomfortable for operators to cross in an NEV. As noted in section 2 of this document (page 7), California Vehicle Code Section 21260 specifies that NEVs shall not cross roadways with speed limits greater than 35 mph, unless the crossing "begins and ends on a roadway with a speed limit of 35 mph or less and occurs at an intersection of approximately 90 degrees."

NEVs are also not permitted to cross state highways *at uncontrolled locations* unless the crossing has been approved and authorized by Caltrans.

Undercrossings and overcrossings are one possible solution, but they are also often cost prohibitive. The CV Link Master Plan includes many of these types of crossings. Securing funds for their development can be a long-term challenge, especially for jurisdictions with multiple major road and highway crossings and poor on-street connectivity.

3.3.6 Whitewater River Channel Crossings

One of major impediments to NEV travel in the Coachella Valley is the lack of accessible Whitewater River Channel crossings. The CV Link Master Plan focuses on the path crossings of the arterials, while this NEV Plan identifies gaps for access to the path and across the channel between other origins and destinations.

As new bridges are built, wide (greater than seven feet) shared bike/golf cart lanes or paths are typically included on both sides. Therefore, where a bridge is currently deficient but programmed for replacement, it is assumed that NEV access will be provided. Class II NEV lanes are recommended for bridges on roadways with speeds 35 mph and under. However, many of these bridges are on roadways with posted speed limits greater than 35 mph. In these circumstances, Class II Lanes may be considered on roadways with posted speed limits up to 55 mph. A NEV Class I grade-separated path is the only option on bridges with speed limits over 55 mph. Sufficient space and the potential for road diets, lane narrowing, conversion of existing golf/bike lanes, and other lower-cost path alternatives should be explored at each location. Table 5 on the next page details the existing roadway provision of bike/golf cart lanes, posted speed limits, and opportunities for future Class II NEV/Bike/Golf cart lanes and Class I NEV Paths.

Table 5: NEV Accessibility on Whitewater River Channel Bridges

Bridge	Existing Provision[3]	Possible Class II Lane*	Possible Class I Path?*	Bridge Replacement Planned	Posted Speed Limit
Date Palm Drive	None	NO	NO	YES	40
Country Club Drive	Class II Bike lane	YES	NO	NO	45
Indio Boulevard	None	NO	NO	NO	50
Monroe Street	None	NO	NO	NO	40
Jackson Street	None	NO	NO	NO	40
Bob Hope Drive	4-Foot-Wide Sidewalk	NO	YES	NO	40
Monterey Avenue	None	NO	YES	NO	50
Fred Waring Drive W	None	NO	YES	NO	50
Miles Avenue W	5-Foot-Wide Bike Lanes	YES	YES	NO	50
Washington Street	None	NO	YES	NO	50
Jefferson Street	7-Foot-Wide Bike Lanes	YES	YES	NO	55
Miles Avenue E	5-Foot-Wide Bike Lanes	YES	YES	NO	45
Vista Chino	6-Foot-Wide Shoulder (Westbound), Wide Sidewalk (Eastbound)	YES	YES	YES	35
Ramon Road	None	NO	NO	YES	40
Cathedral Canyon Drive	4-to 5-Foot-Wide Shoulders (Both Directions)	NO	NO	YES	40
Cook Street	12-Foot-Wide Golf Path (Southbound) Bike Lane (Northbound)	YES	YES	YES	50
Dune Palms Road	18-Foot-Wide Shoulder (Northbound)	YES	YES	YES	45
Ave 44	8-Foot-Wide Shoulders (Both Directions)	YES	YES	YES	45
Dillon Road	4-Foot-Wide Shoulder	NO	NO	YES	45
Ave 50	None	YES	YES	YES	40

[3] Existing facility widths are approximate measures obtained via Google Earth.

Bridge	Existing Provision[3]	Possible Class II Lane*	Possible Class I Path?*	Bridge Replacement Planned	Posted Speed Limit
Ave 52	7-Foot-Wide Shoulders (Both Directions)	YES	YES	YES	50
Ave 66	7-Foot-Wide Shoulders (Both Directions)	YES	YES	?	55
Adams Street	?	?	?	YES	45
Airport Blvd (Ave 56)	None	YES	YES	?	35
Ave 62	7-Foot-Wide Shoulders (Both Directions)	YES	YES	?	25
Dinah Shore Drive	Wide Sidewalk	YES	YES	NO	40
El Dorado Drive	8-Foot-Wide Shoulders	YES	YES	?	40
Frank Sinatra Drive	None	NO	NO	YES	50
Gene Autry Trail	8-Foot-Wide Shoulders (Both Directions)	YES	YES	?	35
Golf Center Parkway	8-Foot-Wide Bike Lane	YES	YES	NO	35
Indian Canyon Drive	Wide Shoulder	YES	YES	?	55
Lincoln Avenue	None	NO	YES	?	25
Portola Avenue	7-Foot-Wide Bike Lane, 7-Foot-Wide Golf Path	YES	YES	NO	50
Railroad Bridge	None	NO	NO	?	N/A
SR-111 (Grapefruit Road)	None	NO	NO	?	55
State Highway 86	8-Foot-Wide Shoulders (Both Directions)	NO (due to speed)	YES	?	65
US Highway 111	None	NO (due to speed)	YES	YES	65

* Considers travel lane narrowing/re-striping

3.3.7 NEV Parking

Section 5.1 of this document provides guidelines on NEV parking.

Local parking ordinances can be structured to support NEV development by prescribing a minimum number of NEV parking spaces in zoning and building codes, variable/free on-street NEV parking rates, and free or reduced rate electric vehicle charging station parking. Agencies may also consider development incentives for on-site electric vehicle parking and charging stations. At the very least, local parking ordinances should allow NEV parking spaces to count toward parking minimums.

Design standards for NEV parking should be consistent throughout a planning area. After adopting consistent design guidelines, cities could develop a design toolkit to assist developers and property owners in designing off-street NEV parking spaces. Coordination between County planning staff and local jurisdictions for the planning and implementation of parking facilities will help to avoid inconsistencies in design. The PEV Readiness plan contains some general design guidelines that could be adopted by all local jurisdictions and made available through design toolkits. CVAG or Riverside County could further assist local jurisdictions by providing design toolkit workshops or trainings that would ensure consistency, enhance participation, and lend transparency to local planning efforts.

3.3.8 Electric Vehicle Charging Infrastructure

Section 5.1 of this document provides guidelines on NEV charging facilities.

To support widespread NEV adoption, providing frequent and appropriately located EV charging facilities will ensure that NEV operators can get from point A to point B without running out of energy and getting stranded. Insufficient or poorly located charging stations can lead to "range anxiety" and is a major inhibitor of NEV adoption for longer trips. Charging stations at workplaces and other opportunity locations such as grocery stores and shopping centers help to alleviate the uncertainty associated with NEV energy requirements, and the reliability of NEVs for longer trips. CV Link access points provide an opportunity for users to park and recharge while using the facility for recreation.

The cost of installing charging stations is much less expensive when the location is "pre-wired" for EV charging stations. Local building and zoning codes can be amended to require such pre-wired parking spaces for new development. Alternatively jurisdictions can offer other incentives such as FAR bonuses, reduced development fees, fast-tracked permitting, etc. to have developer's pre-wire projects for future NEV charging stations. The CVAG PEV Readiness Plan provides information about EV Charging Station design and installation.

3.3.9 Market-based Opportunities

According to the CVAG PEV Readiness Plan, as NEV sales increase economies supporting NEVs are likely to develop, including NEV retail sales, maintenance and repair, battery recycling, and NEV sharing programs. As such, the plan suggests that "targeted strategies to attract these particular enterprises" are not necessary. The plan also suggests the College of the Desert's specialized Advanced Transportation Technologies degree program could play a key role in developing the skilled workforce of technicians that will be needed as NEV use expands.

The plan focuses on engineering and design supply chain strategies to promote widespread NEV adoption. These include NEV vehicle and component manufacturing and engineering and design of vehicles and charging infrastructure. According to a study by Zhou et.al, PEV manufacturing economies tend to present lower barriers to entry, as a result of their horizontal supply chain structures and simple componentry. [4] This presents the Coachella Valley region with an opportunity to establish a manufacturing base. The PEV Readiness plan provides a summary of economic development strategies for attraction, retention, expansion, and incubation of NEV businesses.

4 Route Selection

The purpose of this chapter is to outline the proposed method for developing a safe and comfortable regional NEV Network Concept. The first part of this chapter explains the assumed facility hierarchy and considerations relating to CV Link, street crossings, golf courses, existing golf cart routes, existing NEV routes, and sidewalk paths. The latter part of this chapter provides a narrative and visual summary of the recommended Network Concept, including alternative facility improvements that may be considered given physical constraints or budget.

4.1 Route Selection Assumptions

The following assumptions form the basis for the preliminary assignment of priority NEV routes throughout the Coachella Valley. According to the Streets and Highways Code (section. 1962.3), the plan must address how the route will accommodate NEVs without an adverse impact upon traffic safety. Toward this end, the routing method seeks to minimize conflict opportunities between NEVs and conventional vehicles, and suggests methods to reduce the probability and severity of collisions.

[4] Zhou, Lei, J.W. Watts, M. Sase, and A. Miyata. *Charging Ahead: Battery Electric Vehicles and Transformation of an Industry*. Deloitte Review. Issue 7. 2010.

4.1.1 Facility Hierarchy

Route selection prioritizes placing NEV routes on the "most comfortable" roadways, a relative measure that takes into account roadway posted speed limits, separation of modes, standardized designs, and the opportunity to communicate clear NEV user expectations. The potential facility types that will make up the network are listed below:

- Class I NEV Path (such as CV Link)
- Class II NEV Lane (shared with bikes and golf carts)
- Class III NEV Route (shared with bikes, golf carts, and motor vehicles)

An example of a Class I NEV Path is CV Link. CV Link represents an enormous opportunity to provide quick, convenient, and safe connections for residents. It will enhance the experience for residents using NEVs, bikes, and pedestrians within and between cities by providing a major non-motorized corridor eventually running from Desert Hot Springs and Palm Springs all the way to the Salton Sea. This backbone path network will allow NEVs to traverse longer distances without driving on major arterials or highways and connect them to local destinations via local streets with Class III NEV routes and Class II NEV lanes. This facility offers some flexibility to make connections along or across high speed roadways where barriers or network gaps exist such as bridge crossings and where space or cost does not permit a Class I Path.

Class II NEV Lanes are on-street, striped lanes exclusive to NEVs, bicycles, and golf carts. The exclusive NEV lane is intended for roadways with a posted speed limit of 55 mph and under, but generally recommended on roadways with lower speeds since the striped lane does not feature any physical separation from higher speed traffic.

Class III NEV Routes are the recommended facility on selected roadways 25 mph and under, where NEVs that share the roadway with conventional vehicles are traveling approximately the same speed, reducing the severity of any collisions that may occur. These streets are ideal candidates for additional treatments such as traffic calming and wayfinding. The Class III signed route designation provides a navigational function optimized for direct travel, directing users to safe transitions at high speed crossings, lending predictability to the system, and clarifying roadway user expectations.

Detailed descriptions of NEV facility types consistent with Assembly Bill 61 and the California Streets and Highway Code Division 2.5, Chapter 7.1 Section 1962, are available in Chapter 4. In infrastructure terms, they are similar to the Caltrans Class I, II, and III bikeway infrastructure categories.

The appropriate type of NEV facility depends on the posted speed of the roadway, vehicle volumes, roadway geometry and lane widths. As noted in section 2 on page 4, the CVC permits NEVs on all roadways 35 mph and under. Table 2 presents a broad categorization of NEV facilities by speed limit. Table 6 further describes the legal and recommended facility types.

Table 6: Legal and Recommended Facility Type by Speed Limit

Facility Type Category	Posted Speed Limit			
	≤25 mph	30-35 mph	40-55 mph	≥60 mph
Minimum Required Facility Type on Non-Designated Routes	None	None	Class II NEV Lanes	Class I NEV Path
Legal Facility Type for Designated Routes	Class III NEV Routes	Class III NEV Route	Class II NEV Lanes	Class I NEV Path
Recommended Facility Type for Designated Routes	Class III NEV Route	Class II NEV Lanes	Class I NEV Path	Class I NEV Path

The recommended facility type may differ from the minimum legally required facility type for the purpose of enhanced comfort and user safety. The Class II NEV lane facility is legally acceptable for roadways with a posted speed limit of 55 mph and under, but generally recommended on roadways with lower speeds since the striped lane does not feature any physical separation from higher speed traffic. This facility offers some flexibility to make connections along or across high-speed roadways where barriers or network gaps such as bridge crossings exist and where space or cost does not permit a Class I NEV path.

4.1.2 CV Link Routes

The plan's routing method assumes that CV Link will attract all NEV trips with origins or destinations within a 1.2 mile travel shed. This figure is based on a method proposed by the South Bay Cities Council of Governments and the mature suburban context of each of the cities, where the average trip length is estimated at 1.13 miles. Route selection is based on roadway network distances rather than direct, "as the crow flies" distances, and takes into account potential access issues from different directions.

4.1.3 CV Link Street Crossings

All street crossings are assumed to provide access to CV Link, although not all streets that the CV Link crosses will have dedicated NEV facilities along them. The route selection method considers all access points equal, for the purpose of transportation. Further consideration will be given to points that may not be accessible from every direction due to roadway or intersection configuration and NEV facility

type. Opportunities for access points at these locations will require future evaluation of designs for grade-separated CV Link crossings and other nearby route opportunities.

4.1.4 Golf Courses

All golf courses within 1.2 miles of CV Link will be considered major destinations and will be connected to CV Link via designated NEV routes. Similar to CV Link, route selection is also based on roadway network distances rather than direct "as the crow flies" distances. Route evaluation will also consider limited access from different directions.

4.1.5 Existing Golf Cart and NEV Routes

Based on their existing design characteristics, existing golf cart "routes" should be reclassified as either Class I NEV/Golf Cart Paths, Class II NEV/Golf Cart Lanes, or Class III NEV/Golf Cart Routes per Streets and Highway Code 1962.3(g). After these are established, a determination can be made whether to maintain, relocate or upgrade the facility. Existing golf cart routes and NEV routes will be considered for inclusion in the NEV network if there is an opportunity to connect local and/or regional origins and destinations. Where existing golf cart or NEV routes are within one-half mile of the proposed NEV route and where only a short (up to one-half mile) detour is required to access the same point, the preference is to include the existing golf cart or NEV route in the network. In addition, consideration should be placed on improving existing golf cart facilities on roadways greater than 35 miles per hour. For example, where an opportunity exists to widen an existing off-street golf cart path along a 45 mph roadway, a higher priority should be given to this option than relocating the route to lower speed streets. These improvements should be completed with user safety and comfort in mind, as this is critical to increasing NEV usage across the region.

4.1.6 Sidewalks

In some communities, the existing golf cart network may route a golf cart "path" on what would otherwise be considered a sidewalk. Here, sidewalks are defined as:

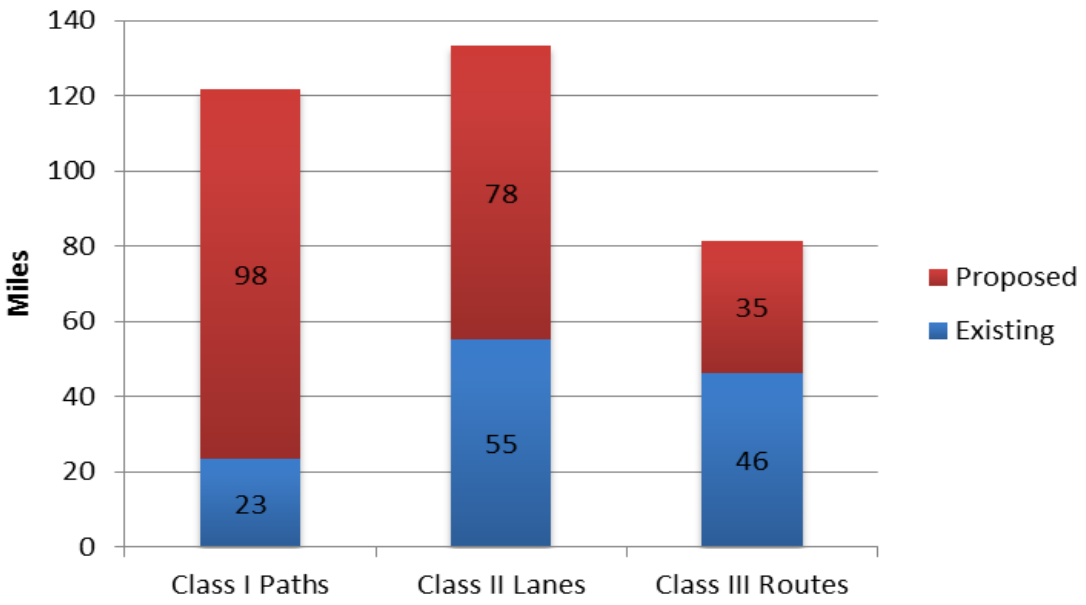
- Paths less than 10 feet wide
- Paths greater than or equal to 10 feet but not designated for shared use (e.g., commercial district sidewalks)

Due to the low level of service and NEV incompatibility with pedestrian activity, sidewalks are not considered valid NEV facilities. As mentioned above, it may be possible to upgrade a sidewalk to a path, but not at the expense of separated pedestrian facilities.

4.2 Network Concept

The Network Concept presented in this section illustrates the primary backbone network for NEV travel throughout the region. Roadway characteristics such as speed, bridges, and block structures create existing gaps in network connectivity and limit the options for low-stress NEV route alternatives. The Network Concept considers these factors in addition to the above route selection assumptions to connect regional origins and destinations in a complete NEV network. In Figure 4, Class I existing paths do not include CV Link or any existing trails such as the Tahquitz Creek Trail; Class II lanes do not include bicycle lanes without golf cart or NEV symbols, and Class III routes do not include the local streets which are accessible but not signposted.

Figure 4: Existing and Proposed Network by Class



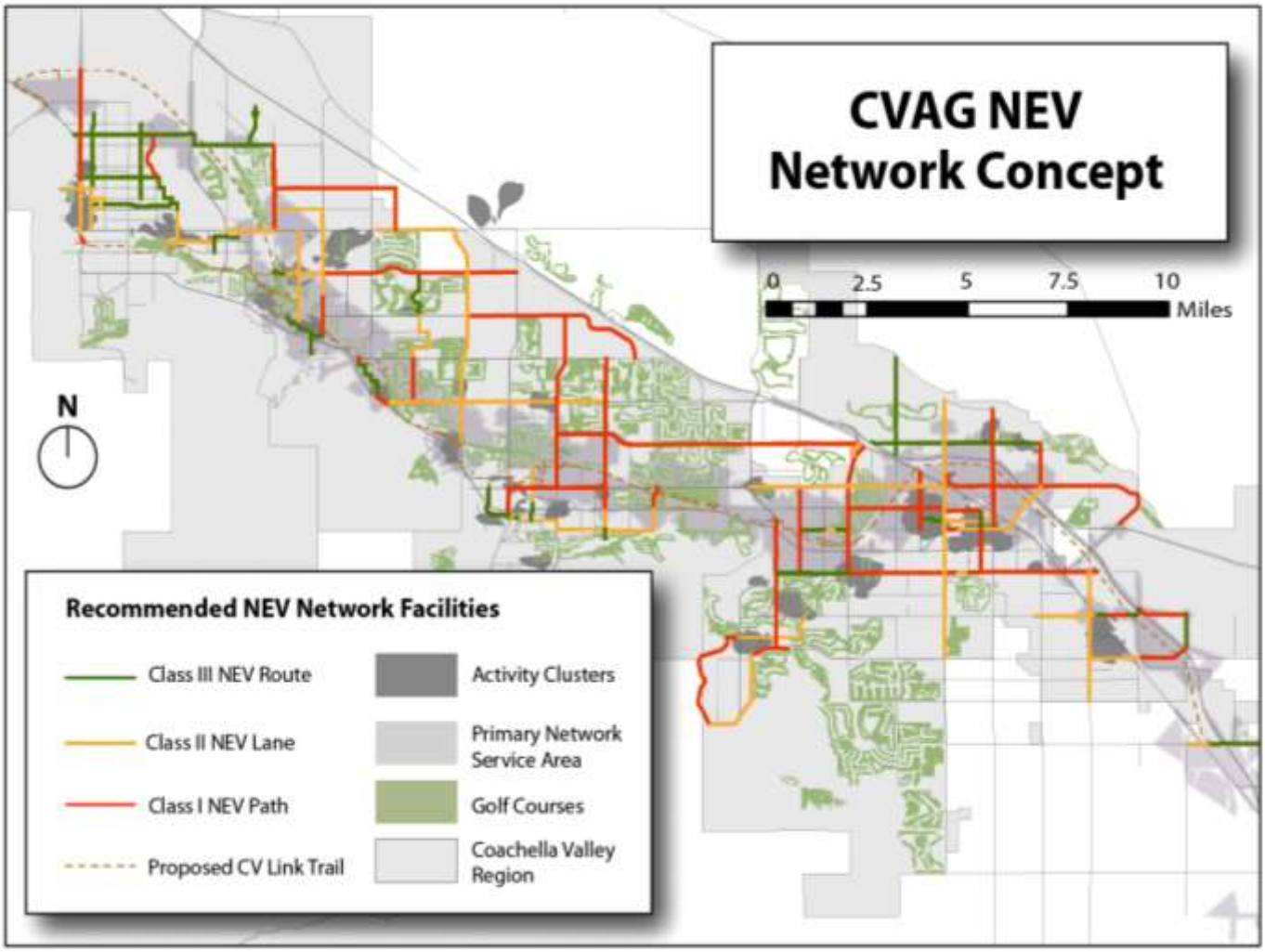
The Network Concept takes advantage of CV Link as the most attractive and desirable NEV path in the valley. As CV Link would be utilized for most trips, it is important to have a dense network of connected facilities on all roads that intersect with CV Link. By designating facilities on these roadways, travel by NEV is simplified and users are not required to spend significant effort remembering where designated routes exist.

The recommended network routing and facility types take advantage of the directness of arterial streets. However these tend to be higher volume and speed streets, so both Class I and Class II facilities should be considered in the actual design of the routes. As such, the city route maps on the following pages illustrate the recommended facility type, as well as an alternative facility type, for consideration after factoring speed limits, location-specific constraints, and budget. Jurisdictions may choose to adopt a phased approach to the recommended improvements based on the ease of implementation, cost, traffic safety impact, and community support.

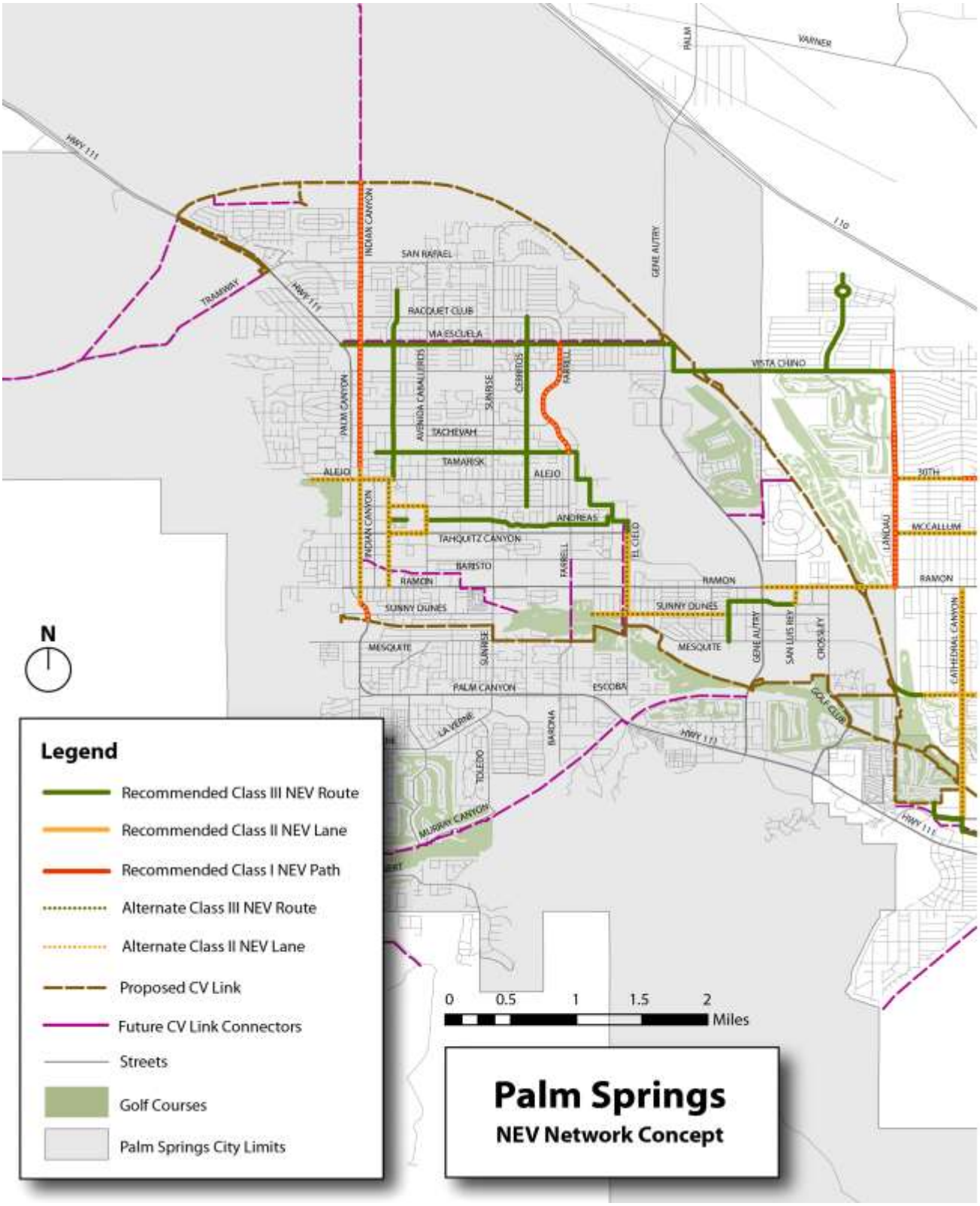
This concept will involve the reallocation of road space on some major arterial streets. Class II NEV lanes are optional on streets with speed limits higher than 25 mph, but would provide a more comfortable experience for all vehicle drivers, and therefore lane narrowing is recommended, where possible, to accommodate this facility type on streets with 30 or 35 mile per hour speed limits. Similarly, for streets and bridges with speed limits higher than 35 mph, motor vehicle lane narrowing or, in some cases, sidewalk widening treatments, will be needed to accommodate NEV users on a separated Class I NEV path or Class II NEV lanes. On streets with speed limits higher than 25 mph, consideration should be given to the facility type that provides greater separation to reduce the probability and severity of collisions between NEVs and highway capable motor vehicles. Finally, separated off-street facilities are required on roadways with speed limits greater than 55 mph.

Minor route adjustments should be considered where it is possible to reroute the network away from locations with specific safety challenges such as high-speed crossings or where the recommended facility type is infeasible. However, this should be accomplished with out of direction travel limited to one-quarter mile or less.

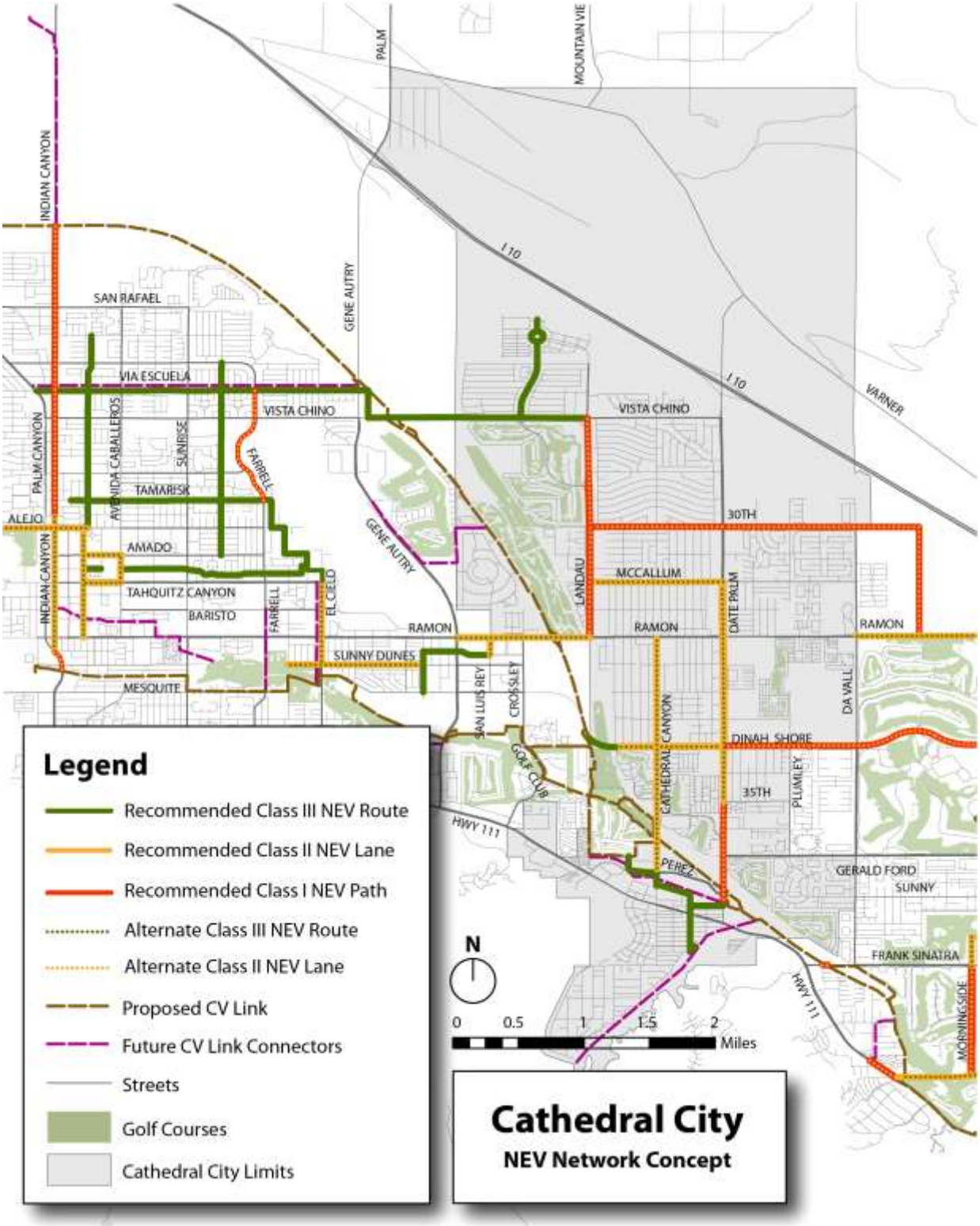
Map 7: CVAG NEV Recommended Network Concept



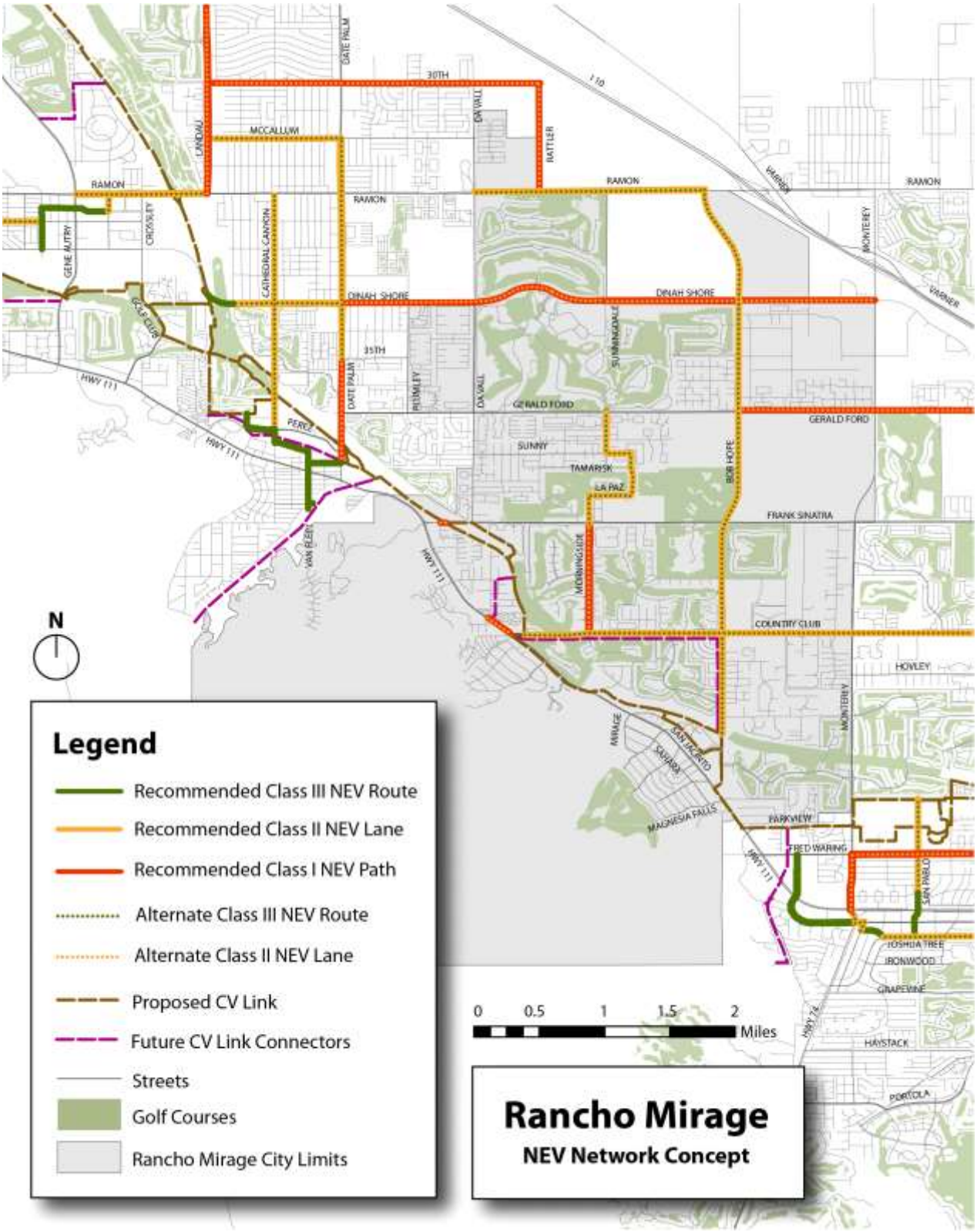
Map 8: CVAG NEV Recommended Network Concept - Palm Springs



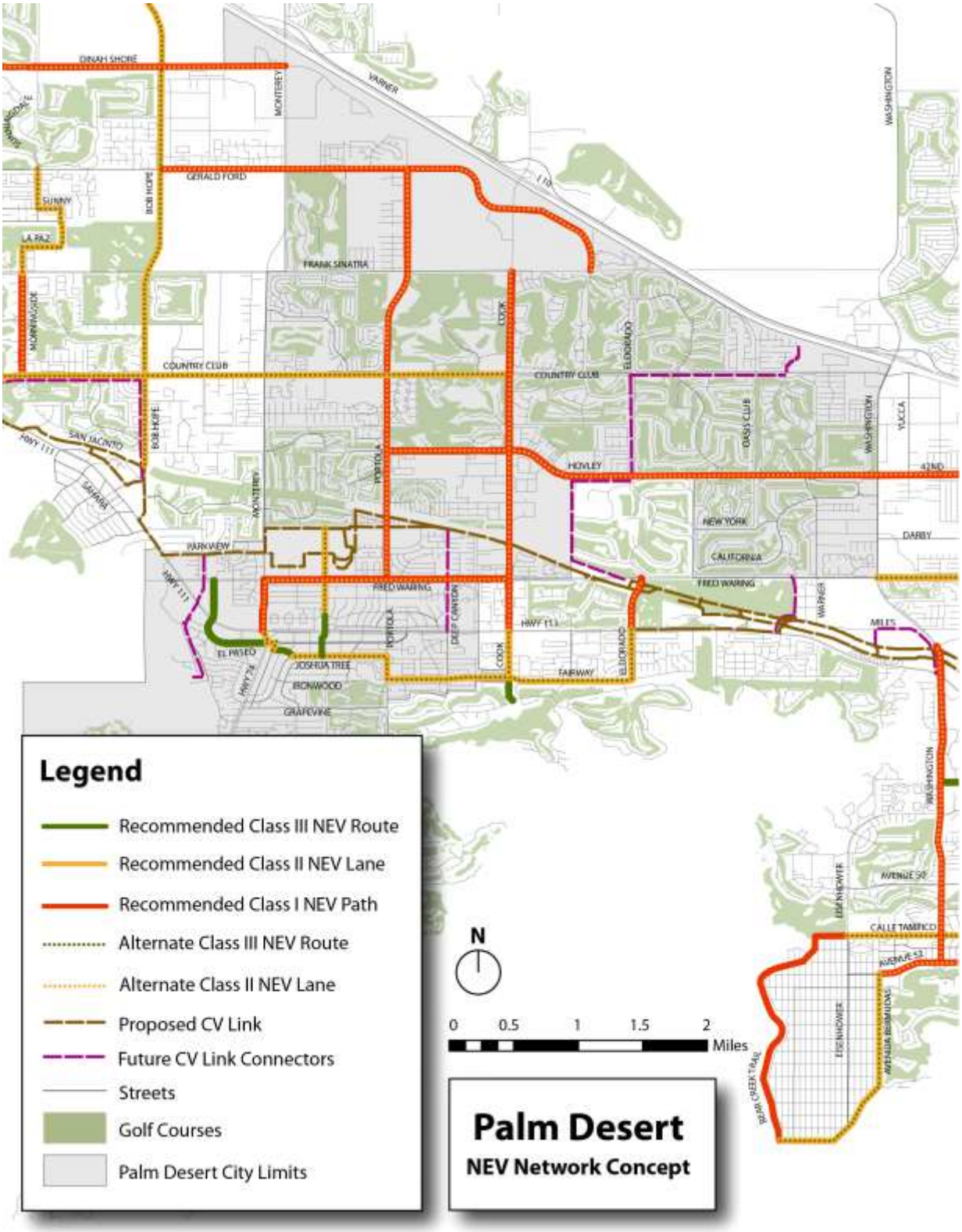
Map 9: CVAG NEV Recommended Network Concept – Cathedral City



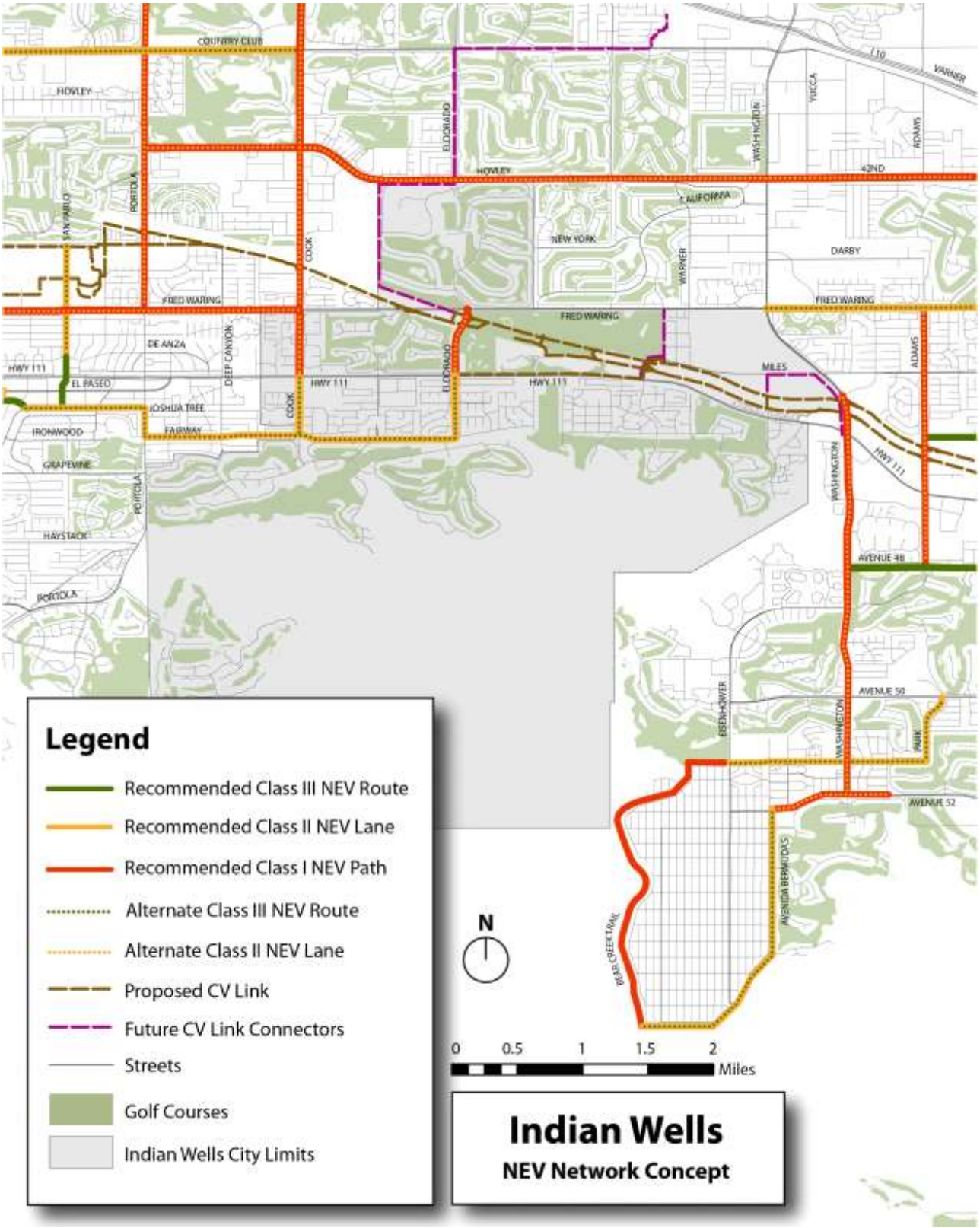
Map 10: CVAG NEV Recommended Network Concept –Rancho Mirage



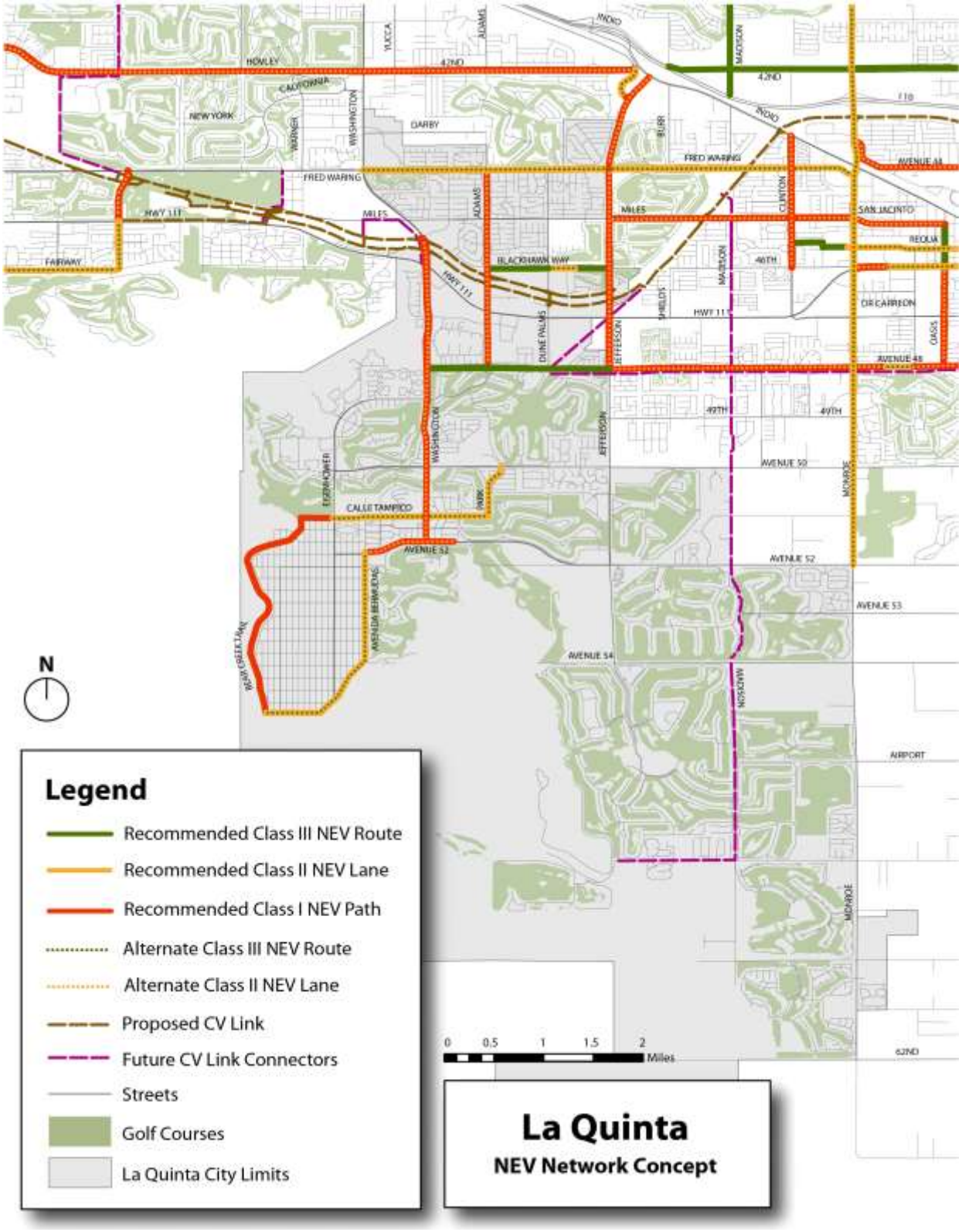
Map 11: CVAG NEV Recommended Network Concept – Palm Desert



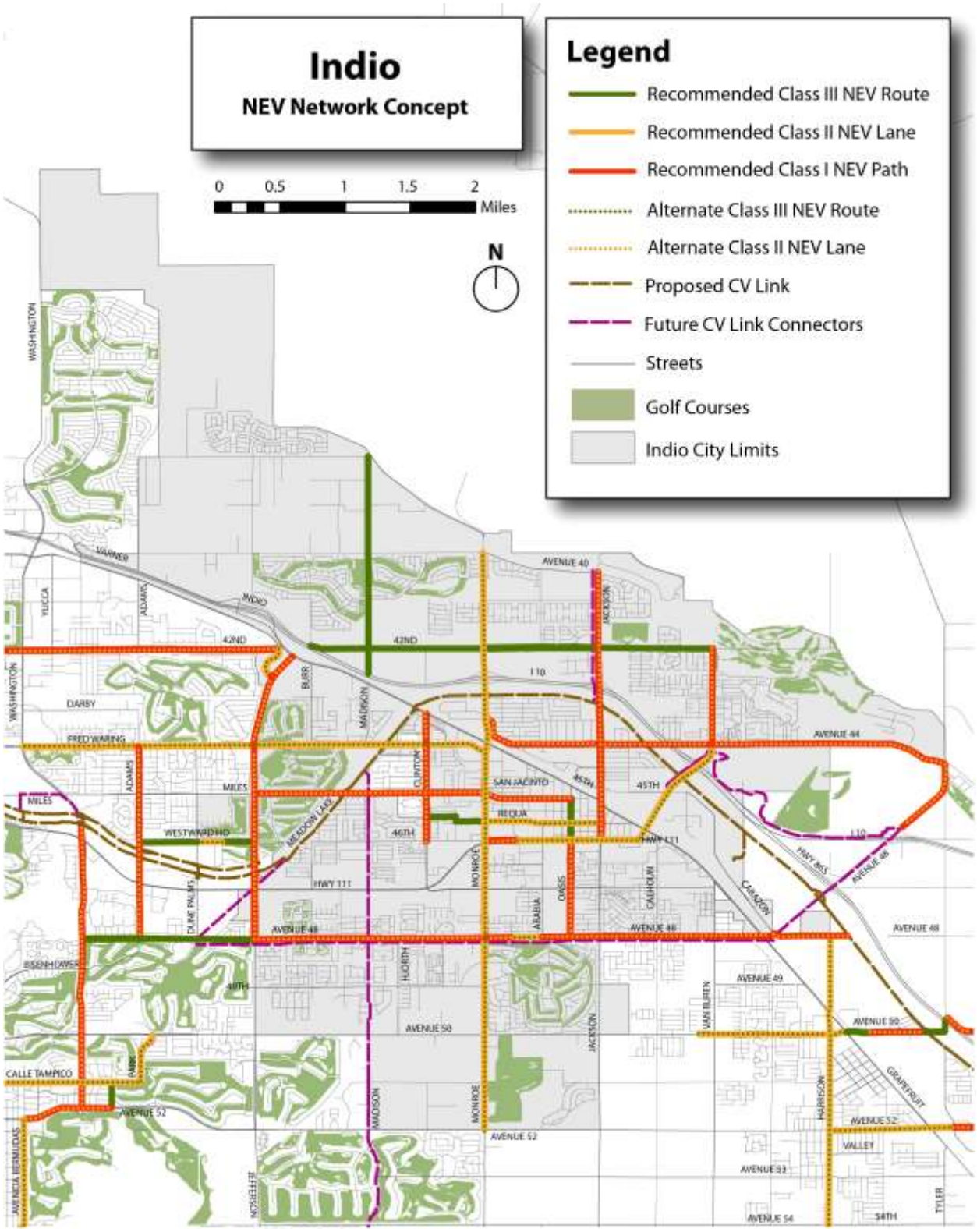
Map 12: CVAG NEV Recommended Network Concept – Indian Wells



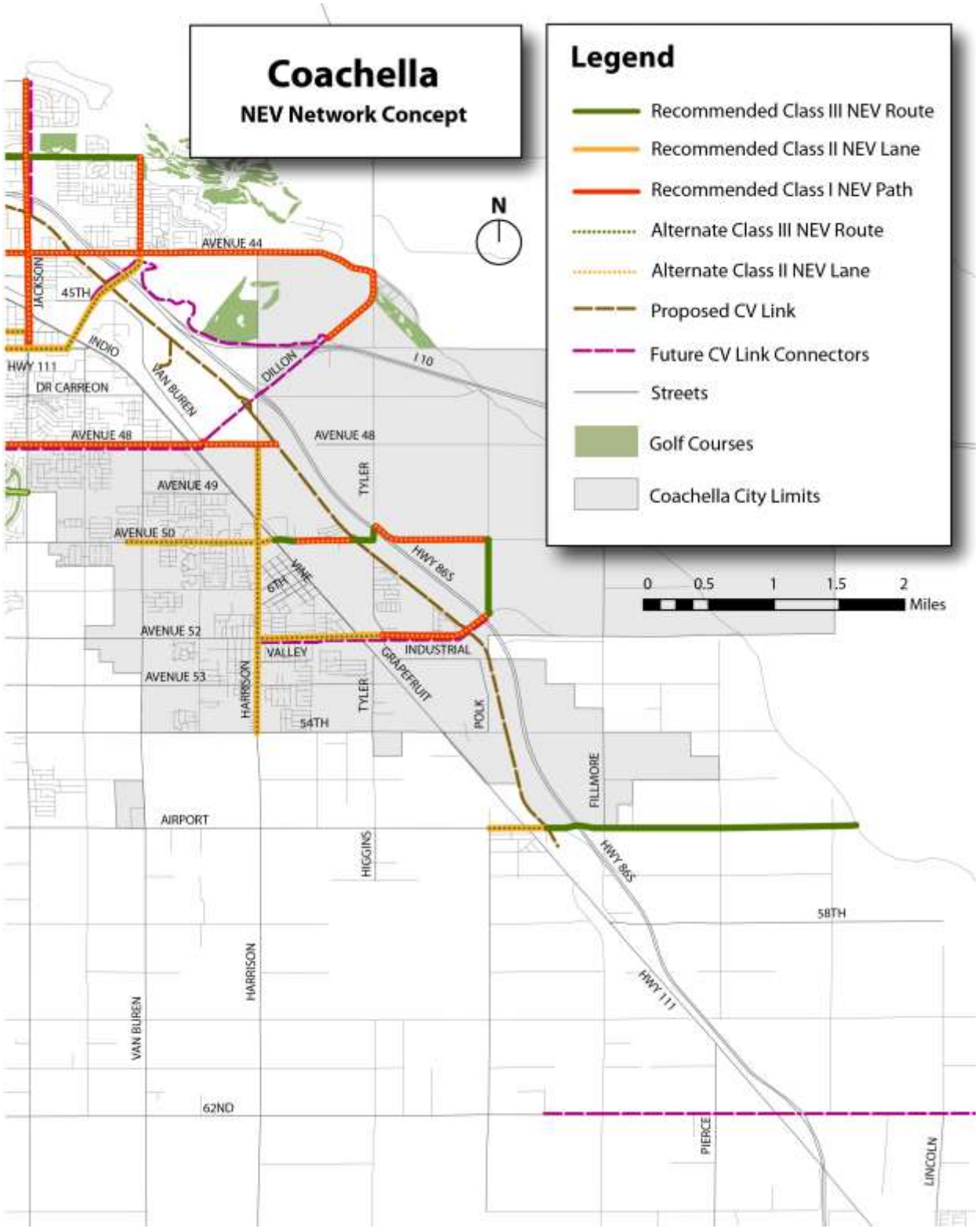
Map 13: CVAG NEV Recommended Network Concept – La Quinta



Map 14: CVAG NEV Recommended Network Concept – Indio



Map 15: CVAG NEV Recommended Network Concept – Coachella



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5 Design Guidelines

This chapter is intended to assist the Coachella Valley Association of Governments and member jurisdictions in the selection and design of on-street NEV facilities. These guidelines are consistent with California state code and have been developed based on existing guidance in NEV plans for Lincoln CA, Rocklin CA, and the Western Riverside Council of Governments (WRCOG). The following guidance is not exhaustive and is not intended to substitute for professional design and engineering judgment under local conditions.

5.1 Design Needs of NEV Facilities

5.1.1 Spatial Needs of Users

NEVs and bicyclists are the expected users of NEV facilities, and design dimensions should be built with these user types in mind. Similar to conventional motor vehicles, NEVs and bicyclists exist in a variety of sizes and configurations. These variations occur in the types of vehicle and behavioral characteristics (such as the skill level of the driver). The design of an NEV facility should consider reasonably expected user types on the facility and design for the appropriate dimensions.

Physical Dimensions

The figures below illustrate the operating space and physical dimensions of NEVs and bicyclists, the typical users of NEV paths and lanes. Because NEVs and bicyclists require clear space to operate within a facility, the minimum operating width is greater than the physical dimensions of the user.

Dimensions below are based on GEM vehicles, a popular NEV manufacturer. All GEM NEVs are the same width regardless of model. The GEM catalog refers to 55 inches (4 feet 7 inches) width from fender edge to fender edge. A GEM with dual mirrors measured at the Palm Springs Energy Summit was found to be 60 inches (5 feet).

Figure 5: Spatial Needs of NEVs

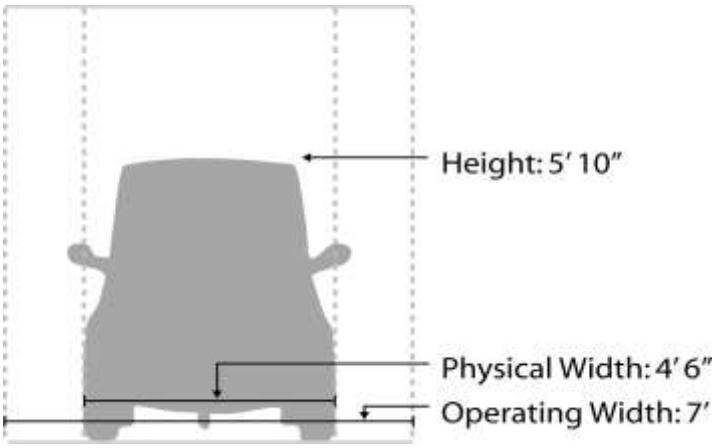
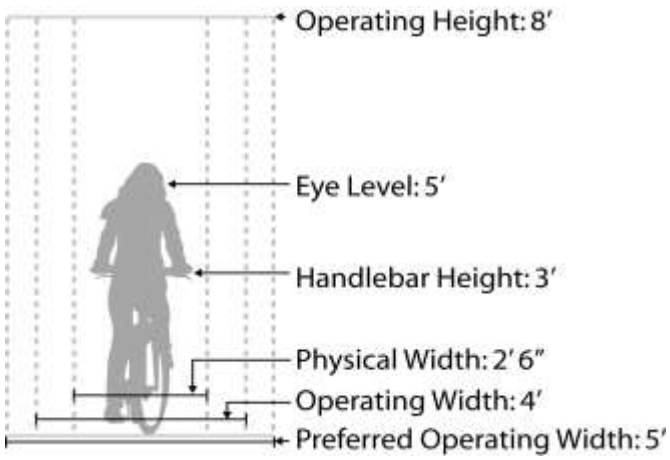


Figure 6: Spatial Needs of Bicyclists



5.1.2 Travel Speeds

Based on the legislated maximum NEV speed (25 mph) and the Highway Design Manual (HDM) table 1003.1, the path design speed conventionally would be 30 mph. In an effort to maintain the desired maximum speed of the pathway, a design speed of 25 mph should be utilized.

In comparison, the adult cyclist typically travels between 8 and 15 mph.[5] AASHTO guidelines specify that 18mph is a sufficient design speed for most relatively flat shared bicycle paths.[6] American roads are often over-engineered, or designed to accommodate higher speeds that are not only faster than the posted speed limit, but faster than is appropriate for the area. Aligning the design speed (the speed that vehicles can navigate the facility without losing control) with the desired driving speed, results in a speed that makes sense for the context.

5.1.3 Other Geometric Design Details

It is assumed that NEVs can stop at least as quickly as bicyclists under the same conditions, and the operating requirements of bicyclists are the limiting factor in shared NEV/Bicycle facility design. As such, horizontal curves and stopping sight distances should be calculated according to the American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities, 4th Edition. It is presumed that these measures will meet the needs of NEVs, although

[5] FHWA. Characteristics of Emerging Road and Trail Users and Their Safety. 2004.

[6] AASHTO. Guide for the Development of Bicycle Facilities. 2012.

research has not been conducted to support this assumption. Through future testing and evaluation, these guidelines may change to reflect NEV specific operating conditions.

Stopping Sight Distance

Stopping sight distance is the distance the NEV driver must be able to see in order to stop in advance of an obstacle on the path. Trees, vegetative buffers, and other landscaping elements should be maintained so as not to obstruct visibility, especially at intersection and driveway approaches.

The NEV braking distance at 25 miles per hour is 10 feet. Based on a maximum speed of 30 mph, AASHTO lists stopping sight distances for bikes ascending a hill as 300 feet (0%) and 200 feet (.15%), and descending a hill, as 250 feet (0%) and 1,600 feet (.15%).

Table 7: Stopping Sight Distance vs. Grade (Bicyclists)

	0% Grade	15% Grade
Ascending	300 Feet	200 Feet
Descending	250 Feet	1600 Feet

Horizontal Curves

NEVs come in various shapes and sizes. A typical four-seat NEV has an inside turn-radius of 12 feet and exterior turn radius of up to 18 feet. Based on the maximum design speed of 25 mph, the smallest horizontal curve along an NEV facility segment should be 115 feet. Turns tighter than this should be signed and/or striped well in advance of the turn, and sign location should be based on breaking distance.

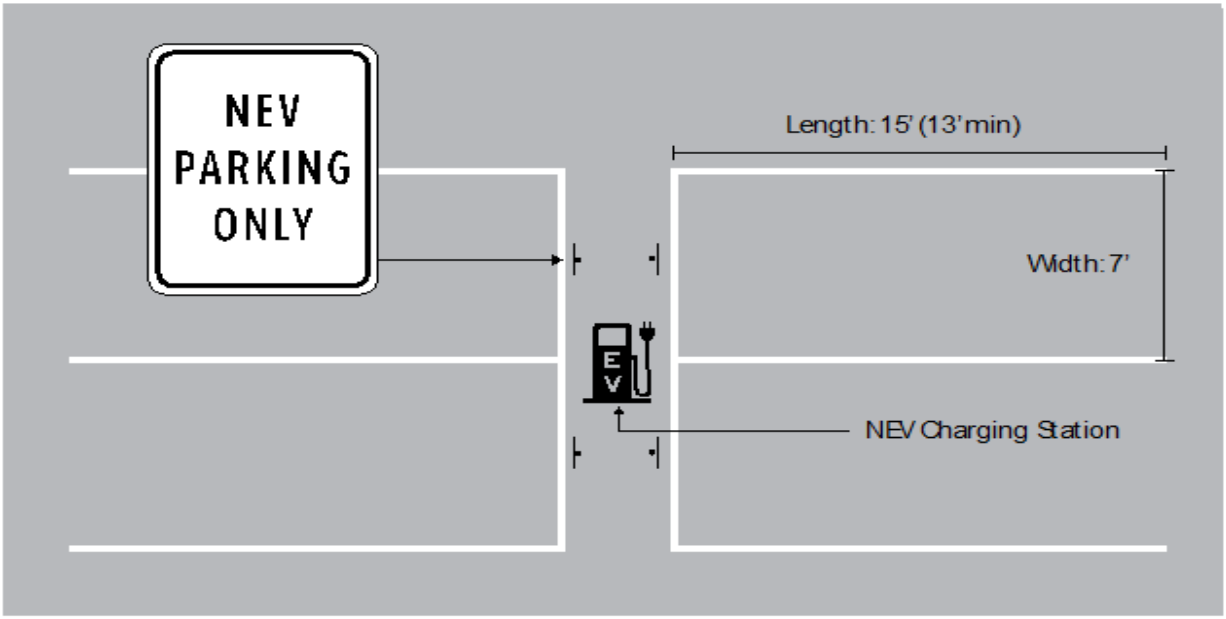
5.1.4 NEV Parking

Some jurisdictions (e.g., Indio) prohibit golf carts from parking in a "motor vehicle" space; notwithstanding, the California Department of Motor Vehicles will register a golf cart as a motor vehicle. To the general public, a golf car and an NEV are indistinguishable and any such parking prohibitions will be confusing and may limit adoption of LSEVs. Given that golf cars and NEVs can serve the same purposes as a regular car and this would have no impact on parking supply and demand, parking should be permitted in any space. The following guidelines are intended to provide greater parking capacity, because golf cars and NEVs are smaller and therefore more of them can fit in a given land area compared to regular motor vehicles.

A typical NEV parking space is 15 feet x 7 feet utilizing a 6-inch-wide white striping pattern, compared to 18 feet x 8 feet 6 inches for standard vehicles. NEVs occupy less physical space than standard passenger vehicles, so a relatively higher number of NEV spaces can be accommodated in a given parking area. This means that NEVs may also be able to utilize existing spaces more efficiently, in a wider assortment of configurations, both on-street and in private lots and garages.

Parking should be located adjacent to charging stations if available.

Figure 7: Typical NEV Parking



5.1.5 Charging Stations

NEV parking locations should be placed within functional reach of electric vehicle charging stations. To date, no symbol has been developed that can effectively convey regulations associated with electric vehicle charging or parking facilities.

Symbols that have not been adopted in the CAMUTCD for use in a specific application cannot be used in untested applications without approved official experimentation that includes the requisite human factors evaluation for comprehension and legibility.

FHWA guidance provides typical examples of modified parking restriction signage to identify, reserve and regulate parking and charging locations. Some of them have been explicitly adopted for use in California. These signs are:

- No parking – FHWA R7-111, R7-112, and R7-113 are augmented in the CAMUTCD by R113, R113A
- Supplementary text – FHWA R7-113aP and R7-113bP signs (approved in informational letter dated 6/17/13) have been approved by the CTCDC for inclusion in the next CAMUTCD
- Blue background EV sign D9-11b (FHWA) or G66-21B (CA) may be used as per FHWA approval lA-13-1 issued 4/11/11

Figure 8: Recommended NEV/Electric Vehicle Regulatory Parking and Charging Signs

5.2 NEV Facility Classification and Selection

5.2.1 Facility Classification

There are three Neighborhood Electric Vehicle (NEV) facility classes.

Class I NEV Paths

Class I Paths are physically separated pathways exclusive to NEV and bicycle travel. Due to the speed differential, Class I NEV paths are not intended for shared-use with pedestrians, although in constrained conditions, this may be unavoidable. Class I paths should be located immediately adjacent to the street, or as close to the street as space permits in order to provide direct connections to local destinations and minimize out-of-direction travel.

Class II NEV Lanes

Class II Lanes designate an exclusive space for NEVs and bicyclists through the use of pavement markings and signage. The lane is typically located on the right side of the street, between the adjacent travel lane and curb and is used in the same direction as motor vehicle traffic.

An additional buffer treatment can be implemented between the NEV/bike lane and travel lane where space provides.

Class III NEV Routes

Class III Routes are low-volume, low-speed streets with shared operating conditions comfortable for use by NEVs and bicyclists. Treatments such as signage, pavement markings, traffic calming, and/or traffic reduction are utilized to achieve specific speed or volume targets.

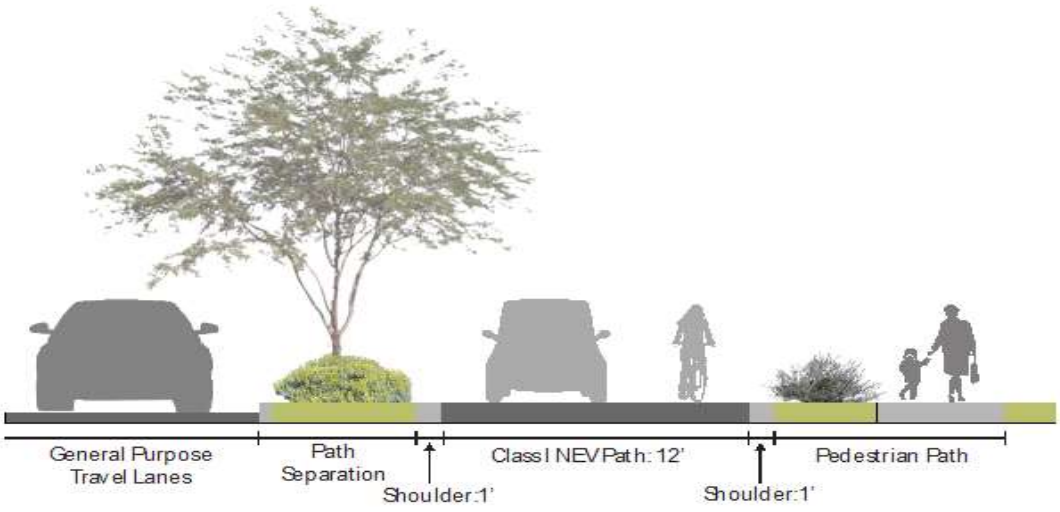
5.3 Class I NEV Path Design

Class I routes provide a physically separate path for the use of NEVs and bicyclists, golf carts, pathway maintenance vehicles, emergency service, and, potentially, water district maintenance. Typically, Class I NEV paths will be one-way, on the right hand side of the street traveling the same direction as the adjacent general-purpose traffic lanes.

5.3.1 Cross Sections

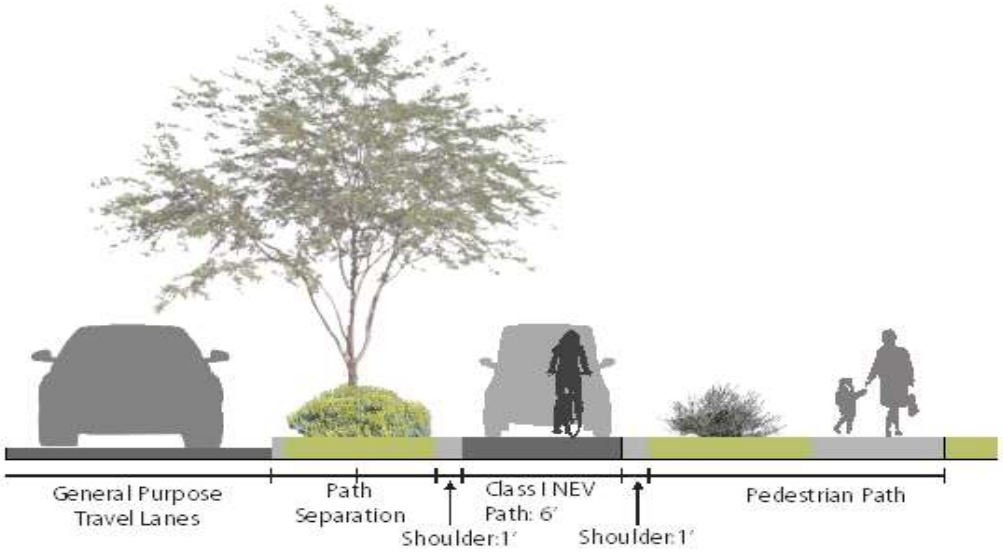
The preferred pathway width for a one-way Class I NEV path is 12 feet with 1-foot shoulders on each side. This provides adequate room for a NEV and bicyclist to pass side-by-side in comfort, and may permit two NEVs to pass in the event of a breakdown. Providing for passing within the Class I path is important if a physical barrier or landscaping prohibits convenient egress from the path.

Figure 9: Preferred Cross Section for One-way Class I NEV Path where Passing is Permitted



If passing is not required, or if the configuration permits users to easily and safely leave the path, the pathway width for a one-way Class I path should be 6 feet, with 1-foot shoulders on each side. In tightly constrained segments, a five-foot-wide pathway with 1-foot-wide shoulders may be necessary. Constrained segments should be indicated with warning signs or markings.

Figure 10: Preferred Cross Section for One-way Class I NEV Path where Passing is Not Allowed

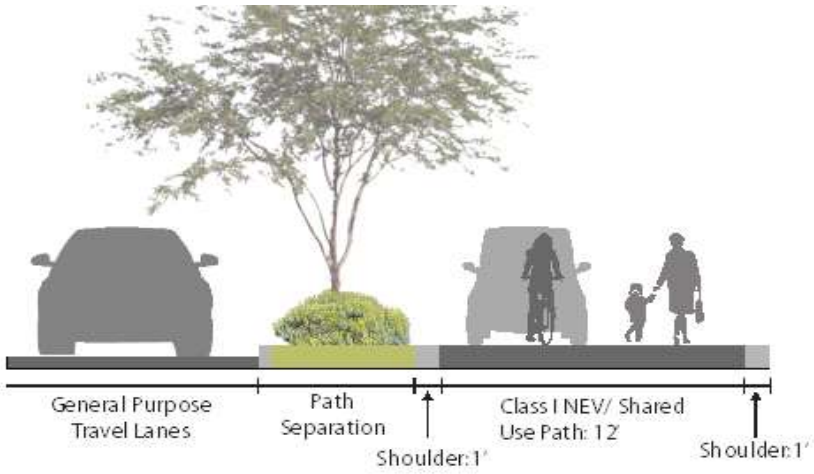


In highly constrained conditions, it may not be possible to provide separate path treads for pedestrians and NEVs/bicyclists. In these conditions, a class I shared use path used by a wide spectrum of users may be considered. This is only appropriate where there is limited right of way or if necessary to provide connections to the CV Link.

In this configuration, NEV and bicyclists are only permitted to travel in one direction, matching that of adjacent traffic. Pedestrians and other non-motorized users may travel in both directions. Because NEV and bicycle users should operate following the same direction as adjacent traffic, Class I paths along roadways should generally be provided on both sides of the street to offer mobility in both directions.

The recommended pathway width for an all-user Class I shared use path is 12 feet, with 1-foot-wide shoulders on each side. In tightly constrained segments, a 10-foot-wide pathway may be necessary. Constrained segments should be indicated with warning signs or markings. Efforts should be made to maintain a reduced NEV operating speed in areas shared with pedestrians.

Figure 11: Constrained Cross Section for All User Class I Path



5.3.2 Markings and Signs

Sign Size

The California Manual on Uniform Traffic Control Devices (CAMUTCD) lists sizes for shared use path regulatory signs in Part 9, Traffic Control for Bicycle Facilities. Proposed sign sizes should be based on the larger dimensions found in the Roadway column of table 9B-1(CA). California Bicycle Facility Sign and Plaque Minimum Sizes.

Class I NEV Path Crosswalk Markings

Consider implementing a unique crosswalk marking style to support path crossings on the NEV network. Enhanced crosswalk designs may serve to raise awareness of the NEV path crossing to all users. Standard marked crosswalks may be enhanced with decorative painting and designs, assuming such designs do not compromise the effectiveness of the crosswalk.

Per FHWA guidance, [7]enhanced crosswalks designs should:

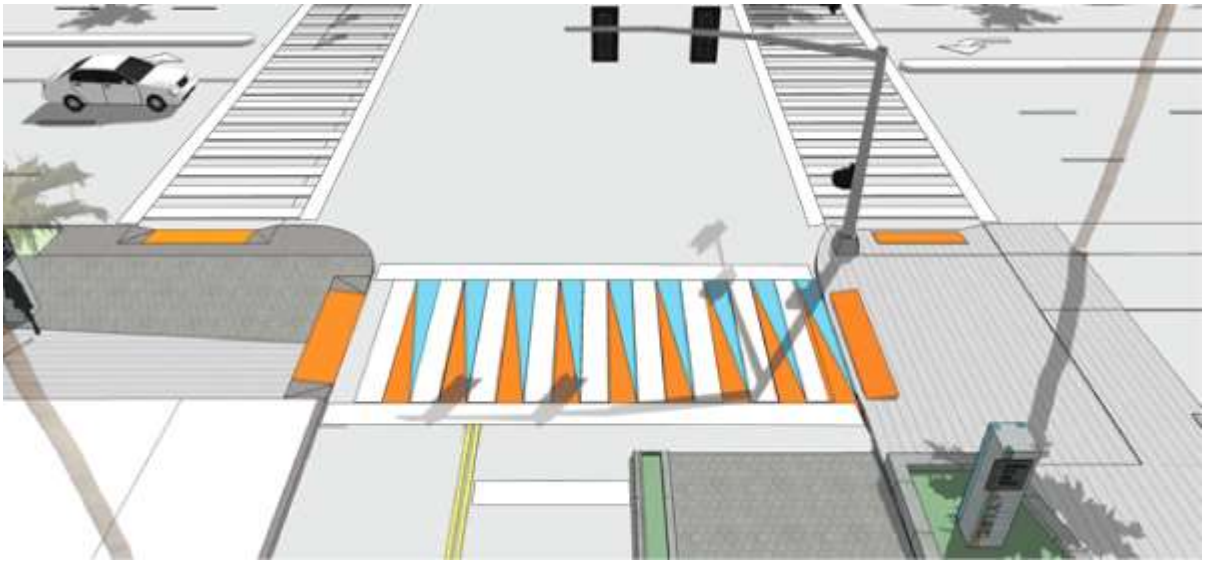
- Use subdued-colored aesthetic treatments between the legally marked transverse crosswalk lines.
- Be devoid of retroreflective properties to clarify that they are not a traffic control device.
- Not diminish the effectiveness (contrast) of the legally required white transverse pavement markings (however, a crosswalk is not needed to provide a legal crossing at intersections).

[7] Interpretation Letter 3(09)-24(I) – Application of Colored Pavement - August 2013. http://mutcd.fhwa.dot.gov/resources/interpretations/3_09_24.htm

- Acceptable colors for these materials would be red, rust, brown, burgundy, clay, tan or similar earth tone equivalents. The colors yellow, blue and green are discouraged to prevent confusion as a traffic control device.
- If brighter colors are desired, a buffer space or black coloring may be used to create the necessary contrast. This is not preferred by the FHWA, but may be acceptable.

The current CV Link crosswalk design concept is shown in Figure 12. This is a conceptual illustration only. The concept could be augmented with white lines parallel to the crosswalk. The FHWA representative to the California Traffic Control Devices Committee (CATCDC) has advised that the ruling is guidance and jurisdictions can exercise engineering judgment. The conceptual CV Link crosswalk may need to be further refined in discussion with local jurisdictions, including materials testing for enhanced durability in the desert environment.

Figure 12: CV Link Type Crossride / Crosswalk Concept Markings



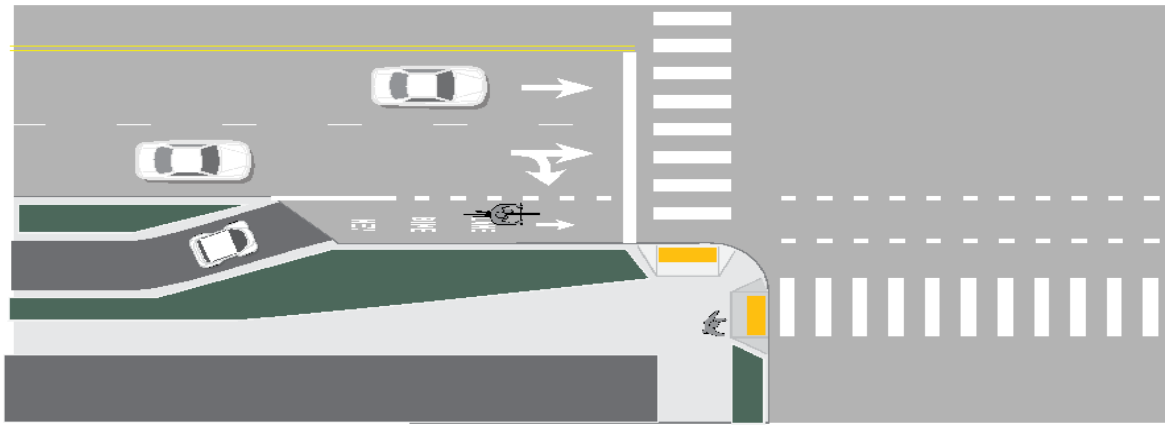
5.3.3 Intersection Crossing Strategies

The following general strategies apply when Class I NEV Paths approach signalized intersections.

Convert to Class II NEV Lane

One strategy in advance of the crossing is to transition the Class 1 NEV into a Class II NEV Lane. Motor vehicles must make right turns from the right most travel lane, which requires NEVs and motor vehicles to negotiate right of way upstream of the intersection. See Section 4.4 for additional guidance on how to integrate Class II lanes with right turn lanes.

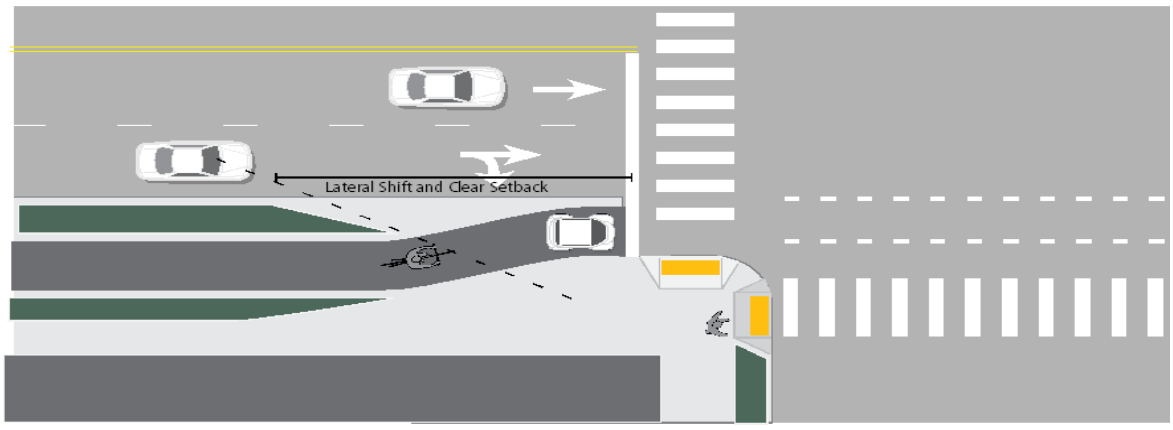
Figure 13: Transition the Class I NEV Path into Class II NEV Lane



Separated Class I Crossing

When a greater degree of separation is desired, the separate Class I NEV Path should be maintained. To ensure adequate visibility, consider laterally shifting the path toward the roadway and/or establish a clear zone in advance of the intersection. Consider signalization schemes that allow NEVs to cross with the pedestrian signal.

Figure 14: Lateral Shift and Class I NEV Path Crossing

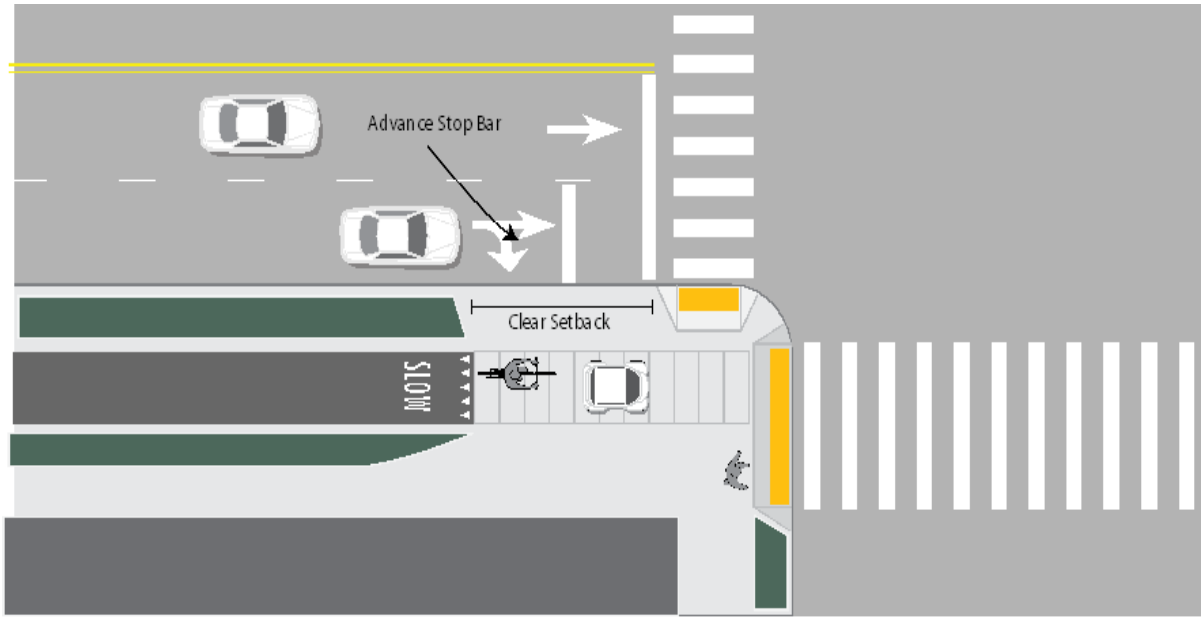


Convert to Shared Use Path

In highly constrained conditions, the Class I NEV path may be converted into a conventional Class I shared use path.

Because this design potentially combines NEVs, bicyclists, and pedestrians in the same space it is important to encourage NEV speeds closer to that of pedestrians. Markings, warnings signs and tactile markings may be used to indicate a speed transition zone.

Figure 15: Transition the Class I NEV Path Into Conventional Class I Shared Use Path



Street Crossing Signal Phasing

When operating on Class I NEV Paths, users will rely on either the standard traffic signal indication or the pedestrian signal head to provide traffic control at signalized intersections.

When NEV and bicyclists are expected to use the pedestrian signal head, a modified R9-5 NEV-BIKE USE PED SIGNAL sign should be provided. This sign has been approved by the CATCDC for inclusion in the next CAMUTCD.

Figure 16: NEV-BIKE USE PED SIGNAL Sign

Protected Signal Phasing

In areas where conflicts between NEVs and turning motor vehicles is a high risk, providing an exclusive pedestrian phase for use by NEVs, bicyclists and pedestrians will provide full protection of NEV Crossings. Right turn on red should be prohibited at these locations.

Leading Pedestrians/NEV Interval Phasing

Where a protected signal phase for pedestrians and/or NEVs is impractical, it may be possible to provide a short-duration head-start protected phase to allowing path users to enter the intersection before adjacent conflicting motor vehicles. Right turn on red should be prohibited at these locations.

Signal Detection and Actuation

NEVs can be detected at signalized intersections using the same technologies that are often used to detect bicycles. Similar to bicycle detection and actuation, NEV detection and actuation can employ video imaging detection, magnetometers, microwave radar, and embedded inductive loop detectors at signalized intersections and further upstream. Embedded inductive loop detectors and video imaging detection systems are the most commonly used detection technologies for passenger vehicles and bicycles.

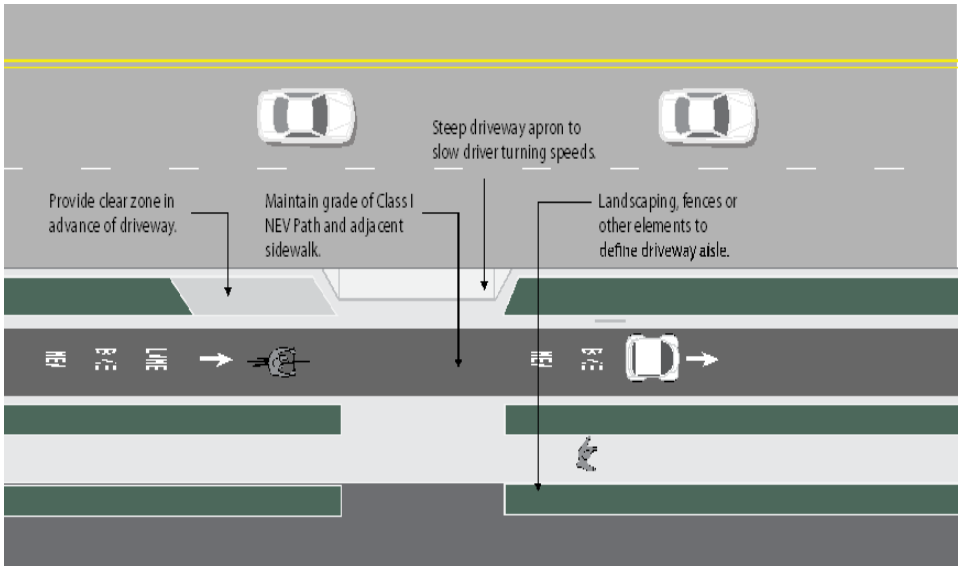
More research is needed to determine the most effective loop detector configuration for NEVs given their larger width and wheelbase. However, if the sensitivity of the loop detector is adjusted for bicycles (more sensitive), and pavement markings or signage are used to indicate appropriate NEV position, then NEVs

can effectively use existing bike detectors. Installing new loop detectors would serve both NEV operators and bicyclists.

Driveways

Motor vehicles are required to yield to NEVs, bicyclists, and pedestrians at driveways. It is important for driveway designs to communicate the priority of these users, and to encourage appropriate turning speed by motor vehicles.

Figure 17: Class I NEV Path Driveway Crossing



5.4 Class II NEV Lane Design

Class II NEV-Bike lanes provide for a separate striped lane adjacent to roadways with speed limits of 55 miles per hour or less. The lane may be shared with bicyclists or may be configured as an additional lane adjacent to a bicycle lane. Adjacent general traffic lanes may need to be narrowed to 10 to 11 feet to accommodate wider Class II NEV-Bike lanes. Less than 12-foot-wide wide lanes are proven to improve safety for all road users and are appropriate for multi-modal urban arterials as noted in the California Highway Design Manual and other documents supported by Caltrans promoting multi-modal design. [8]

[8] http://www.dot.ca.gov/Documents/2014-4-2-Flexibility-in-Design.pdf

5.4.1 Cross Sections

Class II lanes should have a minimum width of 7 feet. Where possible, a 3-foot or wider buffer should allow for passing and provide additional comfort and separation from traffic and/or parking lanes. See Figure 16 for buffer striping options. Special attention should be given to the continuity of NEV lanes through intersections, between vehicle travel and turn lanes and transitions to other NEV facility types. In constrained locations, Class II NEV Lanes may be 7 feet wide and delineated with a single 8-inch-wide white stripe.

Figure 18: Preferred Cross Section for Class II I NEV Lane

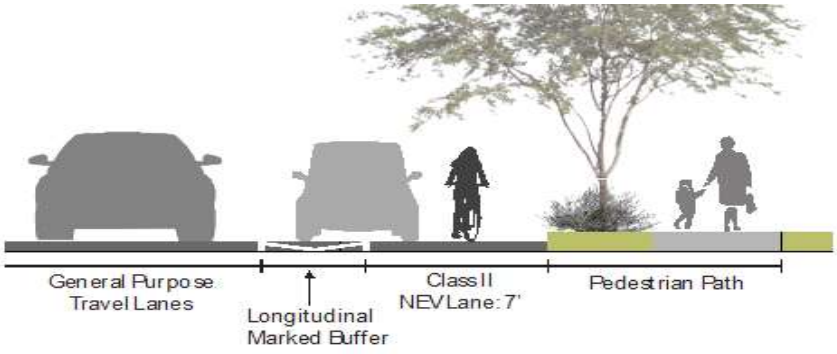
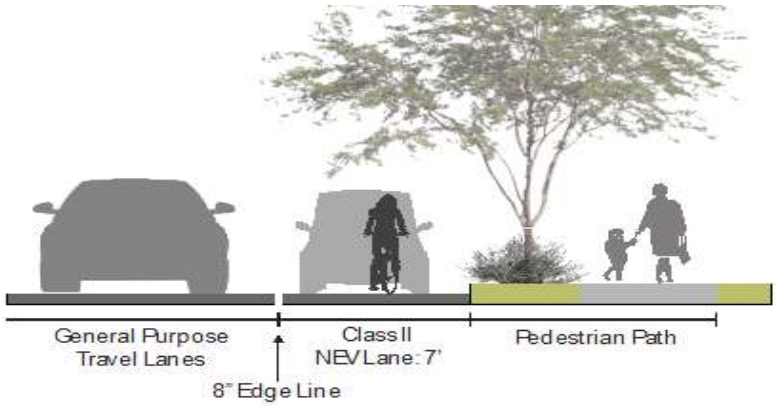


Figure 19: Constrained Cross Section for Class II NEV Lane



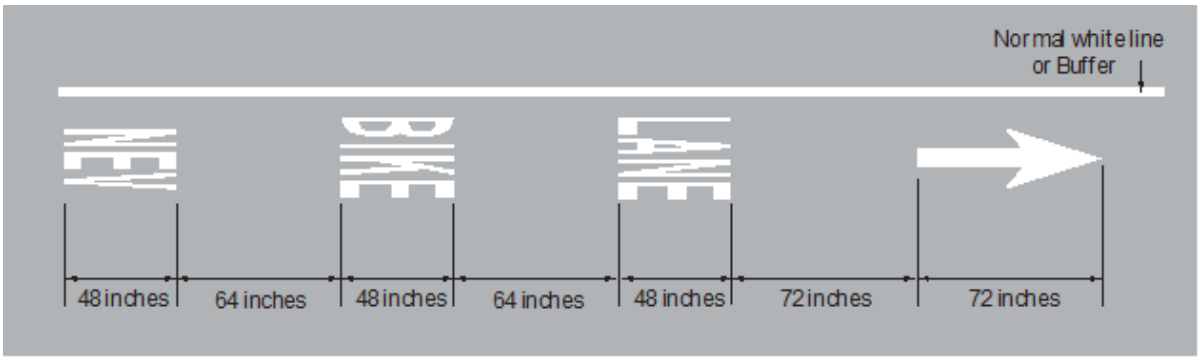
5.4.2 Markings and Signs

Preferential Lane Markings

The California Traffic Control Devices Committee (CATCDC) has approved the inclusion of the letters "NEV" for use in the bike lanes markings in the next CAMUTCD and this marking may be implemented now. Subject to approved experimentation process, it is recommended that a graphic symbol pavement marking design be developed so that the markings are more legible to locals and tourists who may not

fully understand the difference between an NEV and a motor vehicle or golf cart. Additionally, a graphic symbol serves international needs and does not require comprehension of written English.

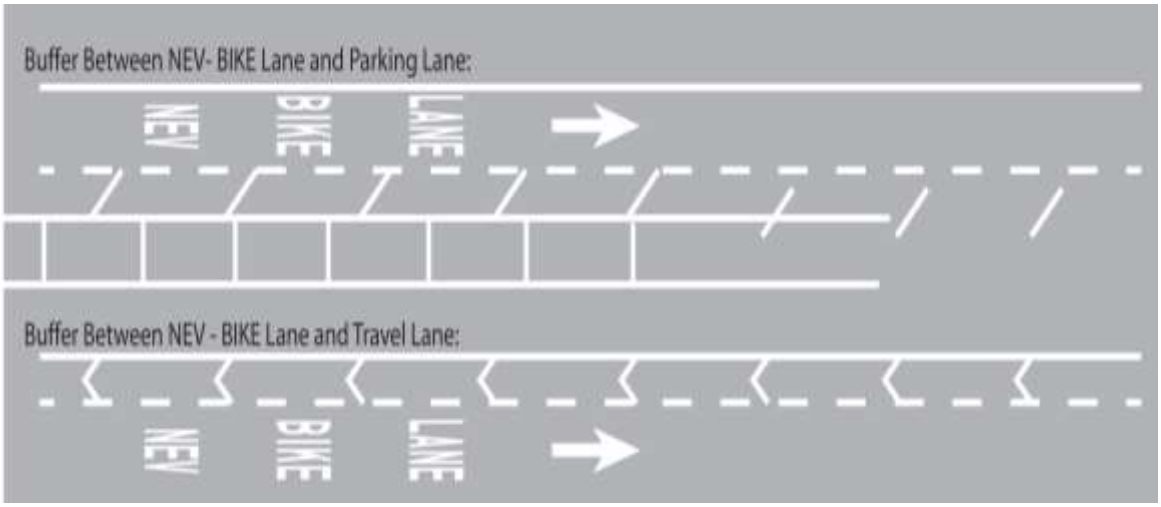
Figure 20: Experimental Standard NEV Pavement Marking



Lines and Buffers

Class II NEV Lanes require lane striping to identify the boundary between the NEV Lane and the adjacent travel lane. Class II lanes are typically marked with a normal 6 inch white line, although in locations with insufficient room for a standard buffer, a line of up to 12 inches may be used[9]. Preferential lane striping is described in section 3D.02 of the CAMUTCD, and the buffers shown have been adopted by the CATCDC.

Figure 21: Longitudinal Edge Striping Alternatives (modified CAMUTCD Figure 9C-104)

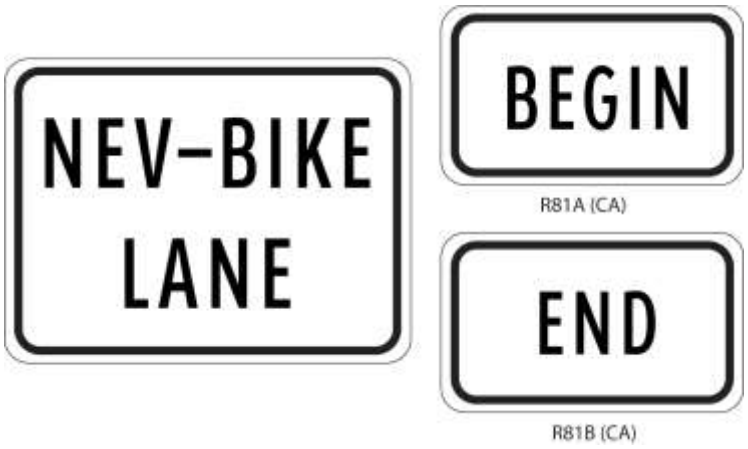


[9] For example, the City of Davis, CA has recently installed 12 inch striping on 5th Street where there was insufficient room for a full buffer

Signs

The combination NEV-Bike Lane sign should be placed on NEV Lanes designed for use by both NEVs and bicyclists. The sign should be placed at the far side of collector street intersections and at a minimum of one-half mile intervals on all continuous NEV-Bike lane segments.

Figure 22: Combination NEV-Bike Lane Sign and Supplemental Plaques



In locations where a NEV Lane is terminated or transitioned into or from a Class I or Class III facility, the R81A "BEGIN" or R81B "END" plaques may be used to the Combination NEV-Bike Lane sign.

5.4.3. NEV prohibition

This regulatory plate may be placed at entrances to public streets that will not accommodate NEV travel. This sign may be placed on the right-hand side of the roadway approximately 25 feet past the intersection so it is visible to operators before they enter that portion of the public right-of-way.

Figure 23: NEV Prohibition Signs

The CTCDC has explained that NEV is an acronym for Neighborhood Electric Vehicle or Neighborhood Electric Vehicles, and accordingly will be adopted with "NEV PROHIBITED" rather than "NEVS PROHIBITED". This sign may be used in conjunction with an existing "BEYOND THIS POINT" supplementary sign or in one sign.

5.4.4 Intersection Design Elements

Right Turns and NEV Lanes

Experience in the City of Lincoln indicates that there are no significant issues with NEV use of conventional roadway left turn lanes. From the Lincoln Evaluation Report:[10]

> *"NEVs tend to move over to the left turn lane, much like bicycles are able to do. The general feelings of safety for turning and maneuvering an NEV are subjective. Driving skills, experience, and familiarity with the driver's surroundings area all key factors. However, as a general rule of thumb, if a bicycle has sufficient speed, site distance, and capability to move from a bike lane to a left turn lane, then an NEV would certainly have similar capability, since NEVs are generally faster and more visible than a standard bicycle."*

Because such operation requires shared roadway conditions for short segment, exercise caution when expecting this type of operation on roadways with a posted speed limit above 35 mph.

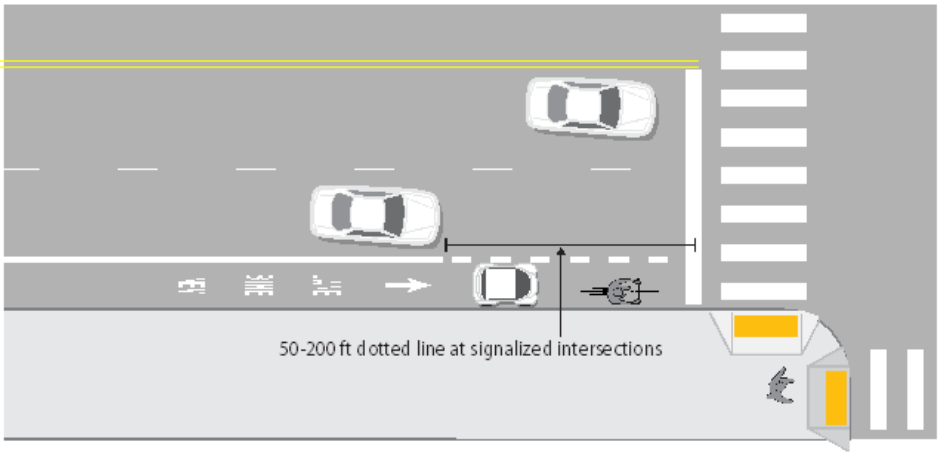
Managing Right Turns and NEV Lanes

Managing conflict between NEVs and right turning vehicles is one of the most important aspects of Class II NEV Lane design at intersections.

At locations adjacent to a shared through/right turn lane, the NEV lane should be dashed in advance of the intersection to allow right turning vehicles to turn from the rightmost lane of the street. Motorists are required to yield to NEVs and bicyclists prior to positioning for the right turn. However according to the CVC they can enter a bike lane 150 feet prior to an intersection when safe to do so.

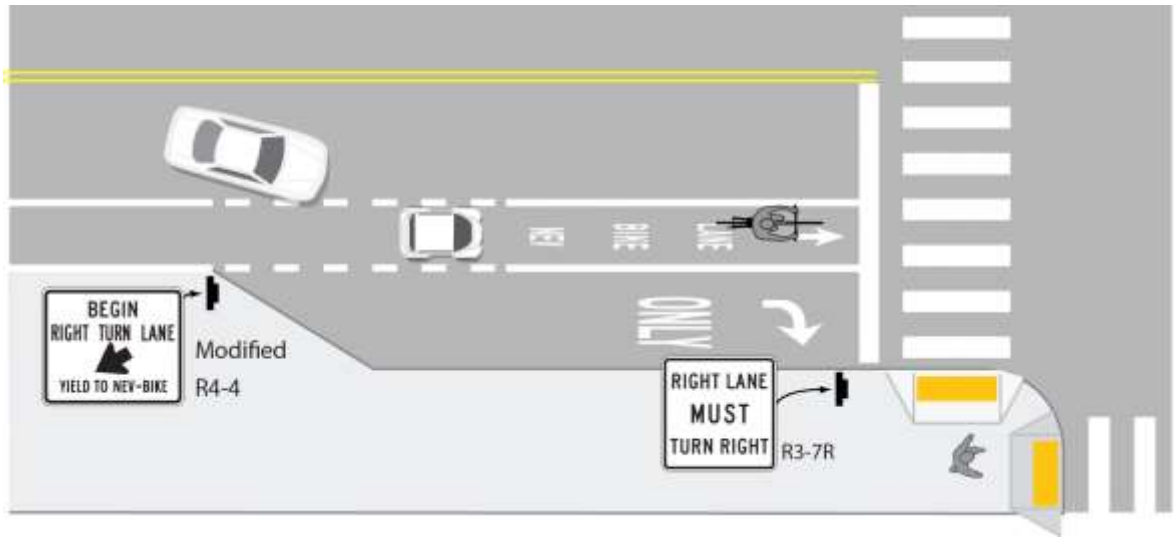
[10] City of Lincoln and City of Rocklin. *Neighborhood Electric Vehicle Transportation Plan Evaluation*. 2011.

Figure 24: Dashed NEV-Bike Lane Next to Through/Right Lane



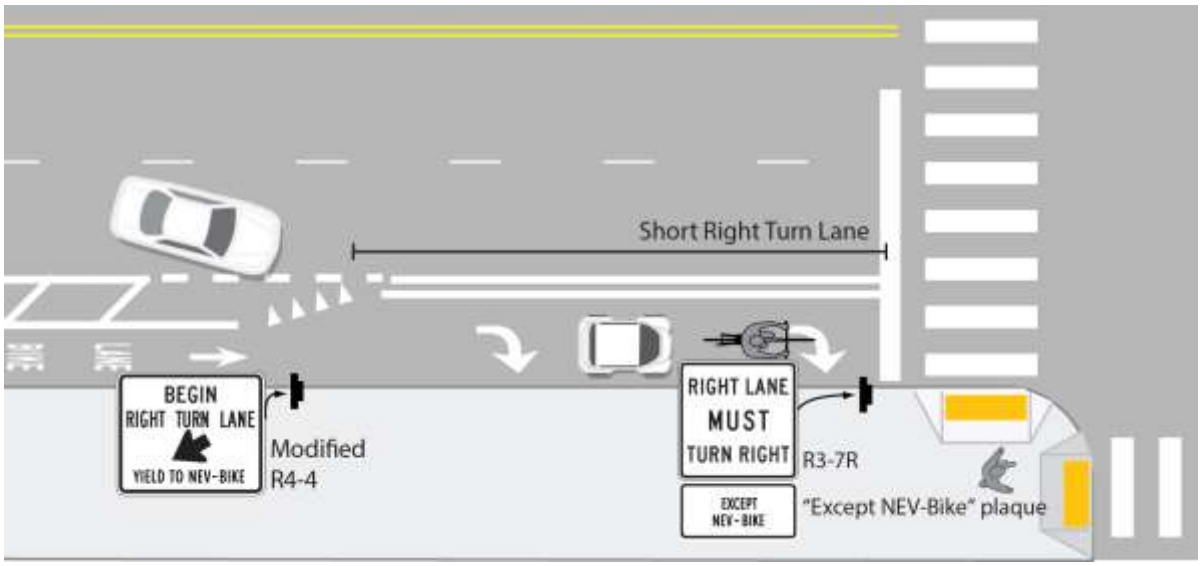
In areas of high right turn volumes, a dedicated right-turn-only lane should be provided. The right-turn-only lane should be added to the right of the NEV lane and the merge area should be marked with dashed lines. The NEV lane alignment should be straight through the merge area (so the right-turn lane is designed as an "add" lane, see Figure 25) with as little deflection to the NEV lane as possible. Motorists are required to yield to NEVs and bicyclist at the entrance to the right-turn-only lane.

Figure 25: Through NEV-Bike Lane and Added Right Turn Only Lane



When there isn't adequate space for a dedicated right-turn-only lane, a Combined NEV-Bike/Turn Lane (Figure 26) may be provided to encourage users to negotiate priority in advance of the intersection. This treatment is based off a similar configuration used for bike lanes[11]. Signs should be used to permit through movements by NEVs and bicyclists in these locations.

Figure 26: Combined NEV-Bike Lane/Turn Lane (Mixing Zone)

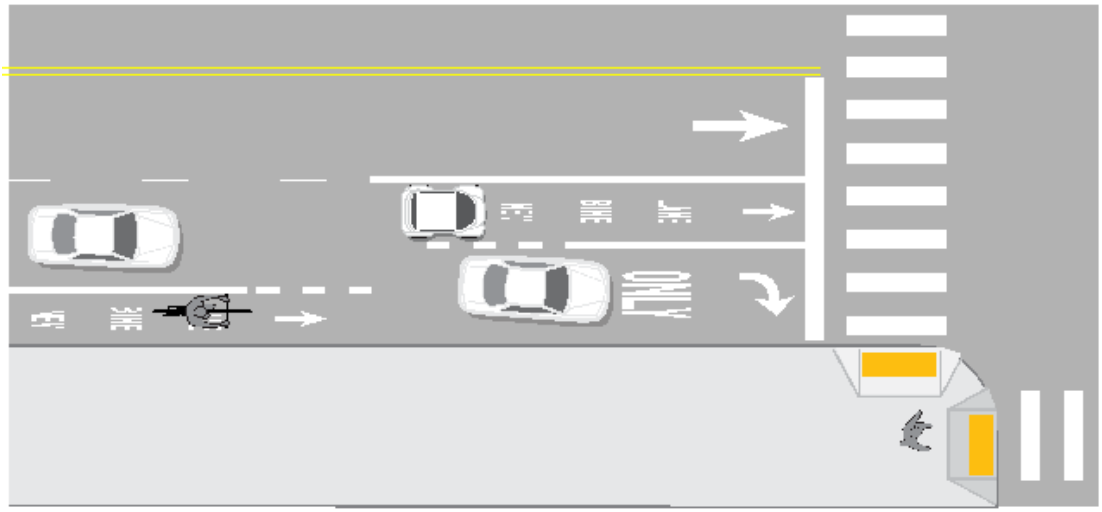


In situations where a through travel lane becomes a right-turn-only lane, NEV operators and bicyclists are required to move laterally to maintain a through position to the left of the right-turn-only lane. This situation is highly undesirable, as motor vehicles are traveling at a high rate of speed and user priority is ambiguous.

Because this configuration creates a short-length of shared-roadway condition, exercise caution when applying this treatment on roadways with a posted speed limit above 35 mph.

[11] NACTO. Urban Bikeway Design Guide: Combined Bike Lane/Turn Lane. 2012.

Figure 27: Through NEV-Bike Lane with Transition to Right-Turn-Only Lane (35 mph or lower)



Signals Detection and Actuation

At signalized intersections, the Class II NEV-Bike Lane users must be able to reliably and easily actuate the signal controller if the signal is not operating on fixed timing mode. Most commonly this is done through loop detectors or other technology.

Loop Detectors

NEV/Bicycle-activated loop detectors are installed within the roadway to allow the presence of an NEV lane user to trigger a change in the traffic signal. Loops that are sensitive enough to detect bicycles should be supplemented with pavement markings to instruct users how to activate the signals.

Video Detection Cameras

Video detection systems use digital image processing to detect a change in the image at a location. These systems can be calibrated to detect NEVs and bicyclists. Video camera system costs range from $20,000 to $25,000 per intersection.

Remote Traffic Microwave Sensor Detection (RTMS)

RTMS is a system which uses frequency modulated continuous wave radio signals to detect objects in the roadway. This method marks the detected object with a time code to determine its distance from the sensor. The RTMS system is unaffected by temperature and lighting, which can affect standard video detection.

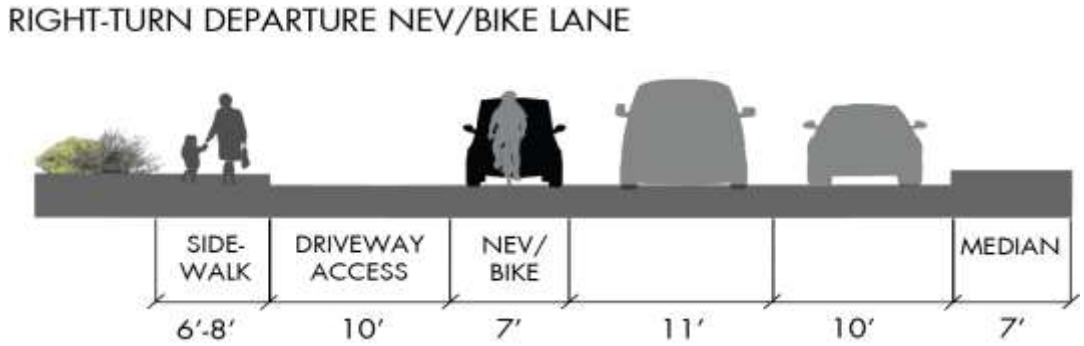
Right Turn Access Lanes

In many areas of the Coachella Valley where arterial roads intersect other arterial roads, consecutive right-turn lanes can present a significant challenge for NEV operators and bicyclists. To make a right turn, an NEV operator would use the right-turn lane as though they were in a motor vehicle. However, once they've executed the turn, they no longer have a dedicated NEV facility, and are instead forced to share another right-turn lane with vehicles turning into driveways or parking lot entrances. This is especially problematic for NEV operators, because they must negotiate a shared space with faster travelling vehicles entering the right-turn lane, while trying to merge over into the through travel lane (again with faster moving vehicles continuing straight). Two options are presented below.

Figure 28 depicts a typical right-turn departure NEV-Bike lane transition. This lane striping provides separation after the turn and forces vehicles to turn across the NEV-Bike lane to access driveways. The dashed vehicle merging area can utilize a green colored surface treatment to further highlight the potential conflict area. Where roadway widths allow, buffered bike lanes (on one or two sides) offer additional space and increased comfort for NEV operators and bicyclists along higher speed roadways. Physical separation can also be achieved with a concrete channelization island near the intersection.

Figure 28: Typical Right-turn Departure NEV-Bike Lane

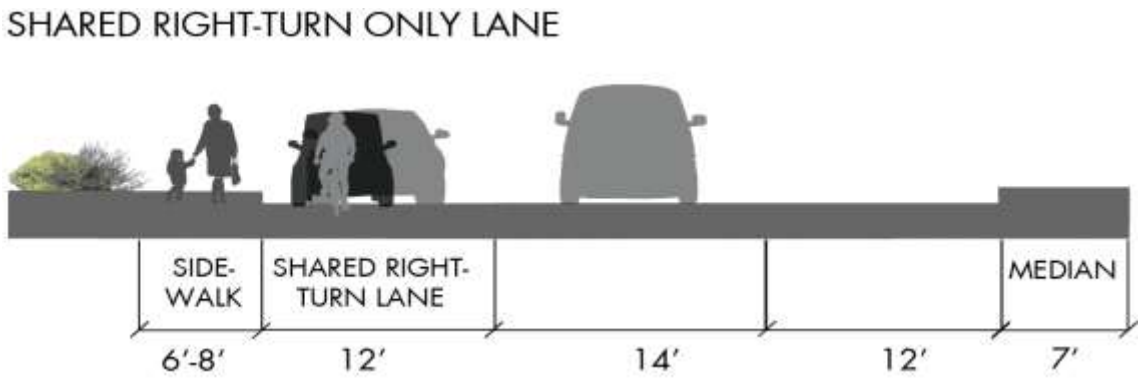
Figure 29: Right-turn Departure NEV-Bike Lane Roadway Section



When the roadway is not wide enough to accommodate a 7-foot-wide NEV/Bike lane, a secondary option is to provide a shared or "mixing" lane, where motor vehicles must turn right for driveway access and NEVs and bikes are permitted to proceed through (Figure 24). Shared lane markings ("Sharrows") may be used and "Right-Turn Only – Except NEV-Bike" signage should be used in this context.

Figure 30: Shared Right-turn Only Lane with Exception for NEVs and Nikes

Figure 31: Shared Right-turn Only Lane Roadway Section



5.5 Class III NEV Route Design

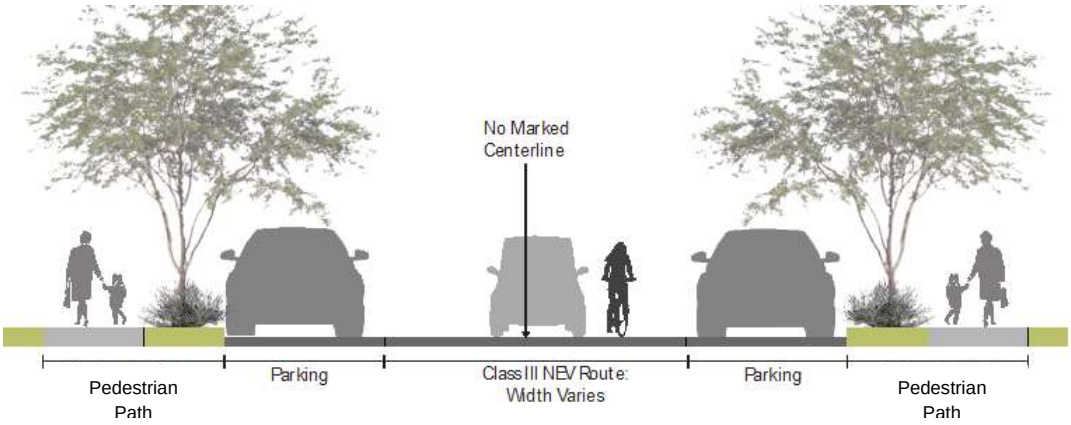
Class III Routes are shared, on-street facilities without exclusive NEV striping or separation from motor vehicles, bikes or other modes, typically designated on residential streets with posted speed limits of 25 mph or less. [12]

Designers should create streets with low design speeds to create "self-explaining" or "self-enforcing" operating conditions. Narrow cross sections and traffic calming elements such as speed tables, chicanes and neighborhood roundabouts should be used to encourage appropriate driver operating speed without the need for enforcement or education.

5.5.1 Cross Sections

When Class III Routes coincide with designated bicycle boulevards, Class III Routes may also feature a bicycle shared lane marking to indicate the facility type to other roadway users. Commonly, the centerline is not marked, to permit and encourage full use of the roadway for comfortable passing.

Figure 32: Typical Class III Route on Residential Street

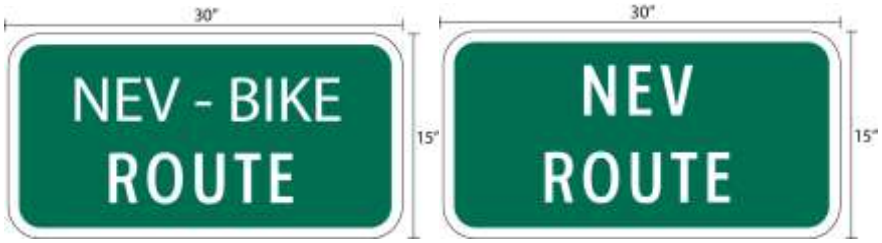


5.5.2 Markings and Signs

No identifying pavement markings are required for Class III NEV Routes. NEV-Bike Route signs should be used to raise awareness to other users of the presence of NEVs. The word BIKE has been included because it is assumed that any route preferred for NEVs would also be a preferred for bicyclists.

[12] State regulations permit shared roadway NEV use on streets with speed limits of 35 mph or lower.

Figure 33: Class III NEV-Bike Route sign and Class III NEV Route Sign



5.6 Implementation Strategies

5.6.1 Travel Lane Reconfigurations

The removal of a single, wide travel lane may provide sufficient space for NEV lanes on both sides of a street. Streets with excess vehicle capacity provide opportunities for NEV lane retrofit projects.

Depending on a street's existing configuration, traffic operations, user needs, and safety concerns, various lane reduction configurations may apply. For instance, a four-lane street (with two travel lanes in each direction) could be modified to provide one travel lane in each direction, a center turn lane, and bike lanes. Prior to implementing this measure, a traffic analysis should identify potential impacts.

5.6.2.Travel Lane Narrowing

Lane narrowing utilizes roadway space that exceeds minimum standards to provide the needed space for NEV lanes. Many roadways have existing travel lanes that are wider than those prescribed in local and national roadway design standards, or which are not marked. Most standards allow for the use of 9- to 12-foot-wide travel lanes to create space for NEV lanes.

Special consideration should be given to the amount of heavy vehicle traffic, desired speed of the roadway, and horizontal curvature before the decision is made to narrow travel lanes. Narrow travel lanes have proven effective in reducing motorists speeds on roadways, as they are more appropriately designed for the predominate passenger vehicle users, of the roadway rather than the largest roadway users like semi-trucks and buses. Two-way left turn lane or enter turn lanes can also be narrowed to 9 to 11 feet in many situations to repurpose pavement space for NEV lanes.

AASHTO supports reduced width lanes in *A Policy on Geometric Design of Highways and Streets:* "On interrupted-flow operation conditions at low speeds (45 mph or less), narrow lane widths are normally adequate and have some advantages."

5.6.3 Parking Lane Removal

Like travel lane removal, the removal of one or both parking lanes may provide necessary space to establish NEV lanes. Typical parking lane widths of 8 feet are directly compatible with one-direction NEV lanes and such conversions may be very cost effective. Parking lane removal may be controversial, and a public process is typically needed.

5.6.4 Shoulder Widening

NEV lanes can be accommodated on streets with excess right-of-way through shoulder widening. Although roadway widening incurs higher expenses than re-striping projects, NEV lanes can be added to streets currently lacking curbs, gutters, and sidewalks without the high costs of major infrastructure reconstruction. Due to the cost of street reconstruction, shoulder widening is most appropriate on roads lacking curbs, gutters, and sidewalks.

5.6.5. Speed Limit Adjustments

In some cases, a roadway may be operating at a speed too fast for Class III shared roadway use (greater than 35 mph), but would otherwise be compatible with NEV operation. In these situations, it may be possible to adjust the design speed of the road through striping, geometry adjustments, and traffic calming to reduce the posted speed limit to 35 mph or less, as appropriate for NEV use.

5.7 Facility Maintenance

5.7.1 Considerations

Regular NEV facility maintenance includes sweeping, maintaining a smooth roadway, ensuring that the gutter-to-pavement transition remains relatively flush, and installing bicycle- and NEV-friendly drainage grates. Pavement overlays are a good opportunity to improve NEV facilities. The following recommendations provide a menu of options to consider enhancing a maintenance regimen.

Table 8: Recommended Maintenance Activities

Maintenance Activity	Frequency
Inspections	Seasonal – at beginning and end of summer
Pavement sweeping/blowing	As needed, with higher frequency in the early Spring and Fall
Pavement sealing	5 - 15 years
Pothole repair	1 week – 1 month after report. Marked with high visibility paint until repairs can be completed.
Culvert and drainage grate inspection	Before winter and after major storms
Pavement markings replacement	As needed
Signage replacement	As needed
Shoulder plant trimming (weeds, trees, brambles)	Twice a year; middle of growing season and early fall
Tree and shrub plantings, trimming	1 – 3 years
Major damage response (washouts, fallen trees, flooding)	As soon as possible

5.7.2 Street Sweeping

NEV users often avoid shoulders and lanes filled with gravel, broken glass, sand accumulation and other debris; they will ride in the roadway to avoid these hazards, potentially causing conflicts with motorists. Debris from the roadway should not be swept onto sidewalks (pedestrians need a clean walking surface), nor should debris be swept from the sidewalk onto the roadway. A regularly scheduled inspection and maintenance program helps ensure that roadway debris is regularly picked up or swept. Street sweeping maintenance practices should include:

- Establish a seasonal sweeping schedule that prioritizes roadways with NEV facilities
- Sand removal should occur after each wind storm event
- Sweep NEV facilities whenever there is an accumulation of debris on the facility.
- Develop a "debris in roadway" hotline to report

- In curbed sections, sweepers should pick up debris; on open shoulders, debris can be swept onto gravel shoulders
- Pave gravel driveway approaches to minimize loose gravel on paved roadway shoulders
- Perform additional sweeping in areas where debris accumulates

5.7.3 Gutter to Pavement Transitions

On streets with concrete curbs and gutters, 1 to 2 feet of the curbside area is typically devoted to the gutter pan, where water collects and drains into catch basins. On many streets, the NEV lane is situated near the transition between the gutter pan and the pavement edge. This transition can be susceptible to erosion, creating potholes and a rough surface for travel.

The pavement on many streets is not flush with the gutter, creating a vertical transition between these segments. This area can buckle over time, creating a hazardous condition for bicyclists. Gutter maintenance strategies include:

- Ensure that gutter-to-pavement transitions have no more than a ¼" vertical transition
- Examine pavement transitions during every roadway project for new construction, maintenance activities, and construction project activities that occur in streets
- Inspect the pavement two to four months after trenching construction activities are completed to ensure that excessive settlement has not occurred
- Provide at least 5 feet of smooth pavement outside of the gutter seam

5.7.4 Access through Construction Areas

Wherever NEVs are allowed, measures should be taken to provide for the continuity of a user's trip through a work zone area. NEV drivers should not be led into conflicts with work site vehicles, equipment, moving vehicles, open trenches, or temporary construction signage.

Efforts should be made to re-create an NEV lane (if one exists) to the left of the construction zone. If this is impossible, then consider the closure of a standard-width travel lane to accommodate separated NEV travel.

Contractors performing work should be made aware of the needs of NEV users and be properly trained in how to safely route NEVs through or around work zones.

Construction Signage

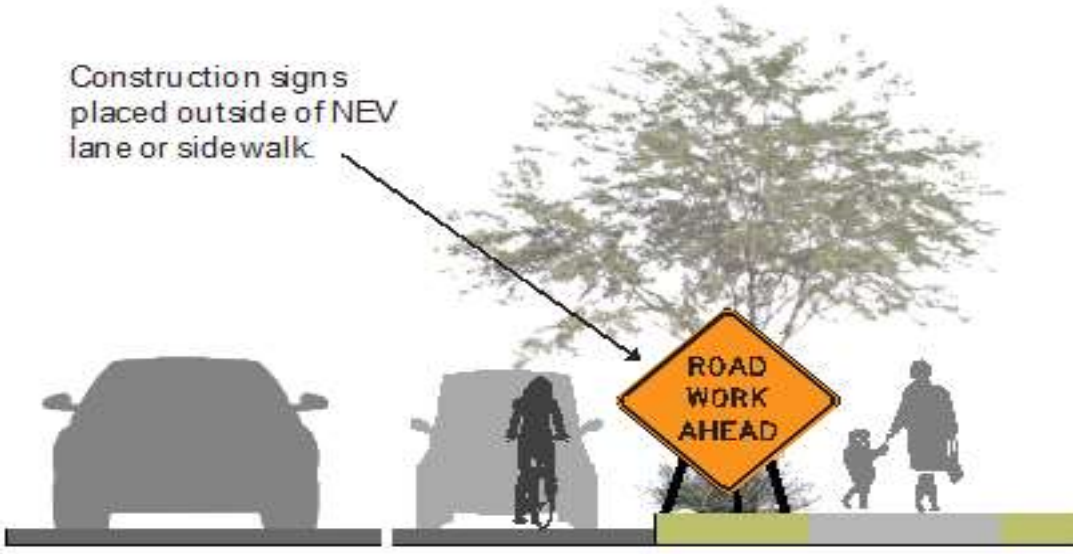
- Place signage in a location that does not obstruct the path of NEV drivers, bicyclists or pedestrians.
- Detour and closure signs related to NEV travel may be included on all bikeways where construction activities occur. Signage should also be provided on all other roadways.

Travel on and around Steel Grates

Plates used to cover trenches tend to not be flush with pavement and have a 1- to 2-inch vertical transition on the edges. This can puncture bicycle tires and can be jarring to NEV drivers. Although it is common to use steel plates during non-construction hours, these plates can be dangerously slippery, particularly when wet. Good practices include:

- Require temporary asphalt (cold mix) around plates to create a smooth transition
- Use steel plates only as a temporary measure during construction, not for extended periods
- Use warning signs where steel plates are in use
- Require both temporary and final repaving to provide a smooth surface without abrupt edges

Figure 34: Proper Placement of Construction Signage Outside of NEV Lane



5.8 Additional AB 61 Considerations

5.8.1 Safety and Maintenance Requirements

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, included below.

TITLE 49 OF THE CODE OF FEDERAL REGULATIONS

§571.500 Standard No. 500; Low-speed vehicles. S5. Requirements.

S5. Requirements.

(a) When tested in accordance with test conditions in S6 and test procedures in S7, the maximum speed attainable in 1.6 km (1 mile) by each low-speed vehicle shall be not more than 40 kilometers per hour (25 miles per hour).

(b) Each low-speed vehicle shall be equipped with:

(1) Headlamps,

(2) Front and rear turn signal lamps,

(3) Taillamps,

(4) Stop lamps,

(5) Reflex reflectors: one red on each side as far to the rear as practicable, and one red on the rear,

(6) An exterior mirror mounted on the driver's side of the vehicle and either an exterior mirror mounted on the passenger's side of the vehicle or an interior mirror,

(7) A parking brake,

(8) A windshield that conforms to the Federal motor vehicle safety standard on glazing materials (49 CFR 571.205).

(9) A VIN that conforms to the requirements of part 565 Vehicle Identification Number of this chapter, and

(10) A Type 1 or Type 2 seat belt assembly conforming to Sec. 571.209 of this part, Federal Motor Vehicle Safety Standard No. 209, Seat belt assemblies, installed at each designated seating position.

(11) Low-speed vehicles shall comply with the rear visibility requirements specified in paragraphs S6.2 of FMVSS No. 111.

S6. General test conditions. Each vehicle must meet the performance limit specified in S5(a) under the following test conditions.

S6.1. Ambient conditions.

S6.1.1. Ambient temperature. The ambient temperature is any temperature between 0 °C (32 °F) and 40 °C (104 °F).

S6.1.2. Wind speed. The wind speed is not greater than 5 m/s (11.2 mph).

S6.2. Road test surface.

S6.2.1. Pavement friction. Unless otherwise specified, the road test surface produces a peak friction coefficient (PFC) of 0.9 when measured using a standard reference test tire that meets the specifications of American Society for Testing and Materials (ASTM) E1136, "Standard Specification for A Radial Standard Reference Test Tire," in accordance with ASTM Method E 1337-90, "Standard Test Method for Determining Longitudinal Peak Braking Coefficient of Paved Surfaces Using a Standard Reference Test Tire," at a speed of 64.4 km/h (40.0 mph), without water delivery (incorporated by reference; see 49 CFR 571.5).

S6.2.2. Gradient. The test surface has not more than a 1 percent gradient in the direction of testing and not more than a 2 percent gradient perpendicular to the direction of testing.

S6.2.3. Lane width. The lane width is not less than 3.5 m (11.5 ft).

S6.3. Vehicle conditions.

S6.3.1. The test weight for maximum speed is unloaded vehicle weight plus a mass of 78 kg (170 pounds), including driver and instrumentation.

S6.3.2. No adjustment, repair or replacement of any component is allowed after the start of the first performance test.

S6.3.3. Tire inflation pressure. Cold inflation pressure is not more than the maximum permissible pressure molded on the tire sidewall.

S6.3.4. Break-in. The vehicle completes the manufacturer's recommended break-in agenda as a minimum condition prior to beginning the performance tests.

S6.3.5. Vehicle openings. All vehicle openings (doors, windows, hood, trunk, convertible top, cargo doors, etc.) are closed except as required for instrumentation purposes.

S6.3.6. Battery powered vehicles. Prior to beginning the performance tests, propulsion batteries are at the state of charge recommended by the manufacturer or, if the manufacturer has made no recommendation, at a state of charge of not less than 95 percent. No further charging of any propulsion battery is permissible.

S7. Test procedure. Each vehicle must meet the performance limit specified in S5(a) under the following test procedure. The maximum speed performance is determined by measuring the maximum attainable vehicle speed at any point in a distance of 1.6 km (1.0 mile) from a standing start and repeated in the opposite direction within 30 minutes.

[63 FR 33216, June 17, 1998, as amended at 68 FR 43972, July 25, 2003; 79 FR 19249, Apr. 7, 2014]

5.8.2.Operator Requirements

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.

5.8.3 Restrictions on Use

Operation of NEVs is restricted to those NEV routes identified in the transportation plan and limited to those NEVs that meet the safety equipment requirements specified in the plan.

5.8.4 Violations

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

5.8.5 Evaluation and Monitoring

Any city that adopts a NEV transportation plan shall submit a report to the Legislature on or before January 1, 2016, in consultation with the Department of Transportation, the Department of the California Highway Patrol, and any applicable local law enforcement agency.

The report shall include all of the following:

- A description of the NEV transportation plan and its elements that have been authorized up to that time.
- An evaluation of the effectiveness of the NEV transportation plan, including its impact on traffic flows and safety.
- A recommendation as to whether AB 61 should be terminated, continued in effect, or expanded statewide.

More detail on evaluation and monitoring is provided in section 7 of this plan.

6 Recommended Education, Legislation, and Enforcement

6.1 Legislation

The disparate patchwork of current bylaws and policies are presented in Appendix D. In order to provide greater consistency across jurisdictional boundaries, support the objectives of CV Link, and promote wider adoption of lower cost and environmentally friendly transportation options, a model set of municipal city codes and policies should be developed to include:

- Coachella Valley wide standard definitions of the types of golf cars, NEVs, LSVs, and LSEVs based on the California Vehicle Code
- All golf carts and NEVs shall be permitted to park in any parking space
- NEVs and golf carts that have a state issued registration for on-street use shall be exempt from city permits
- The acceptance of permits issued by other jurisdictions in the State of California and/or a California Department of Motor Vehicle (DMV) issued license plate for operation on identified routes
- Publication of a map indicating which streets with posted speed limits above 35 mph have NEV facilities and which designated golf cart paths are available for:
    - Unrestricted NEV speed (up to the legal 25 mph limit) as conditions permit
    - Restricted NEV speed up to 15 mph due to geometric or other considerations
    - Prohibited for NEVs but still permissible for golf carts (not recommended, as this may lead to confusion and enforceability issues)

6.2 Education and Enforcement

As NEVs are a nascent technology, many residents and officials conflate them with golf cars (carts). Following from the recommendation for a Coachella Valley-wide set of definitions, there will be a need to educate the public on what each type of vehicle is and where they may be used.

- CVAG and the member cities should conduct outreach and public service announcements to clarify the various vehicle types.

- All Coachella Valley DMV offices should feature hardcopies of the DMV's fact sheet available online here: http://apps.dmv.ca.gov/pubs/brochures/fast_facts/ffvr37.pdf
- Member cities should distribute to all residents the adopted uniform municipal code sections applying to NEVs and golf carts via regular mail as well as throughout all city departments including the police.
- Riverside County Sheriff's Department should distribute the DMV's fact sheet and applicable municipal city codes to all officers.

As previously noted, to support the development of golf cart and NEV plans, streets and paths must be designated for use or prohibited access.

- Inter-jurisdictional development and publication of maps with routes for the operation of NEVs is needed for planning and design of streets, education, wayfinding, and enforcement purposes.

6.3 Frequently Asked Questions

Q. What does the State of California require me to do to drive an NEV / LSV, and do I have to follow the same laws as a car driver?

A. An NEV or LSV driver must have registration, insurance, and driver's license. Although the legislation has established a separate class for LSVs, almost all laws applicable to motor vehicle drivers also apply to LSV drivers. A driver may not operate a vehicle under the influence of alcohol (CVC 23152).

Q. Can I modify my golf cart to achieve 25 mph like a NEV?

A. While it is not difficult to do this and many businesses are currently doing it, the California Department of Motor Vehicles (DMV) states:

> *A golf cart cannot be converted for registration as an NEV/LSV. If you modify your golf cart to go faster than 15 mph or seat more than two persons, the vehicle is considered a regular motor vehicle and must comply with Federal Motor Vehicle Standards for passenger vehicles. Failure to comply with all necessary regulations may result in a citation.*

You may register the golf cart with the DMV as a golf cart, and you may obtain any currently required city permits for operation on public pathways or streets with speed limits generally limited to 25 mph, but you will not be able to legally operate a modified golf cart on a street with a speed limit of 30 or 35 mph.

7 Evaluation and Monitoring

To meet the reporting requirements of Assembly Bill No. 61, CVAG must submit an NEV Plan Evaluation and Monitoring Report to the legislature, in consultation with the Department of Transportation, the Department of the California Highway Patrol, and local law enforcement agencies.

According to AB 61, the report shall describe the plan adopted, evaluate its effectiveness and impact on traffic flows and safety, and make a recommendation to the Legislature on whether to extend the sunset date or expand the authorization for NEV transportation plans statewide. Required elements include:

- A description of NEV transportation plan and its elements that have been authorized up to that time
- An evaluation of the effectiveness of the NEV transportation plans, including their impact on traffic flows and safety
- A recommendation as to whether AB61 sunset date should be extended and if the authorization for NEV transportation plans should be expanded statewide

In 2011, the City of Lincoln and Rocklin prepared an NEV Plan Evaluation for the California Legislature to meet the requirements of AB 2963. The Lincoln evaluation requirements are equivalent to those in AB 61, and as such offer a model for CVAG to follow in preparation and execution of their own Evaluation and Monitoring Report. It is recommended that the CVAG report evaluate the same categories included in the Lincoln/Rocklin report plus additional measures not previously evaluated. The recommended evaluation categories for CVAG are:

Traffic Engineering Speed Study

Histograms of operating speed frequency for both motor vehicles and NEVs on Class II and Class III facilities.

Incident and Traffic Violation Databases

Inquiry and analysis of NEV-involved traffic collision or violations from local law enforcement agencies and the California Highway Patrol.

Surveys

Surveys of travelers of all modes, to understand the perception of NEV use safety and NEV facility design. Survey results can be evaluated separately by mode to understand differences in perception between

motorists, NEV operators, and bicyclists. A copy of the full survey used by the City of Lincoln is available in Appendix C of the City of Lincoln NEV Transportation Plan Evaluation report.

Energy and Air Quality Impacts

A detailed travel survey can form the basis of an analysis of air quality and energy benefits of current and future NEV use.

Evaluation of Signs, Striping and Pavement Markings

To understand comprehension and compliance with NEV specific traffic control devices, methods such as surveys or an analysis of operation should evaluate the effectiveness of non-standard signs and markings. This evaluation may be necessary as part of an experimentation process with the MUTCD.

Education Campaign

Experience in other cities indicates that there may be some confusion about compatibility between NEV and golf cart facilities. It is important to educate users about the limitations and capability differences between the two vehicle types. A NEV Brochure/Route Map would help educate the public about where NEVs can be legally and comfortably operated, and help explain the difference of NEVs and golf carts. The brochure can include safety tips for NEV operators and answer frequently asked questions about using the network.

8 References

Planning, design and implementation standards in this document are derived from the following sources:

- AASHTO, Roadside Design Guide, 2002.
- U.S. Department of Transportation (USDOT), Federal Highway Administration (FHWA), Manual of Uniform Traffic Control Devices (MUTCD), 2009.
- Caltrans, California Manual on Uniform Traffic Control Devices, 2012.
- USDOT, FHWA, Conflicts on Multiple-Use Trails: Synthesis of the Literature and State of the Practice, 1994.
- Caltrans, Highway Design Manual, 2014.
- Institute of Transportation Engineers (ITE), Design and Safety of Pedestrian Facilities, 1997.
- National Association of City Transportation Officials (NACTO), Urban Bikeway Design Guide, 2nd Ed, 2012.
- Assembly Bill No. 61. Chapter 170. 2011-2012. Section 571.500 of Title 49 of the Code of Federal Regulations.
- Coachella Valley Area Governments (CVAG), Whitewater River/Parkway 1e11 NEV/Bike/Pedestrian Corridor Preliminary Study Report, 2012.
- CVAG, Coachella Valley Non-motorized Transportation Plan Update, 2010.
- Coachella Valley Water District (CVWD), Development Design Manual, 2010.
- Riverside County, General Plan Draft Circulation Element, Trails and Bikeway System, 2013.
- City of Lincoln, NEV Transportation Plan, 2006.
- City of Lincoln, CTCDC Approved Experimental Standards, 2005.

The sources listed above provide details on many aspects of path design, but a) may contain recommendations that conflict with each other; b) are not, in most cases, officially recognized "requirements"; and c) do not cover all conditions on most paths. All design guidelines must be supplemented in the application to specific situations by the professional judgments of the path designers and engineers.

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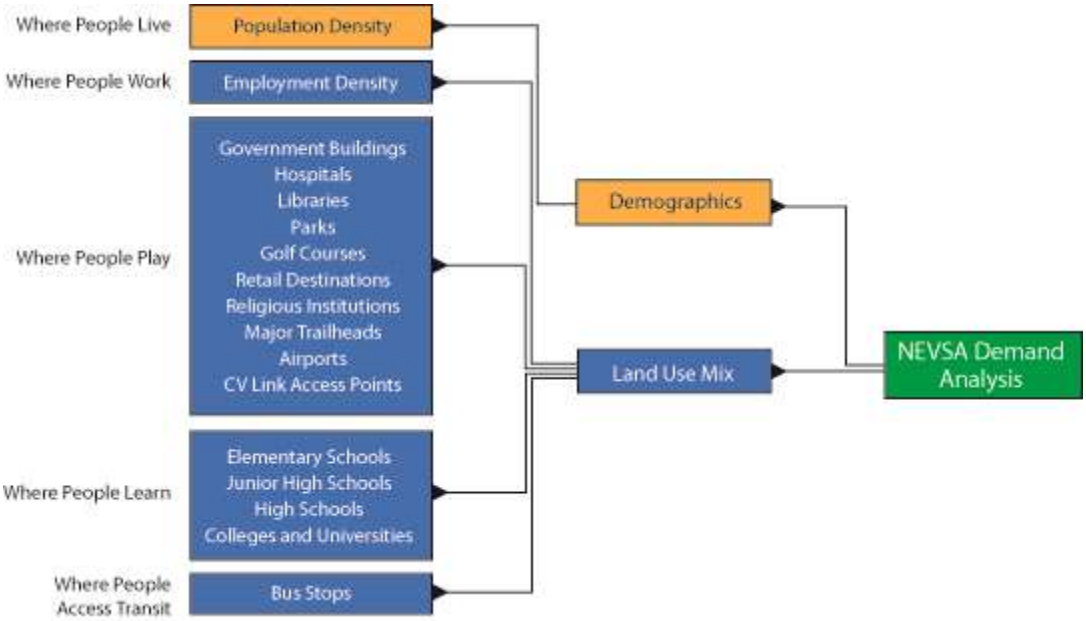
Appendix A. NEVSA Features

Summary of Total Possible Scores

- Where People Live – 20%
- Where People Work – 20%
- Where People Play – 30%
- Where People Learn – 20%
- Where People Access Transit – 10%

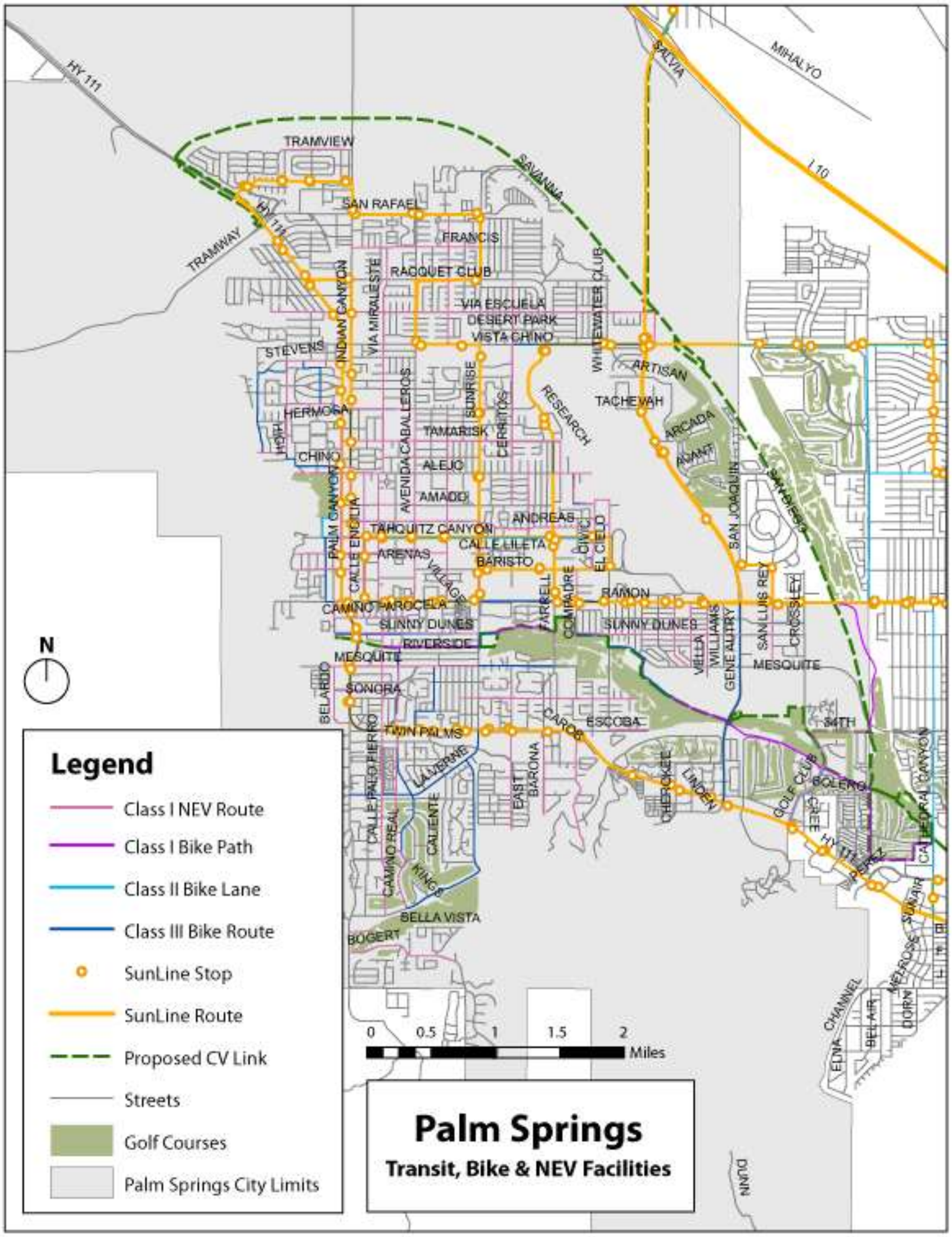
NEVSA Inputs



Appendix B. Existing Transit, Bike, Golf Cart and NEV Facility Maps

The following maps are based upon the:

- Published golf cart maps for each jurisdiction (where available)
- Non-Motorized Transportation Plan (NMTP)
- City staff feedback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Transit, Bike & NEV Facilities
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Class I Bike Path
Class II Bike Lane
Class III Bike Route
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SunLine Route
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Streets
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Miles
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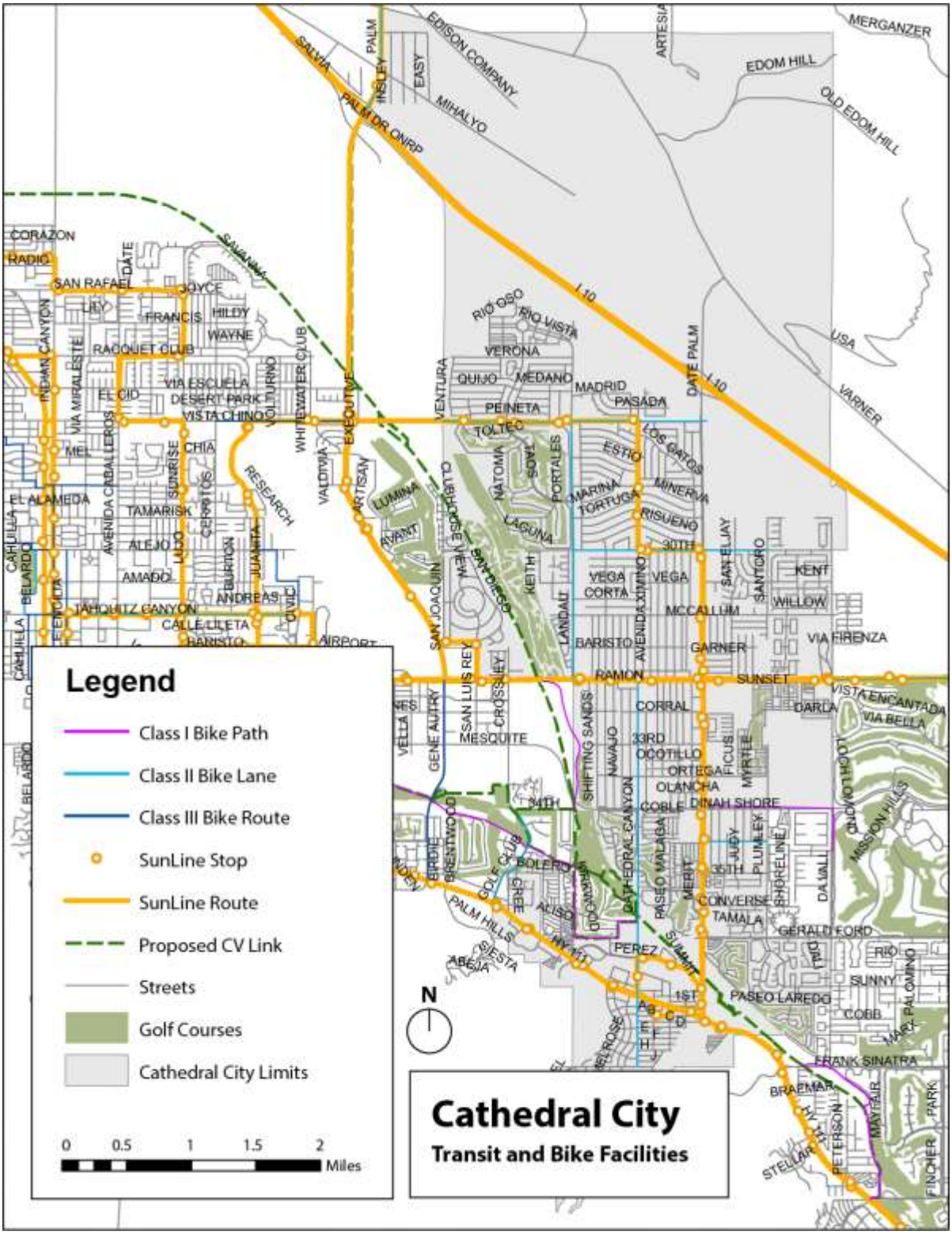
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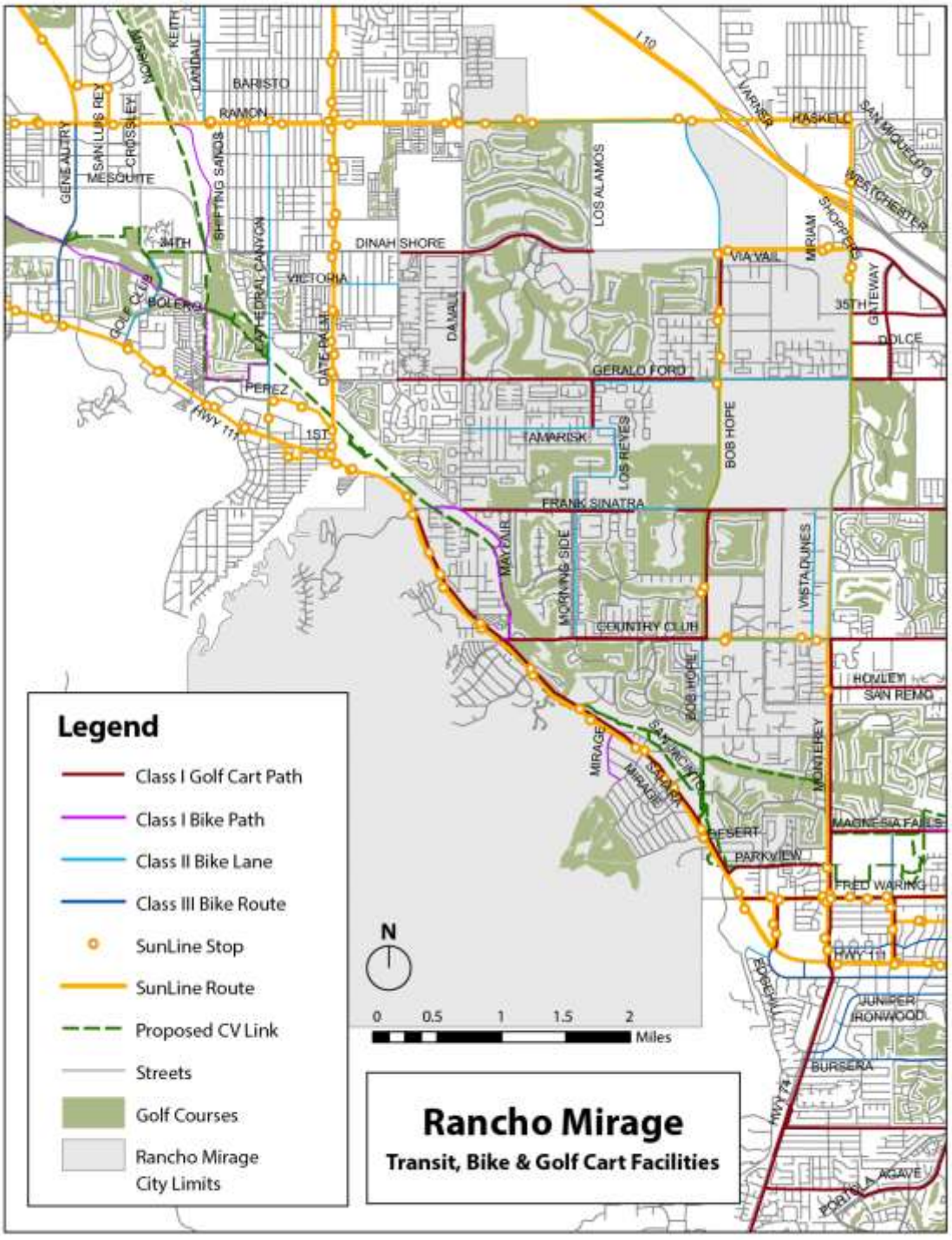
Cathedral City
Transit and Bike Facilities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Class I Golf Cart Path
Class I Bike Path
Class II Bike Lane
Class III Bike Route
SunLine Stop
SunLine Route
Proposed CV Link
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Golf Courses
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Transit, Bike & Golf Cart Facilities
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VARNER
RAMON
BARISTO
KEITH
LANDAU
MORGAN
SAN LUIS REY
CROSSLEY
GENE AUTRY
MESQUITE
SHIFTING SANDS
44TH
DINAH SHORE
LOS ALAMOS
HASKELL
SAN MICHELE
WORCHESTER
SHOPPERS
MIRIAM
VIA VAIL
35TH
GATEWAY
DOLCE
VICTORIA
EAST FEDRAL CANYON
DATE PALM
DA VALL
GERALD FORD
BOLERO
GOLF CLUB
PEREZ
HWY 111
1ST
TAMARISK
LOS REYES
BOB HOPE
FRANK SINATRA
MAYFAIR
MORNING SIDE
COUNTRY CLUB
VISTA DUNES
HOWLEY
SAN REMO
MIRAGE
SAN PASCUAL
SAHARA
MONTEREY
DESERT
PARKVIEW
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JUNIPER
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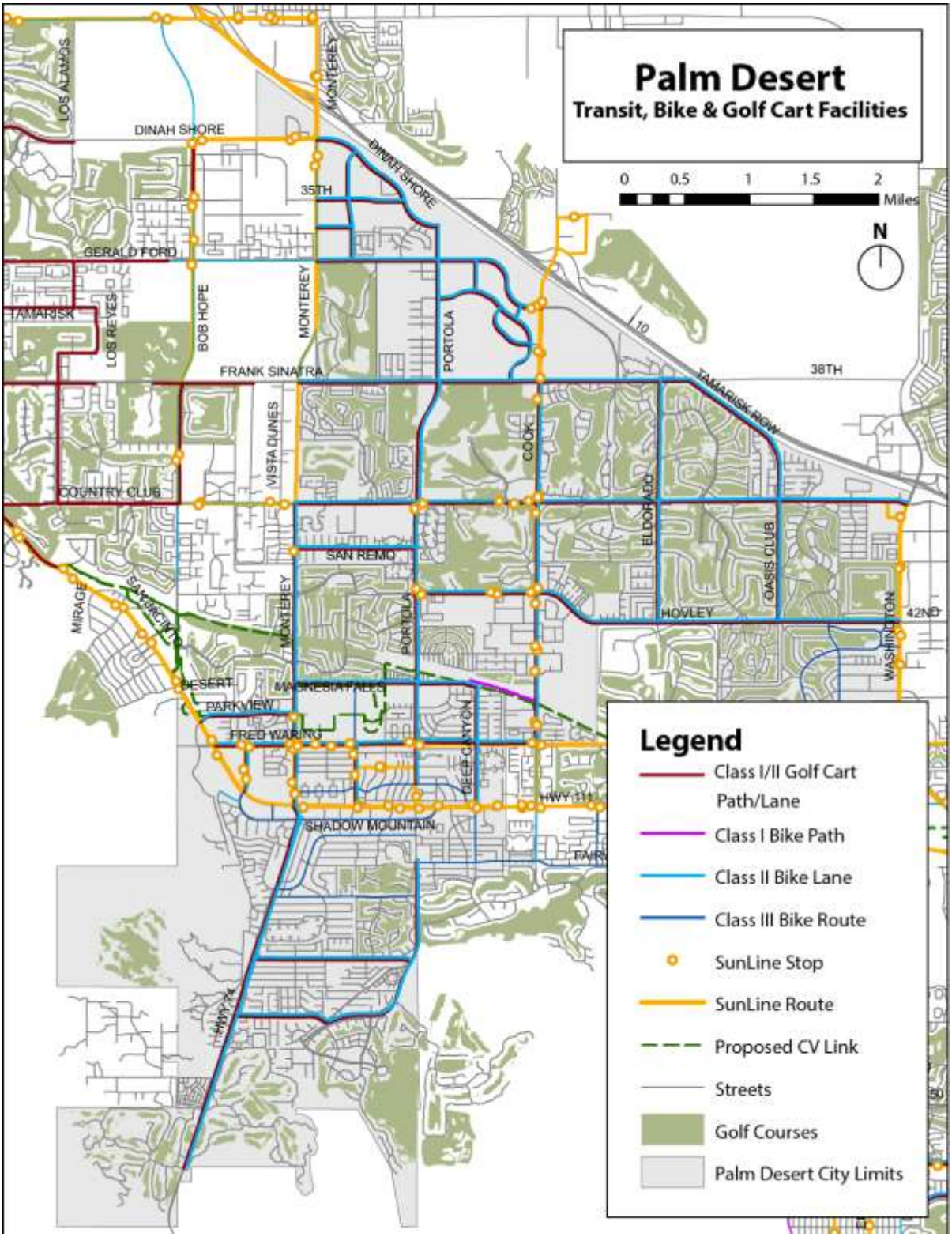
BURSERA
HWY 74
AGAVE


Palm Desert
Transit, Bike & Golf Cart Facilities
0 0.5 1 1.5 2 Miles
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Legend
Class I/II Golf Cart Path/Lane
Class I Bike Path
Class II Bike Lane
Class III Bike Route
SunLine Stop
SunLine Route
Proposed CV Link
Streets
Golf Courses
Palm Desert City Limits
DINAH SHORE
35TH
GERALD FORD
TAMARISK
LOS REYES
BOB HOPE
MONTEREY
FRANK SINATRA
PORTOLA
38TH
TAMARISK ROW
COOK
ELDORADO
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VISTA DUNES
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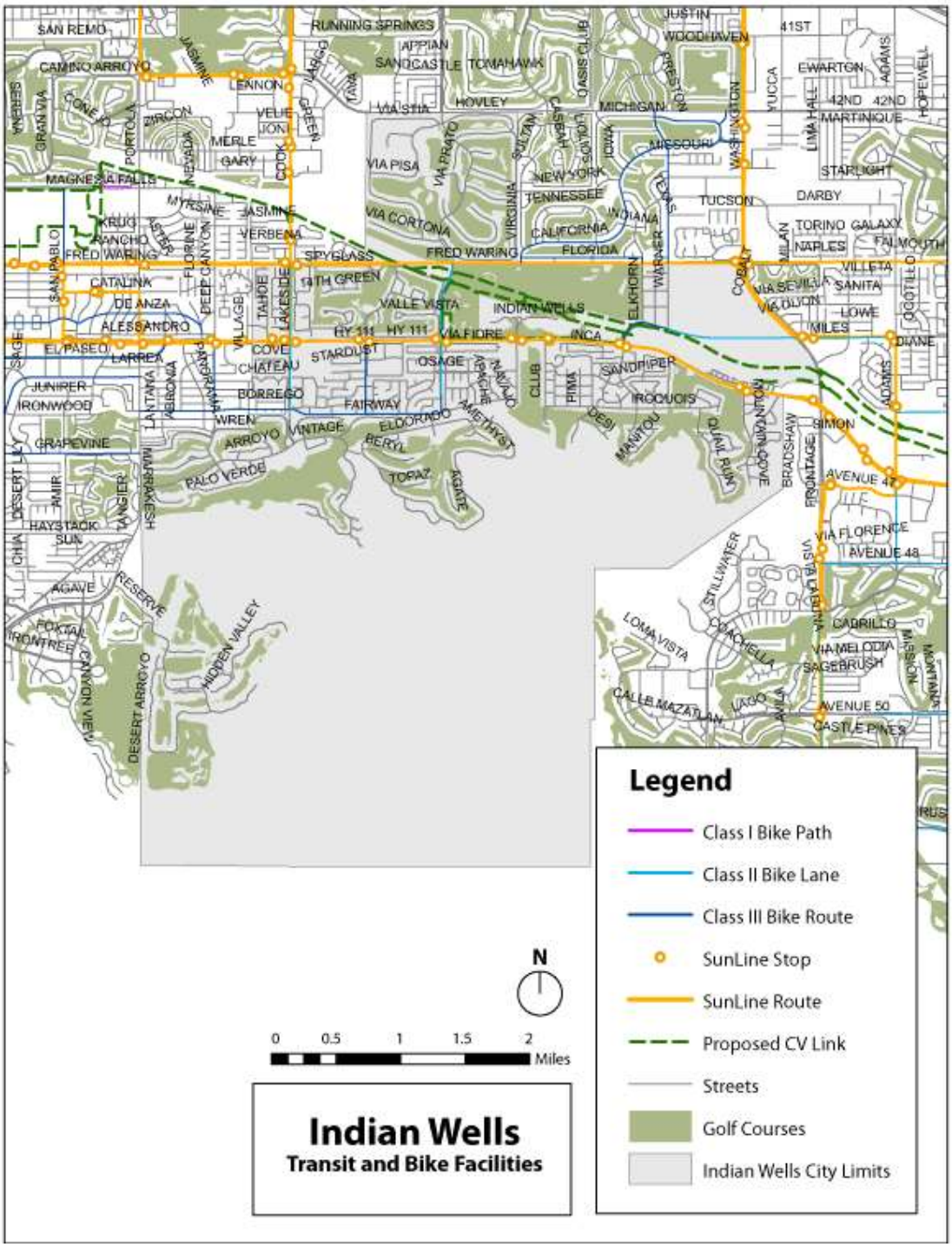
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Class III Bike Route
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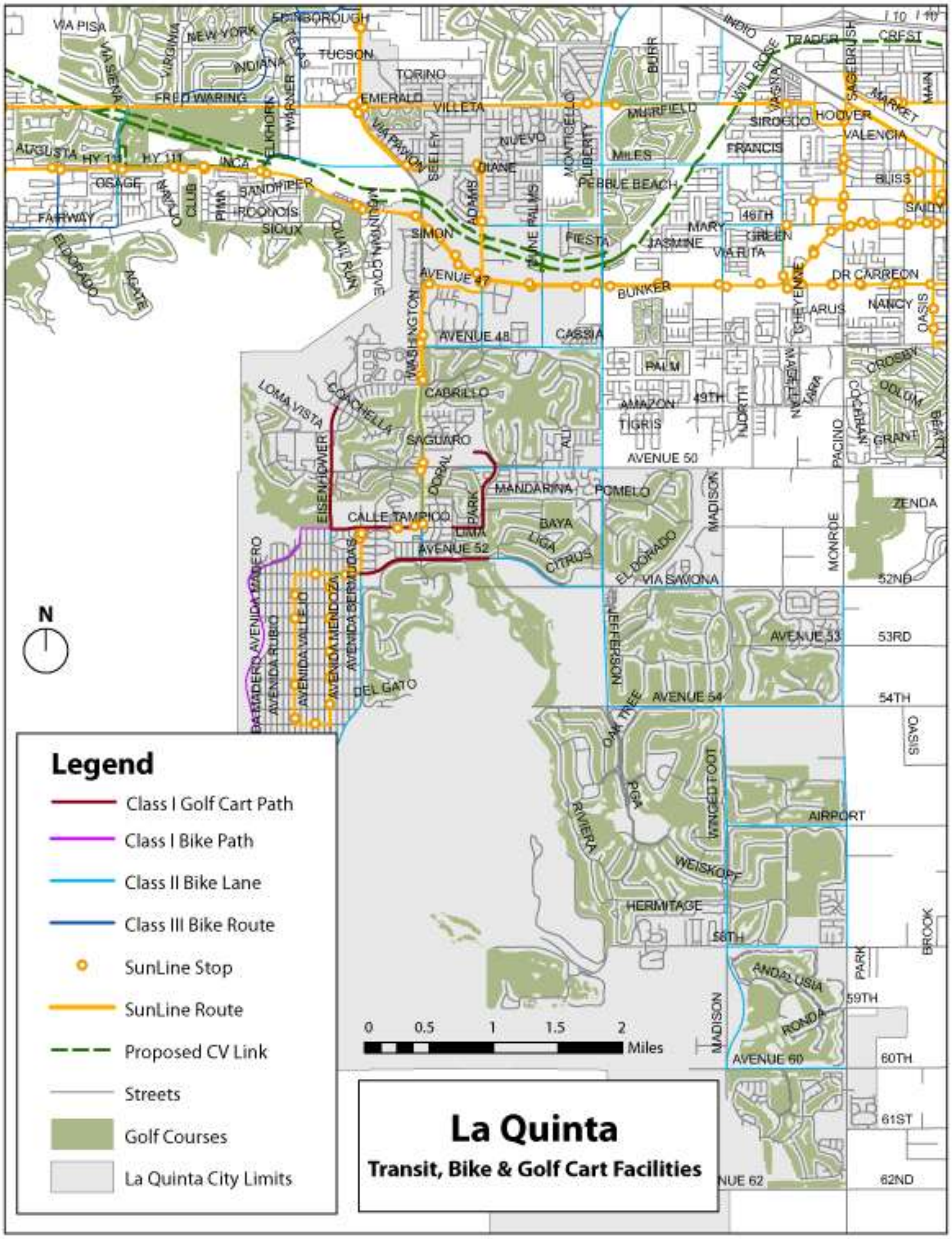
Transit and Bike Facilities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AVENUE 60
WASHINGTON
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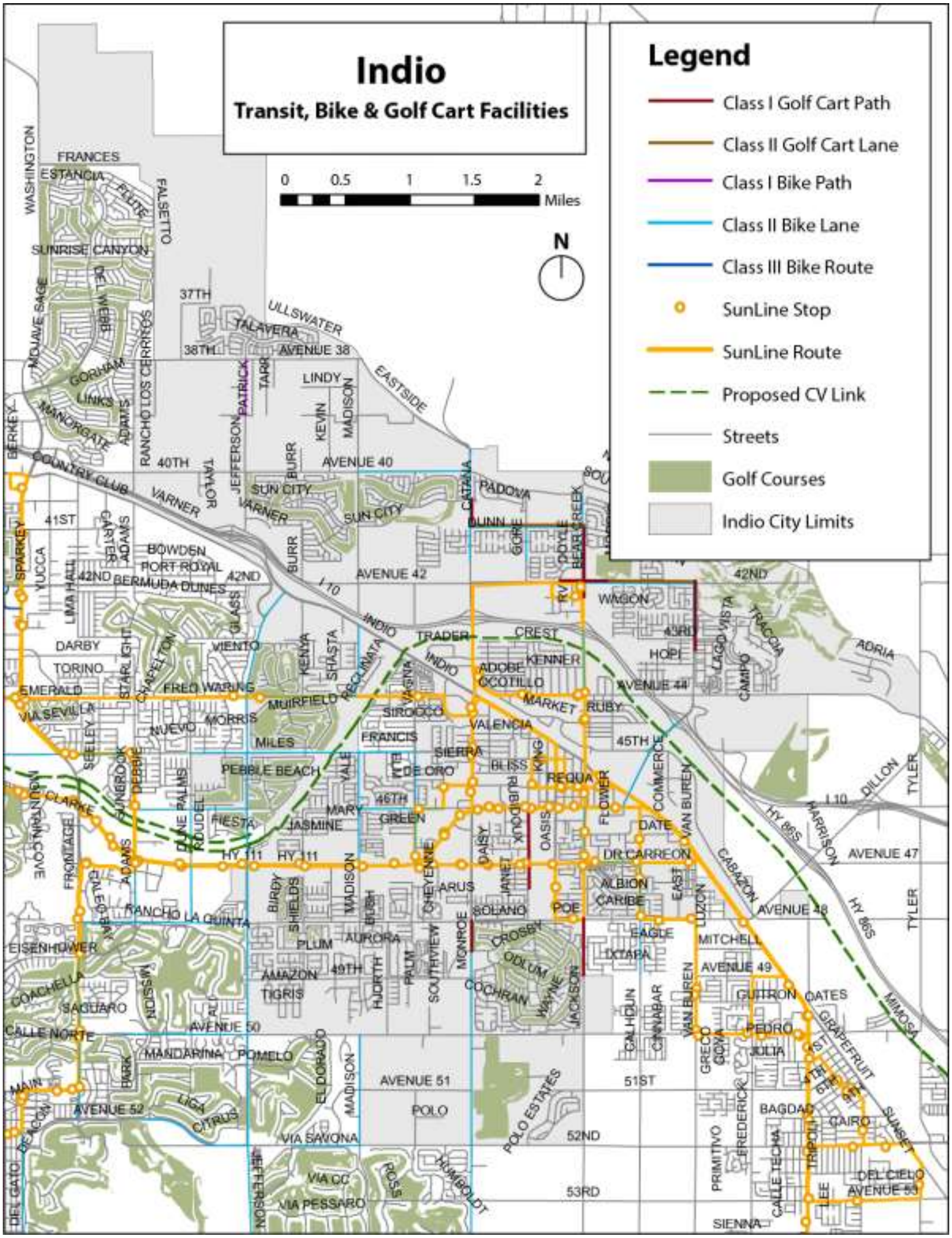
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Streets
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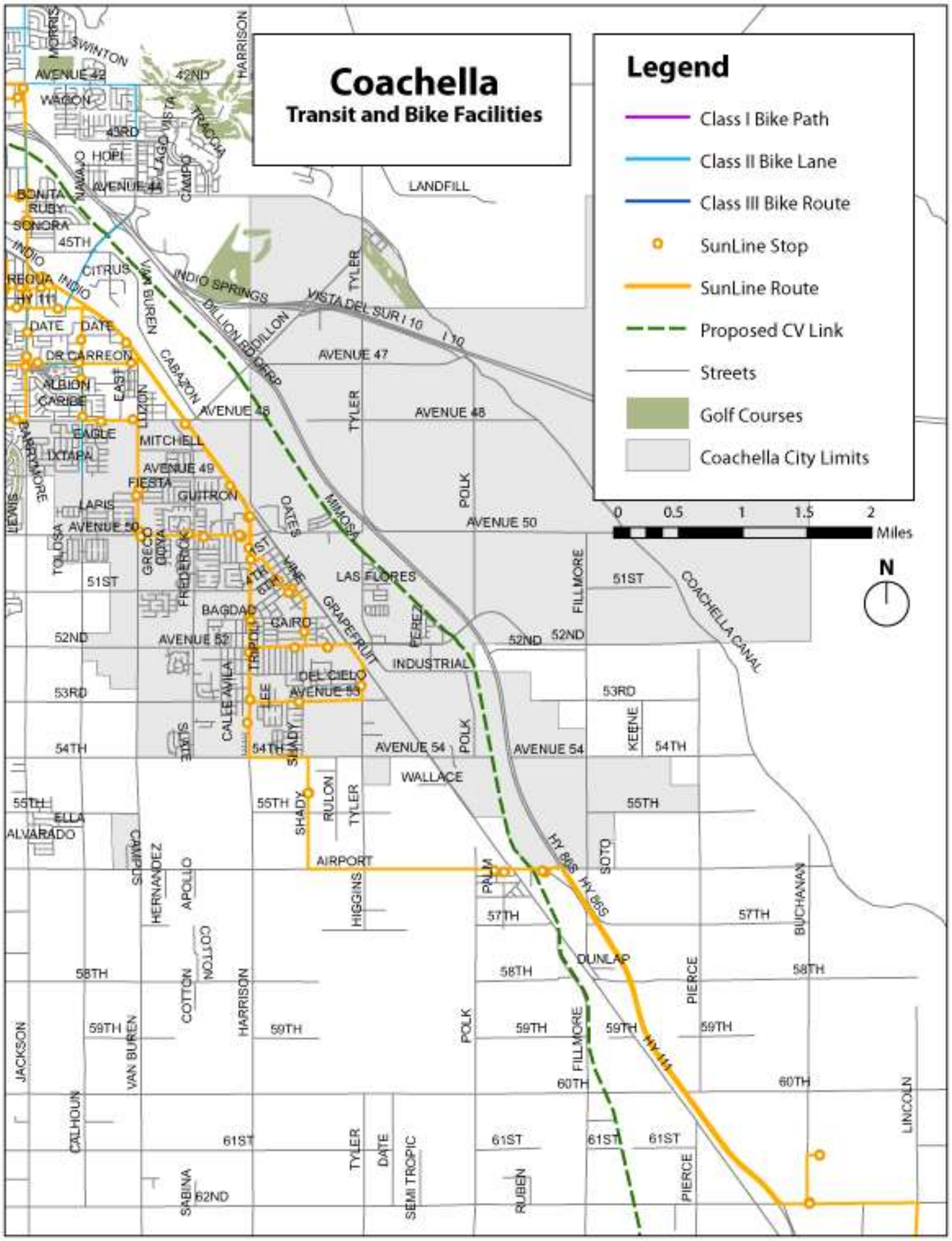
Indio City Limits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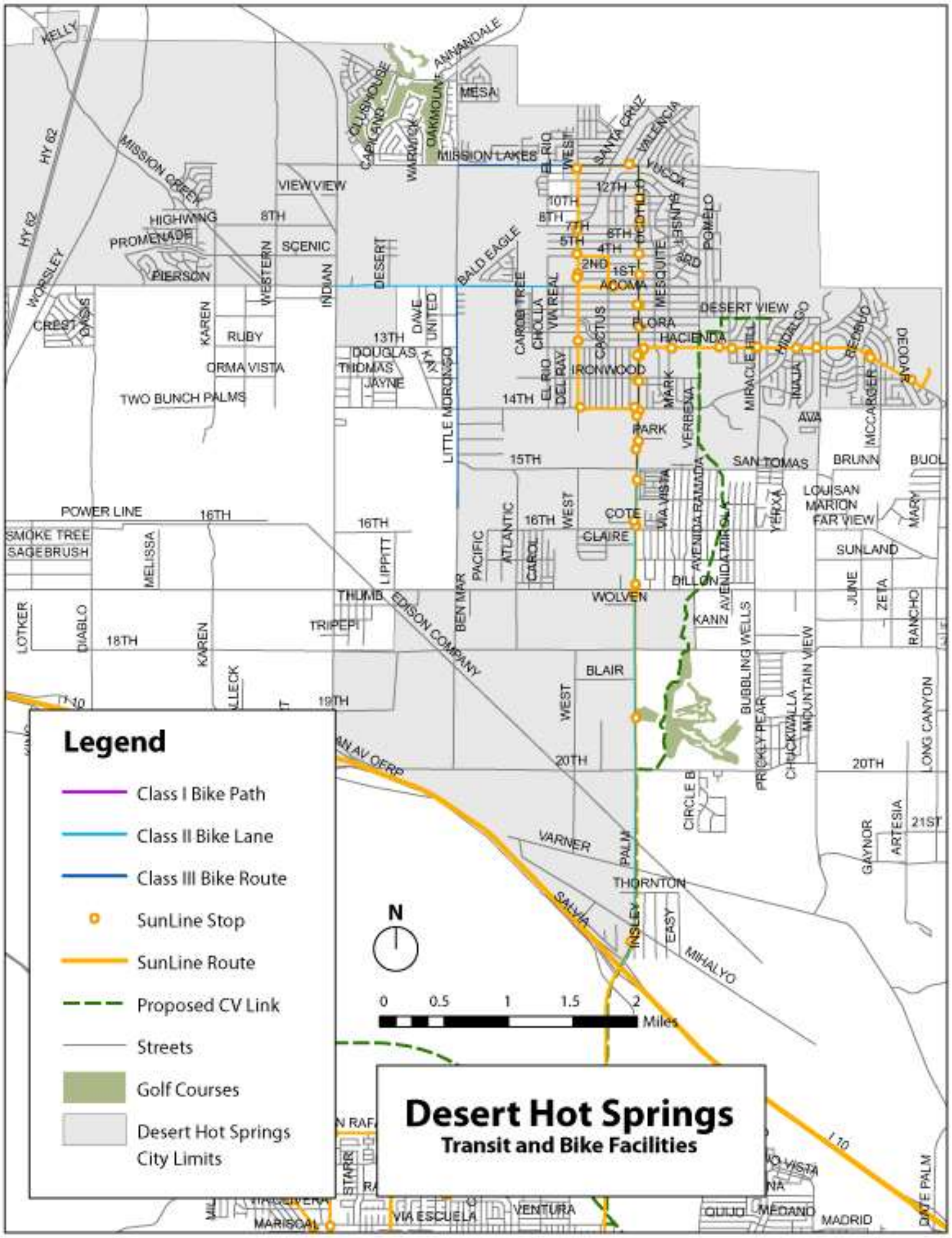
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Proposed CV Link
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Golf Courses
Desert Hot Springs City Limits
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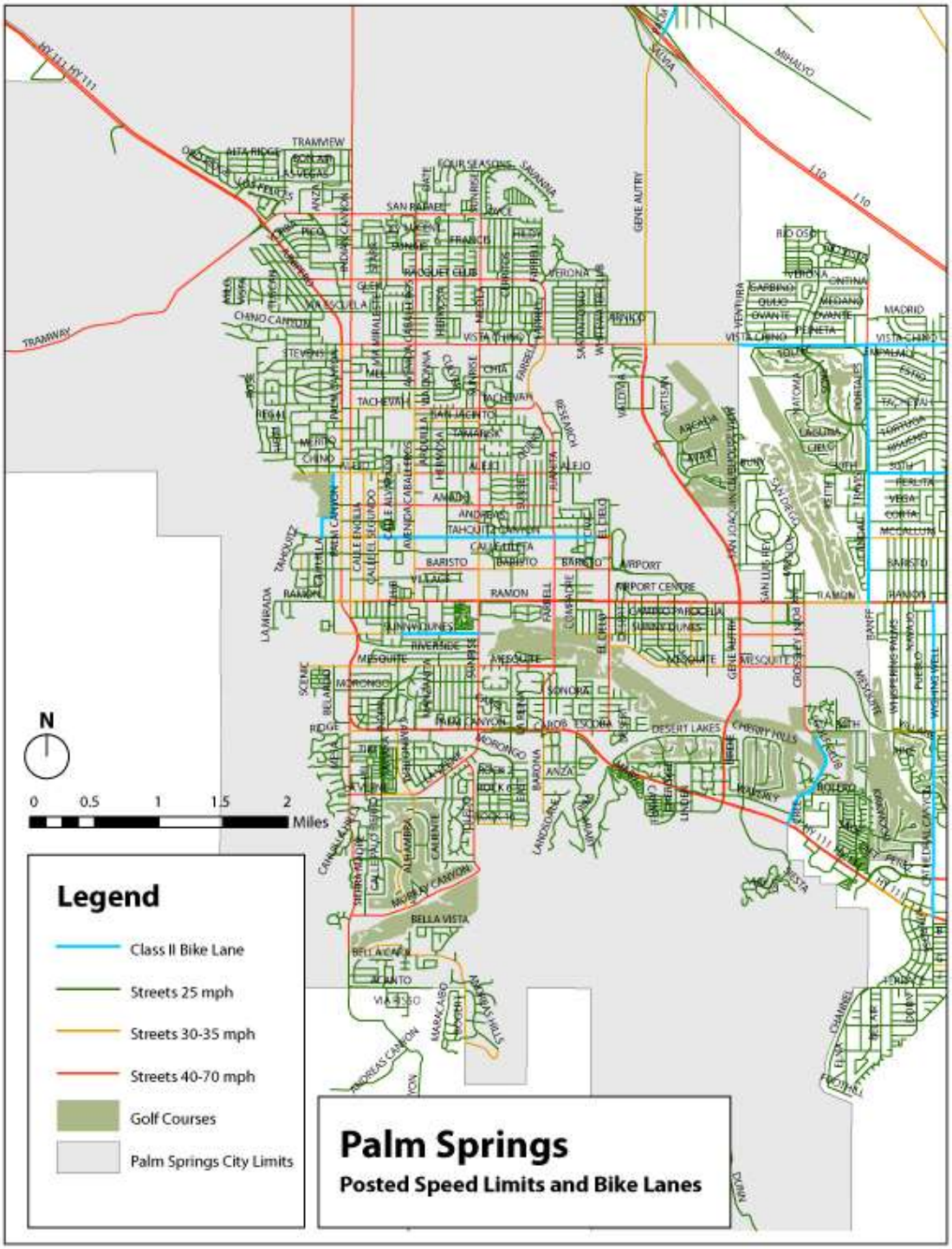
Appendix C. Roadway Speed Limit Maps

The following maps are based upon data collected from CVAG, jurisdictions that supplied data, and inspection of posted speed limit signage as found via street-view imagery available online in 2014. This data was used in the development of the network maps, as NEVs are only permitted to share a general travel lane if the speed limit is 35 mph or less.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Class II Bike Lane
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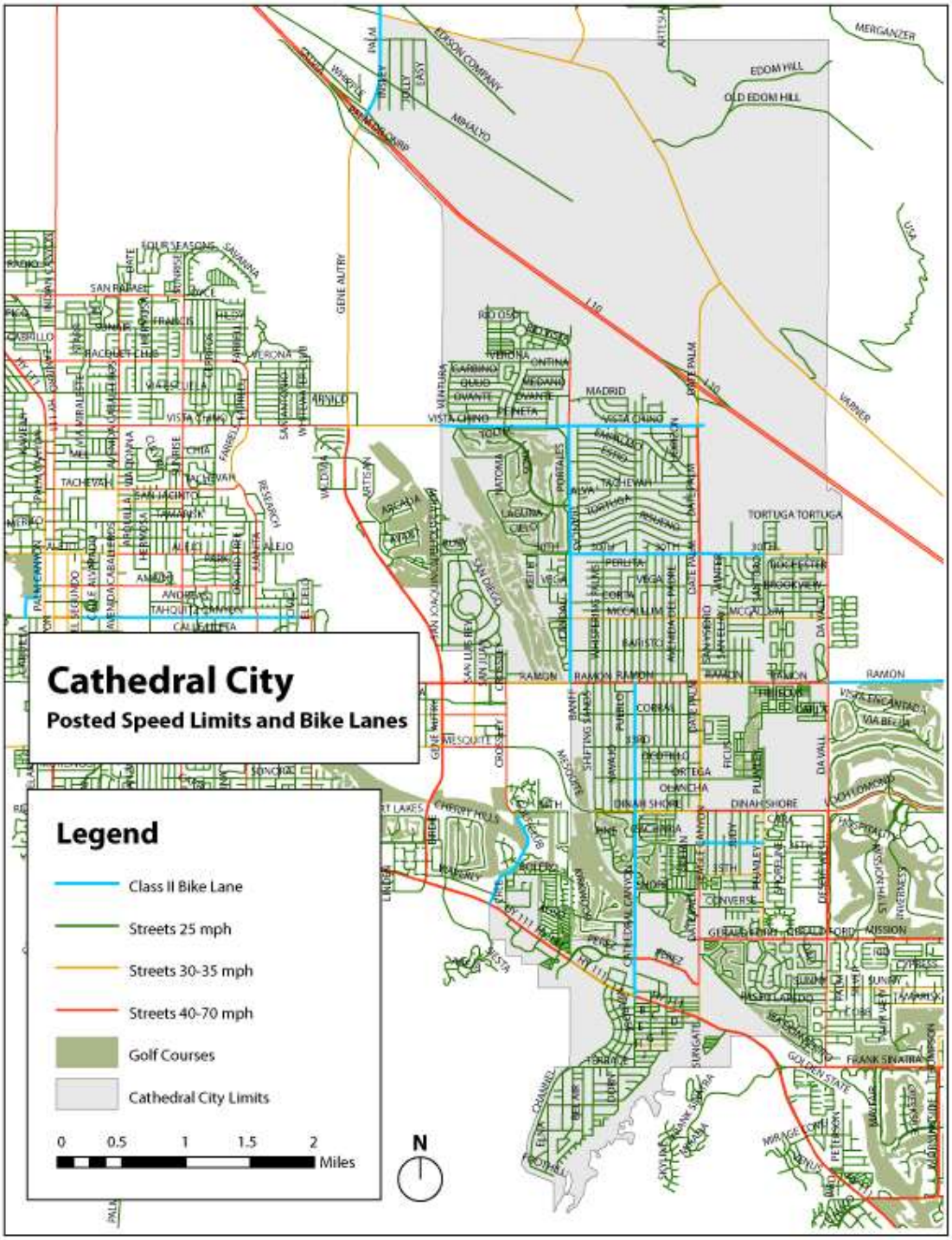
Streets 40-70 mph
Golf Courses
Palm Springs City Limits
Palm Springs
Posted Speed Limits and Bike Lanes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Posted Speed Limits and Bike Lanes
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Class II Bike Lane
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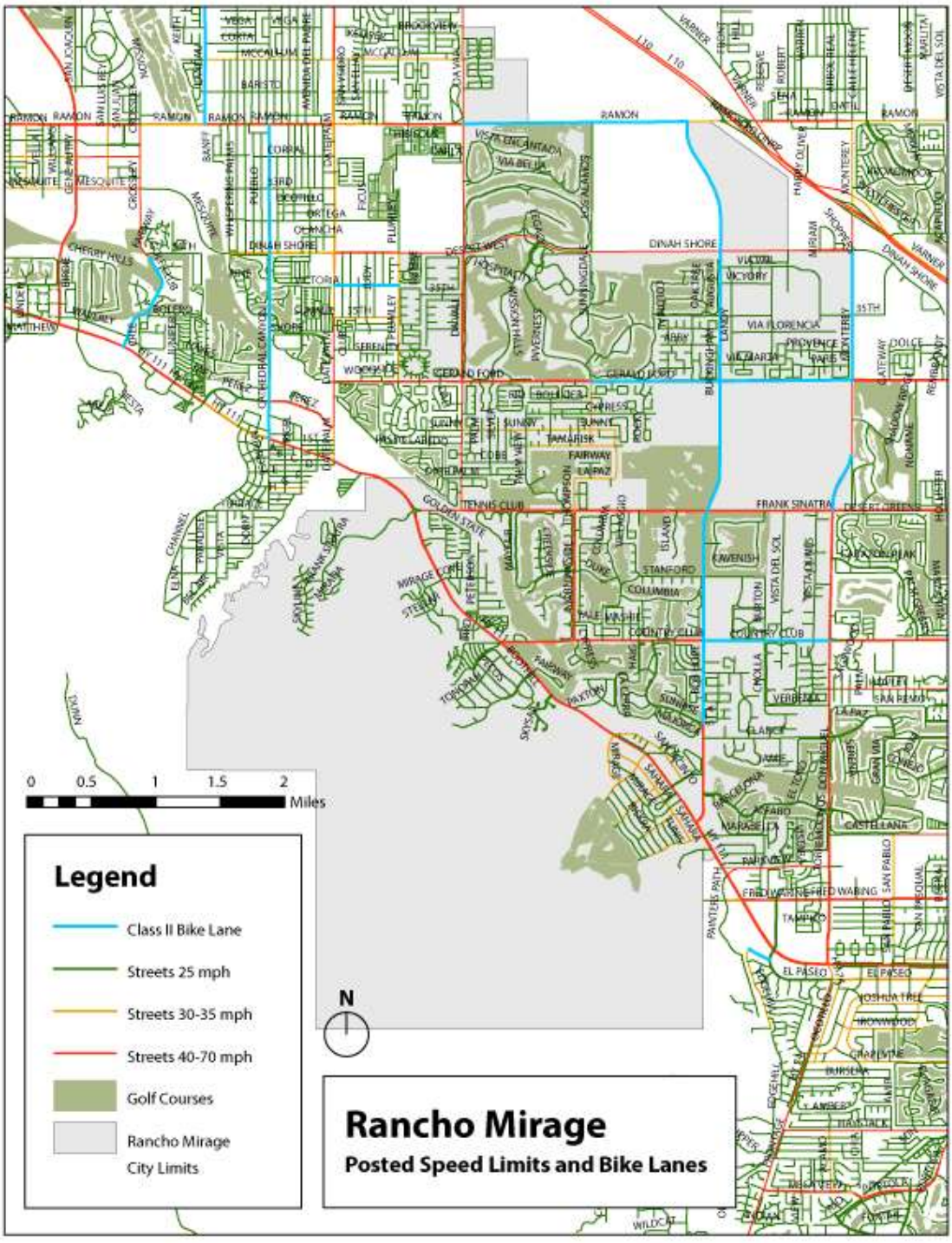
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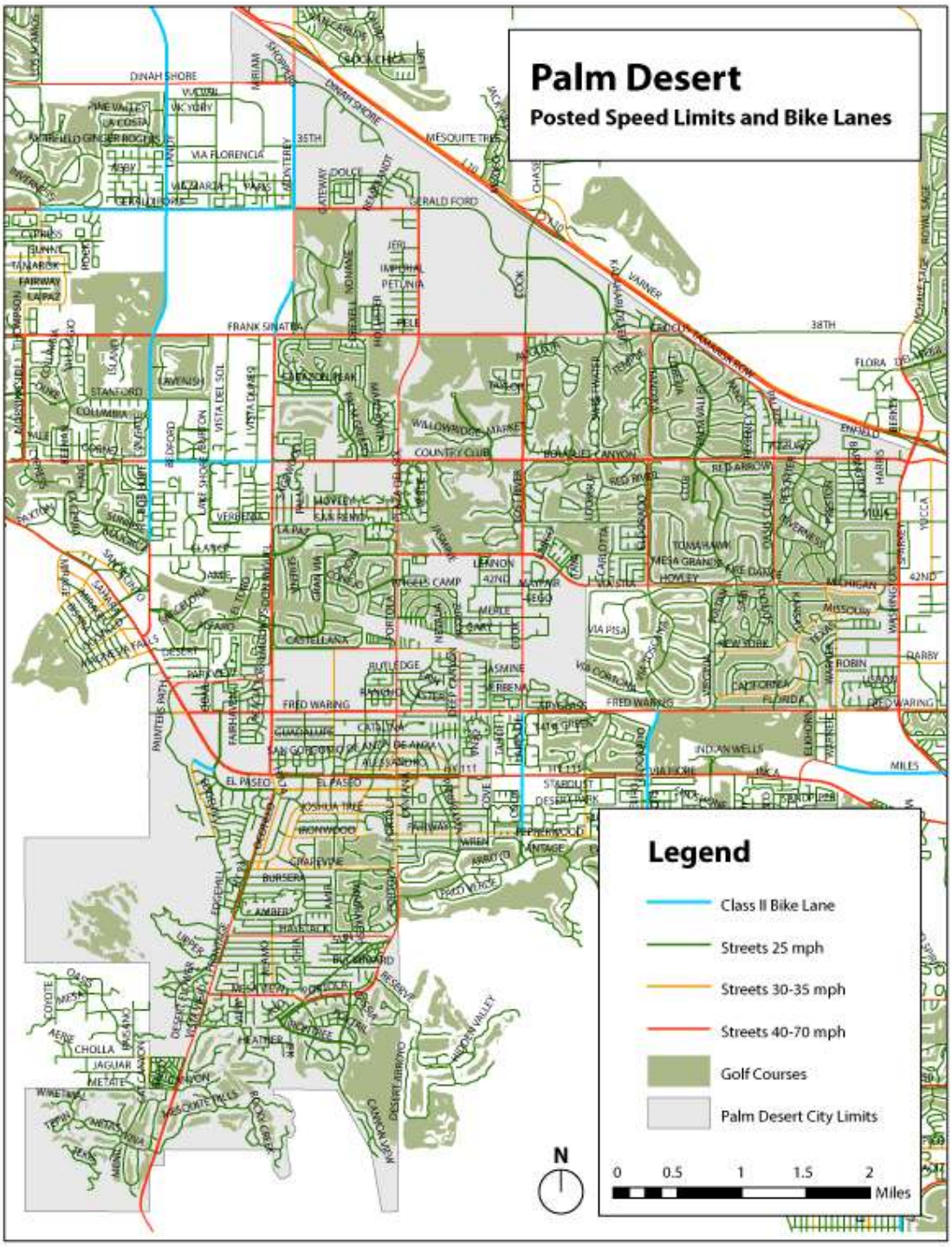
Posted Speed Limits and Bike Lanes


Palm Desert
Posted Speed Limits and Bike Lanes
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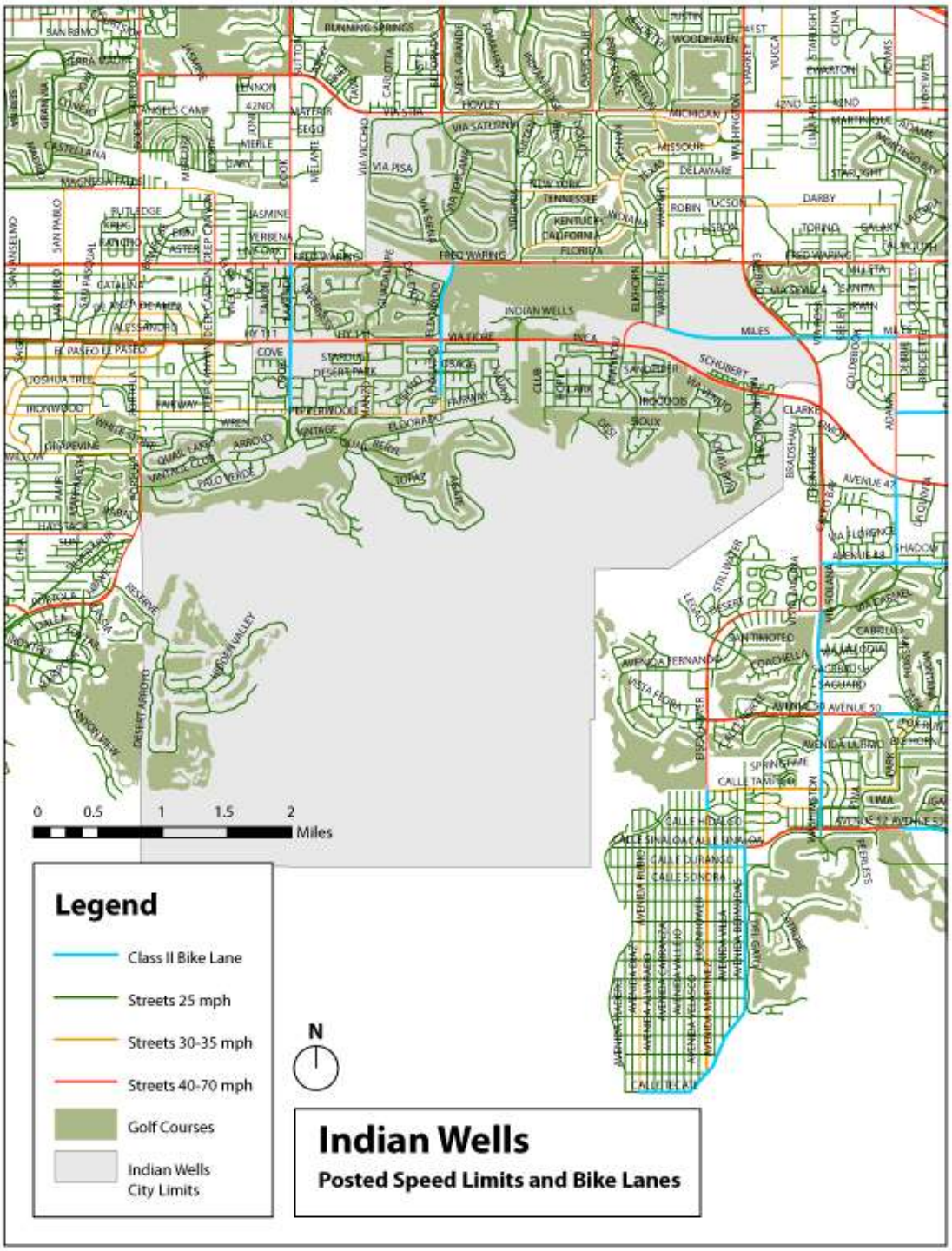
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Class II Bike Lane
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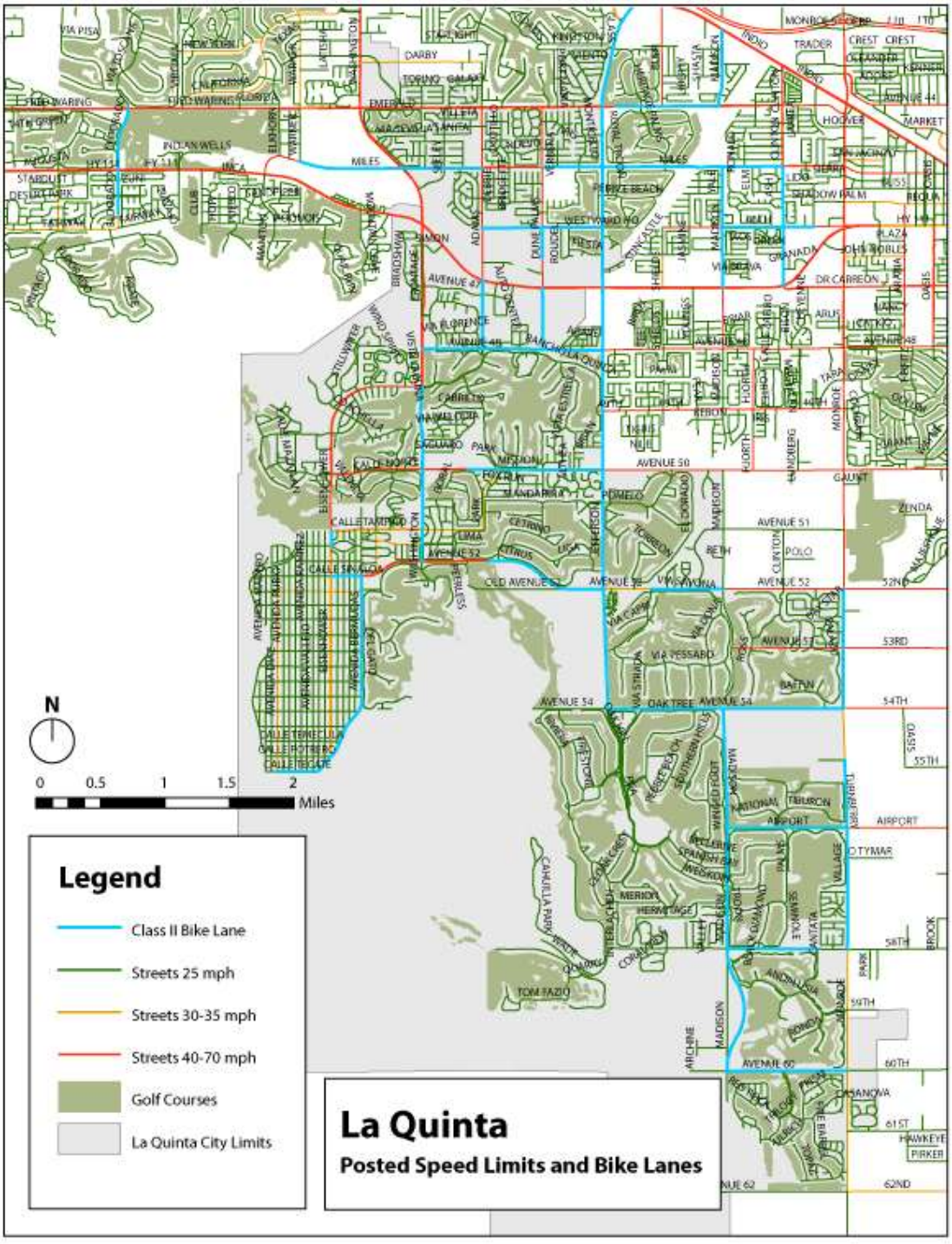
Indian Wells
Posted Speed Limits and Bike Lanes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Class II Bike Lane
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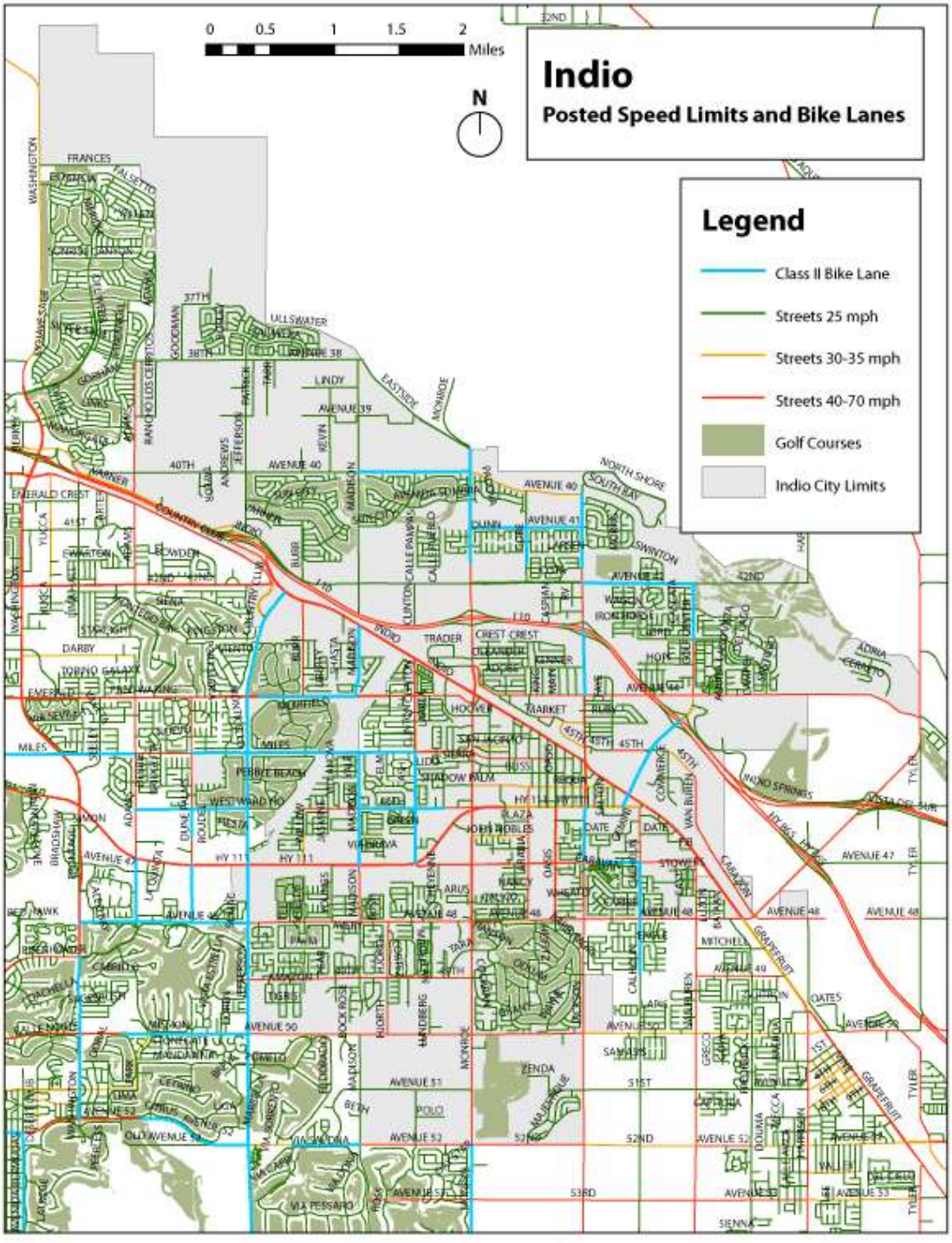
Streets 30-35 mph
Streets 40-70 mph
Golf Courses
La Quinta City Limits
La Quinta
Posted Speed Limits and Bike Lanes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Posted Speed Limits and Bike Lanes
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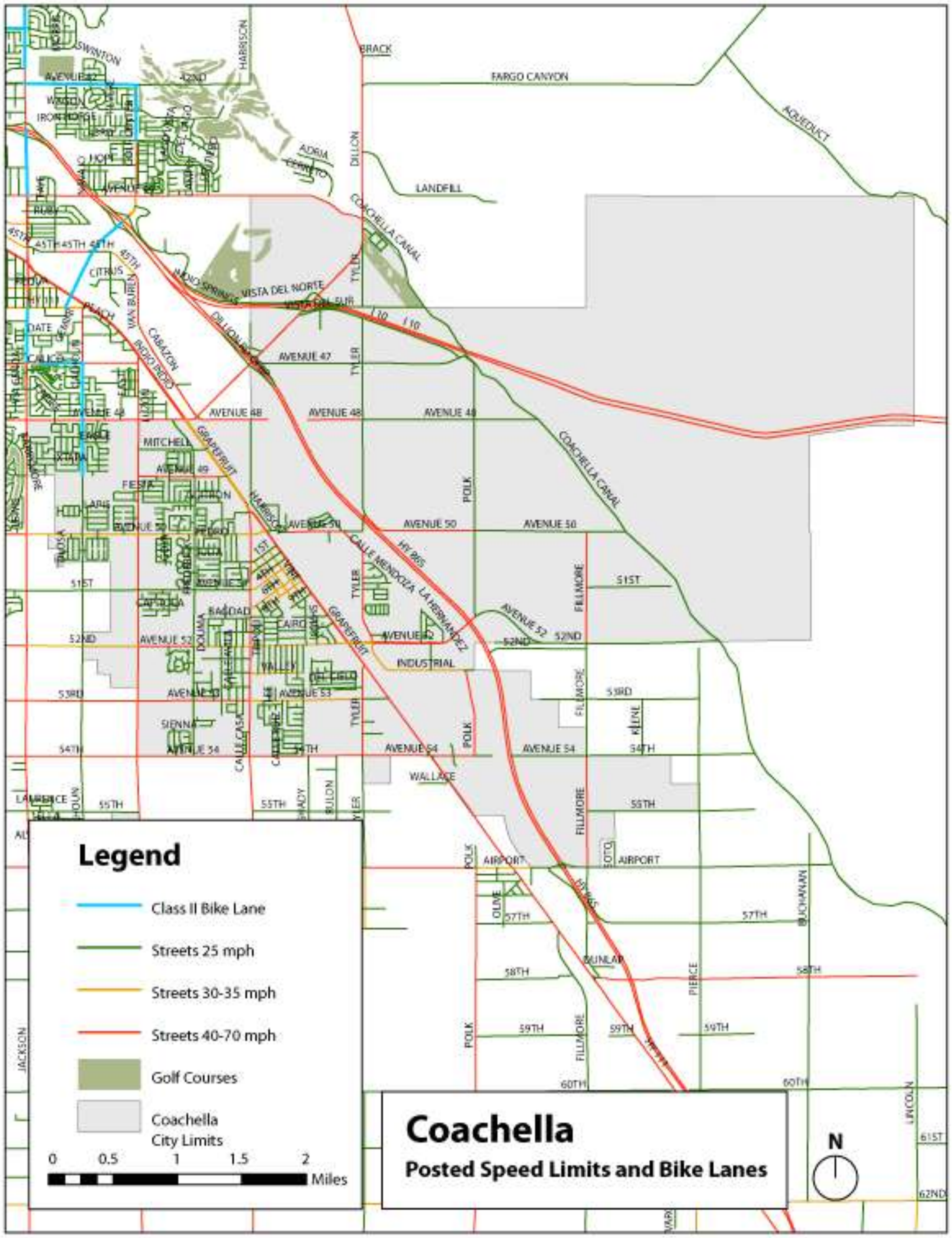
Class II Bike Lane
Streets 25 mph
Streets 30-35 mph
Streets 40-70 mph
Golf Courses
Indio City Limits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Class II Bike Lane
Streets 25 mph
Streets 30-35 mph
Streets 40-70 mph
Golf Courses
Coachella City Limits
0 0.5 1 1.5 2 Miles
Coachella
Posted Speed Limits and Bike Lanes
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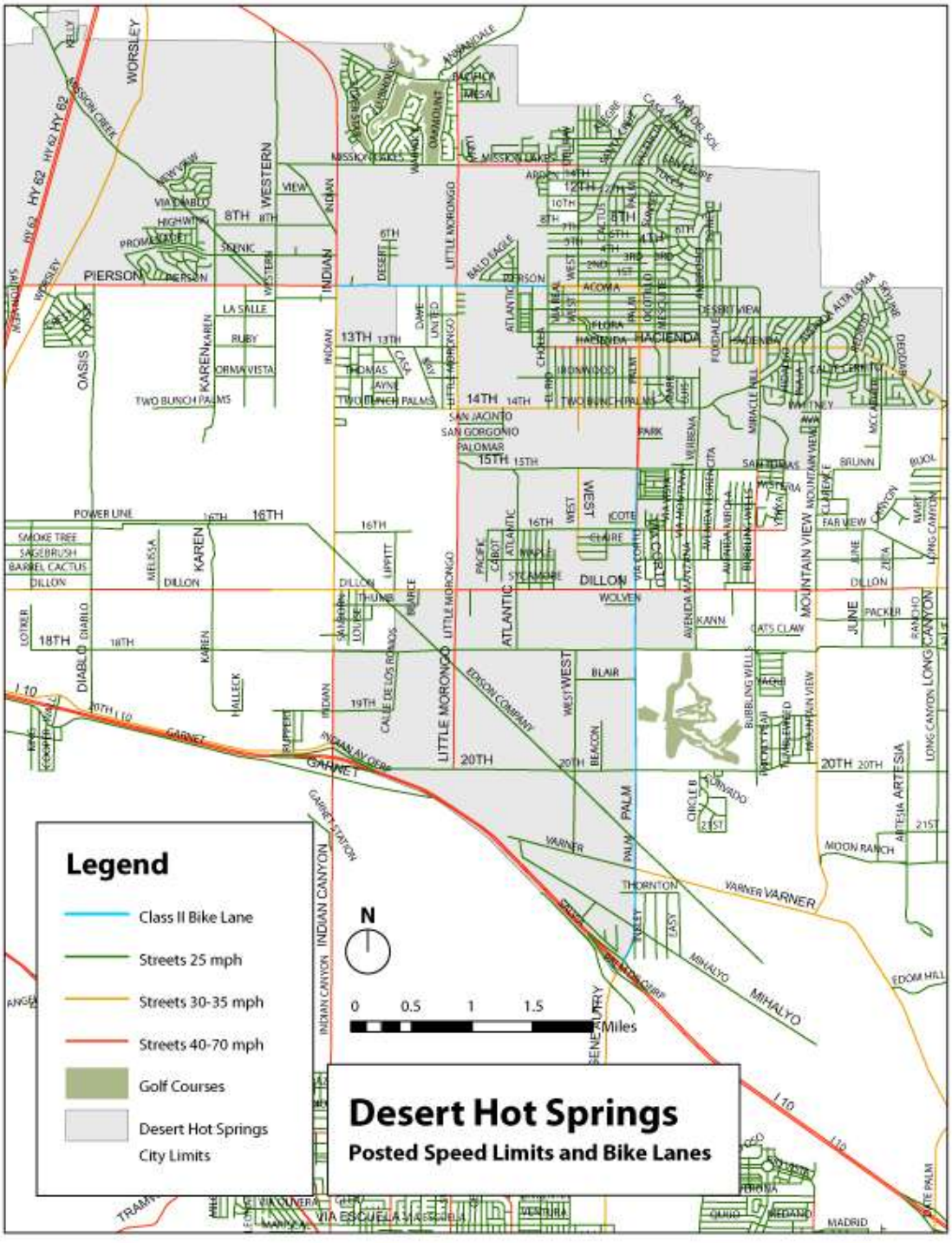

Legend
Class II Bike Lane
Streets 25 mph
Streets 30-35 mph
Streets 40-70 mph
Golf Courses
Desert Hot Springs City Limits
N
0 0.5 1 1.5
Miles
Desert Hot Springs
Posted Speed Limits and Bike Lanes

Appendix D. Existing Golf Cart Permit Requirements and Maps

The following maps are the latest versions of any maps available on each city's website or as obtained through interviews with city staff. Traffic regulations and definitions are provided in more detail in Chapter 2 of this plan.

Indio

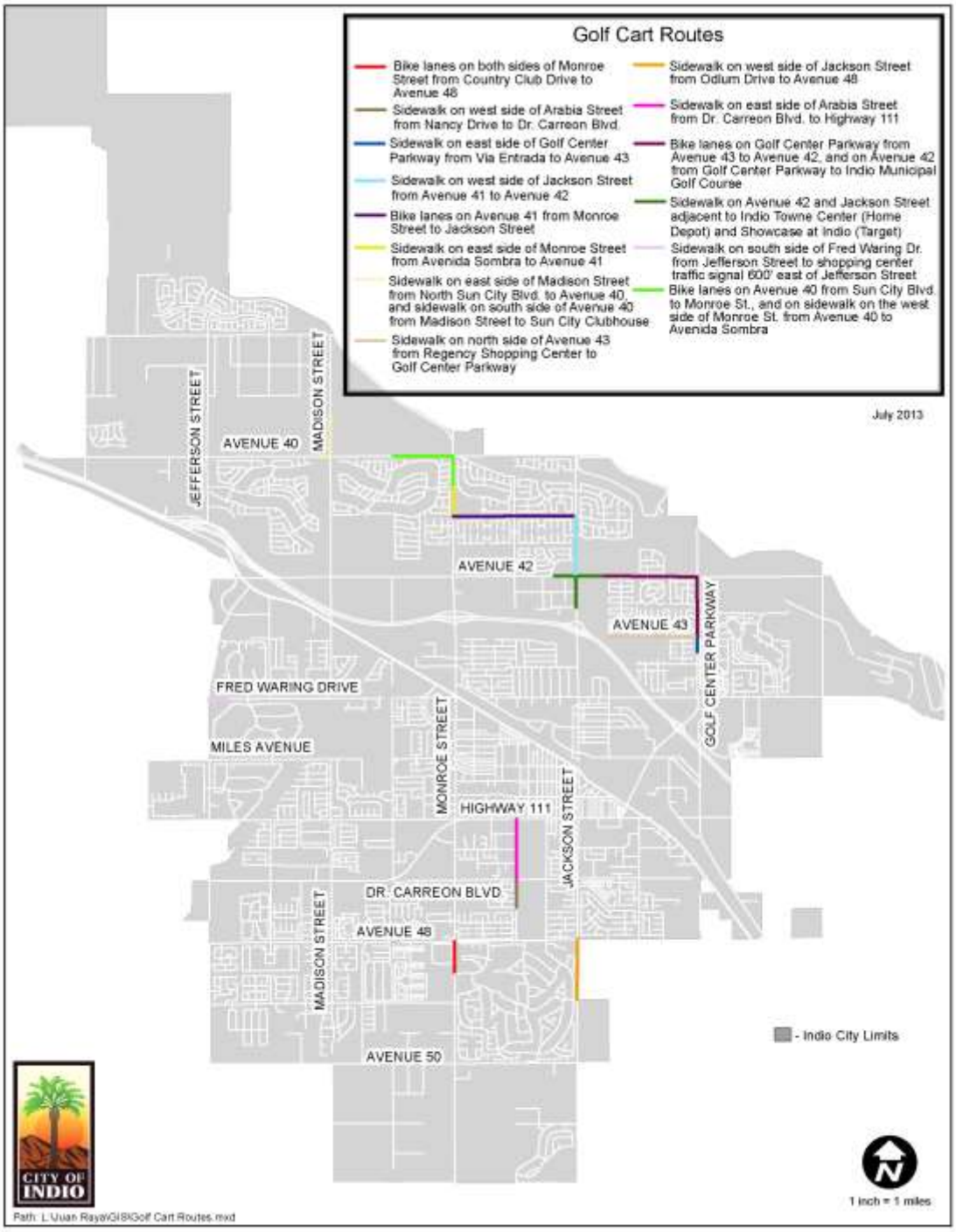
The City of Indio adopted a Golf Cart Transportation Plan in 2010 that sets out definitions, design and safety criteria, permits, crossings for golf clubs, and enforcement policy.

The City of Indio's definition of a golf cart is a motor vehicle that "is operated at not more than twenty-five (25) miles per hour" which conflates higher speed golf carts with federal and state certified NEVs that are street legal on roadways up to 35 mph. Furthermore, the City of Indio defines Class III routes as roadways with speed limits of 25 mph or less, while federal and state legislation permits a street legal NEV to operate on roadways with speed limits of 35 mph or less. It is likely that there are few roadways which serve as connections between Class I paths and Class II lanes posted for 25 mph or less.

Indio's plan also sets out a seven-step procedure for obtaining a permit for street operation, including the requirement to provide proof of insurance. After scheduling a police department inspection of the golf cart at the applicant's home and payment of a $50 two-year permit fee, the "applicant may drive golf cart with permit ONLY on designated pathways, sidewalks, and bicycle lanes, as well as on any residential street, for two (2) years." In comparison to the requirements for operating a car on a public roadway, this procedure is more involved and may dissuade the public from adopting NEVs that are designed for street legal operation from the outset.

The city prohibits parking of golf carts in motor vehicle spaces. By federal and state legislation, an NEV is a motor vehicle, yet the similarity between golf carts and NEVs is likely to lead to confusion on whether or not an NEV operator may park in a "motor vehicle" parking space. As a golf cart or an NEV can serve the same trip purposes as a highway capable car, there is no reason from a parking demand and supply perspective for this restriction.

Figure 35: City of Indio Golf Cart Map



Cathedral City

City staff have advised the following (paraphrased):

> Golf carts and NEVs are currently not allowed on Cathedral City streets. Their use is illegal on public streets, and they have been cited. The City vehicle code would need to be changed in order to permit their use.

The city's municipal code: http://qcode.us/codes/cathedralcity/ does not reference golf carts or NEVs. NEVs are permitted by state legislation on public streets, although the same state legislation permits cities to pass bylaws prohibiting their use.

Cathedral City does not publish a golf cart or NEV route map online.

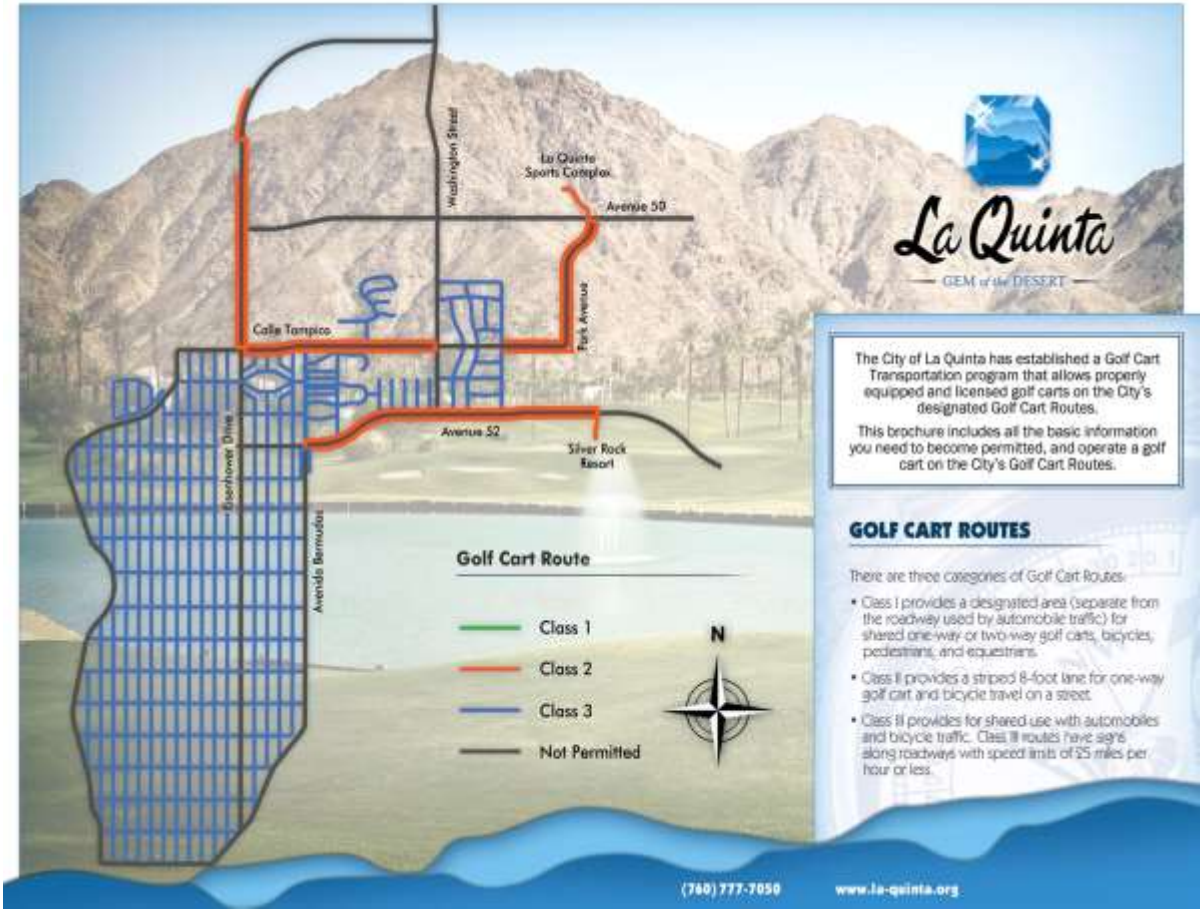
La Quinta

The City of La Quinta has a golf cart ordinance regulating the operation of golf carts on public streets. The city does not mention NEVs. A permit is required, but it is less costly ($20) and difficult to obtain than it is in Indio. The standards which conflict with current developments in NEV design and are likely to limit wider adoption of NEVs include the following, with commentary added in parentheses:

- Golf carts are limited to daytime operation (golf carts modified for street use and factory designed NEVs have front and rear lighting that meet USDOT standards, so there is no obvious reason for this prohibition)
- Golf carts are limited to streets with speed limits of 25 mph or less (this would need to be clarified so that vehicles meeting the LSV definition are permitted on streets with speed limits of 35 mph or less)
- Golf carts must be designed to carry golf equipment and no more than two persons including the driver (NEVs are not designed to carry golf equipment and models are available that carry up to six persons including the driver)

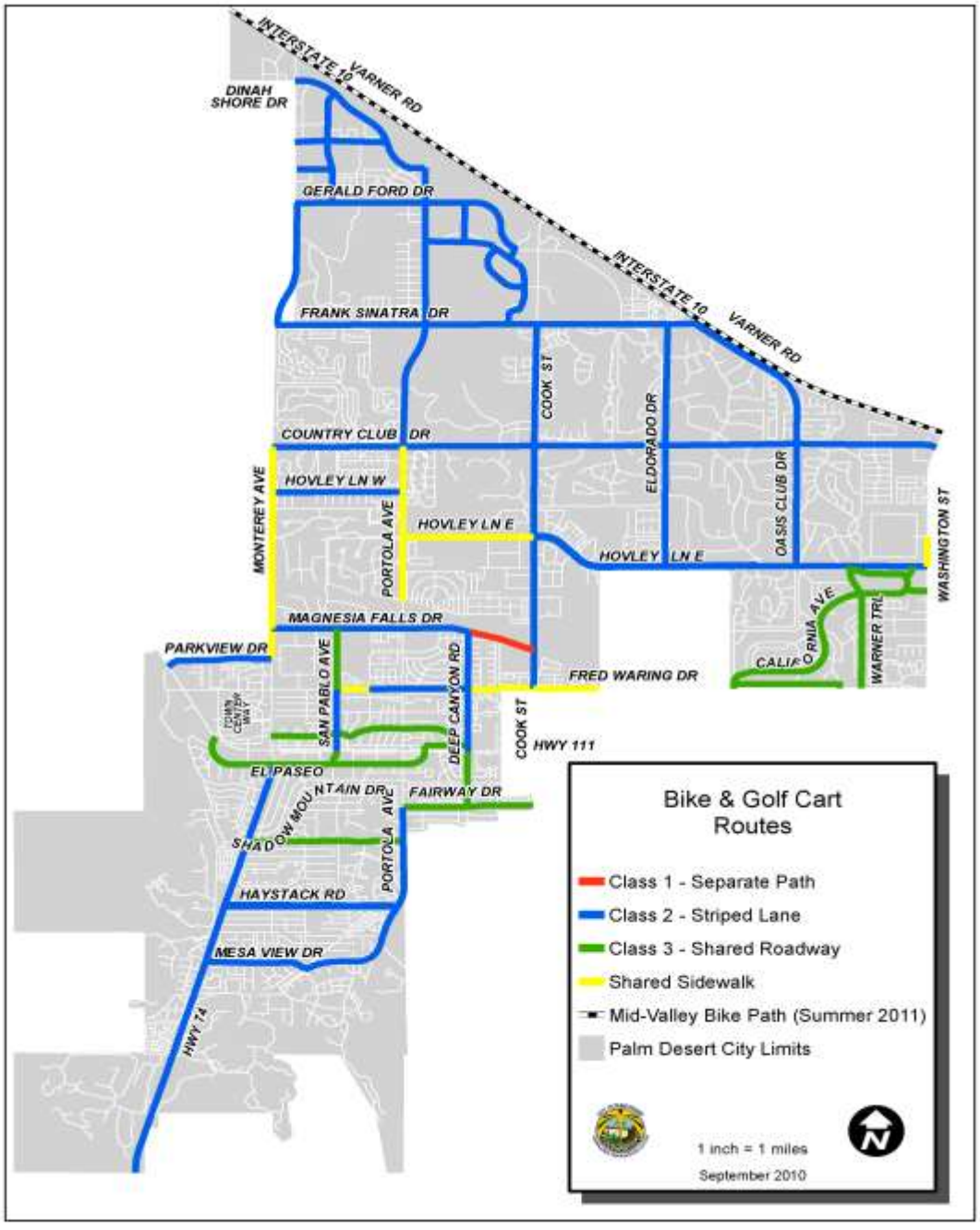
The city publishes a brochure that includes a map of routes by class as shown in Figure 36.

Figure 36: City of La Quinta Golf Cart Map



Palm Desert

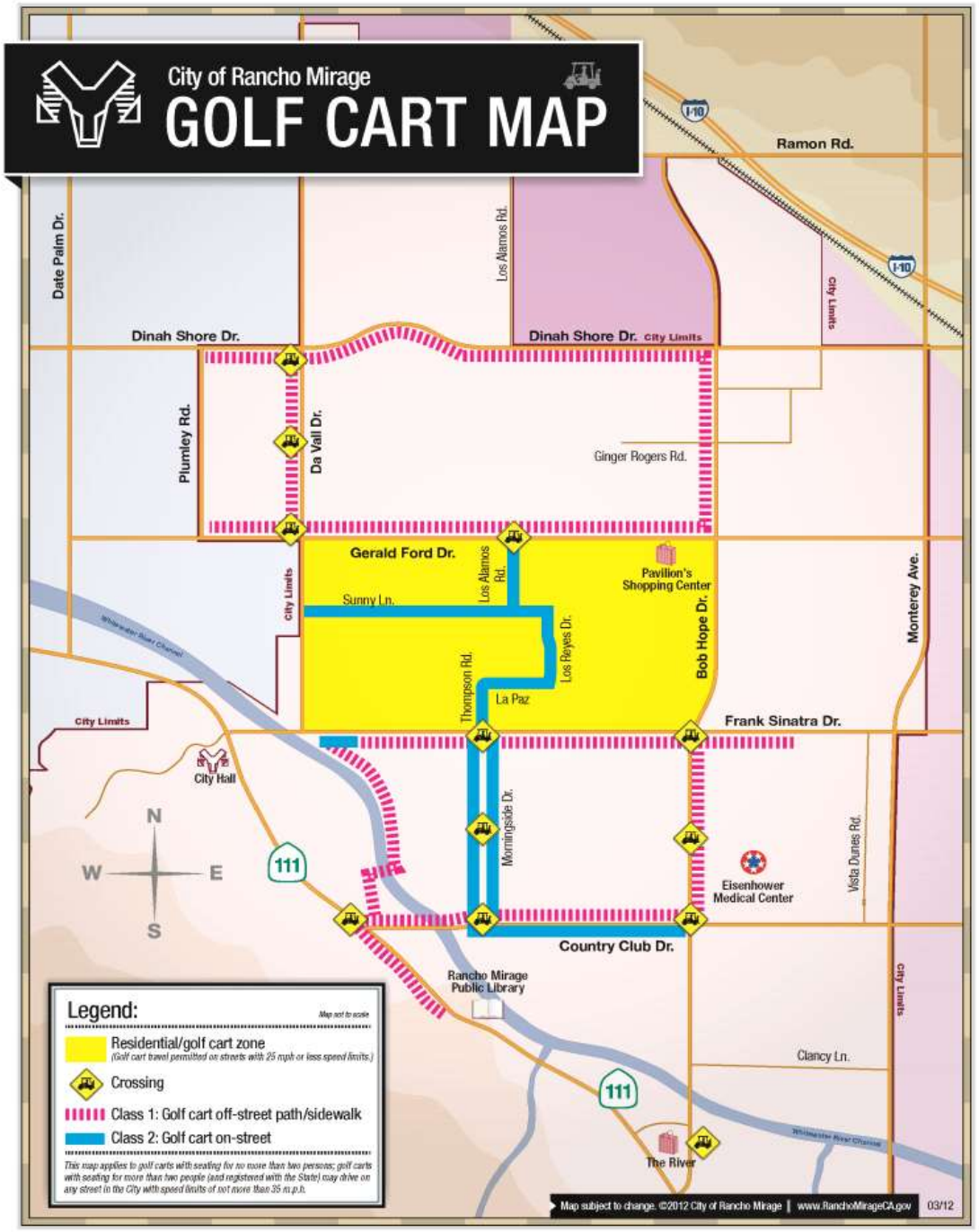
Figure 37: Palm Desert Bike and Golf Cart Route Map



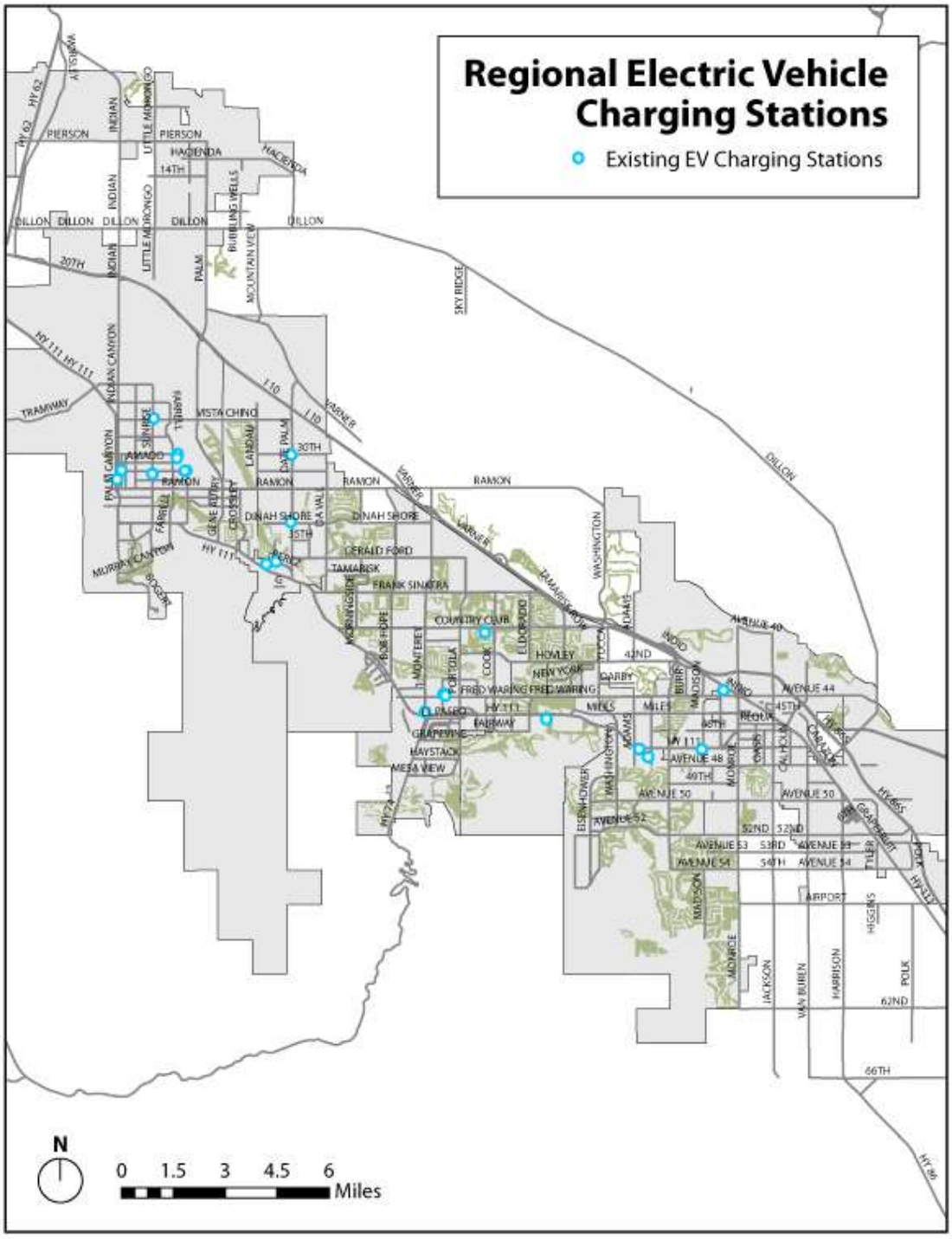
Palm Springs

Palm Springs is the only known Coachella Valley city to have a route map aimed at NEVs, dated 2009. It is not readily found on the City's website.

Rancho Mirage

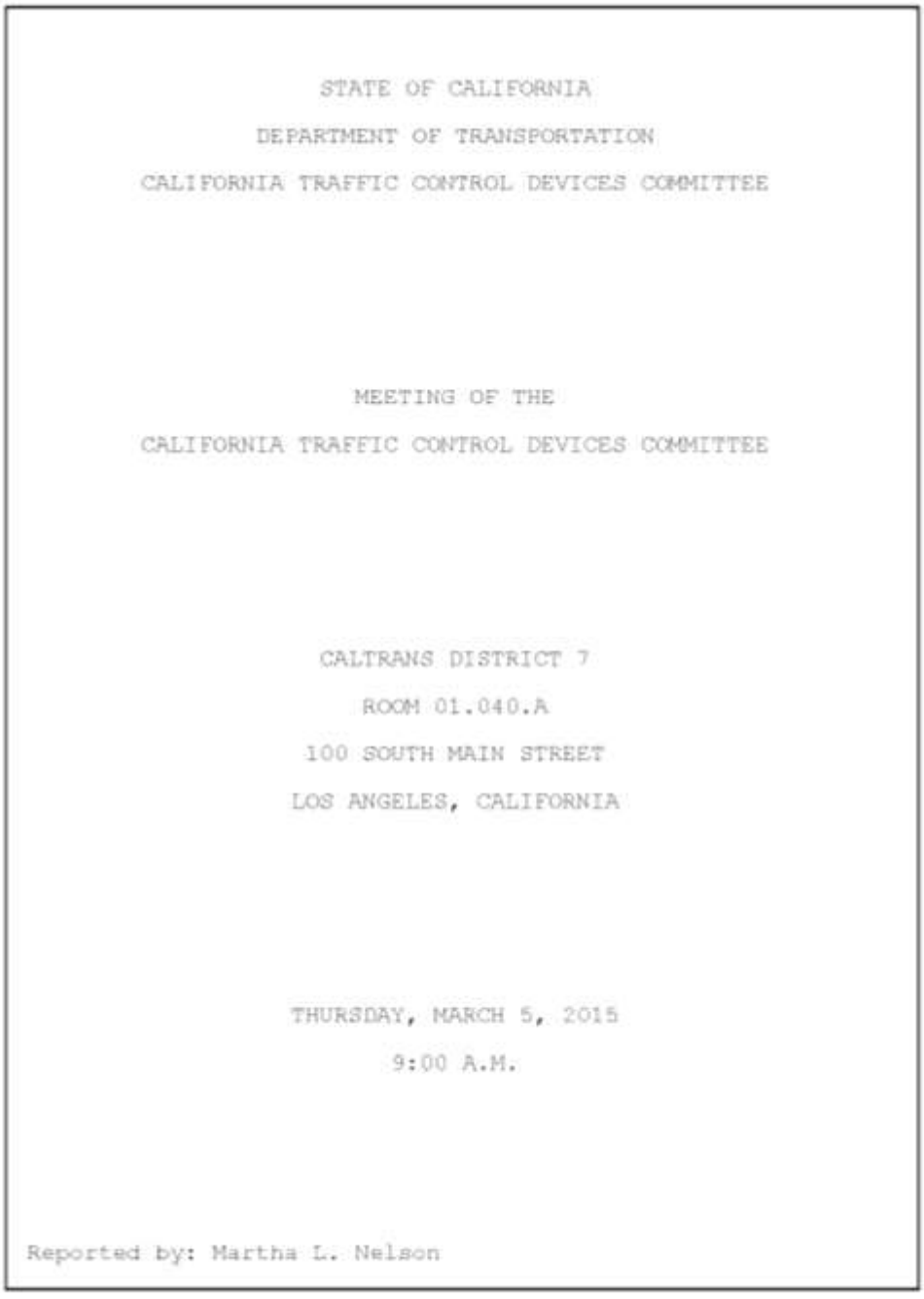


Appendix E. Electric Vehicle Charging Station Locations



Appendix F. NEV Transportation Plan Reviews

Meeting of the California Traffic Control Devices Committee



STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

CALIFORNIA TRAFFIC CONTROL DEVICES COMMITTEE

MEETING OF THE

CALIFORNIA TRAFFIC CONTROL DEVICES COMMITTEE

CALTRANS DISTRICT 7

ROOM 01.040.A

100 SOUTH MAIN STREET

LOS ANGELES, CALIFORNIA

THURSDAY, MARCH 5, 2015

9:00 A.M.

Reported by: Martha L. Nelson

ALL AMERICAN REPORTING, INC.

(916) 362-2345

A P P E A R A N C E S

Committee Members

Hamid Bahadori, Chairman

Mark Greenwood, Vice Chairman

Rob Brown

John Ciccarelli

Chris Engelmann, Committee Secretary

Bryan Jones

Rick Marshall

Lt. David Ricks

Duper Tong

Jay Walter

William Winter

Alternate Committee Members in Attendance

Michael Kenney

Rock Miller

Caltrans Staff - Sacramento Office

Jerry Champa, Statewide Traffic Safety Liaison

Don Howe, Chief, Signs Branch
Office of Traffic Engineering

A P P E A R A N C E S

Also Present

Bob Bronkall
Humboldt County Department of Public Works

Ken Husting
Los Angeles Department of Transportation

Kevin Korth
US Department of Transportation
Federal Highway Administration

John Lieswyn
Alta Planning + Design

Zaki Mustafa
Los Angeles Department of Transportation

Michelle Mowery
City of Los Angeles

Luu Nguyen
Caltrans, Division of Traffic Operations
Office of District Traffic Liaisons/Reviewers

Craig Rhodes
Traffic Management Incorporated

David Royer
Consultant

David Somers
Los Angeles Department of City Planning

LeGrand E. Velez
Coachella Valley Association of Governments

Lewis Yee
Caltrans, District 7

I N D E X

I N D E X

W/D = Item Withdrawn

formal comment?

COMMITTEE CHAIRMAN BAHADORI: Sure.

COMMITTEE SECRETARY ENGELMANN: If the Committee would support that the District do this in an experiment they could come back at the June meeting for a formal request, but in the meantime go ahead and perhaps look at implementing those changes.

COMMITTEE CHAIRMAN BAHADORI: I believe that is all okay. Do you have any comments on that?

I don't see any objection.

COMMITTEE SECRETARY ENGELMANN: Okay. Thank you.

COMMITTEE CHAIRMAN BAHADORI: Thank you, Jerry.

MR. CHAMPA: Thank you.

COMMITTEE CHAIRMAN BAHADORI: Okay, moving on. We have withdrawn Item 15-03.

We go to Item 15-04, which is Coachella Valley NEV Plan and associated TCDs. Mr. Greenwood, that is your item.

COMMITTEE VICE CHAIRMAN GREENWOOD: Thank you. I will ask CVAG representative LeGrand Velez to go the podium, or his consultants, while I do a very brief introduction.

Coachella Valley Association of Governments, CVAG, has a very ambitious, active transportation plan. A 50 mile, roughly, bicycle, walking, NEV path to traverse the entire Coachella Valley from Palm Springs to at least Indio and maybe to coachella. And they have several devices that

they feel they need to innovate and so they put them before the Committee. I will turn it over to CVAG.

MR. LIESWYN: With the Committee's permission, we were about to introduce it. We didn't know how long the previous item was going to go and LeGrand just stepped out to the toilet. But I can get started or we could wait a second.

COMMITTEE VICE CHAIRMAN GREENWOOD: Please get started.

MR. LIESWYN: My name is John Lieswyn of Alta. I have been working with LeGrand Velez on the Neighborhood Electric Vehicle Plan for about two years now.

This plan is authorized by Assembly Bill 61. The legislation permits a city or a group of cities within the county or the County of Riverside to adopt an NEV transportation plan.

One of the requirements of AB 61 - there's LeGrand. LeGrand will speak briefly about the context that we have been working on the NEV plan, specifically the CV language.

MR. VELEZ: Hello. My name is LeGrand Velez with the Coachella Valley Association of Governments. I apologize, I was in the restroom.

Today we are here to get your review and recommendation of our Neighborhood Electric Vehicle

Transportation Plan. That is a corollary plan to our CV Link Master Plan. This is a brief video about the CV Link project that hopefully will work.

(A video was played.)

MR. VELEZ: Thank you. I thought that was the best way to give you an introduction to this project, which is a very innovative, aggressive and ambitious project initiative to transform transportation in the Coachella Valley of Southern California.

The radical thing about this proposal is that it is an alternative transportation corridor that combines bicycle, pedestrians and low-speed electric vehicles; that would be neighborhood electric vehicles as well as golf carts, within the same corridor that primarily runs along drainage channels in our valley. It would connect eight of the nine cities initially with Desert Hot Springs being left out of the initial phase but we are working with Desert Hot Springs now to bring them into the loop as well.

We are here today because we are required to do this project. We are required to do an NEV Transportation Plan. We are authorized to do that under Assembly Bill 61 for Riverside county and all jurisdictions within Riverside County. And under that authorizing legislation we are required to get the review and recommendation of this Committee in order to move on to get the approval of the

Director of Caltrans, who ultimately must approve any transportation plan.

I have a copy of the plan here if anybody is interested. And also -- so we are going -- our presentation is going to be -- that's the introduction and overview. Our presentation, of course, is going to be specifically about some non-standard traffic control devices that are proposed for this innovative, non-standard type project.

The memo and argument we are going to make in support of these standards is supported by two FHWA memos; and I brought copies of those, which I'll distribute. And I will turn over the details of the traffic control devices to my colleague, John Lieswyn.

MR. LIESWYN: Thank you, LeGrand.

As you can see, some of these are not specifically included within the MUTCD, federal or state. However, many of them are not precluded by, and so what we are asking for is motions and decisions or votes on one of four options for each of these devices. So to either include it in the MUTcD if the Committee feels appropriate; to approve some or all of them without explicit inclusion because the Committee feels like they can be covered through engineering judgment, they are not precluded by the MUTCD; or to conditionally approve some of these for experimentation, for example; or do not approve the specific devices.

Using your input today we propose to revise the design component, which is a required chapter of the NEV Plan from AB 61. The Design chapter has these elements in it. There are other elements which we have not brought to your attention because they are already approved MUTCD devices.

Shall I proceed through these in order or do you have any questions before we start?

COMMITTEE CHAIRMAN BAHADORI: Please proceed.

MR. LIESWYN: So the first one is just an NEV parking sign. Currently throughout the Coachella Valley and I'm sure in your communities throughout California there is a plethora of different kinds of parking signs. The most common one within the Coachella Valley is "Golf Carts Only" and it is generally a black text with white background with a black border, as seen here, but there are some other versions of golf cart parking. The basis for this is I believe one of the two memos you have, which goes into FHWA's recommendation on such signs. And that's -- from that we developed this sign. So although this is not currently in the MUTCD it is similar to some of the signs, R22 through R25. Shall we call for a motion on whether to --

COMMITTEE CHAIRMAN BAHADORI: Let's go in a faster fashion through all your requests and then we'll come back.

MR. LIESWYN: Sure. So these are some specific parking signs, which are legend-only regulatory signs. They basically help both private and agency staff establish operations of parking areas throughout the Valley but also along CV Link.

This one is a proposed crosswalk. The top image is what is shown in -- there are 25 such crosswalks along CV Link. This is not a valley-wide request; we would only be placing that colored crosswalk along CV Link. It is a standard ladder style, however, it uses the color themes from CV Link, which are present in other elements along CV Link such as the light tubes. We are using this to indicate to users of CV Link that they have entered an area of mixed use. It's sort of a speed control treatment. Those colored bars are present throughout CV Link and we propose to use that to help people know when they are along CV Link. It's otherwise a standard ladder style. We could also place it between two white transverse lines to increase the standardization with the MUTCD.

The next one is -- there's a couple of examples of other colored crosswalks for your information there.

In many cases there are not only the 25 major roadway crossings where we have CV Link but there are many places throughout the Valley where NEV operators are currently being directed to use shared paths and are

crossing at crosswalks. Where we have NEV lanes in complex traffic environments it may be that in the short term we would direct those NEV drivers and bicyclists to use the ped signal in the interim period until active detection or passive detection can be installed.

So the next ones are basically our lane striping options. From a pretty simple one which is already present in Coachella Valley. The difference is that in Coachella Valley we are generally using a golf cart symbol. And so we are trying to clarify, because golf carts are not allowed on many streets where NEVs would be allowed due to their different speed abilities, we are trying to clarify to users that this is different from the existing golf cart lanes. So that is why we chose and are proposing to use the letters N-E-V.

And then a few buffered lane options as you can see here.

The next things are really about the need to control NEV users where currently there are not a lot of used roadways over 35 miles an hour unless there is a dedicated space. And in many cases we can't provide a path or a lane and we have to direct them to make a turn, so we need some sort of device. Already these are standard, it's just that we are adding the words "NEV" to it. And then we are also coming up with a new sign that jurisdictions may

use in their street networks to indicate that condition where they are no longer legally permitted to travel.

And then a supplemental sign. The "EXCEPT BIKES" I believe, correct me if I'm wrong, I believe that that has just been -- CBAC has been talking about an "EXCEPT BIKES" sign for some time as a supplemental sign. We are simply adding the words "EXCEPT NEVS/BIKES".

And then a route guidance sign in green.

So that's it. How shall we go through this?

MR. VELEZ: Thank you.

COMMITTEE CHAIRMAN BAHADORI: Thank you.

Mr. Marshall.

COMMITTEE MEMBER MARSHALL: I heard from the initial comments that a lot of this rests on legislation that is specific to Riverside County. But somewhere in the materials there was reference to that some other communities have either plans or facilities for NEVs as well. I remember Lincoln being mentioned and something too that I can't remember. So what does that mean? Is this only in this location or should we be thinking about this as, if we approve this it can potentially then be used other places?

MR. LIESWYN: I think the latter. We researched the other NEV plans in coming up with these proposed traffic control devices and basically took the best that are available from there, looked at the most recent guides,

including the two memos that you have in front of you, and have come forward with this. So should some of these devices be included in the MUTCD or the Committee decide that it doesn't need to be specifically included because it is not prohibited by it, that is useful guidance that will end up in a final NEV plan and be a reference for other jurisdictions that may, should AB 61 start to be rolled out.

Because one of the things in AB 61 is that by January of 2016 the agency, CVAG in this case, needs to write a report that recommends to the Legislature whether it be expanded statewide.

COMMITTEE MEMBER MARSHALL: So part of the reason why I ask that question is I happen to own a home in Grass Valley, which is in Nevada County, and I am wondering about the acronym NEV. Is it already adopted and standardized and there is --

MR. LIESWYN: Yes.

MR. VELEZ: Yes.

COMMITTEE MEMBER MARSHALL: -- no room to move it?

This is going to be very confusing if it ever comes to Nevada County. Or frankly, anyplace else in the vicinity of the Nevada state line. I don't know what the solution is to that but I find this -- There is a potential challenge there.

COMMITTEE CHAIRMAN BAHADORI: That is the acronym

that actually they use in the law also. As was just mentioned, it's in Lincoln, it's in Rocklin and South Orange County unincorporated, they all have authority to do NEV plans.

Mr. Walter.

COMMITTEE MEMBER WALTER: I guess a couple of comments. With the signage that you propose, I think it's -- I think we are using too much text. And I think that signage seems to be going towards symbol-type signs rather than the text. So, you know, I would want us to be looking for symbols rather than text. And partly because of that reason as well, for the definition of the NEV.

And then I wasn't clear. Is your NEV plan the first in the state?

MR. LIESWYN: No.

MR. VELEZ: No.

COMMITTEE MEMBER WALTER: Okay. So have these issues been tackled by other communities with NEV plans that they have had to install traffic control devices on?

MR. LIESWYN: I don't know the answer to that. Does anyone in the room know? I couldn't find any examples of like the City of Rocklin or -- Western Riverside County has an NEV plan.

MR. HOWE: Hi, I'm Don Howe from Caltrans.

Yes, we did have a request for experimentation,

which is ongoing. The City of Lincoln, the proponents and the champions for that I believe retired or their funding has dried up and so it is considered an ongoing experiment. Those signs are in place and operational in the city of Lincoln.

My understanding is the city of Rocklin was to adopt a plan and they also did not have funding to go forward but they are in legislation and able to do that.

We never really closed the loop on the Lincoln proposal, nevertheless there are signs out there that are similar to some in these proposals.

COMMITTEE MEMBER WALTER: Okay. So again, I guess, maybe from my perspective, it would have been nice to have seen what other munis have used as examples of traffic control signage, which at least at the time they thought was compliant or would get across the message. And then again, how that compares to what you are proposing.

MR. LIESWYN: Sure. LeGrand here has taken a whole bunch of photos in an area and some of those signs are exactly as we proposed. The "NEVS PROHIBITED BEYOND THIS POINT" that's already established on a right-of-way in Lincoln.

COMMITTEE CHAIRMAN BAHADORI: I think in general, as it was mentioned, this is a growing trend. More and more communities will introduce NEVs as part of the adopted

transportation plan and all that.

Unfortunately, City of Lincoln didn't come back and -- you were just showing me the picture of the sign that they have actually installed there; which is the same sign.

MR. LIESWYN: Yes, it's the same sign.

COMMITTEE CHAIRMAN BAHADORI: So you have the signs already installed elsewhere but maybe it's time to kind of come up with some standard signs.

COMMITTEE MEMBER JONES: And Lincoln's signs have been in place for what, 10 or 15 years?

COMMITTEE CHAIRMAN BAHADORI: Ten years.

COMMITTEE MEMBER JONES: Ten to 15 years now.

COMMITTEE CHAIRMAN BAHADORI: Ten-plus, ten-plus.

COMMITTEE MEMBER JONES: Maybe 20.

COMMITTEE CHAIRMAN BAHADORI: Ten-plus because they got their authority in the early '90s.

COMMITTEE MEMBER JONES: There was Sun City up there.

MR. LIESWYN: May I respond to a couple of the other comments?

One was on symbology rather than text. At Alta we are very keen to do that, to have symbols; it is more international. CV Link is going to have a lot of international users, that's the hope anyway. So the issue is that there is already symbology for a golf cart. We have

to come up with a standard symbol for NEVs and thank you for that input, we'll look into that.

As far as definitions, there was a comment about confusion. The DMV has a pamphlet that defines an NEV versus a golf cart versus a modified golf cart. And it is one of the recommendations of this plan that all DMV locations in Coachella Valley post that pamphlet in a prominent place. It's got pictures and definitions.

COMMITTEE CHAIRMAN BAHADORI: Any comments? Mr. Winter.

COMMITTEE MEMBER WINTER: A question, I suppose, first. The "NEV PARKING ONLY" sign. It's not clear to me. Is that an on-street placement or -- I saw in the video it looked like maybe what was being depicted is along the path there might be areas of parking along the path. So I am not quite sure, where was the application going to be of this sign?

MR. LIESWYN: Valley-wide, not just CV Link. It would be -- it could be used in parking lots that are private or public. It could be used in on-street angled parking spaces. Typically the way that they are used right now in Coachella Valley is in private parking lots where the spaces are smaller. They are conveniently located and they are generally at charging stations as well but not necessarily.

COMMITTEE MEMBER WINTER: And my reason for asking, and thank you for the clarification. Generally private properties or others, there has been past discussion about hopeful conformance with the manual. But, you know, it's different than if it was necessarily an on-street application of that sign. So we want to maybe get into the discussion points.

MR. LIESWYN: Well, if it was explicitly included in the MUTCD it would be a lot easier, I think, for private developers to select the right sign. Because it would avoid this plethora of signs that exist already.

COMMITTEE MEMBER WINTER: Okay. I also saw the reference - and I apologize, I didn't go back. On the "right turn must turn right" where your request is to add the "except NEV and bike" you're noting that that was something we approved in the fall of 2014; is that --

COMMITTEE MEMBER JONES: September of 2014 we approved the "EXCEPT BIKES" for the right turn movements.

COMMITTEE MEMBER WINTER: Was that part of that experiment from Union City?

COMMITTEE MEMBER JONES: I don't believe it was an experiment, I think it was changed in the CA MUTCD.

COMMITTEE MEMBER WINTER: Oh, the update.

COMMITTEE MEMBER CICCARELLI: It was part of the contra-flow bike lanes.

COMMITTEE MEMBER JONES: The contra-flow of bike lanes.

COMMITTEE MEMBER WINTER: Okay. Then the only question, I guess, the plurals. As it was expressed, with NEV being something that people have to get used to, but then adding the plural of NEVS. I didn't know if the necessity was really needed for the plurals to be part of that. More of a comment. That was it for me.

COMMITTEE CHAIRMAN BAHADORI: Mr. Tong.

COMMITTEE MEMBER TONG: I would like to ask Kevin Korth about the symbol. I know FHWA is very specific about using a symbol. So is it an option that the applicant can use a symbol for NEV instead of wording?

MR. KORTH: Kevin Korth, Federal Highway Administration. What the applicant is referring to about the flexibility is in the national manual they can use a text-only sign, and in every other state besides California because of the Vehicle Code, that local agencies can create text-only signs without having it be in place in the national MUTCD. Here in California the applicant would have to come, if he wants to use the CA MUTCD as a reference point, would have to come to you to use the text-only sign and get approved by this committee.

As far as a symbol, they would have to request an experiment at the national level with the Federal Highway

Administration if they were to come up with an NEV symbol. As far as the text, the national MUTCD already allows that for local agencies. It's here in California where the committee needs to act under legend-only signs.

COMMITTEE MEMBER TONG: Thank you.

COMMITTEE MEMBER JONES: Is there a way we can not be the only state that requires that?

MR. LIESWYN: We're special.

(Laughter.)

COMMITTEE MEMBER JONES: I know, but we are trying to also streamline things for cities to be innovative and creative.

COMMITTEE CHAIRMAN BAHADORI: Any other comments, thoughts, suggestions?

Okay, thank you for your presentation. I have to open it to the public.

COMMITTEE MEMBER CICCARELLI: Hamid? Hamid?

COMMITTEE CHAIRMAN BAHADORI: Yes.

COMMITTEE MEMBER CICCARELLI: I have a couple of comments.

With regard to the colored crosswalks. The issue, as I understand it from a low vision specialist is the contrast edge be present to guide someone who basically can see but not much. So they can see where the edge of the crosswalk is. So I would refer you to specialists such as

B. Z. Benson (phonetic), who advises Federal Highway on many things.

MR. LIESWYN: Pardon me. Would we need that if we put the transverse white line?

COMMITTEE MEMBER CICCARELLI: No. If you have a white line in the same direction of travel as the user of the crosswalk that is the contrast edge. The illustration of Alabama Street and Michigan Street in Indianapolis does not have such a contrast edge but I note that the crosswalks on Webster in Oakland do, so that's key to note there. So you have got all sorts of colored stuff. It's not so much that the colored stuff is permitted, it's that the contrast edge is required.

COMMITTEE MEMBER JONES: They actually do have a contrast line up there, it's just faded and not maintained.

COMMITTEE MEMBER CICCARELLI: Right. But I'm thinking -- I couldn't tell from the photo, from the illustration in the top sub-figure whether that features was effectively present in the proposed crosswalk marking.

COMMITTEE MEMBER JONES: I was just saying in the Alabama one.

COMMITTEE MEMBER CICCARELLI: Right. Suggestion regarding "NEV BIKE USE PED SIGNAL" sign. Would be to do what you've done further down that page on the "NEV/BIKE LANE" sign, and that is to put a slash between "NEV" and

"BIKE" and possibly place them on the same line. Because otherwise the interpretation could be, what's an NEV/BIKE. Okay. NEV is an established terminology, I've seen it for probably 15, 20 years.

With regard to the "NEVS PROHIBITED BEYOND THIS POINT" sign. I wanted to suggest considering splitting it into an "NEVS PROHIBITED SIGN" that might be symbol-based and "BEYOND THIS POINT" as a qualifier. Because there could be cases where any of these prohibited messages alone would be useful in a regulatory context. So consider making "BEYOND THIS POINT" effectively a plaque that could modify a sign that was "NEVS PROHIBITED".

I second another member's comment that some of the signs, for example the plaque "EXCEPT NEVS/BIKES" is awfully texty in a dense sort of way that is hard to read. Although at NEV speeds it may be more than readable at the traveler's speed, which is what really counts for a legible MUTCD sign. That's all the comments.

COMMITTEE CHAIRMAN BAHADORI: Thank you. Mr. Greenwood.

COMMITTEE VICE CHAIRMAN GREENWOOD: I had myself talked into the colored crosswalk but the August 2013 FHWA memo, the conclusion is that Paragraph 3 of Section 3G.01 in the MUTCD limits the use of colored pavement used as a traffic control device to the colors of yellow and white.

Interim Approval for green for bike lanes. So the very memo that you provided in support for your proposal actually excludes your proposal.

COMMITTEE CHAIRMAN BAHADORI: I think we have had at least half a dozen items in my tenure on the Committee about the colored crosswalk. And it has always been my understanding that if you have the two white transverse lines you can do whatever you want in the middle. If you don't have those two it doesn't matter what you do; that is not a crosswalk.

So like when I am looking at the illustration up there. Not the picture, the illustration, that is not a legal crosswalk except that it a the intersection. Whether they paint it or not it's a legal crosswalk. But if you put it somewhere like mid-block or somewhere or on a trail or something, by no definition in the law that's a crosswalk. That's a nice aesthetic treatment of the pavement but it is not a crosswalk.

COMMITTEE SECRETARY ENGELMANN: I have a question.

COMMITTEE CHAIRMAN BAHADORI: Sure.

COMMITTEE SECRETARY ENGELMANN: Are they showing ladder markings on that illustration, though? The white ladder markings?

COMMITTEE CHAIRMAN BAHADORI: As long as you have the two white or yellow lines, the edge lines.

COMMITTEE MEMBER CICCARELLI: I think --

COMMITTEE CHAIRMAN BAHADORI: And by the way, what you do in the middle is your business.

COMMITTEE MEMBER CICCARELLI: I think FHWA considers a crosswalk to have the contrast edge if it just consists of the ladder rungs because the strength of that edge is enough to guide a low-vision user. So if the background pavement were dark enough that white fill was used in-between the colored bars -- and the colored bars essentially are irrelevant as a traffic control device. The traffic control device and eligibility becomes the white ladder bars. So if that illustration up there consists of a color alternating with white on a dark ground, that seems to me that would be equivalent to just a white ladder without -- without the --

COMMITTEE MEMBER JONES: A continental crosswalk.

COMMITTEE MEMBER CICCARELLI: Yes, continental.

COMMITTEE MEMBER JONES: So the continental crosswalk that is in the Caltrans manual doesn't have transverse lines, it just has the continental lines on it. So you don't have to have the -- you don't have to have the stop bars.

COMMITTEE CHAIRMAN BAHADORI: We have been told repeatedly by Caltrans predecessors that --

COMMITTEE MEMBER JONES: Right. But the Caltrans

manual --

COMMITTEE CHAIRMAN BAHADORI: We were told, and it is my reading also, the latest edition of the manual that they are passing around, that if you don't have those lines it is not a crosswalk.

COMMITTEE MEMBER JONES: Right. Well then we need to change the Caltrans manual because it has a standard that does not have the lines.

COMMITTEE CHAIRMAN BAHADORI: And then at the same time they're saying you can paint a Michelangelo on the pavement as long as you don't expect a driver to do anything with it. They have restriction on the colored pavement. You can put whatever you want there as long as you don't expect drivers to do anything.

Any other thoughts, comments, questions?

We will turn to the public, to the public hearing. Any member of the audience who wishes to address the Committee on this item?

MR. KORTH: Kevin Korth, Federal Highway Administration. Don, can we go back to the very first figure?

MR. HOWE: Yes.

MR. KORTH: My question with the NEV parking sign. I think it was kind of addressed here. If the CA MUTCD was to include such a sign, some of the application of it and

the operation of it, would be wanting to be addressed in the language. If the sign is to be only used in parking stalls that have a substandard width that would only fit these NEV vehicles and that is when the sign is placed, or is the expectation that the NEVs would be allowed to park in standard stalls or on the streets and diagonal parking as well, then the sign would be appropriate to put in standard stalls and limit all vehicles besides these NEVs. So that's just a question I have is what the presenter was intending the application of that sign would be or if it would be both?

As far as on the next figure, the no parking signs. California already has EV parking signs and no parking signs in Section 2B.46, paragraph 84. And also if you see figure 2B.24(CA), there are parking standing signs and plaques. The R7 series that have -- in the 2014 Manual about electric vehicles. So are these signs substantially different than the intentions that are already in the CA MUTCD? Do we want all these variations? Because I believe those signs, they reference this "EV" versus "electric vehicle" so do we want to have all these additional abbreviations versus full text? So that's something for the Committee to consider.

As far as the crosswalk. None of the three images that are shown as examples/illustrations need a position

from Federal Highway for the recommended practice of colored pavement in 3(09)-24(I). One question I ask for the presenter to come up here real quick before I continue my comment is, are those colors of the additional pavement markings, are they retroreflective or are they not?

MR. LIESWYN: Retroreflective pavement markings are proposed for wherever CV Link is crossing the roadway.

MR. KORTH: So there is a separate Federal Highway interpretation that has come from Florida. Within those marked crosswalks, the paragraph 6 that we talked about, 3G.01, those are -- if it is retroreflective that is a traffic control device and so the only colors are white, yellow and blue for handicapped parking stalls. So these are colors that are not permitted as pavement markings. Obviously those colors have signs, oranges for parking signs in part 6, but as far as the pavement markings, blue, yellow, white, are the only colors that can be retroreflective.

So the pavement markings here would have to be not-retroreflective to be proceeded with at all. But in the Guidance, in the official interpretation as listed here, these colors would be too bright and they don't need the interpretation from Federal Highway. It is only a guidance statement that we are providing the interim interpretation of so the city could proceed as they wish. Definitely there

is a separate interpretation that I could find for them that says they cannot be retroreflective. There is a white; and then here in California for the school zones, yellow can be used to mark the crosswalk with retroreflective colors.

COMMITTEE MEMBER CICCARELLI: Kevin, question. As I read the interpretation that uses the words "subdued colored." So if it is not retroreflective and it doesn't compete with the white marking it would be allowable, correct?

MR. KORTH: You could ask for an official interpretation for this color scheme from Federal Highway.

COMMITTEE MEMBER CICCARELLI: It says --

MR. KORTH: In the interpretation it's talking about earth tones and bricks. There's multiple colors within the old City of Oakland one as well so that is not one that we necessarily would agree with that follows the interpretation. The same with the -- separately, with the Indianapolis, for example. There is an icon in that crosswalk and there is no -- in the interpretation we don't recommend using icons or prohibiting icons to be used in the crosswalk.

COMMITTEE CHAIRMAN BAHADORI: Any other comments?

MR. KORTH: As far as the striping on the next page for the double line striping. I think that is something we kind of covered with the HOV. The top image

that's shown, that would be an experimental double wide striping having the broken and the solid next to it. Why wouldn't there be a need just to use the solid, single wide, solid white line for a buffer space if they were to mark out a bike lane, like there normally is?

That's all I had for the figures.

COMMITTEE CHAIRMAN BAHADORI: Thank you.

Mr. Kenney.

MR. KENNEY: Good morning, Mike Kenney with the County of San Diego.

I want to say it's a tremendous project, I wish you the best. It was great seeing the bridge extrude out across the sky.

The sizes, I don't have any particular comment about that. I did not know what an NEV was. Maybe I'm one of the few in the room but I guess that education will commence.

I did have some concerns about the crosswalk. We have had real problems maintaining color and maintaining design in the pavement as the pavement shifts. And I was really surprised where you're coming from with the sun and the heat that you wouldn't have similar problems. I'm questioning whether or not we are making problems here. Six months is probably (inaudible). I don't know that I would be supportive of a really complex forward crosswalk like

that just for those reasons. But it's a great project; I wish you the best.

MR. LIESWYN: What was your experience with the markings?

MR. KENNEY: The pavers, you've got to power wash them every six months. The applique that goes into the asphalt, that's the one that rotates with the asphalt. And thermal will chip and fade as cars make a right turn across it. You see a difference where the cars are torquing it and where they are going straight. You see a difference.

COMMITTEE CHAIRMAN BAHADORI: Thank you. Any other comments?

Hearing none we will close the public comment portion and bring it back to the Committee. So who is going to lead it? Especially this one.

Mr. Greenwood, do you want to lead the discussion or make a motion or a suggestion?

COMMITTEE VICE CHAIRMAN GREENWOOD: Well frankly, I'd like to hear what the Committee has to say.

COMMITTEE CHAIRMAN BAHADORI: Mr. Walter.

COMMITTEE MEMBER WALTER: Mr. Chair, do we want to take them one at a time and have the discussion on each one?

COMMITTEE CHAIRMAN BAHADORI: We can take them one at a time. That's the first question. Do we even need to look at this and include it in the MUTCD? For example, the

parking sign, for example, as the FHWA representative said, you already have signs in there. Why do you want to introduce new signs with a little bit of difference here and there? Why don't you just use the signs that are there?

And on the NEV/BIKE ONLY, I think we might have probably approved that; I am not sure.

COMMITTEE MEMBER MARSHALL: So I think the answer might be different for the different things.

COMMITTEE CHAIRMAN BAHADORI: Let's move quickly without spending a whole lot of time. On the NEV PARKING ONLY what is the pleasure of the Committee?

COMMITTEE MEMBER JONES: I'd make a motion to approve it.

COMMITTEE CHAIRMAN BAHADORI: Okay, very simple. A motion; is there a second?

COMMITTEE MEMBER WINTER: Second.

COMMITTEE CHAIRMAN BAHADORI: Okay, there is a motion and a second for discussion purposes.

COMMITTEE MEMBER CICCARELLI: Discussion?

COMMITTEE CHAIRMAN BAHADORI: Yes, Mr. Ciccarelli.

COMMITTEE MEMBER CICCARELLI: NEVs and EVs are different animals. An NEV is much --

COMMITTEE CHAIRMAN BAHADORI: Yes, they are legally defined differently.

COMMITTEE MEMBER CICCARELLI: Not only differently

but because of their speed regime they operate differently. They are like golf carts, in that that is their closest cousin. I think it is a legitimate need to mark a parking space for an NEV that would not be legal for an EV, which is a full-speed car.

COMMITTEE CHAIRMAN BAHADORI: There is a motion that we do exactly that, allow the new sign to be for NEV parking only. Mr. Marshall.

COMMITTEE MEMBER MARSHALL: So the proponents had suggested that we choose between a couple of options if we are in favor, one of which is to fully include it in the manual and one of which is to just say, it is okay as a text-only sign, it doesn't have to be actually added to the manual. Which of those is the motion?

COMMITTEE CHAIRMAN BAHADORI: My inclination is to include it in the manual because NEV is a growing trend. And there are other communities that are using them and will be using them.

COMMITTEE MEMBER JONES: A lot of cities are trying to move toward sustainability and a net-zero footprint for carbon -- carbon reductions to encourage their communities to have these neighborhood electric vehicles to get people around for those trips that are three to six miles around their home, you know, that they might not walk or bike to. So it's a great thing that a lot of communities

are moving towards, a lot of senior communities are doing it as well.

COMMITTEE CHAIRMAN BAHADORI: And every single year there is at least one or two bills on NEV trying to expand the network they can use and things of that nature.

COMMITTEE MEMBER MARSHALL: So I appreciate the good reasons for needing this and the spirit of it; I am just clarifying to make sure I have the right understanding. Would the result of the - if we pass this motion - be that Caltrans goes and comes back with proposed language, et cetera?

COMMITTEE CHAIRMAN BAHADORI: No, typically the way that we have done it is that we look at the sign. If we don't like the verbiage or the language we just say we don't like it and we change it.

COMMITTEE MEMBER MARSHALL: Okay, so it will be done today.

COMMITTEE CHAIRMAN BAHADORI: Once we approve it then Caltrans' sign design group, they take it and they develop the details for their specs.

COMMITTEE MEMBER MARSHALL: Okay.

COMMITTEE MEMBER WINTER: And just to be clear, the narrative as well that would go into the actual manual?

COMMITTEE CHAIRMAN BAHADORI: Exactly.

COMMITTEE MEMBER WINTER: Because there is some

guidance.

COMMITTEE CHAIRMAN BAHADORI: Yes.

COMMITTEE MEMBER WINTER: One comment here in the room we heard is, perhaps the sign is supplemental to the actual marked space, which is going to be a narrower space than traditional or maybe not. Either way, that kind of distinction should be made in the narrative that would go into the manual with the sign.

COMMITTEE CHAIRMAN BAHADORI: That's true.

COMMITTEE MEMBER JONES: So my motion was for any space, whether it is specifically designed for NEV or wider, that they could put this sign and use this sign to restrict it just for NEV parking.

COMMITTEE CHAIRMAN BAHADORI: That was your motion; that is my understanding.

Any other discussion on the motion?

Seeing none, all those in favor say aye.

(Ayes.)

COMMITTEE CHAIRMAN BAHADORI: Opposition?

Seeing none, the motion passes unanimously. So Caltrans will develop the appropriate sign details for this sign and incorporate it into the MUTCD for use by anyone in the state.

Now on the parking signs. Who wants to make a motion or a comment? Mr. Ciccarelli.

COMMITTEE MEMBER CICCARELLI: I have a question as to what is being requested here based on the illustration; I am unclear on this.

COMMITTEE MEMBER JONES: What's your question?

COMMITTEE MEMBER CICCARELLI: Approve the use of legend-only regulatory signs. I don't see any legend-only regulatory signs except for the vehicle must be plugged in and vacate stall. Those already have our numbers so what is being requested here? I am confused.

MR. LIESWYN: I apologize, it has been some time since I put this together. There is -- I think it's the OTS has published -- these signs have been in development for some years. I believe San Diego County started with a guideline to help developers and agencies implement parking signs specific to NEVs. And the OTS has come out with another set of guidelines and I believe it was those guidelines we based these on.

COMMITTEE MEMBER CICCARELLI: So are these not-yet-approved signs?

MR. LIESWYN: I don't believe so.

COMMITTEE CHAIRMAN BAHADORI: So they have provisional sign designation numbers? I am not familiar, without looking at it, at the parking chapter of the MUTCD. So these four or six or five images here are provisionals? Don?

MR. HOWE: I am just checking our sign chart that members of the committee received.

COMMITTEE CHAIRMAN BAHADORI: Mr. Howe, we have the charging station. I have seen signs all over town that say "no parking except where charting" or something. We have something for the electric vehicles. And in that respect, NEVs are no different than electric vehicles, they are just charging.

MR. HOWE: Well we are talking about neighborhood electric vehicles. These look to be broader, encompassing all electric vehicles.

COMMITTEE CHAIRMAN BAHADORI: But an NEV is a form of an electric vehicle so it falls under the category of electric vehicle. And if you have signs for parking restrictions for electric vehicles why can't they just use those signs, or do we need new signs?

MR. HOWE: That's a good observation. I know that we wanted to get away from the concept of them being parking places because they are charging stations, so we don't want to call them "parking places," they are "charging places". So the concept of no parking except while charging. We have in your sign charts that you have -- the new signs that we developed for that are on sheet 4 of 14. And we have the symbol "no parking except for EV charging" and then it is all spelled up. We have the alternate version that is

R-113a(CA). Then there is the permissive 4 hour EV charging from 8 a.m. to 6:00 p.m. That's R-114 and the alternative to that is the R-114a(CA) 4 hour electric vehicle charging that has a time frame. So that is what we developed according to our zero emission vehicle policy directive and that was reviewed with and vetted through this Committee.

COMMITTEE CHAIRMAN BAHADORI: So what I am asking is that if you have those signs available why do we need new signs? NEV is a subcategory of an electric vehicle. If you already have those restrictions and those signs are already available why do we need an all new set of signs?

COMMITTEE MEMBER WALTER: Mr. Chair?

COMMITTEE CHAIRMAN BAHADORI: Mr. Walter.

COMMITTEE MEMBER WALTER: Actually, based on what you just described, why did we need to do the first sign? If NEVs are a subcategory of electric vehicles why can't signs for electric vehicles be sufficient?

COMMITTEE CHAIRMAN BAHADORI: That was for parking. That was for parking. One of the things in that -- I hear what you are saying. The only difference between NEV and electric vehicle is the type of arterial or the street that they can operate on and their safety equipment. That's the only difference. Otherwise it's a form of an electric vehicle.

COMMITTEE MEMBER MARSHALL: It was my

understanding that the regular electric vehicles could be full-size, full-speed automobiles, essentially.

COMMITTEE MEMBER JONES: Yes.

COMMITTEE MEMBER MARSHALL: Whereas these neighborhood ones are likely smaller. And I think there is some potential that some locations might create reduced size spaces that need to be posted "NEV" rather than "EV." I think that's why we need the first one but probably don't need this one.

COMMITTEE CHAIRMAN BAHADORI: Okay. So what are your thoughts on this set of signs, on the parking signs? any comments, a motion?

COMMITTEE MEMBER MARSHALL: I move we accept the applicant's request to withdraw this one because it is not needed.

COMMITTEE CHAIRMAN BAHADORI: There is a motion and do we have a second?

COMMITTEE MEMBER JONES: We've got a hand up over here.

COMMITTEE CHAIRMAN BAHADORI: Don.

MR. HOWE: Just as a technical thing. The plaques that are shown, "VEHICLE MUST BE PLUGGED IN", "VACATE STALL WHEN CHARGING COMPLETED", those are new and they may have some value to augment the existing ones that we have in the CA MUTCD. So just those two alone might be helpful.

COMMITTEE CHAIRMAN BAHADORI: Those two, the two plates. I'm looking at R7-113a and 113b. Those two, we don't have anything like those?

COMMITTEE MEMBER MARSHALL: So the numbers are just potential numbering schemes, they don't mean they actually already exist; is that correct?

MR. HOWE: They don't have the CA suffix so they are not in our manual. These may be something in development in another jurisdiction such as was mentioned, San Diego County. But I don't know what context this is used in. These are regulatory so R would be the correct prefix.

COMMITTEE MEMBER MARSHALL: Okay. So I will replace my motion to approve the two plaques.

COMMITTEE CHAIRMAN BAHADORI: Okay. so there is a motion to approve those two plaques, the R7-113a and 113b.

Yes, Mr. Ciccarelli.

COMMITTEE MEMBER CICCARELLI: Not being well versed in the nuances of policy-making around these things and the communities that are likely to use them, I would ask the requestor what the down side of not approving, say, the first sign, the R7-111, would be? What is the use case for this sign? Without trying to drag out the discussion. That's really, that's really how we decide whether the sign is worthwhile.

MR. LIESWYN: The rationale for -- and apparently there is already one there, which we didn't see, it's a symbol sign, "no parking except for EV charging." So the rationale was to promote the use of NEVs and to dedicate spaces that were close to CV Link or other specific facilities, rather than a highway-capable EV. So potentially the Committee could offer us feedback to come back with a different sign that would be targeted at NEVs rather than EVs, as that would benefit the NEV plan.

COMMITTEE CHAIRMAN BAHADORI: The three parking signs, I just don't see the need. Because if you want to restrict parking except for when charging, you already have signs that say that. They don't say what vehicle is charging, full-size electric vehicle or NEV. But those two plaques, as Mr. Marshall mentioned, I see value in the plaques.

COMMITTEE MEMBER JONES: I'll second Mr. Marshall's motion.

COMMITTEE CHAIRMAN BAHADORI: Okay, there is a motion and a second. Any discussion? Mr. Walter.

COMMITTEE MEMBER WALTER: Question as far as those two small plaques are concerned. Because they are black on white are they immediately regulatory and then enforceable and is that something that our law enforcement folks are on board with as far as that goes? Is there any reason why

they wouldn't be?

COMMITTEE CHAIRMAN BAHADORI: I don't see why not. Once it is a regulatory sign and it's a parking sign they can issue tickets.

COMMITTEE MEMBER RICKS: They could. it might be difficult to enforce. Vacate stall when charging completed. How are you going to know when charging is completed.

COMMITTEE CHAIRMAN BAHADORI: Well, I would imagine as long as they are plugged in they are charging and you wouldn't know when they are fully charged or not.

COMMITTEE MEMBER MARSHALL: The charger at my work place includes a feature where it will send you a text message when it's done, then you can come move your vehicle. So such things exist. That's the way it's headed.

COMMITTEE MEMBER JONES: It also sends the meter maid a text that your car is done. See who can get there first.

(Laughter.)

COMMITTEE CHAIRMAN BAHADORI: Okay.

COMMITTEE MEMBER CICCARELLI: I think on a simpler note, it's likely that in jurisdictions that deploy this that at least the local law enforcement would be trained to look at the specific charger that the jurisdiction has selected. There is not likely to be a wide variety of these chargers and there is likely to have a charge complete

indication like a blinking light that goes solid or something.

COMMITTEE CHAIRMAN BAHADORI: So we have the motion and we have a second; any discussion?

All those in favor?

(Ayes.)

COMMITTEE CHAIRMAN BAHADORI: Opposition?

Seeing none, the motion passes unanimously.

Now we go to the crosswalks. Kevin, you have something to add?

MR. KORTH: Kevin Korth, Federal Highway Administration. My recommendation to the Committee is that they don't have to voice any opinion on this actually and let the Federal Highway interpretation letter speak for itself. Let the Agency review that letter and do as they see fit with the guidance statement.

COMMITTEE CHAIRMAN BAHADORI: I fully support your position but bring it back to the Committee.

We heard from FHWA's representative. Any comments?

COMMITTEE MEMBER CICCARELLI: I think I really support FHWA's guidance on this because I am tasked with, in part, looking out for the needs of the pedestrian crosser. And I want the crosswalk to be readable not only to the pedestrian for a guidance perspective but from the

approaching cross-conflict motorist that it stands out. And I wonder whether the applicant might consider instead something that is off-roadway immediately in advance of the crossway that strongly identifies it from a branding perspective but doesn't actually mark the crosswalk itself. Suggestion.

COMMITTEE CHAIRMAN BAHADORI: Just for future, if anyone wants to bring -- to members, if any agency comes to you for a colored crosswalk or anything like that, encourage them to go and read the last ten years' minutes of the Committee. At least seven times we have had this discussion, over and over and over.

COMMITTEE MEMBER JONES: On the way here from Union Station, there's a whole bunch of different, beautiful crosswalks out there that are great examples. I commend LA DOT for being innovative and creative.

COMMITTEE CHAIRMAN BAHADORI: If John Fisher --

COMMITTEE MEMBER WINTER: Mr. Chairman, if I can make a motion? Since we are the Traffic Control Devices Committee, and I think the discussion on this is that this perhaps is not a traffic control device but that the FHWA memo does provide guidance, then my motion on this is to not approve this particular matter but again, as FHWA's representative has said, is perhaps let the applicant consider it.

COMMITTEE CHAIRMAN BAHADORI: There is a motion, is there a second?

COMMITTEE VICE CHAIRMAN GREENWOOD: Second.

COMMITTEE CHAIRMAN BAHADORI: There is a motion and a second. Let it be noted also that the FHWA memo is the decision on this issue. Okay.

MR. VELEZ: May I ask for clarification?

So it is my understanding that we could do something creative with, say, using the colors of the CV Link colors. This whole idea is sort of way-finding, iconic thing to distinguish this is a CV Link crossing as opposed to just a standard crossing. As long as we meet the FHWA guidelines as far as what colors can be retroreflective, having the transverse lines, that we could do some play within colors within that, granted, the limitations that were pointed out by my colleague from san Diego. My interpretation is correct?

COMMITTEE CHAIRMAN BAHADORI: As long as it is a legally defined crosswalk location.

MR. VELEZ: Okay.

COMMITTEE CHAIRMAN BAHADORI: If it's not, don't except the driver to treat it as a crosswalk, because it's not.

MR. VELEZ: Okay. Thank you.

COMMITTEE CHAIRMAN BAHADORI: Any comments?

Okay, we have a motion. Do we have a second? We have a second. Any discussion?

All those in favor say aye?

(Ayes.)

COMMITTEE CHAIRMAN BAHADORI: Opposition?

The motion passes unanimously.

Okay. Did we have another item here? We had the striping issue, right?

(Several people speaking at once.)

COMMITTEE MEMBER CICCARELLI: Move approval with two modifications. One is a "slash" after "NEV" and the second is the placement of the word "NEV" and the word "BIKE" on the same line, for consistency with the sign at the bottom left of the page.

COMMITTEE CHAIRMAN BAHADORI: There is a motion and a second. Any discussion?

Seeing none, all those in favor?

(Ayes.)

COMMITTEE CHAIRMAN BAHADORI: Opposition?

The motion passes unanimously.

Okay. Going down the line. What else do you have there?

COMMITTEE MEMBER CICCARELLI: The combined NEV and bike lane.

COMMITTEE CHAIRMAN BAHADORI: We have a new

proposals for new stencils which says "NEV/BIKE LANE."

COMMITTEE MEMBER CICCARELLI: This is parallel to the use of preferential lanes for motorized vehicles where the type of vehicle is multiple. For example, in San Francisco there are bus and taxi lanes. So this is a parallel construct in the bike lane. I have no heartburn whatsoever with allowing NEVs in bike lanes in the jurisdictions that have decided to pursue that. The NEV is so well established there in the form of a golf cart and the cyclists know what to do. If the agency sees fit to deploy this they have made a substantial investment in combining the two modes in that part of the roadway.

We can't expand the roadways infinitely and have a bike lane and a golf cart lane and a general purpose travel lane. I think the speeds are compatible. If it doesn't work they are going to take it out anyway. So I am supportive overall of this whole NEV-plus-bike lane for the jurisdictions that have chosen to go that route. And this looks to me like the way that matches how multi-vehicle type HOV lanes are done, or preferential lanes are done in a general sense.

I move approval of this one.

COMMITTEE CHAIRMAN BAHADORI: There is a motion; is there a second?

COMMITTEE MEMBER GREENWOOD: I'll second.

COMMITTEE CHAIRMAN BAHADORI: There is a motion and a second for approving the new stencils. Any discussion? Mr. Winter.

COMMITTEE MEMBER WINTER: One question just occurred to me now. The bike lane, traditionally you accompany that with a sign that says "BIKE LANE." So this doesn't depict if it would have signage associated with the bike lane. Is there a suggestion maybe to change a sign that would also say -- well, below, I guess it's the next one. The next one would get into that then, okay. So we're sort of -- my comment will, I guess, be appropriate to the next one, the "NEV/BIKE LANE."

COMMITTEE SECRETARY ENGELMANN: I have a question, Mr. Chairman.

COMMITTEE CHAIRMAN BAHADORI: Sure, go ahead.

COMMITTEE SECRETARY ENGELMANN: Is there a minimum width requirement. Because you wouldn't be able just to do this with any bike lane.

COMMITTEE MEMBER CICCARELLI: Correct.

COMMITTEE CHAIRMAN BAHADORI: I imagine that they would comply with the minimum bike lane requirement.

COMMITTEE MEMBER WINTER: The NEV Plan specifies seven foot minimums.

COMMITTEE SECRETARY ENGELMANN: Seven foot.

COMMITTEE CHAIRMAN BAHADORI: So we have a motion

and a second. Go ahead.

COMMITTEE MEMBER CICCARELLI: It seems to me that this would require modifications to Part 9 of the MUTCD, which defines the use of bike lane markings, 9C.

COMMITTEE CHAIRMAN BAHADORI: Yes, you are absolutely right there.

COMMITTEE MEMBER CICCARELLI: That's it, I am still supportive.

COMMITTEE CHAIRMAN BAHADORI: Okay.

COMMITTEE SECRETARY ENGELMANN: It could be its own separate item, Part 3 under Pavement Markings.

COMMITTEE MEMBER CICCARELLI: I'd actually prefer that because it mainstreams it.

COMMITTEE SECRETARY ENGELMANN: That will change the bike chapter.

COMMITTEE CHAIRMAN BAHADORI: Limited to the application. There are very places that there are combined NEV/bike lanes.

Okay, a motion and second. Any further discussion?

COMMITTEE MEMBER CICCARELLI: Actually it's a question. Would Caltrans be tasked with developing the Part 3 language?

COMMITTEE SECRETARY ENGELMANN: Yes.

COMMITTEE CHAIRMAN BAHADORI: They do that.

COMMITTEE MEMBER CICCARELLI: I would like to revise my motion. I support the marking scheme, provided that Caltrans develops supporting language in Part -- 3C it would be, right, Chapter 3C?

COMMITTEE SECRETARY ENGELMANN: Part 3, yes. And probably Part 9 as well; there might be some references in Part 9.

COMMITTEE MEMBER CICCARELLI: I'll say the appropriate parts.

COMMITTEE SECRETARY ENGELMANN: Yes.

COMMITTEE CHAIRMAN BAHADORI: Okay, we have a motion and it was seconded. Okay, there is a revised motion and a second. Any further discussion?

Seeing none, all those in favor say aye.

(Ayes.)

COMMITTEE CHAIRMAN BAHADORI: Opposition? Seeing none, the motion masses unanimously. Going down the list.

COMMITTEE MEMBER CICCARELLI: I'll take this one. I move to approve the three variants of the buffered NEV/bike lane striping. I have a question before finalizing the motion. That is, whether the solid combined with dotted line is currently allowed in the MUTCD. I thought Kevin had a comment to that effect, that it is not. In other words, the variant.

MR. KORTH: Yes, this is the same issue brought up

by Jerry Champa. They were going to be requesting an experiment for a managed lane on a highway facility to use this type of marking. What was discussed, the vagueness would not -- the color of the current Vehicle Code would allow for them to proceed with their experiment, that managing facility, so that's why I brought it up here. The bike lane, what does that marking just broken and solid represent? That first line stripe marking I would say, if that is going to be an experimental marking, just as it was for the managed lane that Jerry Champa brought up in his item.

MR. LIESWYN: Since we prepared this I understand that the City of Davis has come up with an alternative and I am unsure as to whether that was brought to this committee. It's just a wider paint stripe; I believe it's 10 or 12 inches wide. The reason that there are three presented is basically reduced width. It is an attempt to provide a buffer to the adjacent motor vehicle lane. If the space is there then there would be a standard buffer and if the space is not there then we are looking for something to strengthen that dividing lane line. And I understand just a wider line is something that some communities are trying.

COMMITTEE CHAIRMAN BAHADORI: Thanks for the clarification. Is there a motion on the new proposed striping? Or any discussion?

COMMITTEE MEMBER CICCARELLI: I would like to move --

COMMITTEE CHAIRMAN BAHADORI: Mr. Walter.

COMMITTEE MEMBER WALTER: I'll wait until there is a motion and a second.

COMMITTEE CHAIRMAN BAHADORI: Okay, let's have the motion then we'll have discussion. Mr. Ciccarelli.

COMMITTEE MEMBER CICCARELLI: I have a question in my own mind about the recently added content that I brought forward on buffered bike lanes. It seemed to me that there was something that we actually inherited from the national draft on which it was based that said if the width and buffer is below a certain width then you don't use transverse markings. So it seems to me that Case 1 might already be covered in the buffered bike lane language but I don't know chapter and verse, I'm going to look at it.

COMMITTEE MEMBER JONES: That was part of the September discussion on the buffered bike lanes. And if it's -- it was below two or three feet, or I can't remember the exact dimension, then the transverse diagonal lines did not need to be installed.

COMMITTEE MEMBER: I think it was below four feet.

COMMITTEE MEMBER JONES: Is it below four feet?

COMMITEE MEMBER: Below four feet, yes.

COMMITTEE MEMBER CICCARELLI: So Case 1 of 3 would

seem to be covered already in the manual in the case of buffered bike lanes.

COMMITTEE MEMBER MARSHALL: But don't those have both lines solid and not one of them dashed?

COMMITTEE MEMBER CICCARELLI: Give me a minute and let me find the text that was added and see if I can resolve this. Buffered bike lanes.

COMMITTEE MEMBER JONES: The only difference on those is adding the word, the three letters, NEV as the markings. All the other buffers we approved in September.

COMMITTEE MEMBER CICCARELLI: There is a "should", it says:

"If used and where there is parking on the right side of the buffered bicycle lane, the right most lane line should be broken. Where vehicles are expected to cross the buffered driveways, both lines should be broken. Where neither condition exists, both lanes should be solid."

So it is a "should", it's a guidance right now. I would expect that -- well it says, it's called driveways.

COMMITTEE CHAIRMAN BAHADORI: Well, we don't want to spend too much time on this item either. Are we ready to make a motion or we are just not going to make it.

COMMITTEE MEMBER CICCARELLI: I'd like to move approval of the Case 2 and Case 3 markings and defer Case 1.

COMMITTEE CHAIRMAN BAHADORI: There is a motion, is there a second? Case 1 being the top one. That's what you mean, right?

COMMITTEE MEMBER JONES: Case 1, 2 and 3 are -- the stripings are already there. The questions is, adding NEV to the markings. Because all the striping already exists in the MUTCD.

COMMITTEE MEMBER MARSHALL: Didn't we just approve that? On the page --

COMMITTEE MEMBER JONES: In September --

COMMITTEE CHAIRMAN BAHADORI: So this is the --

COMMITTEE MEMBER MARSHALL: We already approved the marking and then --

COMMITTEE MEMBER JONES: So, we already approved the "NEV" so we don't really need to do any of that striping.

COMMITTEE MEMBER MARSHALL: Okay.

COMMITTEE MEMBER JONES: No the NEV lanes, bike lanes sign.

COMMITTEE CHAIRMAN BAHADORI: That's one of the things we approved already.

COMMITTEE MEMBER JONES: Did we already approve that?

COMMITTEE CHAIRMAN BAHADORI: We already made the motion.

COMMITTEE MEMBER JONES: Okay. I don't believe we did.

COMMITTEE CHAIRMAN BAHADORI: We didn't?

COMMITTEE MEMBER JONES: No.

COMMITTEE CHAIRMAN BAHADORI: Is there a motion and second on those three signs, those three plaques?

COMMITTEE VICE CHAIRMAN GREENWOOD: Yes. I'll move approval as shown.

COMMITTEE MEMBER JONES: Second.

COMMITTEE CHAIRMAN BAHADORI: There is a motion and a second.

COMMITTEE MEMBER MARSHALL: We don't need the two small ones, do we?

COMMITTEE CHAIRMAN BAHADORI: "BEGINS" and "ENDS"? "BEGINS" and "ENDS", we have those "BEGINS" and "ENDS" for all kinds of uses.

MR. LIESWYN: We only put them in there for context.

COMMITTEE CHAIRMAN BAHADORI: Okay. So it's only the left side, the sign that says, "NEV/BIKE LANE". Because we have "BEGIN" and "END" plaques for all other purposes.

Okay, there is a motion and a second. Is there, actually, was there a second?

COMMITTEE MEMBER JONES: Yes.

COMMITTEE CHAIRMAN BAHADORI: All those in favor.

(Ayes.)

COMMITTEE CHAIRMAN BAHADORI: Opposition?

Seeing none it passes unanimously. Okay, and --

COMMITTEE SECRETARY ENGELMANN: Mr. Chair, what do we do on the three striping variations?

COMMITTEE CHAIRMAN BAHADORI: We don't need to do anything because the striping is already there and we approved a combination of NEV and BIKE LANES.

COMMITTEE SECRETARY ENGELMANN: All right, thank you.

COMMITTEE MEMBER JONES: Can you scroll down to the next page.

COMMITTEE MEMBER CICCARELLI: Actually I have a question before we go forward from this page.

COMMITTEE CHAIRMAN BAHADORI: Could you stay on that, Mr. Howe, please.

COMMITTEE MEMBER CICCARELLI: It's actually germane to getting this in the manual. The manual, there is a section on buffered bike lanes. It is not a section on buffered NEV plus bike lanes. So, how does Caltrans resolve that?

COMMITTEE MEMBER JONES: We took the vote up there that says the markings of what goes into them.

COMMITTEE MEMBER CICCARELLI: So what is the change to the manual that allows this to go in?

COMMITTEE MEMBER MARSHALL: I think that the --

COMMITTEE CHAIRMAN BAHADORI: We got the text up, the would allow the text to the appropriate section.

COMMITTEE SECRETARY ENGELMANN: Add the text to Part 3 and we can make references to Part 9 for the striping configurations.

COMMITTEE MEMBER CICCARELLI: Sorry to pick this point but this is important because buffered bike lanes are so new. Will the text in Part 3 say something like, you may add the word "NEV" to any of the bike lane striping configurations in Part 9-whatever.

COMMITTEE SECRETARY ENGELMANN: If it meets the criteria for NEV lanes, yes.

COMMITTEE MEMBER CICCARELLI: Okay.

COMMITTEE CHAIRMAN BAHADORI: Kevin.

MR. KORTH: Kevin Korth, Federal Highway Administration. Part 9 is the bicycle facilities but is also covers shared use facilities, there could be bikes and peds off the main right of way. So there could just be a support statement put in place for context of the discussion they had and all the legislation that was put in place to allow this varying of both bicycles and NEVs. But it would be in the Part 9 Bicycle Facilities part of the CA MUTCD. A support statement to help drive this issue of flexibility for all the different signs and markers that we discussed.

COMMITTEE CHAIRMAN BAHADORI: Thank you. Okay, do we have anything else? Scroll down please to that "PROHIBITED BEYOND THIS POINT".

MR. HOWE: I'm Don Howe from Caltrans. I did want to make a clarification that the signs that are shown here are the plural of BEGIN and END but those Caltrans sign designations, those are not plural. There is, BEGIN and END for those sign designations, so. Just so you know. I'll put it in the record.

COMMITTEE MEMBER JONES: So the only thing I would say on this, the "NEV PROHIBITED BEYOND THIS POINT", is just to make it singular because NEV stands for Neighborhood Electric Vehicle or Vehicles and so you don't need the "S" on the NEV.

COMMITTEE CHAIRMAN BAHADORI: And also you support the idea of splitting the signs into two so that you can use them independently?

COMMITTEE MEMBER JONES: Yes, so you could say, "NEVs PROHIBITED" as one sign and then, "BEYOND THIS POINT" as another placard.

COMMITTEE CHAIRMAN BAHADORI: Or it can be for either/or.

COMMITTEE MEMBER JONES: Yeah, so that is my motion.

COMMITTEE CHAIRMAN BAHADORI: There is a motion to

make it the singular NEV, not plural, and also break up the sign into two signs.

COMMITTEE MEMBER CICCARELLI: Second.

COMMITTEE CHAIRMAN BAHADORI: There is a motion and a second. Any discussion?

Seeing none, all those in favor?

(Ayes.)

COMMITTEE CHAIRMAN BAHADORI: Opposition?

The motion passes unanimously.

COMMITTEE MEMBER JONES: So is LA DOT going to get a whole bunch of NEV vehicles now?

(Laughter.)

COMMITTEE CHAIRMAN BAHADORI: Okay. Thank you. We are done with this item.

COMMITTEE MEMBER CICCARELLI: No, we are not.

COMMITTEE CHAIRMAN BAHADORI: One more?

COMMITTEE MEMBER JONES: The "EXCEPT NEV". So the same thing except NEV take out the "s"/BIKE.

COMMITTEE MEMBER CICCARELLI: I'd like to also suggest that the word "NEV/BIKE" be dropped to a second line to be parallel with the new "EXCEPT BIKE" sign. And the new "EXCEPT BIKE" sign is a graphical bike. I don't think this needs to be graphical, I like it the way it is, but I think two lines would be more legible.

COMMITTEE MEMBER JONES: Two lines is fine.

COMMITTEE CHAIRMAN BAHADORI: Yes. So make it two lines and make it singular, both NEV and BIKE. Yes, Mr. Howe.

MR. HOWE: Also another point of clarification. The solidus, that's your word for the day, is the slash, those are typically only used for fractions of miles on guide signs. So, we might use it in our texting or the way we write things out in notes, but the solidus is really not a character to be used in this context. So, I would recommend if you are going to have that it would be a dash not a solidus.

COMMITTEE CHAIRMAN BAHADORI: Okay. You made your comment. Yes, Chris.

COMMITTEE SECRETARY ENGELMANN: The current sign that says, "EXCEPT BICYCLES" uses the bicycle symbol. We don't have a current sign for bikes that says, "EXCEPT BIKES".

MR. HOWE: Actually, we do. If you look on page -- on the 2014 Sign Chart right next to our new "3 FOOT FOR SAFETY LAW" sign, it's on sheet 4 of 14. It say, "EXCEPT" and below it it has the sideways symbol of a bicycle going from right to left.

COMMITTEE SECRETARY ENGELMANN: But we don't have a text version.

MR. HOWE: No we don't.

COMMITTEE SECRETARY ENGELMANN: So that would be a new sign then.

MR. HOWE: Yeah, evidently it would.

COMMITTEE MEMBER JONES: Or we could just say, "EXCEPT NEV" and then have the bike symbol. So we could mix text and symbol.

COMMITTEE CHAIRMAN BAHADORI: That would be really confusing.

COMMITTEE MEMBER CICCARELLI: Question for Don. I understand the current practice is to use a solidus, what is commonly known as a forward slash, to separate elements of a fraction. But is there any perceived by sign wizards, misinterpretation of this if it were also allowed to be used to separate things in the way it's colloquially done in texting? NEV/BIKE, what's the downside?

MR. HOWE: Well, until we start talking signs that say "LOL" and "OMG" I think we should probably the MUTCD. And it does discuss the solidus.

COMMITTEE MEMBER CICCARELLI: Does it really?

MR. HOWE: Yes it does.

COMMITTEE MEMBER CICCARELLI: Okay, thank you.

COMMITTEE CHAIRMAN BAHADORI: Okay, with that comment, (indiscernible) our approval for the signs. Wherever we say --

COMMITTEE MEMBER JONES: Have a dash.

COMMITTEE CHAIRMAN BAHADORI: Wherever it says, slash, change it to a dash. Okay.

So that is the comment, "EXCEPT NEV --"

COMMITTEE MEMBER JONES: Dash.

COMMITTEE CHAIRMAN BAHADORI: Dash BIKE. And under "NEV ROUTE". I am pretty sure Lincoln has them already on.

MR. HOWE: They are considered experimental signs.

COMMITTEE CHAIRMAN BAHADORI: Well, now they can make them official. Okay. Let's make a motion on those two signs also to make it all official. Is there a motion?

COMMITTEE MEMBER JONES: I think the motion is "EXCEPT NEV-BIKE".

COMMITTEE CHAIRMAN BAHADORI: On two lines.

COMMITTEE MEMBER JONES: On two lines. And then we WIll also throw in the next sign, "NEV ROUTE".

COMMITTEE CHAIRMAN BAHADORI: Okay, that is the motion. Is there a second?

COMMITTEE VICE CHAIRMAN GREENWOOD: Second.

COMMITTEE CHAIRMAN BAHADORI: Discussion? Mr. Walter.

COMMITTEE MEMBER WALTER: Would there ever be a time when you would have an exclusive NEV ROUTE versus an NEV-BIKE ROUTE?

COMMITTEE MEMBER JONES: Should we have both?

COMMITTEE MEMBER WALTER: We have, BIKE ROUTE now.
COMMITTEE CHAIRMAN BAHADORI: We have BIKE ROUTE.
COMMITTEE MEMBER WALTER: We have BIKE ROUTE. But I'm wondering if we should combine it, just so you don't end up with, oh, I've got to put two signs on there. Have a combined version, so to speak.
COMMITTEE MEMBER JONES: Well, let's create two signs, one where you can combine them and one where you are not. That is a good point. That way we don't have to come back.
COMMITTEE CHAIRMAN BAHADORI: Okay. So you want to throw in also an additional sign that says, "NEV-BIKE ROUTE"?
COMMITTEE MEMBER JONES: Yes.
COMMITTEE CHAIRMAN BAHADORI: Okay.
COMMITTEE VICE CHAIRMAN GREENWOOD: I'll still second it.
COMMITTEE CHAIRMAN BAHADORI: So that is the motion. And now we are going to be efficient. They are proactive. We are seeing into the future.
COMMITTEE MEMBER JONES: This needs to go in the Caltrans yearly update next year that we are beomg proactive.
(Laughter.)
COMMITTEE CHAIRMAN BAHADORI: We went beyond the

request of the applicant. Okay, so we have the motion is here. Is there a second on that motion?

COMMITTEE MEMBER BROWN: Second.

COMMITTEE CHAIRMAN BAHADORI: The motion is seconded and any discussion?

THE REPORTER: Who is the second?

COMMITTEE MEMBER BROWN: I did.

COMMITTEE CHAIRMAN BAHADORI: Who did the second? Mr. Brown did the second.

Okay, any discussions?

All those in favor say aye.

(Ayes.)

COMMITTEE CHAIRMAN BAHADORI: Opposition?

Tje ,otion passes unanimously. We are officially done with this, thank you.

MR. LIESWYN: Thank you.

MR. VELEZ: So for the purposes of moving on to Caltrans with our NEV Plan. Was the action today, is that, does that completes the review and recommendation?

COMMITTEE CHAIRMAN BAHADORI: Yes. The Committee only recommends to Caltrans. All the Committee recommendations are subject to Caltrans Director approval.

MR. VELEZ: Great.

COMMITTEE CHAIRMAN BAHADORI: So once the Caltrans Director approves then the Caltrans sign design people have

to design the technical --

MR. HOWE: So, it's an automatic. Actually, yeah.

COMMITTEE CHAIRMAN BAHADORI: The process from here on is automatic.

MR. HOWE: Thank you for clarifying that.

COMMITTEE CHAIRMAN BAHADORI: Okay, we are done. Colleagues, it's 1:00. I have three items that are going to last about an hour. What is your pleasure? Do you want to break for lunch and come back or do you want to proceed and finish by 2:00?

COMMITTEE MEMBER CICCARELLI: A quick lunch break.

COMMITTEE CHAIRMAN BAHADORI: There is no such thing as a quick lunch break. It is going to go 45. There is nothing around here. It is going to take 45 minutes to an hour to break. If you want we can break and come back and then finish by about 3:00, 3:30 or we can keep on going and finish by 2:00, 2:30. What is your pleasure?

COMMITTEE MEMBER MARSHALL: I'd rather have a lunch break.

COMMITTEE CHAIRMAN BAHADORI: Let's take a vote. All those in favor of a lunch break raise your hand.

(Show of hands.)

COMMITTEE CHAIRMAN BAHADORI: Okay. Take a lunch break. Let's make it quick? Let's make it 1:30.

(Off the record at 12:57 p.m.)

Riverside County Transportation Commission Meeting

RIVERSIDE COUNTY TRANSPORTATION COMMISSION	
DATE:	September 9, 2015
TO:	Riverside County Transportation Commission
FROM:	John Standiford, Deputy Executive Director
THROUGH:	Anne Mayer, Executive Director
SUBJECT:	Review of Coachella Valley Association of Governments Neighborhood Electric Vehicle Plan

STAFF RECOMMENDATION:

This item is for the Commission to receive and file the Coachella Valley Association of Governments (CVAG) Neighborhood Electric Vehicle (NEV) Plan.

BACKGROUND INFORMATION:

In 2011, the Governor signed Assembly Bill 61, authored by then-Assemblyman Kevin Jeffries. The new law authorized the county of Riverside or other local jurisdictions to establish NEV Plans. NEVs are defined by law as low-speed vehicles capable of a maximum speed of 25 miles per hour. The bill established a number of standards to be met as part of a plan, requires the entity that adopts a plan to submit a report to the Legislature, and to have the plan reviewed by the Commission.

The approval of the legislation provides agencies with a planning option that complies with previous legislation such as Senate Bill 375 and Assembly Bill 32, which strengthen land use policies that reduce greenhouse gas emissions created by single occupancy vehicles. A number of communities in California have adopted NEV Plans to meet these requirements as a way of encouraging sustainable development.

Over the course of a number of months, CVAG launched an effort to develop a NEV Plan for the Coachella Valley, and the draft NEV Plan is attached for Commission review. Commission staff reviewed the plan, which complies with the law and is the product of considerable research and public outreach.

Additionally, staff reviewed the plan to ensure it is consistent with state and local requirements and does not conflict with countywide transportation priorities. In addition to the Commission review, the law requires CVAG to consult with local law enforcement agencies responsible for traffic enforcement within the plan area and a report will need to be filed with the Legislature. The final approval of the plan falls under the jurisdiction of CVAG.

Attachment: Draft NEV Plan Dated March 2015

Agenda Item 8O

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Coachella Valley Association of Governments Public Safety Committee Meeting

Item 7C

Coachella Valley Association of Governments
Public Safety Committee
September 14, 2015

Staff Report

Subject: **Neighborhood Electric Vehicle Plan Review**

Contact: LeGrand Velez, Transportation Program Manager (lvelez@cvag.org)

Recommendation: Discussion

Background: A Neighborhood Electric Vehicle (NEV) Plan has been developed in conjunction with the CV Link Master Plan, in compliance with Assembly Bill (AB) 61. According to this legislation several reviews of the NEV Plan are required. These include review by California Traffic Control Devices Committee (CTCDC), the Riverside County Transportation Commission (RCTC), and "any agency having traffic law enforcement responsibilities in an entity included in the plan area." The CTCDC reviewed and approved the plan at their meeting on March 5, 2015. RCTC staff reviewed the NEV Plan to ensure that it is consistent with state and local requirements and does not conflict with countywide transportation priorities. The Commission confirmed this review at their meeting on September 9, 2015. The NEV Plan is now being submitted to the CVAG Public Safety Committee for review and feedback to comply with the required law enforcement agency review.

The NEV Plan is available for review on the CVAG website, and specifically at the following link: http://www.cvag.org/library/pdf_files/trans/CV%20Link%20Docs/CVAG_NEV_Plan_March_2015.pdf. Regulatory, enforcement and public education issues and recommendations are discussed in Section 6 of the NEV Plan.

Attached are the NEV Network Concept Maps for each jurisdiction on pages 39-46 of the plan. Desert Hot Springs is not included because it is not part of the first phase (core) CV Link project. Staff from seven cities were consulted regarding the development of the NEV networks. (The CVAG consultant team was unable to schedule a meeting with staff from Indian Wells.) These concept maps are to be adopted and implemented at the discretion of the local jurisdictions.

:attachment

Coachella Valley Association of Governments Public Safety Committee Meeting Minutes

Item 6A

Coachella Valley Association of Governments
PUBLIC SAFETY COMMITTEE
Meeting Minutes of September 14, 2015

CVAG

The audio file for this committee meeting can be found online at: http://www.cvag.org/minutes.htm

1. **CALL TO ORDER**

The Coachella Valley Association of Governments (CVAG) Public Safety Committee meeting was called to order on Monday, September 14, 2015 at 9:00 a.m. by Vice-Chair Betty Sanchez, Councilmember, City of Coachella, at CVAG offices, 73-710 Fred Waring Drive, Conference Room 119, Palm Desert, California 92260-2516.

2. **ROLL CALL**

Following roll call it was determined that a quorum was present.

MEMBERS PRESENT	AGENCY
Councilmember Ted Mertens	City of Indian Wells
Councilmember Jan Pye	City of Desert Hot Springs
Councilmember Lee Osborne	City of La Quinta
Mayor Pro Tem Bob Spiegel	City of Palm Desert
Councilmember Ted Weill	City of Rancho Mirage
Sheriff Stan Sniff	County of Riverside
Councilmember Betty Sanchez **(Vice-Chair)**	City of Coachella
Councilmember Mark Carnevale	City of Cathedral City
Councilmember Mike Wilson	City of Indio

EX-OFFICIO MEMBERS PRESENT	
Richard Twiss, Police Chief	Indio Police Department
Sue Trevino, Captain	Riverside County Sheriff – PD, RM & IW
Dorian Cooley, Deputy Fire Chief	Riverside County Fire Department
Michael Hestrin. DA	Riverside County District Attorney
Andrew Shouse, Captain	Riverside County Sheriff – Coachella/LQ
Laura Quattlebaum, Captain	California Highway Patrol
Steve Foristel, Division Director	Riverside County Probation
Al Franz, Chief	Palm Springs Police Department
Kevin Nadler, Fire Chief	Palm Springs Fire Department
Dale Mondary, Chief	Desert Hot Springs Police Department
Scott Garrett, Patrol Agent In-Charge	U.S. Border Patrol-Indio Station

MEMBERS AND EX-OFFICIOS NOT PRESENT	
Margaret Muhr	Agua Caliente Band of Cahuilla Indians
Chief George Crum	Cathedral City Police Department
Chief Paul Wilson	Cathedral City Fire Department
Mayor Pro Tem Paul Lewin	City of Palm Springs

OTHERS PRESENT	
Sue Steading, ADA	Riverside County District Attorney's Office
Jay K. Keil, DDA	Riverside County District Attorney's Office
Blake Goetz, Interim Chief	Palm Springs Fire Department

CVAG STAFF PRESENT
Tom Kirk, Executive Director — Cheryll Dahlin, Management Analyst
Erica Felci, Gov. Programs Manager

3. **PLEDGE OF ALLEGIANCE**

Councilmember Betty Sanchez led the Pledge of Allegiance.

4. **PUBLIC COMMENTS**

Michael Harrington spoke about the Human Trafficking Resolution.

Joyce Virtue gave spoke about the CV Link.

5. **COMMITTEE MEMBER/DIRECTOR COMMENTS**

None.

6. **CONSENT CALENDAR**

IT WAS MOVED BY MEMBER WILSON AND SECONDED BY MEMBER SPIEGELTO:

A. APPROVE MINUTES FOR JUNE 8, 2015

B. RECEIVE AND FILE

1. PROCLAMATION OF NATIONAL FIRE PREVENTION WEEK

2. CV LINK OPERATIONS AND MAINTENANCE WORKSHOPS UPDATE

3. COMMITTEE ATTENDANCE REPORT

THE MOTION CARRIED WITH 9 AYES AND 1 ABSENT

COUNCILMEMBER CARNEVALE	**AYE**
COUNCILMEMBER SANCHEZ	**AYE**
COUNCILMEMBER PYE	**AYE**
COUNCILMEMBER MERTENS	**AYE**
COUNCILMEMBER WILSON	**AYE**
COUNCILMEMBER OSBORNE	**AYE**
MAYOR PRO TEM SPIEGEL	**AYE**
PALM SPRINGS	**ABSENT**
COUNCILMEMBER WEILL	**AYE**
SHERIFF STAN SNIFF	**AYE**

7. **DISCUSSION/ACTION ITEMS**

A. California State Legislative Update: SB 167 (Gaines and Jackson) Drones—Assemblyman Chad Mayes

Assemblyman Chad Mayes, 42nd District, is a co-author on SB 167 that will keep drones out of fire zones. He gave an update on the bill and a summary of the last week of the legislative session.

B. Medical Marijuana Dispensary and Cultivation Laws Presentation— Deputy District Attorney Jay K. Kiel, Riverside County District Attorney's Office, Major Narcotics Vertical Prosecution

Deputy District Attorney Jay K. Kiel gave a PowerPoint presentation on Medical Marijuana Laws.

C. Neighborhood Electric Vehicle (NEV) Plan Review—LeGrand Velez

John Lieswyn, Alta Planning, gave a NEV Plan overview presentation, focusing on issues of interest to public safety. Feedback was taken by CVAG staff from the committee.

8. **EX-OFFICIO MEMBER UPDATES**

A. **FIRE CHIEFS-**

Deputy Fire Chief Dorian Cooley gave an update on current fires in the state and status of local stations.

The new Palm Springs Fire Chief J. Kevin Nadler introduced himself to the committee.

B. **CALIFORNIA HIGHWAY PATROL-**

Captain Quattlebaum announced the Tex Wash Bridge opening at the end of September and reported no incidents due the construction of the bridge.

C. **BORDER PATROL-**

Patrol Agent in Charge Scott Garrett, Indio Station introduced himself to the committee.

D. **DISTRICT ATTORNEY'S OFFICE-**

District Attorney Hestrin updated on continuing pitfalls AB 109 and Proposition 47. There was a recent incident where an inmate was able to post bail, once released the inmate shot a woman and it paralyzed her.

E. **COUNTY PROBATION DEPARTMENT- Update on AB 109-**

Steve Foristel gave an update from probation.

F. **SHERIFF/POLICE CHIEFS-**

Chief Twiss updated the committee on a meeting he had recently with fellow public safety officials and officials at General Patton State Hospital.

Chief Dale Mondary, City of Desert Hot Springs, introduced himself to the committee

8. **INFORMATIONAL/ANNOUNCEMENTS**

A. **Upcoming Meetings at CVAG, 73-710 Fred Waring Drive, Palm Desert:**

Public Safety Committee - Monday, November 9, 2015, at 9:00 a.m., Conference Room 119

Executive Committee - Monday, September 28, 2015 at 4:30 p.m., Conference Room 119

There being no further business the meeting was adjourned at 10:09 a.m.

Respectfully submitted,
Cheryll Dahlin
Management Analyst

The audio file for this committee meeting can be found online at: http://www.cvag.org/minutes.htm

Appendix G. Caltrans Letter of Concurrence

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 8
PLANNING (MS 722)
464 WEST 4th STREET, 6th FLOOR
SAN BERNARDINO, CA 92401-1400
PHONE (909) 383-4557
TTY 711
www.dot.ca.gov/dist8

Serious Drought.
Help save water!

October 23, 2015

Coachella Valley Association of Governments
Mr. Tom Kirk
Executive Director
73-700 Fred Waring Drive
Palm Desert, CA 92260

Dear Mr. Kirk:

CVAG Neighborhood Electric Vehicle Plan

The California Department of Transportation (Caltrans) has been asked to provide letter of concurrence for Coachella Valley Association of Governments Neighborhood Electric Vehicle Plan (CVAG NEV Plan) per California Assembly Bill no.61, Chapter 170, 2011.

As the owner and operator of the State Highway System (SHS), it is our responsibility to coordinate and consult with local jurisdictions when proposals may impact our facilities. CVAG NEV Plan will cross some sections of Interstate 10, State Route 86 and State Route 111 within certain jurisdictions of the Coachella Valley. Caltrans and CVAG will work together to reduce any impacts that may occur along the routes.

We have no other concerns relative to the approval of the CVAG NEV Plan.

Sincerely,

MARK ROBERTS
Office Chief
Community and Regional Planning

c: LeGrand Velez, CVAG Transportation Program Manager
Haissam Yahya, Office Chief/Operations-Region B

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"