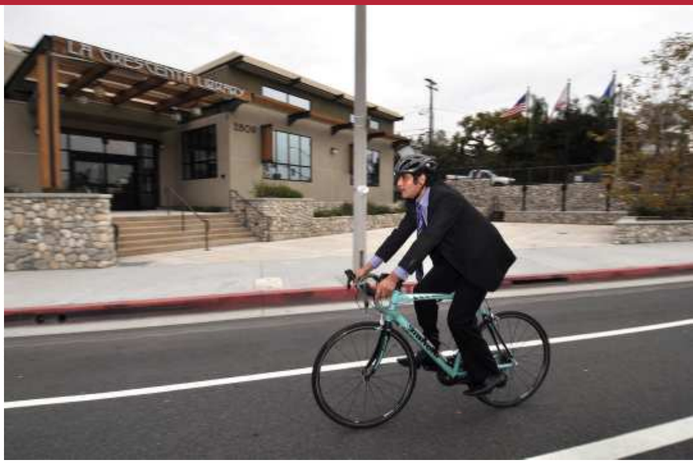
PREPARED BY:
Alta Planning + Design
PREPARED FOR:
County of Los Angeles Public Works

County of Los Angeles

Bicycle Master Plan

Final Plan - March 2012



County of Los Angeles Bicycle Master Plan

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Executive Summary

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Every time I see an adult on a bicycle, I no longer despair for the future of the human race.

- H. G. Wells

The County of Los Angeles Bicycle Master Plan (Plan) proposes a vision for a diverse regional bicycle system of interconnected bicycle corridors, support facilities, and programs to make bicycling more practical and desirable to a broader range of people in the County. The Plan is intended to guide the development and maintenance of a comprehensive bicycle network and set of programs throughout the unincorporated communities of the County of Los Angeles for 20 years (2012 to 2032). The implementation of this Plan will start upon adoption by the Board of Supervisors. The success of the Plan relies on the continued support from all County Departments, the Board of Supervisors, the bicycling public, and advocates throughout the County who recognize the benefits of cycling in their community. The implementation of the network and the programs and policies outlined in the Plan will not be possible without availability of significant and sustained funding levels from grants as well as dedicated funding sources available to the County.

The Plan is an update to the 1975 County Bikeway Plan. The Plan provides direction for improving mobility of bicyclists and encouraging more bicycle ridership within the County by expanding the existing bikeway network, connecting gaps, addressing constrained areas, providing for greater local and regional connectivity, and encouraging more residents to bicycle more often. This Plan is a sub-element of the Transportation Element of the Los Angeles County General Plan. The General Plan is the long-range policy document that guides growth and development in the unincorporated County. The County's General Plan[1] is currently being revised and updated. Once the County's General Plan Update is adopted, this Plan will become a component of the Mobility Element of the County's General Plan. This Plan addresses the guiding principles, goals and policies of the General Plan as it plans for a more bicycle-friendly county that reduces traffic congestion and its carbon footprint, and provides improved opportunities for bicycling and active transportation.

Purpose of the Bicycle Master Plan

The Plan is an update to the 1975 County Bikeway Plan. The Plan provides direction for improving mobility of bicyclists and encouraging more bicycle ridership within the County by expanding the existing bikeway network, connecting gaps, addressing constrained areas, providing for greater local and regional connectivity, and encouraging more residents to bicycle more often.

The Plan complies with Streets and Highways Code Section 891.2, making the County eligible for Bicycle Transportation Account (BTA) funds. The BTA is an annual program that provides state funds for city and county projects that improve safety and convenience for bicycle commuters. **Appendix A** presents the County of Los Angeles Bicycle Master Plan BTA Checklist.

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[1] *A draft of the 2035 General Plan is available at: http://planning.lacounty.gov/generalplan.*

Public Participation

Community involvement was vital to the development of the Plan. The Plan team held three rounds of public workshops to present to the public the Plan's findings and recommendations and to receive public feedback. A total of 32 public workshops were conducted.

The Plan team performed extensive outreach, including:

- Electronic mail blasts to stakeholders, including all 88 cities in Los Angeles County.
- Posting notices on the project website.
- Producing a meeting flyer in English and Spanish.
- Creating and distributing a press release.
- Mailing comment cards to local bike shops, libraries, and parks and recreation facilities.
- Discussing the Plan at Town Council meetings in unincorporated areas and at meetings held by the County of Los Angeles Department of Regional Planning for community specific plans.
- Distributing postcards at “Bike to Work Week” events throughout the County sponsored by the Los Angeles County Metropolitan Transportation Authority (LACMTA).
- Posting public service announcements on County websites, Bus Shelters in unincorporated areas, and on buses and shuttles that operate within or near unincorporated areas.
- Retaining the Los Angeles County Bicycle Coalition (LACBC) to assist with the outreach and to encourage attendance at the workshops. LACBC issued a press release to news media, radio and television; they worked with various entities to coordinate the posting of workshop information on these entities’ websites; and sent electronic mail blasts to their members/subscribers.

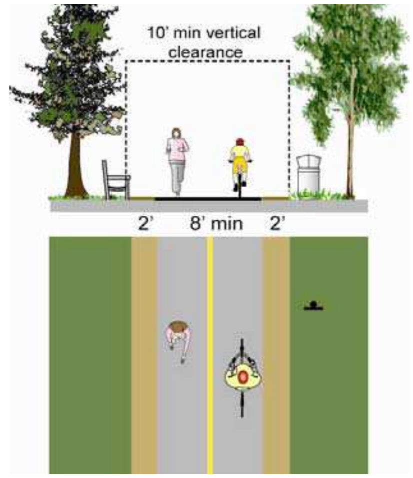
To improve connectivity between the Plan’s recommendations and the existing and planned bikeways in other jurisdictions, the County kept the cities throughout Los Angeles County aware of the status of the Plan via electronic mail blasts. The cities were invited to review and comment on the Plan, as well as to attend the public workshops. Although not every city responded, representatives from numerous cities attended the public workshops and submitted comments on the Plan.

Bikeway Facilities Types

Bikeway Description	Example Graphic

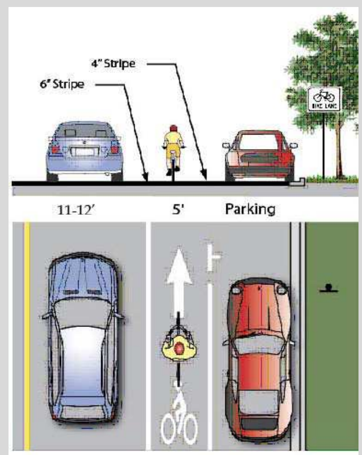
Class I - Bicycle Path

Bike paths, also called shared-use paths or multi-use paths, are paved right-of-way for exclusive use by bicyclists, pedestrians, and other non-motorized modes of travel. They are physically separated from vehicular traffic and can be constructed in roadway right-of-way or exclusive right-of-way. Most of Los Angeles County bicycle paths are located along the creek and river channels, and along the beach. These facilities are often used for recreation but also can provide important transportation connections.



Class II - Bicycle Lane

Bike lanes are defined by pavement striping and signage used to allocate a portion of a roadway for exclusive bicycle travel. Bike lanes are one-way facilities on either side of a roadway. Bike lanes are located adjacent to a curb where no on-street parking exists. Where on-street parking is present, bike lanes are striped to the left side of the parking lane.



Class III - Bicycle Route

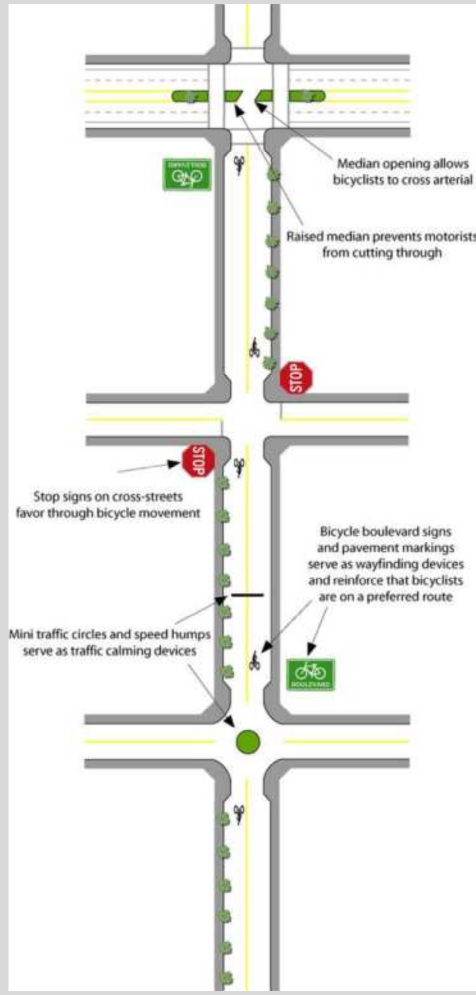
Bike routes provide shared use with motor vehicle traffic within the same travel lane. Designated by signs, bike routes provide continuity to other bike facilities or designate preferred routes through corridors with high demand.

Bikeway Facilities Types (continued)

Bikeway Description	Example Graphic

Bicycle Boulevards

Bicycle boulevards are local roads or residential streets that have been enhanced with signage, traffic calming, and other treatments to prioritize bicycle travel. Bicycle boulevards are typically found on low-traffic / low-volume streets that can accommodate bicyclists and motorists in the same travel lanes, without specific bicycle lane delineation. The treatments applied to create a bicycle boulevard heighten motorists' awareness of bicyclists and slow vehicle traffic, making the boulevard more conducive to safe bicycle (and pedestrian) activity. Bicycle boulevard treatments shall include signage, pavement markings, and traffic calming features, such as intersection treatments, or traffic diversions. The specific treatments employed for a bicycle boulevard will be determined during project implementation based on input received from the public. **Bicycle boulevards are not defined as a specific bikeway type by Caltrans; however, the basic design features of bicycle boulevards comply with Caltrans standards.**



In addition to these standard designs, the Plan includes innovative bicycle treatments such as colored bicycle lanes, raised bicycle lanes, buffered bicycle lanes, cycletracks, and bicycle boxes. While these treatments do not have approved design standards at this time, the County will incorporate them into the Plan's toolbox of treatments as their uniform designs and standards are approved by the State of California Department of Transportation (Caltrans). Caltrans and the Federal Highway Administration allow for the experimental implementation of such treatments. The County promotes the use of these innovative treatments and will apply for and implement experimental projects utilizing them where cost effective and where such projects enhance the safety of bicycles, pedestrians, and motorists.

Summary of Recommendations

The Plan proposes to build on the existing 144 miles of bikeways throughout the County, and install approximately 831 miles of new bikeways in the next 20 years. Along with the proposed bikeway network, the Plan outlines a range of recommendations to facilitate accomplishing the regional goals of increasing the number of people who bike and the frequency of bicycle trips for all purposes. This will be accomplished by encouraging the development of Complete Streets,[2] improving safety for bicyclists, and increasing public awareness and support for bicycling in the County of Los Angeles. The recommendations include bicycle infrastructure improvements, bicycle-related programs, implementation strategies, and policy and design guidelines for the unincorporated communities of the County of Los Angeles and where the County owns property or has jurisdictional control, such as along flood control facilities.

Table i-1 summarizes the mileage of existing bikeway facilities and the mileage and cost for bikeway facilities proposed by this Bicycle Master Plan within each of the ten Planning Areas.[3] **Figures i-1 and i-2** illustrate the percentage of each type of bicycle facility recommended and its respective cost. **Figure i-3 and Figures i-4** depict the proposed bicycle network for the eastern and western portions of the County, respectively.

Table i-1: Summary of Existing and Recommended Bikeway Facilities

	Existing Facilities			Proposed Facilities			
Planning Area	Class I	Class II	Class III	Class I	Class II	Class III	Bicycle Blvd
Antelope Valley	3.2	3.8	0.2	---	95.9	134.8	---
East San Gabriel Valley	7.5	7.6	9.4	25.2	31.0	30.6	4.3
Gateway	45.4	1.0	9.7	5.7	23.1	12.0	---
Metro	---	2.3	---	0.7	48.1	26.9	12.4
San Fernando Valley	---	1.5	---	2.2	1.7	7.5	--
Santa Clarita Valley	---	2.4	0.9	16.5	33.4	108.5	--
Santa Monica Mountains	---	0.5	---	---	1.8	93.8	--
South Bay	9.4	1.1	---	9.2	14.8	9.6	0.9
West San Gabriel	23.3	---	2.6	9.1	17.1	34.3	5.2
Westside	11.5	---	0.7	2.6	6.9	5.6	--
Total Mileage	**100.3**	**20.2**	**23.5**	**71.2**	**273.8**	**463.6**	**22.8**
Total Cost	**---**	**---**	**---**	**$76.1M**	**$119.5M**	**$134.4M**	**$0.69M**

[2] *Complete streets are designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists, and public transportation users of all ages and abilities are able to safely move along and across a complete street. – www.completestreets.org*

[3] *The Plan is organized by the eleven Planning Area boundaries used for the County General Plan, with the exception of the Coastal Islands planning area, which contains no County-maintained roadways.*

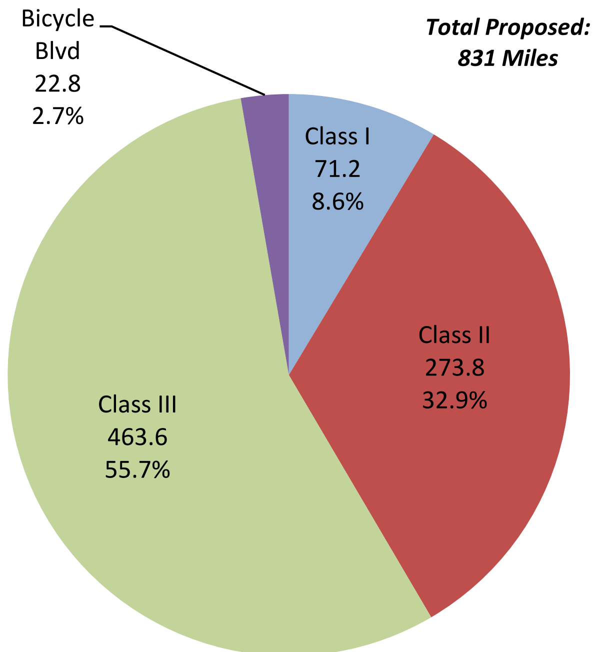


Figure i-1: Total Miles of Proposed Bikeway Facilities

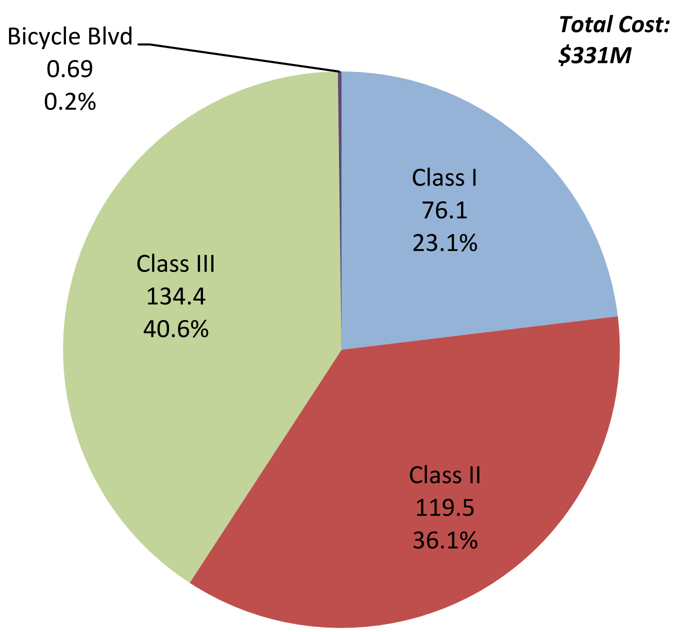


Figure i-2: Estimated Cost of Proposed Bikeway Facilities

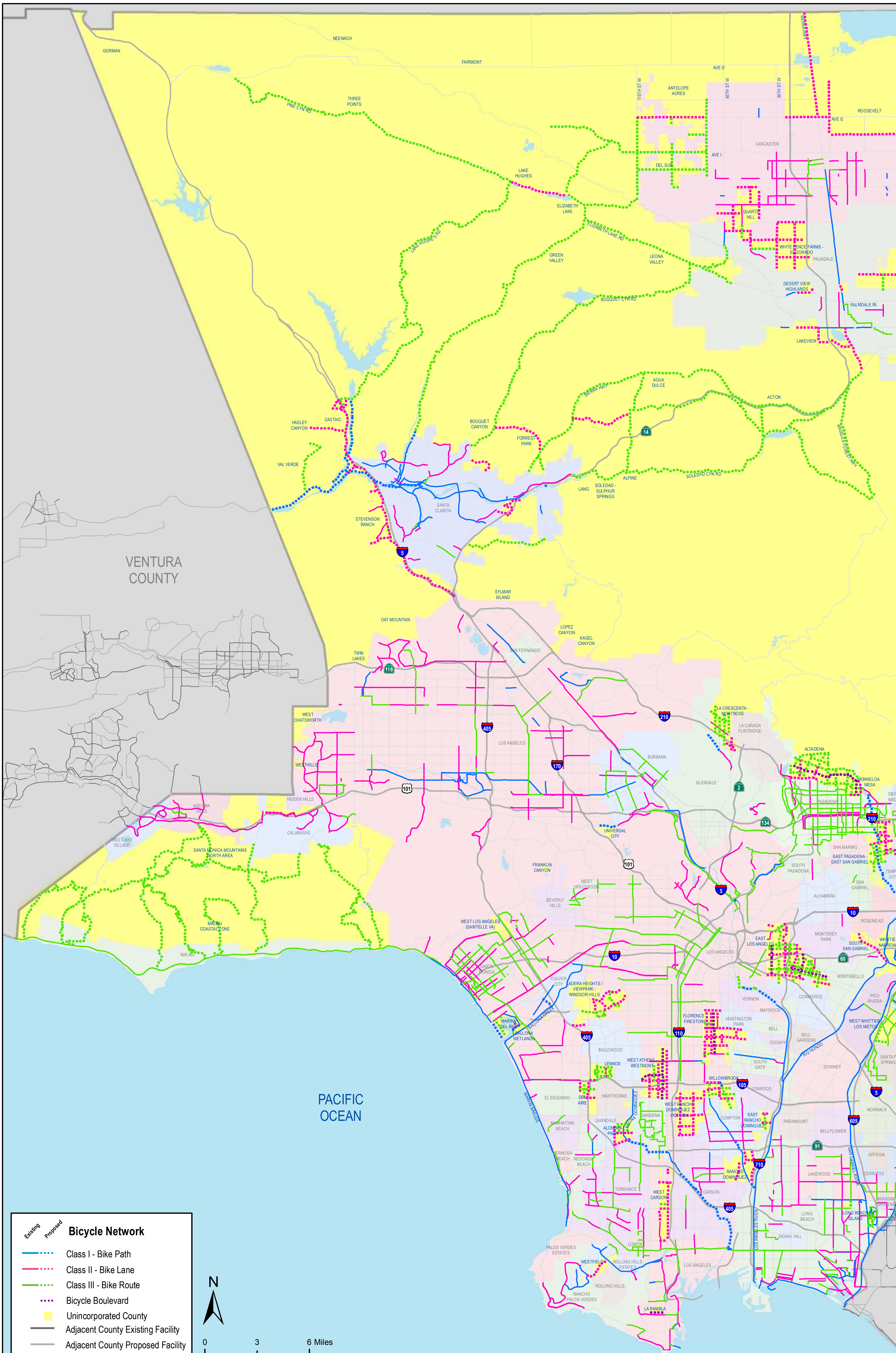


Figure i-3: Western Los Angeles County Propsed Bicycle Network

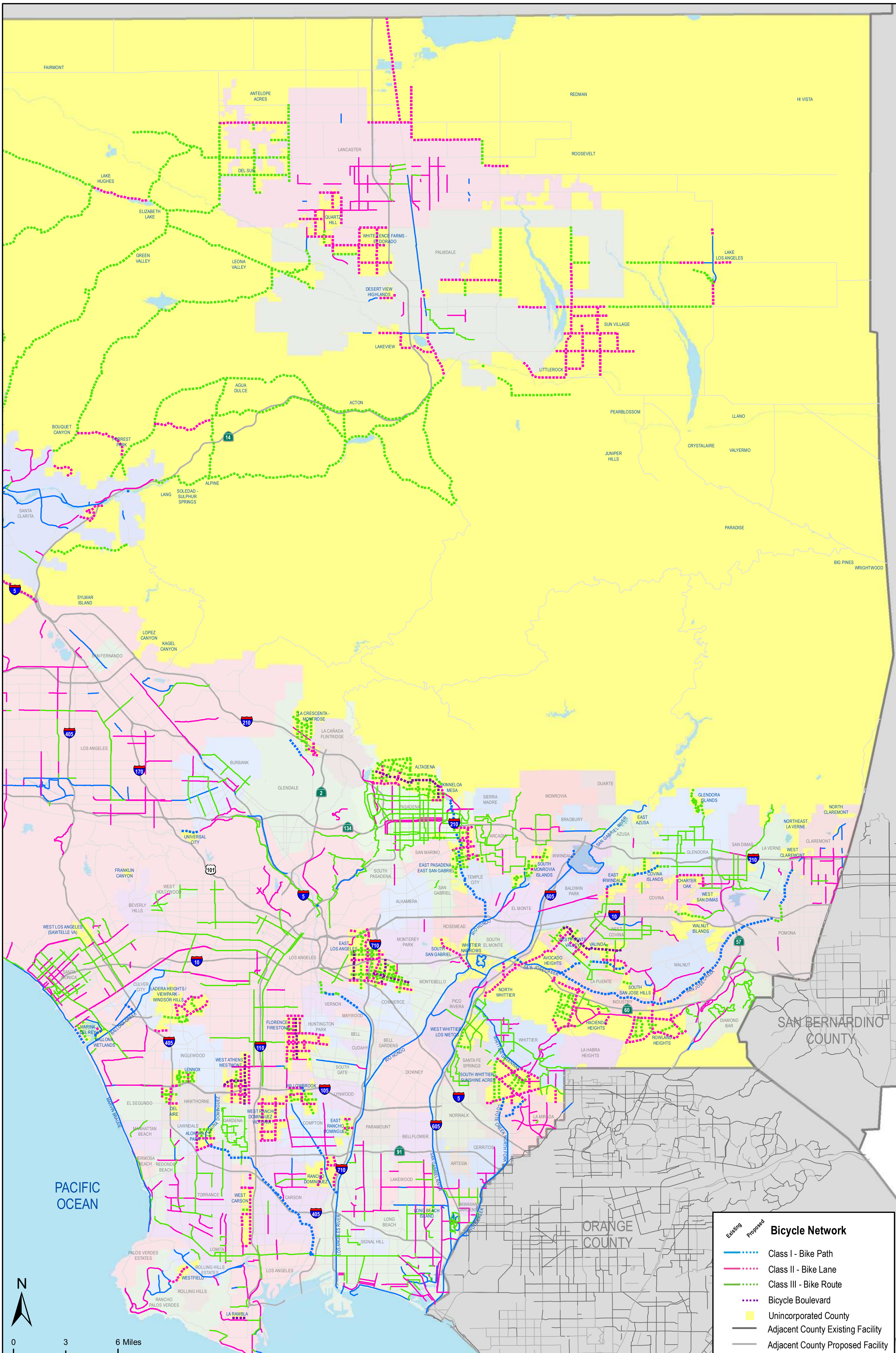


Figure i-4: Eastern Los Angeles County Proposed Bicycle Network

Plan at a Glance

The Plan includes five chapters and eleven appendices. A supplemental atlas of maps of the existing and proposed bikeway network was also made available on the Plan website for ease of reference. The following is a brief orientation to the chapters and the appendices in the Plan.

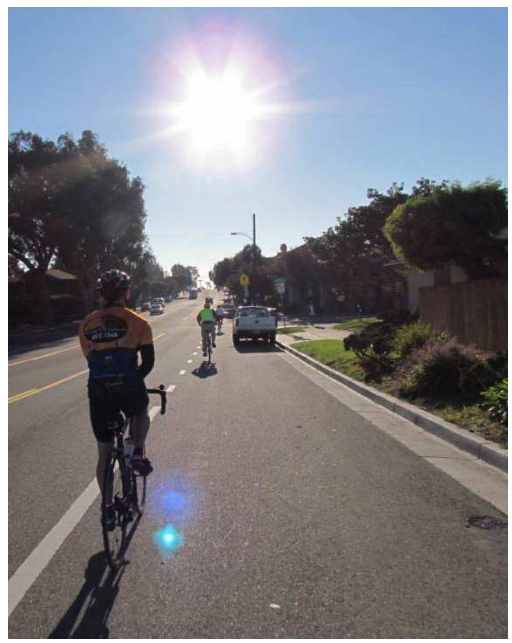
Chapter 1: Introduction

This chapter introduces the purpose of creating a Bicycle Master Plan for the County of Los Angeles, and how the community has been involved in the planning process. It also presents the benefits of bicycling, describing how a bicycle-friendly County will contribute to resolving general complex issues that affect the quality of life of its residents.

Chapter 2: Goals, Policies, and Implementation Actions

This chapter includes the Goals, Policies, and Implementation Actions necessary to implement the Plan. The overarching goal of the Plan is to increase bicycling throughout the County of Los Angeles through the development and implementation of bicycle-friendly policies, programs, and infrastructure. To achieve this, the Plan identified the following goals:

- **Goal 1 - Bikeway System:** Expanded, improved, and interconnected system of County bikeways and bikeway support facilities.
- **Goal 2 - Safety:** Increased safety of roadways for all users.
- **Goal 3 - Education**: Develop education programs that promote safe bicycling.
- **Goal 4 - Encouragement Programs**: Encourage County residents to walk or ride a bike for transportation and recreation.
- **Goal 5 - Community Support**: Community supported bicycle network.
- **Goal 6 - Funding**: Funded Bikeway Plan.



Investing in bicycle-friendly communities can have a profound influence on the quality of life of County Residents.

Chapter 3: Existing Conditions and Proposed Network

This chapter discusses the existing conditions and proposed bikeway network for the ten Planning Areas in the County.

Existing Conditions

Representing about 11% of the County's total population, the unincorporated areas include more than one million residents living in approximately 300,000 households.

The unincorporated areas of the County of Los Angeles comprise 2,656.6 square miles of Los Angeles County's 4,083.2 square miles, equivalent to approximately 65% of the County's total land area. These unincorporated areas are climatically and ecologically diverse. The majority of unincorporated County land is located in the northern part of the county and includes expansive open space. The unincorporated areas of the County consist of 124 separate, non-contiguous land areas. These areas in the northern part of the County are covered by large amounts of sparsely populated land and include the Angeles and Los Padres National Forests, and the Mojave Desert. The unincorporated areas of the southern portion of the County consist of 58 communities, located among the other urban incorporated cities in the county, and are often referred to as the County's unincorporated urban islands. The County's southwestern boundary consists of 70 miles of Pacific Ocean coastline and encompasses two islands, Santa Catalina and San Clemente.

Proposed Network

The Plan recommends approximately **831 miles** of bikeway facilities at a proposed cost of **$331 million** to construct. The network selection process included extensive public outreach and on-going consultation with County staff through monthly meetings with the Technical Advisory Committee, comprised of the County of Los Angeles Departments of Beaches and Harbors, Parks and Recreation, Public Health, Public Works, and Regional Planning. The Plan team received monthly consultation with the Bicycle Advisory Committee (BAC), comprised of two representatives from each Supervisorial District, and one representative for Caltrans and LACMTA, respectively.

Chapter 4: Education, Enforcement, Encouragement and Evaluation Programs

This chapter describes bicycle-related programs that are essential facets of the overall bicycle system envisioned for the County of Los Angeles. These include education, encouragement, enforcement and evaluation programs.

Education

The Plan proposes bicycle education programs that target both youth and adults such as Community Bicycle Education Courses, Youth Bicycle Safety Education, Bicycle Rodeos, and Public Awareness Campaigns for motorists, bicyclists and others.

Enforcement

The Plan recognizes that traffic enforcement is a necessity to improve conditions for all roadway users. The recommended enforcement programs include Bicycle Patrol Unit and Bicycle Light Enforcement.

Encouragement

The Plan recognizes that encouragement programs may likely play the biggest part in improving Bicycle Ridership in the County. The Plan recommends a variety of encouragement programs for youth and adults, such as Suggested Routes to School, Family Biking Programs, Bicycling Maps, Valet Bike Parking at Events, Bike to Work Week/Month, Launch Party for New Bikeways, Bike and Hike to Park programs, Bicycle Sharing programs and local partnerships for more bicycle parking.

Evaluation

establish a bicycle biennial count program, and to provide annual progress reports on the progress of implementing this Bicycle Master Plan.

Chapter 5: Funding and Implementation

Funding

An overview of potential funding sources for proposed projects and programs, and planning level cost estimates are presented in **Chapter 5**. The implementation of the network and the programs and policies outlined in the Plan will not be possible without availability of significant and sustained funding levels from grants as well as dedicated funding sources available to the County. The County is committed to a balanced approach in assigning its available funding to streets and roads, bikeways, and pedestrian projects commensurate with their needs.

Implementation

The Plan provides a long-term vision for the development of a region-wide bicycle network that can be used by all residents for all types of trips. Implementation of the Plan will take place incrementally over many years; and while the Plan is intended to guide bicycling in the County for the next 20 years. The County will review and update the Plan every five years (See **Policy 1.5, Chapter 2**). County staff will review the list of projects on a regular basis, add new projects, remove completed projects, and revise priorities as conditions changes. These changes will be reflected in future updates to the Plan.

The County will evaluate the effectiveness of the Bike Plan Implementation every two years (See **IA 1.5.1, Chapter 2**). Suggested measurements to measure the County's progress toward implementing the Plan and its effectiveness are provided in **Table 5-1** of Chapter 5. These suggested measurements include measurement of bicycle mode share; public attitudes about biking; number of miles of bikeways; proportion of arterial streets with bike lanes; independent recognition of non-motorized transportation planning efforts; as well as a measured reduction in collisions involving bicyclists.

Appendices

Appendix A: Bicycle Transportation Account Checklist

Appendix A presents the County of Los Angeles Bicycle Master Plan BTA Checklist. The Plan complies with Streets and Highways Code Section 891.2, making the County eligible for Bicycle Transportation Account (BTA) funds.

Appendix B: Ridership and Air Quality Benefits

Appendix B presents the benefits of bicycling in relation to environmental/climate change, reduction in obesity and other public health issues, as well as improvements in local and regional economies, and quality of life and safety in the community.

Appendix C: Relationship to Existing Plans and Policies

Appendix C lists the existing plans and policies of the State of California, Los Angeles County and other local agencies that were reviewed during development of the Plan. The Plan was developed to be consistent with these policies and plans to the greatest extent possible.

Appendix D: Existing Land Uses

Appendix D includes maps depicting the existing land use, including locations of residential neighborhoods, schools, shopping centers public buildings, and major employment centers for all ten Planning Areas.

Appendix E: End of Trip Facilities

End of trip facilities, such as short term and long term bicycle parking, showers and changing facilities for employees are essential components of a bicycle network. **Appendix E** provides recommendations for bicycle parking at key locations in unincorporated communities within the unincorporated County. In addition, as per Policy 1.6, in Chapter 2, the County is committed to establish a bicycle parking policy by 2013.

Appendix F: Design Guidelines

Bicyclists have legal access to all county streets. While this Plan identifies a specific subset of streets to be designated as bikeways, many bicyclists will need to use other streets to reach their destinations. Therefore, it is important that all roadways be designed to accommodate bicyclists.

The County will continue to implement on- and off-street projects to encourage walking and bicycling, to improve safety and accessibility, and to enhance the quality of the walkway and bikeway networks so that these activities become integral parts of daily life. **Appendix F** provides a range of design options for bicycle treatments and key principles to guide the development of future County bikeway facilities.

The guidelines provide a toolbox of ideas that can be implemented in the County, but do not reflect treatments that will be used for any specific project. California State law requires that the State adopt uniform standards, and that local agencies conform to those standards. The guidelines include those standards currently prescribed by the Caltrans Highway Design Manual and/or the California Manual of Uniform Traffic Control Devices are described in the Plan. In addition to these standard designs, the Plan includes innovative bicycle treatments such as colored bicycle lanes, raised bicycle lanes, buffered bicycle lanes, cycletracks, and bicycle boxes. While these treatments do not have approved design standards at this time, the County will incorporate them into the Plan's toolbox of treatments as their uniform designs and standards are approved by the State of California Department of Transportation (Caltrans).

Appendix G: Street Plan Analysis

Appendix G describes Alta Planning + Design's 'Street Plan' model used for determining the suitability of all roadways studied for the proposed bikeway network. The StreetPlan model is a method to determine how an existing roadway cross section can be modified to include bike lanes. Assuming acceptable minimum widths for each roadway element, the model analyzes a number of factors to determine strategies to retrofit bike lanes on each surveyed roadway segment. Options for retrofitting bike lanes given the physical curb-to-curb roadway constraints are also described in the appendix.

Appendix H: Engineering Unit Cost Estimates

Appendix H outlines the estimated unit costs used for various recommendations included in the Plan, which were used to determine the estimated total cost of $331.0 million to implement the bicycle network proposed in the Plan.

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Appendix I: Prioritization and Phasing Plan

Appendix I describes the three phases for implementing the proposed bikeway network, and the prioritization strategy used for determining the phase for each project.

Prioritization Strategy

Sixteen different criteria were used to assign prioritization scoring. The criteria fell under two main category themes: Utility and Implementation. The first category, Utility Criteria, considered a project's usefulness toward enhancing the current bicycle network and providing service to key land uses. The second category, Implementation Criteria, considered prioritizing those projects with fewer implementation obstacles.

Phasing Plan

The Plan will be implemented in the following three phases:

Phase I: Projects listed are anticipated to be implemented within the first five-year period following adoption of the Plan (2012-2017).

Phase II:Projects listed are anticipated to be implemented within the ten-year period following Phase I (2017-2027).

Phase III: Projects listed are anticipated to be implemented within the final five-year period of the term of the Plan (2027-2032).

The phasing plan for the non-infrastructure programs are briefly discussed in Chapter 5. Phasing of the bicycle network primarily takes into consideration the overall prioritization score for each project and the anticipated available funding. However, projects in which funding has already been allocated, or that are expected to be implemented in conjunction with County road reconstruction and/or rehabilitation projects may be shown in an earlier phase, regardless of their prioritization score

Appendix J: Facilities Removed

Those segments of the proposed network that were removed from the Plan, either due to their feasibility or because they are outside of the County's jurisdiction, are documented in **Appendix J**.

Appendix K: Acronyms

Appendix K provides a list of acronyms used in the Plan and their corresponding meaning.

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1. Introduction

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The County of Los Angeles Bicycle Master Plan (Plan) proposes a vision for a diverse regional bicycle system of interconnected bicycle corridors, support facilities, and programs to make bicycling more practical and desirable to a broader range of people in the County. The Plan is intended to guide the development and maintenance of a comprehensive bicycle network and set of programs throughout the unincorporated communities of the County of Los Angeles for 20 years (2012 to 2032). The implementation of this Plan will start upon adoption by the Board of Supervisors. The success of the Plan relies on the continued support from all County Departments, the Board of Supervisors, the bicycling public, and advocates throughout the County who recognize the benefits of cycling in their community. The implementation of the network and the programs and policies outlined in the Plan will not be possible without availability of significant and sustained funding levels from grants as well as dedicated funding sources available to the County.

The Plan is an update to the 1975 County Bikeway Plan. The Plan provides direction for improving mobility of bicyclists and encouraging more bicycle ridership within the County by expanding the existing bikeway network, connecting gaps, addressing constrained areas, providing for greater local and regional connectivity, and encouraging more residents to bicycle more often. This Plan is a sub-element of the Transportation Element of the Los Angeles County General Plan. The General Plan is the long-range policy document that guides growth and development in the unincorporated County. The County's General Plan[4] is currently being revised and updated. Once the County's General Plan Update is adopted, this Plan will become a component of the Mobility Element of the County's General Plan. This Plan addresses the guiding principles, goals and policies of the General Plan as it plans for a more bicycle-friendly county that reduces traffic congestion and carbon footprint, and provides improved opportunities for bicycling and active transportation.

The Plan proposes to build off the existing 144 miles of bikeways throughout the County, and install approximately 831 miles of new bikeways in the next 20 years. The 831 miles of proposed bikeways consist of approximately 71 miles Class I bike paths, approximately 274 miles Class II bike lanes, and approximately 463 miles of Class III bike routes, as defined/described in Chapter 1000 of the Caltrans Highway Design Manual. The Plan also proposes a network of 23 miles of bicycle boulevards, which are facilities that prioritize bicycle travel on low-traffic, low-volume streets and are intended to provide greater safety and comfort to bicyclists. An introduction to the different types of facilities is provided in **Chapter 3: Table 3-1**, which are discussed in detail in the Design Guidelines presented in **Appendix F: Figures 1-1 and 1-2** illustrate the portions of the total miles and estimated cost of the recommended bikeway network by facility type.

Along with the proposed bikeway network, the Plan outlines a range of recommendations to facilitate accomplishing the regional goals of increasing the number of people who bike and the frequency of bicycle trips for all purposes. This will be accomplished by encouraging the development of Complete Streets[5], improving safety for bicyclists, and increasing public awareness and support for bicycling in the County of Los Angeles. The recommendations include bicycle infrastructure improvements, bicycle-related programs, implementation strategies, and policy and design guidelines for the unincorporated communities of the County of Los Angeles and where the County owns property or has jurisdictional control, such as along flood control facilities.

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4 A draft of the 2035 General Plan is available at: http://planning.lacounty.gov/generalplan.

5 Complete streets are designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists, and public transportation users of all ages and abilities are able to safely move along and across a complete street. – www.completestreets.org

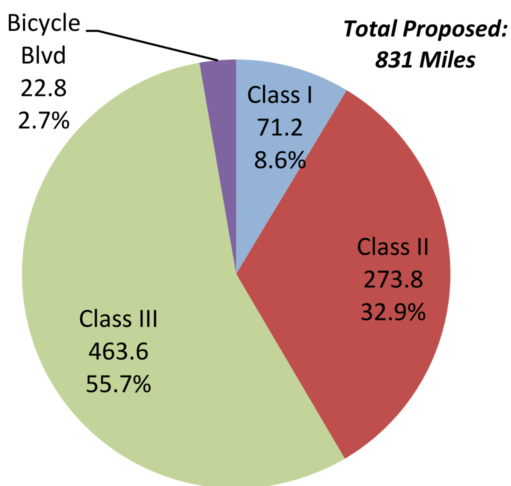

Figure 1-1: Total Miles of Proposed Bikeway Facilities

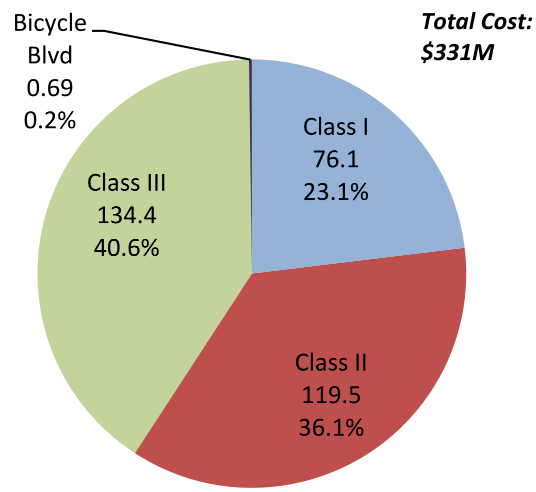

Figure 1-2: Estimated Cost of Proposed Bikeway Facilities

1.1 Setting

The unincorporated areas of the County of Los Angeles comprise 2,656.6 square miles of Los Angeles County's 4,083.2 square miles, equivalent to approximately 65% of the County's total land area. These unincorporated areas are climatically and ecologically diverse. The majority of unincorporated County land is located in the northern part of the county and includes expansive open space. The unincorporated areas of the County consist of 124 separate, non-contiguous land areas. These areas in the northern part of the County are covered by large amounts of sparsely populated land and include the Angeles and Los Padres National Forests, and the Mojave Desert. The unincorporated areas of the southern portion of the County consists of 58 communities, located among the other urban incorporated cities in the county, which are often referred to as the County's unincorporated urban islands. The County's southwestern boundary consists of 70 miles of Pacific Ocean coastline and encompasses two islands, Santa Catalina and San Clemente.

Representing about 11% of the County's total population, the unincorporated area population is projected to be approximately 1,188,000 people in 2010[6].

Figure 1-3 displays Los Angeles County's location within the region as well as Planning Area boundaries.

[6] *2008 SCAG Regional Plan, Table 2.5: Los Angeles County Population Projections*

Figure 1-3: Los Angeles County

Source: Los Angeles County (2011)
Date: 10/05/11

1.2 Purpose of the Bicycle Master Plan

The Plan is an update to the 1975 County Bikeway Plan. The Plan provides direction for improving mobility of bicyclists and encouraging more bicycle ridership within the County by expanding the existing bikeway network, connecting gaps, addressing constrained areas, providing for greater local and regional connectivity, and encouraging more residents to bicycle more often.

The Plan complies with Streets and Highways Code Section 891.2, making the County eligible for Bicycle Transportation Account (BTA) funds. The BTA is an annual program that provides state funds for city and county projects that improve safety and convenience for bicycle commuters. **Appendix A** presents the County of Los Angeles Bicycle Master Plan BTA Checklist.

1.3 Benefits of Bicycling

A more bicycle-friendly County will contribute to resolving several complex and interrelated issues, including traffic congestion, air quality, climate change, public health, and livability. This Plan can affect all of these issues by guiding unincorporated areas toward bicycle friendly development, which collectively can have a profound effect on the existing and future livability in the County of Los Angeles.

1.3.1 Environmental/Climate Change Benefits

Replacing vehicular trips with bicycle trips has a measurable impact on reducing human-generated greenhouse gases (GHGs) in the atmosphere that contribute to climate change. Fewer vehicle trips and vehicle miles traveled (VMT) translate into fewer mobile source pollutants released into the air, such as carbon dioxide, nitrogen oxides, and hydrocarbons. Providing transportation options that reduce VMT is an important component of decreasing GHG emissions and improving air quality. **Appendix B** presents a quantitative estimate of the air quality benefits associated with current bicycling rates, as well as future activity levels in each unincorporated planning area.

1.3.2 Public Health Benefits

Public health professionals have become increasingly aware that the impacts of automobiles on public health extend far beyond asthma and other respiratory conditions caused by air pollution. There is also a much deeper understanding of the connection between the lack of physical activity resulting from auto-oriented community designs and various health-related problems, such as obesity and other chronic diseases. Although diet and genetic predisposition contribute to these conditions, physical inactivity is now widely understood to play a significant role in the most common chronic diseases in the United States, including heart disease, stroke, and diabetes. Creating bicycle-friendly communities is one of several effective ways to encourage active lifestyles, ideally resulting in a higher proportion of the County's residents achieving recommended activity levels.

1.3.3 Economic Benefits

Bicycling is economically advantageous to individuals and communities. According to some statistics, the annual operating costs for bicycle commuters are 1.5% to 3.5% of those for automobile commuters.[7] Cost savings associated with bicycle travel expenses are also accompanied by potential savings in health care costs.

[7] *Active Transportation website: http://www.activetransportation.org/costs.htm*

On a community scale, bicycle infrastructure projects are generally far less expensive than automobile-related infrastructure. Further, shifting a greater share of daily trips to bike trips reduces the impact on the region's transportation system, thus reducing the need for improvements and expansion projects.

1.3.4 Community/Quality of Life Benefits

Fostering conditions where bicycling is accepted and encouraged increases a community's livability from a number of different perspectives that are often difficult to measure but nevertheless important. The design, land use patterns, and transportation systems that comprise the built environment have a profound impact on quality of life issues. Studies have found that people living in communities with built environments that promote bicycling and walking tend to be more socially active, civically engaged, and are more likely to know their neighbors, whereas urban sprawl has been correlated with social and mental health problems, including stress.[8,9] The aesthetic quality of a community improves when visual and noise pollution caused by automobiles is reduced and when green space is reserved for facilities that enable people of all ages to recreate and commute in pleasant settings.

1.3.5 Safety Benefits

Conflicts between bicyclists and motorists result from poor riding and/or driving behavior as well as insufficient or ineffective facility design. Encouraging development and redevelopment in which bicycle travel is fostered improves the overall safety of the roadway environment for all users. Well-designed bicycle facilities improve security for current cyclists and also encourage more people to bike, which in turn can further improve bicycling safety. Studies have shown that the frequency of bicycle collisions has an inverse relationship to bicycling rates, which means more bicyclists on the road equates to lower crash rates.[10] Providing information and educational opportunities about safe and lawful interactions between bicyclists and other roadway users also improves safety.

1.4 Public Participation

Community involvement was vital to the development of the Plan. The Plan team held three rounds of public workshops to present to the public the Plan's findings and recommendations and to receive public feedback.

The **first round** of workshops introduced the Plan to the public and provided opportunities for public input. The Plan team performed extensive outreach to inform County residents of these workshops, including sending electronic mail blasts to stakeholders, including all 88 cities in Los Angeles County, posting notices on the project website, producing a meeting flyer in English and Spanish, creating and distributing a press release, and mailing comment cards to local bike shops, libraries, and parks and recreation facilities. There were a total of ten first round workshops held between February and March 2010. Meeting attendance was an average of ten people.

The **second round** of workshops, held in June 2010, served as a mid-project update for the public. These workshops focused on specific study corridors being evaluated by the project engineering team; education, encouragement and enforcement program recommendations; and project prioritization methodology. There

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[8] *Frumkin, H. 2002. Urban Sprawl and Public Health. Public Health Reports, 117: 201–17.*

[9] *Leyden, K. 2003. Social Capital and the Built Environment: The Importance of Walkable Neighborhoods. American Journal of Public Health 93: 1546–51.*

[10] *Jacobsen, P. Safety in Numbers: More Walkers and Bicyclists, Safer Walking and Bicycling. Injury Prevention, 9: 205-209. 2003.*

were a total of 11 public workshops during the second round, which also attracted an average of ten people per workshop. In addition to the outreach efforts used for the first round of workshops, the outreach for the second round of workshops included discussion of the Plan at Town Council meetings in unincorporated areas and at meetings held by Regional Planning for community specific plans, distribution of postcards at "Bike To Work Week" events throughout the County sponsored by LACMTA, and posting public service announcements on County websites, Bus Shelters in unincorporated areas, and on buses and shuttles that operate within or near unincorporated areas.

The **third round** of public workshops included a presentation of the draft Plan and provided opportunities for the public to provide input on the draft Plan. In addition to the outreach efforts used for the first and second round of workshops, the County retained the Angeles County Bicycle Coalition (LACBC) to assist with the outreach and to encourage attendance at the workshops. LACBC issued a press release to news media, radio and television; they worked with various entities to coordinate the posting of our workshop information on these entities' websites; and sent electronic mail blasts to their members/subscribers. There were a total of 11 public workshops held between March and April 2011, with an average attendance of ten people per workshop.

The public comment period for the draft Plan was from March 31st to June 3rd, which was extended to target participants on the Los Angeles Bike to Work Week. The County again enlisted LACMTA's assistance to distribute quarter page flyers at the Bike to Work Day pit stops, encouraging interested parties to comment on the draft Plan.

To improve connectivity between the Plan's recommendations and the existing and planned bikeways in other jurisdictions, the County kept the cities throughout Los Angeles County aware of the status of the Plan via electronic mail blasts. The cities were invited to review and comment on the Plan, as well as to attend the public workshops. Although not every city responded, representatives from numerous cities attended the public workshops and submitted comments on the Plan.

1.5 Updates and Amendments to the Plan

This Plan provides direction for developing a comprehensive bicycle network, support facilities, and programs for the County. Although this is a 20 year planning document, the County recognizes that in order to achieve the desired results of increasing bicycling throughout Los Angeles County, the County needs to remain flexible to updating and amending the recommendations and proposals contained in this Plan.

The County will consult the community stakeholder group, the affected communities, and other stakeholders throughout implementation of this Plan. Over time, additional facilities may be identified for which bikeway facilities are desirable, or it may be desirable to change a bikeway designation from one classification to another based on community input and/or engineering considerations.

As indicated in Policy 1.5, the County will complete regular updates of the Bicycle Master Plan every five years. In addition, the Plan may be amended more frequently if necessary. Updates and amendments to this Plan would be subject to approval by the County Regional Planning Commission and the County Board of Supervisors. Class II bikeways shall be deemed consistent with the Plan wherever either a Class II or Class III Bike Route is mapped. Accordingly, no plan amendment shall be required when a mapped Class III Bike Route is replaced with a Class II Bike Route.

1.5.1 Requests for Additional Facilities and/or Modifications to the Proposed Bicycle Network

The County added a significant number of facilities as a result of the public comments received throughout development of the Plan. Since it was necessary to finalize the bicycle network before completing the Final Environmental Impact Report for this Plan, the County could not continue to consider the requests that were received after November 2011 for inclusion into the Plan. The County is maintaining a record of the additional requests received, and will consider them for inclusion in future updates and/or amendments.

1.5.2 Class III Bike Routes in Rural Communities

Prior to approval of the Plan, the County received feedback from bicycle advocacy groups requesting that the Class III bicycle routes proposed in rural areas of the County be changed to Class II bike lanes. They expressed concern for bicyclists sharing the road along the proposed Class III facilities, given the high speed of vehicular traffic exhibited on these rural roadways. During the public outreach phase of the Plan, other members of the public expressed a preference for Class III bike routes over Class II bike lanes on these rural roadways to better preserve the rural characteristics of their communities.

The Plan proposes several hundred miles of Class III bicycle routes along these rural roadways; however, the Plan also recognizes that most of these facilities require widening and/or shoulder improvements to provide adequate room for bicyclists to ride. The Design Toolbox in Appendix F provides additional design consideration to enhance bicyclist safety for these “Shoulder Bikeways”. If during the implementation phase of a project, the community supports changing the designation to a Class II bike lane, the County will evaluate the feasibility.

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2. Goals, Policies and Implementation Actions

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The purpose of the Plan is to guide the development of infrastructure, policies, and programs that improve the bicycling environment in the County of Los Angeles. The Plan focuses on areas under the County's jurisdictional authority; however, it also coordinates with bicycle planning efforts of other agencies. This chapter describes the Goals, Policies, and Implementation Actions (IA) necessary to implement this Plan.

Overarching Goal

"Increased bicycling throughout the County of Los Angeles through the development and implementation of bicycle-friendly policies, programs, and infrastructure."

Goal 1 - Bikeway System

Expanded, improved, and interconnected system of county bikeways and bikeway support facilities to provide a viable transportation alternative for all levels of bicycling abilities, particularly for trips of less than five miles

Policy 1.1 **Construct the bikeways proposed in 2012 County of Los Angeles Bicycle Master Plan over the next 20 years.**

Lead Department: County of Los Angeles Department of Public Works (DPW)
Timeframe: Phase I: 2012 to 2017; Phase II: 2017 to 2027; Phase III: 2027 to 2032.

Chapter 5 explains how the projects were grouped into phases and lists the projects in Phase I. Appendix I presents a detailed list of all implementation phases. DPW will coordinate with the community stakeholder group established pursuant to IA 5.1.1, for prioritizing and implementing projects.

IA 1.1.1 **Propose and prioritize bikeways that connect to transit stations, commercial centers, schools, libraries, cultural centers, parks and other important activity centers within each unincorporated area and promote bicycling to these destinations.**

Lead Department: DPW
Timeframe: Ongoing

IA 1.1.2 **Coordinate with adjacent jurisdictions and LACMTA to implement bicycle facilities that promote connectivity.**

Lead Department: DPW
Timeframe: Ongoing

DPW will continue to coordinate with other cities and LACMTA to review and comment on bicycling issues of mutual concern. DPW will continue to propose bicycle facilities where appropriate to improve regional connectivity and also support and encourage LACMTA and local jurisdictions to install bicycle facilities within their jurisdiction and/or as part of their large transportation projects.

Goal 1 - Bikeway System (continued)

Expanded, improved, and interconnected system of county bikeways and bikeway support facilities to provide a viable transportation alternative for all levels of bicycling abilities, particularly for trips of less than five miles

IA 1.1.3 Implement bikeways proposed in this Plan when reconstructing or widening existing streets.

Lead Department: DPW
Timeframe: Ongoing

All roadway reconstruction and widening projects shall implement the bikeways proposed in the Plan. Some of the proposed projects may require additional community outreach, and more extensive environmental clearances.

IA 1.1.4 Implement bikeways proposed in this Plan when completing road rehabilitation and preservation projects.

Lead Department: DPW
Timeframe: Ongoing

All roadway rehabilitation and preservation projects should consider implementing the bikeways proposed in the Plan if the proposed bikeway can be incorporated without significantly delaying the project schedule that would necessitate more costly pavement treatments.

Pavement preservation projects are maintenance projects that rely on utilizing timely, appropriate and successive preservation treatments in order to postpone costly rehabilitation and reconstruction projects. These projects generally follow expedited schedules and do not provide the same opportunity for extensive community outreach and/or environmental clearances as other road construction projects.

Timeframe: Ongoing

Policy 1.2 Amend the County Code to encourage additional bikeways and bicycle support facilities.

Lead Department: County of Los Angeles Department of Regional Planning (DRP)
Timeframe: by 2015

Amendments to the County Code may include changes to the roadway cross-sections, using developer fees for bikeway projects, requirements for developers to provide bikeways and bicycle support facilities, and other changes as needed.

Goal 1 - Bikeway System (continued)

Expanded, improved, and interconnected system of county bikeways and bikeway support facilities to provide a viable transportation alternative for all levels of bicycling abilities, particularly for trips of less than five miles

Policy 1.3 Coordinate with developers to provide bicycle facilities that encourage biking and link to key destinations.

Lead Department: DRP, DPW
Timeframe: Ongoing

DPW will continue to encourage developers to voluntarily use alternative roadway cross-sections that can accommodate bikeways and bicycle facilities. Compliance with any changes incorporated into the County Code pursuant to Policy 1.2 will be required.

IA 1.3.1 Require the implementation of bike lanes and bicycle support facilities along key corridors.

Lead Department: DRP, DPW
Timeframe: In 2015, after necessary changes are enacted in the County Code pursuant to Policy 1.2.

As part of the draft County General Plan, there are 11 Transit-Oriented Districts (TODs) being established. TODs are areas that are within a 1/2 mile radius from a major transit stop, with development and design standards, and incentives to facilitate transit-oriented development. Installation of bike lanes and bicycle support facilities within these TODs will be incorporated into the TOD Station Area Plans for each TOD.

IA 1.3.2 Require bicycle parking at key locations, such as employments centers, parks, transit, schools, and shopping centers.

Lead Department: DRP, DPW
Timeframe: By 2015, after a bicycle parking policy is developed (IA 1.6.2) and subsequent changes are enacted in the County Codes pursuant to Policy 1.2.

Policy 1.4 Support the development of bicycle facilities that encourage new riders.

Lead Department: DRP, DPW
Timeframe: Ongoing

IA 1.4.1 Support efforts to develop a Complete Streets policy that accounts for the needs of bicyclists, pedestrians, disabled persons, and public transit users.

Lead Departments: DRP, DPW
Timeframe: initiated within 2 years of adoption of the draft General Plan.

Development of a Complete Streets Ordinance is included as a Phase 1 Implementation Program in the draft County General Plan. The Implementation Program for the General Plan is divided into three phases. Phase 1 indicates the highest priority for implementing the General Plan, and should be initiated within the first two years of adoption of the General Plan.

Goal 1 - Bikeway System (continued)

Expanded, improved, and interconnected system of county bikeways and bikeway support facilities to provide a viable transportation alternative for all levels of bicycling abilities, particularly for trips of less than five miles

IA 1.4.2 Provide landscaping along bikeways where appropriate.

Lead Department: DPW

Timeframe: Ongoing.

IA 1.4.3 Ensure the provision of convenient and secure end of trip facilities at key destinations.

Lead Department: DPW, DRP

Timeframe: By 2015, after a bicycle parking policy is developed (IA 1.6.2) and subsequent changes are enacted in the County Codes pursuant to Policy 1.2.

High quality bicycle parking within the public right-of-way and on private property will be provided, especially in high demand locations, such as near transit hubs, commercial and employment centers, schools and colleges, and other major trip generators. DPW will also consider seeking grant funding to procure bicycle racks, and partnering with local businesses and community members to install bicycle parking throughout the County at no or substantially reduced costs to the local businesses.

IA 1.4.4 Allow the use of and promote new and/or innovative bicycle facility designs and standards on County bicycle facilities.

Lead Department: DPW

Timeframe: Ongoing

California State law requires the State to adopt uniform standards, and for local agencies to conform to those standards. The Design Guidelines in Appendix F provide a range of design options for bicycle treatments. As additional designs and standards are adopted by the State of California, they will be incorporated into the Plan's toolbox of treatments.

Policy 1.5 Complete regular updates of the Bicycle Master Plan to be current with policies and requirements for grant funding and to improve the network.

Lead Department: DRP, DPW

Timeframe: Every five years as per Caltrans BTA requirements

IA 1.5.1 Measure the effectiveness of the Bikeway Plan implementation.

Lead Department: DPW, DRP

Timeframe: Annually (April)

DPW will coordinate with DRP to include details on the progress made toward implementing the goals, policies, and programs of the Bikeway Plan, as part of the General Plan Annual Progress Report. DPW will also develop and maintain a website pursuant to Policy 5.2, to provide more frequent updates on the progress of the Plan implementation.

Goal 1 - Bikeway System (continued)

Expanded, improved, and interconnected system of county bikeways and bikeway support facilities to provide a viable transportation alternative for all levels of bicycling abilities, particularly for trips of less than five miles

Policy 1.6 Develop a bicycle parking policy.

Lead Department: DPW
Timeframe: Establish by 2013

DPW will review best practices guidelines for bicycle parking developed by the Association of Pedestrian and Bicycle Professionals and others to formulate the County Bicycle Parking policy. In general, bicycle parking should be located within fifty feet of building entrances and be clearly visible from the building entrance and its approaches.

IA 1.6.1 Identify where bicycle parking facilities are needed and identify the appropriate type (e.g., inverted U style racks at grocery stores, bike lockers near transit stations).
Lead Department: DPW
Timeframe: Beginning in 2013

IA 1.6.2 Establish bicycle parking design standards and requirements for all bicycle parking on County property and for private development.
Lead Department: DRP, DPW
Timeframe: Establish program by 2013

Goal 2 - Safety

Increased safety of roadways for all users.

Policy 2.1 Implement projects that improve the safety of bicyclists at key locations.

Lead Department: DPW
Timeframe: ongoing – See **Appendix I** for a detailed list of the projects and their implementation phases

IA 2.1.1 Review bicyclist-related automobile crashes to identify potential problem areas.
Lead Department: DPW
Timeframe: Annually

DPW will monitor bicycle-related collisions in relation to the overall number of bicyclists obtained from the biennial counts pursuant to IA 2.4.2, and from other agencies; and seek a continuous reduction in the collision rates over the next twenty years.

IA 2.1.2 Implement "sharrow" markings on all existing and proposed Class III facilities, as deemed appropriate and in accordance with the most current edition of the Manual on Uniform Traffic Control Devices.
Lead Department: DPW
Timeframe: ongoing

Goal 2 - Safety (continued)

Increased safety of roadways for all users.

IA 2.1.3 Coordinate with the California Public Utilities Commission to consider impacts and safety mitigation measures when proposed bicycle facilities are adjacent to, near or over any railroad or rail transit right-of-way.

Lead Department: DPW

Timeframe: Ongoing

Policy 2.2 Encourage alternative street standards that improve safety such as lane reconfigurations and traffic calming.

Lead Department: DPW, DRP

Timeframe: Ongoing

IA 2.2.1 Identify opportunities to remove travel lanes from roads where there is excess capacity in order to provide bicycle facilities.

Lead Department: DPW

Timeframe: Facilities proposed in this Plan that required travel lane reductions will be implemented per the Phasing Plan in Appendix I. Other potential facilities that are identified will be considered for inclusion in future Bikeway Plan updates performed pursuant to Policy 1.5.

IA 2.2.2 Implement the bicycle boulevards proposed by this Plan.

Lead Department: DPW

Timeframe: By 2027.

IA 2.2.3 Investigate the use of reflective striping alternatives on Class I bike paths that would address concerns with slippery conditions that generally result from traditional reflective striping.

Lead Department: DPW

Timeframe: By 2014

Policy 2.3 Support traffic enforcement activities that increase bicyclists' safety.

Lead Department: DPW

Timeframe: Ongoing

Support increased enforcement of unsafe bicyclist and motorist behaviors and laws that reduce bicycle/motor vehicle collisions and conflicts, and bike lane obstruction.

IA 2.3.1 Encourage enforcement of traffic laws including citing bicyclists, pedestrians and motor vehicle operators consistently for violations to enhance bicyclist and pedestrian safety.

Lead Department: DPW[11]

Timeframe: Ongoing

[11] *County will encourage enforcement activities; however, CHP is responsible for traffic enforcement on unincorporated county roadways.*

Goal 2 - Safety (continued)

Increased safety of roadways for all users.

IA 2.3.2 **Encourage targeted enforcement activities in areas with high bicycle and pedestrian volumes.**

Lead Department: DPW[11]

Timeframe: Ongoing

IA 2.3.3 **Encourage enforcement agencies to conduct traffic enforcement on Class I Bikeways**

Lead Department: DPW[12]

Timeframe: Ongoing

Policy 2.4 **Evaluate impacts on bicyclists when designing new or reconfiguring streets.**

Lead Department: DPW

Timeframe: Ongoing

IA 2.4.1 **Encourage the development and approval of traffic study criteria that better accounts for bicyclists and pedestrians.**

Lead Department: DPW

Timeframe: Ongoing

IA 2.4.2 **Conduct biennial counts of bicyclists on key bikeways to gauge the effectiveness of the County's bicycle facilities in increasing bicycle activity.**

Lead Department: DPW

Timeframe: Every other year beginning in 2012.

DPW will identify a minimum of 20 locations to conduct counts of bicyclists. The selection of locations to conduct these counts will consider those areas with a high number of bicycle-related automobile collisions and will be selected in consultation with the community stakeholder group established pursuant to IA 5.1.1. Expansion of the number of locations to conduct counts of bicyclists is contingent on the availability of funds.

IA 2.4.3 **Use alternative Level of Service (LOS) standards that account for bicycles and pedestrians.**

Lead Department: DPW

Timeframe: Beginning in 2012

Policy 2.5 **Improve and enhance the County's Suggested Routes to School program.**

Lead Department: DPW

Timeframe: Ongoing

IA 2.5.1 **Implement improvements that encourage safe bicycle travel to and from school.**

Lead Department: Los Angeles County Office of Education (LACOE), DPW

Timeframe: Ongoing

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[12] *County will encourage enforcement activities; however, enforcement is the responsibility of the local law enforcement agency for which the Class I bikeway is located in*

Goal 2 - Safety (continued)

Increased safety of roadways for all users.

IA 2.5.2 Develop incentive programs for students who participate in the Suggested Routes to School Program.

Lead Department: DPW, LACOE

Timeframe: Ongoing

Policy 2.6 Support development of a Healthy Design Ordinance.

Lead Department: County of Los Angeles Department of Public Health (DPH), DRP

Timeframe: Adoption of ordinance by summer of 2012

Healthy Design has been defined as features of the built environment that promote physical activity in the form of walking, bicycling, and exercise.

Policy 2.7 Support the use of the Model Design Manual for Living Streets and Design as a reference for DPW.

Lead Department: DPW

Timeframe: Ongoing

The Model Design Manual for Living Streets focuses on all users and all modes, seeking to achieve balanced street design that accommodates cars, while ensuring that pedestrians, cyclists and transit users can travel safely and comfortably. This manual also incorporates features to make streets lively, beautiful, economically vibrant as well as environmentally sustainable.

Goal 3 - Education

Develop education programs that promote safe bicycling

Policy 3.1 Provide bicycle education for all road users, children and adults

Lead Department: DPW, DPH

Timeframe: 2012-2032

DPW and DPH will continue to seek funding for non-infrastructure projects to provide safety education for bicyclists of all of age groups and skill levels. DPW will continue to encourage partnership programs with County agencies such as DPH and/or non-County agencies to provide safety education that benefits the residents in unincorporated County areas.

IA 3.1.1 Offer bicycle skills, bicycle safety classes, and bicycle repair workshops.

Lead Department: DPH, LACOE, and DPW

Timeframe: 2012-2032

DPW will dedicate staff time, work with community advocates and/or solicit volunteer support to set up bicycle repair seminars at major community events in unincorporated County areas, or for bike rides along County maintained Class I bike paths.

IA 3.1.2 Develop communication materials aimed to improve safety for bicyclists and motorists.

Lead Department: DPW

Timeframe: 2012-2032

Policy 3.2 Create safety education campaigns aimed at bicyclists and motorists (e.g., public service announcements, brochures, etc.).

Lead Department: DPW

Timeframe: 2012-2032

DPW will regularly distribute brochures with safety instructions and updated suggested route to school maps tailored for local elementary schools in unincorporated County areas to encourage cycling. DPW will continue to seek grant funding to expand the safety education campaigns to target all age groups.

Policy 3.3 Train county staff working on street design, construction, and maintenance projects to consider the safety of bicyclists in their work.

IA 3.3.1 Educate all key personnel on the needs of bicyclists.

Lead Department: DPW, DRP

Timeframe: Ongoing

Provide bicycle education to County staff involved in decisions regarding transportation facilities. This would include, but would not be limited to, traffic engineers, planners, civil engineers, landscape architects, field inspectors and street maintenance personnel.

Goal 3 - Education (continued)

Develop education programs that promote safe bicycling

IA 3.3.2 **Educate maintenance personnel on the importance of bicycling related maintenance.**
Lead Department: DPW
Timeframe: Ongoing

IA 3.3.3 **Explore development of an education program to educate County employees who use a County vehicle on how to safely share the road with bicycles**
Lead Department: County of Los Angeles Department of Human Resources (DHR)
Timeframe: 2015

Policy 3.4 Support training for the California Highway Patrol (CHP).

IA 3.4.1 **Work with the CHP to provide training regarding bicyclists' rights and responsibilities pursuant to the California Vehicle Code and the County Code.**
Lead Department: DPW
Timeframe: 2012-2032

Goal 4 - Encouragement Programs

County residents that are encouraged to walk or ride a bike for transportation and recreation.

Policy 4.1 Support organized rides or cycling events, including those that may include periodic street closures in the unincorporated areas.

Lead Department: DPW
Timeframe: Ongoing

DPW will work with other County agencies such as the Department of Parks and Recreation as well as non-County agencies to support bicycle rides along County roadways as well as the County maintained Class I bike paths.

Policy 4.2 Encourage non-automobile commuting.

IA 4.2.1 **Promote Bike to Work Day/Bike to Work Month among County employees.**
Lead Department: County of Los Angeles Chief Executive Office (CEO), DHR
Timeframe: Annually (May)

IA 4.2.2 **Investigate options for incentivizing County employees to use bicycles and other non-auto modes of transportation to commute to work.**
Lead Department: CEO, DHR
Timeframe: By 2015

IA 4.2.3 **Expand the County fleet to include alternate modes of transportation, e.g. bicycles.**
Lead Department: ISD, DPW
Timeframe: By 2015

Goal 4 - Encouragement Programs (continued)

County residents that are encouraged to walk or ride a bike for transportation and recreation.

IA 4.2.4 Participate in a working group with LACMTA, the Southern California Association of Governments (SCAG), local agencies and advocacy groups, and private industry/entrepreneurs to develop a regionally consistent bicycle sharing program in Los Angeles County.

Lead Department: DPW

Timeframe: Beginning in 2012

LACMTA will develop a working group comprised of all interested local agencies and groups in the region who will work with private partners/entrepreneurs to develop a regionally consistent bicycle sharing program for Los Angeles County. The County will be a participating member in this working group.

Policy 4.3 **Develop maps and wayfinding signage and striping to assist navigating the regional bikeways.**

Lead Department: DPW

Timeframe: Enhancing the County's bicycle network with additional wayfinding signage and striping is ongoing. Development of Maps will start in 2012.

The maps will be made available on the County Bikeway website to be developed pursuant to Policy 5.2 and upon request.

Goal 5 - Community Support

Community supported bicycle network.

Policy 5.1 Support Community Involvement.

IA 5.1.1 Establish a community stakeholder group to assist with the implementation of the Bicycle Master Plan.

Lead Department: DPW

Timeframe: Beginning in 2012

The community stakeholder group will oversee the implementation of this Plan and will provide input on bicycle issues in the County. Input from the group can include selection of projects for available grant opportunities. Section 4.4.2 provides additional details related to the roles and selection of members of this group.

IA 5.1.2 Encourage citizen participation and stakeholder input in the planning and implementation of bikeways and other bicycle related improvements by holding public meetings and workshops to solicit community input.

Lead Department: DPW

Timeframe: Ongoing

Policy 5.2 Create an online presence to improve visibility of bicycling issues in unincorporated Los Angeles County.

Lead Department: DPW

Timeframe: By 2012

IA 5.2.1 Provide updates to the community about planned projects.

Lead Department: DPW

Timeframe: By 2012

IA 5.2.2 Provide closure updates to the community about County-maintained regional bikeways.

Lead Department: DPW

Timeframe: By 2012

IA 5.2.3 Provide information on bicycle safety and wayfinding resources

Lead Department: DPW

Timeframe: By 2012

Policy: 5.3 Maintain efforts to gauge community interest and needs on bicycle-related issues.

Lead Department: DPW

Timeframe: Ongoing

IA 5.3.1 Conduct periodic online surveys to gauge interest in bicycling and related issues throughout the county.

Lead Department: DPW

Timeframe: Approximately every two years

Goal 6 - Funding

Funded Bikeway Plan.

Policy 6.1 Identify and secure funding to implement this Bicycle Master Plan.

IA 6.1.1 Support innovative funding mechanisms to implement this Bicycle Master Plan.

Lead Department: DPW

Timeframe: Ongoing

DPW will continue to leverage funding for bikeways and bicycle support facilities through its road construction and bikeway programs The County is committed to a balanced approach in assigning our available Road, Prop C Local Return, Measure R Local Return, and Article 3 Bikeway funds to address the County's streets and roads, bikeways, and pedestrian improvement and maintenance priorities commensurate with their needs and funding eligibility. DPW will also consider other innovative funding mechanisms, such as public-private partnerships, to implement this Plan.

IA 6.1.2 Support new funding opportunities for bicycle facilities that are proposed at the Federal, State, and Local level that impact the county.

Lead Department: DPW

Timeframe: Ongoing

IA 6.1.3 Identify and apply for grant funding that support the development of bicycle facilities and programs.

Lead Department: DPW

Timeframe: Ongoing

Chapter 5 outlines known grant opportunities for which DPW intends to apply for funds.

IA 6.1.4 Establish construction of bikeways as a potential mitigation measure for project-related vehicle trips.

Lead Department: DPW

Timeframe: In 2015, after necessary changes are enacted in the County Code pursuant to Policy 1.2.

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3. Existing Conditions and Proposed Network

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This chapter presents an overview of existing conditions and proposed network improvements in the unincorporated County of Los Angeles. The content begins with a summary and description of the regional bike paths maintained by the County, and is then organized alphabetically by County planning area. The statistics presented in each section are specific to these planning areas only; however, the maps display information about the incorporated cities interspersed within the unincorporated areas.

Each section opens with a description of the planning area's geographic, land use, and population characteristics. Then, a summary of existing bicycle conditions is presented, including existing County-maintained bicycle facilities, multimodal connections, and bicycle-involved collisions reported in the area from 2004 through 2009. The proposed network is then presented with information on the alignments and classifications of recommended bicycle networks in the plan area.

Figure 3-1 on page 30 displays an index map of the County of Los Angeles region, which provides information on where to find figures for a specific planning area within the plan. **Figures 3-2 and 3-3** provide an overview of existing bicycle facilities in the western and eastern portions of the County. The maps display data from the LACMTA showing the existing bicycle facilities in incorporated cities adjacent to the County planning areas. LACMTA updated its existing bicycle facilities GIS shapefile in the summer of 2010. Maps of existing land uses by planning area can be found in **Appendix D**.

The proposed network is displayed on two overview maps: **Figure 3-4**, the western portion of the County, and **Figure 3-5**, the eastern portion of the County. Information on the alignments and classifications of recommended bicycle networks for each planning area are provided in sections 3.2 through 3.11. **Appendix E** provides maps identifying existing bicycle parking at Metro stations and proposed end-of-trip facilities for each planning area.

Table 3-1 presents the Caltrans bikeway classification system, which this plan follows in classifying all existing and proposed bikeway facilities. Note that while the County may impose more stringent facility requirements, the County must follow the State minimum standards for all facilities.

The Plan presents an interconnected network of bicycle corridors that adds approximately 831 miles of bikeways throughout the County. The additional bikeways would improve the mobility of bicyclists within the County by enhancing safety, directness, and convenience within and between major regional destinations and activity centers. The 831 miles of proposed bikeways consist of approximately 71 miles Class I bike paths, approximately 274 miles Class II bike lanes, and approximately 463 miles of Class III bike routes, as defined/described in Chapter 1000 of the Caltrans Highway Design Manual. The Plan also proposes a network of 23 miles of bicycle boulevards,[13] which are facilities that prioritize bicycle travel on low-traffic, low-volume streets and are intended to provide greater safety and comfort to bicyclists. **Table 3-1** provides an introduction to the four proposed facility types, which are discussed in further detail in the Design Guidelines presented in **Appendix F**.

[13] *Bicycle Boulevards will be abbreviated BB in subsequent tables.*

Figure 3-1: Los Angeles County Index of Planning Area Maps

Source: Los Angeles County (2011)
Date: 10/05/11

Table 3-1: Bikeway Facilities Types

<table>
<tr><th>Bikeway Description</th><th>Example Graphic</th></tr>
<tr><td>

Class I – Bicycle Path

Bike paths, also called shared-use paths or multi-use paths, are paved right-of-way for exclusive use by bicyclists, pedestrians, and other non-motorized modes of travel. They are physically separated from vehicular traffic and can be constructed in roadway right-of-way or exclusive right-of-way. Most of Los Angeles County bicycle paths are located along the creek and river channels, and along the beach. These facilities are often used for recreation but also can provide important transportation connections.

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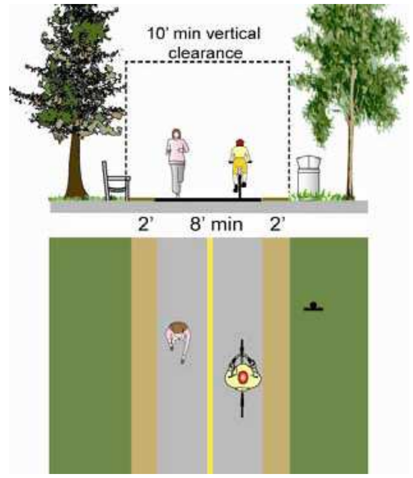

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<tr><td>

Class II – Bicycle Lane

Bike lanes are defined by pavement striping and signage used to allocate a portion of a roadway for exclusive bicycle travel. Bike lanes are one-way facilities on either side of a roadway. Bike lanes are located adjacent to a curb where no on-street parking exists. Where on-street parking is present, bike lanes are striped to the left side of the parking lane.

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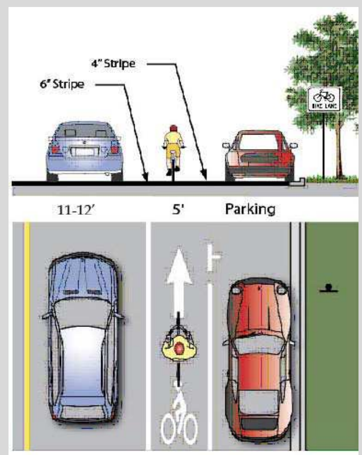

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Class III – Bicycle Route

Bike routes provide shared use with motor vehicle traffic within the same travel lane. Designated by signs, bike routes provide continuity to other bike facilities or designate preferred routes through corridors with high demand.

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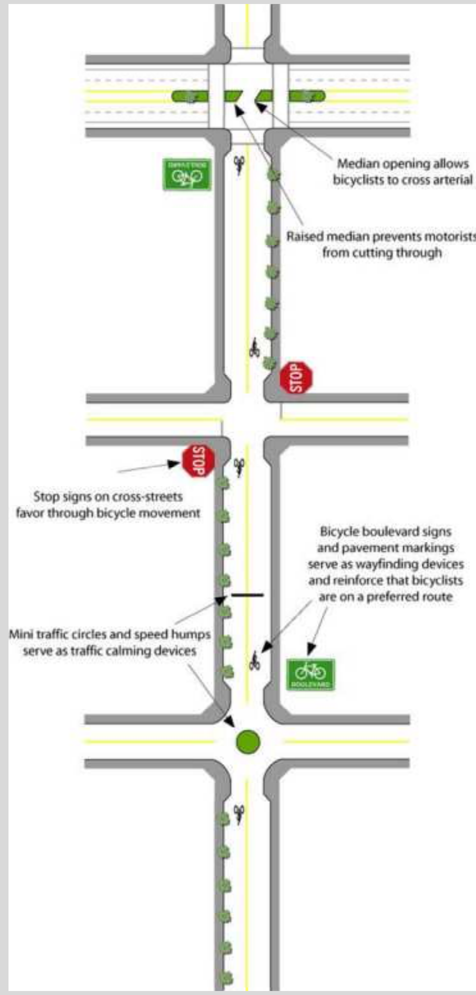
</td></tr>
</table>

Table 3-1: Bikeway Facilities Types (continued)

Bikeway Description	Example Graphic
Bicycle Boulevards Bicycle boulevards are local roads or residential streets that have been enhanced with signage, traffic calming, and other treatments to prioritize bicycle travel. Bicycle boulevards are typically found on low-traffic / low-volume streets that can accommodate bicyclists and motorists in the same travel lanes, without specific bicycle lane delineation. The treatments applied to create a bicycle boulevard heighten motorists' awareness of bicyclists and slow vehicle traffic, making the boulevard more conducive to safe bicycle (and pedestrian) activity. Bicycle boulevards shall include signage, pavement markings, and traffic calming features, such as intersection treatments or traffic diversions. The specific treatments employed for a bicycle boulevard will be determined during project implementation based on input received from the public. **Bicycle boulevards are not defined as a specific bikeway type by Caltrans; however, the basic design features of bicycle boulevards comply with Caltrans standards.**	

In addition to these standard designs, the Plan includes innovative bicycle treatments such as colored bicycle lanes, raised bicycle lanes, buffered bicycle lanes, cycletracks, and bicycle boxes. While these treatments do not have approved design standards at this time, the County will incorporate them into the Plan's toolbox of treatments as their uniform designs and standards are approved by the State of California Department of Transportation (Caltrans). Caltrans and the Federal Highway Administration allow for the experimental implementation of such treatments. The County promotes the use of these innovative treatments and will apply for and implement experimental projects utilizing them where cost effective and where such projects enhance the safety of bicycles, pedestrians, and motorists.

3.1 Regional Bicycle Paths Maintained by the County

In addition to the bikeways within unincorporated areas, the County of Los Angeles maintains many regional bicycle paths that travel through incorporated cities. These bicycle paths are described below.

Ballona Creek Bicycle Path

The County–maintained portion of the Ballona Creek Bicycle Path runs 1.5 miles along the northern side of Ballona Creek, between Lincoln Avenue and the Pacific Avenue Bridge where it connects with the Marvin Braude Bicycle Path. The unincorporated areas adjacent to this path include West Fox Hills and Marina del Rey.

Compton Creek Bicycle Path

The southern County–maintained portion of the Compton Creek Bicycle Path runs 1.8 miles along the east side of Compton Creek, between Del Amo Boulevard to just south of the Gardena Freeway (CA-91). Existing access points are located at Del Amo Boulevard, Alameda Street, and Santa Fe Avenue. The unincorporated areas adjacent to this path include Rancho Dominguez, West Rancho Dominguez-Victoria, and Willowbrook.

Coyote Creek Bicycle Path

The Coyote Creek Bicycle Path straddles the Los Angeles County and Orange County border, running from the North Fork confluence with the La Mirada Creek down to the San Gabriel River. The County of Los Angeles Department of Public Works maintains the 2.8-mile portion on the west side of the channel from Centralia Street to North Fork Coyote Creek. The unincorporated Cerritos Islands are adjacent to this path.

Dominguez Channel Bicycle Path

The Dominguez Channel Bicycle Path runs along the east side of the Dominguez Channel, from Main Street and Broadway to Vermont Avenue and Artesia Boulevard, near the Artesia Transit Center. The unincorporated areas adjacent to this path include West Carson.

La Cañada Verde Creek Bicycle Path

The La Cañada Verde Creek Bicycle Path runs 0.1 miles along the south side of the La Cañada Verde Creek in the Whittier area, from Mulberry Street to Broadway. Mulberry Street and Broadway are the only access points. This bike path is entirely within the unincorporated South Whittier-Sunshine Acres community.

Laguna Dominguez Bicycle Path

The Laguna Dominguez Bicycle Path runs 3.2 miles along the west side of the Dominguez Creek, from Redondo Beach Boulevard to 120th Street. The unincorporated areas adjacent to this path include Alondra Park and Hawthorne Island.

Los Angeles River Bicycle Path

The County-maintained portion of the Los Angeles River Bicycle Path runs 16.7 miles along the Los Angeles River, from the Shoreline Bikeway in Long Beach to Atlantic Boulevard in the City of Vernon. The community of East Rancho Dominguez is the only unincorporated community that is adjacent to this path. South of Imperial Highway, the Los Angeles River Bicycle Path runs along the east bank of the river. At Imperial Highway in South Gate, at the confluence of the Los Angeles River and Rio Hondo, the path splits into two directions. The Los Angeles River Bicycle Path continues north, although the path switches over to the west bank where it continues along the river until its terminus at Atlantic Boulevard. The path along the east bank becomes Rio Hondo Path north of Imperial Highway, and continues northeasterly along the Rio Hondo.

North Fork Coyote Creek Bicycle Path

The North Fork Coyote Creek Bicycle Path runs 2.8 miles along the eastside of Coyote Creek, from Foster Road in Santa Fe Springs to the confluence with the Coyote Creek in Cerritos. No unincorporated areas are adjacent to this facility.

Rio Hondo Bicycle Path

The Rio Hondo Bicycle Path consists of 17.5 miles of inter-connected bicycle path along the Rio Hondo, Upper Rio Hondo and through the Whittier Narrows Regional Park, connecting to the San Gabriel River Bicycle Path. The southernmost part of the path begins at Imperial Highway in South Gate, where it connects to the Los Angeles River Bicycle Path and continues north to Peck Park in Arcadia.

San Gabriel River Bicycle Path

The San Gabriel River Path runs 30.2 miles along the San Gabriel River, from San Gabriel Canyon Road in Azusa to the access into El Dorado Park in Long Beach. There are numerous access points along the path. The unincorporated areas adjacent to this path include West Whittier-Los Nietos, North Whittier, Whittier Narrows, Avocado Heights, and East Azusa.

San Jose Creek Bicycle Path

The San Jose Creek Bicycle Path runs 2.1 miles along the south side of the San Jose Creek in the City of Industry, from 7th Avenue to Workman Mill Road. Access points are only located at 7th Avenue and Workman Mill Road. The unincorporated areas adjacent to this path include Avocado Heights and Hacienda Heights.

Santa Anita Wash Bicycle Path

The Santa Anita Wash Bicycle Path runs one mile along the Santa Anita Wash, from Live Oak Avenue to the east side of the spillway of Peck Road Water Conservation where it meets the Rio Hondo Bicycle Path in Arcadia. The unincorporated areas adjacent to this path include the South Monrovia Islands.

Marvin Braude Bicycle Path (formerly South Bay Beach Bicycle Path)

The Marvin Braude Bicycle Path is a 20-mile system that runs along the Pacific Coast from Pacific Palisades in the City of Los Angeles to the City of Torrance. The County maintains approximately 14.9 miles of the path from the northern boundary of the City of Santa Monica to its southern terminus in the City of Torrance. Within these limits, the County does not maintain the bicycle lane on Washington Boulevard from north of Admiralty Way to Venice Beach, or the portion from 1st Avenue at Hermosa Beach to the southern end of the Pier at Redondo Beach.

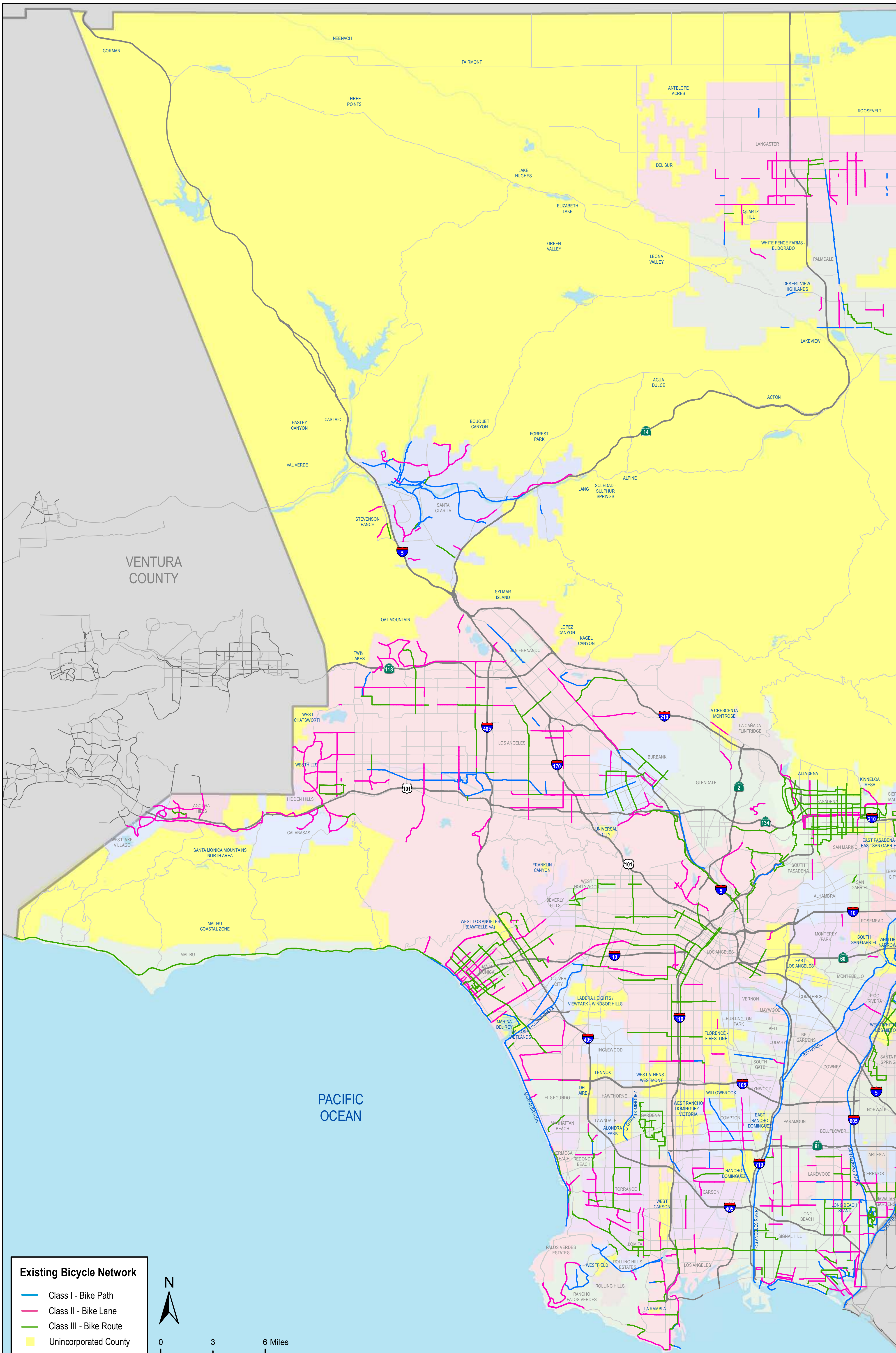


Figure 3-2: Overview of Existing Bikeways in Western Los Angeles County

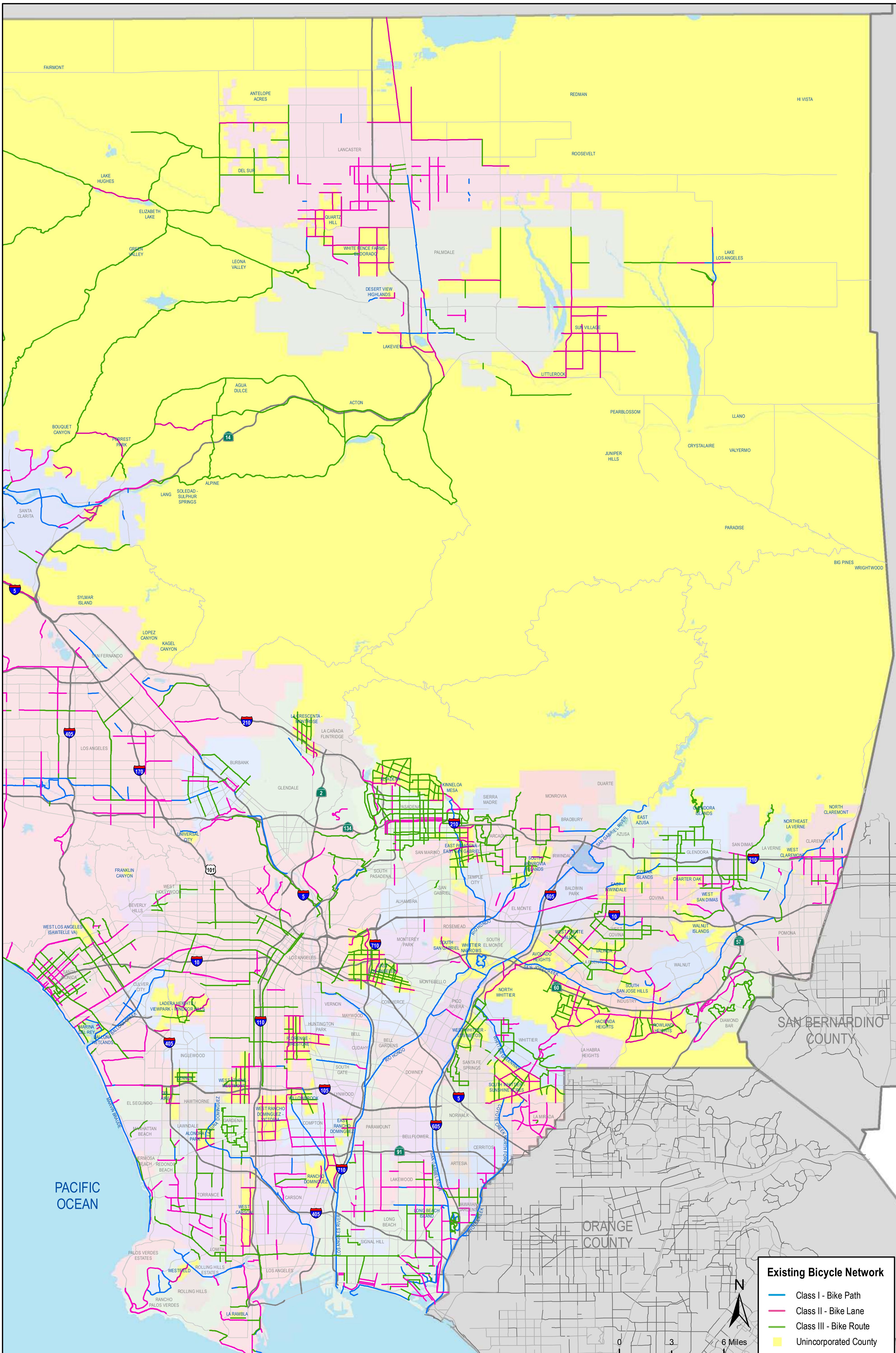


Figure 3-3: Overview of Existing Bikeways in Eastern Los Angeles County

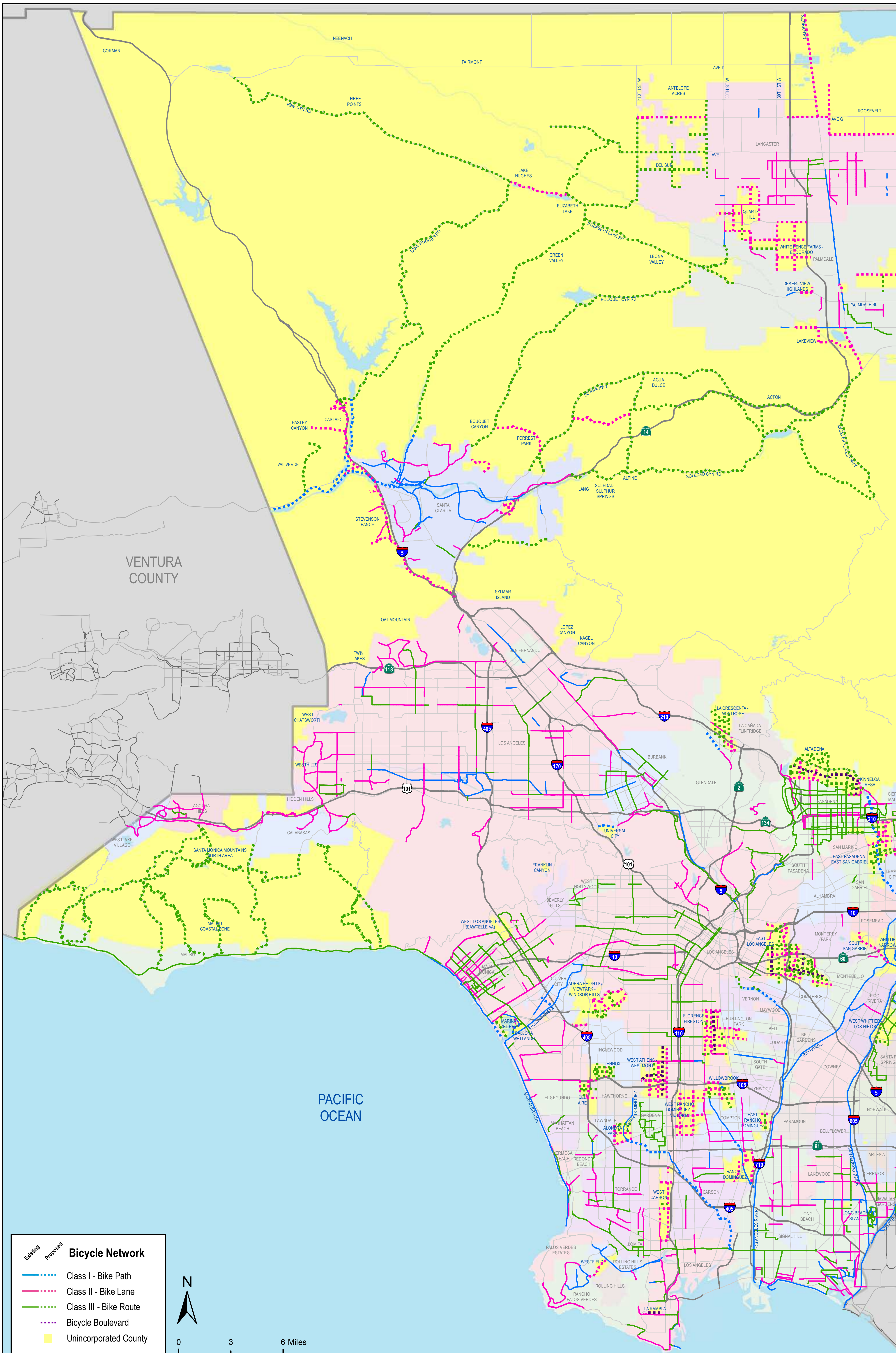


Figure 3-4: Western Los Angeles County Proposed Bicycle Network

Source: Los Angeles Metro (2006; 2010); Alta Planning + Design (2010)
Date: 1/30/2011

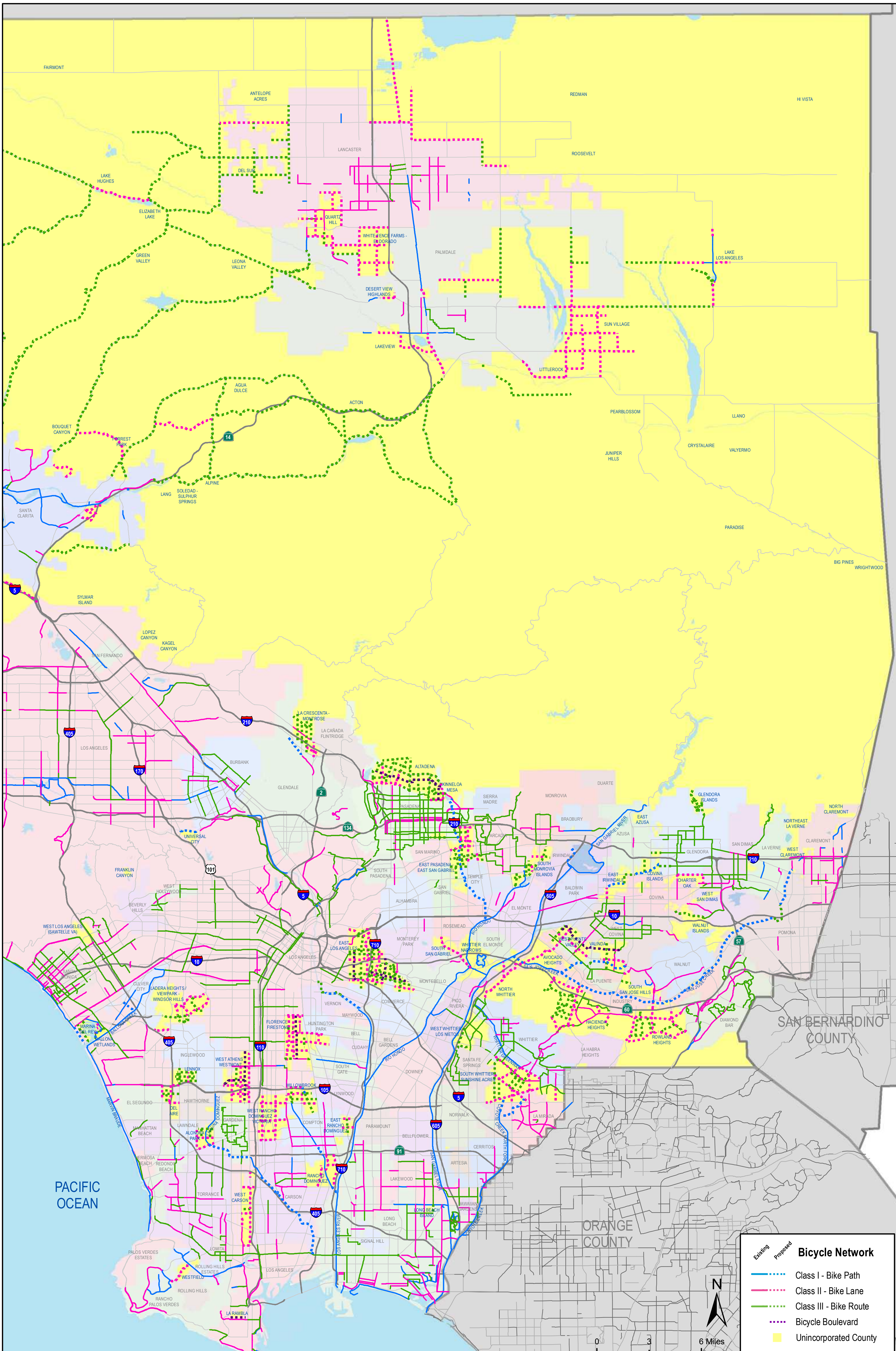


Figure 3-5: Eastern Los Angeles County Proposed Bicycle Network

Los Angeles County Bicycle Master Plan

Source: Los Angeles Metro (2006; 2010); Alta Planning + Design (2010)
Date: 1/30/2011

3.1.1 Network Development

The network selection and classification process included extensive public outreach, on-going consultation with County of Los Angeles staff through a Technical Advisory Committee (TAC), and input from the County's Bicycle Advisory Committee (BAC). The TAC's membership includes staff from the Department of Public Works (DPW), Department of Regional Planning, Department of Public Health, Department of Beaches and Harbors, the Los Angeles County Sheriff's Department, and California Highway Patrol. The BAC is comprised of appointees from the County Supervisors, and staff from Caltrans and LACMTA. The proposed network was also influenced considerably by existing plans and ongoing bicycle planning efforts, by both the County of Los Angeles and other adjacent jurisdictions. The overall objective was to create a seamless, well-integrated bikeway network throughout Los Angeles County.

StreetPlan, an Alta Planning + Design model, was used to evaluate the feasibility of installing bike lanes on roadway segments throughout the County of Los Angeles. *StreetPlan* compares measurements taken of the existing roadway cross-section with roadway design minimum widths for the County and the amount of roadway space available to make a feasibility assessment. The assessments made by the *StreetPlan* model were later followed up by engineering review. **Appendix G** provides a detailed description of the *StreetPlan* model that was conducted to evaluate the proposed bikeway network.

This feasibility study identified potential bicycle facilities based on existing street cross-sections and proposed cross-sections, which is sufficient for a planning level analysis. Implementing specific bike facilities proposed in the Plan will require a more detailed traffic study that takes into account traffic volumes, speeds, percentage of heavy vehicles/trucks, demand for bicycle facilities, coordination with other jurisdictions/agencies, public outreach, and other considerations.

To enhance the utility of the regional bicycle network, this Plan also includes provisions for secure and convenient bicycle parking and support facilities that encourage transportation-based bicycle trips, and enhance access to transit.

Consistent with the County's Neighborhood Traffic Management Program's[14] primary goal of involving the community in the planning process, the implementation of bicycle boulevard projects will include a process of public outreach to neighborhood residents and other stakeholders. Upon notifying the community of proposed bicycle boulevard projects, a steering committee would be assembled, comprised of neighborhood residents and other stakeholders, County of Los Angeles representatives, and DPW staff. The steering committee will monitor and guide DPW's data collection and analysis. The data analysis will provide further information on the cost and feasibility of potential bicycle boulevard treatments.

DPW staff and the steering committee will present the collected data and analysis results to the public at a community workshop. Planning and outreach for the community workshops will attempt to solicit broad participation and support throughout the community. Upon receiving reasonable community consensus at the public meeting(s), DPW staff will present the bicycle boulevard study results to appropriate regulatory agencies (e.g., County Board of Supervisors, Los Angeles County Sheriff, Los Angeles County Fire, and California Highway Patrol) for review and implementation.

[14] *Neighborhood Traffic Management Program http://dpw.lacounty.gov/TNL/NTMP/Page_01.cfm*

3.1.2 Bicycle Demand and Air Quality Benefits Analysis

Replacing vehicular trips with bicycle trips has a significant impact on reducing human-generated greenhouse gases (GHGs) in the atmosphere that contribute to climate change. Fewer vehicle trips and Vehicle Miles Traveled (VMTs)[15] translates into fewer mobile source pollutants being released into the air, such as carbon dioxide, nitrogen oxides, and hydrocarbons. Under the Clean Air Act, regions must meet the National Ambient Air Quality Standards established by the U.S. Environmental Protection Agency or they are designated as non-attainment areas.

South Coast Air Quality Management District (SCAQMD) covers most of the County of Los Angeles and is designated a non-attainment area for ozone and Particulate Matter (PM 2.5 and PM 10). The SCAQMD jurisdiction is approximately 10,743 square miles and includes the entire County except for the Antelope Valley, which is covered by the Antelope Valley Air Quality Management District (AVAQMD). The SCAQMD implements a wide range of programs and regulations that address point source pollution and mobile source emissions, and enforces air quality through inspections, fines, and educational training.

The AVAQMD, which includes the Antelope Valley, is a non-attainment area for ozone. Ozone is formed by a photochemical reaction of different pollutants including nitrogen oxides and hydrocarbons. Exposure to ozone has been linked to a number of acute health problems, especially in children.[16] PM pollution has been linked to a number of acute and chronic conditions including chronic bronchitis and heart attack.[17] Although the Los Angeles region has made great strides in improving air quality in recent decades, continued effort is needed to meet federal standards and protect public health. Replacing vehicle trips with bicycle trips is one of many strategies that can help address air pollution.

The SCAQMD and the AVAQMD are responsible for monitoring air quality, as well as planning, implementing, and enforcing programs designed to attain and maintain state and federal ambient air quality standards in the region.

Appendix B presents detailed estimates of existing and future bicycle ridership and associated air quality benefits. For each planning area, an adjusted estimate of current bicycling levels was made using County of Los Angeles and United States Census data, along with several adjustments for likely bicycle commuter underestimations. The Plan predicted future bicycle ridership based on increases observed in other cities and automobile trip reductions for each planning area. Based on the vehicular trip reductions, the Plan predicted planning area-specific air quality benefits for 2035[18]. The planning areas included in the Plan are listed alphabetically. **Table 3-2** summarizes existing and future bicycle ridership for all planning areas in unincorporated County of Los Angeles and the associated air quality benefits.

[15] *Vehicle Miles Traveled is a measurement of the extent of motor vehicle operation, a sum of all miles traveled by motor vehicles over a given period.*
[16] *http://www.aqmd.gov/forstudents/health_effects_on_children.html*
[17] *http://www.epa.gov/pm/health.html*
[18] *2035 was chosen as the horizon year to conform to the County General Plan, which estimates future population in 2035*

Table 3-2: Current and Future Ridership and Air Quality Benefits

Commuting Statistics	Current (2010)	Future (2035)
Study area population	1,188,324	1,648,695
Employed population	404,342	549,131
Bike-to-work mode share	2.0%	4.0%
Number of bike-to-work commuters	2,176	6,264
School children, ages 6-14 (grades K-8)	174,140	279,535
School children bicycling mode share	2.0%	4.0%
School children bike commuters	3,483	10,873
Number of college students in study area	77,887	125,138
Estimated college bicycling mode share	10.0%	15.0%
College bike commuters	7,789	18,359
Total number of bike commuters	13,719	44,477
Total daily bicycling trips	27,438	88,955
Vehicle Trips and Miles Reduction	**Current (2010)**	**Future (2035)**
Reduced Vehicle Trips per weekday	9,167	24,464
Reduced Vehicle Trips per year	2,392,599	6,385,134
Reduced Vehicle Miles per weekday	60,415	155,375
Reduced Vehicle Miles per year	15,768,365	40,552,751
Air Quality Benefits	**Current (2010)**	**Future (2035)**
Reduced Hydrocarbons (pounds/weekday)	181.14	465.86
Reduced NO_x (pounds/weekday)	126.53	325.42
Reduced CO (pounds/weekday)	1,651.59	4,247.52
Reduced $C0_2$ (pounds/weekday)	49,148	126,398
Reduced Hydrocarbons (pounds/year)	47,278	121,589
Reduced NO_x (pounds/year)	33,025	84,933
Reduced CO (pounds/year)	431,065	1,108,604
Reduced $C0_2$ (pounds/year)	12,827,656	32,989,896

Source: See LACBMP Appendix C, Tables C1-10.

The above analysis shows that while the population of the study area is expected to increase by 45% over the next 23 years, the expected number of bike commuters will increase by 225%. The increased number of trips taken by bicycle will reduce VMT by 155,375 miles on an average weekday, and lead to sizeable air quality benefits. By 2035, emissions of nearly 85,000 pounds of smog-forming NOx will be avoided per year, along with 16,500 tons of $C0_2$, one of the principle gasses associated with global climate change.

3.2 Antelope Valley Planning Area

The Antelope Valley Planning Area consists of 1,800 square miles of unincorporated territory within the Antelope Valley. The planning area encompasses the majority of northern County of Los Angeles, accounting for 44% of the County of Los Angeles' total square mileage.[19] The planning area is primarily comprised of rural communities and open space, including high desert lands, the Liebre and Sierra Pelona mountain ranges, and the Angeles National Forest. **Figure D-1** in the appendices displays the existing land uses for the communities in the Antelope Valley Planning Area.

There are an estimated 103,000 residents living in the unincorporated communities of Antelope Valley Planning Area.[20] The unincorporated areas surround the more urban and densely populated incorporated cities of Palmdale and Lancaster with estimated populations of 182,663 and 160,650 respectively.[21] Over the past decade, the entire Antelope Valley has experienced significant population growth, including the unincorporated area within the planning area, which is largely due to the influx of housing subdivisions within and adjacent to Palmdale and Lancaster. This trend is expected to continue with the current unincorporated areas of the planning area projected to grow to a population of 255,000 by 2035.[22]

The planning area's 18 unincorporated communities are Acton, Antelope Acres, Crystalaire, Gorman, El Dorado, Juniper Hills, Green Valley, Lake Hughes, Elizabeth Lake, Lake Los Angeles, Leona Valley, Littlerock, Llano, Pearblossom, Quartz Hill, Sun Village, White Fence Farms, and Wrightwood. The following subsections describe current bicycling conditions in Antelope Valley unincorporated communities.

3.2.1 Existing Bicycling Conditions

Bicycling conditions throughout the planning area vary significantly due to Antelope Valley's diverse terrain and land use patterns. Some of the more populated communities such as Quartz Hill or Littlerock/Pearblossom have flat terrain and grid street networks that are conducive to developing a bicycle network with connections to neighboring jurisdictions' bicycle networks. In more rural areas, many of Antelope Valley's roadways are narrow, two-lane roads that function as either arterial highways or residential streets. Some of these roadways have wider shoulders and some also have relatively low traffic volumes and most have no on-street parking demand. Bicycling as a transportation mode can be challenging throughout the planning area due to substantial distances to access employment and commercial centers.

The planning area's unincorporated parts contain 7.2 miles of County maintained bikeways. The existing bikeways are located in Quartz Hill and Lake Los Angeles. The bikeways within Quartz Hill connect with the bicycle network of the neighboring City of Lancaster. **Table 3-3** summarizes the location, classification, and mileage of existing bikeways. **Figure 3-6** shows Antelope Valley's existing bikeways along with major transit stations and bicycle-involved collisions.

[19] *Los Angeles County, Antelope Valley Area Plan Update Background Report, 2009*

[20] *2008 SCAG Regional Transportation Plan, Table 2.5: Los Angeles County Population Projections*

[21] *2008 SCAG Regional Transportation Plan.*

[22] *2008 SCAG Regional Transportation Plan.*

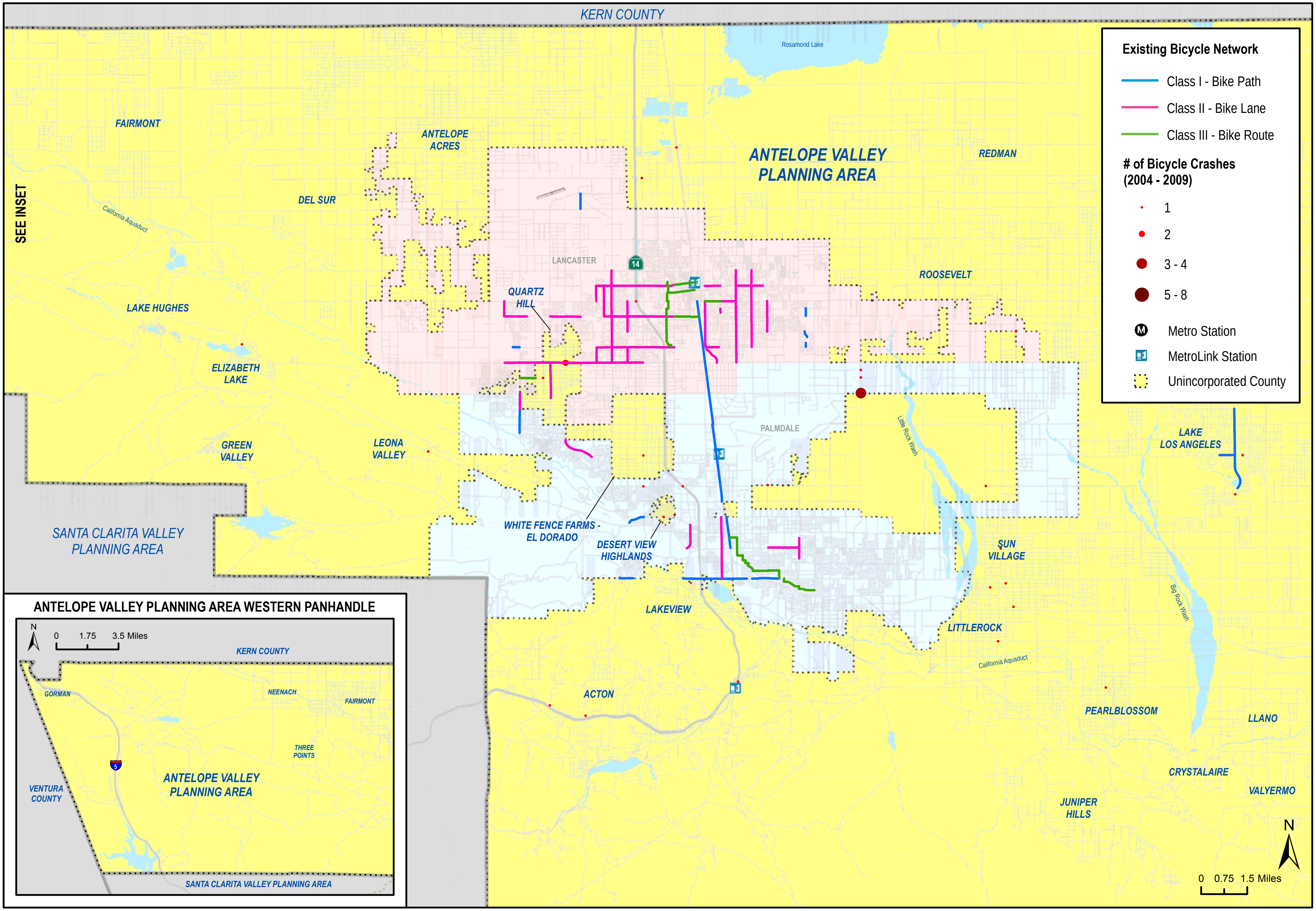


Figure 3-6: Antelope Valley Planning Area Exisiting Bicycle Network, Major Transit Stations, and Bicycle Crashes (2004-2009)

Source: Los Angeles Metro (2010); SWITRS (2010)
Date: 8/2/2010

Table 3-3: Existing Antelope Valley Bikeways

Community	Segment	From	To	Class	Mileage
Lake Los Angeles	170th Street East	Avenue M-8	Avenue P	1	2.7
Lake Los Angeles	Avenue O	165th Street East	170th Street East	1	0.5
Quartz Hill	50th Street West	Avenue L	Avenue M-4	2	1.3
Quartz Hill	60th Street West	Avenue L-4	Avenue L-8	2	0.3
Quartz Hill	60th Street West	Avenue L-12	Avenue M-8	2	0.7
Quartz Hill	Avenue L	55th Street West	40th Street West	2	1.5
Quartz Hill	Avenue L-8	57th Street West	55th Street West	3	0.2
				Total	**7.2**

**County-maintained bikeways only*

Bicycle collision data assists with identifying locations that may require safety assessment and serves as baseline with which to measure the impacts of bicycle program and infrastructure improvements. According to the California Highway Patrol Statewide Integrated Traffic Records System (SWITRS), 46 bicycle collisions were reported within the unincorporated parts of Antelope Valley Planning Area between 2004 through 2009. Of these 46 instances, three took place at the intersection of 50th Street E and Avenue M, which is the greatest number of crashes at a single location in the Planning Area.

Bicycle-transit integration is vital to encouraging utilitarian bicycling in areas where there is significant distance between where most people live and work. There are three MetroLink stations in Antelope Valley, including one within the unincorporated area, the Vincent Grade/Acton Station. By providing improved bicycle access to commuter rail stations, residents will have greater opportunity to complete lengthy trips without the use of an automobile.

3.2.2 Proposed Network

Table 3-4 summarizes the proposed bicycle network mileage by classification type within the Antelope Valley Planning Area. Projects were prioritized based on bicycling demand, facility deficiencies, barriers to implementation, public comment, and a host of other criteria. As shown, the proposed network would provide an additional 230.7 miles of facility across the planning area, a substantial increase compared to the approximately eight miles of existing bicycle facility within the unincorporated parts of Antelope Valley.

Table 3-4: Antelope Valley Planning Area Bicycle Network Facility Type and Mileage Summary

Mileage of Proposed Projects by Facility Type	Miles	% of Total
Class II – Bike Lane	95.1	41.6%
Class III – Bike Route	134.8	58.4%
Total	**230.7**	**100%**

Table 3-5 presents the Supervisorial District, specific location, alignment, classification, priority score, and mileage for each of the proposed bikeways within the planning area.

Figure 3-7 displays the proposed bicycle network as well as existing bicycle facilities and major transit stations in the Antelope Valley Planning Area. **Figure 3-8** shows a more detailed view of the proposed bicycle network within the communities of Quartz Hill and White Fence Farms. **Figure 3-9** provides a more detailed view of the proposed bicycle network within the communities of Littlerock and Sun Village Area.

Table 3-5: Antelope Valley Planning Area Proposed Bicycle Facilities

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
1	30th Street West	Avenue M	Avenue O-12	White Fence Farms-El Dorado, Cities of Lancaster[A] and Palmdale[A]	2	2.8	5	120
2	Elizabeth Lake Road	Dianron Road	10th Street West	Desert View Highlands	2	0.8	5	110
3	170th Street East	Avenue M	Avenue M-8	Lake Los Angeles	2	0.5	5	110
	170th Street East	Avenue P	Palmdale Boulevard		2	1.5		
4	Elizabeth Lake Road	Lake Hughes Road	Munz Ranch Road	Elizabeth Lake	2	3.4	5	110
5	Sierra Highway	Avenue S	Pearblossom Highway	Lakeview and City of Palmdale[A]	2	2.7	5	105
6	Avenue L-8	65th Street West	60th Street West	City of Lancaster[A]	2	0.5	5	100
7	50th Street West	Avenue M-2	Avenue N	Quartz Hill	3	0.9	5	95
8	55th Street West	Avenue L	Avenue M-8	Quartz Hill and City of Lancaster[A]	2	1.5	5	95
9	Ridge Route Road/ Pine Canyon Road/ Elizabeth Lake Road	Lancaster Road	0.3 miles east of Cherry Tree Lane (Palmdale city limit)	Three Points, Lake Hughes, Elizabeth Lake, Leona Valley	3	30.8	5	95
10	40th Street East	Avenue H	Lancaster Blvd	Roosevelt, and City of Lancaster[A]	3	1.5	5	90
11	40th Street West	Avenue K-4	Avenue M	Quartz Hill, and City of Lancaster[A]	2	1.7	5	90
12	Avenue O	90th Street East	150th Street East	Lake Los Angeles	3	4.0	5	90
		150th Street East	165th Street East		2	1.5		
		170th Street East	180th Street East		2	1.0		
13	Angeles Forest Highway	Sierra Highway	Aliso Canyon Road	Acton	3	7.1	5	90
14	Avenue N-8	Bolz Ranch Road	30th Street West	White Fence Farms-El Dorado and City of Palmdale[A]	3	1.5	5	85
15	45th Street West	Avenue M-8	Avenue N-8	Quartz Hill, White Fence Farms-El Dorado and Cities of Lancaster[A] and Palmdale[A]	2	1.0	5	85
16	Avenue P	160th Street East	170th Street East	Lake Los Angeles	3	1.6	5	85

Table 3-5: Antelope Valley Planning Area Proposed Bicycle Facilities (continued)

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
17	Avenue O	30th Street West	10th Street West	White Fence Farms-El Dorado	2	2.0	5	85
18	110th Street West	Avenue G	Johnson Road	Del Sur and City of Lancaster[A]	3	4.5	5	80
19	10th Street West	Auto Center Drive	Elizabeth Lake Road	Desert View Highlands and City of Palmdale[A]	2	0.3	5	80
20	105th Street East	Palmdale Boulevard	Avenue S	Sun Village	2	1.5	5	80
21	Lancaster Boulevard	40th Street East	55th Street East	Roosevelt and City of Lancaster[A]	2	1.5	5	80
22	Barrell Springs Road	Tierra Subida Avenue	Sierra Highway	Lakeview	2	2.0	5	80
23	Tierra Subida Avenue	Avenue S	Barrell Springs Road	Lakeview	2	0.8	5	80
24	Avenue U	87th Street East	96th Street East	Little Rock, Sun Village	2	1.0	5	80
25	Avenue M	30th Street West	State Route 14	Quartz Hill	2	1.7	5	80
26	20th Street West	Avenue O-12	West Avenue M	Quartz Hill	2	2.8	5	80
27	Avenue H	Division Street	40th Street East	Roosevelt and City of Lancaster[A]	2	4.1	5	80
28	Avenue T	80th Street East	126th Street East	Littlerock	2	4.6	5	75
29	30TH Street East	East Avenue Q	East Avenue P	Antelope Valley	3	1.0	5	75
30	Avenue K	52nd Street West	40th Street West	Quartz Hill and City of Lancaster[A]	2	1.2	5	75
31	Avenue S	0.3 miles east of The Groves (Palmdale city limit)	Tierra Subida Avenue	Lakeview	2	1.3	5	75
32	Crown Valley Road	Sierra Highway	Soledad Canyon Road	Acton	3	1.9	5	75
33	Avenue R	90th Street East	110th Street East	Sun Village	2	2.0	5	75
34	Division Street	Avenue H	Avenue E	Roosevelt	2	3.0	5	75
35	Sierra Highway	Avenue P-8	East Avenue Q	Antelope Valley	2	0.5	5	75
36	90th Street West	Avenue G	Avenue G-8	Fairmount, Del Sur, and City of Lancaster[A]	3	0.5	5	75
37	Avenue L-8	60th Street West	50th Street West	Quartz Hill and City of Lancaster[A]	2	1.0	5	75
38	Mackennas Gold Avenue/ Rawhide Avenue	Avenue P	170th Street East	Lake Los Angeles	3	0.9	5	70
39	116th Street East	Avenue S	Avenue T	Sun Village	2	1.0	5	70
40	Avenue M-8	60th Street West	45th Street West	Quartz Hill and City of Palmdale[A]	2	1.5	5	70

Table 3-5: Antelope Valley Planning Area Proposed Bicycle Facilities (continued)

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
41	45th Street West	Avenue K-4	Avenue L	Quartz Hill	2	1.0	5	70
42	San Francisquito Canyon Road	Calle Siemerio	Elizabeth Lake Road	Green Valley, Elizabeth Lake	3	3.5	5	70
43	90th Street West	Avenue H-8	Avenue K	Fairmount, Del Sur, and City of Lancaster[A]	3	2.5	5	70
44	106th Street East	Avenue S	Pearblossom Highway	Sun Village	2	2.5	5	65
45	Sierra Highway	Avenue A	Avenue G	Roosevelt	2	6.1	5	65
46	Red Rover Mine Road/ Escondido Canyon Road	Sierra Highway	Crown Valley Road	Acton	3	2.4	5	65
47	96th Street East	Avenue R-8	Avenue U	Littlerock, Sun Village	2	2.5	5	65
48	Pearblossom Highway	62nd Street East	87th Street East	Littlerock and City of PalmdaleA	2	3.0	5	65
49	Avenue S	0.5 miles west of 90th Street East	116th Street	Littlerock, Sunvillage	2	3.2	5	65
50	Johnson Road	Elizabeth Lake Road	110th Street West	Elizabeth Lake, Del Sur	3	3.4	5	65
51	East Avenue P	15th Street East	50th Street East	Antelope Valley Planning Area and City of Palmdale[A]	2	3.6	5	65
52	Avenue K	85th Street West	90th Street West	Fairmount, Del Sur, and City of Lancaster[A]	3	0.5	5	65
53	Avenue H	80th Street West	70th Street West	Fairmount, Del Sur, and City of Lancaster[A]	3	1.0	5	65
54	Avenue G	Lancaster City Limits	Division Street	Roosevelt	2	2.5	5	65
55	Godde Hill Road	Avenida Entrada	Elizabeth Lake Road	Quartz Hill, Leona Valley and City of Palmdale[A]	3	2.9	5	65
56	40th Street East	0.3 miles north of Barrell Springs Road	Barrell Springs Road	Antelope Valley Planning Area	3	0.3	5	60
57	50th Street East	Avenue M	Avenue Q	Antelope Valley Planning Area	3	4.0	5	60
58	Barrell Springs Road/ Cheseboro Road/ Mount Emma Road	47th Street East	Fort Tejon Road	Antelope Valley Planning Area	3	5.0	5	60

Table 3-5: Antelope Valley Planning Area Proposed Bicycle Facilities (continued)

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
59	Aliso Canyon Road	Soledad Canyon Road	Angeles Forest Highway	Acton	3	7.4	5	60
60	90th Street East 90th Street East/ 87th Street East	Avenue M Avenue Q	Avenue Q Pearblossom Highway	Sun Village, Little Rock, City of Palmdale[A]	3 2	2.0 6.7	5	60
61	Palmdale Boulevard Palmdale Boulevard	60th Street East 110th Street East	110th Street East 170th Street East	Sun Village, Lake Los Angeles, and City of Palmdale[A]	2 3	4.5 6.2	5	60
62	San Francisquito Canyon Road	Calle Siemerino	Santa Clarita River Trail	Green Valley	3	14.8	5	60
63	Avenue G West	110th Street West	70th Street West	Del Sur and City of LancasterA	2	4.0	5	60
64	Avenue N	50th Street West	State Route 14	Quartz Hill, White Fence-El Dorado, and Cities of Lancaster and Palmdale[A]	2	3.6	5	55
65	Avenue J	110th Street West	70th Street West		3	4.0	5	55
66	70th Street West	Avenue F	Avenue J		3	4.5	5	55
67	Lancaster Road/ Fairmont Neenach Road/ 120th Street West / Avenue I	160th Street West	70th Street West	Fairmont, Del Sur and City of LancasterA	3	9.8	5	55
68	Munz Ranch Road	Fairmont Neenach Road	Elizabeth Lake Road	Del Sur, Elizabeth Lake	3	4.4	5	50
Total Miles						**230.7**		

[A] *Part of project traverses through or along boundary of incorporated city*

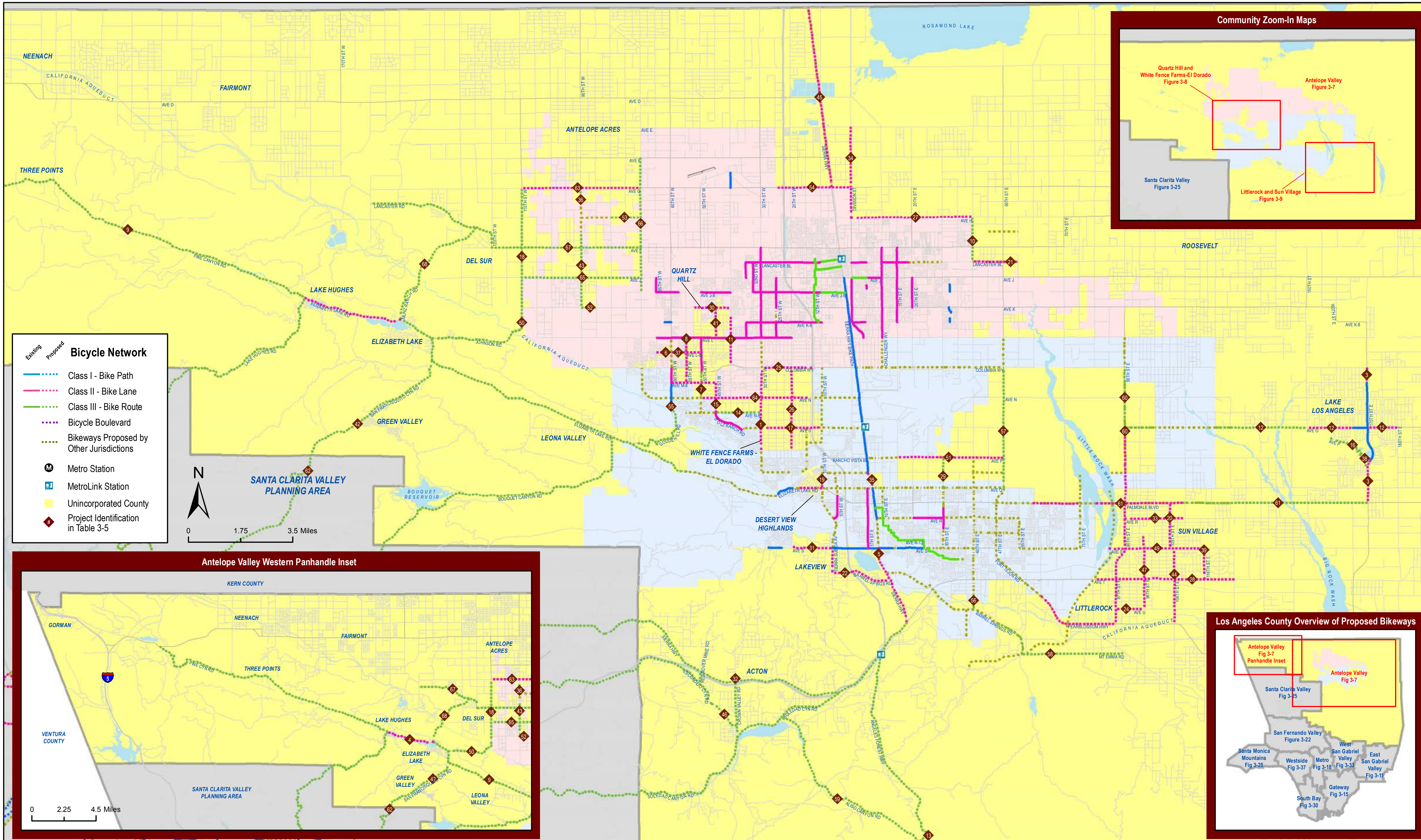


Figure 3-7: Antelope Valley Planning Area Proposed Bicycle Facilities

Source: Los Angeles Metro (2006; 2010); Alta Planning + Design (2010)
Date: 1/31/2011

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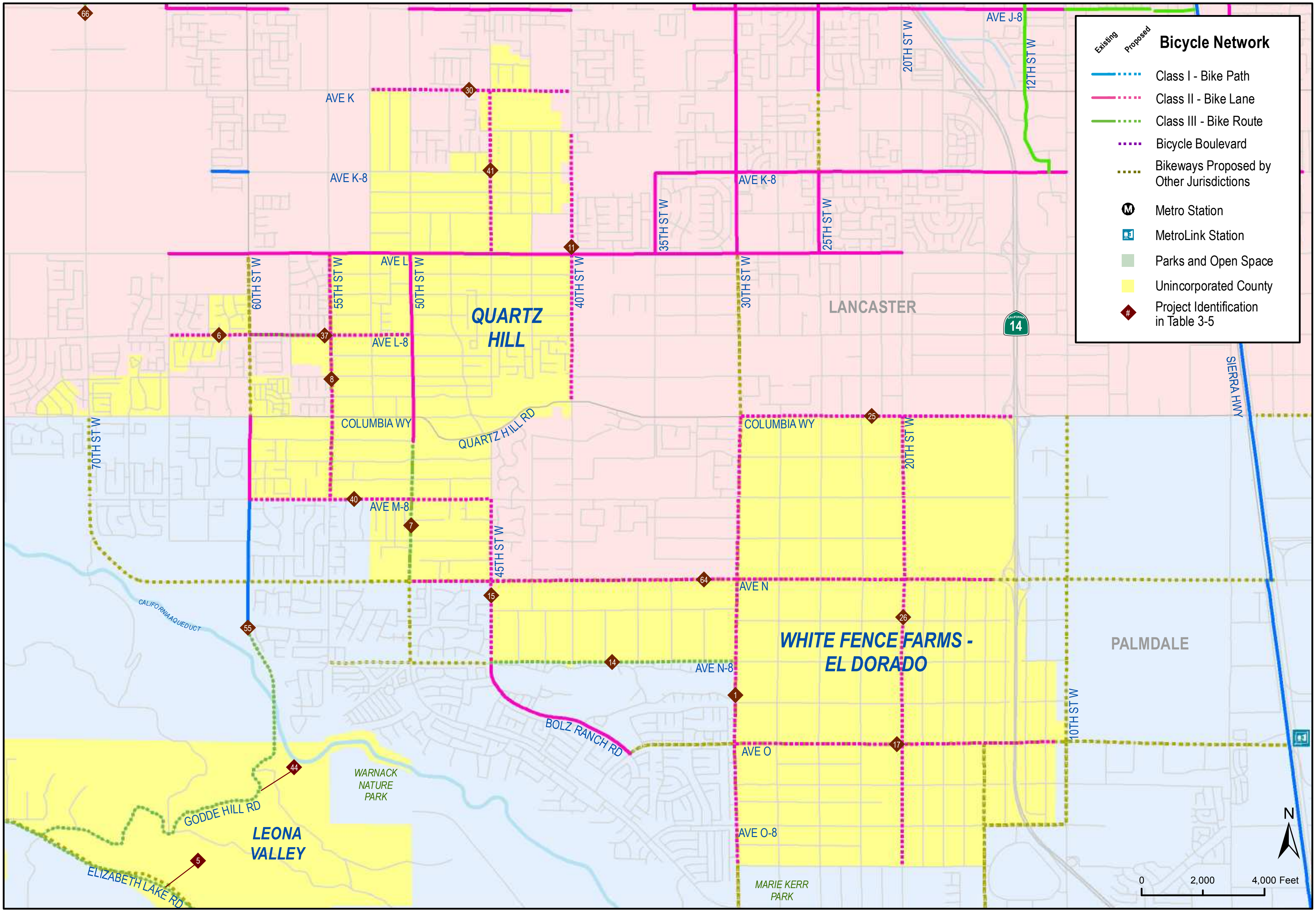

Figure 3-8: Quartz Hill and White Fence Farms-El Dorado Proposed Bicycle Facilities

Source: Los Angeles Metro (2006; 2010); Alta Planning + Design (2010)
Date: 1/31/2011

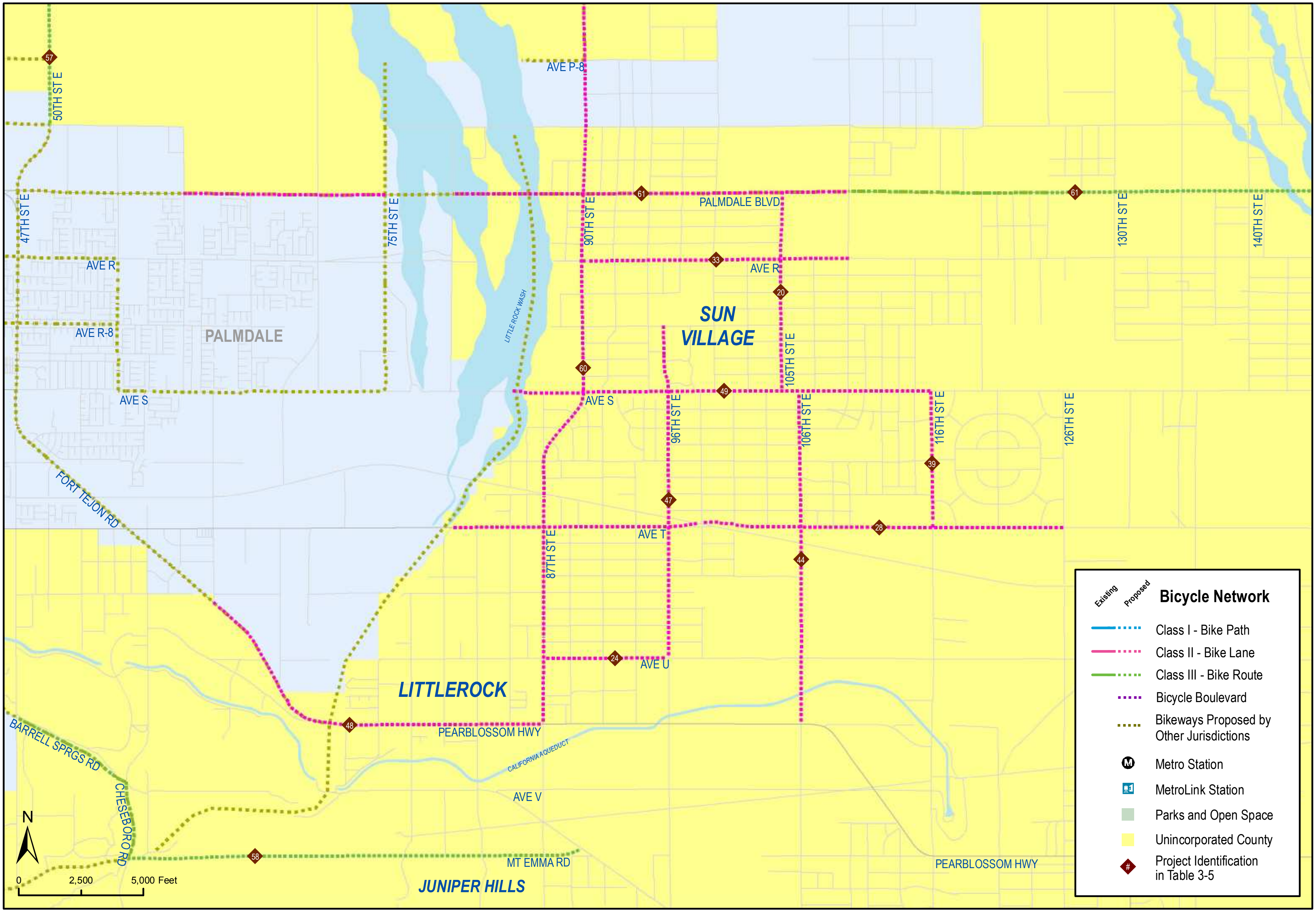

Figure 3-9: Littlerock and Sun Village Proposed Bicycle Facilities

Source: Los Angeles Metro (2006; 2010); Alta Planning + Design (2010)
Date: 1/31/2011

3.3 East San Gabriel Valley Planning Area

The East San Gabriel Valley Planning Area is the easternmost planning area in the Los Angeles Basin, adjacent to the San Bernardino County border. It consists of the greatest number of unincorporated communities, many of which are small, non-contiguous communities interspersed with incorporated cities. They include: Avocado Heights, Charter Oak Islands, Covina Islands, East Azusa, East Irwindale, East San Dimas, Glendora Islands, Hacienda Heights, North Claremont, North Pomona, Northeast La Verne, Northeast San Dimas, Rowland Heights, South San Jose Hills, South Walnut, Valinda, Walnut Islands, West Claremont, West Puente Valley, and West San Dimas.

Approximately 274,000 people live in the primarily built-out East San Gabriel Valley unincorporated neighborhoods.[23] **Figure D-2** in **Appendix D** contains the distribution of land uses across the planning area.

3.3.1 Existing Bicycling Conditions

The unincorporated parts of East San Gabriel Valley Planning Area have 24.5 miles of existing County-maintained bikeways. **Table 3-6** presents the location, classification, and mileage of existing bikeways within the communities.

Table 3-6: East San Gabriel Valley Existing Bikeways

Community	Segment	From	To	Class	Mileage
Avocado Heights and City of Industry	San Jose Creek Bicycle Path	Workman Mill Road	7th Avenue	1	2.1
Cities of Baldwin Park and Industry	San Gabriel River Bicycle Path	Ramona Boulevard	0.1 miles south of Fineview Street	1	2.8
City of Azusa	San Gabriel River Bicycle Path	San Gabriel Canyon Road	Huntington Road	1	2.6
Covina Islands	Hollenbeck Avenue	San Dimas Wash	0.1 miles south of Edna Place	3	0.6
Hacienda Heights	Cedarlane Drive	Glendale Avenue	Fieldgate Avenue	3	0.2
Hacienda Heights	Colima Road	Allenton Avenue	Larkvane Road	2	3.5
Hacienda Heights	Fieldgate Avenue	Cedarlane Drive	Wedgeworth Drive	3	0.1
Hacienda Heights	Garo Street	Stimson Avenue	Glenelder Avenue	3	0.4
Hacienda Heights	Glenelder Avenue	Garo Street	Cedarlane Drive	3	0.2
Hacienda Heights	Halliburton Road	Stimson Avenue	Colima Road	2	1.2
Hacienda Heights	Pepperbrook Way	Wedgeworth Drive	Azusa Avenue	3	0.1
Hacienda Heights	Stimson Avenue	Gale Avenue	La Monde Street	3	1.1
Hacienda Heights	Stimson Avenue	La Monde Street	Colima Road	2	0.9
Hacienda Heights	Wedgeworth Drive	Fieldgate Avenue	Pepperbrook Way	3	1.2
Hacienda Heights, Rowland Heights	Colima Road	Casino Drive	Allenton Avenue	3	1.2
South San Jose Hills	La Puente Road	Nogales Street	Trish Way	2	0.3

[23] *2008 SCAG Regional Transportation Plan, Table 2.5: Los Angeles County Population Projections*

Table 3-6: East San Gabriel Valley Existing Bikeways (continued)

Community	Segment	From	To	Class	Mileage
South San Jose Hills	Nogales Street	0.1 miles south of Amanda Street	La Puente Road	2	0.3
Valinda	Lark Ellen Avenue	0.1 miles south of Francisquito Avenue	Maplegrove Street	3	0.5
Valinda	Temple Avenue	0.1 miles west of Ruthcrest Avenue	Azusa Avenue	3	1.1
Valinda	Valinda Avenue	0.1 miles south of Merced Avenue	Maplegrove Street	3	0.6
Valinda	Valinda Avenue	Burtree Street	Amar Road	2	0.3
Valinda	Valinda Avenue	Maplegrove Street	Meadowside Street	2	0.1
Valinda	Valinda Avenue	Meadowside Street	Burtree Street	3	0.1
Walnut Islands	Cameron Avenue	Whitebirch Drive	Grand Avenue	2	0.6
Walnut Islands	Grand Avenue	Cameron Avenue	0.3 miles south of Hillside Drive	2	0.4
West Puente Valley	Sunset Avenue	Fairgrove Avenue	Temple Avenue	3	0.8
West Puente Valley	Temple Avenue	0.2 miles east of Baldwin Park Boulevard	Puente Avenue	3	0.5
West Puente Valley	Temple Avenue	Sunset Avenue	Unruh Avenue	3	0.7
				Total	**24.5**

**County-maintained bikeways only*

Figure 3-10 displays the existing bicycle network along with mass transit stations and locations of bicycle collisions[24] in the East San Gabriel Valley Planning Area. Los Angeles County Metropolitan Authority (LACMTA) identified one gap in the 2006 Metro Bicycle Transportation Strategic Plan, as shown in Table 3-7.

Table 3-7: MTA Identified Gaps in the East San Gabriel Inter-Jurisdictional Bikeway

MTA #	Corridor	Jurisdiction	Description	Constraints
29	Colima Road	LA County	Colima Road between Fullerton Rd and Diamond Bar City Limits in unincorporated Rowland Heights	ROW width

Source: Los Angeles County Metropolitan Transportation Authority: 2006 Metro Bicycle Transportation Strategic Plan, p. 103-104

[24] *Bicycle collision locations displayed for unincorporated county only.*

According to the California Highway Patrol SWITRS data, a total of 256 bicycle collisions were reported within the unincorporated communities of East San Gabriel Planning Area from 2004 through 2009. Sixty-eight of these collisions occurred within Rowland Heights and seven at the intersection of Paso Real Avenue and Colima Road, the single greatest crash location in the planning area between 2004 and 2009. A nearly one-mile segment of Colima Road from Fullerton Drive to Nogales Street had a reported 32 bicycle collisions during the study period.

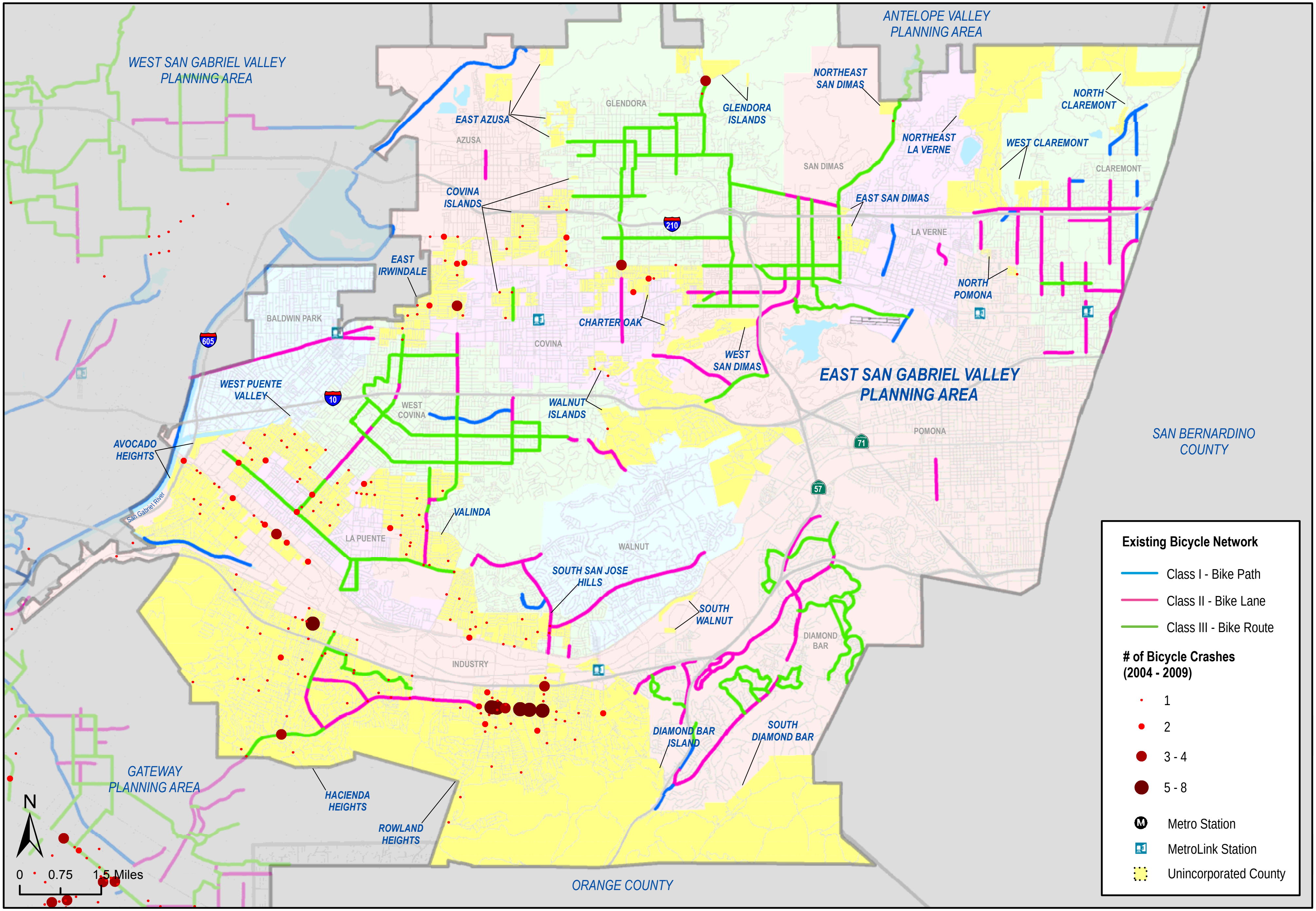

Figure 3-10 East San Gabriel Valley Planning Area Existing Bicycle Network, Major Transit and Bicycle Crashes (2004-2009)

Los Angeles County Bicycle Master Plan

Source: Los Angeles Metro (2010)
Date: 10/13/2011; SWITRS (2010)

3.3.2 Proposed Network

Table 3-8 summarizes the proposed bicycle network mileage by classification type within the East San Gabriel Valley Planning Area. Projects were prioritized based on bicycling demand, facility deficiencies, barriers to implementation, public comment, and a host of other criteria. As shown, the proposed network would provide approximately 91.1 miles of facility across the planning area compared to its approximately 24.5 existing miles of bicycle facility.

Table 3-8: East San Gabriel Valley Planning Area Bicycle Network Facility Type and Mileage Summary

Mileage of Proposed Projects by Facility Type	Miles	% of Total
Class I – Bicycle Path	25.2	27.7%
Class II – Bicycle Lane	31.0	34.0%
Class III – Bicycle Route	30.6	33.6%
Bicycle Boulevard	4.3	4.7%
Total	**91.1**	

Table 3-9 presents the Supervisorial District, specific location, alignment, classification, priority score, and mileage for each of the proposed bikeways within the planning area.

Figure 3-11 displays the proposed bicycle network as well as existing bicycle facilities and major transit stops in the East San Gabriel Valley Planning Area. **Figure 3-12** provides a closer view of the proposed bicycle network within the communities comprising the southwestern portion of the planning area: Avocado Heights, Hacienda Heights, Valinda, and West Puente Valley. **Figure 3-13** provides a more focused view of the proposed bicycle network within the communities comprising the eastern portion of the planning area: Charter Oak, Covina Islands, East Azusa, East Irwindale, Glendora Islands, Walnut Islands, and West San Dimas.

Table 3-9: East San Gabriel Valley Planning Area Proposed Bicycle Facilities

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
1	North Sunset Avenue	Amar Road	Temple Avenue	West Puente Valley, Valinda	2	0.4	1	145
2	San Jose Creek Proposed Bicycle Path	7th Avenue	Murchison Avenue	Cities of Industry and Pomona; Hacienda Heights, Rowland Heights, South Walnut and Walnut Islands	1	15.7	1, 4	140

Table 3-9: East San Gabriel Valley Planning Area Proposed Bicycle Facilities (continued)

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
3	Vineland Avenue	0.3 miles north of Rath Street (Walnut Creek)	Nelson Avenue	West Puente Valley and City of Industry[A]	3	1.3	1	125
4	Killian Avenue	Paso Real Avenue	Otterbien Avenue	Rowland Heights	3	0.4	4	125
5	Paso Real Avenue	Colima Road	Pathfinder Road	Rowland Heights	3	0.9	4	125
6	Pathfinder Road[B]	Paso Real Avenue	Alexdale Lane	Rowland Heights	2	0.4	4	125
7	Jellick Drive/ Los Padres Drive	Greenbay Drive	Aguiro Street	Rowland Heights	3	1.5	4	120
8	Amar Road	Vineland Avenue	North Puente Avenue	West Puente Valley	2	0.4	1	120
9	West Gladstone Street	Blender Street	Big Dalton Wash	East Irwindale and City of Glendora[A]	3	0.8	1,5	120
10	Balan Road/ Annendale Avenue	Brea Canyon Cut Off Road	Pathfinder Road	Rowland Heights	3	1.0	4	115
11	Batson Avenue	Colima Road	Aguiro Street	Rowland Heights	3	1.1	4	115
12	Nogales Street	La Puente Road	Hollingworth Street	West Covina	2	0.4	1	115
13	Pathfinder Road	Fullerton Road	Paso Real Avenue	Rowland Heights	2	1.6	4	115
14	Fullerton Road	Colima Road	Pathfinder Road	Rowland Heights	2	1.6	4	115
15	Nogales Street	Arenth Avenue	Pathfinder Road	Rowland Heights and City of Industry[A]	2	1.8	4,1	110
16	Pathfinder Road	Alexdale Lane	Canyon Ridge Road	Rowland Heights	2	1.9	4	110
17	Mauna Loa Avenue	Citrus Avenue	La Serena Drive	East Irwindale and City of Azusa[A]	3	0.6	1, 5	105
18	Willow Avenue	Francisquito Avenue	Amar Road	West Puente Valley and City of La Puente[A]	3	0.8	1	100
19	Las Lomitas Drive/ Newton Street	Vallecito Drive	Hacienda Boulevard	Hacienda Heights	3	1.1	4	100
20	Los Robles Avenue	7th Avenue	Kwis Avenue	Hacienda Heights	3	1.3	4	100
21	Fairway Drive/ Brea Canyon Cut Off Road	Walnut Drive	Bickford Drive	Rowland Heights	2	1.0	4	100
22	Glendora Avenue	Arrow Highway	La Cienega Avenue	Charter Oak	2	0.3	5	100
23	Thompson Creek Proposed Bicycle Path[E]	Lockhaven Way White Avenue	White Avenue Murchison Avenue	City of Pomona	1 3	2.3 1.4	1	100
24	Kwis Avenue	Three Palms Avenue	Newton Street	Hacienda Heights	3	0.6	4	95

Table 3-9: East San Gabriel Valley Planning Area Proposed Bicycle Facilities (continued)

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
25	Walnut Avenue/ Echelon Avenue/ Ranlett Avenue	Francisquito Avenue	Temple Avenue	Valinda and City of Industry A	3	1.6	1	95
26	La Monde Street	Hacienda Boulevard	Stimson Avenue	Hacienda Heights	2	0.2	4	95
27	Temple Avenue	Azusa Avenue	Woodgate Drive	South San Jose Hills	2	0.4	1	95
28	Azusa Avenue Azusa Avenue	Colima Road Glenfold Drive	Glenfold Drive Tomich Road	Hacienda Heights	2 3	0.6 0.1	4	95
29	Gale Avenue	7th Avenue	Stimson Avenue	Hacienda Heights and City of Industry A	2	2.0	1,4	95
30	Gemini Street	Azusa Avenue	Shipman Avenue	South San Jose Hills	3	0.6	1	90
31	Aguiro Street	Fullerton Road	Los Padres Drive	Rowland Heights	3	0.7	4	90
32	Amar Road	Willow Avenue	North Unruh Avenue	West Puente Valley	2	1.5	1	90
33	Three Palms Avenue/ Farmstead Avenue/ Lujon Street	Kwis Avenue	Stimson Avenue	Hacienda Heights	3	1.0	4	85
34	Camino Del Sur	Vallecito Drive	Colima Road	Hacienda Heights	2	0.9	4	85
35	Colima Road	Casino Drive	Allenton Avenue	Hacienda Heights	2	1.2	4	85
36	Halliburton Road	Hacienda Boulevard	Stimson Avenue	Hacienda Heights	2	0.2	4	85
37	Rath Street/ Stichman Avenue/ Barrydale Street/ Mayland Avenue/ Nolandale Street/ Siesta Avenue/ Fairgrove Avenue/ Sandy Hook Avenue / Maplegrove Street	Vineland Avenue	Lark Ellen Avenue	West Puente Valley, Valinda and Cities of La Puente A and West Covina[A]	BB	4.3	1	85
38	Big Dalton Wash Proposed Bicycle Path[D]	Irwindale Avenue Lark Ellen Avenue Arrow Hwy	Lark Ellen Avenue Azusa Avenue N. Barranca Avenue	Cities of Azusa and Irwindale; Covina Islands and East Irwindale	1 3 1	1.0 1.1 1.6	1, 5	85
39	Rockvale Avenue	Interstate 210	Woodcroft Street	East Irwindale	3	0.8	5	80
40	Los Altos Drive	Vallecito Drive	Hacienda Boulevard	Hacienda Heights	3	0.9	4	80

Table 3-9: East San Gabriel Valley Planning Area Proposed Bicycle Facilities (continued)

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
41	Colima Road	Brea Canyon Cut Off Road	City of Diamond Bar boundary (0.1 miles east of Tierra Luna)	Rowland Heights	2	0.7	4	80
42	Irwindale Avenue	Cypress Street	Badillo Street	East Irwindale	2	0.6	1	80
43	Puente Avenue/ Workman Mill Road	Barrydale Street	San Jose Creek Bicycle Path	West Puente Valley and City of Industry A	2	3.5	1	80
44	San Jose Creek Proposed Bicycle Path	San Gabriel River Bicycle Path	Workman Mill Avenue	Avocado Heights and Whittier Narrows	1	0.7	1	80
45	Covina Hills Road	San Joaquin Road	Via Verde	Walnut Islands and Cities of Covina A and San Dimas[A]	3	2.0	5	75
46	Colima Road	Larkvane Road	Brea Canyon Cut Off Road	Rowland Heights	2	2.3	4	75
47	Angelcrest Drive	Newton Avenue	La Subida Drive	Hacienda Heights	3	0.4	4	70
48	La Subida Drive	Vallecito Drive	Hacienda Boulevard	Hacienda Heights	3	0.9	4	70
49	Vallecito Drive	Los Robles Avenue	Camino Del Sur	Hacienda Heights	3	1.6	4	70
50	Brea Canyon Cut Off Road	Bickford Drive	Pathfinder Road	Rowland Heights	3	0.5	4	70
51	Arrow Highway	Glendora Avenue	Valley Center Boulevard	Charter Oak and City of Glendora[A]	2	1.5	5	70
52	Puente Creek Proposed Bicycle Path[C]	Sunset Avenue (San Jose Creek)	Temple Avenue	Avocado Heights, Valinda and Cities of Industry and La Puente	1	1.7	1	70
		Temple Avenue	Hacienda Boulevard		3	0.4		
		Hacienda Boulevard	Azusa Avenue		1	2.2		
53	7th Avenue	Clark Avenue	Palm Avenue	Hacienda Heights	2	0.5	1,4	65
	7th Avenue/ Orange Grove Avenue	Palm Avenue	Beech Hill Drive		3	0.8		
54	Hacienda Boulevard	Colima Road	0.2 miles north of Walbrook Drive	Hacienda Heights	2	2.4	1,4	65
55	Amar Road	Aileron Avenue	Azusa Avenue	Valinda	2	1.6	1	65
56	Countrywood Avenue	Wedgeworth Drive	Colima Road	Hacienda Heights	2	0.5	4	60
57	Valley Center Avenue	Arrow Highway	Badillo Street	Charter Oak and City of San Dimas[A]	2	0.6	5	60

Table 3-9: East San Gabriel Valley Planning Area Proposed Bicycle Facilities (continued)

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
58	Glendora Mountain Road	4.4 miles north of Big Dalton Canyon Road	Big Dalton Canyon Road	East Azusa, Antelope Valley Planning Area and City of Glendora[A]	3	4.4	5	60
Total Mileage						**91.1**		

[A] Part of project traverses through or along boundary of incorporated city

[B] Proposed segment overlaps with Early Action bicycle project identified by County of Los Angeles

[C] Proposed segment requires on-street alignment between Temple Avenue and Hacienda Boulevard

[D] Proposed segment requires on-street alignment between Lark Ellen Avenue and Arrow Highway

[E] Proposed segment requires on-street alignment between White Avenue and Murchison Avenue

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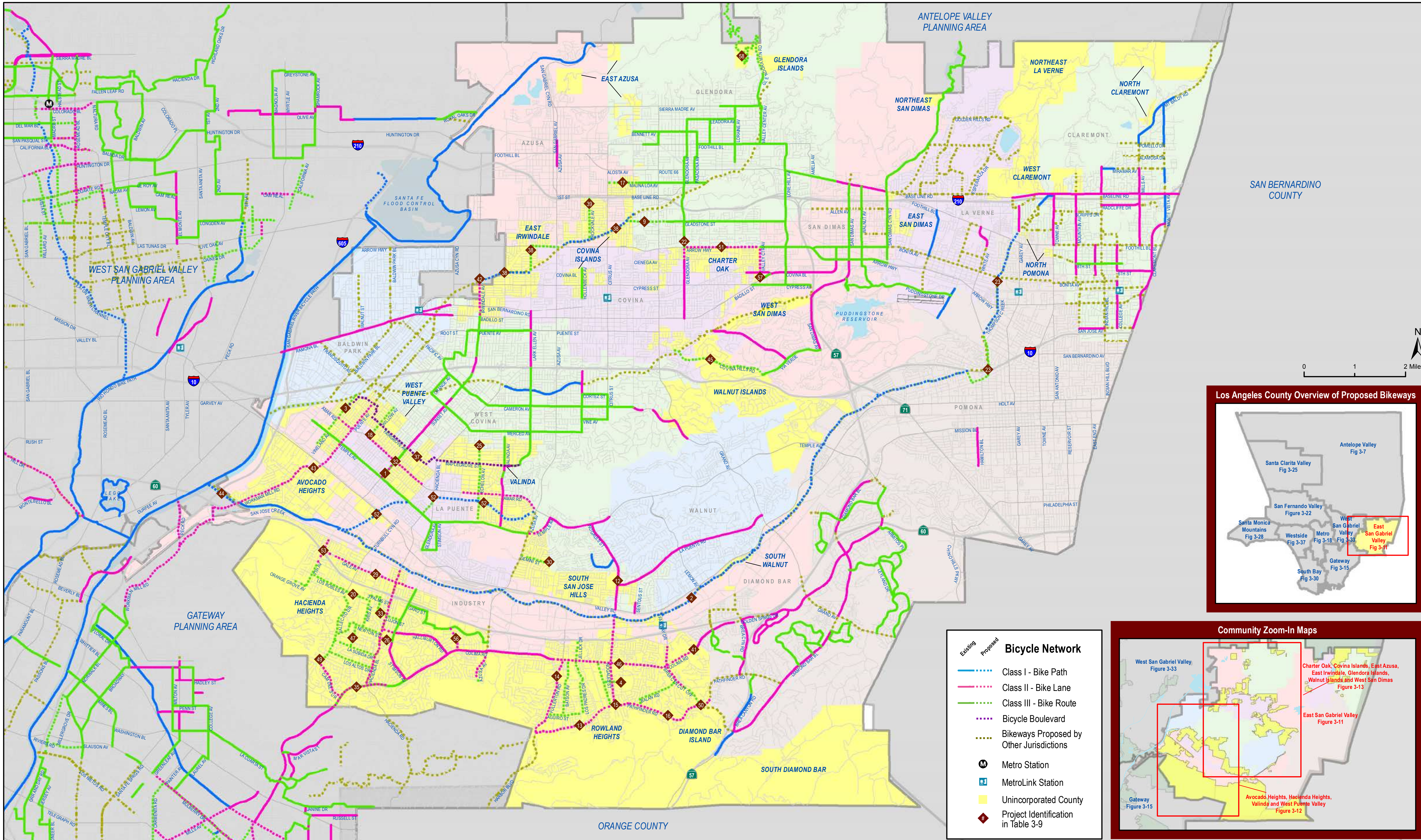

Figure 3-11: East San Gabriel Valley Planning Area Proposed Bicycle Facilities

Source: Los Angeles Metro (2006; 2010); Alta Planning + Design (2010)
Date: 1/30/2011

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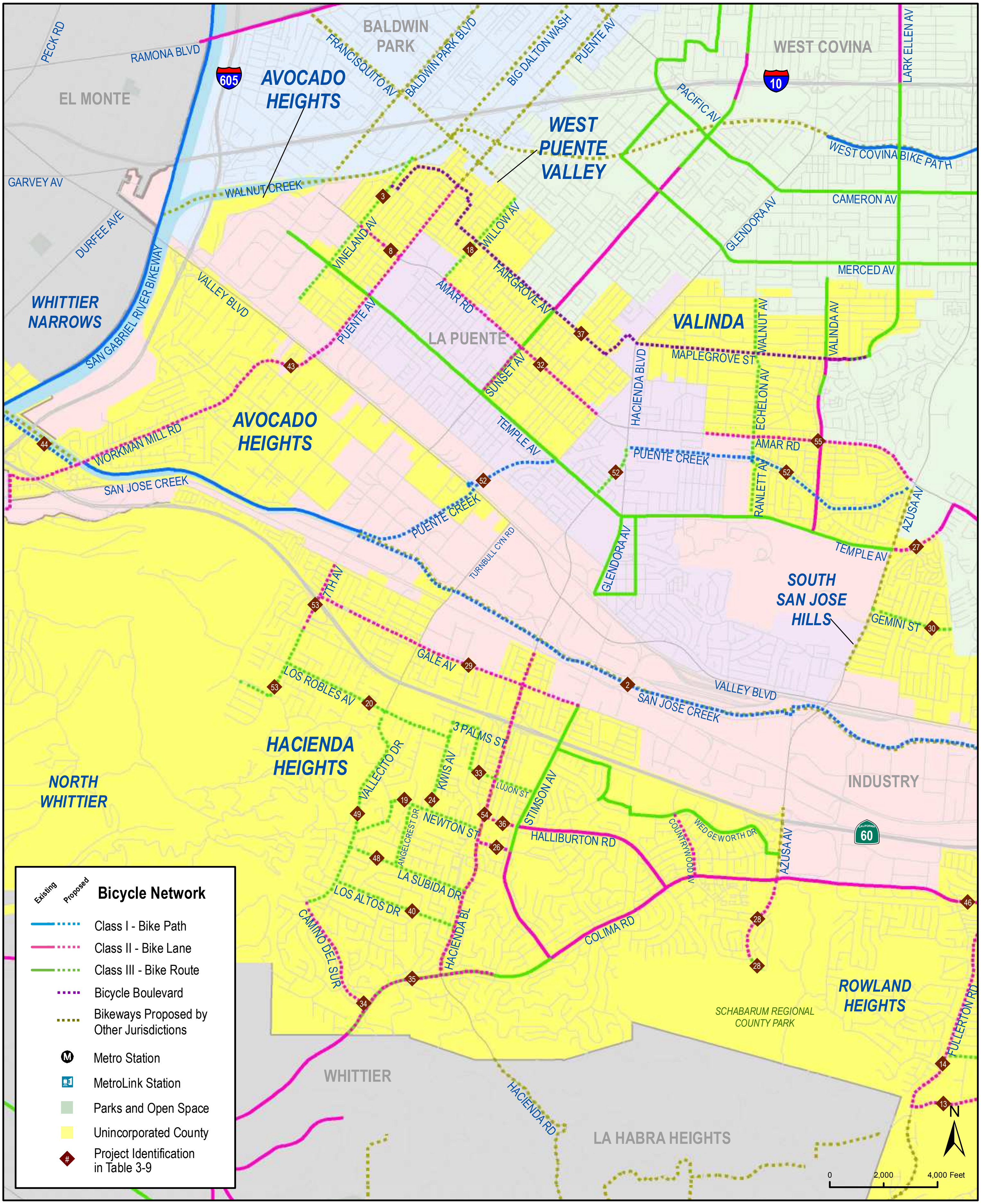

Figure 3-12: Avocado Heights, Hacienda Heights, Valinda and West Puente Valley Proposed Bicycle Facilities

Source: Los Angeles Metro (2006; 2010); Alta Planning + Design (2010)
Date: 1/30/2011

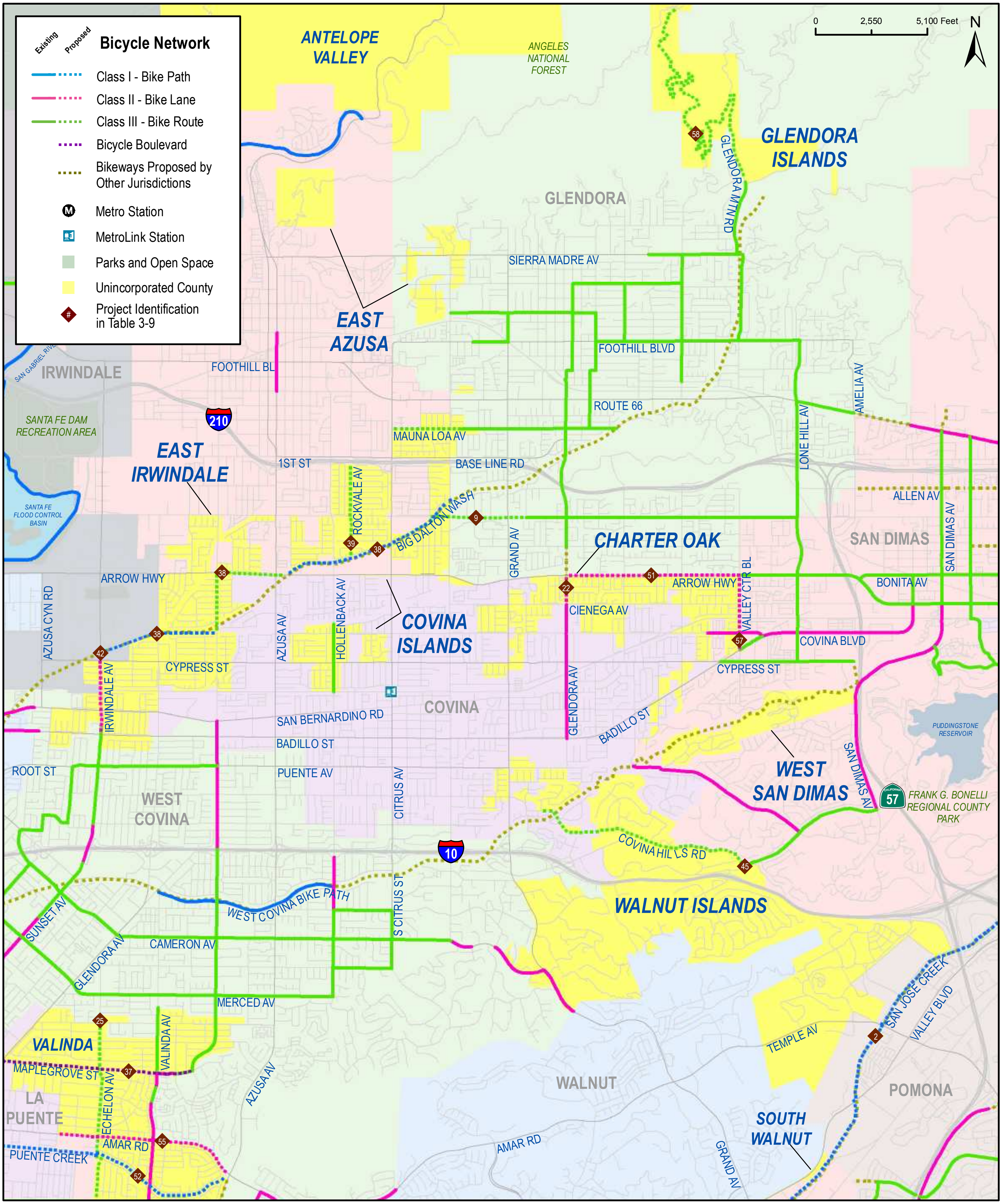

Figure 3-13: Charter Oak, Covina Islands, East Azusa, East Irwindale, Glendora Islands, Walnut Islands and West San Dimas Proposed Bicycle Facilities

3.4 Gateway Planning Area

The Gateway Planning Area is located in the southern portion of the County of Los Angeles, bordering Orange County, the Metro Planning Area, and the West and East San Gabriel Valley Planning Areas. The planning area includes the following urban unincorporated islands: East Rancho Dominguez, North Whittier, Rancho Dominguez, South Whittier-Sunshine Acres, and West Whittier-Los Nietos. Approximately 129,000 people live in the Gateway Planning Area unincorporated neighborhoods. [25]

Most of these relatively dense unincorporated communities are predominately residential, interspersed with a mix of education, commercial, office, facilities, open space, and recreational land uses. North Whittier, however, is primarily open space, whereas Rancho Dominguez and the Bandini Islands are dominated by industrial land uses. **Figure D-3** in **Appendix D** displays the Gateway Planning Area communities' current land uses.

3.4.1 Existing Bicycling Conditions

The Gateway Planning Area unincorporated communities contain 56.1 miles of existing bikeways, including over 45 miles of County-maintained Class I. **Table 3-10** presents the location, classification, and mileage of existing bikeways within the communities.

Table 3-10: Gateway Planning Area Existing Bikeways

Community	Segment	From	To	Class	Mileage
Bandini Islands, Cities of Bell, Compton, Cudahy, Long Beach, Paramount, South Gate and Vernon	Los Angeles River Bicycle Path	Atlantic Boulevard	Golden Shore Street	1	16.7
Cerritos Islands, City of Cerritos	Coyote Creek Bikeway	Artesia Boulevard	Crescent Avenue	1	2.9
Cities of Bellflower, Cerritos, Downey, Lakewood, Long Beach, Norwalk and Pico Rivera; West Whittier-Los Nietos	San Gabriel River Bicycle Path	0.2 miles south of Siphon Road	Wardlow Road	1	15.3
Cities of Bell Gardens, Commerce, Downey, Pico Rivera and South Gate	Rio Hondo Bicycle Path	0.2 miles north of Washington Boulevard	Imperial Highway (Los Angeles River)	1	6.0
Cities of Cerritos and Santa Fe Springs	Coyote Creek Bicycle Path (North Fork Coyote Creek)	Foster Road	Artesia Boulevard	1	2.7

[25] *2008 SCAG Regional Transportation Plan, Table 2.5: Los Angeles County Population Projections*

Table 3-10: Gateway Planning Area Existing Bikeways (continued)

Community	Segment	From	To	Class	Mileage
Rancho Dominguez	Compton Creek Bicycle Path	0.1 miles north of Homestead Place	Del Amo Boulevard	1	1.7
South Whittier-Sunshine Acres	La Cañada Verde	Mulberry Drive	Broadway	1	0.1
South Whittier-Sunshine Acres	Greenleaf Avenue	0.1 miles north of Ann Street	Barton Road	3	0.3
South Whittier-Sunshine Acres	Lambert Road	Leffingwell Road	County of Los Angeles border	3	1.0
South Whittier-Sunshine Acres	Mulberry Drive	Painter Avenue	Scott Ave	3	2.9
South Whittier-Sunshine Acres	Santa Gertrudes Avenue	Leffingwell Road	Lemon Drive	3	0.5
South Whittier-Sunshine Acres	Scott Avenue	Mulberry Drive	Lemon Drive	3	0.8
West Whittier-Los Nietos	Broadway	Whittier Blvd	Norwalk Boulevard	3	1.4
West Whittier-Los Nietos	Dunlap Crossing Road	San Gabriel River Bicycle Path	Norwalk Boulevard	3	0.3
West Whittier-Los Nietos	Mines Boulevard	Norwalk Boulevard	Lambert Road	2	1.0
West Whittier-Los Nietos	Norwalk Boulevard	Whittier Boulevard	Perkins Ave	3	2.3
West Whittier-Los Nietos	Sorensen Avenue	Lambert Road	Washington Boulevard	3	0.2
				Total	**56.1**

**County-maintained bikeways only*

Los Angeles County Metropolitan Authority (LACMTA) identified seven key gaps in the 2006 Metro Bicycle Transportation Strategic Plan, as shown in **Table 3-11**.

Table 3-11: MTA Identified Gaps in the Gateway Inter-Jurisdictional Bikeway Network

MTA #	Corridor	Jurisdiction	Description	Constraints
32	Whittier Greenway	LA County	Connection between Whittier City Limits and San Gabriel River trail	Route not identified
33	Workman Mill Road	LA County	Connection between Whittier Bike Path and Rio Hondo College	Route not identified
34	Connector	LA County / Carson	Connection between LA River Path and Compton Path terminus near Del Amo Boulevard	Route not identified
38	La Mirada / Colima Connector	LA County / La Mirada	Connection between Whittier (La Colima Road) and La Mirada Boulevard in La Mirada	Route not identified
40	Mills Avenue	LA County / Santa Fe Springs	At Mills Ave, connection between Norwalk Blvd and Whittier Greenway Bike Path	Route not identified
44	Coyote Creek	Orange County / LA County	Completion of Coyote Creek Bike Path east of North Fork on Coyote Creek Channel	ROW, bridges, jurisdictional issues
46	Gateway	Paramount / LA County	Connection between San Gabriel River and West Santa Ana Branch ROW at NW terminus of planned multi-city project	DWP ROW, Active RR, adjacent105 Fwy

Source: Los Angeles County Metropolitan Transportation Authority: 2006 Metro Bicycle Transportation Strategic Plan, p. 103-104

Figure 3-14 displays the existing bicycle network along with major transit stations and bicycle collision sites in the Gateway Planning Area reported from 2004 through 2009. According to the California Highway Patrol SWITRS data, a total of 142 bicycle collisions were reported within the unincorporated communities of the Gateway Planning Area between 2004 and 2009. The greatest concentration by community occurred in South Whittier-Sunshine Acres, with 86 between 2004 and 2009.

As shown in **Figure 3-14**, two Metro lines service the planning area. Rancho Dominguez is serviced directly by a Blue Line Metro Station located where the Compton Creek bikeway terminates to the south. The Norwalk/Santa Fe Springs MetroLink station is located just outside the boundary of the South Whittier-Sunshine Acres community. The eastern terminus of the Metro Green Line is located approximately two miles west of the MetroLink Station.

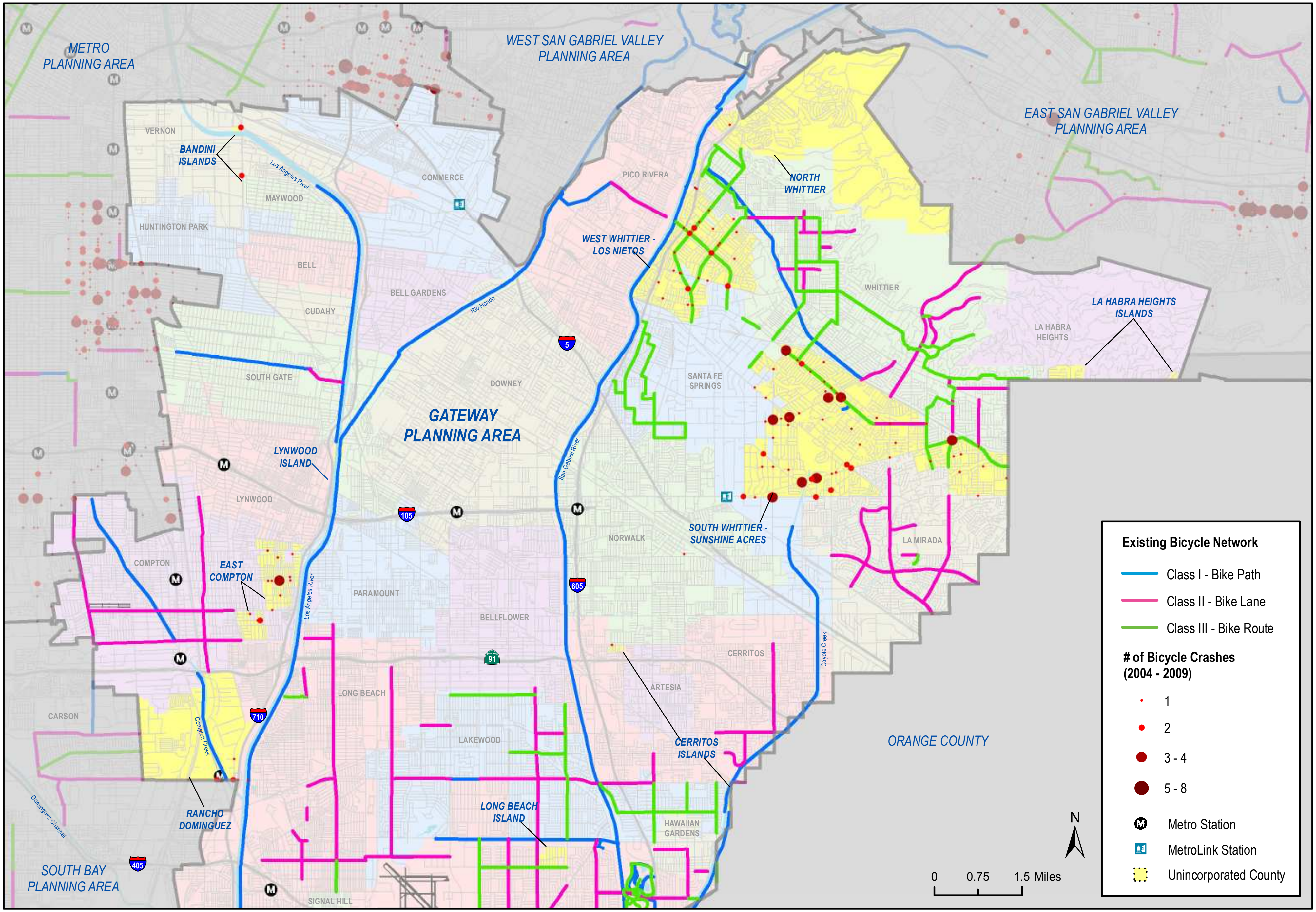

Figure 3-14: Gateway Planning Area Existing Bicycle Network, Major Transit and Bicycle Crashes (2004-2009)

Los Angeles County Bicycle Master Plan

Source: Los Angeles Metro (2010); SWITRS (2010)
Date:10/13/2011

3.4.2 Proposed Network

Table 3-12 summarizes the proposed bicycle network mileage by classification type within the Gateway Planning Area. Projects were prioritized based on bicycling demand, facility deficiencies, barriers to implementation, public comment, and a host of other criteria. As shown, the proposed network would provide approximately 41 miles of facility across the planning area. Currently, unincorporated parts of Gateway Planning Area contain just over 56 miles of existing bicycle facilities.

Table 3-12: Gateway Planning Area Bicycle Network Facility Type and Mileage Summary

Mileage of Proposed Projects by Facility Type	Miles	% of Total
Class I – Bicycle Path	5.7	13.9%
Class II – Bicycle Lane	23.1	56.5%
Class III – Bicycle Route	12.1	29.6%
Total	**40.9**	**100%**

Table 3-13 presents the Supervisorial District, specific location, alignment, classification, priority score, and mileage for each of the proposed bikeways within the planning area.

Figure 3-15 displays the proposed bicycle network as well as existing bicycle facilities and major transit stops within the Gateway Planning Area. **Figure 3-16** provides a more detailed view of the proposed bicycle network within the communities of South Whittier-Sunshine Acres and West Whittier-Los Nietos.

Table 3-13: Gateway Planning Area Proposed Bicycle Facilities

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
1	Workman Mill Road	San Jose Creek Bicycle Path	Strong Avenue	North Whittier, Avocado Heights and City of Industry[A]	2	3.4	1, 4	145
2	Compton Creek Proposed Bicycle Path	Del Amo Boulevard	Los Angeles River Bicycle Path	Rancho Dominguez and City of Long Beach	1	0.5	2, 4	120
3	Mills Avenue	Telegraph Road	Lambert Road	South Whittier-Sunshine Acres	2	1.4	4	110
4	Colima Road	La Mirada Boulevard	Poulter Drive	South Whittier-Sunshine Acres	3	1.2	4	105
	Colima Road	Poulter Drive	Leffingwell Road		2	0.3		
5	Ceres Avenue	Broadway	Telegraph Road	South Whittier-Sunshine Acres	3	0.7	4	100
6	Mulberry Drive	Greenleaf Avenue	Colima Road	South Whittier-Sunshine Acres and City of Whittier[A]	2	2.2	4	100

Table 3-13: Gateway Planning Area Proposed Bicycle Facilities (continued)

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
7	Atlantic Avenue	Rosecrans Avenue	Alondra Boulevard	East Rancho Dominguez and City of Compton[A]	3	1.0	2	100
8	E. Victoria Street	S. Santa Fe Avenue	Susana Road	Rancho Dominguez	2	0.5	2	100
9	Compton Boulevard	Harris Avenue	Los Angeles River Bicycle Path	East Rancho Dominguez and City of Paramount[A]	2	0.8	2,4	100
10	Imperial Highway	Shoemaker Avenue	Leffingwell Road	South Whittier-Sunshine Acres and Cities of La Mirada[A] & Santa Fe Springs[A]	2	0.3	4	100
	Leffingwell Road	Imperial Highway	Scott Avenue		2	3.0		
11	Rivera Road	Pioneer Boulevard	Norwalk Boulevard	West Whittier-Los Nietos and City of Santa Fe Springs[A]	3	0.7	4	95
12	1st Avenue	Lambert Road	Imperial Highway	South Whittier-Sunshine Acres	2	0.8	4	95
13	Rosecrans Avenue	Butler Avenue	Gibson Avenue	East Rancho Dominguez and City of Compton[A]	2	0.5	2	95
14	South Susana Road	East Artesia Boulevard	Del Amo Boulevard	Rancho Dominguez	2	2.0	2	95
15	Broadway	Mills Avenue	Colima Road	South Whittier-Sunshine Acres	3	0.9	4	90
16	Santa Fe Avenue	Artesia Boulevard	0.1 miles south of Reyes Avenue (Compton Creek Bicycle Path)	Rancho Dominguez	2	1.0	2	90
17	Saragosa Street/ Pioneer Boulevard	Norwalk Boulevard	Los Nietos Road	West Whittier-Los Nietos and City of Santa Fe Springs[A]	3	1.3	4	90
18	Compton Creek Proposed Bicycle Path	Greenleaf Boulevard	State Route 91	City of Compton	1	0.7	2	90
19	Palo Verde Avenue	Parkcrest Street	Conant Street	Long Beach Island and City of Long Beach[A]	3	0.5	4	85
20	North Fork Coyote Creek Proposed Bicycle Path	Leffingwell Road	Foster Road	South Whittier-Sunshine Acres, City of Santa Fe Springs	1	0.8	4	85
21	Leland Avenue	Mills Avenue	Leffingwell Road	South Whittier-Sunshine Acres	3	1.2	4	80
22	Carmenita Road	Mulberry Drive	Leffingwell Road	South Whittier-Sunshine Acres and City of Santa Fe Springs[A]	3	2.5	4	80

Table 3-13: Gateway Planning Area Proposed Bicycle Facilities (continued)

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
23	Lambert Road	Mills Avenue	Scott Avenue	South Whittier-Sunshine Acres and City of Whittier[A]	2	1.3	4	80
24	Laurel Park Road	East Victoria Street	South Rancho Way	Rancho Dominguez	2	0.6	2	75
25	Los Angeles River Proposed Bicycle Path[B]	Washington Boulevard	Bandini Boulevard	Bandini Islands, City of Los Angeles, City of Vernon	3	1.0	1	75
		Bandini Boulevard	S. Downey Boulevard		1	0.6		
		S. Downey Boulevard	Bandini Boulevard		3	0.4		
		Bandini Boulevard	S. Atlantic Boulevard		1	1.3		
26	Telegraph Road	Carmenita Road	Huchins Drive	South Whittier-Sunshine Acres and Cities of La Mirada[A] and Santa Fe Springs[A]	2	2.4	4	75
27	Valley View Avenue	Broadway	Telegraph Road	South Whittier-Sunshine Acres	3	0.7	4	75
	Valley View Avenue	Telegraph Road	Imperial Highway		2	0.8		
28	South Rancho Way	Laurel Park Road	Del Amo Boulevard	Rancho Dominguez	2	0.7	2	70
29	La Mirada Boulevard	Colima Road	Leffingwell Road	South Whittier-Sunshine Acres	2	1.1	4	65
30	Milan Creek Proposed Bicycle Path	Marquardt Avenue	Telegraph Avenue	South Whittier-Sunshine Acres, City of La Mirada	1	1.8	4	30
Total Mileage						**40.9**		

[A] *Part of project traverses through or along boundary of incorporated city*

[B] *Proposed project requires on-street alignment between Washington Boulevard and Bandini Boulevard and between Downey Road and Bandini Boulevard*

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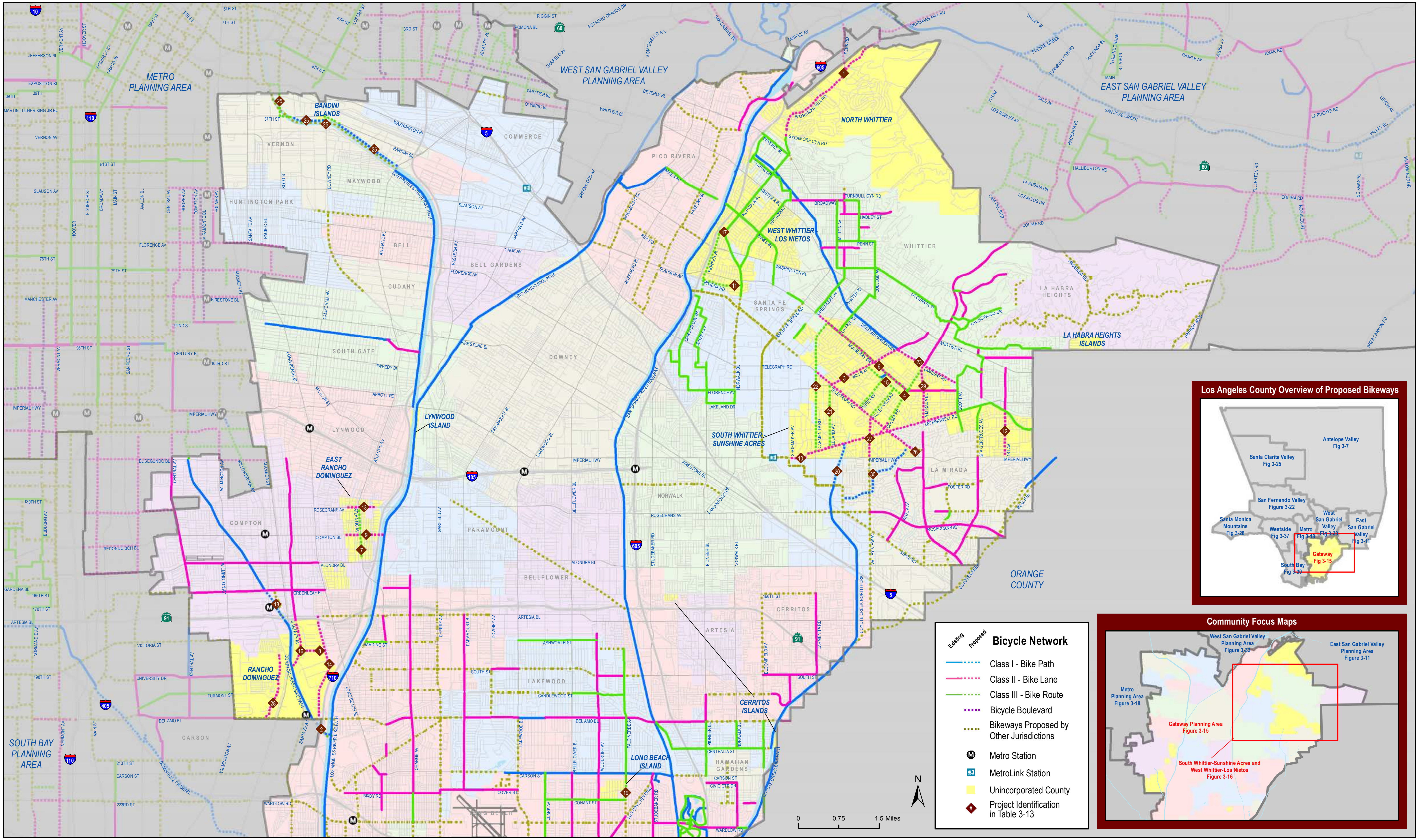

Figure 3-15: Gateway Planning Area Proposed Bicycle Facilities

Source: Los Angeles Metro (2006; 2010); Alta Planning + Design (2010)
Date: 1/30/2011

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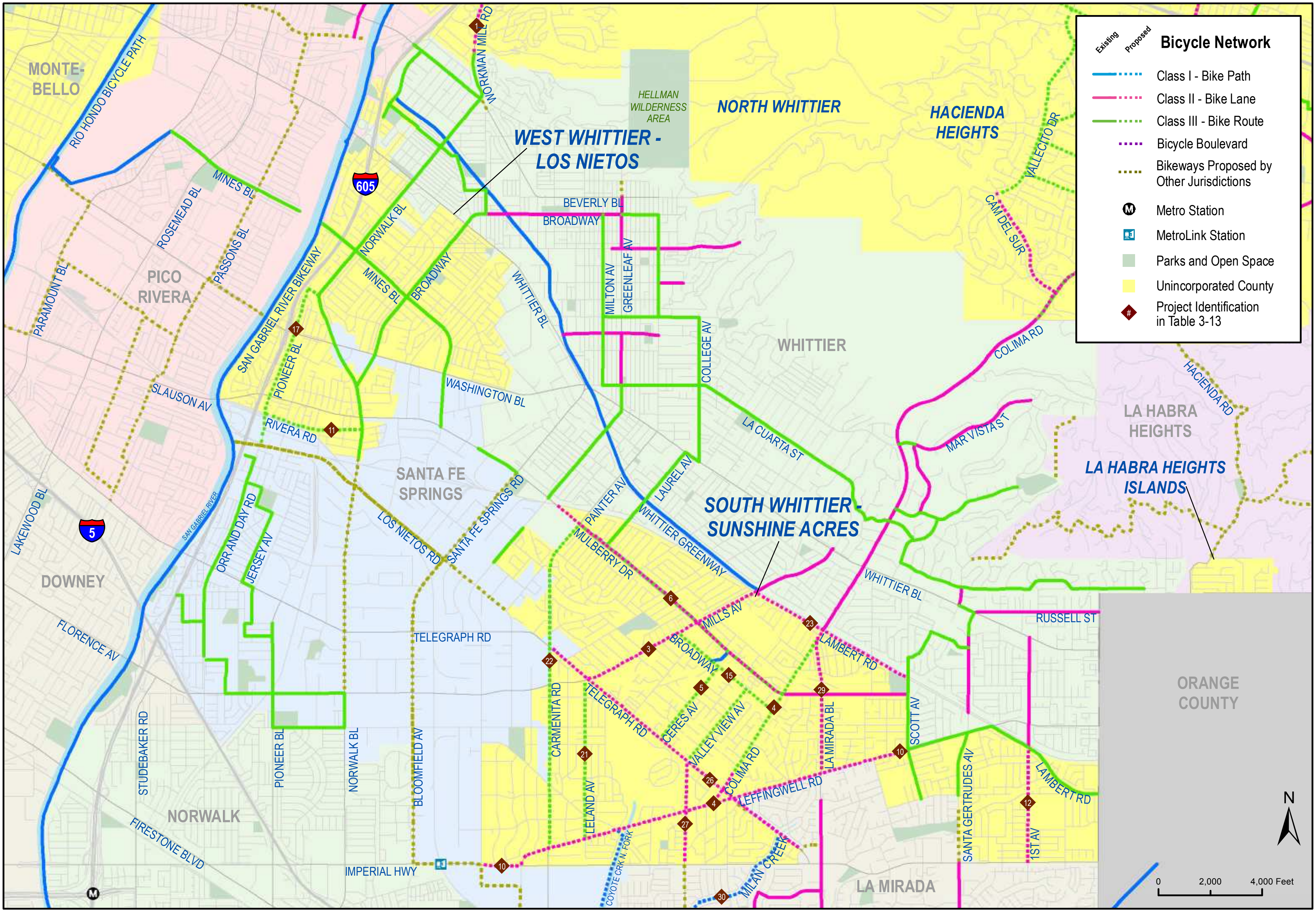

Figure 3-16: South Whittier-Sunshine Acres and West Whittier-Los Nietos Proposed Bicycle Facilities

Los Angeles County Bicycle Master Plan

Source: Los Angeles Metro (2006; 2010); Alta Planning + Design (2010)
Date: 10/13/2011

3.5 Metro Planning Area

The Metro Planning Area is located in a dense urban area of central County of Los Angeles. The planning area's unincorporated communities include East Los Angeles, Florence-Firestone, Walnut Park, West Athens-Westmont, West Rancho Dominguez-Victoria, and Willowbrook. This planning area also contains a large portion of the incorporated City of Los Angeles, including Downtown Los Angeles and South Los Angeles.

The planning area is ethnically diverse and densely populated with an estimated 317,000 people living within the approximately 21 square miles combined of unincorporated communities alone.[26] The communities are also transit-rich, transected by light-rail lines. **Figure D-4** in **Appendix D** displays the Metro Planning Area's mix of primarily commercial, mixed use, multi-family, and single-family residential and industrial land uses.

3.5.1 Existing Bicycling Conditions

The Metro Planning Area unincorporated communities have 2.3 miles of existing bikeways. **Table 3-14** presents the location, classification, and mileage of existing bikeways within the communities.

Table 3-14: Metro Planning Area Existing Bikeways

Community	Segment	From	To	Class	Mileage
East Los Angeles	City Terrace Drive	Alma Avenue	Marengo Avenue	2	0.6
East Los Angeles	Gerhart Avenue	Via San Delarro	Via Campo	2	0.4
East Los Angeles	Herbert Avenue	Medford Street	Whiteside Street	2	0.2
Florence-Firestone	Holmes Avenue	Florence Avenue	Gage Avenue	2	0.5
West Athens-Westmont	98th Street	Halldale Avenue	Vermont Avenue	2	0.6
				Total	**2.3**

**County-maintained bikeways only*

Figure 3-17 displays the existing bicycle network along with major transit stations and bicycle collision sites in the Metro Planning Area reported from 2004 through 2009.

Los Angeles County Metropolitan Authority (LACMTA) identified one key gap in the 2006 Metro Bicycle Transportation Strategic Plan, as shown in **Table 3-15.**

[26] *2008 SCAG Regional Transportation Plan, Table 2.5: Los Angeles County Population Projections*

Table 3-15: MTA Identified Gaps in the Metro Planning Area Inter-Jurisdictional Bikeway Network

MTA #	Corridor	Jurisdiction	Description	Constraints
37	LA River	LA County / LA City	Los Angeles River through central LA, corridor being studied as part of Los Angeles River Revitalization	Active railroad and industrial uses

Source: Los Angeles County Metropolitan Transportation Authority: 2006 Metro Bicycle Transportation Strategic Plan, p. 103-104

According to the California Highway Patrol SWITRS data, a total of 530 bicycle collisions were reported within the unincorporated parts of the Metro Planning Area between 2004 and 2009. Two hundred and twenty-eight of these collisions occurred within East Los Angeles. There were six collisions at the intersection of Eastern Avenue and Whittier Boulevard, the single greatest crash location within the unincorporated parts of the planning area between 2004 and 2009. Locations within the Metro Planning Area have some of the highest bicycle crash rates in unincorporated Los Angeles County. The high crash rates are attributed to the high ridership within the planning area and a corresponding urgent need for improved bicycle infrastructure. The Plan contains a policy that prioritizes improvements at locations with high crash rates, and certain state and federal programs provide funding opportunities for mitigating dangerous conditions.

Also shown in **Figure 3-17,** the Metro Planning Area is transit-rich, providing opportunities to support multimodal trips between the planning area and locations throughout the region. All of the unincorporated communities are served by Metro Rail Lines. East Los Angeles is served by four stations along the Gold Line. Florence-Firestone and Willowbrook combined have several stations along the Blue and Green Line. The southernmost unincorporated communities, West Athens-Westmont and West Rancho Dominguez-Victoria, are served by the Green Line.

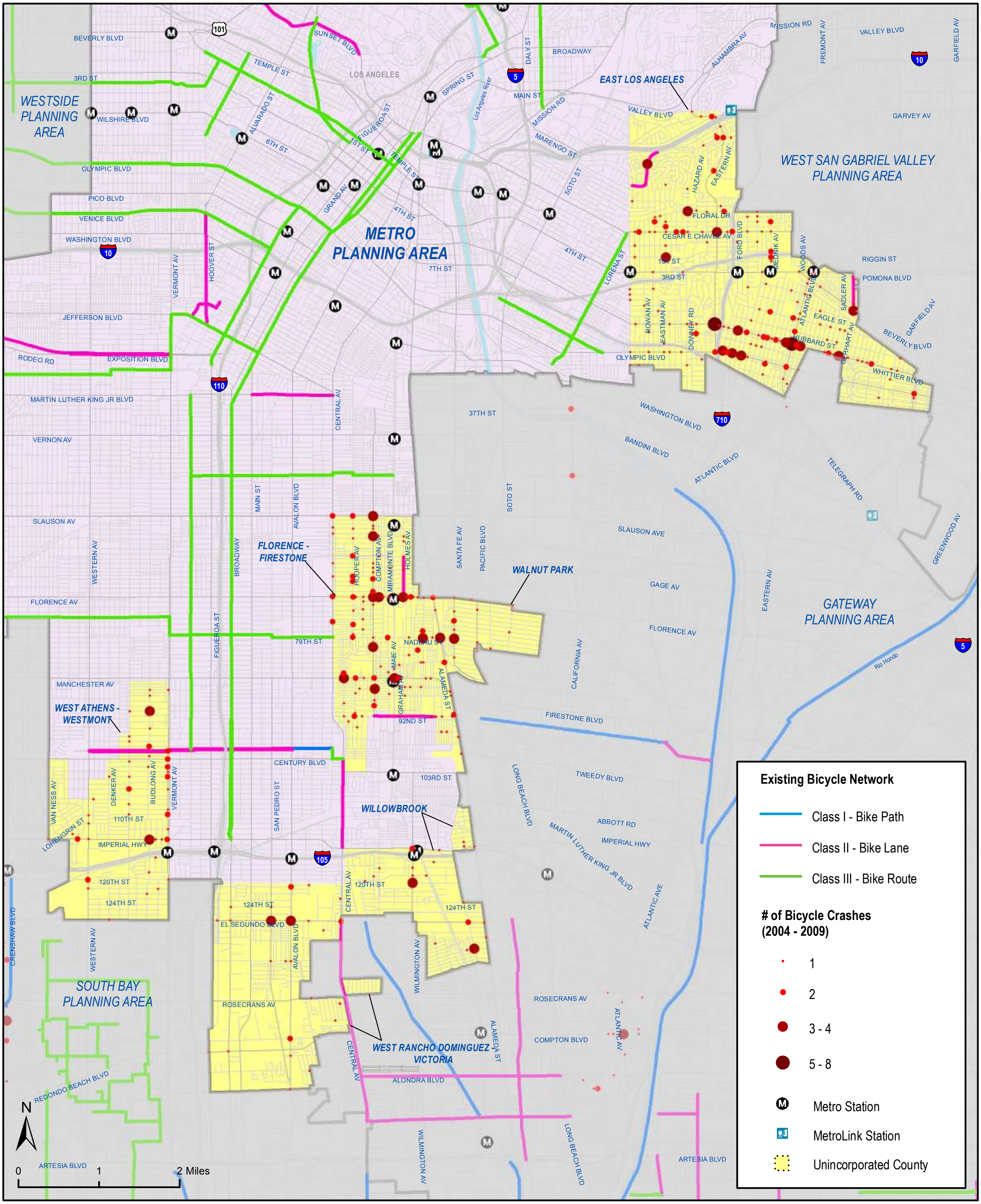

Figure 3-17: Metro Planning Area Existing Bicycle Network, Major Transit Stations, and Bicycle Crashes (2004-2009)

Source: Los Angeles Metro (2010); Alta Planning + Design (2010)
Date: 10/13/11

3.5.2 Proposed Network

Table 3-16 summarizes the proposed bicycle network mileage by classification type within the Metro Planning Area. Projects were prioritized based on bicycling demand, facility deficiencies, barriers to implementation, public comment, and a host of other criteria. As shown, the proposed network would provide approximately 88 miles of facility across the planning area to bolster its total of 2.3 existing miles of bicycle facility within the unincorporated parts of the planning area.

Table 3-16: Metro Planning Area Bicycle Network Facility Type and Mileage Summary

Mileage of Proposed Projects by Facility Type	Miles	% of Total
Class I – Bicycle Path	0.7	0.8%
Class II – Bicycle Lane	48.1	54.6%
Class III – Bicycle Route	26.9	30.5%
Bicycle Boulevard	12.4	14.1%
Total	**88.1**	**100%**

Table 3-17 presents the Supervisorial District, specific location, alignment, classification, priority score, and mileage for each of the proposed bikeways within the planning area.

Figure 3-18 displays the proposed bicycle network as well as existing bicycle facilities and major transit stops within the Metro Planning Area. **Figure 3-19** provides a more detailed view of the proposed bicycle network within the community of East Los Angeles. **Figure 3-20** provides a more focused view of the proposed bicycle network within the communities comprising the central and southern portion of the planning area: Florence-Firestone, Walnut Park, West Athens-Westmont, West Rancho Dominguez-Victoria, and Willowbrook.

Table 3-17: Metro Planning Area Proposed Bicycle Facilities

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
1	Crocket Boulevard	76th Place	83rd Street	Florence-Firestone	3	0.6	2	145
2	Cesar Chavez Avenue	Indiana Street	Mednik Avenue	East Los Angeles	3	1.8	1	145
	Cesar Chavez Avenue	Mednik Avenue	Vancouver Avenue		2	0.3		
3	Woods Avenue[A]	1st Avenue	Olympic Boulevard	East Los Angeles	BB	1.5	1	145
4	Normandie Avenue	98th Street	El Segundo Boulevard	West Athens-Westmont	2	2.1	2	140
5	East 68th Street	Central Avenue	Compton Avenue	Florence-Firestone	3	0.5	2	135
6	Maie Avenue/ Miramonte Boulevard	Slauson Avenue	92nd Street	Florence-Firestone	BB	2.5	2	135
7	Redondo Beach Boulevard	South Figueroa Street	Avalon Boulevard	West Rancho Dominguez-Victoria	2	1.0	2	135

Table 3-17: Metro Planning Area Proposed Bicycle Facilities (continued)

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
8	Florence Avenue[B]	Central Avenue	Mountain View Avenue	Florence-Firestone and City of Huntington Park[C]	2	2.2	1, 2	135
9	Vermont Avenue	87th Street	El Segundo Boulevard	West Athens-Westmont and City of Los Angeles[C]	2	2.9	2	135
10	Budlong Avenue	Manchester Avenue	El Segundo Boulevard	West Athens-Westmont	BB	3.0	2	130
11	El Segundo Boulevard	Figueroa Street	Central Avenue	Willowbrook	2	1.6	2	130
12	Compton Avenue	Slauson Avenue	92nd Street	Florence-Firestone and City of Los Angeles[C]	2	2.5	2	130
13	Broadway	East 121 Street	East Alondra Boulevard	West Rancho Dominguez-Victoria	2	2.5	2	130
14	Firestone Boulevard[B]	Central Avenue	Alameda Street	Florence-Firestone	2	1.4	2	130
15	Imperial Highway	Van Ness Avenue	Vermont Avenue	West Athens-Westmont	2	1.5	2	130
16	Denker Avenue	Century Boulevard	Imperial Highway	West Athens-Westmont	3	1.0	2	125
17	Holmes Avenue	Slauson Avenue	Gage Avenue	Florence-Firestone	2	0.5	2	125
18	Rosecrans Avenue	Figueroa Street	Central Avenue	Willowbrook and City of Compton[C]	2	1.7	2	125
19	Hazard Avenue	City Terrace Drive	Cesar Chavez Avenue	East Los Angeles	3	1.1	1	120
20	6th Street	Ford Boulevard	Harding Avenue	East Los Angeles	3	1.8	1	120
21	92nd Street 92nd Street	Central Avenue Miner Street	Compton Avenue Alameda Street	Florence-Firestone and City of Los Angeles[C]	3 3	0.5 0.3	2	120
22	Ford Boulevard[A]	Floral Drive	Olympic Boulevard	East Los Angeles	3	1.8	1	120
23	Nadeau Street/ Broadway	Central Avenue	State Street	Florence-Firestone	2	2.6	1, 2	120
24	Whiteside Street	Hebert Avenue	Eastern Avenue	East Los Angeles	3	0.6	1	115
25	Seville Avenue	East Florence Avenue	Broadway	Florence-Firestone	2	0.5	1	115
26	124th Street	Slater Avenue	Alameda Street	Willowbrook and City of Compton[C]	3	1.5	2	110
27	Whitter Boulevard	Indiana Street	Ford Boulevard	East Los Angeles	3	1.2	1	110
28	Success Avenue/ Slater Avenue	Imperial Highway	El Segundo Boulevard	Willowbrook and City of ComptonC	3	0.9	2	110
29	Avalon Boulevard	121st Street	Alondra Boulevard	West Rancho Domínguez-Victoria	2	2.5	2	110
30	Mednik Avenue/ Arizona Avenue A	Floral Drive	Olympic Boulevard	East Los Angeles	2	1.9	1	110

Table 3-17: Metro Planning Area Proposed Bicycle Facilities (continued)

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
31	Whitter Boulevard	Ford Boulevard	Via Clemente Street	East Los Angeles	3	2.4	1	105
32	Imperial Highway	Central Avenue	Wilmington Avenue	Willowbrook and City of Los Angeles[C]	2	0.9	2	105
33	Alondra Boulevard	Figueroa Street	Avalon Boulevard	Rancho Dominguez-Victoria, and City of Carson[C]	2	1.0	2	105
34	Beverly Boulevard	Pomona Boulevard	Gerhart Avenue	East Los Angeles	3	0.8	1	100
35	Rowan Avenue/ Dennison Street/ Eastman Avenue[A]	Floral Drive	Olympic Boulevard	East Los Angeles	BB	1.8	1	100
36	Hubbard Street	Ford Boulevard	Mobile Street	East Los Angeles	BB	2.2	1	100
37	Gerhart Avenue	Via San Delarro Street	Eagle Street	East Los Angeles	2	0.2	1	100
	Gerhart Avenue	Eagle Street	Whittier Boulevard		3	0.5		
38	120th Street/ 119th Street[A]	Central Avenue	Wilmington Avenue	Willowbrook	2	0.8	2	100
	119th Street	Wilmington Avenue	Mona Boulevard		3	0.6		
39	Eastern Avenue	0.1 miles north of Whiteside Street	Olympic Boulevard	East Los Angeles	2	3.1	1	100
40	Olympic Boulevard	Indiana Street	Concourse Avenue	East Los Angeles	2	3.3	1	100
41	Wilmington Avenue	119th Street	El Segundo Boulevard	Willowbrook and City of Compton[C]	2	0.6	2	100
42	Western Avenue	108th Street	El Segundo Boulevard	West Athens-Westmont	2	1.5	2	100
43	Medford Street	Indiana Street	Hebert Avenue	East Los Angeles	2	0.5	1	95
	Hebert Avenue	Whiteside Street	City Terrace Drive		3	0.1		
44	1st Street	Indiana Street	Mednik Avenue	East Los Angeles	2	1.8	1	95
45	Margaret Avenue	Sadler Avenue	Hubbard Street	East Los Angeles	3	0.8	1	90
46	Willowbrook Avenue	119th Street	Oris Street	Willowbrook	3	1.2	2	90
47	La Verne Avenue/ Gratian Street/ Ferris Avenue	3rd Street	Telegraph Road	East Los Angeles	3	1.5	1	90
48	Floral Drive	Indiana Street	Mednik Avenue	East Los Angeles and City of Monterey Park[C]	3	1.8	1	90
49	Lohengrin Avenue/ 110th Street	Imperial Highway	Budlong Avenue	West Athens-Westmont	BB	1.3	2	90

Table 3-17: Metro Planning Area Proposed Bicycle Facilities (continued)

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
50	City Terrace Drive	0.1 miles east of Rowan Avenue	Hazard Avenue	East Los Angeles	3	0.5	1	90
	City Terrace Drive	Hazard Avenue	Eastern Avenue		2	0.4		
51	Willowbrook Avenue Proposed Bicycle Path[A]	Imperial Highway (at Rosa Parks Metro Station)	119th Street	Willowbrook	1	0.4	2	90
52	Hooper Avenue	Slauson Avenue	95th Street	Florence-Firestone	2	2.7	2	90
53	Slauson Avenue	Central Avenue	Alameda Street	Florence-Firestone and City of Los Angeles[C]	2	1.1	1, 2	90
54	Central Avenue	121st Street	127th Street	West Rancho Dominguez-Victoria	2	0.5	2	85
55	Arroyo Seco Proposed Bicycle Path[A]	San Fernando Road	Avenue 26	City of Los Angeles	1	0.3	1	85
56	Hendricks Avenue	0.1 miles north of Hubbard Street	Ferguson Drive	East Los Angeles	3	0.8	1	80
57	Sadler Avenue	Pomona Boulevard	Whittier Boulevard	East Los Angeles	3	1.0	1	80
58	Downey Road	3rd Avenue	Noakes Street	East Los Angeles	3	1.5	1	80
59	120th Street	Western Avenue	Vermont Avenue	West Athens-Westmont	2	1.0	2	80
60	El Segundo Boulevard	Wilmington Avenue	Alameda Street	Willowbrook	2	0.9	2	80
Total Mileage						**88.1**		

[A] *Proposed segment overlaps with Early Action bicycle project identified by County of Los Angeles*

[B] *Proposed segment will be developed as part of the County's Transit Oriented District (TOD) development plan*

[C] *Part of project traverses through or along boundary of incorporated city*

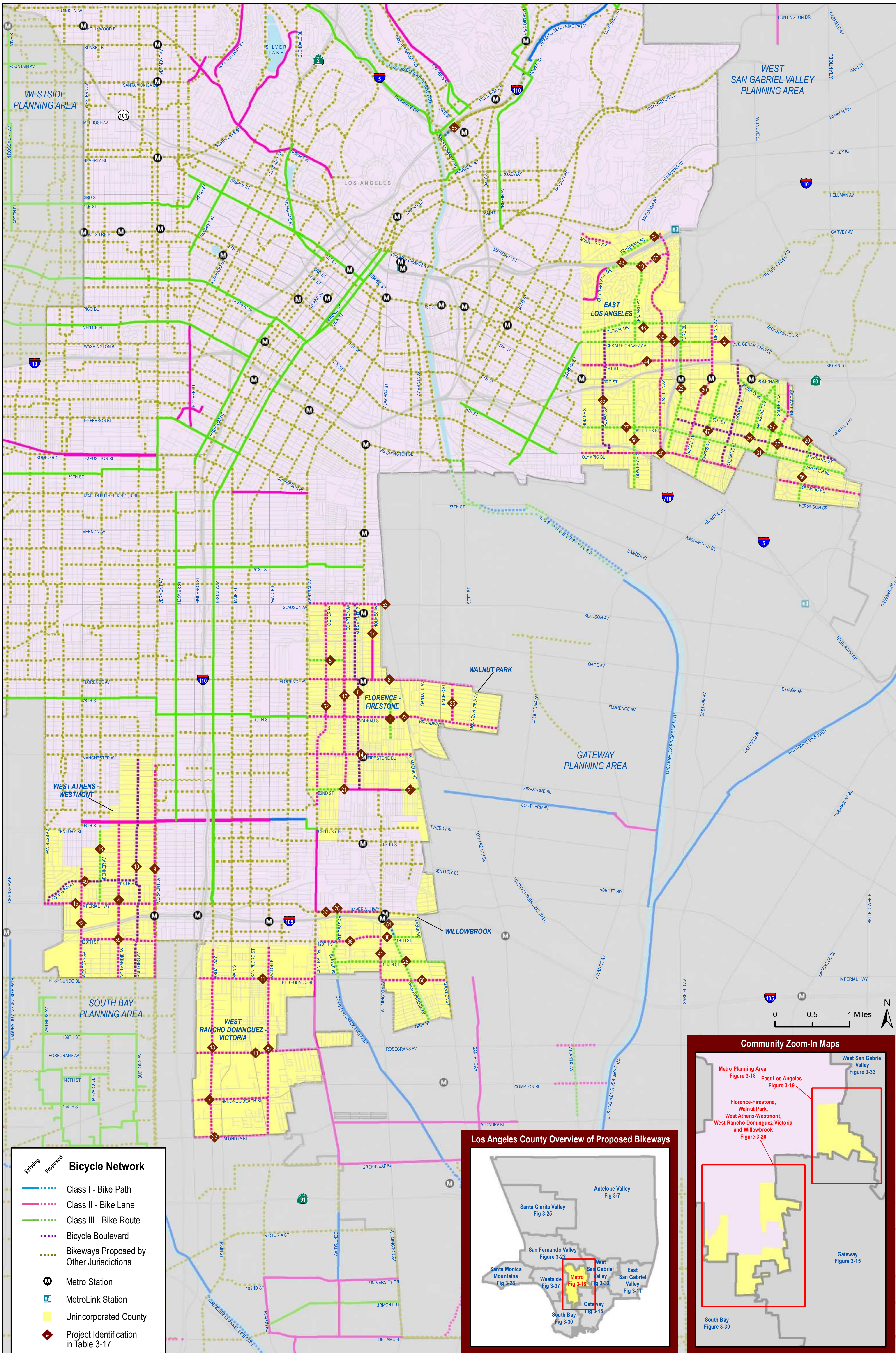

Figure 3-18: Metro Planning Area Proposed Bicycle Facilities

Source: Los Angeles Metro (2006; 2010); Alta Planning + Design (2010)
Date: 10/13/11

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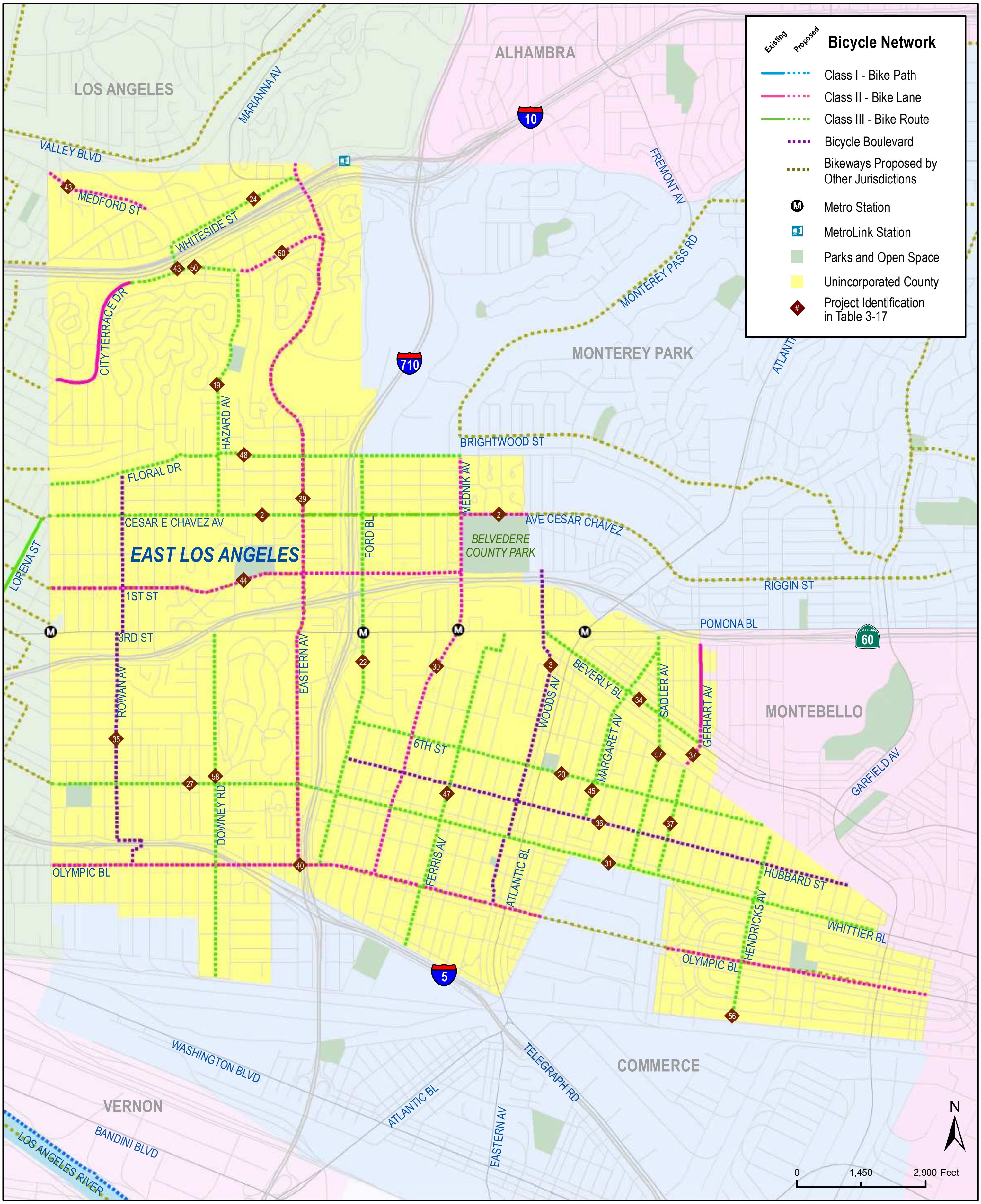

Figure 3-19: East Los Angeles Proposed Bicycle Facilities

Los Angeles County Bicycle Master Plan

Source: Los Angeles Metro (2006; 2010); Alta Planning + Design (2010)
Date:10/13/11

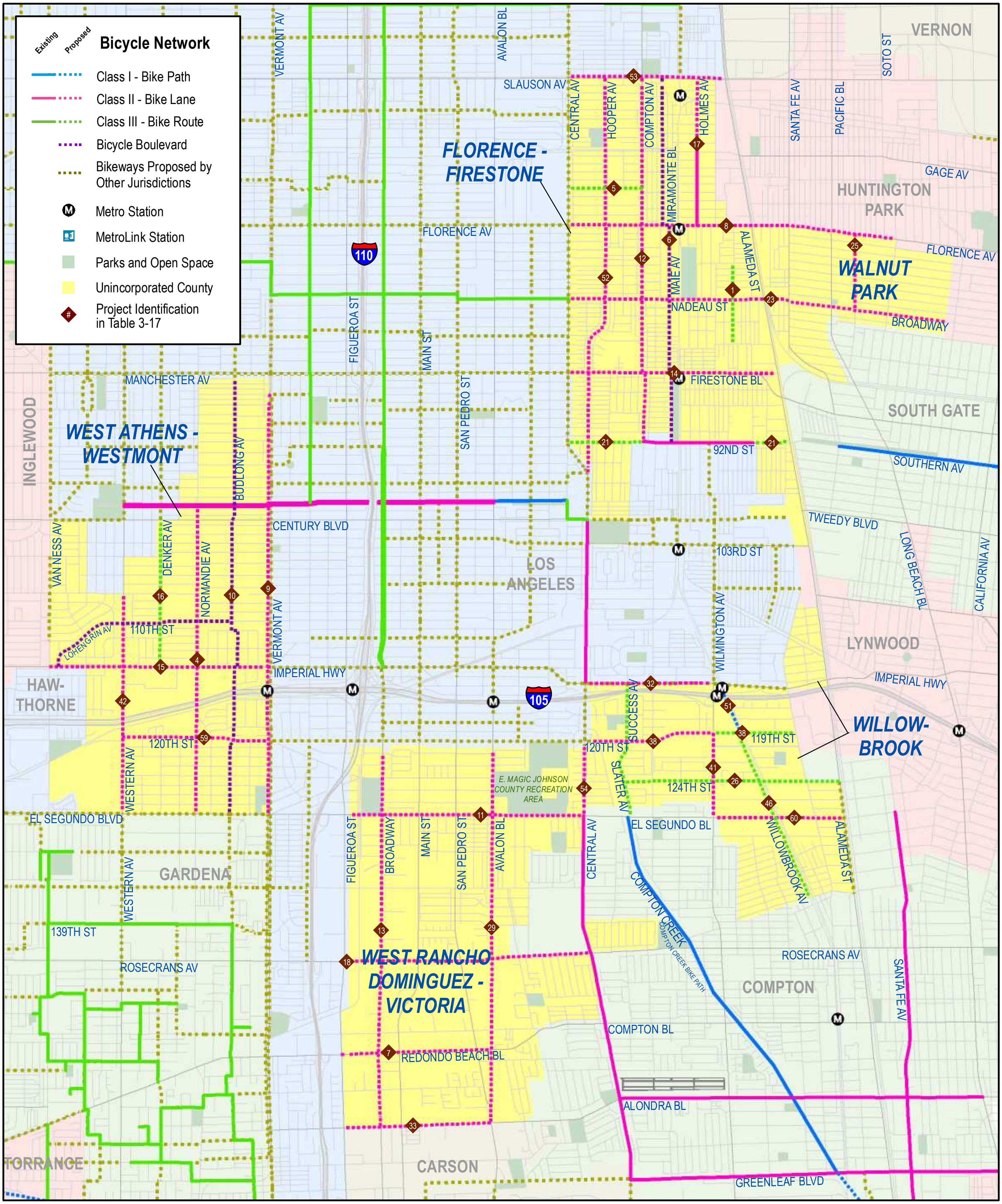

Figure 3-20: Florence-Firestone, Walnut Park, West Athens-Westmont, West Rancho Dominguez-Victoria and Willowbrook Proposed Bicycle Facilities

Los Angeles County Bicycle Master Plan

Source: Los Angeles Metro (2006; 2010); Alta Planning + Design (2010)
Date: 10/13/11

3.6 San Fernando Valley Planning Area

The San Fernando Valley Planning Area is mostly incorporated with only a few small unincorporated communities scattered along the periphery of the planning area in the foothills of the mountain ranges surrounding San Fernando Valley. The planning area's unincorporated communities include Kagel Canyon, La Crescenta-Montrose, Lopez Canyon, Oat Mountain, Sylmar Island, Twin Lakes, Universal City, West Chatsworth, and West Hills. The unincorporated parts of the San Fernando Valley have an estimated population of 28,000 residents.[27] These communities encircle the incorporated San Fernando Valley, which includes the cities of Los Angeles (San Fernando Valley portion), Burbank, Glendale, and San Fernando.

The San Fernando Valley is demarcated by the Santa Susana Mountains to the northwest, San Gabriel Mountains to the northeast, Verdugo Mountains to the east, and the Santa Monica Mountains to the south separating the San Fernando Valley from the Los Angeles Basin. The Chalk Hills to the south and the Simi Hills to the west also define the valley area. The planning area unincorporated communities are, for the most part, sparsely populated, with only La Crescenta-Montrose having a sizable population (18,907).

Figure D-5 in **Appendix D** displays the land uses within the planning area. The communities of Kagel Canyon, Lopez Canyon and Sylmar Island are mountainous with predominantly rural residential, open space, and park land uses. Industrial uses occupy the southern portion of Lopez Canyon. La Crescenta-Montrose is primarily low to medium density single-family residential with commercial activity concentrated along Foothill Boulevard. Oat Mountain and Twin Lakes have a combined population of 1,358. Whereas Oat Mountain is mainly rural, park, and open space, Twin Lakes is dominated by single-family residential land uses. Universal City is exclusively occupied by Universal Studios property. The unincorporated area has no residences and is designated for commercial and industrial land uses only. Located on the western boundary of the planning area, West Chatsworth and West Hills encompass two square miles of rural residential and single family residential land. West Chatsworth is largely rural residential with a sparsely populated hillside community located in the northern portion of the community. By comparison, the incorporated cities of San Fernando Valley are mostly built out, with strong patterns of urban and suburban development.

3.6.1 Existing Bicycling Conditions

Of these nine communities, only La Crescenta-Montrose has an existing bikeway, which runs through the community along Foothill Boulevard. The community of West Hills contains a portion of a bikeway on Valley Circle Boulevard, which runs along the boundary of the community for one third of a mile.

Table 3-18 presents the location, classification, and mileage of existing bikeways within the communities. **Figure 3-21** displays major transit, existing bicycle network, and reported bicycle collisions in the planning area.

[27] *2008 SCAG Regional Transportation Plan, Table 2.5: Los Angeles County Population Projections*

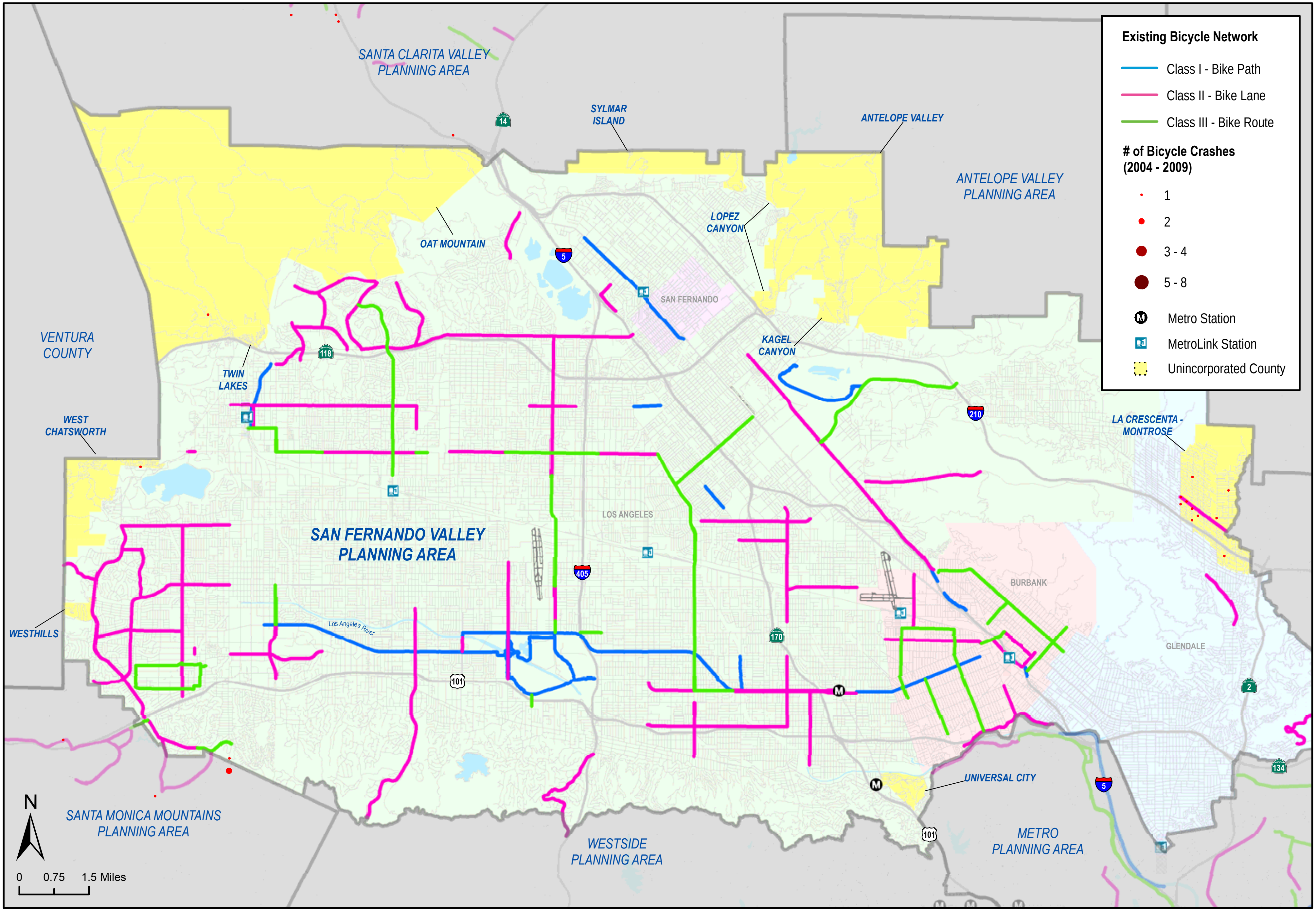

Figure 3-21: San Fernando Valley Planning Area Existing Bicycle Network, Major Transit and Bicycle Crashes (2004-2009)

Source: Los Angeles Metro (2010); SWITRS (2010)
Date: 10/13/11

Table 3-18: San Fernando Planning Area Existing Bicycle Facilities

Community	Segment	From	To	Class	Mileage
San Fernando Valley Planning Area	Foothill Boulevard	Pennsylvania Avenue	Briggs Avenue	2	1.2
San Fernando Valley Planning Area	Valley Circle Boulevard	0.1 miles north of Vanowen Street	Corrie Lane	2	0.3
				Total	**1.5**

**County-maintained bikeways only*

Los Angeles County Metropolitan Authority (LACMTA) identified two key gaps in the 2006 Metro Bicycle Transportation Strategic Plan, as shown in **Table 3-19**.

Table 3-19: MTA Identified Gaps in the San Fernando Inter-Jurisdictional Bikeway Network

MTA #	Corridor	Jurisdiction	Description	Constraints
24	Foothill Blvd	LA City / Glendale / LA County/ La Cañada-Flintridge	Connection between Wentworth (LA City) and Oak Grove (La Cañada)	Urban Arterial

Source: Los Angeles County Metropolitan Transportation Authority: 2006 Metro Bicycle Transportation Strategic Plan, p. 103-104

Several factors hinder bicycling opportunities in the San Fernando Valley Planning Area. Many of the communities are characterized by steep topography, undulating street networks, and minimal bicycle trip generators. However, opportunities do exist to provide recreational facilities, connect these communities with adjacent cities, and foster multimodal trip-taking.

La Crescenta-Montrose includes both flat and hilly terrain. While it has a grid street network, connectivity to the east and south are respectively hindered by the Pickens Canyon Channel and the Foothill Freeway (I-210). Both barriers currently create choke points requiring identification of potential new crossings or enhancements to existing crossings.

Universal City consists of hilly private land and streets, except for access roads that connect visitors to the Universal Studios Theme Park and Universal City Walk. Although the community has no residents, the area is a major employee and tourist destination. Shuttles transport workers and visitors between the area and the nearby Universal City Red Line Metro Station.

Due to topographical barriers and the relative absence of major bicycle trip generators, improvements are focused on facilitating connections to bicycle networks and transit hubs in adjacent cities. Six MetroLink and two Metro Stations are located in San Fernando Valley incorporated communities.

According to the California Highway Patrol SWITRS data, 12 bicycle collisions were reported in the unincorporated communities of San Fernando Valley Planning Area from 2004 through 2009. Figure 3.21 identifies bicycle crash locations for this time period. Of the 12 collisions, ten occurred in La Crescenta-Montrose. This high number of collisions may be a result of La Crescenta-Montrose having higher population and more bicycling activity than the other communities in the planning area.

3.6.2 Proposed Network

Table 3-20 summarizes the proposed bicycle network mileage by classification type within the San Fernando Valley Planning Area. Projects were prioritized based on bicycling demand, facility deficiencies, barriers to implementation, public comment, and a host of other criteria. As shown, the proposed network would provide approximately 11 miles of facility across the planning area including 2 miles of bicycle path and 7 miles of bicycle route. Currently, there are only 1.5 miles of existing bicycle facility within the unincorporated parts of the San Fernando Valley Planning Area.

Table 3-20: San Fernando Valley Planning Area Bicycle Network Facility Type and Mileage Summary

Mileage of Proposed Projects by Facility Type	Miles	% of Total
Class I – Bicycle Path	2.2	19.3%
Class II – Bicycle Lane	1.7	14.9%
Class III – Bicycle Route	7.5	65.8%
Total	**11.4**	**100%**

Table 3-21 presents the Supervisorial District, specific location, alignment, classification, priority score, and mileage for each of the proposed bikeways within the planning area.

Figure 3-22 displays the proposed bicycle network as well as existing bicycle facilities and major transit stops in the San Fernando Valley planning area. **Figure 3-23** provides a more detailed view of the proposed bicycle network within the La Crescenta-Montrose community.

Table 3-21: San Fernando Valley Planning Area Proposed Bicycle Facilities

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
1	Los Angeles River Proposed Bicycle Path	Lankershim Boulevard	0.2 miles west of Barham Boulevard	Universal City	1	1.0	3	145
2	Rosemount Avenue	Rockdell Street	Honolulu Avenue	La Crescenta-Montrose and City of Glendale[A]	3	1.9	5	135
3	La Crescenta Avenue	Orange Avenue	Foothill Boulevard	La Crescenta-Montrose	3	0.6	5	130
4	Altura Avenue	La Crescenta Avenue	Rosemount avenue	La Crescenta-Montrose	3	0.3	5	120
5	La Crescenta Avenue	Foothill Boulevard	Montrose Avenue	La Crescenta-Montrose and City of Glendale[A]	3	0.6	5	120
6	Briggs Avenue	Shields Street	Foothill Boulevard	La Crescenta-Montrose	3	1.3	5	110
7	Ramsdell Avenue	Markridge Road	Montrose Avenue	La Crescenta-Montrose and City of Glendale[A]	3	1.6	5	95

Table 3-21: San Fernando Valley Planning Area Proposed Bicycle Facilities (continued)

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
8	Montrose Avenue	Rosemont Ave	Montrose Lane	La Crescenta-Montrose	2	0.8	5	95
9	Orange Avenue/ Whittier Drive	Pennsylvania Avenue	Briggs Avenue	La Crescenta-Montrose	3	1.2	5	80
10	Verdugo Flood Control Channel Bicycle Path	New York Avenue	Shirley Jean Street	City of Glendale	1	1.2	5	70
11	Ocean View Boulevard	Foothill Boulevard	Honolulu Avenue	La Crescenta-Montrose and City of Glendale[A]	2	0.9	5	50
Total Mileage						**11.4**		

[A] *Part of project traverses through or along boundary of incorporated city*

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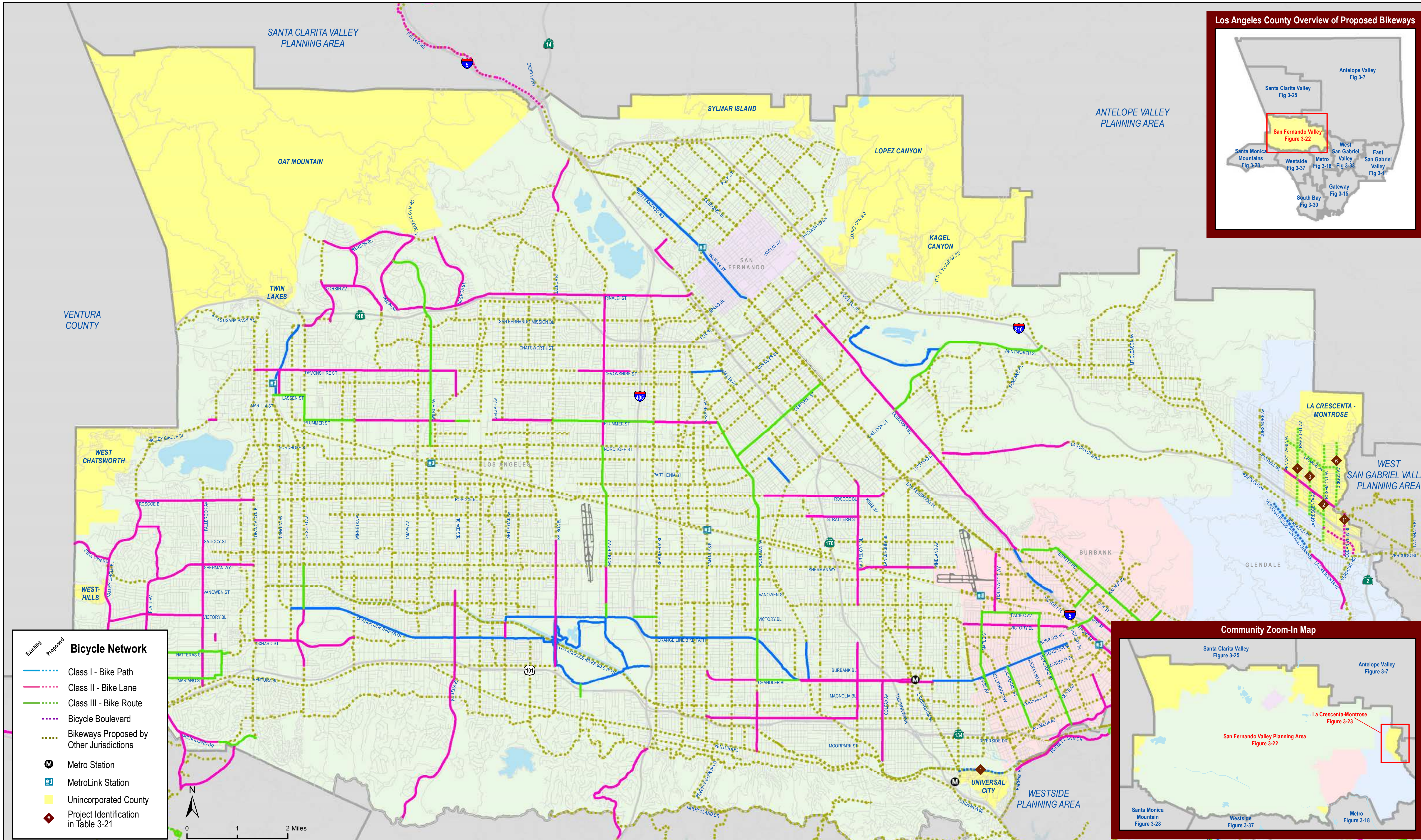

Figure 3-22: San Fernando Valley Planning Area Proposed Bicycle Facilities

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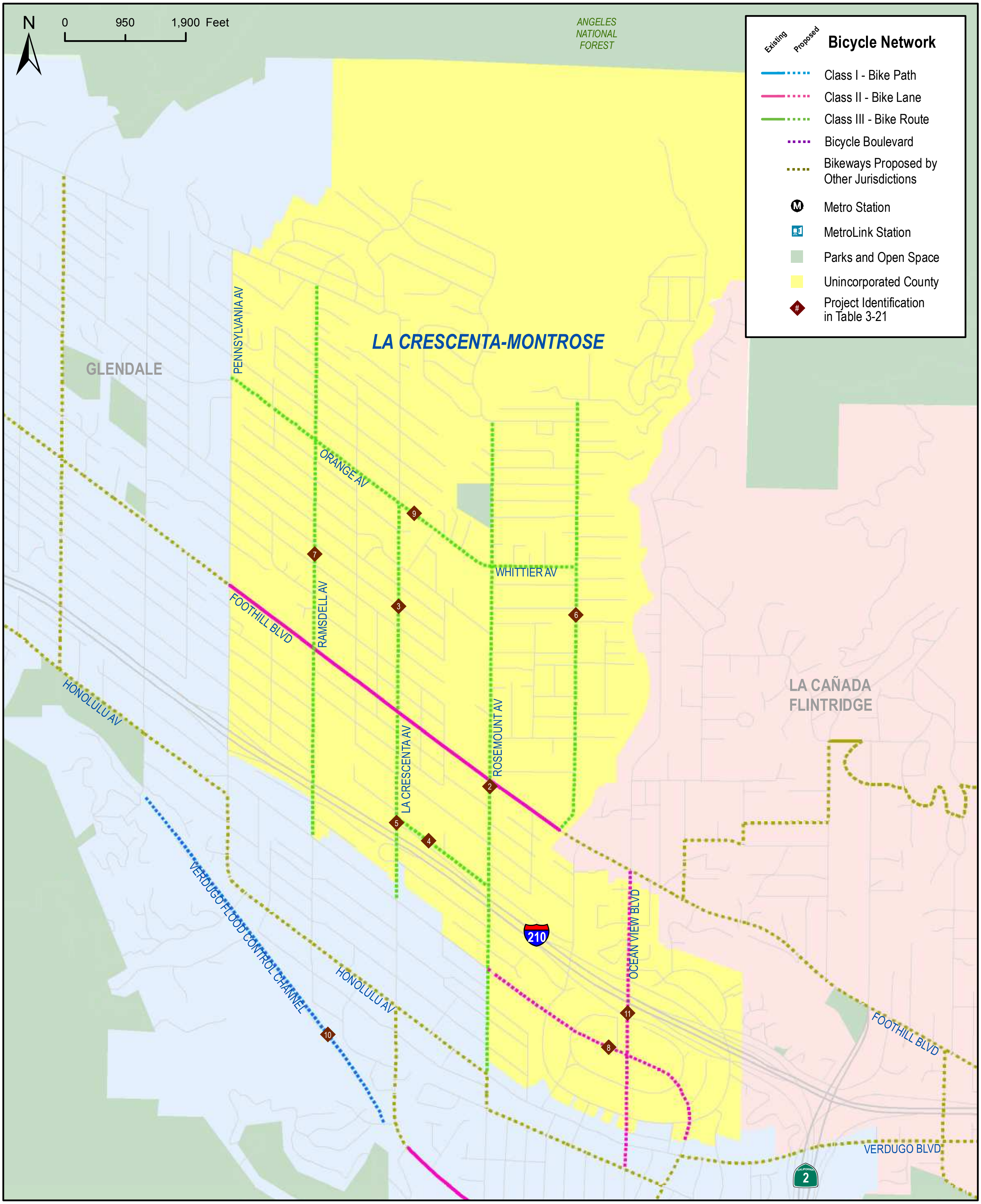

Figure 3-23: La Crescenta-Montrose Proposed Bicycle Facilities

Los Angeles County Bicycle Master Plan

Source: Los Angeles Metro (2006; 2010); Alta Planning + Design (2010)
Date: 10/13/11

3.7 Santa Clarita Valley Planning Area

The unincorporated County covers around 195 square miles of the Santa Clarita Valley Planning Area's total 484 square miles. The Planning Area is located in northern Los Angeles County, bounded by Ventura County to the west, the Antelope Valley Planning Area to the north and east, and the San Fernando Valley Planning Area to the south.[28]

The planning area is characterized by several village-like communities with distinct development patterns and histories of development. Many of these communities are isolated from each other by built and natural barriers such as topography, the Santa Clarita River, and Interstate 5. The valley features a significant amount of County park and open space. The Los Padres and Angeles National Forests comprise about 235 square miles of the planning area. Urban development is focused within and just outside of the City of Santa Clarita, while the surrounding unincorporated communities are suburban-rural. **Figure D-6** in **Appendix D** displays the Santa Clarita Valley Planning Area communities and designated land uses. The unincorporated parts of Santa Clarita Valley have an estimated population of 85,000 residents compared to the 178,062 residents living in the more densely populated incorporated City of Santa Clarita.[29]

There are 10 unincorporated suburban/rural communities within Santa Clarita Valley Planning Area. They include: Agua Dulce, Alpine, Bouquet Canyon, Castaic, Forest Park, Hasley Canyon, Lang, Soledad-Sulphur Springs, Stevenson Ranch, and Val Verde. The following subsections describe current bicycling conditions within unincorporated Santa Clarita Valley Planning Area.

3.7.1 Existing Bicycling Conditions

There are three existing County-maintained bikeway segments accounting for approximately 3.3 miles in unincorporated Santa Clarita Valley. **Table 3-22** summarizes the location, classification, and mileage of existing bikeways. **Figure 3-24** displays the existing bicycle network along with major transit stations and bicycle collision locations in Santa Clarita Valley.

Table 3-22: Santa Clarita Valley Existing Bikeways

Community	Segment	From	To	Class	Mileage
Stevenson Ranch	Stevenson Ranch Parkway	Poe Parkway	The Old Road	2	1.4
Stevenson Ranch	The Old Road	Stevenson Ranch Parkway	Pico Canyon Road	3	0.9
Stevenson Ranch	Valencia Boulevard	0.2 miles west of Old Rock Road	The Old Road	2	1.0
				Total	**3.3**

**County-maintained bikeways only*

[28] *Los Angeles County, Draft Santa Clarita Valley Area Plan: "One Valley One Vision", 2009*

[29] *2008 SCAG Regional Transportation Plan, Table 2.5: Los Angeles County Population Projections; 2006-2008 American Community Survey, B00001 3-Year Estimates*

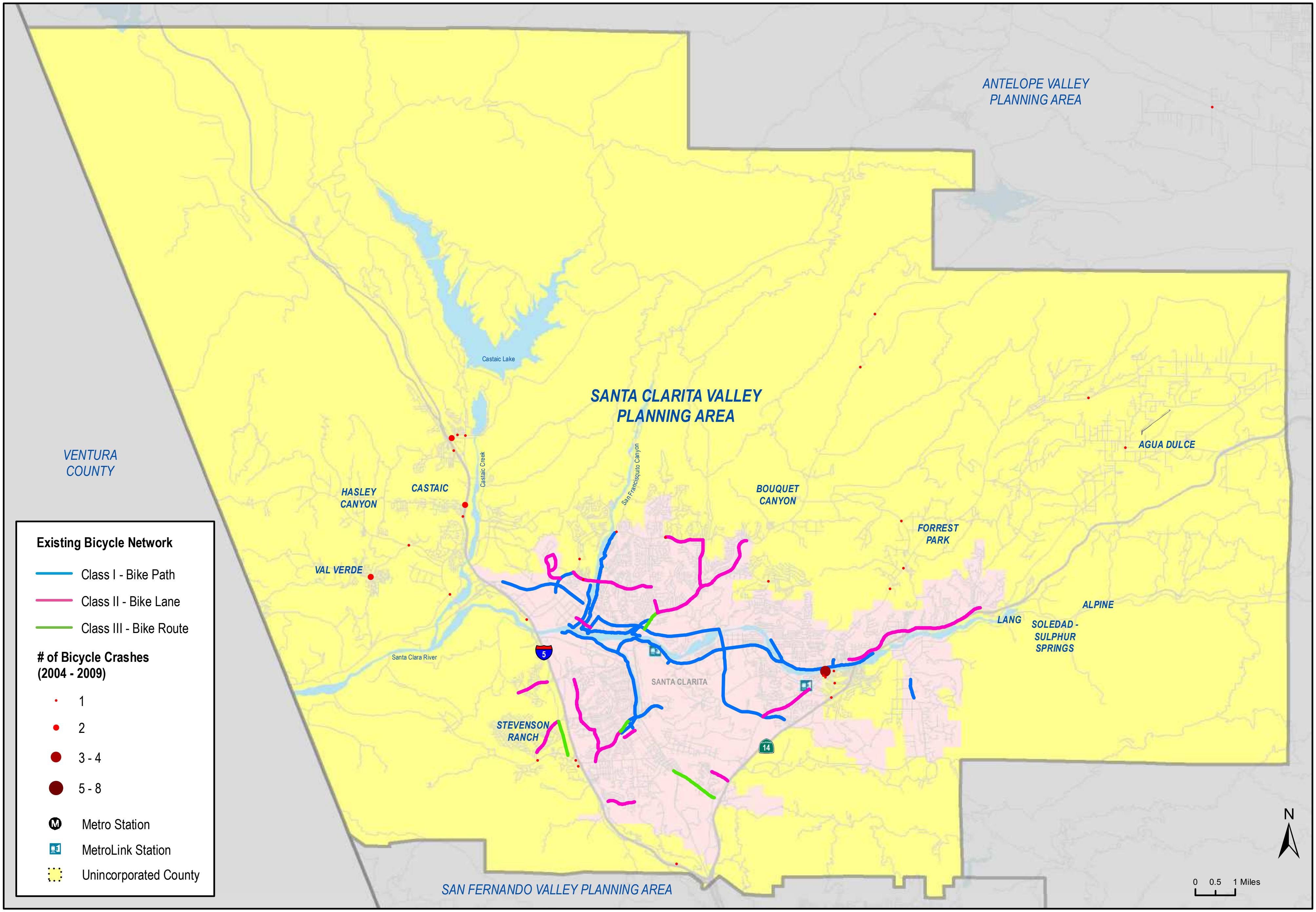

Figure 3-24: Santa Clarita Valley Planning Area Existing Bicycle Network, Major Transit and Bicycle Crashes (2004-2009)

Source: Los Angeles Metro (2010); SWITRS (2010)
Date: 10/13/11

The planning area possesses both opportunities and constraints in expanding the existing bicycle network and increasing bicycling activity. Constraints, including medium-to-low residential density and undulating street network nestled in hilly terrain, serve as barriers to bicycling. There are also several constrained gaps in the inter-jurisdictional bikeway network. LACMTA identified four key gaps in the 2006 Metro Bicycle Transportation Strategic Plan, as shown in **Table 3-23**.

Table 3-23: MTA Identified Gaps in the Santa Clarita Inter-Jurisdictional Bikeway Network

MTA #	Corridor	Jurisdiction	Description	Constraints
30	Old Road	Los Angeles County	Located along Old Road adjacent to Golden State Freeway. Connection between Valencia, Santa Clarita and San Fernando Road MetroLink right-of-way bike path in the San Fernando Valley	May require shoulder improvements and road widening in some places to create Class II or III bikeway.
31	Route 126	Los Angeles County	Connection between Santa Clarita and the Ventura County Line	May require shoulder improvements and road widening in some places to create Class II or III bikeway.
49	Castaic/San Francisquito Creek	Santa Clarita/Los Angeles County	Connection between Santa Clarita and Castaic Lake along Castaic Creek, San Francisquito Creek, and the Golden State Freeway	May require shoulder improvements and road widening in some places to create Class II or III bikeway.
50	Sierra Highway	Santa Clarita/Los Angeles County	Connection between the Old Road and Soledad Canyon Bike Path	May require shoulder improvements and road widening in some places to create Class II or III bikeway.

Source: Los Angeles County Metropolitan Transportation Authority: 2006 Metro Bicycle Transportation Strategic Plan, p. 103-104

Providing connections to the City of Santa Clarita, which the unincorporated area surrounds completely, is an essential consideration for improving the bicycling connectivity in the unincorporated portions of the Santa Clarita Valley Planning Area. The City of Santa Clarita also has three MetroLink Stations and an extensive bike path system along its rivers. Opportunities exist to extend the bike path system through to the unincorporated area along the Santa Clara River and Castaic Creek.

According to the California Highway Patrol SWITRS data, 38 bicycle collisions were reported within unincorporated Santa Clarita Valley between 2004 and 2009. Of these 38 instances, four occurred at the intersection of Sierra Highway and Sandy Drive, which is the greatest number of crashes at a single location in the planning area.

3.7.2 Proposed Network

Table 3-24 presents the proposed bicycle network mileage by classification type within the Santa Clarita Valley Planning Area. Projects were prioritized based on bicycling demand, facility deficiencies, barriers to implementation, public comment, and a host of other criteria. As shown, the proposed network would add approximately 158 miles to the existing 3.3 miles of bicycle facility across the unincorporated parts of the planning area—including 108 miles of proposed Class III. A vast majority of the 108 miles of Class III bikeways are proposed along the shoulders of rural roadways. The shoulders of rural Class III bikeways provide the same physical separation as bike lanes do, while maintaining the legality of the shoulder as space for emergency vehicle stops. Class IIIs on shoulders do not require curb and gutter, which helps preserve the rural characteristic of the roadway.

Table 3-24: Santa Clarita Valley Planning Area Bicycle Network Facility Type and Mileage Summary

Mileage of Proposed Projects by Facility Type	Miles	% of Total
Class I – Bicycle Path	16.5	10.4%
Class II – Bicycle Lane	33.4	21.1%
Class III – Bicycle Route	108.5	68.5%
Total	**158.4**	**100%**

Table 3-25 presents the Supervisorial District, specific location, alignment, classification, priority score, and mileage for each of the proposed bikeways within the planning area.

Figure 3-25 displays the proposed bicycle network as well as existing bicycle facilities and major transit stops in the Santa Clarita Valley Planning Area. **Figure 3-26** displays a closer view of the proposed bicycle facilities for the Castaic neighborhood.

Table 3-25: Santa Clarita Valley Planning Area Proposed Bicycle Facilities

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
1	Pico Canyon Road	Whispering Oaks Drive	The Old Road	Stevenson Ranch	2	1.2	5	115
2	Sierra Highway[A, B]	0.3 miles south of Ryan Lane	Pearblossom Highway	Forest Park, Agua Dulce,, Acton	3	24.3	5	105
3	Stevenson Ranch Parkway	Poe Parkway	Pico Canyon Road	Stevenson Ranch	2	0.2	5	100
4	Old Road	Weldon Canyon Road	Sierra Highway	Castaic	2	1.2	5	100
5	San Francisquito Creek Trail	Copper Hill	San Francisquito Canyon Road	Green Valley	1	0.6	5	95
6	Hillcrest Parkway	Sloan Canyon Road	The Old Road	Castaic	2	2.0	5	90
7	Magic Mountain Parkway[A]	0.4 miles west of The Old Road	The Old Road	Santa Clarita Valley Planning Area	2	0.5	5	90

Table 3-25: Santa Clarita Valley Planning Area Proposed Bicycle Facilities (continued)

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
8	The Old Road[A, B]	Sloan Canyon Road	Weldon Canyon Road	Castaic and City of Santa Clarita[C]	2	13.4	5	90
9	Castaic Road	Lake Hughes Road	Parker Road	Castaic	3	0.5	5	80
10	Sloan Canyon Road	Quail Valley Road	Lake Hughes Road	Castaic	2	0.8	5	80
11	Jakes Way	Canyon Park Boulevard	Eleanor Circle	Santa Clarita Valley Planning Area	2	1.0	5	80
12	Escondido Canyon Road	Agua Dulce Canyon	Red Rover Mine	Forest Park, Agua Dulce	3	6.9	5	80
13	Pulm Canyon Road	Via Joice Drive	Ashboro Drive	Bouquet Canyon, Leona Valley, Antelope Valley Planning Area	2	1.7	5	75
14	Bouquet Canyon Road[B]	Hob Court	Elizabeth Lake Road	Bouquet Canyon, Leona Valley, Antelope Valley Planning Area	3	19.8	5	75
15	Soledad Canyon Road[A]	Mammoth Lane	Sierra Highway	Lang, Soledad-Sulphur Springs, Alpine, Acton and City of Santa Clarita[C]	3	17.5	5	75
16	Parker Road/ Ridge Route Road	Sloan Canyon Road	Lake Hughes Road	Castaic	2	1.2	5	70
17	Lost Canyon Road	Via Princessa Road	Canyon Park Boulevard	Fair Oaks Ranch	2	0.5	5	70
18	Agua Dulce Canyon Road[A]	Sierra Highway	Soledad Canyon Road	Agua Dulce, Alpine	3	6.5	5	70
19	Santa Clara River Proposed Bicycle Path[B, D]	Ventura County limit	McBean Parkway	Santa Clarita Valley Planning Area, City of Santa Clarita	1	10.2	5	70
20	Oak Springs Canyon Road Proposed Bicycle Path[D]	Soledad Canyon Road	Lost Canyon Road	City of Santa Clarita	1	0.2	5	65
21	Via Princessa Road[C]	Sierra Highway	Lost Canyon Road	Fair Oaks Ranch and City of Santa Clarita	2	0.8	5	65
22	Canyon Park Boulevard	Sierra Highway	Lost Canyon Road	Santa Clarita Valley Planning Area	2	0.8	5	60
23	Henry Mayo Drive[A]	Commerce Center Drive	The Old Road	Santa Clarita Valley Planning Area	2	0.8	5	60

Table 3-25: Santa Clarita Valley Planning Area Proposed Bicycle Facilities (continued)

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
24	Vasquez Canyon Road	Bouquet Canyon Road	Sierra Highway	Bouquet Canyon, Forest Park	2	3.6	5	60
25	Castaic Creek Proposed Bicycle Path[D]	Lake Hughes Road	Henry Mayo Drive	Santa Clarita Valley Planning Area	1	5.5	5	60
26	Davenport Road[A]	Sierra Highway	Agua Dulce Canyon Road	Agua Dulce	2	3.7	5	55
27	Lake Hughes Road	Sloan Canyon Road	Elizabeth Lake Road	Castaic, Lake Hughes, Antelope Valley Planning Area	3	23.0	5	55
28	Sand Canyon Road	Sierra Highway	Vista Point Lane	Forrest Park and City of Santa Clarita[C]	3	1.0	5	50
29	Hasley Canyon Road/ Del Valle Road/ Hunstock Street/ Chiquito Canyon Road	Sloan Canyon Road	Henry Mayo Drive	Val Verde	3	4.0	5	50
30	Placerita Canyon Road	Sierra Highway	Sand Canyon Road	Santa Clarita Valley Planning Area and City of Santa Clarita[C]	3	5.0	5	45
Total Mileage						**158.4**		

[A] *Proposed segment has been identified as a roadway widening project in the Santa Clarita Valley One Valley One Vision Plan*

[B] *Proposed segment overlaps with Early Action bicycle project identified by County of Los Angeles*

[C] *Part of project traverses through or along boundary of incorporated city*

[D] *Alignment of bicycle path is conceptual and does not represent alignment at implementation phase*

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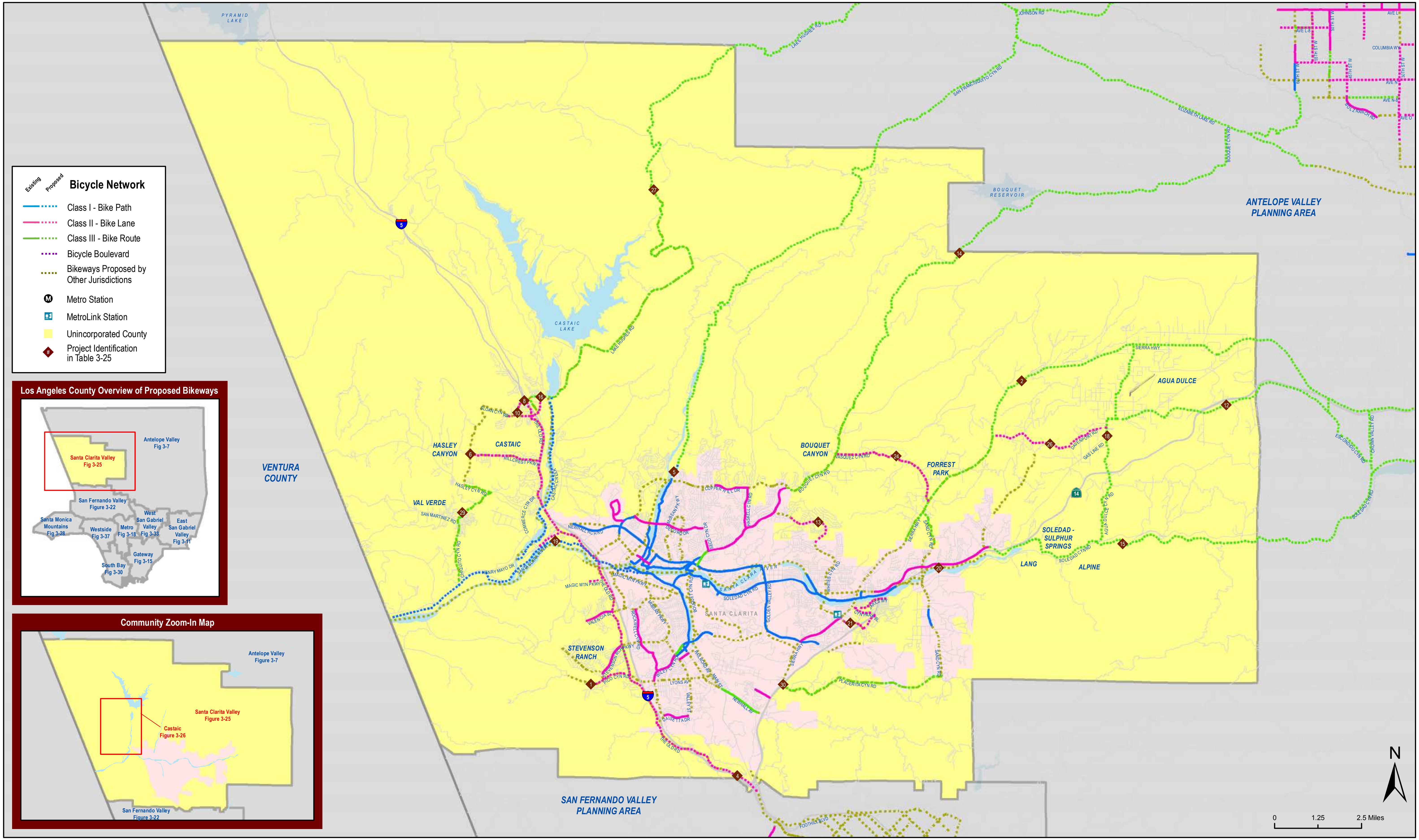

Figure 3-25: Santa Clarita Valley Planning Area Proposed Bicycle Facilities

Los Angeles County Bicycle Master Plan

Source: Los Angeles Metro (2006; 2010); Alta Planning + Design (2010)
Date: 10/13/11

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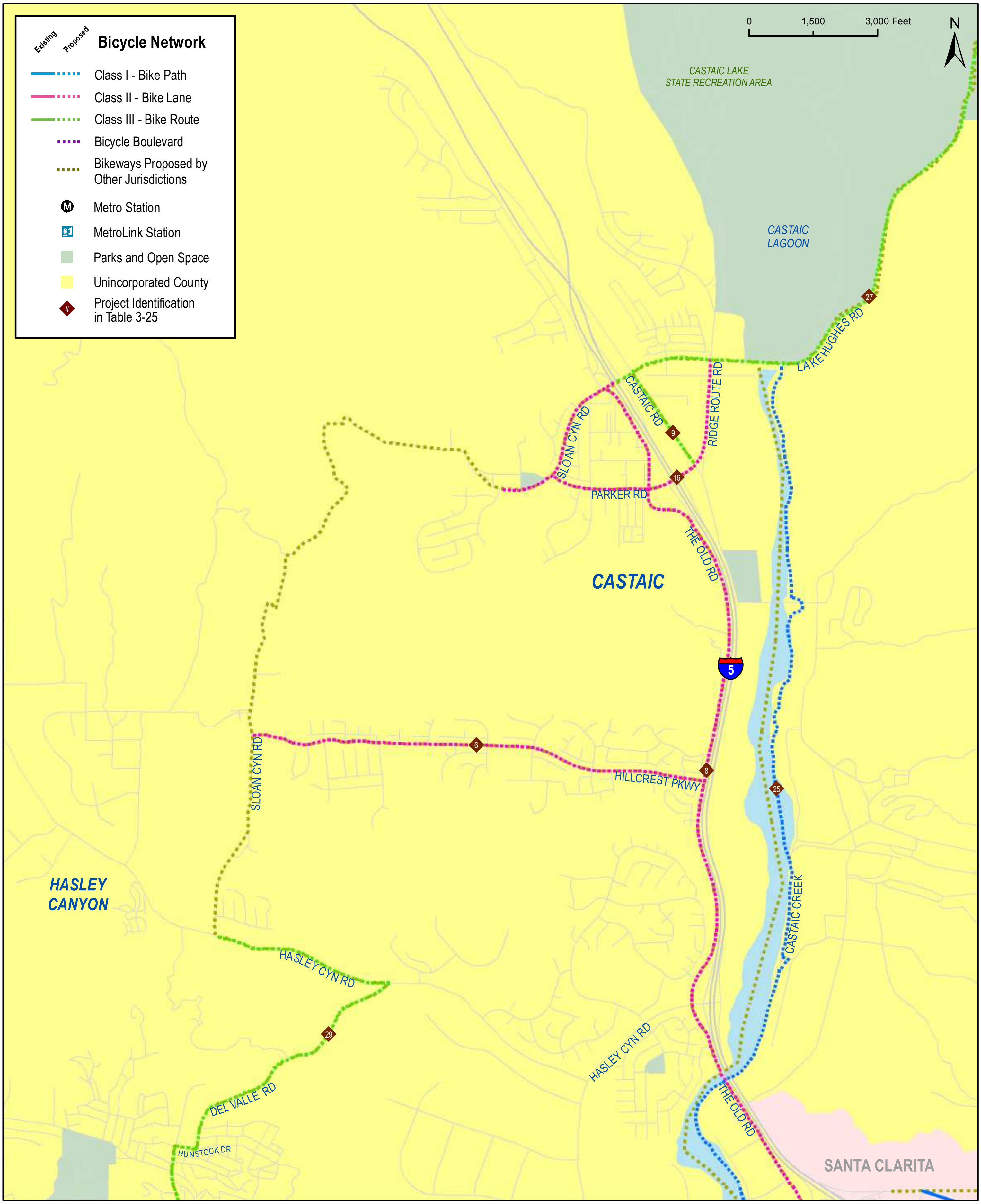

Figure 3-26: Castaic Proposed Bicycle Facilities

Los Angeles County Bicycle Master Plan

Source: Los Angeles Metro (2006; 2010); Alta Planning + Design (2010)
Date: 10/13/11

3.8 Santa Monica Mountains Planning Area

The Santa Monica Mountains Planning Area is located in a biologically diverse and sensitive mountainous area of western County of Los Angeles. The planning area borders Ventura County, San Fernando Valley Planning Area, and Westside Planning Area. Along the northern portion of the planning area are several incorporated cities: Westlake Village, Agoura Hills, Calabasas, and Hidden Hills. Along the coastal portion of the planning area to the south is the City of Malibu. The Santa Monica Mountains National Recreational Area encompasses a vast area of the mountain range. The remaining 113 approximate square miles of unincorporated areas are comprised of the Santa Monica Mountains Coastal Zone and Santa Monica Mountains North Area.

In 2010, approximately 22,000 people resided within the unincorporated parts of Santa Monica Mountains Planning Area.[30] Multi-agency conservation-based planning efforts have helped maintain a low population density throughout the planning area. The Santa Monica Mountains Planning Area land uses are predominately open space, park, and rural residential. There are also discrete pockets of single-family residential and commercial areas dispersed throughout the planning area. **Figure D-7** in **Appendix D** displays the planning area's location and land uses.

3.8.1 Existing Bicycling Conditions

There is one existing County-maintained Class II bikeway of 0.5 miles within the unincorporated Santa Monica Mountains Planning Area. **Table 3-26** summarizes the location and extent of this facility.

Table 3-26: Santa Monica Mountains Planning Area Existing Bikeways

Community	Segment	From	To	Class	Mileage
Santa Monica Mountains North Area	Agoura Road	Liberty Canyon Road	0.1 miles west of Malibu Hills Road	2	0.5
				Total	**0.5**

**County-maintained bikeways only*

Figure 3-27 shows the existing bicycle facilities along with bicycle collision locations in the Santa Monica Mountains Planning Area.

The LACMTA identified one key gap in the 2006 Metro Bicycle Transportation Strategic Plan, as shown in **Table 3-27.**

[30] *2008 SCAG Regional Transportation Plan, Table 2.5: Los Angeles County Population Projections*

Table 3-27: MTA Identified Gaps in the Santa Monica Mountains Inter-Jurisdictional Bikeway Network

MTA #	Corridor	Jurisdiction	Description	Constraints
28	Beach	Los Angeles County	Northern extension of South Bay Beach Bike Path through Malibu	Requires feasibility study

Source: Los Angeles County Metropolitan Transportation Authority: 2006 Metro Bicycle Transportation Strategic Plan, p. 103-104

Opportunities to expand the existing bicycle network include creating connections to recreational areas and between residential and commercial pockets. There is no mass transit servicing the planning area, which limits multimodal trip-taking potential.

According to the California Highway Patrol SWITRS data, a total of 31 bicycle collisions were reported in the Santa Monica Mountains/Coastal Planning Area between 2004 through 2009. Twelve of these collisions occurred in the Santa Monica Mountains North Area, with four crashes reported at the intersection of Kanan Road and Mulholland Highway. Nineteen took place within the Malibu Coastal Zone, four of which occurred at the Mulholland Highway and Pacific Coast Highway intersection.

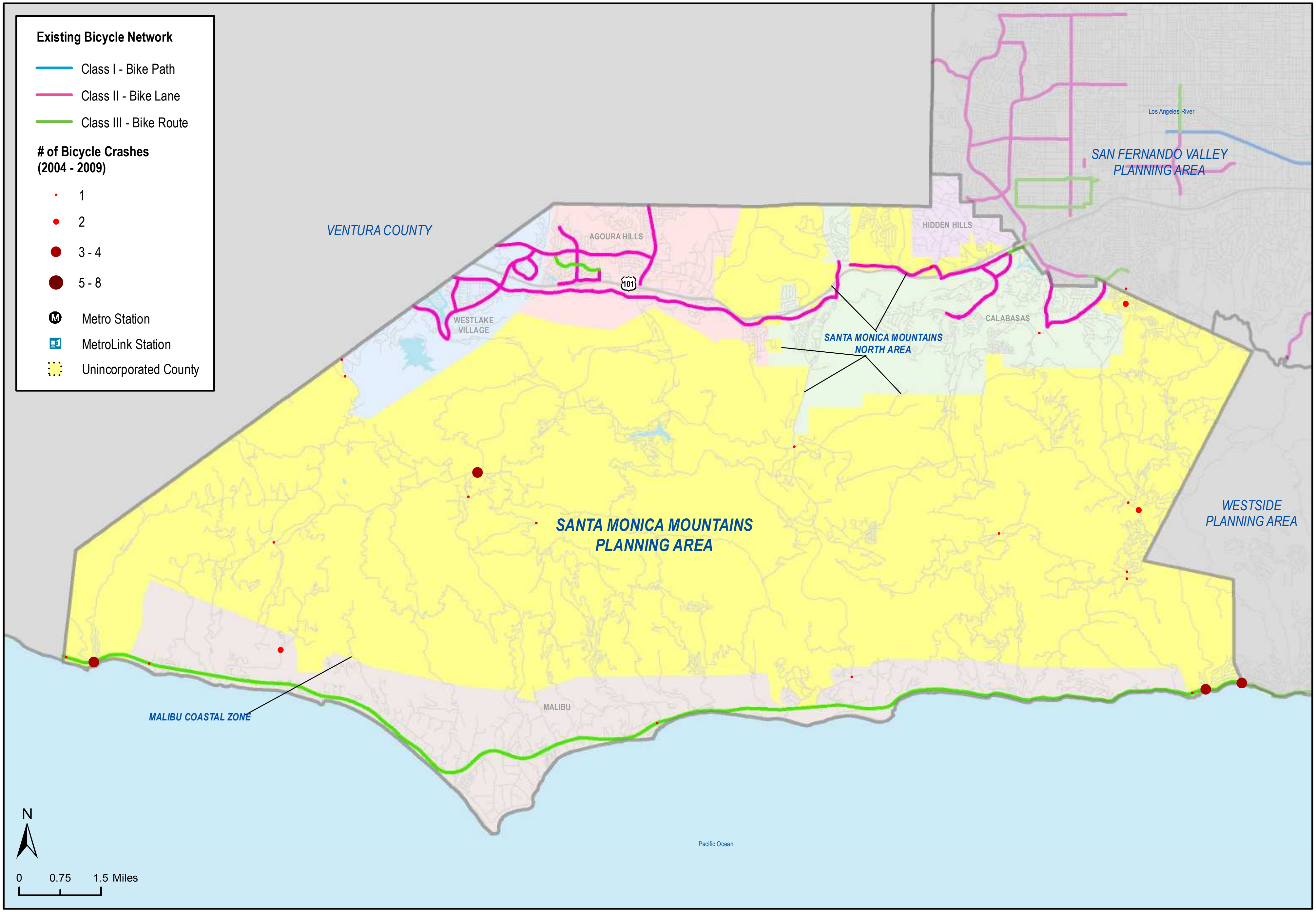

Figure 3-27: Santa Monica Mountains Existing Bicycle Network, Major Transit and Bicycle Crashes (2004-2009)

Source: Los Angeles Metro (2010); SWITRS (2010)
Date: 10/13/11

3.8.2 Proposed Network

Table 3-28 summarizes the proposed bicycle network mileage by classification type within the Santa Monica Mountains Planning Area. Projects were prioritized based on bicycling demand, facility deficiencies, barriers to implementation, public comment, and a host of other criteria. As shown, the proposed network would provide approximately 96 miles of facility across the planning area to bolster the 0.5 existing miles of bicycle facility within the unincorporated communities.

Table 3-29 presents the Supervisorial District, specific location, alignment, classification, priority score, and mileage for each of the proposed bikeways within the planning area. **Figure 3-28** displays the proposed bicycle network, as well as existing bicycle facilities and major transit stops in the Santa Monica Mountains planning area.

Table 3-28: Santa Monica Mountains Planning Area Bicycle Network Facility Type and Mileage Summary

Mileage of Proposed Projects by Facility Type	Miles	% of Total
Class II – Bicycle Lane	1.8	2%
Class III – Bicycle Route	93.8	98%
Total	**95.6**	**100%**

Table 3-29: Santa Monica Mountains Planning Area Proposed Bicycle Facilities

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
1	Las Virgenes Road/ Malibu Canyon Road	0.1 miles south of Lost Hills Road	Pacific Coast Highway	Santa Monica Mountains North Area, Malibu Coastal Zone and Cities of Calabasas and Malibu[A]	3	7.9	3	110
2	Mureau Road	0.2 miles west of Las Virgenes Road	Calabasas Road	Santa Monica Mountains North Area	2	1.8	3	105
3	Lake Vista Drive	Mulholland Highway	Mulholland Highway	Malibu Coastal Zone	3	1.4	3	90
4	Mulholland Highway	Decker Canyon Road	Pacific Coast Highway	Malibu Coastal Zone	3	7.5	3	85
5	Corral Canyon Road	Mesa Peak Road	Pacific Coast Highway	Santa Monica Mountains and City of Malibu[A]	3	7.7	3	80
6	Latigo Canyon Road	Mulholland Highway	Pacific Coast Highway	Santa Monica Mountains and City of Malibu[A]	3	10.6	3	80
7	Tuna Canyon Road	Fernwood Pacific Drive	Pacific Coast Highway	Santa Monica Mountains North Area and City of Malibu[A]	3	5.4	3	80

Table 3-29: Santa Monica Mountains Planning Area Proposed Bicycle Facilities (continued)

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
8	Old Topanga Canyon Road	Valdez Road	Topanga Canyon Boulevard	Santa Monica Mountains North Area, Malibu Coastal Zone and City of Los Angeles[A]	3	4.8	3	80
	Topanga Canyon Boulevard[B]	Old Topanga Canyon Road	Pacific Coast Highway		3	4.3	3	
9	Decker Canyon Road[B]/ Lechusa Road/ Encinal Canyon Road	Mulholland Highway	Pacific Coast Highway	Malibu Coastal Zone and City of Malibu[A]	3	5.9	3	75
10	Cornell Road	Kanan Road	Mulholland Highway	Santa Monica Mountains North Area and City of Agoura Hills[A]	3	2.3	3	65
11	Kanan Road/ Kanan Dume Road	Agoura Road	Pacific Coast Highway	Santa Monica Mountains North Area, Malibu Coastal Zone and Cities of Agoura Hills and Malibu[A]	3	12.1	3	60
12	Fernwood Pacific Drive	Topanga Canyon Boulevard	Tuna Canyon Road	Santa Monica Mountains North Area	3	1.7	3	55
13	Decker Canyon Road[B]/ Encinal Canyon Road/ Mulholland Highway	Pacific Coast Highway	0.5 miles north of Lyndon Drive	Malibu Coastal Zone and City of Malibu[A]	3	22.2	3	45
Total Mileage						**95.6**		

[A] *Part of project traverses through or along boundary of incorporated city*

[B] *Proposed facility is along a Caltrans-maintained roadway*

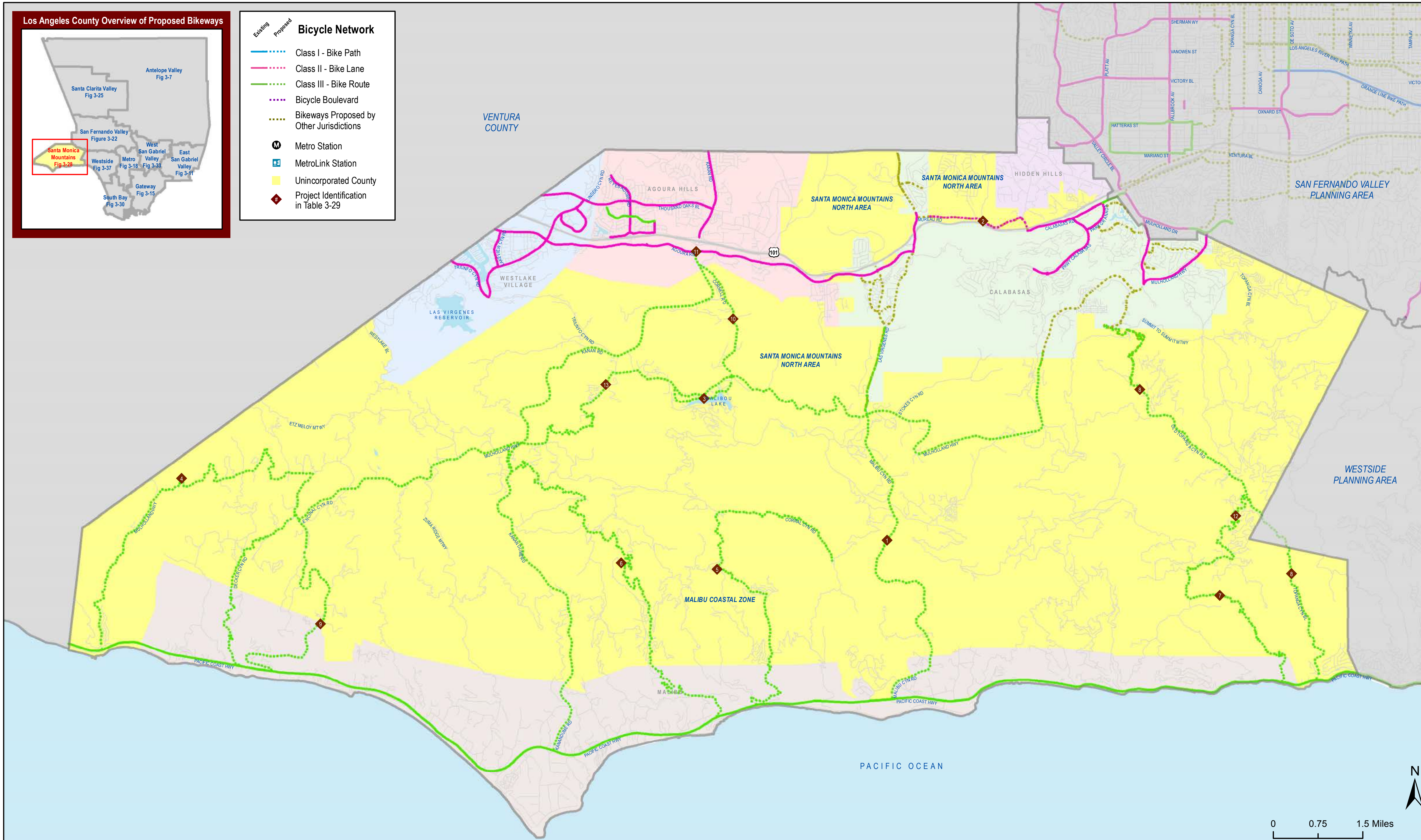

Figure 3-28: Santa Monica Mountains Planning Area Proposed Bicycle Facilities

Source: Los Angeles Metro (2006; 2010); Alta Planning + Design (2010)
Date: 10/13/11

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3.9 South Bay Planning Area

The South Bay Planning Area is located in the southwestern-most portion of Los Angeles County. Approximately 78,000 people resided within the unincorporated parts of the South Bay Planning Area in 2010.[31] The planning area unincorporated communities include Alondra Park, Hawthorne Island, Del Aire, Lennox, Westfield, La Rambla, and West Carson.

These relatively dense communities host a broad spectrum of land uses including residential, commercial, office, education, industrial, open space, and recreational. **Figure D-8** in **Appendix D** displays the South Bay Planning Area's current land use patterns.

3.9.1 Existing Bicycling Conditions

The South Bay Planning Area contains 10.5 miles of County-maintained bicycle facilities. **Table 3-30** presents the location, classification, and mileage of existing bikeways within the communities. **Figure 3-29** illustrates the existing bicycle facilities of the planning area and regionally significant transit stations in the area, as well as bicycle collision sites within the unincorporated communities reported from 2004 through 2009.

Table 3-30: South Bay Planning Area Existing Bicycle Facilities

Community	Segment	From	To	Class	Mileage
Alondra Park, Cities of Gardena and Hawthorne	Laguna Dominguez Bicycle Path	120th Street	Redondo Beach Boulevard	1	3.2
Cities of El Segundo, Hermosa Beach and Manhattan Beach	Marvin Braude Bicycle Path	Grand Avenue	35th Street	1	2.9
Cities of Redondo Beach and Torrance	Marvin Braude Bicycle Path	Coral Way	Via Riviera	1	2.0
City of Los Angeles	Dominguez Channel Bicycle Path	Vermont Avenue	190th Street	1	0.8
West Carson	Normandie Avenue	Sepulveda Boulevard	Lomita Boulevard	2	1.1
City of Carson	Dominguez Channel Bicycle Path	190th Street	Main Street	1	0.5
				Total	**10.5**

**County-maintained bikeways only*

The LACMTA identified one key gap in the 2006 Metro Bicycle Transportation Strategic Plan, as shown in **Table 3-31**.

[31] *2008 SCAG Regional Transportation Plan, Table 2.5: Los Angeles County Population Projections*

Table 3-31: MTA Identified Gaps in the South Bay Inter-Jurisdictional Bikeway Network

MTA #	Corridor	Jurisdiction	Description	Constraints
39	Beach	Los Angeles County / Palos Verdes Estates	Southern extension of beach bikeway, connector to Palos Verdes Dr. path	Route not identified

Source: Los Angeles County Metropolitan Transportation Authority: 2006 Metro Bicycle Transportation Strategic Plan, p. 103-104

There are opportunities to facilitate multi-modal trip-making in the unincorporated communities of Lennox and Del Aire by linking the nearby Metro transit stations servicing the neighborhood with bicycle facilities. Opportunities also exist to provide connections to El Camino College and UCLA Harbor Medical Center, two key land uses in the unincorporated South Bay Planning Area, as well as employment centers in neighboring Torrance and El Segundo. As islands dispersed between incorporated cities, developing a cohesive bicycle network for the unincorporated communities of the South Bay Planning Area will be difficult without additional bicycle connections being provided by neighboring cities. While neighboring cities of Torrance and Gardena have developed bikeways, most neighboring cities have yet to begin developing comprehensive bicycle networks. The Dominguez Channel provides an excellent opportunity to create a continuous bicycle path system from the City of Hawthorne to downtown Long Beach if it were to connect with the existing Laguna Dominguez bicycle path to the north and the existing Los Angeles River bicycle path to the south.

According to the California Highway Patrol SWITRS data, a total of 109 bicycle collisions were reported within the unincorporated communities of South Bay Planning Area between 2004 and 2009, 41 of which occurred in West Carson.

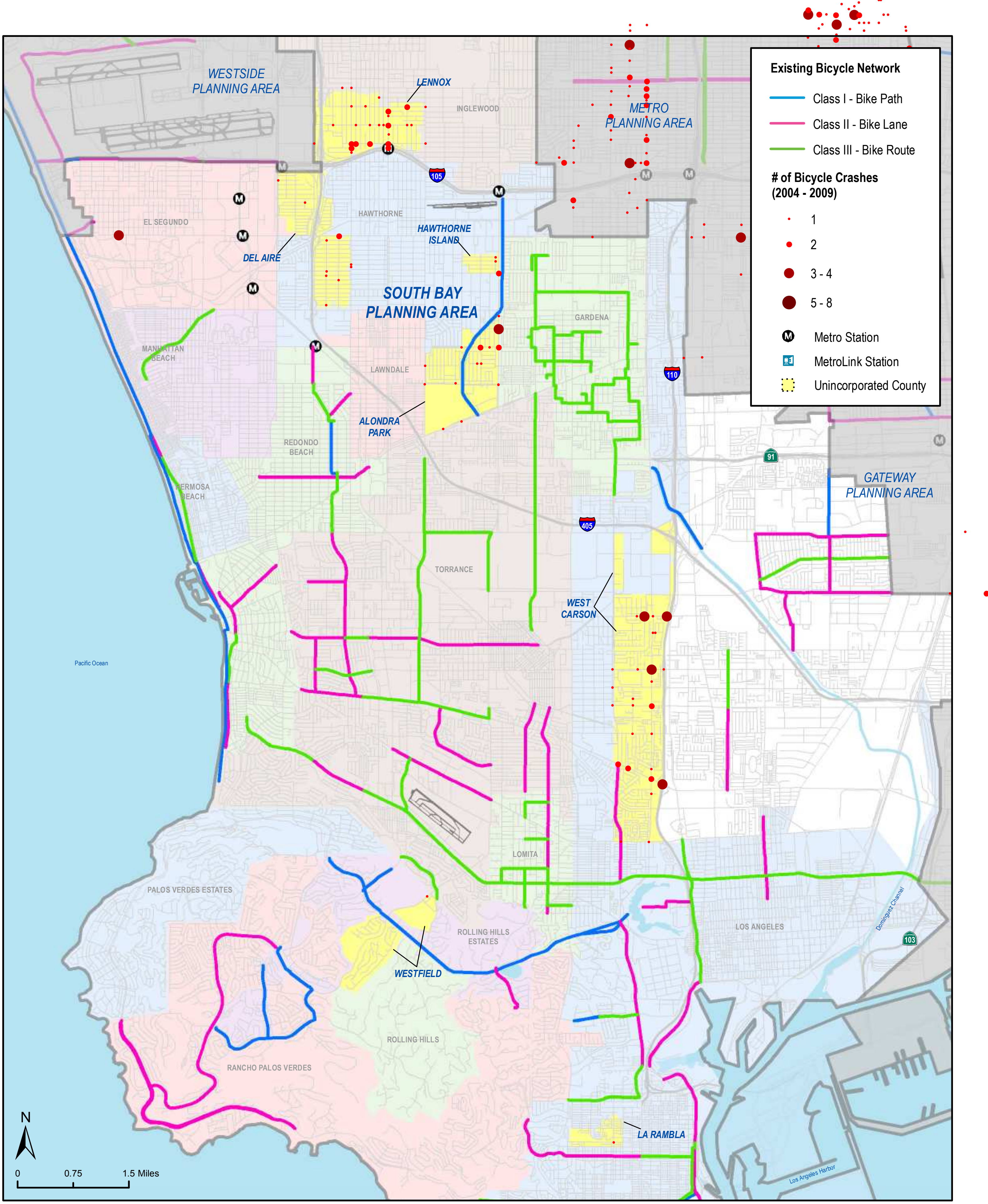

Figure 3-29: South Bay Planning Area Existing Bicycle Network, Major Transit and Bicycle Crashes (2004-2009)

Los Angeles County Bicycle Master Plan

Source: Los Angeles Metro (2010); SWITRS (2010)
Date: 10/13/11

3.9.2 Proposed Network

Table 3-32 summarizes the proposed bicycle network mileage by classification type within the South Bay Planning Area. Projects were prioritized based on bicycling demand, facility deficiencies, barriers to implementation, public comment, and a host of other criteria. As shown, the proposed network would add 34.5 miles of bicycle facility to the 10 miles already maintained by the County. **Table 3-33** presents the Supervisorial District, specific location, alignment, classification, priority score, and mileage for each of the proposed bikeways within the planning area.

Figure 3-30 displays the proposed bicycle network, as well as existing bicycle facilities and major transit stops within the South Bay Planning Area. **Figure 3-31** provides a more focused view of the proposed bicycle network within the communities comprising the northern and central portion of the planning area: Alondra Park, Del Aire, Hawthorne Island, and Lennox.

Table 3-32: South Bay Planning Area Bicycle Network Facility Type and Mileage Summary

Mileage of Proposed Projects by Facility Type	Miles	% of Total
Class I – Bicycle Path	9.2	26.7%
Class II – Bicycle Lane	14.8	42.9%
Class III – Bicycle Route	9.6	27.8%
Bicycle Boulevard	0.9	2.6%
Total	**34.5**	**100%**

Table 3-33: South Bay Planning Area Proposed Bicycle Facilities

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
1	Hawthorne Boulevard	104th Street	111th Street	Lennox	2	0.6	2	145
2	Redondo Beach Boulevard	Prairie Avenue	Crenshaw Boulevard	Alondra Park and City of Torrance[A]	2	1.1	2	145
3	111th Street	Buford Avenue	Prairie Avenue	Lennox and City of Inglewood[A]	3	1.1	2	130
4	Manhattan Beach Boulevard	Prairie Avenue	Crenshaw Boulevard	Alondra Park	2	1.0	2	125
5	104th Street	Buford Avenue	Prairie Avenue	Lennox and City of Inglewood[A]	3	1.1	2	120
6	Marine Avenue	Prairie Avenue	Crenshaw Boulevard	Alondra Park and City of Hawthorne[A]	3	0.9	2	120

Table 3-33: South Bay Planning Area Proposed Bicycle Facilities (continued)

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
7	Normandie Avenue	225th Street	Sepulveda Boulevard	West Carson	2	0.6	2	115
8	Lennox Boulevard	Felton Avenue	Osage Avenue	Lennox	3	1.1	2	110
9	Freeman Avenue	104th Street	111th Street	Lennox	3	0.5	2	105
10	South Lemoli Avenue	Marine Avenue	Manhattan Beach Boulevard	Alondra Park	3	0.5	2	105
11	Doty Avenue	Marine Avenue	Manhattan Beach Boulevard	Alondra Park	3	0.5	2	105
12	Aviation Boulevard	Imperial Highway	154th Street	Del Aire and City El Segundo[A]	2	0.7	2, 4	105
13	Dominguez Channel Proposed Bicycle Path	Redondo Beach Boulevard	Pacific Coast Highway	City of Torrance, City of Gardena	1	2.8	2, 4	105
14	Buford Avenue	104th Street	111th Street	Lennox	3	0.5	2	100
15	Isis Avenue	116th Street	El Segundo Boulevard	Del Aire and City of El Segundo[A]	3	0.9	2,4	100
16	223rd Street	Normandie Avenue	Interstate 110	West Carson	2	0.7	2	100
17	220th Street	Normandie Avenue	Vermont Avenue	West Carson	3	0.5	2	90
18	Del Amo Boulevard	Normandie Avenue	Interstate 110	West Carson and City of Los Angeles[A]	2	0.8	2, 4	90
19	Imperial Highway	La Cienega Boulevard	Inglewood Avenue	Lennox and Cities of Hawthorne and Los Angeles[A]	2	0.5	2	90
20	Crenshaw Boulevard	Palos Verdes Drive	Indian Peak Road	Westfield and Cities of Rancho Palos Verdes, Rolling Hills, Rolling Hills Estates[A]	2	1.6	4	90
21	Prairie Avenue	Redondo Beach Boulevard	South Marine Avenue	Alondra Park	2	1.2	2	85
22	Lomita Boulevard	Frampton Avenue	Vermont Avenue	West Carson and City of Los Angeles[A]	2	0.5	2	85
23	El Segundo Boulevard	Isis Avenue	Inglewood Avenue	Del Aire and City of Hawthorne[A]	2	0.8	2	85

Table 3-33: South Bay Planning Area Proposed Bicycle Facilities (continued)

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
24	120th Street	Aviation Boulevard	Inglewood Avenue	Del Aire and City of Hawthorne [A]	3	1.0	2	80
25	Vermont Avenue	190th Street	Lomita Boulevard	West Carson and City of Los Angeles [A]	2	3.7	2, 4	80
26	Inglewood Avenue	Century Boulevard	Imperial Highway	Lennox and Cities of Hawthorne and Inglewood [A]	3	1.0	2	75
27	La Cienega Boulevard	Imperial Highway	El Segundo Boulevard	Del Aire and City of Los Angeles [A]	2	1.0	2,4	75
28	Dominguez Creek Proposed Bicycle Path	Main Street	Pacific Coast Highway	City of Los Angeles	1	6.4	2, 4	75
29	223rd Street	Harbor Fwy	Vermont Avenue	West Carson	2	0.2	4	65
30	West 7th Street	South Weymounth Avenue	South Cabrillo Avenue	City of Loa Angeles [A]	BB	0.9	4	60
Total Mileage						**34.5**		

[A] *Part of project traverses through or along boundary of incorporated city*

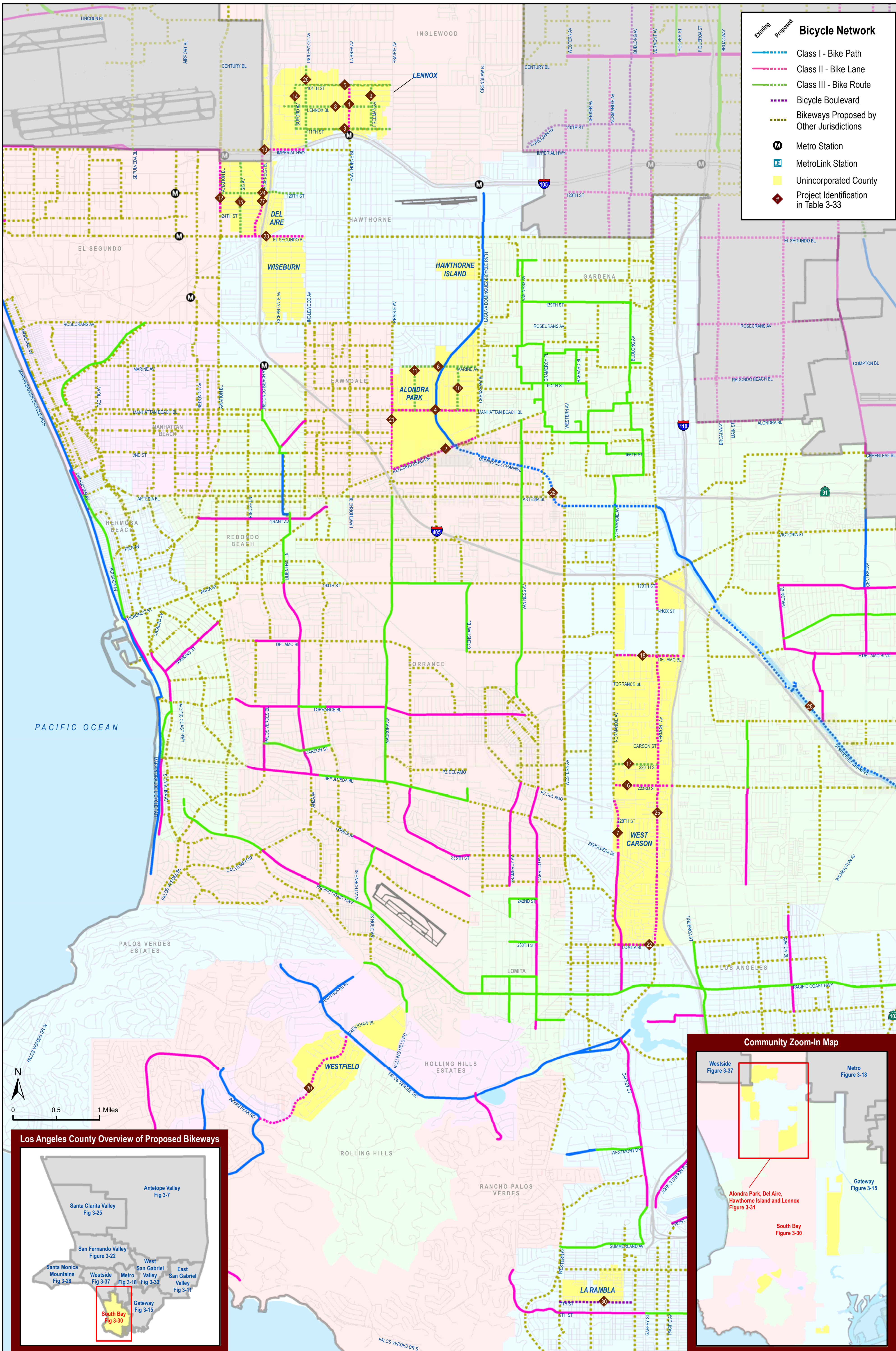

Figure 3-30: South Bay Planning Area Proposed Bicycle Facilities

Source: Los Angeles Metro (2006; 2010); Alta Planning + Design (2010)
Date: 1/30/2011

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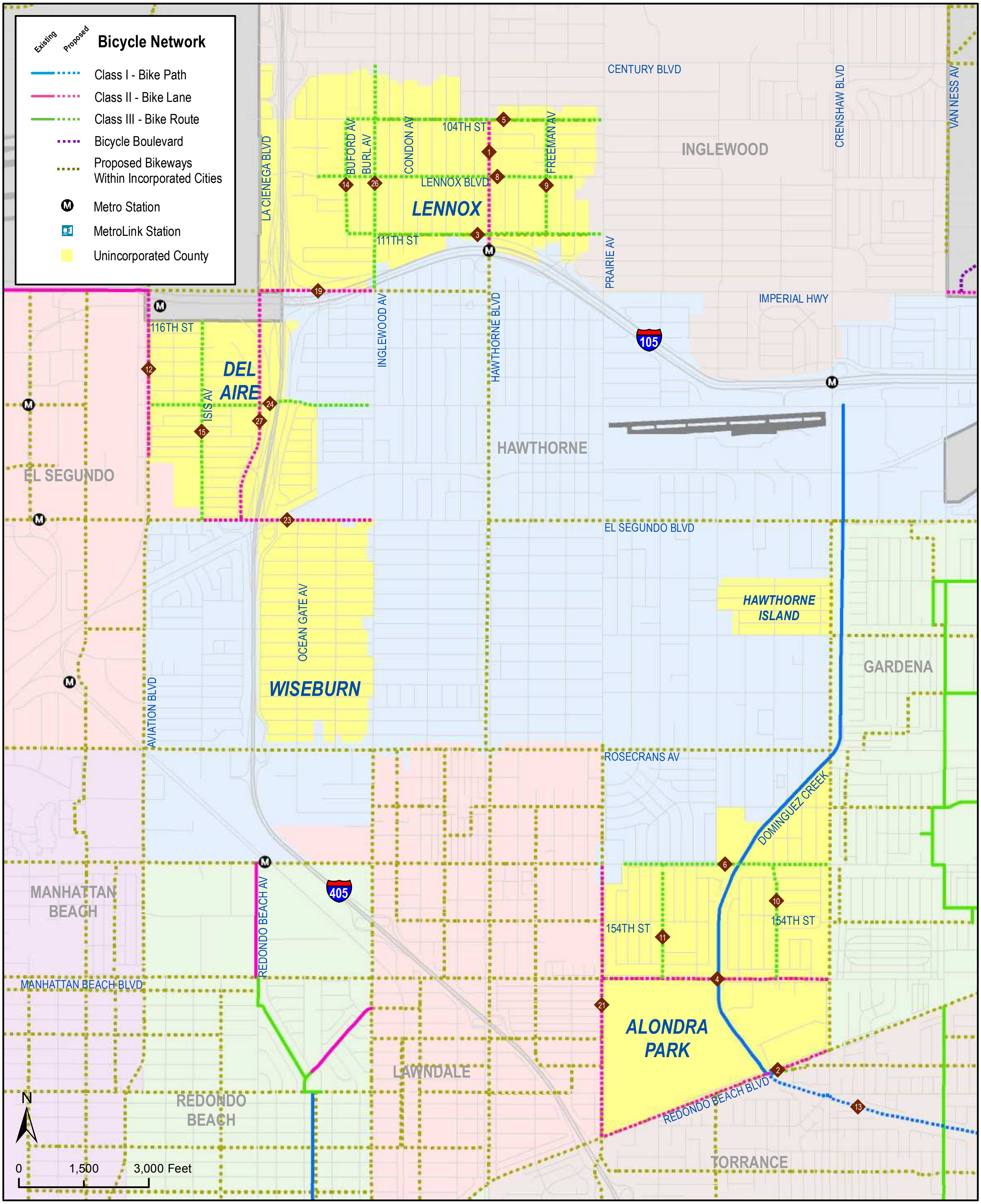

Figure 3-31: Alondra Park, Del Aire, Hawthorne Island and Lennox Recommended Bicycle Facilities

Source: Los Angeles Metro (2010); Alta Planning + Design (2010)
Date: 10/13/11

3.10 West San Gabriel Valley Planning Area

The West San Gabriel Valley Planning Area is comprised of a cluster of communities located east of downtown Los Angeles and intermingled with numerous cities, including Pasadena, South Pasadena, Monterey Park, and El Monte. Approximately 118,000 people resided within the unincorporated parts of the West San Gabriel Valley in 2010.[32] The planning area communities include Altadena, East Pasadena-East San Gabriel, Kinneloa Mesa, San Pasqual, South Monrovia Islands, South San Gabriel, South El Monte Islands, and Whittier Narrows.

The San Gabriel Valley has undergone dramatic population and demographic shifts over the last 30 years. Previously a bedroom community, it now hosts employment centers and major regional transit access. Mixed-use infill and transit-oriented development are planned for East Pasadena and it is envisioned as a model for unincorporated communities in this area. **Figure D-9** in **Appendix D** shows the West San Gabriel Valley Planning Area's current land use patterns, which are predominately single-family residential.

3.10.1 Existing Bicycle Conditions

The unincorporated parts of West San Gabriel Valley Planning Area currently contain 25.9 miles of existing bikeways, including 23 miles of Class I bicycle path. **Table 3-34** summarizes the location, classification, and mileage of existing bikeways.

Figure 3-32 displays the existing bicycle network along with mass transit stations and bicycle collision sites[33] in the West San Gabriel Valley Planning Area.

There are multiple Metro and MetroLink Stations in the planning area that provide residents and commuters with the option to take multimodal trips. Altadena, East Pasadena-East San Gabriel, and San Pasqual also have Metro Gold Line stations nearby. The South Monrovia Islands and Whittier Narrows have connections to the El Monte MetroLink station and the El Monte Bus Terminal via the Rio Hondo bike path.

Numerous opportunities exist to expand the existing bicycle network and, therefore, improve bicycle-transit integration and access to commercial, recreational, and other key destinations. The unincorporated communities of Altadena, East Pasadena-East San Gabriel, San Pasqual, and the South Monrovia Islands have excellent opportunities to enhance their bicycling mobility by developing facilities that tie in to the relatively dense bicycle networks of adjacent cities of Pasadena and Arcadia.

According to the California Highway Patrol SWITRS data, a total of 87 bicycle collisions were reported in the West San Gabriel Valley Planning Area from 2004 through 2009, 40 of which occurred in Altadena.

[32] *2008 SCAG Regional Transportation Plan, Table 2.5: Los Angeles County Population Projections*

[33] *Bicycle collision locations displayed for unincorporated county only.*

Table 3-34: West San Gabriel Valley Existing Bikeways

Community	Segment	From	To	Class	Mileage
Altadena	Allen Avenue	New York Drive	Washington Boulevard	3	0.7
Altadena	Elizabeth Street	Oxford Avenue	Allen Avenue	3	0.2
Cities of Arcadia and El Monte	Santa Anita Wash Bicycle Path	Live Oak Avenue	Rio Hondo Bicycle Path	1	1.0
Cities of Arcadia, El Monte, Rosemead and South El Monte, and Whittier Narrows	Upper Rio Hondo Bicycle Path	Rio Hondo Parkway	San Gabriel Boulevard	1	6.9
City of Irwindale	San Gabriel River Bicycle Path	Huntington Drive	Ramona Boulevard	1	8.2
City of Montebello and Whittier Narrows	Rio Hondo Bicycle Path	San Gabriel Boulevard	0.2 miles north of Washington Boulevard	1	3.7
East Pasadena-East San Gabriel	Madre Street	Del Mar Boulevard	Green Street	3	0.2
East Pasadena-East San Gabriel	Madre Street	Thorndale Road	San Pasqual Street	3	0.2
East Pasadena-East San Gabriel	San Pasqual Street	0.1 miles west of Oneida Drive	Madre Street	3	0.1
San Pasqual	San Pasqual Street	Berkeley Avenue	San Gabriel Boulevard	3	0.9
San Pasqual	Sierra Madre Boulevard	0.1 miles south of Del Mar Boulevard	0.1 miles north of California Boulevard	3	0.3
Whittier Narrows	Rio Hondo-San Gabriel River Connector	Upper Rio Hondo Bicycle Path	San Gabriel River Bicycle Path	1	1.0
Whittier Narrows	San Gabriel River Bicycle Path	0.1 miles south of Fineview Street	0.2 miles south of Siphon Road	1	2.5
				Total	**25.9**

**County-maintained bikeways only*

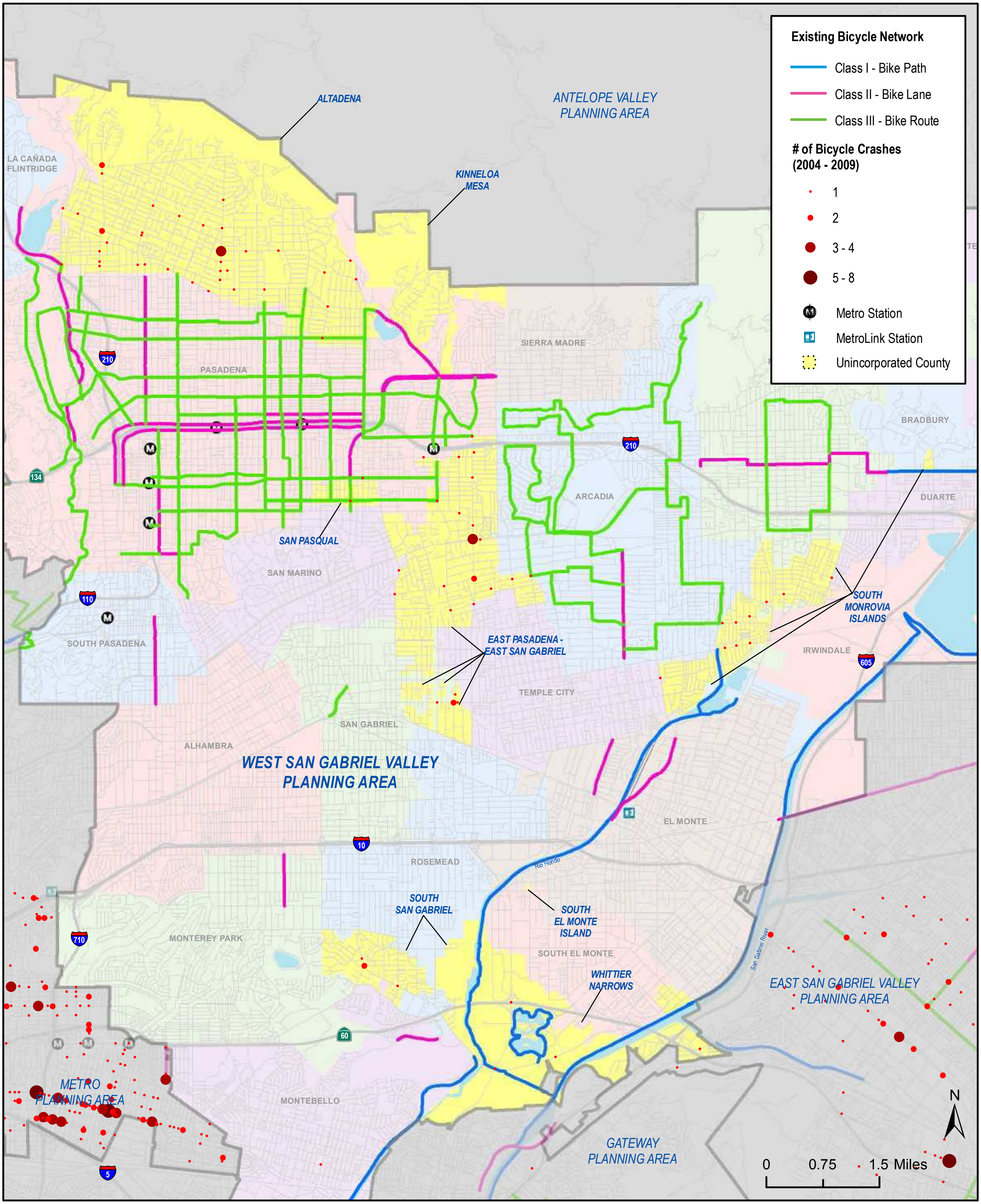

Figure 3-32: West San Gabriel Valley Planning Area Existing Bicycle Network, Major Transit and Bicycle Crashes (2004-2009)

Source: Los Angeles Metro (2010); SWITRS (2010)
Date: 10/13/11

3.10.2 Proposed Network

Table 3-35 summarizes the proposed bicycle network mileage by classification type within the West San Gabriel Valley Planning Area. Projects were prioritized based on bicycling demand, facility deficiencies, barriers to implementation, public comment, and a host of other criteria. As shown, the proposed network would provide 66 miles of facility across the planning area. Under current conditions, unincorporated West San Gabriel Valley contains nearly 26 miles of bicycle facility.

Table 3-36 presents the Supervisorial District, specific location, alignment, classification, priority score, and mileage for each of the proposed bikeways within the planning area.

Figure 3-33 displays the proposed bicycle network as well as existing bicycle facilities and major transit stops in the West San Gabriel Valley Planning Area. **Figure 3-34** provides a more detailed view of the proposed bicycle network within the Altadena and Kinneloa Mesa communities. **Figure 3-35** provides a closer view of the proposed bicycle network within the communities of East Pasadena-East San Gabriel, San Pasqual, and the South Monrovia Islands.

Table 3-35: West San Gabriel Valley Planning Area Bicycle Network Facility Type and Mileage Summary

Mileage of Proposed Projects by Facility Type	Miles	% of Total
Class I – Bicycle Path	9.1	13.9%
Class II – Bicycle Lane	17.1	26.0%
Class III – Bicycle Route	34.3	52.2%
Bicycle Boulevard	5.2	7.9%
Total	**65.7**	**100%**

Table 3-36: West San Gabriel Valley Proposed Bicycle Facilities

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
1	Madre Street/ Muscatel Avenue	San Pasqual Street	Longden Avenue	East Pasadena-East San Gabriel	3	1.7	5	145
2	Del Mar Boulevard	Madre Street	Rosemead Avenue	East Pasadena-East San Gabriel and City of Pasadena[A]	3	0.5	5	145
3	Allen Avenue	Altadena Drive	New York Drive	Altadena	3	1.5	5	130

Table 3-36: West San Gabriel Valley Proposed Bicycle Facilities (continued)

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
4	Eaton Wash Channel Proposed Bicycle Path[B]	New York Drive	E. Foothill Boulevard	East Pasadena-East San Gabriel, City of Pasadena, City of Temple City, City of San Gabriel, City of Rosemead, City of El Monte	1	1.7	1, 5	125
		E. Foothill Boulevard	Del Mar Boulevard		3	0.6		
		Del Mar Boulevard	Rio Hondo Bicycle Path		1	6.0		
5	Longden Avenue	8th Avenue	Peck Road	South Monrovia Islands	3	0.7	5	115
6	Holliston Avenue	Altadena Drive	Lexington Street	Altadena and City of Pasadena[A]	3	1.1	5	115
7	Daines Drive/ 9th Avenue/ Lynd Avenue	Santa Anita Avenue	Mayflower Avenue	South Monrovia Islands and City of Arcadia[A]	3	1.3	5	110
8	Lake Avenue	Loma Alta Drive	Atchison Street	Altadena and City of Pasadena	3	1.9	5	110
9	Santa Anita Wash Proposed Bicycle Path	Longden Avenue	Live Oak Avenue	South Monrovia Islands	1	0.3	5	100
10	Huntington Drive	San Gabriel Boulevard	Michillinda Avenue	East Pasadena-East San Gabriel	2	1.4	5	105
11	Sierra Madre Villa Avenue/ Madre Street	Interstate 210	Green Street	East Pasadena-East San Gabriel and City of Pasadena[A]	3	0.2	5	105
12	Colorado Boulevard	Kinneloa Avenue (Eaton Wash Channel Proposed Bicycle Path)	Michillinda Avenue	East Pasadena-East San Gabriel and City of Pasadena	2	1.1	5	100
13	Woodbury Road	Windsor Avenue	Santa Rosa Avenue	Altadena and City of Pasadena[A]	2	1.7	5	95
	Woodbury Road	Santa Rosa Avenue	Lake Avenue		3	0.5		
14	Foss Avenue/ Center Street	Longden Avenue	Daines Drive	South Monrovia Islands	3	0.6	5	95
15	California Avenue	Hurstview Avenue	Novice Lane	South Monrovia Islands and City of Monrovia[A]	3	0.9	5	95
16	Pepper Drive	Glen Canyon Road	Washington Boulevard	Altadena	3	0.9	5	95
17	Altadena Drive	Allen Avenue	Canyon Close Road	Altadena	3	1.0	5	95

Table 3-36: West San Gabriel Valley Proposed Bicycle Facilities (continued)

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
18	Ardendale Avenue/ Oak Avenue/ Naomi Avenue	0.2 miles west of Muscatel Avenue (Eaton Wash Channel Proposed Bicycle Path)	Golden West Avenue	East Pasadena-East San Gabriel	3	1.4	5	95
19	Glenrose Avenue	Loma Alta Drive	Woodbury Road	Altadena	3	1.5	5	95
20	New York Drive	Lake Avenue	0.1 miles east of Creekside Court	Altadena	3	2.2	5	95
21	Altadena Drive	Crestford Drive	Allen Avenue	Altadena and City of Pasadena[A]	3	3.1	5	95
22	Lincoln Avenue Lincoln Avenue	Loma Alta Drive Altadena Drive	Altadena Drive Woodbury Road	Altadena	3 2	0.2 1.1	5	95
23	Ventura/ Calaveras/Mendocino	Windsor Avenue	Allen Avenue	Altadena	BB	3.6	5	95
24	Peck Road	San Gabriel River Bicycle Path	Workman Mill Road	Whittier Narrows, Avocado Heights, North Whittier and City of Industry[A]	2	0.9	1,4	95
25	Duarte Road[C] Duarte Road	San Gabriel Boulevard Sultana Avenue	Sultana Avenue Oak Avenue	East Pasadena-East San Gabriel	3 2	1.0 0.4	5	90
26	Windsor Avenue	Ventura Street	Figueroa Drive	Altadena	3	0.5	5	90
27	Loma Alta Drive	Lincoln Avenue	Lake Avenue	Altadena	3	1.6	5	90
28	Glenview Terrace/ Glen Canyon Road/ Roosevelt Avenue	Allen Avenue	Washington Boulevard	Altadena	BB	1.6	5	90
29	Emerald Necklace Gateway	San Gabriel River Path	Park entrance parking lot	Santa Fe Dam Recreational Area	1	1.1	1	90
30	Windsor Avenue Windsor Avenue	Figueroa Drive Alberta Street	Alberta Street Interstate 210	Altadena and City of Pasadena[A]	3 2	0.1 0.3	5	85
31	San Pasqual Street	Madre Street	Rosemead Avenue	East Pasadena-East San Gabriel	2	0.5	5	85
32	Tyler Ave/W. Hondo Parkway	E. Live Oak Avenue	Temple City Limits	South Monrovia Islands	3	1.0	1,5	85

Table 3-36: West San Gabriel Valley Proposed Bicycle Facilities (continued)

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
33	Altadena Drive	Canyon Close Road	Washington Boulevard	Altadena	2	1.0	5	85
34	Del Mar Avenue/ Hill Drive/San Gabriel Boulevard[C]	Graves Avenue	0.2 miles east of Lincoln Avenue	South San Gabriel, Whittier Narrows and Cities of Montebello and Rosemead[A]	2	2.6	1	85
35	Figueroa Drive	Windsor Avenue	Fair Oaks Avenue	Altadena	3	0.8	5	80
36	Las Flores Drive	Glenrose Avenue	Lake Avenue	Altadena	3	1.0	5	80
37	Marengo Avenue Marengo Avenue	Loma Alta Drive Altadena Drive	Altadena Drive Montana Street	Altadena and City of Pasadena[A]	3 2	0.9 0.9	5	80
38	S 10th Avenue	Arcadia City Limits	E. Live Oak Avenue	South Monrovia Islands	3	0.6	5	75
39	Casitas Avenue	Ventura Street	West Altadena Drive	Altadena	3	0.5	5	75
40	Vista Street	Huntington Drive	Longden Avenue	East Pasadena-East San Gabriel	3	1.1	5	70
41	San Pasqual Street	Greenwood Avenue	San Gabriel Boulevard	East Pasadena	3	0.9	5	70
42	Mayflower Avenue	Longden Avenue	Lynd Avenue	South Monrovia Islands	2	0.3	5	70
43	South Golden West Avenue	West Naomi Avenue	East Lemon Avenue	East Pasadena-East San Gabriel and City of San Arcadia[A]	3	0.4	5	70
44	Camino Real Shrode Avenue	Mayflower Avenue California Avenue	California Avenue Mountain Avenue	South Monrovia Islands	2 3	0.7 0.4	5	70
45	Washington Boulevard	Bellford Drive	Altadena Drive	Altadena	2	0.7	5	70
46	Willard Avenue	Longden Avenue	Las Tunas Drive	East Pasadena-East San Gabriel and City of San Gabriel[A]	3	0.7	5	60
47	California Boulevard	0.1 miles east of Brightside Lane	Michillinda Avenue	East Pasadena-East San Gabriel	2	1.0	5	60
48	Longden Avenue	San Gabriel Boulevard	Rosemead Boulevard	East Pasadena-East San Gabriel and Cities of San Gabriel and Temple City[A]	3	1.0	5	55

Table 3-36: West San Gabriel Valley Proposed Bicycle Facilities (continued)

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
49	Temple City Boulevard	Duarte Road	Lemon Avenue	East Pasadena-East San Gabriel and City of Temple City[A]	2	0.5	5	55
50	Rosemead Boulevard[C]	Colorado Boulevard	Callita Street	East Pasadena-East San Gabriel	2	2.0	5	60
				Total Mileage		**65.7**		

[A] *Part of project traverses through or along boundary of incorporated city*

[B] *Proposed project requires on-street alignment between Maple Street and Titley Avenue and between Kinneloa Avenue and Del Mar Boulevard*

[C] *Proposed segment overlaps with Early Action bicycle project identified by County of Los Angeles*

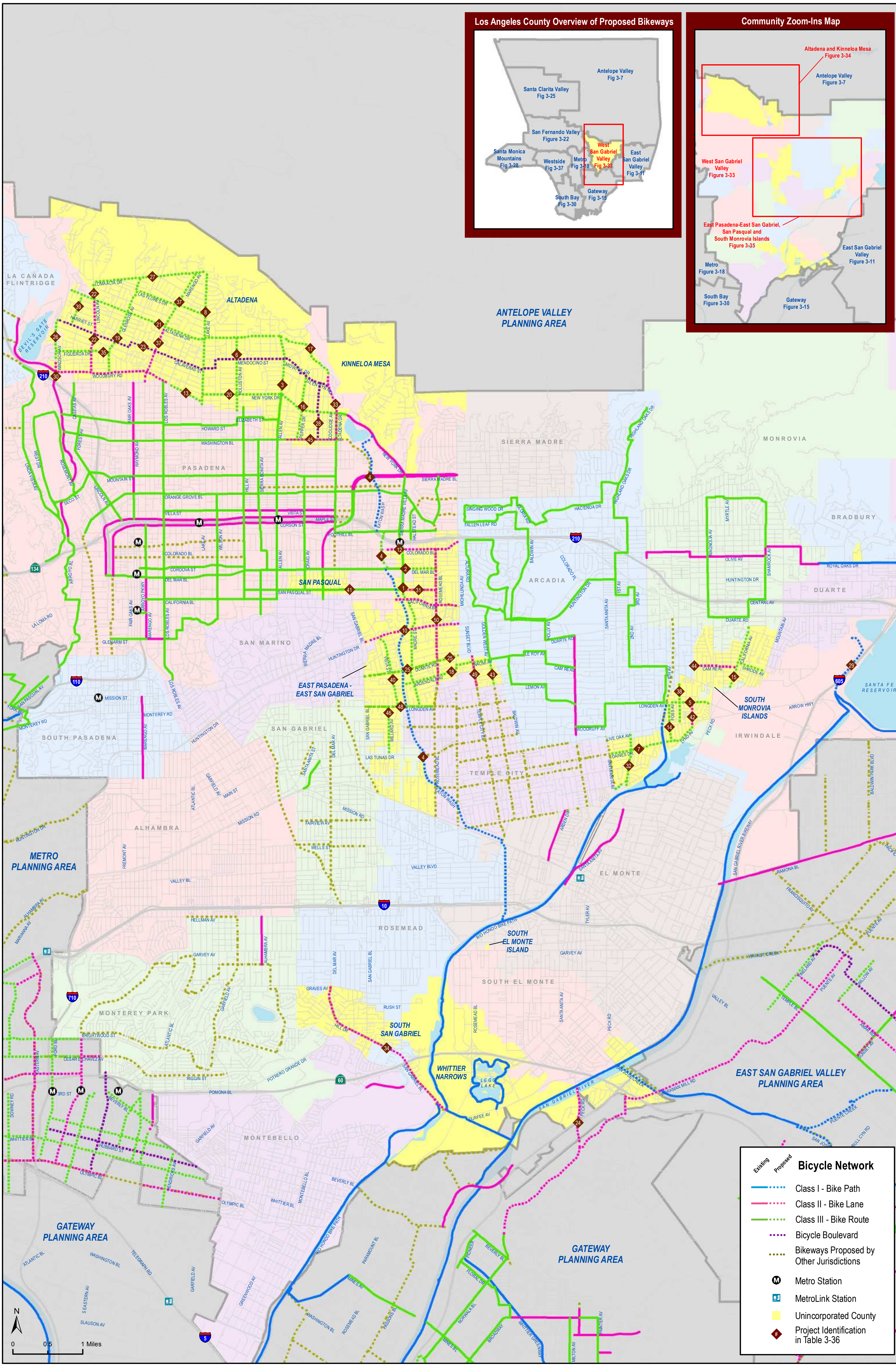

Figure 3-33: West San Gabriel Valley Planning Area Proposed Bicycle Facilities

Source: Los Angeles Metro (2006; 2010); Alta Planning + Design (2010)
Date: 10/13/11

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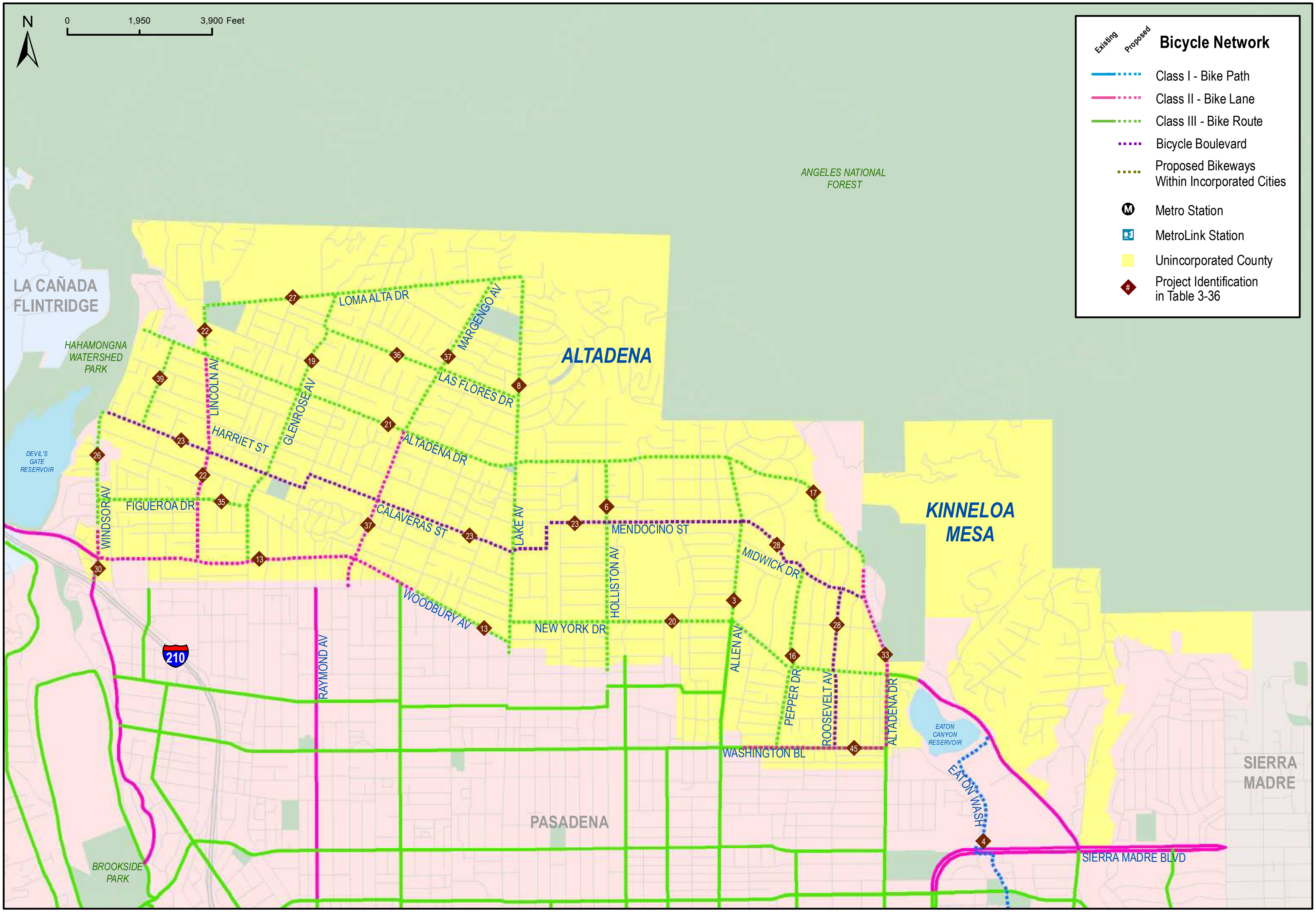

Figure 3-34: Altadena and Kinneloa Mesa Proposed Bicycle Facilities

Los Angeles County Bicycle Master Plan

Source: Los Angeles Metro (2010); Alta Planning + Design (2010)
Date: 10/13/10

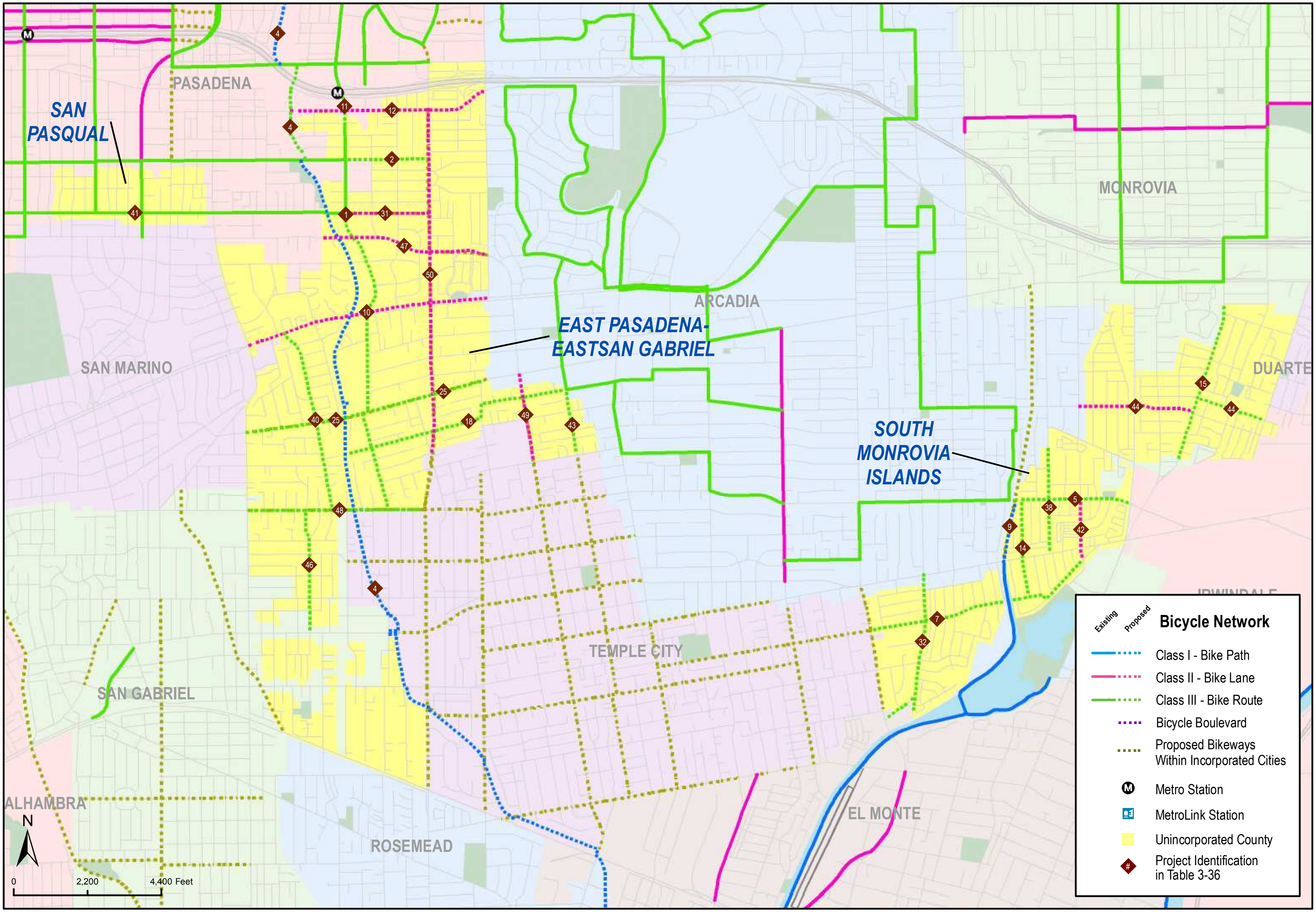

Figure 3-35: East Pasadena-East San Gabriel, San Pasqual and South Morovia Islands Proposed Bicycle Facilities

Source: Los Angeles Metro (2010); Alta Planning + Design (2010)
Date: 10/13/10

3.11 Westside Planning Area

The Westside Planning Area is located in the densely urban western part of Los Angeles County. There are four unincorporated areas comprised of the following six communities: Franklin Canyon, West Los Angeles (Sawtelle Veterans Affairs), Marina del Rey, Ballona Wetlands, West Fox Hills, and Ladera Heights/Viewpark-Windsor Hills. The unincorporated area is surrounded by incorporated jurisdictions, primarily the City of Los Angeles.

Approximately 32,000 people reside in this geographically small collection of communities[34], excluding West Los Angeles (Sawtelle Veterans Affairs), which has no permanent residents. Land uses in West Los Angeles are exclusively open space/park and public use, hosting the Veterans Affairs Administration and Hospital, Barrington Recreation Center, and Los Angeles National Cemetery. The remaining communities consist of predominately residential, commercial, open space, and park land uses. **Figure D-10** in **Appendix D** displays existing land uses within the planning area.

3.11.1 Existing Bicycle Conditions

Within the Westside Planning Area, there are approximately 12.2 miles of bikeways maintained by the County. **Table 3-37** summarizes the location, classification, extents, and mileage of the facilities maintained by the County.

Table 3-37: Westside Planning Area Existing Bikeways

Community	Segment	From	To	Class	Mileage
Cities of Los Angeles and Santa Monica	Marvin Braude Bicycle Path	Mabery Road	Washington Boulevard	1	4.8
City of Los Angeles	Marvin Braude Bicycle Path	Pacific Avenue	Grand Avenue	1	3.8
City of Los Angeles and Marina del Rey	Ballona Creek Bicycle Path	Pacific Avenue	Lincoln Boulevard	1	1.5
Marina del Rey	Fiji Way	Western terminus of Fiji Way	Admiralty Way	3	0.7
Marina del Rey	Marvin Braude Bicycle Path	Fiji Way	Ballona Creek Bicycle Path	1	0.1
Marina del Rey	Marvin Braude Bicycle Path	Washington Boulevard	Fiji Way	1	1.3
				Total	**12.2**

**County-maintained bikeways only*

[34] *2008 SCAG Regional Transportation Plan, Table 2.5: Los Angeles County Population Projections*

Opportunities to expand the existing bicycle network include improving access to key attractors in Ladera Heights/Viewpark-Windsor Hills such as West Los Angeles College, the Goldleaf Circle Commercial Plaza, the Fox Hills Mall, and the commercial area surrounding Leimert Park Plaza, and to existing networks in Culver City and Los Angeles. In Marina del Rey, opportunities include enhancing beach access and connections to Culver City and Los Angeles networks, including linkages to Marvin Braude Bicycle Path.

The LACMTA identified two key gaps in the 2006 Metro Bicycle Transportation Strategic Plan, as shown in **Table 3-38.**

Table 3-38: MTA Identified Gaps in the Westside Inter-Jurisdictional Bikeway Network

MTA #	Corridor	Jurisdiction	Description	Constraints
35	Beach	LA County / LA City	South Bay Beach Bicycle Path through the Marina in Marina del Rey	Existing Class II on Washington
36	Beach	LA County / LA City	Connection between Fisherman's Village and Ballona Creek Bicycle Path	Existing Class III on Fiji Way

Source: Los Angeles County Metropolitan Transportation Authority: 2006 Metro Bicycle Transportation Strategic Plan, p. 103-104

Figure 3-36 displays existing bicycle facilities, public transit stations, and bicycle collision locations within the planning area[35]. According to the California Highway Patrol SWITRS data, 56 bicycle collisions were reported in the Westside Planning Area between 2004 and 2009. Of these 56 instances, 37 occurred in Marina del Rey. Four intersections in Marina del Rey experienced more than five collisions during that time period: Mindanao Way/ Admiralty Way (eight crashes), Bali Way/Admiralty Way (seven crashes), Palawan Way/Admiralty Way (seven crashes), and Fiji Way/Admiralty Way (six crashes). The high incidence of bicycle collisions in this concentrated area is partly a function of the high bicycling rates.

[35] *Bicycle collision locations displayed for unincorporated communities only.*

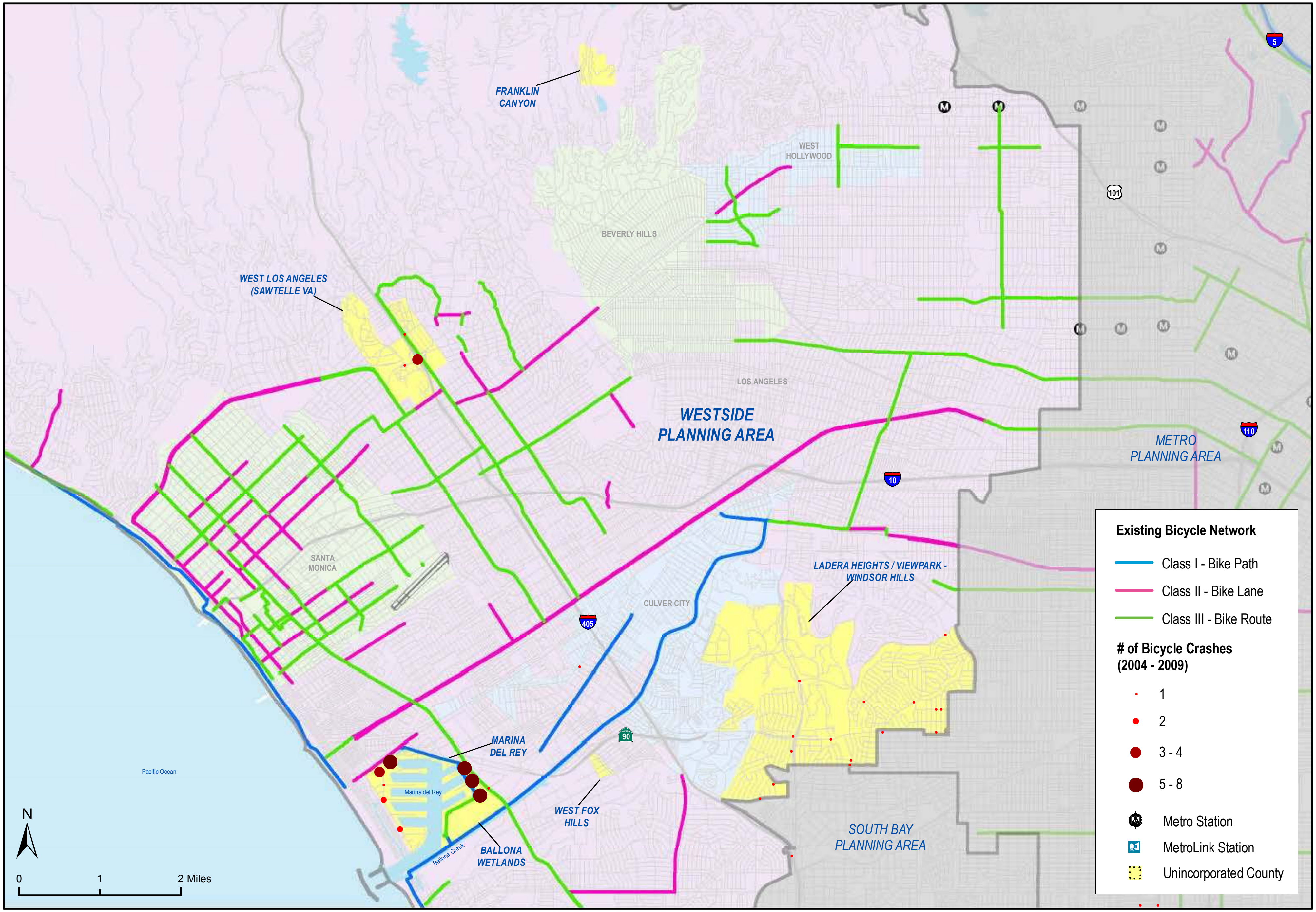

Figure 3-36: Westside Planning Area Existing Bicycle Network, Major Transit and Bicycle Crashes (2004-2009)

Source: Los Angeles Metro (2010); SWITRS (2010)
Date: 8/2/2010

3.11.2 Proposed Network

Table 3-39 summarizes the proposed bicycle network mileage by classification type within the Westside Planning Area. Projects were prioritized based on bicycling demand, facility deficiencies, barriers to implementation, public comment, and a host of other criteria. As shown, the proposed network would provide approximately 16 miles of facility across the planning area. There are currently only 12.2 miles of existing bicycle facilities within the unincorporated parts of Westside Planning Area. **Table 3-40** presents the Supervisorial District, specific location, alignment, classification, priority score, and mileage for each of the proposed bikeways within the planning area.

Figure 3-37 displays the proposed bicycle network as well as existing bicycle facilities and major transit stops in the Westside planning area. **Figure 3-38** provides a more detailed view of the proposed bicycle network within the Marina del Rey and Ballona Wetlands communities.

Table 3-39: Westside Planning Area Bicycle Network Facility Type and Mileage Summary

Mileage of Proposed Projects by Facility Type	Miles	% of Total
Class I – Bicycle Path	2.6	17.2%
Class II – Bicycle Lane	6.9	45.7%
Class III – Bicycle Route	5.6	37.1%
Total	**15.1**	**100%**

Table 3-40: Westside Planning Area Proposed Bicycle Facilities

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
1	Fiji Way[A]	0.7 miles west of Admiralty Way	Admiralty Way	Marina del Rey	2	0.6	4	115
	Fiji Way	Admiralty Way	Lincoln Boulevard		3	0.1		
2	Palawan Way	Washington Boulevard	0.1 miles south of Admiralty Way	Marina del Rey	3	0.2	3,4	100
3	Bali Way	0.1 miles west of Marvin Braude Bicycle Path (Admiralty Way)	Marvin Braude Bicycle Path (Admiralty Way)	Marina del Rey	2	0.1	4	100
4	Mindanao Way	0.2 miles west of Marvin Braude Bicycle Path (Admiralty Way)	Marvin Braude Bicycle Path (Admiralty Way)	Marina del Rey	2	0.2	4	100

Table 3-40: Westside Planning Area Proposed Bicycle Facilities (continued)

Project ID	Segment	From	To	Community	Class	Mileage	Supervisorial District	Priority Score
5	Valley Ridge Avenue/ 54th Street	Stocker Street	Hillcrest Drive	Ladera Heights/ Viewpark-Windsor Hills	3	1.4	2	90
6	Via Dolce Via Marina	Washington Boulevard Via Dolce/ Marquesas Way	Via Marina Channel Walk	Marina del Rey and City of Los Angeles[B]	3 3	0.4 0.8	3, 4	85
7	Fiji Way Proposed Bicycle Path	Fiji Way	Admiralty Way	Marina del Rey	1	0.7	4	85
8	Overhill Drive Overhill Drive	Stocker Street Slauson Avenue	Slauson Avenue 60th Street	Ladera Heights/ Viewpark-Windsor Hills	2 3	0.7 0.2	2	80
9	Sepulveda Channel Proposed Bicycle Path	Washington Boulevard	Ballona Creek Bicycle Path	City of Los Angeles	1	0.8	2	80
10	Marvin Braude Proposed Bicycle Path	Washington Boulevard	0.1 miles south of Yawl Street	City of Los Angeles	1	1.1	3	75
11	62nd Street/ Citrus Avenue/ 60th Street	Fairfax Avenue	0.1 miles east of Overhill Drive	Ladera Heights/ Viewpark-Windsor Hills and City of Los Angeles[B]	3	0.7	2	70
12	Slauson Avenue	0.1 miles east of Buckingham Parkway	Angeles Vista Road	Ladera Heights/ Viewpark-Windsor Hills and City of Los Angeles[B]	3	1.6	2	70
13	Fairfax Avenue Fairfax Avenue	Stocker Street 57th Street	57th Street 62nd Street	Ladera Heights/ Viewpark-Windsor Hills	2 3	0.6 0.4	2	65
14	Centinela Avenue	Green Valley Circle	La Tijera Boulevard	Ladera Heights/ Viewpark-Windsor Hills and City of Los Angeles[B]	2	0.9	2	65
15	Angeles Vista Road	Slauson Avenue	Vernon Avenue	Ladera Heights/ Viewpark-Windsor Hills and City of Los Angeles[B]	2	1.6	2	65
16	Stocker Street	Fairfax Avenue	Santa Rosalia Drive	Ladera Heights/ Viewpark-Windsor Hills and City of Los Angeles[B]	2	2.0	2	50
Total Mileage						**15.7**		

[A.] *Proposed segment overlaps with Early Action bicycle project identified by County of Los Angeles*

[B] *Part of project traverses through or along boundary of incorporated city*

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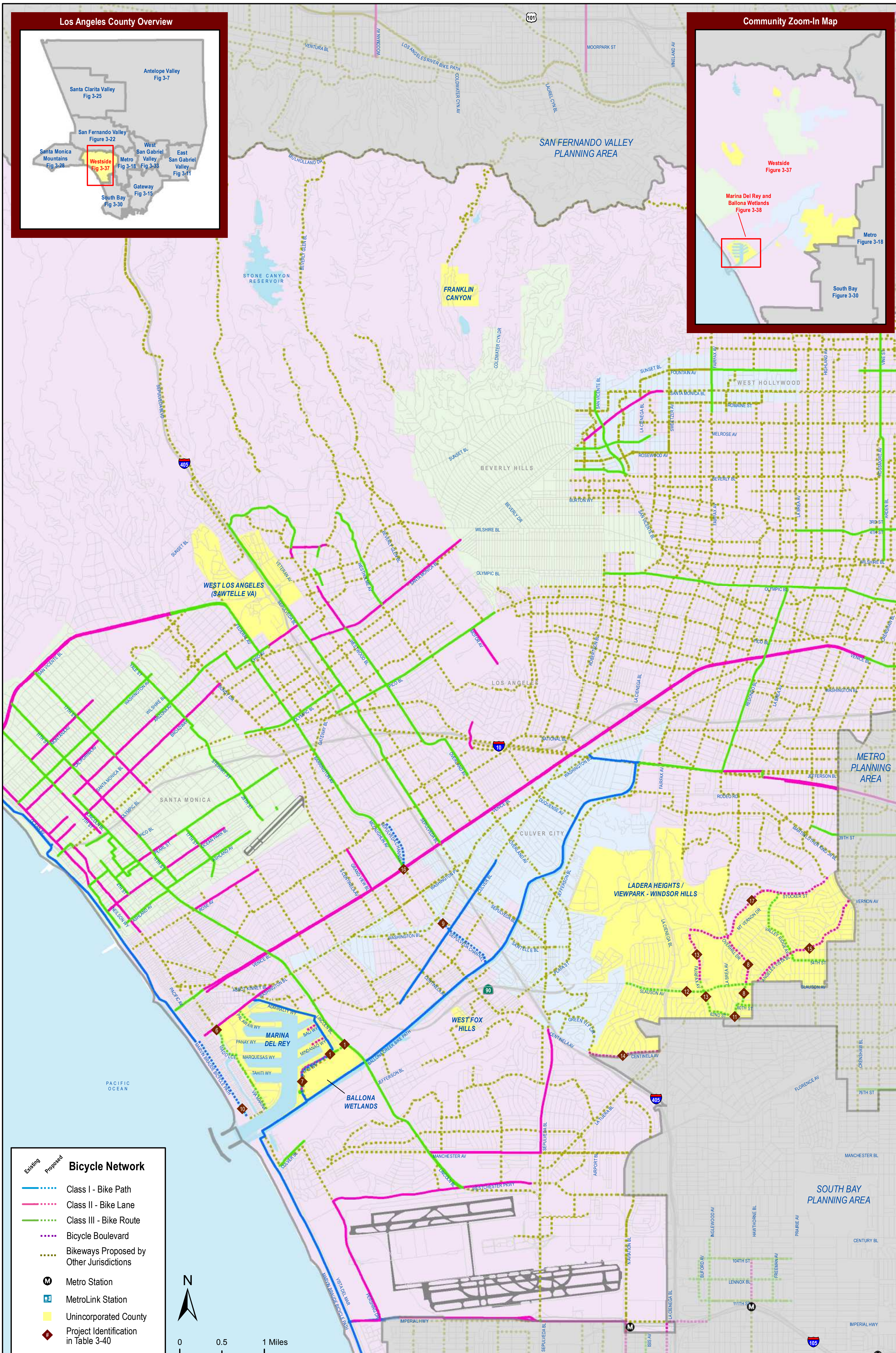

Figure 3-37: Westside Planning Area Proposed Bicycle Facilities

Source: Los Angeles Metro (2006; 2010); Alta Planning + Design (2010)
Date: 10/14/11

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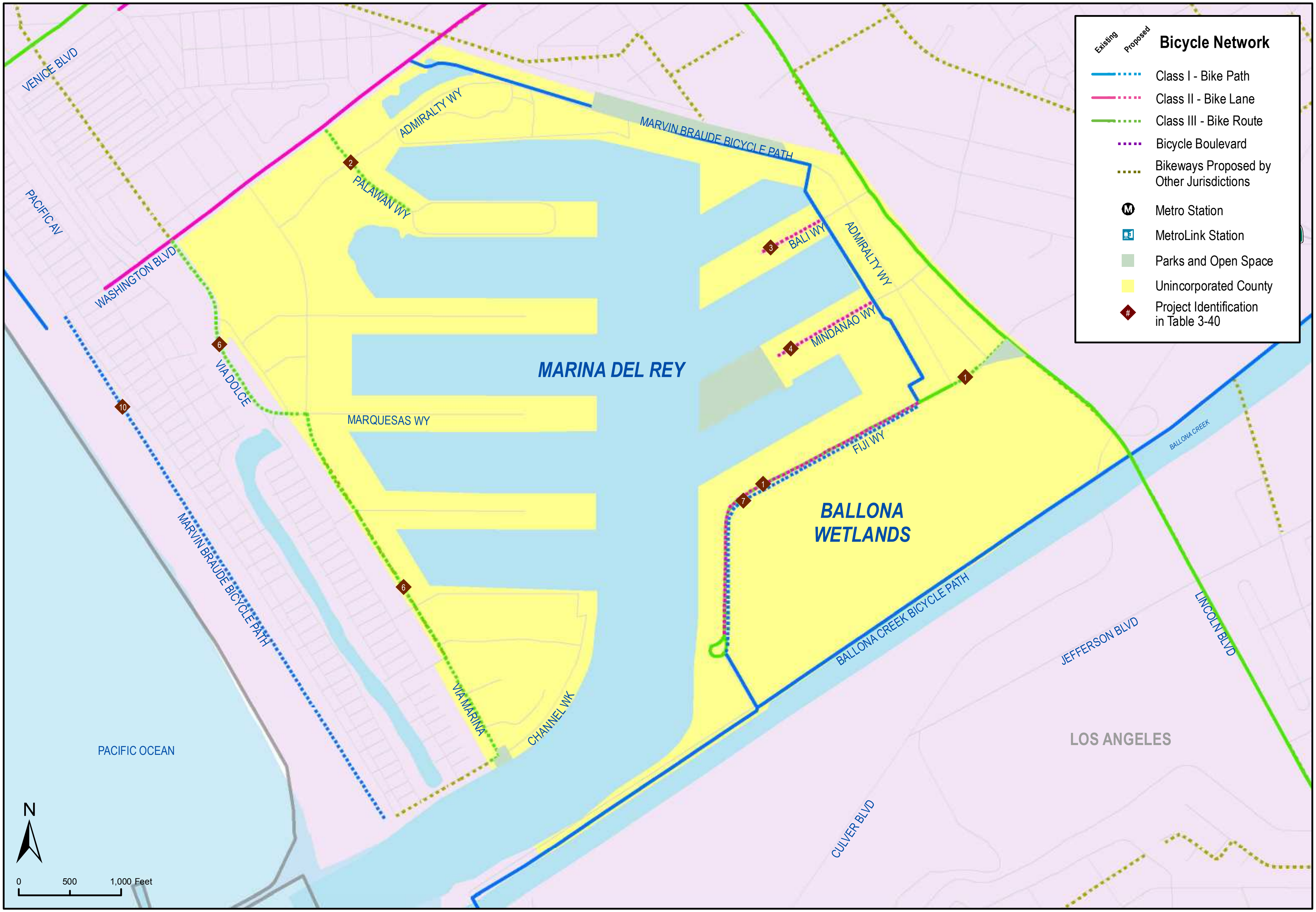

Figure 3-38: Ballona Wetlands and Marina Del Rey Proposed Bicycle Facilities

Source: Los Angeles Metro (2010); Alta Planning + Design (2010)
Date: 10/14/2011

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4. Education, Enforcement, Encouragement and Evaluation Programs

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The bikeway projects and facility improvements recommended in the Plan will incorporate programs designed to educate people about bicyclists' rights and responsibilities and safe bicycle operation; connect current and future bicyclists to existing resources; and encourage residents to bicycle more frequently.

This chapter outlines several potential programs that the County will pursue, as well as programs that the County currently provides and will continue. Recommendations presented in this chapter are divided into the following four categories: education, enforcement, encouragement and evaluation programs. Implementation of the programs will require coordination between various County departments. The County will pursue funding for these programs along with the proposed bikeway projects as implementation of the Plan moves forward. **Table 5-6** in the next chapter provides the implementation strategies for the proposed programs outlined in this chapter.

4.1 Education Programs

Education programs enable bicyclists, pedestrians, and motorists to understand how to travel safely in the roadway environment and be aware of the laws that govern these modes of transportation. Education programs are available in an array of mediums, from long-term courses with detailed instruction to single sessions focusing on a specific topic. Curriculums should be tailored to the target audience and to the format of instruction. The education programs described in the remainder of this section are recommended for implementation in the unincorporated County of Los Angeles:

- Community Bicycle Education Courses
- Youth Bicycle Safety Education
- Bicycle Rodeos
- Share the Path Campaign
- Public Awareness Campaigns

The County shall coordinate with LACMTA and local jurisdictions to evaluate the efficacy of different education programs and partner with these stakeholders where appropriate to reach a wider audience throughout the County.

4.1.1 Community Bicycle Education Courses

Target audience	General Public, County employees
Primary agency	DPW & DPH
Potential partners	Bicycling groups such as Los Angeles County Bicycle Coalition (LACBC), Cyclists Inciting Change thru LIVE Exchange (C.I.C.L.E) and Sustainable Streets; local Jurisdictions; bicycle shops
Purpose	Educate users of all age groups and skill levels on safe bicycling skills pursuant to Policy 3.1
Resources	www.bikeleague.org/programs/education/courses.php

Most bicyclists do not receive comprehensive instruction on safe and effective bicycling techniques, laws, or bicycle maintenance. Bicycle skills courses can address this deficiency by providing on-bike maneuvering, traffic negotiation, and crash avoidance techniques, as well as instruction on bicycle safety checks, fixing flat tires, and adhering to bicycle traffic laws. The League of American Bicyclists (LAB) developed a comprehensive bicycle skills curriculum which is considered the national standard for adults seeking to improve their on-bike skills. The classes available include bicycle safety checks and basic maintenance, basic and advanced on-road skills, commuting, and driver education.

Many community groups such as the Los Angeles County Bicycle Coalition (LACBC), Cyclists Inciting Change thru LIVE Exchange (C.I.C.L.E) and Sustainable Streets offer adult LAB courses taught by League Certified Instructors on an ongoing basis. The County can partner with these groups to conduct targeted safety education for County residents, or incorporate them into other County programs that encourage healthy lifestyles, such as the Department of Parks and Recreations "Healthy Parks" program. Common LAB adult courses are Traffic Skills 101, Traffic Skills 102, and Commuting.

The community bicycle skill courses can also include distribution of bike repair kits or other free material, and offer free bicycle repair to encourage public participation. The skill courses can be made available to individual members of the public and also to existing groups such as employees of local business, County employees and university college students.

4.1.2 Youth Bicycle Safety Education

Target audience	School-age Children
Primary agency	DPW, DPH & LACOE
Potential partners	School Districts and parent groups, local volunteers, League of American Bicyclists instructors, bicycle groups
Purpose	In-school and/or after-school on-bike skills and safety training
Resources	National Center for Safe Routes to School guide: http://www.saferoutesinfo.org/guide/education/key_messages_for_children.cfm LAB's Kids I and II curriculum: http://www. Bikeleague.org/programs/education/courses.php#kids1 BTA's Bike Safety Education Program: http://www.bta4bikes.org/resources/educational.php

Youth bicycle safety programs educate students about the rules of the road, proper use of bicycle equipment, biking skills, street crossing skills, and the benefits of bicycling. Such education programs are frequently initiated as part of Suggested Routes to School programs.

Bicycle safety education can be integrated into classroom time, physical education periods, or taught after school. Classroom activities teach children about bicycling and traffic safety through lessons given by a volunteer, trained professional, law enforcement officer, or teacher. Individual lessons should focus on one or two key issues and include activities that are specifically designed to entertain and engage the targeted age group. Pedestrian safety topics are generally most effective for children in kindergarten through third grade, whereas bicycle safety lessons are more appropriate for fourth through eighth grade students.[36] The National Center for Safe Routes to School (SR2S) online guide summarizes key messages to include in pedestrian and bicycle safety curriculums.

In addition to classroom-based activities, periodic "safety assemblies" can also be used to provide bicycle safety education. Safety assemblies are events that convey a safety message through the use of engaging and visually stimulating presentations, videos, skits, guest speakers, or artistic displays. Assemblies should be relatively brief and focus on one or two topics. Classes receiving on-going instruction on related topics can participate by presenting what they are learning to the rest of the school. Safety assembly lessons can be reinforced throughout the school year by reiterating the message in school announcements, school newsletters, posters, or other means. In addition to providing safety instruction, safety assemblies generate enthusiasm about biking.

On-bike safety education presented by professionally trained teachers, bicycling organizations, or other volunteers should include:

- Identifying the parts of a bicycle
- How a bicycle works
- Flat fixing
- Rules of the road
- Right of way
- Road positioning
- On-bike skills lessons (braking, turning, steering)
- Riding with traffic

4.1.3 Bicycle Rodeos

Target audience	School-age Children
Primary agency	DPW & DPH
Potential partners	School Districts and parent groups, CHP, Sheriff's Department and local law enforcement, bicycle groups
Purpose	Teach children basic bicycle skills through a fun activity
Resources	Safe Routes to School online guide: http://www.bicyclinglife.com/SafetySkills/BicycleRodeo.htm http://www.saferoutestoschools.org/pdfs/lessonplans/RodeoManualJune2006.pdf

Bicycle Rodeos are individual events that help students develop basic bicycling techniques and safety skills through the use of a bicycle safety course. Rodeos use playgrounds or parking lots set up with stop signs,

[36] *Safe Routes to School National Partnership, http://www.saferoutespartnership.org/state/bestpractices/personalsafety*

traffic cones, and other props to simulate the roadway environment. Typically, students are taught basic maneuvering tips and are taught to stop at stop signs and look for on-coming traffic before proceeding through intersections.

Bicycle Rodeos also provide an opportunity for instructors to ensure children's helmets and bicycles are appropriately sized, and can include free or low-cost helmet distribution and/or bike safety checks. Trained adult volunteers can administer rodeos, or they may be offered through the local police or fire department. Bicycle Rodeos can be conducted as part of school events or in conjunction with other community-wide events to engage parents and obtain their support for bicycling as a valid transportation choice.

4.1.4 Share the Path Campaign

Target audience	Users of multi-use paths and Class I bike paths
Primary agency	DPW & Los Angeles County Department of Parks & Recreation (DPR)
Potential partners	CHP, Sheriff's Department and local law enforcement, bicycle groups, local bicycle retail and rental shops
Purpose	Educate path users, including bicyclists, pedestrians, joggers, and dog walkers on being safe and respectful to others on multi-use paths
Resources	City of Portland, OR: http://www.portlandonline.com/shared/cfm/image.cfm?id=163129

Conflicts between bike path users can be a major issue on popular, well-used path systems. "Share the Path" campaigns promote safe and courteous behavior. These campaigns typically involve distribution at bicycle rides and other public events of bicycle bells and other bicycle paraphernalia, and brochures with safety tips and maps.

Effective "Share the Path" campaigns generally require the following actions:

- Developing a simple, clear "Share the Path" brochure for distribution through local bike shops and wherever bike maps are distributed.
- Public service announcements promoting courtesy and respect to encourage all path users to share the path safely.
- Hosting a bicycle bell giveaway promotion at a community event, such as a popular bicycle ride on a shared-use path. Bell giveaways provide positive stories about bicycling and good visual opportunities for marketing. A table is typically set up near the start line with maps and brochures, and event organizers are present to answer questions and mount the bells on handlebars at the event (bells that require no tools for installation such as BBB EasyFit bells are recommended). The event organizers and corporate sponsors can also assist with media outreach to publicize the event.
- Volunteers and County staff can partner to distribute "Share the Path" brochures to other path users (e.g., pedestrians with strollers or pets).

4.1.5 Public Awareness Campaigns

Target audience	Motorists, Bicyclists and Pedestrians
Primary agency	DPW
Potential partners	Bicycle groups, health organizations, local transit agencies (for advertising)
Purpose	Increase awareness of bicycling; promote safety
Resources	Sonoma County (CA) Transit: http://www.sctransit.com/bikesafe/bikes.htm

A high-profile outreach campaign that highlights bicyclist safety is an important part of helping all roadway users – motorists, pedestrians and bicyclists alike – understand their roles and responsibilities on the roadway. This type of campaign is an effective way to raise the profile of bicycling and improve safety for all roadway users.

A public awareness campaign should combine compelling graphics and messages with an easy-to-use website targeted to motorists, pedestrians and bicyclists. The safety and awareness messages can be displayed near high-traffic corridors (e.g., on billboards), printed in local publications and broadcast as public service announcements. A well-produced public awareness campaign will be memorable and effective and include clear graphics in a variety of media, distribution of free promotional items, and email or in-person outreach. This type of campaign is particularly effective when kicked off in conjunction with other bicycling events.

The public awareness campaign should address many of the following safety issues:

- How to share the road (for both motorists and bicyclists)
- Proper roadway positioning and etiquette
- Bicycling rights
- Safe bicycling skills
- Yielding to pedestrians
- Where bicycling is permitted and where bicyclists should walk their bikes
- Light and helmet use

4.2 Enforcement

Enforcement programs target unsafe bicyclist and motorist behaviors and enforce laws that reduce bicycle/motor vehicle collisions and conflicts. Enforcement fosters mutual respect between roadway users and improves safety. These programs generally require coordination between law enforcement, transportation agencies, and bicycling organizations.

Enforcement activities are undertaken by different agencies throughout the County of Los Angeles. The California Highway Patrol is responsible for enforcement on unincorporated County roadways. The local police departments in the incorporated cities are responsible for enforcement of the County-operated Class I bike paths in their jurisdiction. Some cities may have elected to contract with the Los Angeles County

Sheriff's Department for law enforcement in their jurisdiction. For those cities, the County Sheriff's Department is responsible for enforcement along the Class I bike paths.

4.2.1 Bicycle Patrol Unit

Target audience	Cyclists and motorists
Primary agency	CHP, Sheriff's Department and local law enforcement agencies
Potential partners	DPW
Purpose	Increase safety by promoting awareness of bicycle/motorist issues and conflicts
Resources	http://www.bta4bikes.org/btablog/2008/01/30/alice-award-nominee-chief-jon-zeliff/

On-bike officers are an excellent tool for community and neighborhood policing because they are more accessible to the public and able to mobilize in areas that patrol cars cannot reach (e.g., overcrossings and paths). Bike officers undergo special training in bicycle safety and bicycle-related traffic laws and are therefore especially equipped to enforce laws pertaining to bicycling. Bike officers help educate cyclists and motorists through enforcement and also serve as excellent outreach personnel to the public at parades, street fairs, and other gatherings.

Vehicle statutes related to bicycle operations are typically enforced on bikeways as part of the responsible traffic enforcement agencies' normal operations. Such agencies may also consider using bicycle patrol units to proactively enforce bicycle-related violations. Spot enforcements are highly visible and publicly advertised. They may take the form of intersection stings, handing out informational sheets to motorists, bicyclists and pedestrians, or enforcing speed limits and right-of-way at shared use path/roadway intersections. Targeted enforcement can be undertaken as a component of a Share the Road campaign. Plain clothes officers on bicycles can stop motorists and cyclists not following the rules of the road and provide educational material, as well as cite the transgressors. An officer on a bicycle could observe the offense and radio to an officer in a chase car who will make the stop. Bicycle patrol units can also effectively enforce a bike light requirement which is discussed in the next section.

4.2.2 Bicycle Light Enforcement

Target audience	Cyclists
Primary agency	CHP, Sheriff's Department and local law enforcement agencies
Potential partners	Bicycle groups
Purpose	Increase safety by providing bicycle lights to bicyclists
Resources	Community Cycling Center (Portland, OR): http://www.communitycyclingcenter.org/index.php/programs-for-adults/get-lit/ San Francisco Bicycle Coalition: http://www.sfbike.org/?lights

A bicycle light enforcement program can issue "fix it" tickets or warnings to bicyclists without lights and distribute safety brochures. The actual installation of free bike lights on the spot is a common alternative.

Many bicyclists ride without lights or with dysfunctional lights and are unaware that during darkness, lights are required by California law. Bicycling without lights reduces bicyclists' visibility and visibility to motor vehicles and therefore increases bicyclists' risks of being involved in bicycle/car crashes. For these reasons, increasing bicycle light usage is a top priority for the County.

Bicycle light enforcement can effectively impact behavior, particularly if bicyclists are able to avoid penalty by obtaining a bike light. One option is for officers to give offenders warnings, explain the law, and install a free bike light at the time of citation. Alternatively, officers can write "fix it" tickets and waive the fine if bicyclists can prove that they have purchased a bike light within a specified timeframe. When citing bicyclists, officers can also provide coupons for free or discounted lights at local bike shops, if available.

Bicycle light enforcement can be implemented in tandem with outreach efforts. Bike light outreach campaigns can include the following components:

- Well-designed public service announcements reminding bicyclists about the importance of bike lights can be placed on transit benches, transit vehicles, and local newspapers.
- Partnership with local cycling groups to get the word out to their members and partners. Groups should be supplied with key campaign messages to distribute to their constituents, along with coupons for free or discounted bike lights.
- Distribution of media releases with statistics about the importance of using bike lights and relevant legal statutes.
- In-school presentations about bike lights, including reflective material giveaways.
- A community bike light parade with prizes.
- Discounts on bike lights and reflective gear at local bike shops.

4.3 Encouragement Programs

Encouragement programs are generally characterized by their focus on encouraging people to bicycle more frequently, particularly for transportation. Encouragement programs increase the propensity for bicycle trips by providing incentives, recognition, or services that make bicycling a more convenient transportation mode. The following encouragement programs are recommended for implementation in the unincorporated County and described in more detail in the remainder of the section:

- Suggested Routes to School
- Family biking programs
- Bicycling maps
- Valet bike parking at events
- Local partnerships for more bicycle parking
- Bike to Work Week/Month

- New bikeway parties
- Bike and Hike to Parks Programs

4.3.1 Suggested Routes to School

Target audience	Students and their parents; school administrators, faculty, and staff
Primary agency	DPW & LACOE
Potential partners	Schools, school districts and parent groups, CHP, Sheriff's Department and local law enforcement agencies, bicycle groups
Purpose	Provide parents and children with recommendations for safer and direct routes to walk/bike to school
Resources	County of Los Angeles Suggested Routes to School Program http://ladpw.org/tnl/schoolroute/

Suggested biking and walking route maps direct students to walk and bicycle along the safest routes to school. These maps include arrows to indicate the routes and show stop signs, signals, crosswalks, sidewalks, trails, overcrossings, and crossing guard locations surrounding the school. Maps can be distributed by school officials to parents to encourage their children to walk and bike to school. Having County staff, such as a traffic engineer, review and approve the maps can ensure that they reflect up-to-date traffic information.

Factors to consider in the process of creating routes include:

- Presence of sidewalks or paths
- Presence of bikeways
- Traffic volumes and speeds
- Roadway widths
- Convenience, directness
- Number of crossings
- Types of controls at intersections, e.g., stop signs or signals
- Crossing guards
- Surrounding land uses

The maps should be focused on the attendance boundary of a particular school. Suggested walking and biking maps may tie directly to a community's existing or proposed sidewalk, traffic control, and park networks. Routes should take advantage of low volume residential streets, and off-street facilities such as bike paths, sidewalks, and pedestrian bridges. Identifying where crossing guards, traffic signals, or stop signs provide the safest crossing locations is a major component of developing a suggested route.

4.3.2 Family Biking Programs

Target audience	Parents and Families
Primary agency	DPW
Potential partners	Regional bicycling groups, local volunteers, local bicycle shops
Purpose	Educate and encourage parents on how to ride bicycles with children
Resources	Kidical Mass: http://www.kidicalmass.org/locations/ Geared 4 Kids: http://www.geared4kids.org/

Family bicycling programs equip families with information and tools so that parents can safely transport children by bicycle and help children learn bicycling skills. Family biking programs provide a level of security and certainty to parents that the family is receiving appropriate training on safety issues and safe practices. Activities include trainings or safety courses, group rides, bicycle safety checks, basic bike maintenance workshops, the distribution of maps and information on bicycling with children, and more.

4.3.3 Bicycling Maps

Target audience	General Public
Primary agency	DPW
Potential partners	LACMTA, Southern California Association of Governments (SCAG)
Purpose	Assist bicyclists in wayfinding by offering a map with clear symbols and graphics, destinations and services attractive for bicyclists, and good selection of routes
Resources	City of Long Beach, CA: http://www.longbeach.gov/civica/filebank/blobdload.asp?Blobid=27418 City of Los Angeles, CA: http://www.bicyclela.org/pdf/BikeMapWestsideCC.pdf San Diego Region Bicycle Map: http://www.icommutesd.com/Bike/BikeMap.aspx

One of the most effective ways of encouraging people to bicycle is by distributing maps and guides to show that the infrastructure exists, demonstrate how easy it is to access different parts of the community by bike, and highlight unique areas, shopping districts, or recreational areas. Maps can also support bicycle tourism. Maps can be County-wide, community-specific, or neighborhood maps, and can be available on paper and/or online.

4.3.4 Valet Bike Parking at Events

Target audience	General Public, event attendees
Primary agency	Los Angeles County DPW
Potential partners	Bicycle groups, local volunteers
Purpose	Encourage bicycle travel; offer appealing alternative to driving for event attendees
Resources	LACBC: http://la-bike.org/projects/bike-valet San Francisco Bicycle Coalition: http://www.sfbike.org/?valet

Convenient, secure bike parking at large events can make bicycling to an event a more attractive option. Valet bike parking provides secure, staffed temporary facilities for the storage of bicycles during large events. Sometimes these are outdoor, temporary structures; however, indoor bicycle storage locations can be designed into future venues that host sporting events, festivals, and other events where large numbers of people gather.

Valet parking systems generally work like a coat check: the cyclist gives their bicycle to the attendant, who tags the bicycle with a number and gives the cyclist a claim stub. The valet bike parking can also accept non-motorized devices such as rollerblades, baby strollers, and push scooters. When the cyclist returns to get the bicycle, they present the claim stub and the attendant retrieves the bicycle for them. Locks are not needed. The valet is generally open for a couple of hours before the event and a shorter time after the event.

Local bicycling groups such as LACBC offer secure, professional, and attended bike valet services. The County should work with these groups and volunteers to provide this service at their events.

4.3.5 Local Partnerships for More Bicycle Parking

Target audience	General Public
Primary agency	DPW
Potential partners	LACMTA, local shops, bicycle groups
Purpose	Make bicycle parking easily available for residents in unincorporated County areas
Resources	City of Long Beach, CA: http://www.bikelongbeach.org/ City of Portland, OR: http://www.portlandonline.com/transportation/index.cfm?c=34813

Bicycle parking is a major factor in whether individuals choose to use a bike for commuting to work or for running errands. The County shall evaluate the feasibility of seeking grant funding and partnering with local stakeholders to make bicycle parking available at no or low-cost at all key destinations in unincorporated County areas. Long Beach, CA has innovative programs where bicycle racks are provided and installed free of charge at key destinations to improve bicycle mobility in the community.

4.3.6 Bike to Work Week/Month

Target audience	Commuters
Primary agency	DPW
Potential partners	LACMTA, bicycle groups, local bicycle shops, large employers
Purpose	Encourage bicycling to work through fun, social activities and incentives
Resources	LAB: http://www.bikeleague.org/programs/bikemonth/ LACMTA: http://www.metro.net/around/bikes/bike-to-work/

Bike to Work Month, Week, and Day are high-profile encouragement programs intended to introduce people to bicycle commuting and impact the general public's perceptions and attitudes toward bicycle commuting. Cities, towns, and counties across the country participate in Bike to Work Week, Month, or Day. They generally rely on special events, materials, and media outreach to promote bicycle commuting.

Common elements of Bike to Work events include: Commute 101 workshops, guided commutes or group rides to increase comfort and familiarity with bicycling routes, "Energizer Stations" to reward bicycle commuters with treats and incentives, workplace/team bicycling challenges, celebrity events (e.g., County administration bikes to work with news team, bike/bus/car race), post-work celebrations, and bike-to-school events.

4.3.7 Launch Party for New Bikeways

Target audience	Residents living or working near recently completed bicycle facilities
Primary agency	DPW
Potential partners	LACMTA and other stakeholders, bicycle groups, local bicycle shops
Purpose	Inform residents about new bicycle facilities to encourage use and promote awareness
Sample Program	When a new bikeway is built, the City of Vancouver throws a neighborhood party to celebrate. Cake, t-shirts, media and festivities are provided and all neighbors are invited as well as City workers (engineers, construction staff, and planners) who worked on it.

When a new bicycle facility is built, some residents will become aware of it and use it, but others may not realize that they have improved bicycling options available to them. A launch party/campaign is an effective and fun way to inform residents about a new bikeway, and an opportunity to share other bicycling information (such as maps and brochures) and answer questions about bicycling.

4.3.8 Bike and Hike to Park Programs

Target audience	General Public
Primary agency	DPR
Potential partners	Bicycle groups, community and other stakeholders
Purpose	Promote healthy, active living by encouraging residents to bike/walk to recreational facilities

Encouraging bicycling and walking to parks is a great way to increase community health, decrease automobile congestion and parking issues, and maximize the use of public resources. DPR created the "Healthy Parks" program to work with local communities and develop health and wellness programs that reflect their diverse community needs and improve the quality of life for the community.

Elements of these type of programs typically include distributing route information, guiding rides and walks to and in parks, information kiosks, improved bicycle parking at trailheads and parks, and outreach to existing groups (e.g., boy scouts, senior groups, walking and bicycling clubs).

4.3.9 Bicycle Sharing Program

Target audience	General Public
Primary agency	DPW
Potential partners	LACMTA, SCAG and local governmental agencies
Purpose	Develop a regionally consistent bicycle sharing program for Los Angeles County
Resources	City of Washington, DC: http://www.capitalbikeshare.com City of Denver, CO: http://www.denverbikesharing.org

LACMTA will develop a working group comprised of all interested local agencies and groups in the region who will work with private partners/entrepreneurs to develop a regionally consistent bicycle sharing program for Los Angeles County. The County will be a participating member in this working group.

4.4 Evaluation Programs

Monitoring and evaluating the County's progress toward becoming bicycle-friendly is critical to ensuring that programs and facilities are achieving their desired results and to understanding changing needs. Maintaining consistent staff positions, count programs, reporting on progress, and convening community stakeholder groups are methods for monitoring efforts and for holding agencies accountable to the public.

4.4.1 Annual Progress Report

Target audience	County residents
Primary agency	DPW
Potential partners	DRP
Purpose	Provide continuous updates on the progress of the Bikeway Plan implementation
Resources	City of Seattle, WA: http://www.seattle.gov/transportation/bikeprogram.htm San Francisco Annual Report Card: http://www.sfbike.org/download/reportcard_2006/SF_bike_report_card_2006.pdf

The County will provide annual updates on the progress made toward implementing the goals, policies, and programs of the Bikeway Plan, as part of the General Plan Annual Progress Report. DPW will also develop and maintain a website pursuant to Policy 5.2, to provide more frequent updates on the progress of the Plan implementation.

4.4.2 Community Stakeholder Group

Target audience	Citizen advocates
Primary agency	DPW
Potential partners	LACMTA, SCAG, Caltrans, bicycle groups, local advocates
Purpose	Advise the County on bicycle issues
Resources	City of LA Bicycle Advisory Committee: http://www.bicyclela.org/

Create a Community Stakeholder Group pursuant to IA 5.1.1 that will oversee the implementation of this plan and provide input on bicycle issues in the County. Input from the Community Stakeholder Group will play a pivotal role in decisions made related to implementation of the individual projects and programs within the Plan. Specifically, the Community Stakeholder Group will participate in decisions made related to which projects within Phase I and/or Programs within Tier I we will implement or submit grant applications for. This group shall include representatives of each planning area, and should be composed of representatives from the unincorporated County communities, County officials, bicycling organizations, bicycling clubs, transportation agencies, universities, colleges, and community members-at-large in order to provide multiple perspectives from a broad cross-section of the bicycling community.

4.4.3 Bicycle Counts

Target audience	County staff, elected officials, general public
Primary agency	DPW
Potential partners	LACMTA, SCAG, bicycle groups, local advocates
Purpose	Gather important benchmarking information about bicycling and provide progress reports on the Plan
Resources	http://bikepeddocumentation.org/

Collect bicycle counts biennially, pursuant to IA 2.4.2 as a part of a regional effort to record bicycle activity levels. The bicycle count program will be administered biennially and capture all types of bicycle trips including trips for recreation, commuting to work and for other utilitarian purposes. Bicycle counts and assessments should also be conducted whenever a local land development project requires a traffic impact study. Funding opportunities will need to be identified to guarantee the longevity of the program.

5. Funding and Implementation

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This chapter is intended to support the implementation of the Plan's recommendations by providing the following information:

- Planning-level cost estimates for the entire proposed un-built network, presented in **Table 5-2**
- An overview of the implementation strategies for the proposed programs, presented in **Table 5-6**
- An overview of funding sources for those proposed projects, presented in **Table 5-7**

5.1 Program Monitoring

The Plan provides a long-term vision for the development of a region-wide bicycle network that can be used by all residents for all types of trips. Implementation of the Plan will take place incrementally over many years, and the Plan is intended to guide bicycling in the County for the next 20 years. The County shall review and update the Plan every five years pursuant to Policy 1.5 of the Plan. The following actions and measures of effectiveness are provided to guide the County of Los Angeles toward the vision identified in the Plan.

5.1.1 Update the Plan

While the Plan is intended to guide bicycle planning in the County of Los Angeles for the next 20 years, it shall be reviewed and updated every five years pursuant to Policy 1.5, to reflect the current needs of the community and enable the County to remain eligible for Bicycle Transportation Account (BTA) funding.

5.1.2 Regularly Revisit Project Prioritization

The proposed bikeways were prioritized and grouped into three implementation phases based on bicycling demand, facility deficiencies, barriers to implementation, public input, and other criteria described in detail in **Appendix I**. County staff shall review the projects in each phase on a regular basis, and consult with the community stakeholder group and other interested parties for prioritizing project implementation within each phase. Community input should also be sought after adoption of the Plan via the web or through community meetings, for new infrastructure or programs to improve bicycle mobility in the County, which will be reflected in future updates to the Plan.

5.1.3 Establish Measures of Effectiveness

Measures of effectiveness are used as a quantitative way to measure the County's progress toward implementing the Plan. Well-crafted measures of effectiveness will allow the County to determine the degree of progress toward meeting the Plan's goals, and include time-sensitive targets for the County to meet.

Table 5-1 describes several recommended program measures for the County. These measures were developed based on known baseline conditions. When given, goal targets are developed based on reasonable expectations within the time frame. As new baseline information is made available, and the County implements more of the Plan, the measures of effectiveness should be re-evaluated, revised, and updated. The County of Los Angeles should regularly review the progress made toward these goals.

Table 5-1: Program Measures of Effectiveness

Measure	Existing Benchmark (if available)	Target
Bicycle mode share	Existing County bicycle mode share estimated to be 1.86%.	Increase bicycle mode share in the County to 2.5% within 5 years.
Public attitudes about biking in the County of Los Angeles	A survey geared specifically toward attitudes of bikers and non-bikers should be developed.	Increase bikeway-related public service announcements and initiate education and evaluation programs for County staff and the general public within 5 years. All educational material should be accompanied with surveys to gauge shifts in opinion and general knowledge regarding bicycling in the region.
Number of miles of bike paths, lanes and routes maintained by the County of Los Angeles	Mileage of existing bicycle network: Class I Bike Paths – 100.3 miles Class II Bike Lanes – 20.2 miles Class III Bike Routes – 23.5 miles	Mileage of full build-out of proposed bicycle network: Class I Bike Paths – 170.9 miles Class II Bike Lanes – 286.1 miles Class III Bike Routes – 482.1 miles Bicycle Boulevards – 18.9 miles
Proportion of arterial streets with bike lanes	8.9 miles out of an estimated 690 miles of County-maintained arterial streets have bike lanes (1.3%).	Within 5 years, increase the proportion of arterial streets with bicycle facilities. Suggested target of 5% to spur greater bicycle commuting (an additional 25 miles of bike lanes on County-maintained arterial roads).
Independent recognition of non-motorized transportation planning efforts	No bicycle awards to date.	Independent recognition of efforts to promote biking within 3 years. League of American Bicyclists' Bronze Award within 8 years and Silver or Gold Award within 18 years.
Number of collisions involving bicyclists and motor vehicles in unincorporated areas	Year / Crashes / Killed 2004 / 272 / 5 2005 / 245 / 2 2006 / 209 / 6 2007 / 220 / 5 2008 / 220 / 5 2009 / 203 / 2	Zero deaths or severe injuries resulting from collisions involving bicyclists and motor vehicles while increasing bicycle ridership.

Sources: NHTS (2010); US Census (2000); LACMTA (2010); SWITRS (2010)

5.2 Cost Estimates

Table 5-2 summarizes cost estimates for the proposed bikeway network recommended in the Plan. Unit cost estimates for the Plan were developed by KOA Corporation. The cost of completing the proposed bicycle network is estimated to be about $76 million for bike path projects, $251 million for bike lane and bike route projects, and $0.57 million for bicycle boulevard projects, for a combined total system build-out cost of approximately $327.6 million. Cost estimates include costs for survey and design, construction, administration, and contingencies. These costs do not include programmatic or project-level environmental review or detailed traffic studies for implementing neighborhood traffic management programs as part of on-road bikeways. Refer to **Appendix H** for detailed subcomponents of the unit costs.

Table 5-2: Proposed Bicycle Network Cost Estimates

Facility Type	Unit Cost (per mile)	Miles of Un-Built Proposed	Cost Estimate
Class I – Bike Path	Varies	76.1*	$76,097,000
Class II – Bike Lane	$40,000	78.4	$3,136,000
Class II – Bike Lane (curb reconstruction/ raised median)	$1,700,000	41.8	$70,996,000
Class II – Bike Lane (widening/ paved shoulder)	$400,000	85.1	$34,040,000
Class II – Bike Lane (road diet)	$165,000	68.6	$11,318,000
Class III – Bike Route	$15,000	88.4	$1,327,000
Class III – Bike Route (sharrows)	$25,000	40.0	$1,000,000
Class III – Bike Route (widening/ paved shoulder)	$400,000	330.3	$132,114,000
Bicycle Boulevard	$30,000[37]	22.8	$685,000
Totals		**831.4**	**$330,713,000**

Source: KOA Corporation, August 2010

** This total includes 4.9 miles of on-street Class III connections for some proposed Bike Paths.*

[37] *This unit is a base cost and does not include the potential need for intersection treatments.*

5.3 Implementation Plan

The following sections describe the implementation plan for the proposed bikeway network, as well as the programs recommended in the Plan.

5.3.1 Bikeway Network Phasing and Implementation Plan

Prioritization Process

The bicycle network was prioritized based on key indicators of demand, deficiencies, and implementation factors in order to guide network implementation phasing. The project prioritization was completed in a two-phase process, the first of which focused on factors related to people's propensity to use the proposed network (utility factors) and a second phase that addressed key implementation factors. The utility prioritization factors include connections to existing and proposed bikeway network; connections to key destinations such as schools, libraries, parks, recreation centers, and transit hubs; lack of existing bikeways; bicycle crashes; and community support of the proposed facilities obtained through the public outreach process.

Table 5-3 summarizes the utility prioritization factors and point values assigned to each proposed bikeway throughout the County of Los Angeles, which were developed to measure the overall usefulness and utility of the proposed bikeway projects. These prioritization factors were finalized after extensive review and input from members of the Bicycle Advisory Committee and the Technical Advisory Committee. For a more detailed description of the prioritization approach, refer to **Appendix I**.

Table 5-3: Bicycle Network Prioritization Utility Factors and Points

Utility Prioritization Factor	Point Range
Connects to Existing Bikeway Facility: Class I Bike Path = 20 points Class II/III On-Street Bikeway = 15 points	0 to 20
Connects to Proposed Bikeway Facility	0 or 10
Alternative Route Availability	0 or 10
Connects to University	0 or 20
Connects to Transit Station	0 or 20
Connects to K-12 School	0 to 20
High Employment Density	0 or 10
Connects to Park, Library or Recreational Facility	0 to 20
High Rate of Collisions	0 or 5
High Rate of Zero Vehicle Households	0 or 10
Public Input	0 to 10
Maximum Total Points	**155**

Source: Alta Planning + Design, 2011

The second phase of the prioritization process focused on implementation-oriented factors, such as project cost, project coordination, travel lane and parking removal, and other considerations. These prioritization factors are intended to measure issues, challenges, and the "degree of difficulty" of implementing the proposed bikeway projects. **Table 5-4** summarizes these implementation-oriented prioritization factors and describes the scoring process that was utilized for each factor.

Finally, the project scores from the two prioritization phases described above were tabulated to generate an overall project score for each project. All projects were ranked numerically based upon their respective overall project scores.

Table 5-4: Bicycle Network Prioritization Implementation Factors and Points

Implementation Prioritization Factor	Point Range
Project Cost was ranked as follows: Less than $100,000 = 20 points $100,000 to $500,000 = 15 points $500,000 to $1,500,000 = 10 points $1,500,000 to $3,000,000 = 5 points Greater than $3,000,000 = 0 points	0 to 20
Project Coordination	0 or 10
Requires Travel Lane Removal	0 or 5
Requires Reduction in Width of Landscaped Median	0 or 5
Requires Street Widening of Paved Surface	0 or 5
Requires Parking Removal	0 or 5
Maximum Total Points	**50**

Source: Alta Planning + Design, 2011

5.3.2 Bikeway Network Implementation Plan

The proposed bikeway projects were grouped into three phases primarily based on the overall prioritization score for each project and the anticipated available funding. Projects for which funding has already been allocated, or which are expected to be implemented in conjunction with County road reconstruction and/or rehabilitation projects may be shown in an earlier phase, regardless of their prioritization score. The implementation timeline for the three phases is shown below:

Phase I: Projects listed are anticipated to be implemented within the first five-year period following adoption of the Plan (2012-2017).

Phase II: Projects listed are anticipated to be implemented within the ten-year period following Phase I (2017-2027).

Phase III: Projects listed are anticipated to be implemented within the final five-year period of the term of the Plan (2027-2032).

Table 5-5 lists the projects in Phase I. Refer to **Appendix I** for more information on the phasing and a list of all projects in the three phases.

Table 5-5: Phase I Projects

Segment	From	To	Class	Planning Area
N. Sunset Avenue	Amar Road	Temple Avenue	2	East San Gabriel Valley
Workman Mill Road	San Jose Creek Bicycle Path	Strong Avenue	2	Gateway
Woods Avenue	1st Avenue	Olympic Boulevard	BB	Metro
Cesar Chavez	Mednik Avenue	Roscommon	2/3	Metro
Crocket Boulevard	76th Place	83rd Street	3	Metro
Hawthorne Boulevard	104th Street.	111 Street	2	South Bay
Redondo Bch Boulevard	Prairie Avenue	Crenshaw Boulevard	2	South Bay
Madre Street / Muscatel	San Pasqual	Longden Drive	3	West San Gabriel Valley
Del Mar Boulevard	Pasadena City Limit	Rosemead Avenue	3	West San Gabriel Valley
San Jose Creek	7th Avenue	Murchison Avenue	1	East San Gabriel Valley
Normandie Avenue	98th Street	El Segundo Boulevard	2	Metro
E. 68th Street	Central Avenue	Compton Avenue	3	Metro
Maie Avenue / Miramonte Boulevard	Slauson Avenue	92nd Street	BB	Metro
Redondo Beach Boulevard	S Figueroa Street	Avalon Boulevard	2	Metro
Florence Avenue	Central Avenue	Mountain View Avenue	2	Metro
Vermont Avenue	87th Street	El Segundo Boulevard	2	Metro
Rosemont Avenue	Rockdell Street	Honolulu Avenue	3	San Fernando Valley
Budlong Avenue	N County Border	El Segundo Boulevard	BB	Metro
El Segundo Boulevard	Figueroa	Central	2	Metro
Compton Avenue	Slauson Avenue	92nd Street	2	Metro
Broadway	E. 121st Street	E. Alondra Boulevard	2	Metro
Firestone Boulevard	Central Avenue	Alameda Street	2	Metro
Imperial Hwy	Van Ness Avenue	Vermont Street	2	Metro
La Crescenta Avenue	Orange Avenue	Foothill Boulevard	3	San Fernando Valley
111th Street	Buford Avenue	Prairie Avenue	3	South Bay
Allen Avenue	Pinecrest Drive.	New York Drive	3	West San Gabriel Valley
Pathfinder Road	Paso Real Avenue	Alexdale Lane	2	East San Gabriel Valley
Vineland Avenue	Nelson Avenue	Proposed bike path	3	East San Gabriel Valley
Killian Avenue	Paso Real Avenue	Otterbien	3	East San Gabriel Valley
Paso Real Avenue	Colima Road	Pathfinder Road	3	East San Gabriel Valley
Denker Avenue	Century Boulevard	Imperial Hwy	3	Metro
Holmes Avenue	Slauson Avenue	Gage Avenue	2	Metro
Rosecrans Avenue	Figueroa Street	Central Avenue	2	Metro
Manhattan Beach Boulevard	Prairie	Crenshaw	2	South Bay
Eaton Wash Channel	New York Drive	Rio Hondo Bikeway	1/3	West San Gabriel Valley
30th Street West	Avenue M	Avenue 0-12	2	Antelope Valley
Los Padres Drive/ Jellick Avenue	Greenbay Drive	Aguiro Street	3	East San Gabriel Valley

Table 5-5: Phase I Projects (continued)

Segment	From	To	Class	Planning Area
Amar Road	Vineland Avenue	N. Puente Avenue	2	East San Gabriel Valley
W Gladstone Street	Blender Street	Big Dalton Wash	3	East San Gabriel Valley
Ford Boulevard	Floral Drive	Olympic Boulevard	3	Metro
Hazard Avenue	City Terrace Drive	Cesar Chavez Avenue	3	Metro
6th Street	Ford Boulevard	Harding Avenue	3	Metro
92nd Street E	Central Avenue	Alameda Street	3	Metro
Nadeau Street / Broadway	Central Avenue	E County Border	2	Metro
Altura Avenue	La Crescenta Avenue	Rosemount Avenue	3	San Fernando Valley
La Crescenta Avenue	Foothill Boulevard	Montrose Avenue	3	San Fernando Valley
104th Street	Buford Avenue	Prairie Avenue	3	South Bay
Marine Avenue	Gerkin Avenue	Crenshaw Boulevard	3	South Bay
Balan Rd / Annandel Avenue	Cul-de-sac s/o Pathfinder Rd	Brea Canyon Cut Off Rd	3	East San Gabriel Valley
Batson Avenue	Colima Rd	Dragonera Drive	3	East San Gabriel Valley
Nogales Street	La Puente Road	Hollingworth Street	2	East San Gabriel Valley
Pathfinder Road	Fullerton Road	Paso Real Avenue	2	East San Gabriel Valley
Fullerton Road	Colima Road	Pathfinder Road	2	East San Gabriel Valley
Whiteside Street	Hebert Avenue	Eastern Avenue	3	Metro
Seville Avenue	E. Florence Avenue	Broadway	2	Metro
Pico Canyon Rd	The Old Road	Whispering Oaks	2	Santa Clarita Valley
Normandie Avenue	225th Street	Sepulveda Boulevard	2	South Bay
Longden Avenue	8th Avenue	Peck Road	3	West San Gabriel Valley
Holliston Avenue	S County Border	Altadena Drive	3	West San Gabriel Valley
Fiji Way	0.7 Miles South of Lincoln Boulevard	Lincoln Boulevard	3,2	Westside
Fiji Way	Lincoln Boulevard	Admiralty Way	3	Westside
Elizabeth Lake Rd	10th Street	Dianron Rd	2	Antelope Valley
170th Street E	Avenue M	Palmdale Boulevard	2	Antelope Valley
Nogales Street	Arenth Avenue	Pathfinder Rd	2	East San Gabriel Valley
Pathfinder Road	Alexdale Lane	Canyon Ridge Road	2	East San Gabriel Valley
Mills Avenue	Telegraph Rd	Lambert Rd	2	Gateway
Mednik Avenue	Floral Drive	Olympic Boulevard	2	Metro
124th Street E	Slater Avenue	Alameda Street	3	Metro
Whitter Boulevard	Indiana Street	Ford Boulevard	3	Metro
Success Avenue/Slater Avenue	Imperial Hwy	El Segundo Boulevard	3	Metro
Avalon Boulevard	121st Street	E Alondra Boulevard	2	Metro
Briggs Avenue	Shields Street	Foothill Boulevard	3	San Fernando Valley
Las Virgenes Rd / Malibu Canyon Rd	Mureau Rd	Pacific Coast Hwy	3	Santa Monica Mountains

Table 5-5: Phase I Projects (continued)

Segment	From	To	Class	Planning Area
Lennox Boulevard.	Felton Avenue	Osage Avenue	3	South Bay
Daines Drive/ Lynd Avenue	Santa Anita Avenue	Mayflower Avenue	3	West San Gabriel Valley
Lake Avenue	Loma Alta Drive	S County Border	3	West San Gabriel Valley
Sierra Hwy	915' s/o Avenue	Pearlblossom Hwy	2	Antelope Valley
Mauna Loa Avenue	Citrus Avenue	E County Border	3	East San Gabriel Valley
Colima Rd	Mulberry Drive	Poulter Drive	3	Gateway
Whitter Boulevard	Ford Boulevard	Via Clemente Street	3	Metro
Imperial Hwy	Central Avenue	Wilmington	2	Metro
Alondra Boulevard	Figueroa Street	Avalon Boulevard	2	Metro
Mureau Rd	Las Virgenes Road	Calabasas Rd	2	Santa Monica Mountains
S Freeman Avenue	W 104th Street	W 111th Street	3	South Bay
S. Lemoli Avenue	Marine Avenue	Manhattan Beach Boulevard	3	South Bay
Doty Avenue	Marine Avenue	Manhattan Beach Boulevard	3	South Bay
Aviation Boulevard	Imperial Hwy	154th Street	2	South Bay
Huntington Drive	San Gabriel Boulevard	Michillinda Avenue	2	West San Gabriel Valley
Sierra Madre Villa Avenue	I-210	Green Street	3	West San Gabriel Valley
Avenue L-8	65th Street West	60th Street West	2	Antelope Valley
Willow Avenue	Amar Rd	Francisquito Avenue	3	East San Gabriel Valley
Las Lomitas Drive / Newton Street	Vallecito Drive	Hacienda Boulevard	3	East San Gabriel Valley
Los Robles Avenue	7th Avenue	Kwis Avenue	3	East San Gabriel Valley
Fairway Drive / Brea Canyon Cut Off Rd	Walnut Rd	Bickford Drive	2	East San Gabriel Valley
Glendora Avenue	Arrow Hwy	Cienega Avenue	2	East San Gabriel Valley
Ceres Avenue	Broadway	Telegraph Rd	3	Gateway
Mulberry Drive	Greenbay Drive	Colima Road	2	Gateway
Atlantic Avenue	Rosecrans Avenue	Alondra Boulevard	3	Gateway
E. Victoria Street	S. Santa Fe Avenue	Susana Road	2	Gateway
Compton Boulevard	Harris Avenue	LA River Bikeway	2	Gateway
Leffingwell Rd	Imperial Hwy	Scott Avenue	2	Gateway
Rowan Avenue	Floral	Olympic Boulevard	BB	Metro
120th Street	Central Avenue	Wilmington	2	Metro
Willowbrook Avenue	Imperial Hwy	119th street	1	Metro
The Old Rd	Sloan Canyon Road	Weldon Cyn Rd	2	Santa Clarita Valley
Duarte Rd	San Gabriel Boulevard	Sultana Avenue	3	West San Gabriel Valley
San Gabriel Boulevard/ Hill Drive	Graves Avenue	Lincoln Avenue	2	West San Gabriel Valley

Table 5-5: Phase I Projects (continued)

Segment	From	To	Class	Planning Area
Emerald Necklace Gateway	San Gabriel River Path	Park entrance (parking lot)	1	West San Gabriel Valley
San Jose Creek	Workman Mill Rd	San Gabriel River Bikeway	1	East San Gabriel Valley
Bouquet Canyon Road	Hob Ct	Elizabeth Lake Rd	3	Santa Clarita Valley
Rosemead Boulevard	Colorado	Callita Street	2	West San Gabriel Valley

5.3.3 Programs Phasing and Implementation Plan

The multitude of programs recommended in **Chapter 4** are a relatively low-cost and highly effective method for promoting public awareness of bicycling and adding to the safety and enjoyment of bicyclists in the County. The programs have been grouped into two tiers; Tier I includes programs that can be implemented within a year of Plan adoption, and Tier II includes the remaining programs which are anticipated to be implemented within the five-year period following Tier I. **Table 5-6** lists the programs in each tier, and provides additional information for the programs, such as the timeframe for implementation; the entity most appropriate for initiating and overseeing the program (noted as "Lead Agency"); the nexus between the recommended program with the goals, policies and implementation actions outlined in Chapter 2; and a list of potential funding sources for implementing the program.

While the majority of infrastructure projects fall within the exclusive jurisdiction of the County, many program recommendations can fall under the banner of outside agencies, local and regional nonprofit organizations and, in some cases, private sector partners. A collaborative approach to implementing and sustaining bicycling programs will contribute to the broader vision of improving bicycling conditions in the County and fostering a strong bicycle advocacy community and bicycle culture.

Table 5-6: Program Implementation Recommendations

Program	Nexus with Chapter 2	Timeframe	Lead Agency	Possible Funding Sources
Tier I Programs				
Community Bicycle Education Courses	*Goal 3 – Education* Offer bicycle skills, bicycle safety classes and bicycle repair workshops. (IA3.1.1)	Ongoing	DPW & DPH	Center for Disease Control (CDC) - Community Transformation Grants
Youth Bicycle Safety Education Classes	*Goal 3 – Education* Offer bicycle skills, bicycle safety classes and bicycle repair workshops. (IA3.1.1)	Annual	DPW, DPH & LACOE	Safe Routes to School – Federal and State

Table 5-6: Programs Implementation Recommendations (continued)

Program	Nexus with Chapter 2	Timeframe	Lead Agency	Possible Funding Sources
Bicycle Rodeos	*Goal 3 – Education* Offer bicycle skills, bicycle safety classes and bicycle repair workshops. (IA3.1.1)	Biannual. In conjunction with Bike Month events and Summer Out-of School programs.	DPW & DPH	CDC - Community Transformation Grants
Suggested Routes to School	*Goal 3 – Education* Create Safety Education Campaigns aimed at bicyclists and motorists. (P 3.2)	Ongoing.	DPW	Safe Routes to School – Federal and State
Family Biking Programs	*Goal 4: Encouragement* Support organized rides or cycling events. (P 4.1)	Ongoing. In coordination with regular bicycle events.	DPW	CDC or other health grant programs
Bicycling Maps	*Goal 4: Encouragement* Develop maps and wayfinding signage and striping to assist navigating the regional bikeways. (P 4.3)	One time with regular updates.	DPW	CMAQ - Surface Transportation Program
Bike to Work Week/Month	*Goal 4: Encouragement* Promote Bike to Work Day/Month among County employees. (IA 4.2.1)	Annual.	DPW	General transportation fund; local donations
Launch Parties for New Bikeways	*Goal 5: Community Support* Maintain efforts to gauge community interest and needs on bicycle-related issues. (P 5.3)	As new bikeways are built.	DPW	General transportation fund; local donations
Bike and Hike to Park Programs	*Goal 4: Encouragement* Support organized rides or cycling events. (P 4.1)	Ongoing.	DPW & DPR	CDC - Community Transformation Grants

Table 5-6: Programs Implementation Recommendations (continued)

Program	Nexus with Chapter 2	Timeframe	Lead Agency	Possible Funding Sources
Community Stakeholder Group	*Goal 5: Community Support* Establish a community stakeholder group to assists with the implementation of the Bicycle Master Plan. (IA 5.1.1)	Ongoing.	DPW	N/A
Annual Progress Report	*Goal 1: Bikeway System* Measure the effectiveness of the Bikeway Plan Implementation. (IA 1.5.1)	Annual.	DPW	N/A
Bicycle Counts	*Goal 2: Safety* Conduct biennial counts. (IA 2.4.2)	Biennial.	DPW	Federal transportation funding, such as Transportation Enhancements or mini grants
Tier II Programs				
Share the Path Campaign	*Goal 3- Education* Create safety education campaigns aimed at bicyclists and motorists. (P 3.2)	Ongoing. Host one event in the Summer.	DPW & DPR	General transportation fund; federal funding; can use volunteers for outreach
Public Awareness Campaigns	*Goal 3- Education* Develop communication materials aimed to improve safety for bicyclists and motorists. (IA 3.1.2)	Every 2 to 4 years.	DPW	General transportation fund; federal funding; donations from transit agencies and advertising/media
Bicycle Patrol Unit	*Goal 2- Safety* Support traffic enforcement activities that increase bicyclists' safety. (P 2.3)	Ongoing.	CHP, Sheriff's Dept. and local law enforcement	Law enforcement budgets
Bicycle Light Enforcement	*Goal 2- Safety* Encourage targeted enforcement activities in areas with high bicycle and pedestrian volumes. (IA 2.3.2)	Ongoing.	CHP, Sheriff's Dept. and local law enforcement	General transportation fund; law enforcement budgets; federal funding

Table 5-6: Programs Implementation Recommendations (continued)

Program	Nexus with Chapter 2	Timeframe	Lead Agency	Possible Funding Sources
Valet Bike Parking at Events	*Goal 4: Encouragement* Support organized rides or cycling events. (P 4.1)	Ongoing. In coordination with annual bicycle events.	DPW	Mostly volunteer effort
Bicycle Sharing Program	*Goal 4: Encouragement* Develop a regionally consistent bicycle sharing program for Los Angeles County (IA 4.2.4)	Ongoing.	DPW	LACMTA
Local Partnerships for More Bicycle Parking	*Goal 1: Bikeway System* Ensure the provision of convenient and secure end-of-trip facilities at key destinations. (IA 1.4.3)	Ongoing.	DPW	General transportation fund; donations from transit agencies and local businesses

5.4 Funding Sources

This section explores the available funding opportunities for implementing the proposed bikeway network from **Chapter 3**. It is important to note that the County will pursue funding for education, encouragement, enforcement, and monitoring and evaluation programs along with the proposed bikeway projects as implementation of the Plan moves forward. Potential funding sources for bicycle projects, programs, and plans can be found at all levels of government. This section covers federal, state, and regional sources of bicycle funding, as well as some non-traditional funding sources that may be used for bicycle projects. All the projects are recommended for implementation over the next five to 20 years, or as funding is available. The more expensive projects may take longer to implement. In addition, many funding sources are highly competitive. Therefore, it is not possible to determine exactly which projects will be funded by which funding sources. The information in **Table 5-7** below is intended as a general guide to funding sources. County staff should refer to current guidelines provided by the granting agency when pursuing any funding opportunity.

Table 5-7: Bikeway Improvements Funding Source Summary

Funding Source	Due Date*	Administering Agency	Annual Total	Matching Requirement	Eligible Applicants	Planning	Infrastructure	Other	Comments
Federally-Administered Funding									
Transportation, Community and System Preservation Program**	Varies, generally January or February.	Federal Transit Administration	$204 million nationally in 2009	20%	States, MPOs, local governments and tribal agencies	X	X	X	Because TCSP program is one of many programs authorized under SAFETEA-LU, current funding has only been extended through March 4 of 2011, and program officials are not currently accepting applications for 2011. In most years, Congress has identified projects to be selected for funding through the TCSP program. TAMC will need to work with AMBAG, Caltrans and Members of Congress to gain access to this funding.
Federal Lands Highway Programs**	Not available	Federal Highway Administration	$1,019 million nationally in 2009	Not applicable	States	X	X	-	Grant funds are allocated for highways, roads, and parkways (which can include bicycle and pedestrian facilities) and transit facilities that provide access to or within public lands, national parks, and Indian reservations.
Rivers, Trails and Conservation Assistance Program	Aug 1 for the following fiscal year	National Parks Service	Program staff time is awarded.	Not applicable	Public agencies	-	-	X	RTCA staff provides technical assistance to communities to conserve rivers, preserve open space, and develop trails and greenways. The program provides only for planning assistance – there are no implementation monies available.

Table 5-7: Bikeway Improvements Funding Source Summary (continued)

Funding Source	Due Date*	Administering Agency	Annual Total	Matching Requirement	Eligible Applicants	Planning	Infrastructure	Other	Comments
Partnership for Sustainable Communities	Not applicable	Environmental Protection Agency (EPA), the U.S. Department of Housing and Urban Development (HUD), and the U.S. Department of Transportation (USDOT)	Varies	Not applicable	Varies by grant	X	X	X	Though not a formal agency, the Partnership for Sustainable Communities is a joint project of the EPA, the HUD, and the USDOT. One goal of the project is to expand transportation options that improve air quality and public health, which has already resulted in several new grant opportunities (including TIGER I and TIGER II grants). The County should track communications and be prepared to respond proactively to announcements of new grant programs.
Surface Transportation Program**	Not available	Federal Highway Administration	$6,577 million nationally in 2009	Not applicable	States and local governments	X	X	X	Grants fund projects on any federal-aid highway. Bicycle and pedestrian improvements include on-street facilities, off-street paths, sidewalks, crosswalks, bicycle and pedestrian signals, parking, and other ancillary facilities. Non-construction projects, such as maps, bicycle/pedestrian coordinator positions, and encouragement programs are eligible. The modification of sidewalks to comply with the requirements of the Americans with Disabilities Act (ADA) is also an eligible activity.

Table 5-7: Bikeway Improvements Funding Source Summary (continued)

Funding Source	Due Date*	Administering Agency	Annual Total	Matching Requirement	Eligible Applicants	Planning	Infrastructure	Other	Comments
Congestion Mitigation and Air Quality (CMAQ)**	Not available	Federal Highway Administration and Federal Transit Administration	$1,777 million nationally in 2009	Not applicable	States and Metropolitan Planning Organizations in air quality non-attainment and maintenance areas	X	X	X	Funds are allocated for transportation projects that aim to reduce transportation related emissions. Funds can be used for construction of bicycle transportation facilities and pedestrian walkways or for non-construction projects related to safe bicycling and walking (i.e. maps and brochures).
Transportation Enhancements**	Not available	Federal Highway Administration	10 percent of State Transportat ion Program funds	Not applicable	States	X	X	X	Funds are a set-aside of Surface Transportation Program (STP) monies designated for Transportation Enhancement (TE) activities, which include the pedestrians and bicycles facilities, safety and educational activities for pedestrians and bicyclists, and the preservation of abandoned railway corridors (including the conversion and use thereof for pedestrian and bicycle trails).
Highway Safety Improvement Program**	October	Federal Highway Administration	$1,296 million nationally in 2009	Varies between 0% and 10%	City, county or federal land manager	X	X	X	Funds projects on publicly-owned roadways or bicycle/pedestrian pathways or trails that address a safety issue and may include education and enforcement programs. This program includes the Railroad-Highway Crossings and High Risk Rural Roads programs.

Table 5-7: Bikeway Improvements Funding Source Summary (continued)

Funding Source	Due Date*	Administering Agency	Annual Total	Matching Requirement	Eligible Applicants	Planning	Infrastructure	Other	Comments
Community Development Block Grants	Varies between grants	U.S. Dept. of Housing and Urban Development (HUD)	$42.8 m	Varies between grants	City, county	X	X	X	Funds local community development activities such as affordable housing, anti-poverty programs, and infrastructure development. Can be used to build sidewalks and recreational facilities.
Recreational Trails Program**	October	CA Dept. of Parks and Recreation	$1.3 m in 2010	12%	Agencies and organizations that manage public lands	X	X	X	Provides funds to states for acquisition of easements for trails from willing sellers, maintenance and restoration of existing trails, construction of new paved or unpaved trails, and operation of educational programs to promote safety and environmental protection related to trails.
Federal Safe Routes to School**	Mid-July	Federal Highway Administration	Max. funding cap for infra-structure project: $1 million. Max funding cap for non-infrastructure project: 500,000	Not applicable	State, city, county, MPOs, RTPAs and other organizations that partner with one of the above.	X	X	X	Grant funds for infrastructure and non-infrastructure projects. Infrastructure projects are engineering projects or capital improvements that will substantially improve safety and the ability of students to walk and bicycle to school. Non-infrastructure projects are education/encouragement/enforcement activities that are intended to change community behavior, attitudes, and social norms to make it safer for children in grades K-8 to walk and bicycle to school.

Table 5-7: Bikeway Improvements Funding Source Summary (continued)

Funding Source	Due Date*	Administering Agency	Annual Total	Matching Requirement	Eligible Applicants	Planning	Infrastructure	Other	Comments
Community Transformation Grant	July	Centers for Disease Control and Prevention	$50,000-10,000,000 per applicant	Not applicable	State and local governmental agencies, tribes and territories, and national and community-based organizations	X	-	X	Funding is available to support evidence and practice-based community and clinical prevention and wellness strategies that will lead to specific, measurable health outcomes to reduce chronic disease rates. Bicycle and pedestrian improvements are applicable as they encourage physical activity, which has been proven to reduce the risks of diseases associated with inactivity.
State-Administered Funding									
Bicycle Transportation Account	March	Caltrans	$7.2 million	Minimum 10% local match on construction	Public agencies	X	X	X	Funds bicycle projects that improve safety and convenience of bicycle commuters. In addition to construction and planning, funds may be used for right of way acquisition.
California Safe Routes to School	Varies	Caltrans	$24.5 million	10%	Cities and counties	-	X	X	SR2S is primarily a construction program to enhance safety of pedestrian and bicycle facilities near schools.
State Transportation Improvement Program (STIP)	December	Caltrans	Varies	Not applicable	Cities	X	X	X	The STIP is a multi-year capital improvement program of transportation projects on and off the State Highway System, funded with revenues from the Transportation Investment Fund and other funding sources.
State Coastal Conservancy	Rolling	State Coastal Conservancy	Varies	Not applicable	Public agencies, non-profit organizations	X	X	X	Projects must be in accordance with Division 21 and meet the goals and objectives of the Conservancy's strategic plan. More information can be found at http://scc.ca.gov/applying-for-grants-and-assistance/forms.

Table 5-7: Bikeway Improvements Funding Source Summary (continued)

Funding Source	Due Date*	Administering Agency	Annual Total	Matching Requirement	Eligible Applicants	Planning	Infrastructure	Other	Comments
Community Based Transportation Planning	March	Caltrans	$3 million	20%	MPO, city, county	-	X	-	Eligible projects that exemplify livable community concepts including enhancing bicycle and pedestrian access.
Land and Water Conservation Fund	March	NPS, CA Dept. of Parks and Recreation	$2.3 million in CA in 2009	50% + 2-6% administration surcharge	Cities, counties and districts authorized to operate, acquire, develop and maintain park and recreation facilities	X	-	X	Fund provides matching grants to state and local governments for the acquisition and development of land for outdoor recreation areas. Lands acquired through program must be retained in perpetuity for public recreational use. Individual project awards are not available. The Department of Parks and Recreation levies a surcharge for administering the funds. The LCWF could fund the development of river-adjacent bicycle facilities.
Environmental Enhancement and Mitigation Program	October	California Natural Resources Agency	$10 million	Not applicable	Federal, State, local agencies and MPO	-	X	X	Support projects that offset environmental impacts of modified or new public transportation facilities. These projects can include highway landscaping and urban forestry projects, roadside recreation projects, and projects to acquire or enhance resource lands. EEMP funds projects in California, at an annual project average of $250,000. Funds may be used for land acquisition.

Table 5-7: Bikeway Improvements Funding Source Summary (continued)

Funding Source	Due Date*	Administering Agency	Annual Total	Matching Requirement	Eligible Applicants	Planning	Infrastructure	Other	Comments
State Highway Operations and Protection Program (SHOPP)	Not Available	Caltrans	$1.69 million statewide annually through FY 2013/14	Not Available	Local and regional agencies	-	X	X	Capital improvements and maintenance projects that relate to maintenance, safety and rehabilitation of state highways and bridges.
Office of Traffic Safety (OTS) Grants	January	Caltrans	Varies annually - $82 million statewide in FY 2009/2010	Not applicable	Government agencies, state colleges, state universities, city, county, school district, fire department, public emergency service provider	-	-	X	Funds are used to establish new traffic safety programs, expand ongoing programs, or address deficiencies in current programs. Bicycle safety is included in the list of traffic safety priority areas. Grant funding cannot replace existing program expenditures, nor can traffic safety funds be used for program maintenance, research, rehabilitation, or construction. Evaluation criteria to assess needs include potential traffic safety impact, collision statistics and rankings, seriousness of problems, and performance on previous OTS grants.

Table 5-7: Bikeway Improvements Funding Source Summary (continued)

Funding Source	Due Date*	Administering Agency	Annual Total	Matching Requirement	Eligible Applicants	Planning	Infrastructure	Other	Comments
Regional- and Local-Administered Funding									
Transportation Development Act (TDA) Article 3 (SB 821)	January	LACMTA	Varies	Not applicable	Cities and counties	-	X	X	Funds are a percentage of the state sales tax given annually to local jurisdictions for bicycle and pedestrian projects. Funds may be used for engineering expenses leading to construction, right-of-way acquisition, construction and reconstruction, retrofitting existing facilities, route improvements, and bicycle support facilities.
Metro Call for Projects (CFP)***	January	LA Metro	Varies annually	Not applicable	Public agencies that provide transportation facilities or services within Los Angeles County	X	X	X	Co-funds new regionally significant capital projects that improve all modes of surface transportation. Relevant categories include Bikeway Improvements; Regional Surface Transportation Improvements; Transportation Enhancement Activities; Transportation Demand Management; and Pedestrian Improvements.
Proposition A	N/A	LA County	Varies	Not applicable	Cities and unincorporated communities in LA County				A half-cent sales tax dedicated to transportation funding. One-fourth of the funds go to Local Return Programs. The monies help these entities develop and improve local public transit, paratransit, and related transportation infrastructure

Table 5-7: Bikeway Improvements Funding Source Summary (continued)

Funding Source	Due Date*	Administering Agency	Annual Total	Matching Requirement	Eligible Applicants	Planning	Infrastructure	Other	Comments
Proposition C	N/A	LACMTA	Varies	Not applicable	Cities and unincorporated communities in LA County	-	-	-	Revenues are allocated into categories including Rail & Bus Security; Commuter Rail, Transit Centers and Park and Ride Lots; Local Return; and, Transit Related Improvements to Streets and Highways. Supports projects and programs developed with Prop A funds.
Measure R	N/A	LACMTA	Varies	Not applicable	Cities and unincorporated communities in LA County	X	X	X	A half-cent sales tax to finance new transportation projects and programs, and accelerate many of those already in process.
Adopt-A-Trail Programs	Not applicable	Local trail commission or non-profit	Varies	Not applicable	Local governments	-	X	X	These programs used to fund new construction, renovation, trail brochures, informational kiosks and other amenities. These programs can also be extended to include sponsorship of trail segments for maintenance needs.
Other Funding Sources									
Vehicle Impact Fees	Not applicable	LA County	Not Available	Not Available	Local communities affected by development projects	-	X	-	These fees are typically tied to trip generation rates and traffic impacts produced by a proposed project. A developer may reduce or mitigate the number of trips by paying for on- and off-site bikeway improvements that encourage residents to bicycle rather than drive. Establishing a clear connection between the impact fee and the project's impacts is critical.

Table 5-7: Bikeway Improvements Funding Source Summary (continued)

Funding Source	Due Date*	Administering Agency	Annual Total	Matching Requirement	Eligible Applicants	Planning	Infrastructure	Other	Comments
Bikes Belong Grant	Multiple dates throughout year.	Bikes Belong	Not Available	50% minimum	Organizations and agencies	-	X	X	Bikes Belong provides grants for up to $10,000 with a 50% match that recipients may use towards paths, bridges and parks.
Robert Wood Johnson Foundation (RWJF)	Multiple dates throughout year.	RWJF	$2,000 to $14 M	Not Available	Organizations and agencies	-	X	-	The RWJF funds aim to improve health and health care in the United States. RWJF funds approximately 12 percent of unsolicited projects. Bicycle and pedestrian projects applying for RWJF funds qualify under the program's goal to "promote healthy communities and lifestyles."

** Due dates are subject to change due to pending authorization of a new federal transportation bill.*

*** Program is one of many programs authorized under SAFETEA-LU and current funding has only been extended through March 31, 2012.*

**** Refer to Table 5-8 for more information on eligible project types*

Regional Funding Sources

LACMTA is responsible for allocating discretionary federal, state, and local transportation funds to improve all modes of surface transportation. LACMTA also prepares the Los Angeles County Transportation Improvement Program (TIP). A key component of TIP is the Call for Projects program, a competitive process that distributes discretionary capital transportation funds to regionally-significant projects.

Every other year (pending funding availability), LACMTA accepts Call applications in several modal categories. Funding levels for each of the modes is established by mode share as determined by the LACMTA Long Range Transportation Plan (LRTP). As of the writing of this Plan, the Call is currently on an odd-year funding cycle with applications typically due early in the odd years. Local jurisdictions, transit operators, and other eligible public agencies may submit applications proposing projects for funding. LACMTA staff ranks eligible projects and presents preliminary scores for approval to LACMTA's Technical Advisory Committee (TAC), which is made up of members of public agencies and the LACMTA's Board of Directors. Upon approval, the TIP is updated and formally transmitted to the Southern California Association of Governments (SCAG) and the California Transportation Commission (CTC) planning agencies. The TIP then becomes part of the five-year program of projects scheduled for implementation in the County of Los Angeles.

The modal categories relevant to the implementation of bicycle projects and programs are Bikeway Improvements, Regional Surface Transportation Improvements (RSTI), Transportation Enhancements Activation (TEA), and Transportation Demand Management (TDM). Typically, funding provided for bicycle improvements under the Call comes from different sources including SAFETEA-LU, Regional Surface Transportation Program (RSTP), Transportation Enhancement (TE), and CMAQ. Wherever possible, projects from this Plan should be included as part of larger arterial improvement projects and submitted under the RSTI category. Other regional funding sources include the Policies for Livable, Active Communities and Environments (PLACE) grant, and the Regional Parks and Open Space District (RPOSD) grants. The Los Angeles County Department of Public Health's PLACE Program in 2008 awarded approximately $100,000 per year over a three-year period to five agencies to initiate policy changes and physical projects to enhance the built environment and increase physical activity among community residents. The funded projects include bicycle plans, a Safe and Healthy Streets Plan, and several bicycle corridor improvements. The RPOSD grants program allocated $859 million to date for acquisition, development and rehabilitation of open space, and improvement of recreation facilities to several regional agencies within the County. Grant funds from RPOSD are administered through the Specified Project, Per Parcel Discretionary, and Excess Funds Grant Programs.[38]

Table 5-8 provides information on each of the relevant modal categories within the LACMTA Call for Projects as of 2011.

[38] *For more information about RPOSD grants refer to: Grant Program Procedural Guide, June 2009. Available at http://openspacedistrict.lacounty.info/cms1_139608.pdf*

Table 5-8: LACMTA Call for Projects (Bicycle Related)

Modal Category	Share of Funding*	Eligible Projects**
Bikeway Improvements	8%	Regionally-significant projects that provide access and mobility through bike-to-transit improvements, gap closures in the inter-jurisdictional bikeway network, bicycle parking, and first-time implementation of bicycle racks on buses.
Regional Surface Transportation Improvements (RSTI)	40%	On-street bicycle lanes may be eligible if included as part of a larger capacity-enhancing arterial improvement project. Bikeway grade-separation projects may be eligible as part of larger arterial grade-separation projects.
Transportation Enhancement Activities (TEA)	2%	Bicycle-related safety and education programs. Bikeway projects implemented as part of a scenic or historic highway, and landscaping or scenic beautification along existing bikeways may also be eligible.
Transportation Demand Management (TDM)	7%	Technology and/or innovation-based bicycle transportation projects such as Bicycle Commuter Centers and modern bicycle sharing infrastructure. Larger TDM strategies with bicycle transportation components would also be eligible.

**Funding estimate is biennial (every other year) based on the approved funding from the 2009 Call.*

***The discussion of eligible projects is based on 2009 CFP requirements and assumes all eligibility requirements are met and the questions in the Call application are adequately addressed. These requirements are subject to change in future cycles. County staff should refer to the latest Call Application Package for detailed eligibility requirements.*

See http://www.metro.net/projects_studies/call_projects/images/2011-Call-for-Projects-Application.pdf

Under the 2011 Draft Guidelines, the following projects are eligible for Bikeways Improvement funding:

- Bicycle parking (racks or lockers); membership-based attended or unattended high-capacity bicycle-parking facility (20 spaces and above) at major destinations or transit stations (examples are: store fronts, bike rooms, or sheltered rack parking with bicycle-information kiosk).
- On-street improvements to increase bicycle access to transit hubs (see 2006 BTSP Section 3 for bike-transit hubs).
- Wayfinding and directional signage to major destinations and transit stations, as part of a larger bikeway project.
- Bike sharing programs.

- Road diet (lane reduction to add bike lanes, center left-turn lanes, and intersection improvements for bikes – be aware that this cannot be on a street that received RSTI funds to widen for car lanes in the last seven years).
- Class II bike lanes or Class I bike path projects that improve continuity to other bicycle facilities (i.e., gap closures).
- Enhanced Class III bike routes or bicycle priority streets (i.e., bicycle boulevards) that modify a roadway to prioritize bicycle throughput and divert cut-through motor traffic (treatments such as signage, pavement legends, roundabouts, diverters, curb extensions, highly visible crossings, stop signs or cross streets, etc.).
- Sharrows on identified bike routes (see Caltrans Traffic Operations Policy Directive 05-10).

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PREPARED BY:
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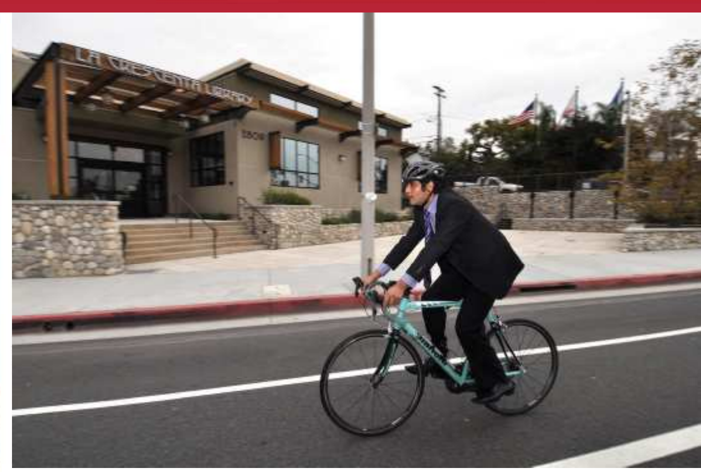
County of Los Angeles

Bicycle Master Plan

Appendices A-K



County of Los Angeles Bicycle Master Plan Appendices

Prepared for:

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Appendix A. Bicycle Transportation Account (BTA) Check List

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The Bicycle Transportation Account (BTA) is an annual program that provides state funds for City and County projects that improve safety and convenience for bicycle commuters. The County must prepare and adopt a Bicycle Transportation Plan (BTP) that complies with Streets and Highways Code Section 891.2 to be eligible for BTA funds. **Table A-1** presents these eleven criteria and identifies the section of the Plan that contains each element.

Table A-1: County of Los Angeles Bicycle Master Plan BTA Requirement Check List

Approved	Required Plan Elements		Page(s)
	(a)	Existing and future bicycle commuters	
		Appendix B , Tables B-1 to B-10	p. B-3 to B-21
	(b)	Existing and proposed land use patterns description and maps	
		Description Chapter 1	p. 4
		Description by Planning Areas, Chapter 3	p. 27 to 145
		Figures D-1 to D-10	p. D-3 to D-12
	(c)	Existing and proposed bikeways description and maps	
		Table i-1	p. xv
		Description by Planning Areas, Chapter 3	p. 27
		Figures 3-2, 3-3, 3-4, 3-5	p. 35, 36, 37, 38
		Figures by Planning Areas: Figure 3-6 to 3-38	p. 43 to 145
	(d)	Existing and proposed bicycle parking description and map	
		Description, Appendix E	p. E-3
		Figures E-1- E-10	p. E-4, E-13
	(e)	Existing and proposed multimodal connections description and maps	
		Description by Planning Area, Chapter 3	p. 27
		Figures 3-6, 3-10, 3-14, 3-17, 3-21, 3-24, 3-27, 3-29, 3-32 & 3-36	p. 43 to 139
		Figures E-1 to E-10	p. E-4 to E-13
	(f)	Existing and proposed changing and storage facilities description and map	
		Description, Appendix E	p. E-3
		Figures E-1 to E-10	p. E-4 to E-13
	(g)	Bicycle safety and education programs with safety collision analysis	
		Description By Planning Area, Chapter 3	p. 27 to 145
		Description, Chapter 4	p. 147 to 162
	(h)	Citizen and community involvement	
		Description, Section 1.4	p. 7
	(i)	Consistency with transportation, air quality, and energy plans	
		Description, Chapter 2	p. 13 to 25
		Description, Appendix C	p. C-3 to C-32
	(j)	Proposed projects and priority implementation	
		Tables by Planning Areas: 3-5, 3-9, 3-13, 3-17, 3-21, 3-25, 3-29, 3-33, 3-36 & 3-40	p. 38 to 145
		Description, Chapter 5	p. 163
		Table 5-5	p. 170
		Appendix I	P. I-1

Table A-1: County of Los Angeles Bicycle Master Plan BTA Requirement Check List

Approved	Required Plan Elements		Page(s)
	(k)	Past expenditures for bicycle facilities and future financial needs	
		Description, Chapter 5	p. 163
		Appendix H	p. H-1 to H-6

Source: Alta Planning + Design, November 2011

Appendix B. Ridership and Air Quality Benefits

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This appendix presents an adjusted estimate of current bicycling levels within unincorporated areas of the County of Los Angeles. The analysis is based on County and U.S. Census data along with several adjustments for likely bicycle commuter underestimations. This study uses models to estimate the positive air quality impacts associated with existing and future bicycle and pedestrian travel within the study area. Non-motorized travel directly and indirectly translates into fewer vehicle trips and an associated reduction in vehicle miles traveled and auto emissions.

The model input variables generally follow industry standards for demand models, including study area population, employed persons and commute mode share. Other inputs include data on college student and school children commuting patterns. Additional assumptions were used to estimate the number of reduced vehicle trips and vehicle miles traveled, as well as vehicle emissions reductions. The analysis assumes that 73 percent of bicycling trips will directly replace vehicle trips for adults and college students, and a 53 percent reduction in vehicular trips for school children.

To estimate the reduction of existing and future vehicle miles traveled, this analysis assumes a bicycle roundtrip distance of eight miles for adults and college students, and one mile for school children. These distance assumptions are consistent with industry-standard non-motorized benefits models. The vehicle emissions reduction estimates also incorporate calculations commonly used in other models, and are identified in the footnotes of each table.

B.1 Antelope Valley Planning Area

The benefits model predicts that by 2030 the total number of bicycle commuters could increase from the current estimate of 744 to 2,714, resulting in an estimated decrease of 26 pounds of hydrocarbons per weekday, 18 pounds of mono-nitrogen oxides (NO_x) per weekday, 26 pounds of PM10 (particulate matter) per year, and 1,825,446 pounds of carbon dioxide (CO_2) per year by 2030.

Table B-1: Antelope Valley Planning Area Current / Future Demand and Air Quality Benefits Estimates

Variable	Current Value	Future Value	Source (1)	Source (2)
Demographics				
Study area population	103,451	255,364	*Los Angeles County General Plan Update(2008)*	
Employed population	41,648	110,202	*Estimate based on 2005-2007 American Community Survey, B0801 3-Year Percentages*	*Antelope Valley Area Plan Update, Background Report, April 2009*
Bike-to-work mode share	0.10%	0.15%	*2005-2007 American Community Survey, B0801 3-Year Estimates*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
Number of bike-to-work commuters	42	165	*Employed persons multiplied by bike-to-work mode share*	
Work-at-home mode share	3.50%	4.00%	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Estimate based on historic work-at-home population growth (or decline) trends*
Number of work-at-home bike commuters	3	88	*Assumes 0.2% of population working at home makes at least one daily bicycle trip*	*Assumes 2% of population working at home makes at least one daily bicycle trip*

Table B-1: Antelope Valley Planning Area Current / Future Demand and Air Quality Benefits Estimates (continued)

Variable	Current Value	Future Value	Source (1)	Source (2)
Transit-to-work mode share	0.60%	1.00%	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Estimate of the potential mode share increase (or decrease) associated with planned/proposed bikeway system improvements and transit service improvements/reductions*
Transit bicycle commuters	3	276	*Employed persons multiplied by transit mode share. Assumes 1.2% of transit riders access transit by bicycle*	*Employed persons multiplied by transit mode share. Assumes 25% of transit riders access transit by bicycle*
School children, ages 6-14 (grades K-8)	13,301	26,563	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Population-based estimate*
School children bicycling mode share	2.00%	4.00%	*National Safe Routes to School surveys, 2003.*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
School children bike commuters	266	1,063	*School children population multiplied by school children bike mode share*	*School children population multiplied by school children bicycling mode share*
Number of college students in study area	4,303	8,633	*2005-2007 American Community Survey, B14001 3-Year Estimates*	*Population-based estimate*
Estimated college bicycling mode share	10.00%	13.00%	*Review of bicycle commute share in seven university communities (source: National Bicycling & Walking Study, FHWA, Case Study No. 1, 1995).*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
College bike commuters	430	1,122	*College student population multiplied by college student bicycling mode share*	
Total number of bike commuters	744	2,714	*Total bike-to-work, school, college and utilitarian bike trips. Does not include recreation.*	
Total daily bicycling trips	1,487	5,427	*Total bicycle commuters x 2 (for round trips)*	
Current Estimated VMT Reductions				
Reduced Vehicle Trips per Weekday	488	1,567	*Assumes 73% of bicycle trips replace vehicle trips for adults/college students and 53% for school children*	
Reduced Vehicle Trips per Year	127,273	409,095	*Reduced number of weekday vehicle trips multiplied by 261 (weekdays in a year)*	
Reduced Vehicle Miles per Weekday	2,914	8,597	*Assumes average round trip travel length of 8 miles for adults/college students and 1 mile for schoolchildren*	
Reduced Vehicle Miles per Year	760,594	2,243,926	*Reduced number of weekday vehicle miles multiplied by 261 (weekdays in a year)*	
Current Air Quality Benefits Estimates				
Reduced Hydrocarbons (pounds/weekday)	9	26	*Daily mileage reduction multiplied by 1.36 grams per reduced mile*	
Reduced PM10 (pounds/weekday)	0	<1	*Daily mileage reduction multiplied by 0.0052 grams per reduced mile*	
Reduced PM2.5 (pounds/weekday)	0	<1	*Daily mileage reduction multiplied by 0.0049 grams per reduced mile*	
Reduced NO_X (pounds/weekday)	6	18	*Daily mileage reduction multiplied by 0.95 grams per reduced mile*	
Reduced CO (pounds/weekday)	80	235	*Daily mileage reduction multiplied by 12.4 grams per reduced mile*	

Table B-1: Antelope Valley Planning Area Current / Future Demand and Air Quality Benefits Estimates (continued)

Variable	Current Value	Future Value	Source (1)	Source (2)
Reduced $C0_2$ (pounds/weekday)	2,371	6,994	*Daily mileage reduction multiplied by 369 grams per reduced mile*	
Reduced Hydrocarbons (pounds/year)	2,280	6,728	*Yearly mileage reduction multiplied by 1.36 grams per reduced mile*	
Reduced PM10 (pounds/year)	9	26	*Yearly mileage reduction multiplied by 0.0052 grams per reduced mile*	
Reduced PM2.5 (pounds/year)	8	24	*Yearly mileage reduction multiplied by 0.0049 grams per reduced mile*	
Reduced NO_X (pounds/year)	1,593	4,700	*Yearly mileage reduction multiplied by 0.95 grams per reduced mile*	
Reduced CO (pounds/year)	20,793	61,343	*Yearly mileage reduction multiplied by 12.4 grams per reduced mile*	
Reduced $C0_2$ (pounds/year)	618,747	1,825,446	*Yearly mileage reduction multiplied by 369 grams per reduced mile*	

(Emissions rates from EPA report 420-F-05-022 "Emission Facts: Average Annual Emissions and Fuel Consumption for Gaso Fueled Passenger Cars and Light Trucks." 2005.)

B.2 East San Gabriel Valley Planning Area

The benefits model predicts that by 2030 the total number of bicycle commuters could increase from the current estimate of 4,198 to 11,401, resulting in an estimated decrease of 132 pounds of hydrocarbons per weekday, 92 pounds of mono-nitrogen oxides (NO_x) per weekday, 132 pounds of PM10 (particulate matter) per year, and 9,341,105 pounds of carbon dioxide (CO_2) per year.

Table B-2: East San Gabriel Valley Planning Area Current / Future Demand and Air Quality Benefits Estimates

Variable	Current Value	Future Value	Source (1)	Source (2)
Demographics				
Study area population	274,374	371,842	*Los Angeles County General Plan Update (2008)*	
Employed population	41,655	49,187	*LAFCO MSR Report*	
Bike-to-work mode share	2.00%	4.00%	*2005-2007 American Community Survey, B0801 3-Year Estimates*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
Number of bike-to-work commuters	814	1,967	*Employed persons multiplied by bike-to-work mode share*	
Work-at-home mode share	6.80%	8.60%	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Estimate based on historic work-at-home population growth (or decline) trends*
Number of work-at-home bike commuters	20	85	*Assumes 0.7% of population working at home makes at least one daily bicycle trip*	*Assumes 2% of population working at home makes at least one daily bicycle trip*

Table B-2: East San Gabriel Valley Planning Area Current / Future Demand and Air Quality Benefits Estimates (continued)

Variable	Current Value	Future Value	Source (1)	Source (2)
Transit-to-work mode share	9.60%	12.20%	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Estimate of the potential mode share increase (or decrease) associated with planned/proposed bikeway system improvements and transit service improvements/reductions*
Transit bicycle commuters	48	1,495	*Employed persons multiplied by transit mode share. Assumes 1.2% of transit riders access transit by bicycle*	*Employed persons multiplied by transit mode share. Assumes 25% of transit riders access transit by bicycle*
School children, ages 6-14 (grades K-8)	44,600	65,258	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Population-based estimate*
School children bicycling mode share	2.00%	4.00%	*National Safe Routes to School surveys, 2003.*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
School children bike commuters	892	2,610	*School children population multiplied by school children bike mode share*	*School children population multiplied by school children bicycling mode share*
Number of college students in study area	24,242	34,960	*2005-2007 American Community Survey, B14001 3-Year Estimates*	*Population-based estimate*
Estimated college bicycling mode share	10.00%	15.00%	*Review of bicycle commute share in seven university communities (source: National Bicycling & Walking Study, FHWA, Case Study No. 1, 1995).*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
College bike commuters	2,424	5,244	*College student population multiplied by college student bicycling mode share*	
Total number of bike commuters	4,198	11,401	*Total bike-to-work, school, college and utilitarian bike trips. Does not include recreation.*	
Total daily bicycling trips	8,396	22,803	*Total bicycle commuters x 2 (for round trips)*	
Estimated VMT Reductions				
Reduced Vehicle Trips per Weekday	2,851	6,710	*Assumes 73% of bicycle trips replace vehicle trips for adults/college students and 53% for school children*	
Reduced Vehicle Trips per Year	744,140	1,751,268	*Reduced number of weekday vehicle trips multiplied by 261 (weekdays in a year)*	
Reduced Vehicle Miles per Weekday	19,500	43,994	*Assumes average round trip travel length of 8 miles for adults/college students and 1 mile for schoolchildren*	
Reduced Vehicle Miles per Year	5,089,390	11,482,531	*Reduced number of weekday vehicle miles multiplied by 261 (weekdays in a year)*	
Air Quality Benefits Estimates				
Reduced Hydrocarbons (pounds/weekday)	58	132	*Daily mileage reduction multiplied by 1.36 grams per reduced mile*	
Reduced PM10 (pounds/weekday)	<1	1	*Daily mileage reduction multiplied by 0.0052 grams per reduced mile*	
Reduced PM2.5 (pounds/weekday)	<1	<1	*Daily mileage reduction multiplied by 0.0049 grams per reduced mile*	
Reduced NO_X (pounds/weekday)	41	92	*Daily mileage reduction multiplied by 0.95 grams per reduced mile*	
Reduced CO (pounds/weekday)	533	1,203	*Daily mileage reduction multiplied by 12.4 grams per reduced mile*	

Table B-2: East San Gabriel Valley Planning Area Current / Future Demand and Air Quality Benefits Estimates (continued)

Variable	Current Value	Future Value	Source (1)	Source (2)
Reduced CO_2 (pounds/weekday)	15,863	35,790	*Daily mileage reduction multiplied by 369 grams per reduced mile*	
Reduced Hydrocarbons (pounds/year)	15,259	34,428	*Yearly mileage reduction multiplied by 1.36 grams per reduced mile*	
Reduced PM10 (pounds/year)	58	132	*Yearly mileage reduction multiplied by 0.0052 grams per reduced mile*	
Reduced PM2.5 (pounds/year)	55	124	*Yearly mileage reduction multiplied by 0.0049 grams per reduced mile*	
Reduced NO_x (pounds/year)	10,659	24,049	*Yearly mileage reduction multiplied by 0.95 grams per reduced mile*	
Reduced CO (pounds/year)	139,130	313,902	*Yearly mileage reduction multiplied by 12.4 grams per reduced mile*	
Reduced CO_2 (pounds/year)	4,140,248	9,341,105	*Yearly mileage reduction multiplied by 369 grams per reduced mile*	

(Emissions rates from EPA report 420-F-05-022 "Emission Facts: Average Annual Emissions and Fuel Consumption for Gaso Fueled Passenger Cars and Light Trucks." 2005.)

B.3 Gateway Planning Area

The benefits model predicts that by 2030 the total number of bicycle commuters could increase from the current estimate of 1,673 to 4,717, resulting in an estimated decrease of 50 pounds of hydrocarbons per weekday, 35 pounds of mono-nitrogen oxides (NO_x) per weekday, 50 pounds of PM10 (particulate matter) per year, and 3,519,069 pounds of carbon dioxide (CO_2) per year.

Table B-3: Gateway Planning Area Current / Future Demand and Air Quality Benefits Estimates

Variable	Current Value	Future Value	Source (1)	Source (2)
Demographics				
Study area population	129,247	142,829	*Los Angeles County General Plan Update (2008)*	
Employed population	83,435	93,006	*Los Angeles County General Plan Update (2008)*	
Bike-to-work mode share	0.29%	1.00%	*2005-2007 American Community Survey, B0801 3-Year Estimates*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
Number of bike-to-work commuters	243	930	*Employed persons multiplied by bike-to-work mode share*	
Work-at-home mode share	1%	2.00%	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Estimate based on historic work-at-home population growth (or decline) trends*
Number of work-at-home bike commuters	5	74	*Assumes 0.44% of population working at home makes at least one daily bicycle trip*	*Assumes 4% of population working at home makes at least one daily bicycle trip*
Transit-to-work mode share	2%	4.00%	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Estimate of the potential mode share increase (or decrease) associated with planned/proposed bikeway system improvements and transit service improvements/reductions*

Table B-3: Gateway Planning Area Current / Future Demand and Air Quality Benefits Estimates (continued)

Variable	Current Value	Future Value	Source (1)	Source (2)
Transit bicycle commuters	17	930	*Employed persons multiplied by transit mode share. Assumes 1.2% of transit riders access transit by bicycle*	*Employed persons multiplied by transit mode share. Assumes 25% of transit riders access transit by bicycle*
School children, ages 6-14 (grades K-8)	23,406	26,083	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Population-based estimate*
School children bicycling mode share	2%	4.00%	*National Safe Routes to School surveys, 2003.*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
School children bike commuters	468	1,043	*School children population multiplied by school children bike mode share*	*School children population multiplied by school children bicycling mode share*
Number of college students in study area	9,397	11,592	*2005-2007 American Community Survey, B14001 3-Year Estimates*	*Population-based estimate*
Estimated college bicycling mode share	10%	15.00%	*Review of bicycle commute share in seven university communities (source: National Bicycling & Walking Study, FHWA, Case Study No. 1, 1995).*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
College bike commuters	940	1,739	*College student population multiplied by college student bicycling mode share*	
Total number of bike commuters	1,673	4,717	*Total bike-to-work, school, college and utilitarian bike trips. Does not include recreation.*	
Total daily bicycling trips	3,345	9,433	*Total bicycle commuters x 2 (for round trips)*	
Estimated VMT Reductions				
Reduced Vehicle Trips per Weekday	1,115	2,556	*Assumes 73% of bicycle trips replace vehicle trips for adults/college students and 53% for school children*	
Reduced Vehicle Trips per Year	291,032	667,008	*Reduced number of weekday vehicle trips multiplied by 261 (weekdays in a year)*	
Reduced Vehicle Miles per Weekday	7,184	16,574	*Assumes average round trip travel length of 8 miles for adults/college students and 1 mile for schoolchildren*	
Reduced Vehicle Miles per Year	1,874,972	4,325,807	*Reduced number of weekday vehicle miles multiplied by 261 (weekdays in a year)*	
Air Quality Benefits Estimates				
Reduced Hydrocarbons (pounds/weekday)	22	50	*Daily mileage reduction multiplied by 1.36 grams per reduced mile*	
Reduced PM10 (pounds/weekday)	0	0	*Daily mileage reduction multiplied by 0.0052 grams per reduced mile*	
Reduced PM2.5 (pounds/weekday)	0	0	*Daily mileage reduction multiplied by 0.0049 grams per reduced mile*	
Reduced NO_X (pounds/weekday)	15	35	*Daily mileage reduction multiplied by 0.95 grams per reduced mile*	
Reduced CO (pounds/weekday)	196	453	*Daily mileage reduction multiplied by 12.4 grams per reduced mile*	
Reduced $C0_2$ (pounds/weekday)	5844	13483	*Daily mileage reduction multiplied by 369 grams per reduced mile*	

Table B-3: Gateway Planning Area Current / Future Demand and Air Quality Benefits Estimates (continued)

Variable	Current Value	Future Value	Source (1)	Source (2)
Reduced Hydrocarbons (pounds/year)	5,622	12,970	*Yearly mileage reduction multiplied by 1.36 grams per reduced mile*	
Reduced PM10 (pounds/year)	21	50	*Yearly mileage reduction multiplied by 0.0052 grams per reduced mile*	
Reduced PM2.5 (pounds/year)	20	47	*Yearly mileage reduction multiplied by 0.0049 grams per reduced mile*	
Reduced NO_X (pounds/year)	3927	9060	*Yearly mileage reduction multiplied by 0.95 grams per reduced mile*	
Reduced CO (pounds/year)	51,257	118,256	*Yearly mileage reduction multiplied by 12.4 grams per reduced mile*	
Reduced $C0_2$ (pounds/year)	1,525,300	3,519,069	*Yearly mileage reduction multiplied by 369 grams per reduced mile*	

(Emissions rates from EPA report 420-F-05-022 "Emission Facts: Average Annual Emissions and Fuel Consumption for Gaso Fueled Passenger Cars and Light Trucks." 2005.)

B.4 Metro Planning Area

The benefits model predicts that by 2030 the total number of bicycle commuters could increase from the current estimate of 2,612 to 12,021, resulting in an estimated decrease of 95 pounds of hydrocarbons per weekday, 66 pounds of mono-nitrogen oxides (NO_x) per weekday, 95 pounds of PM10 (particulate matter) per year, and 6,722,256 pounds of carbon dioxide (CO_2) per year.

Table B-4: Metro Planning Area Current / Future Demand and Air Quality Benefits Estimates

Variable	Current Value	Future Value	Source (1)	Source (2)
Demographics				
Study area population	316,978	353,336	*Los Angeles County General Plan Update (2008)*	
Employed population	63,693	101,909	*LA County 2008 In-Fill Study*	*Estimate based on historic employment population growth (or decline) trends*
Bike-to-work mode share	0.30%	1.00%	*2005-2007 American Community Survey, B0801 3-Year Estimates*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
Number of bike-to-work commuters	191	1,019	*Employed persons multiplied by bike-to-work mode share*	
Work-at-home mode share	2.10%	4.00%	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Estimate based on historic work-at-home population growth (or decline) trends*
Number of work-at-home bike commuters	4	82	*Assumes 0.3% of population working at home makes at least one daily bicycle trip*	*Assumes 2% of population working at home makes at least one daily bicycle trip*
Transit-to-work mode share	12.70%	15.00%	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Estimate of the potential mode share increase (or decrease) associated with planned/proposed bikeway system improvements and transit service improvements/reductions*

Table B-4: Metro Planning Area Current / Future Demand and Air Quality Benefits Estimates (continued)

Variable	Current Value	Future Value	Source (1)	Source (2)
Transit bicycle commuters	97	3,822	*Employed persons multiplied by transit mode share. Assumes 1.2% of transit riders access transit by bicycle*	*Employed persons multiplied by transit mode share. Assumes 25% of transit riders access transit by bicycle*
School children, ages 6-14 (grades K-8)	43,216	76,375	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Population-based estimate*
School children bicycling mode share	2.00%	4.00%	*National Safe Routes to School surveys, 2003.*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
School children bike commuters	864	3,055	*School children population multiplied by school children bike mode share*	*School children population multiplied by school children bicycling mode share*
Number of college students in study area	14,559	26,956	*2005-2007 American Community Survey, B14001 3-Year Estimates*	*Population-based estimate*
Estimated college bicycling mode share	10.00%	15.00%	*Review of bicycle commute share in seven university communities (source: National Bicycling & Walking Study, FHWA, Case Study No. 1, 1995).*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
College bike commuters	1,456	4,043	*College student population multiplied by college student bicycling mode share*	
Total number of bike commuters	2,612	12,021	*Total bike-to-work, school, college and utilitarian bike trips. Does not include recreation.*	
Total daily bicycling trips	5,225	24,041	*Total bicycle commuters x 2 (for round trips)*	
Estimated VMT Reductions				
Reduced Vehicle Trips per Weekday	1,663	5,374	*Assumes 73% of bicycle trips replace vehicle trips for adults/college students and 53% for school children*	
Reduced Vehicle Trips per Year	434,125	1,402,690	*Reduced number of weekday vehicle trips multiplied by 261 (weekdays in a year)*	
Reduced Vehicle Miles per Weekday	10,100	31,660	*Assumes average round trip travel length of 8 miles for adults/college students and 1 mile for schoolchildren*	
Reduced Vehicle Miles per Year	2,636,069	8,263,317	*Reduced number of weekday vehicle miles multiplied by 261 (weekdays in a year)*	
Air Quality Benefits Estimates				
Reduced Hydrocarbons (pounds/weekday)	30	95	*Daily mileage reduction multiplied by 1.36 grams per reduced mile*	
Reduced PM10 (pounds/weekday)	<1	<1	*Daily mileage reduction multiplied by 0.0052 grams per reduced mile*	
Reduced PM2.5 (pounds/weekday)	<1	<1	*Daily mileage reduction multiplied by 0.0049 grams per reduced mile*	
Reduced NO_X (pounds/weekday)	21	66	*Daily mileage reduction multiplied by 0.95 grams per reduced mile*	
Reduced CO (pounds/weekday)	276	866	*Daily mileage reduction multiplied by 12.4 grams per reduced mile*	
Reduced $C0_2$ (pounds/weekday)	8,216	25756	*Daily mileage reduction multiplied by 369 grams per reduced mile*	

Table B-4: Metro Planning Area Current / Future Demand and Air Quality Benefits Estimates (continued)

Variable	Current Value	Future Value	Source (1)	Source (2)
Reduced Hydrocarbons (pounds/year)	7,904	24,776	*Yearly mileage reduction multiplied by 1.36 grams per reduced mile*	
Reduced PM10 (pounds/year)	30	95	*Yearly mileage reduction multiplied by 0.0052 grams per reduced mile*	
Reduced PM2.5 (pounds/year)	28	89	*Yearly mileage reduction multiplied by 0.0049 grams per reduced mile*	
Reduced NO_X (pounds/year)	5,521	17307	*Yearly mileage reduction multiplied by 0.95 grams per reduced mile*	
Reduced CO (pounds/year)	72,063	225,897	*Yearly mileage reduction multiplied by 12.4 grams per reduced mile*	
Reduced $C0_2$ (pounds/year)	2,144,457	6,722,256	*Yearly mileage reduction multiplied by 369 grams per reduced mile*	

(Emissions rates from EPA report 420-F-05-022 "Emission Facts: Average Annual Emissions and Fuel Consumption for Gaso Fueled Passenger Cars and Light Trucks." 2005.)

B.5 San Fernando Valley Planning Area

The benefits model predicts that by 2030 the total number of bicycle commuters could increase from the current estimate of 708 to 1,583, resulting in an estimated decrease of 21 pounds of hydrocarbons per weekday, 15 pounds of mono-nitrogen oxides (NO_x) per weekday, 21 pounds of PM10 (particulate matter) per year, and 1,470,980 pounds of carbon dioxide (CO_2) per year.

Table B-5: San Fernando Valley Planning Area Current / Future Demand and Air Quality Benefits Estimates

Variable	Current Value	Future Value	Source (1)	Source (2)
Demographics				
Study area population	27,634	34,505	*Los Angeles County General Plan Update (2008)*	
Employed population	24,820	26,785	*Los Angeles County General Plan Update (2008)*	
Bike-to-work mode share	1.00%	2.00%	*2005-2007 American Community Survey, B0801 3-Year Estimates*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
Number of bike-to-work commuters	246	536	*Employed persons multiplied by bike-to-work mode share*	
Work-at-home mode share	4.00%	5.00%	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Estimate based on historic work-at-home population growth (or decline) trends*
Number of work-at-home bike commuters	11	54	*Assumes 1.1% of population working at home makes at least one daily bicycle trip*	*Assumes 4% of population working at home makes at least one daily bicycle trip*
Transit-to-work mode share	1.00%	2.00%	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Estimate of the potential mode share increase (or decrease) associated with planned/proposed bikeway system improvements and transit service improvements/reductions*

Table B-5: San Fernando Valley Planning Area Current / Future Demand and Air Quality Benefits Estimates (continued)

Variable	Current Value	Future Value	Source (1)	Source (2)
Transit bicycle commuters	3	134	*Employed persons multiplied by transit mode share. Assumes 1.2% of transit riders access transit by bicycle*	*Employed persons multiplied by transit mode share. Assumes 25% of transit riders access transit by bicycle*
School children, ages 6-14 (grades K-8)	6,235	7,230	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Population-based estimate*
School children bicycling mode share	2.00%	4.00%	*National Safe Routes to School surveys, 2003.*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
School children bike commuters	125	289	*School children population multiplied by school children bike mode share*	*School children population multiplied by school children bicycling mode share*
Number of college students in study area	3,234	3,805	*2005-2007 American Community Survey, B14001 3-Year Estimates*	*Population-based estimate*
Estimated college bicycling mode share	10.00%	15.00%	*Review of bicycle commute share in seven university communities (source: National Bicycling & Walking Study, FHWA, Case Study No. 1, 1995).*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
College bike commuters	323	571	*College student population multiplied by college student bicycling mode share*	
Total number of bike commuters	708	1,583	*Total bike-to-work, school, college and utilitarian bike trips. Does not include recreation.*	
Total daily bicycling trips	1,416	3,166	*Total bicycle commuters x 2 (for round trips)*	
Estimated VMT Reductions				
Reduced Vehicle Trips per Weekday	490	1,000	*Assumes 73% of bicycle trips replace vehicle trips for adults/college students and 53% for school children*	
Reduced Vehicle Trips per Year	127,798	261,029	*Reduced number of weekday vehicle trips multiplied by 261 (weekdays in a year)*	
Reduced Vehicle Miles per Weekday	3,455	6,928	*Assumes average round trip travel length of 8 miles for adults/college students and 1 mile for schoolchildren*	
Reduced Vehicle Miles per Year	901,634	1,808,199	*Reduced number of weekday vehicle miles multiplied by 261 (weekdays in a year)*	
Air Quality Benefits Estimates				
Reduced Hydrocarbons (pounds/weekday)	10	21	*Daily mileage reduction multiplied by 1.36 grams per reduced mile*	
Reduced PM10 (pounds/weekday)	0	0	*Daily mileage reduction multiplied by 0.0052 grams per reduced mile*	
Reduced PM2.5 (pounds/weekday)	0	0	*Daily mileage reduction multiplied by 0.0049 grams per reduced mile*	
Reduced NO_X (pounds/weekday)	7	15	*Daily mileage reduction multiplied by 0.95 grams per reduced mile*	
Reduced CO (pounds/weekday)	94	189	*Daily mileage reduction multiplied by 12.4 grams per reduced mile*	
Reduced CO_2 (pounds/weekday)	2,810	5,636	*Daily mileage reduction multiplied by 369 grams per reduced mile*	
Reduced Hydrocarbons (pounds/year)	2,703	5,421	*Yearly mileage reduction multiplied by 1.36 grams per reduced mile*	

Table B-5: San Fernando Valley Planning Area Current / Future Demand and Air Quality Benefits Estimates (continued)

Variable	Current Value	Future Value	Source (1)	Source (2)
Reduced PM10 (pounds/year)	10	21	*Yearly mileage reduction multiplied by 0.0052 grams per reduced mile*	
Reduced PM2.5 (pounds/year)	10	20	*Yearly mileage reduction multiplied by 0.0049 grams per reduced mile*	
Reduced NO_x (pounds/year)	1,888	3,787	*Yearly mileage reduction multiplied by 0.95 grams per reduced mile*	
Reduced CO (pounds/year)	24,648	49,431	*Yearly mileage reduction multiplied by 12.4 grams per reduced mile*	
Reduced $C0_2$ (pounds/year)	733,484	1,470,980	*Yearly mileage reduction multiplied by 369 grams per reduced mile*	

(Emissions rates from EPA report 420-F-05-022 "Emission Facts: Average Annual Emissions and Fuel Consumption for Gaso Fueled Passenger Cars and Light Trucks." 2005.)

B.6 Santa Clarita Valley Planning Area

The benefits model predicts that by 2030 the total number of bicycle commuters could increase from the current estimate of 754 to 3,217, resulting in an estimated decrease of 37 pounds of hydrocarbons per weekday, 26 pounds of mono-nitrogen oxides (NO_x) per weekday, 37 pounds of PM10 (particulate matter) per year, and 2,653,579 pounds of carbon dioxide (CO_2) per year.

Table B-6: Santa Clarita Valley Planning Area Current / Future Demand and Air Quality Benefits Estimates

Variable	Current Value	Future Value	Source (1)	Source (2)
Demographics				
Study area population	85,326	170,085	*Los Angeles County General Plan Update (2008)*	
Employed population	37,652	47,065	*2006-2008 American Community Survey, B0801 3-Year Estimates*	*Los Angeles County General Plan Update (2008)*
Bike-to-work mode share	0.20%	1.00%	*2005-2007 American Community Survey, B0801 3-Year Estimates*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
Number of bike-to-work commuters	62	471	*Employed persons multiplied by bike-to-work mode share*	
Work-at-home mode share	2.80%	3.50%	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Estimate based on historic work-at-home population growth (or decline) trends*
Number of work-at-home bike commuters	2	33	*Assumes 0.2% of population working at home makes at least one daily bicycle trip*	*Assumes 2% of population working at home makes at least one daily bicycle trip*
Transit-to-work mode share	1.40%	2.00%	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Estimate of the potential mode share increase (or decrease) associated with planned/proposed bikeway system improvements and transit service improvements/reductions*
Transit bicycle commuters	7	235	*Employed persons multiplied by transit mode share. Assumes 1.2% of transit riders access transit by bicycle*	*Employed persons multiplied by transit mode share. Assumes 25% of transit riders access transit by bicycle*

Table B-6: Santa Clarita Valley Planning Area Current / Future Demand and Air Quality Benefits Estimates (continued)

Variable	Current Value	Future Value	Source (1)	Source (2)
School children, ages 6-14 (grades K-8)	11,814	30,850	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Population-based estimate*
School children bicycling mode share	2.00%	3.00%	*National Safe Routes to School surveys, 2003.*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
School children bike commuters	236	925	*School children population multiplied by school children bike mode share*	*School children population multiplied by school children bicycling mode share*
Number of college students in study area	4,472	11,942	*2005-2007 American Community Survey, B14001 3-Year Estimates*	*Population-based estimate*
Estimated college bicycling mode share	10.00%	13.00%	*Review of bicycle commute share in seven university communities (source: National Bicycling & Walking Study, FHWA, Case Study No. 1, 1995).*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
College bike commuters	447	1,552	*College student population multiplied by college student bicycling mode share*	
Total number of bike commuters	754	3,217	*Total bike-to-work, school, college and utilitarian bike trips. Does not include recreation.*	
Total daily bicycling trips	1,508	6,434	*Total bicycle commuters x 2 (for round trips)*	
Estimated VMT Reductions				
Reduced Vehicle Trips per Weekday	498	1,991	*Assumes 73% of bicycle trips replace vehicle trips for adults/college students and 53% for school children*	
Reduced Vehicle Trips per Year	130,102	519,758	*Reduced number of weekday vehicle trips multiplied by 261 (weekdays in a year)*	
Reduced Vehicle Miles per Weekday	3,111	12,498	*Assumes average round trip travel length of 8 miles for adults/college students and 1 mile for schoolchildren*	
Reduced Vehicle Miles per Year	812,022	3,261,905	*Reduced number of weekday vehicle miles multiplied by 261 (weekdays in a year)*	
Air Quality Benefits Estimates				
Reduced Hydrocarbons (pounds/weekday)	9	37	*Daily mileage reduction multiplied by 1.36 grams per reduced mile*	
Reduced PM10 (pounds/weekday)	0	0	*Daily mileage reduction multiplied by 0.0052 grams per reduced mile*	
Reduced PM2.5 (pounds/weekday)	0	0	*Daily mileage reduction multiplied by 0.0049 grams per reduced mile*	
Reduced NO_X (pounds/weekday)	7	26	*Daily mileage reduction multiplied by 0.95 grams per reduced mile*	
Reduced CO (pounds/weekday)	85	342	*Daily mileage reduction multiplied by 12.4 grams per reduced mile*	
Reduced $C0_2$ (pounds/weekday)	2,531	10,167	*Daily mileage reduction multiplied by 369 grams per reduced mile*	
Reduced Hydrocarbons (pounds/year)	2,435	9,780	*Yearly mileage reduction multiplied by 1.36 grams per reduced mile*	
Reduced PM10 (pounds/year)	9	37	*Yearly mileage reduction multiplied by 0.0052 grams per reduced mile*	

Table B-6: Santa Clarita Valley Planning Area Current / Future Demand and Air Quality Benefits Estimates (continued)

Variable	Current Value	Future Value	Source (1)	Source (2)
Reduced PM2.5 (pounds/year)	9	35	*Yearly mileage reduction multiplied by 0.0049 grams per reduced mile*	
Reduced NO_X (pounds/year)	1,701	6,832	*Yearly mileage reduction multiplied by 0.95 grams per reduced mile*	
Reduced CO (pounds/year)	22,199	89,172	*Yearly mileage reduction multiplied by 12.4 grams per reduced mile*	
Reduced $C0_2$ (pounds/year)	660,585	2,653,579	*Yearly mileage reduction multiplied by 369 grams per reduced mile*	

(Emissions rates from EPA report 420-F-05-022 "Emission Facts: Average Annual Emissions and Fuel Consumption for Gaso Fueled Passenger Cars and Light Trucks." 2005.)

B.7 Santa Monica Mountains Planning Area

The benefits model predicts that by 2030 the total number of bicycle commuters could increase from the current estimate of 210 to 897, resulting in an estimated decrease of 11 pounds of hydrocarbons per weekday, 7 pounds of mono-nitrogen oxides (NO_x) per weekday, 11 pounds of PM10 (particulate matter) per year, and 750,588 pounds of carbon dioxide (CO_2) per year.

Table B-7: Santa Monica Mountains Planning Area Current / Future Demand and Air Quality Benefits Estimates

Variable	Current Value	Future Value	Source (1)	Source (2)
Demographics				
Study area population	21,925	32,888	*Los Angeles County General Plan Update (2008)*	
Employed population	16,277	17,854	*Los Angeles County General Plan Update (2008)*	
Bike-to-work mode share	0.20%	0.60%	*2005-2007 American Community Survey, B0801 3-Year Estimates*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
Number of bike-to-work commuters	26	107	*Employed persons multiplied by bike-to-work mode share*	
Work-at-home mode share	3.30%	4.80%	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Estimate based on historic work-at-home population growth (or decline) trends*
Number of work-at-home bike commuters	2	9	*Assumes 0.3% of population working at home makes at least one daily bicycle trip*	*Assumes 1% of population working at home makes at least one daily bicycle trip*
Transit-to-work mode share	0.50%	0.80%	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Estimate of the potential mode share increase (or decrease) associated with planned/proposed bikeway system improvements and transit service improvements/reductions*
Transit bicycle commuters	1	34	*Employed persons multiplied by transit mode share. Assumes 1.2% of transit riders access transit by bicycle*	*Employed persons multiplied by transit mode share. Assumes 25% of transit riders access transit by bicycle*
School children, ages 6-14 (grades K-8)	2,873	7,098	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Population-based estimate*

Table B-7: Santa Monica Mountains Planning Area Current / Future Demand and Air Quality Benefits Estimates (continued)

Variable	Current Value	Future Value	Source (1)	Source (2)
School children bicycling mode share	2.00%	4.00%	*National Safe Routes to School surveys, 2003.*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
School children bike commuters	57	284	*School children population multiplied by school children bike mode share*	*School children population multiplied by school children bicycling mode share*
Number of college students in study area	1,240	3,093	*2005-2007 American Community Survey, B14001 3-Year Estimates*	*Population-based estimate*
Estimated college bicycling mode share	10.00%	15.00%	*Review of bicycle commute share in seven university communities (source: National Bicycling & Walking Study, FHWA, Case Study No. 1, 1995).*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
College bike commuters	124	464	*College student population multiplied by college student bicycling mode share*	
Total number of bike commuters	210	897	*Total bike-to-work, school, college and utilitarian bike trips. Does not include recreation.*	
Total daily bicycling trips	420	1,795	*Total bicycle commuters x 2 (for round trips)*	
Estimated VMT Reductions				
Reduced Vehicle Trips per Weekday	141	574	*Assumes 73% of bicycle trips replace vehicle trips for adults/college students and 53% for school children*	
Reduced Vehicle Trips per Year	36,833	149,698	*Reduced number of weekday vehicle trips multiplied by 261 (weekdays in a year)*	
Reduced Vehicle Miles per Weekday	916	3,535	*Assumes average round trip travel length of 8 miles for adults/college students and 1 mile for schoolchildren*	
Reduced Vehicle Miles per Year	239,022	922,659	*Reduced number of weekday vehicle miles multiplied by 261 (weekdays in a year)*	
Air Quality Benefits Estimates				
Reduced Hydrocarbons (pounds/weekday)	3	11	*Daily mileage reduction multiplied by 1.36 grams per reduced mile*	
Reduced PM10 (pounds/weekday)	0	0	*Daily mileage reduction multiplied by 0.0052 grams per reduced mile*	
Reduced PM2.5 (pounds/weekday)	0	0	*Daily mileage reduction multiplied by 0.0049 grams per reduced mile*	
Reduced NO_X (pounds/weekday)	2	7	*Daily mileage reduction multiplied by 0.95 grams per reduced mile*	
Reduced CO (pounds/weekday)	25	97	*Daily mileage reduction multiplied by 12.4 grams per reduced mile*	
Reduced $C0_2$ (pounds/weekday)	745	2,876	*Daily mileage reduction multiplied by 369 grams per reduced mile*	
Reduced Hydrocarbons (pounds/year)	717	2,766	*Yearly mileage reduction multiplied by 1.36 grams per reduced mile*	
Reduced PM10 (pounds/year)	3	11	*Yearly mileage reduction multiplied by 0.0052 grams per reduced mile*	
Reduced PM2.5 (pounds/year)	3	10	*Yearly mileage reduction multiplied by 0.0049 grams per reduced mile*	
Reduced NO_X (pounds/year)	501	1,932	*Yearly mileage reduction multiplied by 0.95 grams per reduced mile*	

Table B-7: Santa Monica Mountains Planning Area Current / Future Demand and Air Quality Benefits Estimates (continued)

Variable	Current Value	Future Value	Source (1)	Source (2)
Reduced CO (pounds/year)	6,534	25,223	*Yearly mileage reduction multiplied by 12.4 grams per reduced mile*	
Reduced $C0_2$ (pounds/year)	194,446	750,588	*Yearly mileage reduction multiplied by 369 grams per reduced mile*	

(Emissions rates from EPA report 420-F-05-022 "Emission Facts: Average Annual Emissions and Fuel Consumption for Gaso Fueled Passenger Cars and Light Trucks." 2005.)

B.8 South Bay Planning Area

The benefits model predicts that by 2030 the total number of bicycle commuters could increase from the current estimate of 747 to 2,030, resulting in an estimated decrease of 25 pounds of hydrocarbons per weekday, 17 pounds of mono-nitrogen oxides (NO_x) per weekday, 25 pounds of PM10 (particulate matter) per year, and 1,768,883 pounds of carbon dioxide (CO_2) per year.

Table B-8: South Bay Planning Area Current / Future Demand and Air Quality Benefits Estimates

Variable	Current Value	Future Value	Source (1)	Source (2)
Demographics				
Study area population	78,254	86,880	*Los Angeles County General Plan Update (2008)*	
Employed population	20,346	21,767	*Los Angeles County General Plan Update (2008)*	
Bike-to-work mode share	0.80%	1.20%	*2005-2007 American Community Survey, B0801 3-Year Estimates*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
Number of bike-to-work commuters	170	255	*Employed persons multiplied by bike-to-work mode share*	
Work-at-home mode share	3.10%	4.40%	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Estimate based on historic work-at-home population growth (or decline) trends*
Number of work-at-home bike commuters	4	479	*Assumes 0.7% of population working at home makes at least one daily bicycle trip*	*Assumes 50% of population working at home makes at least one daily bicycle trip*
Transit-to-work mode share	3.30%	4.50%	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Estimate of the potential mode share increase (or decrease) associated with planned/proposed bikeway system improvements and transit service improvements/reductions*
Transit bicycle commuters	8	246	*Employed persons multiplied by transit mode share. Assumes 1.2% of transit riders access transit by bicycle*	*Employed persons multiplied by transit mode share. Assumes 25% of transit riders access transit by bicycle*
School children, ages 6-14 (grades K-8)	8,397	9,848	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Population-based estimate*
School children bicycling mode share	2.00%	4.00%	*National Safe Routes to School surveys, 2003.*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
School children bike commuters	168	394	*School children population multiplied by school children bike mode share*	*School children population multiplied by school children bicycling mode share*

Table B-8: South Bay Planning Area Current / Future Demand and Air Quality Benefits Estimates (continued)

Variable	Current Value	Future Value	Source (1)	Source (2)
Number of college students in study area	3,965	4,377	*2005-2007 American Community Survey, B14001 3-Year Estimates*	*Population-based estimate*
Estimated college bicycling mode share	10.00%	15.00%	*Review of bicycle commute share in seven university communities (source: National Bicycling & Walking Study, FHWA, Case Study No. 1, 1995).*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
College bike commuters	397	657	*College student population multiplied by college student bicycling mode share*	
Total number of bike commuters	747	2,030	*Total bike-to-work, school, college and utilitarian bike trips. Does not include recreation.*	
Total daily bicycling trips	1,494	4,061	*Total bicycle commuters x 2 (for round trips)*	
Estimated VMT Reductions				
Reduced Vehicle Trips per Weekday	506	1,224	*Assumes 73% of bicycle trips replace vehicle trips for adults/college students and 53% for school children*	
Reduced Vehicle Trips per Year	132,019	319,480	*Reduced number of weekday vehicle trips multiplied by 261 (weekdays in a year)*	
Reduced Vehicle Miles per Weekday	3,423	8,331	*Assumes average round trip travel length of 8 miles for adults/college students and 1 mile for schoolchildren*	
Reduced Vehicle Miles per Year	893,531	2,174,396	*Reduced number of weekday vehicle miles multiplied by 261 (weekdays in a year)*	
Air Quality Benefits Estimates				
Reduced Hydrocarbons (pounds/weekday)	10	25	*Daily mileage reduction multiplied by 1.36 grams per reduced mile*	
Reduced PM10 (pounds/weekday)	0	<1	*Daily mileage reduction multiplied by 0.0052 grams per reduced mile*	
Reduced PM2.5 (pounds/weekday)	0	<1	*Daily mileage reduction multiplied by 0.0049 grams per reduced mile*	
Reduced NO_X (pounds/weekday)	7	17	*Daily mileage reduction multiplied by 0.95 grams per reduced mile*	
Reduced CO (pounds/weekday)	94	228	*Daily mileage reduction multiplied by 12.4 grams per reduced mile*	
Reduced $C0_2$ (pounds/weekday)	2,785	6777	*Daily mileage reduction multiplied by 369 grams per reduced mile*	
Reduced Hydrocarbons (pounds/year)	2,679	6,519	*Yearly mileage reduction multiplied by 1.36 grams per reduced mile*	
Reduced PM10 (pounds/year)	10	25	*Yearly mileage reduction multiplied by 0.0052 grams per reduced mile*	
Reduced PM2.5 (pounds/year)	10	23	*Yearly mileage reduction multiplied by 0.0049 grams per reduced mile*	
Reduced NO_X (pounds/year)	1,871	4554	*Yearly mileage reduction multiplied by 0.95 grams per reduced mile*	
Reduced CO (pounds/year)	24,427	59,442	*Yearly mileage reduction multiplied by 12.4 grams per reduced mile*	

Table B-8: South Bay Planning Area Current / Future Demand and Air Quality Benefits Estimates (continued)

Variable	Current Value	Future Value	Source (1)	Source (2)
Reduced CO_2 (pounds/year)	726,893	1,768,883	*Yearly mileage reduction multiplied by 369 grams per reduced mile*	

(Emissions rates from EPA report 420-F-05-022 "Emission Facts: Average Annual Emissions and Fuel Consumption for Gaso Fueled Passenger Cars and Light Trucks." 2005.)

B.9 West San Gabriel Valley Planning Area

The benefits model predicts that by 2030 the total number of bicycle commuters could increase from the current estimate of 1,643 to 4,408, resulting in an estimated decrease of 50 pounds of hydrocarbons per weekday, 35 pounds of mono-nitrogen oxides (NO_x) per weekday, 50 pounds of PM10 (particulate matter) per year, and 3,563,556 pounds of carbon dioxide (CO_2) per year.

Table B-9: West San Gabriel Valley Planning Area Current Future Demand and Air Quality Benefits Estimates

Variable	Current Value	Future Value	Source (1)	Source (2)
Demographics				
Study area population	117,913	157,371	*Los Angeles County General Plan Update (2008)*	
Employed population	57,179	62,897	*Los Angeles County General Plan Update (2008)*	
Bike-to-work mode share	0.60%	1.00%	*2005-2007 American Community Survey, B0801 3-Year Estimates*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
Number of bike-to-work commuters	336	629	*Employed persons multiplied by bike-to-work mode share*	
Work-at-home mode share	3.50%	4.70%	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Estimate based on historic work-at-home population growth (or decline) trends*
Number of work-at-home bike commuters	12	59	*Assumes 0.6% of population working at home makes at least one daily bicycle trip*	*Assumes 2% of population working at home makes at least one daily bicycle trip*
Transit-to-work mode share	2.90%	4.00%	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Estimate of the potential mode share increase (or decrease) associated with planned/proposed bikeway system improvements and transit service improvements/reductions*
Transit bicycle commuters	20	631	*Employed persons multiplied by transit mode share. Assumes 1.2% of transit riders access transit by bicycle*	*Employed persons multiplied by transit mode share. Assumes 25% of transit riders access transit by bicycle*
School children, ages 6-14 (grades K-8)	17,314	24,833	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Population-based estimate*
School children bicycling mode share	2.00%	4.00%	*National Safe Routes to School surveys, 2003.*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
School children bike commuters	346	993	*School children population multiplied by school children bike mode share*	*School children population multiplied by school children bicycling mode share*
Number of college students in study area	9,283	13,969	*2005-2007 American Community Survey, B14001 3-Year Estimates*	*Population-based estimate*

Table B-9: West San Gabriel Valley Planning Area Current Future Demand and Air Quality Benefits Estimates (continued)

Variable	Current Value	Future Value	Source (1)	Source (2)
Estimated college bicycling mode share	10.00%	15.00%	*Review of bicycle commute share in seven university communities (source: National Bicycling & Walking Study, FHWA, Case Study No. 1, 1995).*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
College bike commuters	928	2,095	*College student population multiplied by college student bicycling mode share*	
Total number of bike commuters	1,643	4,408	*Total bike-to-work, school, college and utilitarian bike trips. Does not include recreation.*	
Total daily bicycling trips	3,285	8,816	*Total bicycle commuters x 2 (for round trips)*	
Estimated VMT Reductions				
Reduced Vehicle Trips per Weekday	1115	2,559	*Assumes 73% of bicycle trips replace vehicle trips for adults/college students and 53% for school children*	
Reduced Vehicle Trips per Year	291,054	667,793	*Reduced number of weekday vehicle trips multiplied by 261 (weekdays in a year)*	
Reduced Vehicle Miles per Weekday	7,636	16,783	*Assumes average round trip travel length of 8 miles for adults/college students and 1 mile for schoolchildren*	
Reduced Vehicle Miles per Year	1,993,124	4,380,493	*Reduced number of weekday vehicle miles multiplied by 261 (weekdays in a year)*	
Air Quality Benefits Estimates				
Reduced Hydrocarbons (pounds/weekday)	23	50	*Daily mileage reduction multiplied by 1.36 grams per reduced mile*	
Reduced PM10 (pounds/weekday)	<1	<1	*Daily mileage reduction multiplied by 0.0052 grams per reduced mile*	
Reduced PM2.5 (pounds/weekday)	<1	<1	*Daily mileage reduction multiplied by 0.0049 grams per reduced mile*	
Reduced NO_X (pounds/weekday)	16	35	*Daily mileage reduction multiplied by 0.95 grams per reduced mile*	
Reduced CO (pounds/weekday)	209	459	*Daily mileage reduction multiplied by 12.4 grams per reduced mile*	
Reduced $C0_2$ (pounds/weekday)	6212	13,653	*Daily mileage reduction multiplied by 369 grams per reduced mile*	
Reduced Hydrocarbons (pounds/year)	5976	13,134	*Yearly mileage reduction multiplied by 1.36 grams per reduced mile*	
Reduced PM10 (pounds/year)	23	50	*Yearly mileage reduction multiplied by 0.0052 grams per reduced mile*	
Reduced PM2.5 (pounds/year)	22	47	*Yearly mileage reduction multiplied by 0.0049 grams per reduced mile*	
Reduced NO_X (pounds/year)	4174	9,174	*Yearly mileage reduction multiplied by 0.95 grams per reduced mile*	
Reduced CO (pounds/year)	54487	119,751	*Yearly mileage reduction multiplied by 12.4 grams per reduced mile*	
Reduced $C0_2$ (pounds/year)	1,621,418	3,563,556	*Yearly mileage reduction multiplied by 369 grams per reduced mile*	

(Emissions rates from EPA report 420-F-05-022 "Emission Facts: Average Annual Emissions and Fuel Consumption for Gaso Fueled Passenger Cars and Light Trucks." 2005.)

B.10 Westside Planning Area

The benefits model predicts that by 2030 the total number of bicycle commuters could increase from the current estimate of 431 to 1,489, resulting in an estimated decrease of 19 pounds of hydrocarbons per weekday, 14 pounds of mono-nitrogen oxides (NO_x) per weekday, 19 pounds of PM10 (particulate matter) per year, and 1,374,433 pounds of carbon dioxide (CO_2) per year.

Table B-10: Westside Planning Area Current / Future Demand and Air Quality Benefits Estimates

Variable	Current Value	Future Value	Source (1)	Source (2)
Demographics				
Study area population	31,777	40,949	*LA County General Plan Update (2008)*	
Employed population	17,637	18,459	*LA County General Plan Update (2008)*	
Bike-to-work mode share	0.30%	1.00%	*2005-2007 American Community Survey, B0801 3-Year Estimates*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
Number of bike-to-work commuters	46	185	*Employed persons multiplied by bike-to-work mode share*	
Work-at-home mode share	5.80%	8.80%	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Estimate based on historic work-at-home population growth (or decline) trends*
Number of work-at-home bike commuters	2	33	*Assumes 0.2% of population working at home makes at least one daily bicycle trip*	*Assumes 2% of population working at home makes at least one daily bicycle trip*
Transit-to-work mode share	2.00%	4.00%	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Estimate of the potential mode share increase (or decrease) associated with planned/proposed bikeway system improvements and transit service improvements/reductions*
Transit bicycle commuters	4	185	*Employed persons multiplied by transit mode share. Assumes 1.2% of transit riders access transit by bicycle*	*Employed persons multiplied by transit mode share. Assumes 25% of transit riders access transit by bicycle*
School children, ages 6-14 (grades K-8)	2,984	5,396	*2005-2007 American Community Survey, S0801 3-Year Estimates*	*Population-based estimate*
School children bicycling mode share	2.00%	4.00%	*National Safe Routes to School surveys, 2003.*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
School children bike commuters	60	216	*School children population multiplied by school children bike mode share*	*School children population multiplied by school children bicycling mode share*
Number of college students in study area	3,192	5,811	*2005-2007 American Community Survey, B14001 3-Year Estimates*	*Population-based estimate*
Estimated college bicycling mode share	10.00%	15.00%	*Review of bicycle commute share in seven university communities (source: National Bicycling & Walking Study, FHWA, Case Study No. 1, 1995).*	*Estimate of the potential mode share increase associated with planned/proposed bikeway system improvements*
College bike commuters	319	872	*College student population multiplied by college student bicycling mode share*	
Total number of bike commuters	431	1,489	*Total bike-to-work, school, college and utilitarian bike trips. Does not include recreation.*	
Total daily bicycling trips	862	2,979	*Total bicycle commuters x 2 (for round trips)*	

Table B-10: Westside Planning Area Current / Future Demand and Air Quality Benefits Estimates (continued)

Variable	Current Value	Future Value	Source (1)	Source (2)
Estimated VMT Reductions				
Reduced Vehicle Trips per Weekday	300	909	*Assumes 73% of bicycle trips replace vehicle trips for adults/college students and 53% for school children*	
Reduced Vehicle Trips per Year	78225	237,316	*Reduced number of weekday vehicle trips multiplied by 261 (weekdays in a year)*	
Reduced Vehicle Miles per Weekday	2,176	6,473	*Assumes average round trip travel length of 8 miles for adults/college students and 1 mile for schoolchildren*	
Reduced Vehicle Miles per Year	568,008	1,689,518	*Reduced number of weekday vehicle miles multiplied by 261 (weekdays in a year)*	
Air Quality Benefits Estimates				
Reduced Hydrocarbons (pounds/weekday)	7	19	*Daily mileage reduction multiplied by 1.36 grams per reduced mile*	
Reduced PM10 (pounds/weekday)	<1	<1	*Daily mileage reduction multiplied by 0.0052 grams per reduced mile*	
Reduced PM2.5 (pounds/weekday)	<1	<1	*Daily mileage reduction multiplied by 0.0049 grams per reduced mile*	
Reduced NO_X (pounds/weekday)	5	14	*Daily mileage reduction multiplied by 0.95 grams per reduced mile*	
Reduced CO (pounds/weekday)	59	177	*Daily mileage reduction multiplied by 12.4 grams per reduced mile*	
Reduced $C0_2$ (pounds/weekday)	1,770	5,266	*Daily mileage reduction multiplied by 369 grams per reduced mile*	
Reduced Hydrocarbons (pounds/year)	1,703	5,066	*Yearly mileage reduction multiplied by 1.36 grams per reduced mile*	
Reduced PM10 (pounds/year)	7	19	*Yearly mileage reduction multiplied by 0.0052 grams per reduced mile*	
Reduced PM2.5 (pounds/year)	6	18	*Yearly mileage reduction multiplied by 0.0049 grams per reduced mile*	
Reduced NO_X (pounds/year)	1,190	3,539	*Yearly mileage reduction multiplied by 0.95 grams per reduced mile*	
Reduced CO (pounds/year)	15,528	46,187	*Yearly mileage reduction multiplied by 12.4 grams per reduced mile*	
Reduced $C0_2$ (pounds/year)	462,078	1,374,433	*Yearly mileage reduction multiplied by 369 grams per reduced mile*	

(Emissions rates from EPA report 420-F-05-022 "Emission Facts: Average Annual Emissions and Fuel Consumption for Gaso Fueled Passenger Cars and Light Trucks." 2005.)

Appendix C. Relationship to Existing Plans and Policies

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The Plan coordinates with the existing plans and policies of the State of California, Los Angeles County and other agencies. During development of the Plan, other state, county and local plans and policies were reviewed and are outlined in this Appendix. This Plan was developed to be consistent with these policies and plans to the greatest extent possible. Close coordination with other jurisdictions will be necessary during the implementation of this plan.

Appendix C presents a summary of the following existing plans and policies:

State Legislation and Policies

- State Legislation: AB 32 (Global Warming Solutions Act), SB 375 (Sustainable Communities and Climate Protection Act of 2008), AB 1358 (Complete Streets Act of 2008)

Countywide Plans and Policies:

- Draft County of Los Angeles General Plan
- Unincorporated Area wide and Community Specific Plans
- County of Los Angeles Plan of Bikeways (1975)
- Los Angeles River Master Plan (1996)
- San Gabriel River Corridor Master Plan (2006)
- Los Angeles County Code
- Metro Bicycle Transportation Strategic Plan (2006)

Municipal Bicycle Planning Documents:

- City of Burbank Bicycle Master Plan Update (2009)
- Claremont Bicycle Plan (2007)
- City of Glendale Bikeway Master Plan (1995)
- City of San Fernando Bicycle Master Plan (2007)
- City of Santa Clarita Non-Motorized Transportation Master Plan (2008)
- Whittier Bicycle Transportation Plan (2008)
- Los Angeles River Revitalization Master Plan (2007)
- West Hollywood Bicycle and Pedestrian Master Plan (2003)
- Temple City Bicycle Master Plan (2011)
- City of Los Angeles Bicycle Master Plan Update (2011)
- Pasadena Bicycle Master Plan
- Culver City Bicycle and Pedestrian Master Plan (in progress)

Relevant Planning Studies:

- Enhanced Public Outreach Project (2004)
- Eastside Light Rail Bike Interface Plan (2006)
- Coyote Creek Trail Master Plan (2008)
- Bicycle Plans in Adjacent Counties

C.1 State Legislation and Policies

In recent years the State of California has enacted numerous pieces of legislation that directly or indirectly affect the development of a bicycle network in the County of Los Angeles. Recent regulatory initiatives including Assembly Bill 32 (AB 32) and Senate Bill 375 (SB 375) have created a mandate to consider project impacts upon greenhouse gas (GHG) emissions to limit the effects of global warming. A key issue related to GHG emissions is that vehicular travel contributes significantly to overall emissions. Statewide, transportation emissions from vehicles generate over one-third of overall emissions. At a municipal level, transportation may contribute more than 50 percent to citywide or countywide emissions. AB 32, passed in 2006, directed the California Air Resources Board (ARB) to begin developing early action plans to reduce greenhouse gas emissions and to develop a scoping plan to identify how to achieve the 2020 greenhouse gas emissions reductions. Senate Bill 375, which was signed into law September 2008, implements AB 32 by addressing emissions related to land-use and transportation.

This Bicycle Master Plan will play a major role in promoting non-motorized transportation. Addressing transportation emissions can include encouraging walking, bicycling, and utilizing transit, in turn reducing passenger vehicle trips - "the largest single source of greenhouse gas emissions in California, accounting for 30 percent of the total[i]." When developing strategies to reduce GHG emissions through increased use of alternative transportation, it is also important to differentiate between recreational walking and bicycling and utilitarian non-motorized transportation. Replacing a regular, utilitarian automobile trip with a non-motorized trip allows the traveler to fulfill the same trip purpose, whether it is work, school, or shopping travel, among others. However, while infrastructure may increase bicycling trips as a recreational activity, these trips do not necessarily replace other irregular or infrequent recreational trips using automobiles.

C.1.1 SB 375: Redesigning Communities to Reduce Greenhouse Gasses

Senate Bill 375 enhances California's ability to reach its AB 32 goals by promoting good planning with the goal of more sustainable communities. Under the law, the California Air Resources Board (ARB) has until September 2010 to develop regional GHG emission reduction targets for passenger vehicles, which account for a third of the state's GHG emissions. ARB is required to establish targets for 2020 and 2035 for each region covered by one of the State's 18 metropolitan planning organizations (MPOs). Each of California's MPOs will then prepare a "sustainable communities strategy (SCS)" that demonstrates how the region will meet its GHG reduction target through integrated land use, housing and transportation planning. Once adopted by the MPO, the SCS will be incorporated into that region's federally enforceable regional transportation plan (RTP). ARB is also required to review each final SCS to determine whether it would, if implemented, achieve the GHG emission reduction target for its region.

On June 30, 2010, ARB released its *Draft Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375*. In the draft report, the Southern California Association of Governments (SCAG), the MPO for the project area, agreed to preliminary per capita reduction targets of 3% and 6% at years 2020 and 2035, respectively, compared to base year 2005 per capita emissions levels. Official reduction targets were recommended in the fall of 2010. For the SCAG region, individual sub regions will develop their own SCS.

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[i] *http://gov.ca.gov/fact-sheet/10707/*

SB 375 offers subregions the flexibility to develop appropriate strategies to address the region's GHG reduction goals, including the use of land use and transportation policy.[ii] The implementation of the Bicycle Master Plan can be a supporting policy to the SCS. The County of Los Angeles participates in multiple SCAG subregions and will have to coordinate closely with other subregional bodies in the development of the SCS. The close alignment of the strategies to achieve both increased bicycle use and a reduction in GHG emissions offers an opportunity for garnering the necessary support to implement the Bicycle Master Plan.

C.1.2 AB 1358: The Complete Streets Act of 2008

AB 1358 was signed into law in September, 2008. Commencing on January 1, 2011, the bill will require that complete street policies be included in the circulation element of city and county general plans when they undergo a substantive revision. Complete streets are defined as highways and city streets that provide routine accommodation to all users of the transportation system, including motorists, pedestrians, bicyclists, individuals with disabilities, seniors, and users of public transportation.

The adoption of complete streets policy language has goals in common with both the greenhouse gas bills (AB 32 and SB 375) as well as the Bicycle Master Plan. As described in the Section 2.g of AB 1358: "In order to fulfill the commitment to reduce greenhouse gas emissions, make the most efficient use of urban land and transportation infrastructure, and improve public health by encouraging physical activity, transportation planners must find innovative ways to reduce vehicle miles traveled and to shift from short trips in the automobile to biking, walking, and use of public transit."

Of note and related to AB 1358, the California Department of Transportation (Caltrans) adopted two policies in recent years relevant to bicycle planning initiatives such as this Bicycle Master Plan. Similar to AB 1358, Deputy Directive 64 (DD-64-R1) sets forth that Caltrans addresses the "safety and mobility needs of bicyclists, pedestrians, and transit users in all projects, regardless of funding."

In a more specific application of complete streets goals, Traffic Operations Policy Directive 09-06 features bicycle detection requirements. Specifically, 09-06 requires that new and modified signal detectors provide bicyclist detection if they are to remain in operation. Further, the standard states that new and modified bicycle path approaches to signalized intersections provide bicycle detection or a bicyclist pushbutton if detection is required.

C.2 Countywide Plans and Policies

This section describes the countywide plans and policies which most directly influence the development of the County of Los Angeles Bicycle Master Plan. These plans and policies have been reviewed to ensure that the Bicycle Master Plan is consistent with existing County of Los Angeles plans and policies. A summary of countywide plans and policies follows.

[ii] *According to the SCAG Framework and Guidelines for Subregional Sustainable Communities Strategy*

http://www.scag.ca.gov/sb375/pdfs/SB375_FrameworkGuidelines040110.pdf

C.2.1 Draft County of Los Angeles General Plan (2010)

The County of Los Angeles is currently updating its General Plan and a draft is available for public review at http://planning.lacounty.gov.

The primary theme of the General Plan is sustainability and includes many policies that promote healthy, livable, and sustainable communities. Of the five major goals of the plan, bicycling can help address three:

- Smart Growth
- Adequate Community Services and Infrastructure
- Healthy, Livable and Equitable Communities

C.2.1.1 Mobility Element

As a sub-element to the Mobility Element, the Bicycle Master Plan will conform most closely to the goals and policies of that element. However, the Bicycle Master Plan will also support the goals and policies of other General Plan elements. **Table C-1** shows the Mobility Element Goals, Policies and Implementation Actions most relevant to the development of the Bicycle Master Plan. The text below reflects the Mobility Element's focus on multi-modal and active transportation.

> *Mobility policies create a well-connected transportation network; help walking and biking become more practical modes of transport; support increased densities and a mix of uses in transit-oriented and pedestrian districts; conserve energy resources; reduce greenhouse gas emissions and air pollution; and continue to accommodate auto mobility on the County's streets and highways. The California Complete Streets Act of 2007 requires that the transportation plans of California communities meet the needs of all users of the roadway including pedestrians, bicyclists, users of public transit, motorists, children, the elderly, and the disabled. Complete Streets planning requires planning for all modes of travel, with the goal of making roads that are safer and more convenient places to walk, ride a bike, or take transit. Additionally, safer roads enable more people to gain the health benefits of choosing an active form of transportation, and benefit everyone by reducing traffic congestion, auto-related air pollution, and the production of climate-changing greenhouse gases.*

Table C-1: Relevant Goals, Policies and Implementation Actions from the County of Los Angeles General Plan Mobility Element

GOAL M-1: An accessible transportation system that ensures the mobility of people and goods throughout the County.

Policy M 1.1: Expand the availability of transportation options throughout the County.
Policy M 1.2: Encourage a range of transportation services at both the regional and local levels, especially for transit dependent populations.
Policy M 1.3: Sustain an affordable countywide transportation system for all users.
Policy M 1.4: Maintain transportation right-of-way corridors for future transportation uses.
Policy M 1.5: Support the linking of regional and community level transportation systems.

GOAL M-2: An efficient transportation system that effectively utilizes and expands multimodal transportation options.

Policy M 2.1: Encourage street standards that embrace the complete streets concept, which designs roadways for all users equally including pedestrians, bicyclists, motorists, people with disabilities, seniors, and users of public transit.
Policy M 2.2: Expand transportation options throughout the County that reduce automobile dependence.
Policy M 2.3: Reduce Vehicle Miles Traveled (VMT) and vehicle trips through the use of alternative modes of transportation…
Policy M 2.4: Support smart-growth street design, such as traditional street grid patterns and alleyways.
Policy M 2.5: Expand bicycle infrastructure and amenities throughout the County for both transportation and recreation
Policy M 2.6: Ensure bike lanes, bike paths, and pedestrian connectivity in all future street improvements.
Policy M 2.7: Reduce parking footprints.
Policy M 2.8: Require a maximum level of connectivity in transportation systems and community-level designs.

Implementation Action M 2.1: Establish a task force to study and evaluate the design guidelines and standards for sidewalks, bike lanes and roads in the County.

GOAL M-4: A transportation system that ensures the safety of all County residents.

Policy M 4.1: Design roads and intersections that protect pedestrians and bicyclists and reduce motor vehicle accidents.

Implementation Action M 4.1: Develop a traffic calming initiative to increase the safety and use of alternative modes of transportation that targets intersection improvements and residential streets. Change the County code to allow narrower roads and enhanced sidewalks where appropriate.

GOAL M-5: A financially sustainable countywide transportation system.

Policy M 5.1: Support dedicated funding streams for the maintenance and improvement of County transportation systems.

GOAL M-6: Effective inter-jurisdictional coordination and collaboration in all aspects of transportation planning.

Policy M 6.1: Expand inter-jurisdictional cooperation to ensure a seamless, inter-modal, and multimodal regional transportation system.
Policy M 6.3: Support the County Bikeway Plan and continue development of a regional coordinated system of bikeways and bikeway facilities.
Policy M 6.4: Encourage local bikeway proposals and community bike plans.

Implementation Action M 6.1: Develop a TDM Management Ordinance that requires bicycle parking in schools, public buildings, major employment centers, and major commercial districts. This ordinance could also apply to select new developments adjacent to transit centers, major employment centers, and major commercial districts to promote alternatives to the automobile.

Implementation Action M 6.2: Participate in the creation of the County Bicycle Master Plan Update Program with the Department of Public Works.

The Mobility Element notes the importance of linking transportation and land use planning to create sustainable communities. The County has historically planned with the goal of moving the highest number of automobiles as possible, but the updated Mobility Element envisions a multimodal transportation system with a greater investment in transit, pedestrian, and bicycle infrastructure.

> *For any transportation system to be effective, all aspects – streets, freeways, public transit, highways, sidewalks, bicycle facilities, and freight movement – must be comprehensively coordinated with land use planning. Land use and mobility are inextricably linked: low density sprawl with single use development encourages driving. Alternatively, denser, communities with a mix of land uses that encourages transit use, walking, and biking are healthier and sustainable…*
>
> *Congested roadways and high on-street parking demand create insufficient space adjacent to the road to accommodate widening for bike lanes. In addition, a frequent complaint of bicyclists is the absence of adequate facilities to secure their bicycles at public and private buildings or facilities. Many of the commercial corridors in the mature urban areas are underutilized and in need of redevelopment. Strengthening mixed land uses and promoting compact development in these areas, in concert with design standards for rights-of-way, will help encourage walking and bicycling for shorter trips, as well as make transit more accessible.*

C.2.1.2 Land Use Element

The Land Use Element of the General Plan addresses Public Health, due to the growing awareness of how land use development affects public health issues at the community level. Improving the overall condition of the County's public health and well-being through innovative and health-conscious land use planning is a goal of the General Plan. According to the Centers for Disease Control and Prevention (CDC), there has been a dramatic increase in obesity in the United States during the past 20 years.[iii] The CDC has underscored the connection between urban planning and public health, given the evidence that certain urban design and land use policies significantly increase the amount of time people engage in physical activity.

The goal of the Bicycle Master Plan is to promote an active and healthy lifestyle by encouraging more people to ride bicycles, and providing more bikeways and bicycle infrastructure within the County to accommodate bicyclists. Expansion of the bikeway network within the County will also result in improving the safety of existing road users. According to Statewide Integrated Traffic Records System (SWITRS) data, there were over 50,000 motor vehicle collisions involving bicyclists and pedestrians between 2003 and 2008 statewide.

Some of the relevant Goals and Policies from the Land Use Element are shown below:

Goal LU-8: Land use patterns and community infrastructure that promote health and wellness.

- **Policy LU 8.1:** Promote community health for all neighborhoods.
- **Policy LU 8.2:** Direct resources to areas that lack amenities, such as transit, clean air, grocery stores, bike lanes, parks, and other components of a healthy community.
- **Policy LU 8.3:** Encourage patterns of development, such as sidewalks and walking and biking paths that promote physical activity and discourage automobile dependency.

[iii] *Centers for Disease Control and Prevention report on Obesity Trends:*http://www.cdc.gov/obesity/data/trends.html

C.2.1.3 Air Quality Element

By encouraging active transportation, the Bicycle Master Plan can also help reduce mobile source emissions throughout the County of Los Angeles. Some of the relevant goals and policies are shown below:

Goal AQ-2: The reduction of air pollution and mobile source emissions through coordinated land use, transportation and air quality planning.

- Policy AQ 2.4: Enhance incentive programs for County employees to utilize alternative transportation options, particularly active transportation such as walking and biking.
- Policy AQ 2.8: Reduce emissions due to traffic congestion and vehicle trips through increased infrastructure that supports alternative modes of transportation.

C.2.1.4 General Plan Implementation

The County General Plan will be implemented in three phases. Phase 1 indicates the highest priority implementation programs, and should be initiated within the first two years of adoption of the General Plan. Phases 2 and 3 should be initiated three and five years from adoption, respectively. Programs designated as ongoing represent actions that must be done on an annual or ongoing basis for General Plan implementation. Table C-2 shows County General Plan implementation programs relevant to the County Bicycle Master Plan:

Table C-2: Plan Implementation

Implementation Program	Actions	General Plan Policies	Phase 1 (0-2 years)	Phase 2 (3-5 years)	Phase 3 (5-10 years)	Ongoing
Complete Streets Ordinance	Prepare a Complete Streets Ordinance that considers the following: Standards for streets, including rural streets, sidewalks, bike lanes and other road amenities to implement Complete Streets. Traffic calming measures for intersections and residential streets that increase the safety and use of alternatives modes of transportation.	Mobility Element Policies: 2.1, 2.2, 2.3, 2.8, 5.3, 6.6	-	X	-	-
Multimodal Transportation Incentives Ordinance*	Prepare a Multimodal Transportation Incentives Ordinance that encourages the provision of multimodal transportation amenities, such as bicycle parking in schools, public buildings, major employment centers, and commercial districts.	Economic Development Element Policies: 3.3	-	-	X	-

**The Department of Regional Planning is currently developing a Healthy Design Ordinance, which will include standards for bike related facilities.*

Alternative Transportation and Mobility Program

The Alternative Transportation and Mobility Program addresses the goal to provide communities with access to multi-modal transportation options. This program focuses on improving the pedestrian and mobility environment.

Responsible Agencies: DRP, DPW, Department of Parks and Recreation (DPR), Los Angeles County Metropolitan Transportation Authority (Metro), CEO

C.2.2 Unincorporated Area wide and Community Specific Plans

The Los Angeles County General Plan is the foundation for all other land use plans that are created in the unincorporated County. These community planning efforts are supplemental components of the General Plan and must be consistent with general Plan goals and policies.

Many of these plans include regional or community-level policies regarding circulation, recreational facilities and bikeway facilities. Additionally, certain area and community plans are currently being updated through comprehensive, community-based efforts. All potential bikeways and support facilities that have been identified in these plans and update efforts were reviewed, and included in the Bicycle Master Plan based on their feasibility and relevance to the countywide bikeway network. The County's supplemental land use plans are listed below:

- **Santa Clarita Valley Area Plan** (Adopted 1984; currently being updated)
- **Antelope Valley Area Plan** (Adopted 1986; currently being updated)
- **Hacienda Heights Community Plan** (Adopted 1978; currently being updated)
- **Rowland Heights Community Plan** (Adopted 1981)
- **Altadena Community Plan** (Adopted 1986)
- **Walnut Park Walnut Park Neighborhood Plan** (Adopted 1987)
- **East Los Angeles Community Plan** (Adopted 1988)
- **West Athens/Westmont Community Plan** (Adopted 1990)
- **Twin Lakes Community Plan** (Adopted 1991)
- **Santa Monica Mountains North Area Plan** (Adopted 2000)
- **Florence-Firestone Community Plan** (currently being created)
- **Santa Catalina Island Local Coastal Plan** (Adopted 1983);
- **Marina Del Rey Land Use Plan** (Adopted 1996);
- **Malibu Land Malibu Land Use Plan** (Adopted 1986; currently being updated as the Santa Monica Mountains Coastal Zone Plan).
- **Fair Oaks Ranch** (Adopted 1986)
- **Canyon Park Canyon Park**(Adopted 1986)
- **La Vina**(Adopted 1989)
- **Northlake** (Adopted 1993)
- **Newhall Ranch** (Adopted 1999)
- **East Los Angeles Third Street Specific Plan** (currently being created)

C.2.2.1 Antelope Valley Area Plan Mobility Element Goals and Policies

Travel Demand Management

Goal M 1: Land use patterns that promote alternatives to automobile travel.

Policy M 1.3: Encourage new parks, recreation areas, and public facilities to locate in existing rural towns and rural town centers.

Policy M 1.4: Promote alternatives to automotive transit in existing rural towns and rural town centers by linking adjoining areas through pedestrian walkways, trails, and bicycle routes.

Goal M 2: Reduction of vehicle trips and emissions through effective management of travel demand, transportation systems, and parking.

Policy M 2.4: Develop multi-modal transportation systems that offer alternatives to automobile travel by implementing the policies regarding regional transportation, local transit, bicycle routes, trails, and pedestrian access contained in this Mobility Element.

Policy M 2.5: As residential development occurs in communities; require transportation routes, including alternatives to automotive transit, link to important local destination points such as shopping, services, employment, and recreation.

Bikeways and Bicycle Routes

Goal M 9: A unified and well-maintained bicycle transportation system throughout the Antelope Valley with safe and convenient routes for commuting, recreation, and daily travel.

Policy M 9.1: Implement the adopted Bikeway Plan for the Antelope Valley in cooperation with the cities of Lancaster and Palmdale. Ensure adequate funding on an ongoing basis.

Policy M 9.2: Along streets and highways in rural areas, add safe bicycle routes that link to public facilities, a regional transportation hub in Palmdale, and shopping and employment centers in Lancaster and Palmdale.

Policy M 9.3: Ensure that bikeways and bicycle routes connect communities and offer alternative travel modes within communities.

Policy M 9.4: Encourage provision of bicycle racks and other equipment and facilities to support the use of bicycles as an alternative means of travel.

Pedestrian Access

Goal M 11: A continuous, integrated system of safe and attractive pedestrian routes linking residents to rural town centers, schools, services, transit, parks, and open space areas.

Policy M 11.2: Within rural town centers, require that highways and streets provide pleasant pedestrian environments and implement traffic calming methods to increase public safety for pedestrians, bicyclists, and equestrian riders.

Policy M 11.4: Within rural town centers, require that parking be located behind or beside structures, with primary building entries facing the street. Require direct and clearly delineated pedestrian walkways from transit stops and parking areas to building entries.

C.2.2.2 Santa Clarita Valley Area Plan (One Valley, One Vision)

Land Use Goals and Policies

Goal LU 3: Healthy and safe neighborhoods for all residents.

Policy LU 3.2.2: In planning residential neighborhoods, include pedestrian linkages, landscaped parkways with sidewalks, and separated trails for pedestrians and bicycles, where appropriate and feasible.

Goal LU 5: Enhanced mobility through alternative transportation choices and land use patterns.

Objective LU 5.1: Provide for alternative travel modes linking neighborhoods, commercial districts, and job centers.

Policy LU 5.1.1: Require safe, secure, clearly-delineated, adequately-illuminated walkways and bicycle facilities in all commercial and business centers.

Policy LU 5.1.2: Require connectivity between walkways and bikeways serving neighborhoods and nearby commercial areas and schools.

Circulation Goals and Policies

Goal C 1: An inter-connected network of circulation facilities that integrates all travel modes, provides viable alternatives to automobile use, and conforms with regional plans.

Objective C 1.1: Provide multi-modal circulation systems that move people and goods efficiently while protecting environmental resources and quality of life.

Policy C 1.1.1: Reduce dependence on the automobile, particularly single-occupancy vehicle use, by providing safe and convenient access to transit, bikeways, and walkways.

Policy C 1.1.4: Promote public health through provision of safe, pleasant, and accessible walkways, bikeways, and multi-purpose trail systems for residents.

Policy C 1.1.6: Provide adequate facilities for multi-modal travel, including but not limited to bicycle parking and storage, expanded park-and-ride lots, and adequate station and transfer facilities in appropriate locations.

Policy C 1.1.7: Consider the safety and convenience of the traveling public, including pedestrians and cyclists, in design and development of all transportation systems.

Goal C 6: A unified and well-maintained bikeway system with safe and convenient routes for commuting, recreational use and utilitarian travel, connecting communities and the region.

Objective C 6.1: Adopt and implement a coordinated master plan for bikeways for the Valley, including both City and County areas, to make bicycling an attractive and feasible mode of transportation.

Policy C 6.1.1: For recreational riders, continue to develop Class 1 bike paths, separated from the right-of-way, linking neighborhoods to open space and activity areas.

Policy C 6.1.2: For long-distance riders and those who bicycle to work or services, provide striped Class 2 bike lanes within the right-of-way, with adequate delineation and signage, where feasible and appropriate.

Policy C 6.1.3: Continue to acquire or reserve right-of-way and/or easements needed to complete the bicycle circulation system as development occurs.

Policy C 6.1.4: Where inadequate right-of-way exists for Class 1 or 2 bikeways, provide signage for Class 3 bike routes or designate alternative routes as appropriate.

Policy C 6.1.5: Plan for continuous bikeways to serve major destinations, including but not limited to regional shopping areas, college campuses, public buildings, parks, and employment centers.

Objective C 6.2: Encourage provision of equipment and facilities to support the use of bicycles as an alternative means of travel.

Policy C 6.2.1: Require bicycle parking, which can include bicycle lockers and sheltered areas, at commercial sites and multi-family housing complexes for use by employees and residents, as well as customers and visitors.

Policy C 6.2.2: Provide bicycle racks on transit vehicles to give bike-and-ride commuters the ability to transport their bicycles.

Policy C 6.2.3: Promote the inclusion of services for bicycle commuters, such as showers and changing rooms, as part of the review process for new development or substantial alterations of existing commercial or industrial uses, where appropriate.

C.2.2.3 Santa Monica North Area Plan (2000)

Goal VII 3: Alternative modes of travel for the single occupant automobile for local, commuter, and recreational trips.

Policy VII 22: Develop, and as part of new non-residential development, require the provision of priority park-and-ride lots and parking facilities for public transit vehicles, bicycles, and motorcycles to encourage these modes of transportation.

Policy VII 24: Promote bicycle use by requiring establishment of secure and adequate areas for the parking and storage of bicycles, showers, lockers, and other facilities at major employment and recreation destinations.

Policy VII 25: Develop and maintain a comprehensive system of bicycle routes within the planning area, as depicted on Map 8: Ventura Freeway Corridor Bikeway Plan, and provide appropriate support facilities for bicycle riders; incorporate bike lanes and/or bike use signage into local road designs wherever feasible.

C.2.2.4 Hacienda Heights Community Plan

Policy M 1.2: Promote the integration of multi-use regional trails, walkways, bicycle paths, transit stops, parks and local destinations.

Policy M 1.3: Ensure that bus stops are easily and safely accessible by foot, bicycle, or automobile.

Policy M 1.5: promote and expand the Park and Ride bus system, including providing bike parking facilities at Park and Ride locations.

Goal M 2: Safe and well-maintained bike routes and facilities.

Policy M 2.1: Upgrade existing Class III bike lane designations to Class II and make all new bike lanes Class II or better, where infrastructure permits.

Policy M 2.2: Install safe bike accommodations in appropriate places along Hacienda Boulevard, Colima Road and other well-traveled roads.

Policy M 2.3: Add and maintain new bike racks and lockers at major bus stops in commercial areas, and at all community facilities.

Policy M 2.4: Educate riders and motorists on how to safely share the road, for example through Share the Road signage and educational campaigns.

Implementation #6: Continue to improve traffic operations through signal upgrades, striping, signalization, improved public transit service, expanded bikeways and lanes, carpooling, pedestrian-friendly enhancements, and other improvements where needed.

Implementation # 11: Update Bikeway Master Plan for Unincorporated County Areas including Hacienda Heights.

C.2.2.5 Vision Lennox

- Hawthorne Green Line Station: add bike lane, station bicycle parking. Expanded bicycle storage facilities should be provided at the Green Line station. These facilities could include a bike station or automated bicycle parking at the station. (p. 21)
- Walking/jogging path along freeways. The Caltrans right-of-way just north of the I-105 freeway and the I-405 freeway is wide enough to construct a bike path that would connect four of the schools in Lennox. This bike path will need special crossing treatments at Inglewood Avenue and Hawthorne Boulevard. Access could be provided at the streets that currently end in cul-de-sacs. Interpretive signage, landscape, public art and other similar features could enhance this bike path into one of the most popular features in Lennox. (p. 25)
- Create a network of bikeways. Add bike lanes and bike routes along appropriate streets to develop an interconnected network that local cyclists could use to ride from home to school, the Green Line station, stores, Lennox Park, etc. Add the Class III bike routes (signed on-street bicycle routes) that are in the draft Countywide Bicycle Master Plan along 104th Street and 111th Street. Enhance these bike routes with "sharrows"– pavement markings indicating a shared bicycle lane – and destination signs. Add Class II bike lanes (striped on-street bike lanes) along Lennox Boulevard and Hawthorne Boulevard. Plan for a full bikeway network that may include Class III bike routes on other streets such as Buford Avenue, Firmona Avenue and Freeman Avenue.
- Construct pedestrian and bicycle improvements on school routes. Identify and construct street, sidewalk and intersection improvements that will enhance safety for students that walk or bicycle to school. Teach bicycle safety to students. Encourage students to walk and bicycle to school.(p. 26)
- Add bicycle parking. Install bicycle parking along retail corridors, at schools, Lennox Park, the Hawthorne Green Line Station, and other destinations. Given security concerns, bicycle parking at the Hawthorne Green Line Station will be best if done as a bike station with attendants or automated parking. (p. 26-27)

- Implement road diets and street reconfigurations. Remove travel lanes on appropriate streets to add bike lanes, widen sidewalks, improve pedestrian crossings, landscape, and enhance retail and/or residential neighborhoods (p. 27) See pages 27, 28 for configurations to add bike lanes along certain streets.
- Hold a periodic or regular "ciclovia" on Lennox Boulevard. On occasion, or on a regular basis, close all or part of Lennox Boulevard to cars, so that Lennox residents can use it to bicycle, walk, rollerblade, skateboard, relax, or hold farmers' markets, etc. (p. 30)
- Implementation Action: Station bicycle parking (p. 36)
- Implementation Action: Bike racks throughout Lennox, improve bicycle network (p. 39)

C.2.2.6 Florence-Firestone Vision Plan

- Allow shared spaces in alleys. Transform alleys into livable shared spaces that may be used by cars, bikes, pedestrians and trucks. Activities to achieve this could include improved paving, fencing and signage. (p. 58)
- Prepare and implement a bicycle network plan. Create and then implement a bicycle plan. Improvements should include adding bike lanes, bike routes, and bike paths along appropriate streets and corridors. The goal of these improvements should be to develop an interconnected network that local cyclists could use to ride from home to the Blue Line station, schools, stores, parks and other destinations. Adopt the recommendations from the study conducted for Metro by the Los Angeles County Bicycle Coalition or incorporate these ideas into the bicycle plan.
- Add bicycle parking in key locations. Install bicycle parking along retail corridors and at schools, parks and other destinations. (p. 74)
- Pedestrian and bicycle improvements on school routes - Identify and construct street, sidewalk and intersection improvements that will enhance safety for students that walk or bicycle to school. The County should seek federal and State grants from Safe Routes to Schools funding sources. (p. 75)
- Recommended streets for road diets in Florence-Firestone include Nadeau Street, Hooper Avenue, Compton Avenue, Holmes Avenue. Recommended improvements include adding bike lanes, widening sidewalks, improving pedestrian crossings, and adding landscaping. (p. 76)

C.2.3 County of Los Angeles Plan of Bikeways (1975)

The previous bicycle plan for the County of Los Angeles was developed in 1975. At the time this plan was developed, there were 78 incorporated cities in the County, none of whom had adopted Bicycle Master Plans. The 1975 Plan of Bikeways proposed a countywide network of bikeways in both incorporated and unincorporated areas. The plan included over 170 "major bikeway corridors" and a proposed network of over 1,500 miles of bikeways. The conditions along many of these proposed "major bikeway corridors" may have changed in the intervening decades, requiring an updated analysis to determine their desirability and feasibility. Additionally, the updated County of Los Angeles Bicycle Master Plan differs significantly from the 1975 Plan of Bikeways in scope, as it focuses only on unincorporated areas and other County-controlled properties. However, the goals and polices of the plan still have relevance today, and provided the framework for the goals, policies and implementation actions recommended in this Bicycle Master Plan. **Table C-3** lists the goals from the 1975 Plan of Bikeways.

Table C-3: County of Los Angeles Plan of Bikeways (1975) Goals

GENERAL GOAL 1: Provide safer, more convenient bicycle facilities throughout Los Angeles County for transportation and recreation, as a viable alternative to automobile travel.
Sub-Goal A: Promote citizen participation in the planning and financing of bicycle routes.
Sub-Goal B: Plan and implement a coordinated interconnected system of bikeways and bikeway support facilities to enhance bicycle transportation.
GOAL 2: Initiate a comprehensive safety education program for both bicyclists and motorists to improve safety on existing roadways.
Sub-Goal A: Educate bicyclists, motorists and enforcement agencies in the proper operation of bicycles on our roadway transportation system.
Sub-Goal B: Monitor accident and safety data to identify safety problems and their solutions.
GOAL 3: Interface the Plan of Bikeways with existing and future modes of transportation as they are planned and implemented to ensure the development of a balanced coordinated transportation system which meets the needs of all the citizens of this County.
Sub-Goal A: Coordinate the implementation of bikeways with other modes of transportation.

C.2.4 Los Angeles River Master Plan (1996)

The County Board of Supervisors requested the development of a master plan for the Los Angeles River and one of its major tributaries—the Tujunga Wash—in 1991 and the plan was completed in 1996. The Mission of the Los Angeles River Master Plan (LARMP) is to provide for "the optimization and enhancement of aesthetic, recreational, flood control and environmental values by creating a community resource, enriching the quality of life for residents and recognizing the rivers primary purpose for flood control." The plan envisions a continuous bikeway along both the LA River and the Tujunga Wash. Other LARMP recommendations would also improve the conditions for transportation and recreational bicycling along the river. Environmental quality recommendations such as planting a continuous greenway of trees along the river will improve the bicycling environment along existing and future river bike path segments by providing shade and visual relief along the corridor. Economic development policies related to zoning requirements and development incentives for properties along the river could potentially increase access to destinations.

Recommendations regarding the design and use of fencing along the river and at access points may also impact bicycling in the County. In addition to the LARMP, guidelines for signage, landscaping and maintenance along the LA River were developed. **Figure C-1** provides an example of projects recommended in the LARMP which include bike path landscaping and access improvements, among others. LARMP bikeway-related projects and general recommendations falling under County of Los Angeles jurisdiction were addressed in the design guidelines and project recommendations in this Bicycle Master Plan.

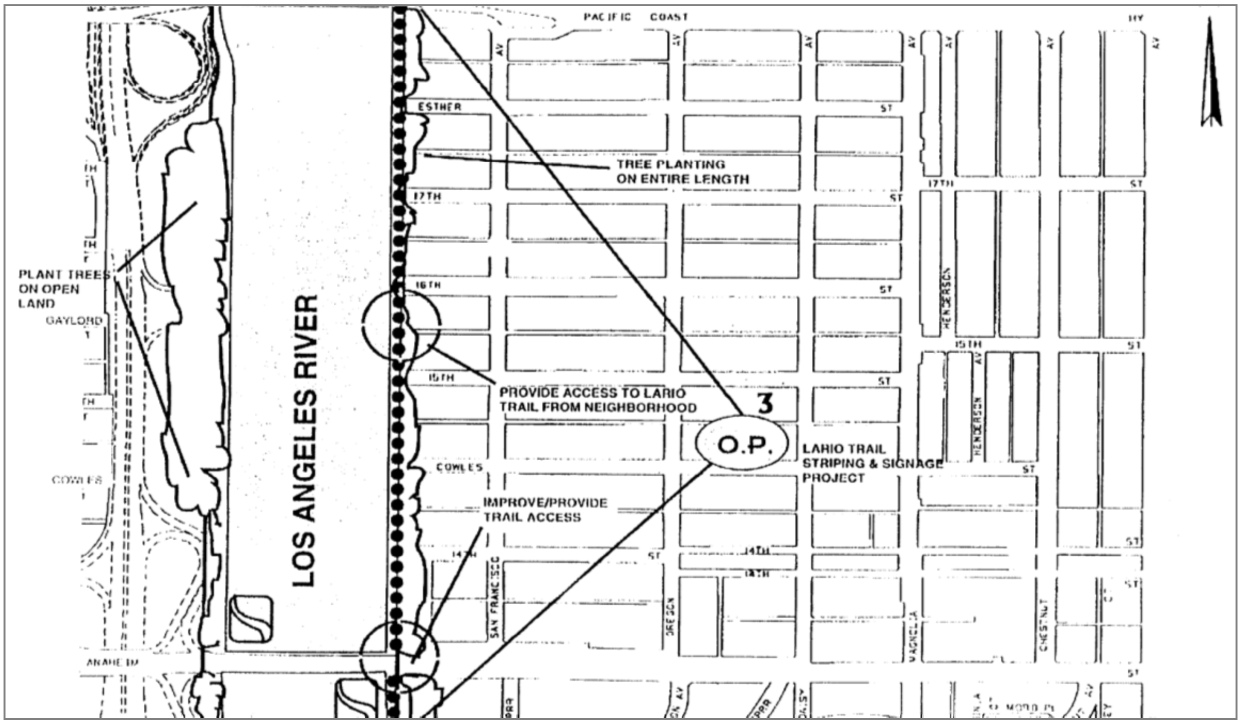

Figure C-1: Los Angeles River Master Plan Examples Project Sheet

C.2.5 San Gabriel River Corridor Master Plan (2006)

The San Gabriel River Corridor Master Plan (SGRCMP) has goals related to habitat, recreation, open space, flood protection, water quality, and economic development. A bicycle path (the San Gabriel River Trail) already exists along the full length of the river from the foothills of the San Gabriel Mountains in Azusa to Seal Beach. A primary objective of the SGRCMP is to enhance the San Gabriel River Trail. The plan identifies 27 "trail enhancement projects" within the corridor. **Figure C-2** identifies river enhancement projects along the corridor. The yellow dots indicate enhancements to the San Gabriel River Trail. The Bicycle Master Plan includes the San Jose Creek Bike Trail connection between the existing San Jose Creek Bike Trail and the San Gabriel River Bike Trail next to the Woodland Duck Farm Project proposed in the SGRCMP.

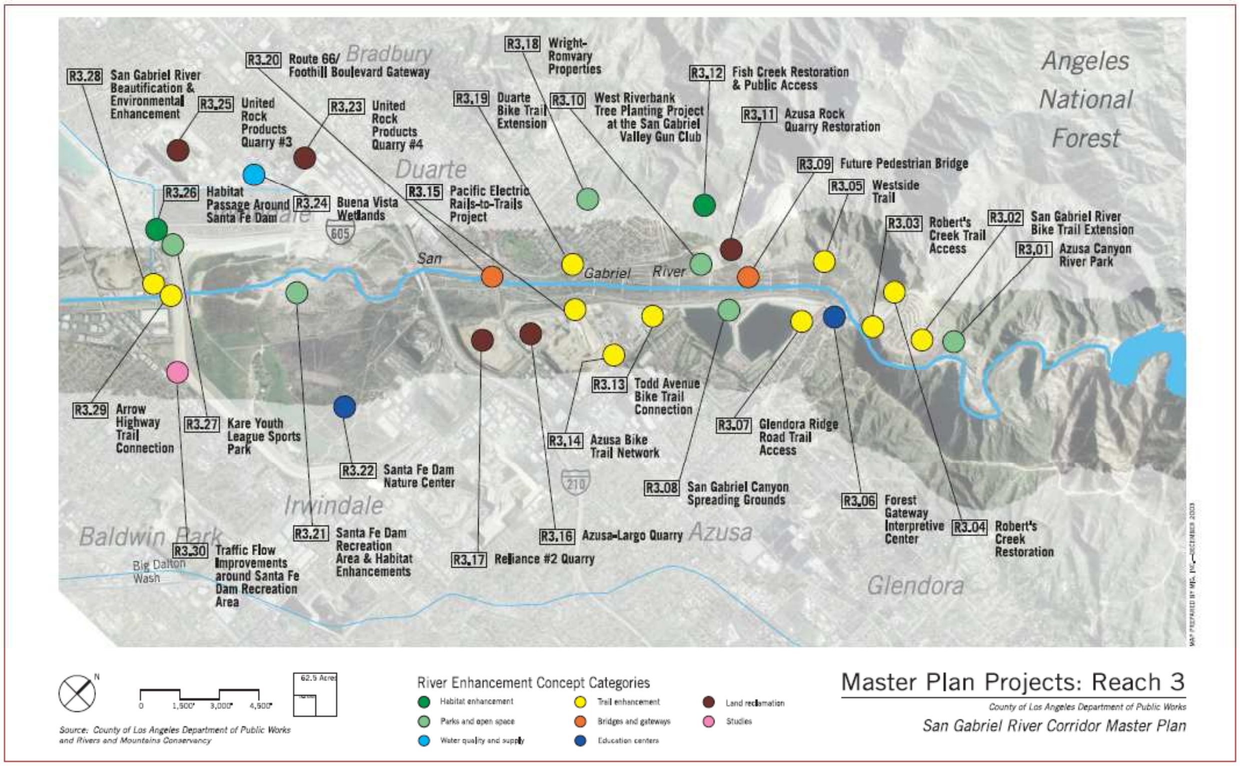

Figure C-2: San Gabriel Corridor Master Plan Projects

C.2.6 Los Angeles County Code

The Los Angeles County Code has numerous references to bicycling. Bicycle-related code is summarized in Table C-4 below.

Table C-4: Los Angeles County Code

Code	Summary
Chapter 15.52 Crosswalks and Bikeways	
15.52.030 Bicyclist roadway crossing restrictions	The commissioner may place signs where it has been determined that conditions of vehicular and bicycle traffic are such that a traffic hazard would exist if bicyclists were permitted to cross the roadway at these locations directing that bicyclists shall not cross at a location so indicated.
15.52.040 (A) Placement of bicycle lanes	If the commissioner finds that the width of a county highway and the amount of traffic thereon, is such that a separate lane could be provided to accommodate bicycle traffic, he may place appropriate markings and may erect and maintain appropriate signs indicating the bicycle lane.
15.52.040 (B) Prohibition of vehicle use of bicycle lanes	A person shall not operate a motor vehicle in the bicycle lane except to cross at a permanent or temporary driveway, or for the purpose of parking a vehicle where parking is permitted or where the vehicle is disabled.

Table C-4: Los Angeles County Code (continued)

Code	Summary
15.52.050-70 Pedestrian use of bicycle lanes restrictions, signage and conditions for prohibition	Pedestrians are prohibited from walking upon bicycle lanes, except when crossing, where appropriate signs or markings allow them to do so. Wherever sidewalks or other suitable areas are available for pedestrian use, the commissioner may place and maintain such signs and pavement markings. In any otherwise events where pedestrians walk in the bicycle lane, they are to stay close to the edge of the lane farthest from vehicular traffic.
Chapter 15.76 Miscellaneous Regulations	
15.76.080 Driving or riding vehicles on sidewalk.	A person shall not operate any bicycle on any sidewalk or parkway except at a permanent or temporary driveway or at specific locations thereon where the commissioner finds that such locations are suitable for, and has placed appropriate signs and/or markings permitting such operation or riding.
15.76.090 Riding on bicycle or motorcycle handlebars.	The operator of a bicycle shall not carry any other person upon the handlebars of such bicycle or motorcycle. A person shall not ride upon the handlebars of any bicycle.
15.76.100 Clinging to moving vehicles prohibited.	A person operating, riding or traveling upon any bicycle on any public highway shall not cling to or attach himself to, or his vehicle or device to, any other moving vehicle or streetcar.
Chapter 17.12 Beaches	
17.12.240 Bicycle paths.	The director may designate, by sign or postings, certain areas to be used exclusively by persons using or operating bicycles upon bicycle lanes or paths set aside for that use on the beach.
Chapter 19.12 Harbors	
19.12.1340 Bicycles operation and immobility	No person shall ride a bicycle on other than a paved vehicular road or path designated for that purpose. A bicyclist shall be permitted to wheel or push a bicycle by hand over any area normally reserved for pedestrian use. No person shall leave a bicycle or motorcycle lying on the ground or paving, or set against a building or tree, or in any place or position that may cause a person to trip over or be injured by it.
Chapter 22.20 Residential Zones	
Part 7 22.20.460 (4d) Residential Planned Development Zone Uses and development standards Open Space	Subject to the approval of the hearing officer, open space may include one or more of the following, designated for the use and enjoyment of all of the occupants of the planned residential development or appropriate phase thereof: - Present or future hiking, riding or bicycle trails

Table C-4: Los Angeles County Code (continued)

Code	Summary
Chapter 22.40 Special Purpose and Combining Zones	
Part 11. (9c) Mixed Use Development Parking and Access	Unless specifically waived or modified by the hearing officer, mixed use developments shall be subject to all of the following requirement for parking and access: there shall be adequate provision for and separation of different transportation modes including pedestrian, bicycle, automobile and truck.
22.40.520 (4d) Mixed Use Development Uses and development standards Open Space	Subject to the approval of the hearing officer, open space may include one or more of the following, designated for the use and enjoyment of all of the occupants of the planned mixed use development or appropriate phase thereof: - Present or future hiking, riding or bicycle trails
Chapter 22.46 Specific Plans	
Part 2. 22.46.220 & 630 Bicycle and Pedestrian Circulation plan for the Two Harbors area	A bicycle and pedestrian circulation plan shall be prepared which shows the location and design of bikeways and pedestrian walkways providing access to the Two Harbors area. The bicycle and pedestrian routes shall link with proposed residential areas, lodges, commercial development, piers and the proposed interpretive center.
Part 2. 22.46.1050 Marina Del Rey community identity elements	Notable elements within the Marina Del Rey area feature bicycle amenities that should be preserved with any further development. These include the Loop Road, with its own landscaped character, signs, lighting, the pedestrian promenade and bicycle trail; and the walkways and bicycle trails that are a primary means for access to activities in the Marina.
22.46.1100 Marina Del Rey bicycle circulation system	The pedestrian and bicycle system is an important component of the overall circulation system. The pedestrian promenade and bicycle path enhance shoreline access and implement a number of policies in the land use plan. Bicycle system features include: Connections to the South Bay Regional Bikeway; Access around the entire Marina area, to all land uses, including visitor-serving facilities and beaches; Identification striping, markers and signs; Smooth, continuous paving; Directories, bike racks, benches, drinking fountains, storage lockers at all land uses; Connections to other travel modes (bus stops, park and ride, transit stations, bus transportability). The bicycle system should maximize access without compromising safety. Separate right-of-way, minimizing driveways that interfere with the route and compatible intersection design are all necessary for ensuring a safe bicycle system.

Table C-4: Los Angeles County Code (continued)

Code	Summary
22.46.1190 (3) Conditions of approval	To fully mitigate traffic impacts, new developments are required to establish a functional transportation systems management (TSM)/Transportation Demand Management (TDM) program, or to participate in an existing TSM/TDM program. Consolidation of numerous TSM/TDM programs is highly desirable. Viable TSM/TDM possibilities include, but shall not be limited to: -- Carpools; -- Ridesharing; -- Vanpools; -- Modified work schedules/flex time; -- Increase use of bicycles for transportation; -- Bicycle racks, lockers at places of employment; -- Preferential parking for TSM/TDM participants; -- Incentives for TSM/TDM participants; -- Disincentives. The TSM/TDM program should follow the guidelines in the Transportation Improvement Program contained in Appendix G. An annual report on the effectiveness of the TSM/TDM program shall be submitted to the department of regional planning.
22.46.1850-80 Regional bicycle trail retention within the Marina Del Rey area	The regional bicycle trail shall be retained or reconstructed as part of any redevelopment affecting parcels in the Oxford Development Zone 6, the Admiralty Development Zone 7, the Bali Development Zone 8, or the Mindanao Development Zone 9.
22.46.1950 (C1) Coastal improvement fund. Use of Fund	Park and public access facilities, including, but not limited to: Bicycle paths
22.46.1970 (B1) Coastal improvement fund fee specified programs	The Marina del Rey Specific Plan identifies specific facilities which may be financed through the coastal improvement fund to mitigate the impacts of residential development in the existing Marina. The facilities include: Park and public access facilities, including, but not limited to: Bicycle paths

C.2.7 Metro Bicycle Transportation Strategic Plan (2006)

The Los Angeles County Metropolitan Transportation Authority (LACMTA) adopted their Bicycle Transportation Strategic Plan (BTSP) in June 2006. This plan was designed to be used by cities, the County and transit agencies in planning regionally significant bicycle facilities.

Volume 1 of the BTSP focuses primarily on methods for improving bicycle access to transit hubs and identifying gaps in the regional bikeway network. **Figure C-3** shows bike-transit hubs identified by LACMTA. **Figure C-4** and **Figure C-5** show gaps in the regional bikeway network identified by LACMTA. The County of Los Angeles Bicycle Master Plan will attempt to improve access to bike-transit hubs and close gaps in the regional bikeway network wherever possible within the County's jurisdictional authority.

Volume 2 of the BTSP compiled all existing and proposed bikeways under the jurisdiction of the County and the 88 incorporated cities within the County of Los Angeles. The volume was developed to provide compliance with the requirements of the Bicycle Transportation Account (CA Streets and Highways Code

Section 891.2), and to facilitate inter-jurisdictional coordination in bikeway planning efforts. In the development of the County of Los Angeles Bicycle Master Plan, the BTSP identified connection opportunities to existing and planned bikeways in adjacent jurisdictions. For example, **Figure C-6** shows the location of existing and proposed bicycle facilities surrounding the unincorporated areas of La Crescenta/Montrose and Altadena.

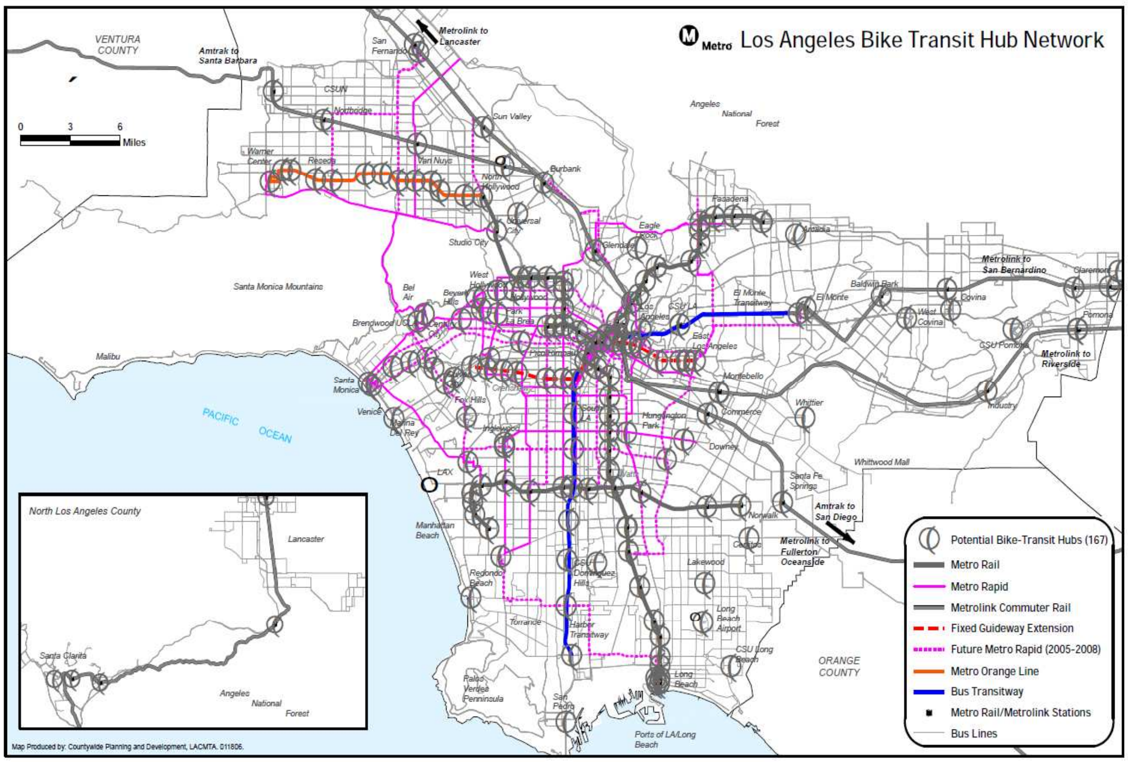

Figure C-3: Metro Bike Transit Hubs

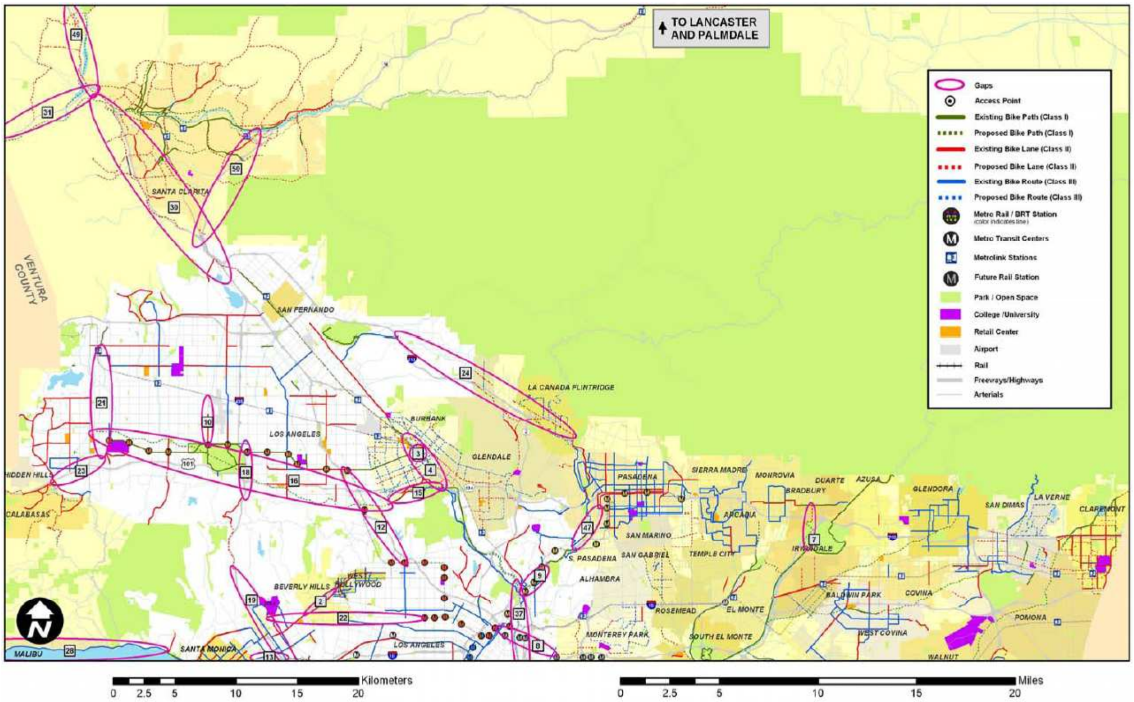

Figure C-4: North County Regional Bikeway Gaps

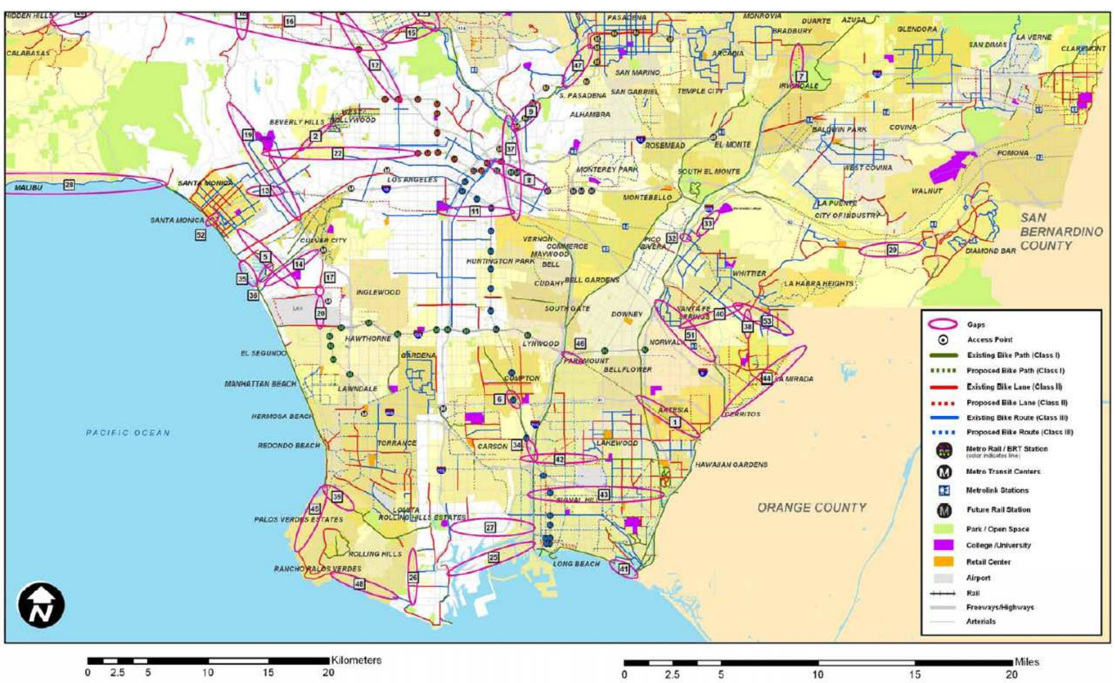

Figure C-5: South County Regional Bikeway Network Gaps

Figure C-6: Existing and Proposed Bikeways in Adjacent Jurisdictions

C.3 Municipal Bicycle Planning Documents

The Metro Bicycle Transportation Strategic Plan (BTSP) will be the primary tool for coordination with the bikeway infrastructure plans of other jurisdictions. However, the following bicycle planning documents are more recent than the BTSP. These plans have been either developed and adopted by incorporated cities, or are forthcoming and will be consulted for inter-jurisdictional coordination throughout the development of the County of Los Angeles Bicycle Master Plan. The following section describes these recent bicycle plans and identifies the specific projects within each plan that are relevant to the development of the County of Los Angeles Bicycle Master Plan.

C.3.1 City of Burbank Bicycle Master Plan Update (2009)

The City of Burbank adopted an update to its 2003 Bicycle Master Plan Update in December 2009. The City of Burbank is located in the western San Fernando Valley and does not border any unincorporated territory. Future segments of the Los Angeles River Bikeway will be located along the river near the city's southern border.

C.3.2 Claremont Bicycle Plan (2007)

The City of Claremont Bicycle Plan was adopted in November 2007. Claremont is located in the San Gabriel Valley at the eastern border of Los Angeles County. The City has borders with several small pockets of unincorporated County. A key element of the bikeway network is the Thompson Creek Regional Trail, which includes an existing section between Mount Baldy Road in the north to the south side of the 210 Freeway, as well as a proposed section extending south to Gary Avenue. The bike paths proposed in the County Bicycle

Master Plan along San Jose Creek and Thomson Creek will connect the City's existing and proposed bikeway network to the County's regional bikeway network.

C.3.3 Culver City Bicycle and Pedestrian Master Plan (2011)

Culver City is located in western Los Angeles County and shares its eastern border with the unincorporated areas of Baldwin Hills and Ladera Heights. The Ballona Creek bikeway carries a significant portion of the City's existing bicycle traffic. A focus of the Bicycle and Pedestrian Initiative is providing access to the future Exposition Light Rail Transit Line and bike path., This plan was adopted by the City Council on November 8, 2011.

C.3.4 City of Glendale Bikeway Master Plan (1995)

The City of Glendale completed its Bikeway Master Plan in 1995. The City of Glendale lies at the eastern end of the San Fernando Valley and shares borders with the City of Los Angeles, the City of Burbank, the City of La Cañada Flintridge and unincorporated La Crescenta-Montrose. The 1995 Bikeway identifies bikeways connecting to unincorporated areas along Foothill Boulevard, Rosemont Avenue, and Honolulu Avenue. The city is currently developing the Safe and Healthy Streets Plan to help implement policies contained in the Bikeway Master Plan.

C.3.5 City of Los Angeles Bicycle Master Plan Update (2011)

The City of Los Angeles is the most populous city in the county with approximately 3.8 million residents. The city spans much of the County's north-central and central area. The City borders numerous unincorporated areas including Kagel Canyon, East Los Angeles, City Terrace, Marina Del Rey, Baldwin Hills, View Park, Windsor Hills, Florence, Del Aire, Lennox, Westmont, Athens, Willowbrook, Walnut Park, and West Carson. Several major County-owned flood control channels fall largely within the Los Angeles City limits. The Plan was adopted by the City council on March 1, 2011. Many of the on-street facilities recommended in this plan include connections to unincorporated areas. Proposed bikeways along flood-control owned or maintained by the Los Angeles County Flood Control District also appeared in the draft maps including facilities along the Arroyo Seco, Brown's Canyon Wash, East Canyon Channel, Los Angeles River, Pacoima Diversion Canal, Pacoima Wash, and Tujunga Wash.

C.3.6 City of San Fernando Bicycle Master Plan (2007)

The City of San Fernando completed its first Bicycle Master Plan in January 2007. San Fernando is surrounded by the City of Los Angeles. Bike paths have been recommended along two flood control channels: the East Canyon Channel and the Pacoima Wash. The proposed bike path along the East Canyon Channel would be used to connect two proposed local bikeways. The proposed Pacoima Wash path extends along the entire western side of the channel within the City of San Fernando. A path along the eastern side of the channel is proposed between 4^{th} and 8^{th} streets. The Pacoima Wash path has potential to become a regional trail, as the City of Los Angeles's current Bicycle Master Plan has proposed bike paths along the Pacoima Wash that will connect to the bike path within the City of San Fernando.

C.3.7 City of Santa Clarita Non-Motorized Transportation Master Plan (2008)

The City of Santa Clarita is located on the northern edge of the county and is surrounded on all sides by unincorporated areas. The roadway network is dominated by curvilinear arterials which lead out beyond the city limits. Santa Clarita's plan proposes improvements to bicycle, pedestrian and trail facilities, including several which connect to County roads. The County plan proposes bikeway connections to the City of Santa Clarita in several locations to the east, including Bouquet Canyon Road, Sierra Highway, Sand Canyon Road and Soledad Canyon Road. To the west, the County is proposing bike lanes along The Old Road, which runs along the western boundary of the City of Santa Clarita and crosses several important arterials leading into the city. **Figure C-7** shows existing and proposed bicycle facilities and trails in Santa Clarita. Santa Clarita bicycle facilities connecting to unincorporated areas include:

- Santa Clarita River (Bike path)
- San Francisquito Creek Trail (Bike path)
- Copper Hill Drive (Bike lanes)
- Decoro Drive (Bike lanes)
- Bouquet Canyon Road (Bike lanes)
- Plum Canyon/Whites Canyon Road (Bike lanes)
- Sand Canyon Road (Bike path/lanes/route)
- Placerita Canyon Road (Bike route)
- Vasquez Canyon Road/Sierra Highway (Bike lanes)

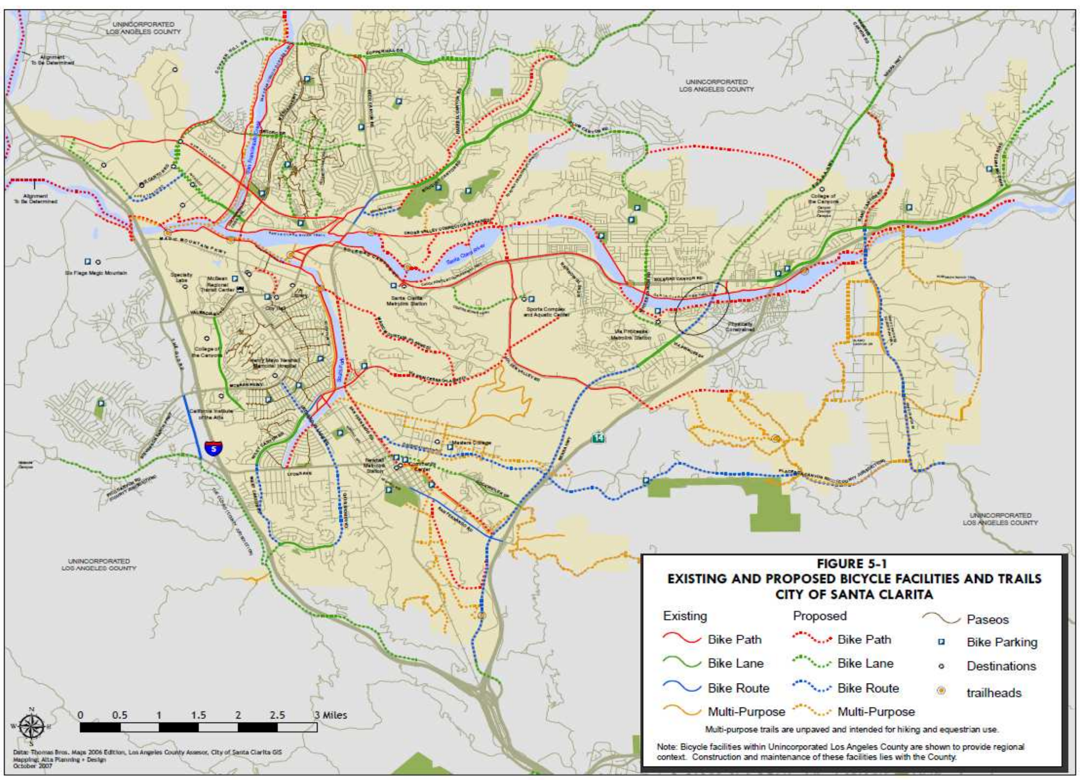

Figure C-7: Existing and Proposed Santa Clarita Bicycle Facilities and Trails

C.3.8 City of Temple City Bicycle Master Plan (2011)

On March 15, 2011, the City Council approved Temple City's first bicycle master plan, which includes a network of designated bikeways and other safety improvements that connect cyclists to key destinations like parks, schools, transit hubs and the regional Rio Hondo Bike Trail.

The plan includes:

- Bicyclist input from over 300 online surveys.
- A network of Class I, II, and II bikeways totaling 26.9 miles, which includes on-street and off-street bikeways.
- Direction on expanding the existing regional bikeway network and connecting gaps to ensure greater local and regional connectivity.
- Recommendations for education, encouragement, enforcement, and evaluation programs.
- A bicycle improvement list including potential funding sources; implementation is estimated at $6.9 million.
- An increase in bicycle commuting to over 3,200 local riders by the year 2030.

The city of Temple City Bicycle Master Plan proposes 26.9 miles of bicycle facilities to promote bicycling as a viable transportation alternative. Temple City lies within the West San Gabriel Valley Planning Area of Los Angeles County. Of the proposed facilities, there are some that link to the unincorporated county proposed facilities adjacent to the city limits of Temple City including:

- Proposed Class III facility on S. Golden West Avenue, connecting to the City of Arcadia
- Proposed Class II facility on Temple City Boulevard, connecting to the City of Arcadia
- Proposed Class II facility on Rosemead Boulevard, extending north toward City of Pasadena
- Proposed Class III facility on Longden Avenue, connecting to the City of San Gabriel
- Proposed Class III facility on Garibaldi Avenue, connecting to the City of San Gabriel
- Proposed Class III facility on Daines Drive, connecting to the City of Arcadia
- In addition the proposed Class I Eaton Wash Channel trail crosses over the western boarder of Temple City.

The recommendations in the City's Plan were developed to complement the recommendations being made by the County's Plan around and within the City's jurisdiction.

C.3.9 West Hollywood Bicycle and Pedestrian Plan (2003)

The City of West Hollywood is surrounded by Hollywood, the Hollywood Hills, Melrose and Beverly Hills. The Bicycle and Pedestrian Mobility Plan provides enhancements for a multi-modal bicycle- and pedestrian activity, while improving links to transit to better serve residents, commuters, shoppers, and visitors within this popular and active community.

- The Plan includes six primary goals:
- Promote Bicycle Transportation
- Develop an Enhanced Bikeway Network
- Enhance Bicycle Transportation Safety
- Enhance Pedestrian Mobility

- Enhance Pedestrian Safety
- Encourage More People to Walk

The existing bikeway network consists of 5.45 miles of bike lanes and routes, with an additional 11.30 miles of roadway enhancements proposed in the Plan. Santa Monica and Sunset Boulevards are specific arterial roads with high volumes of bicyclists and pedestrians. Plans for improving these corridors include widened sidewalks and add bicycle lanes to further accommodate and support an active community. The Plan also supports the development and implementation of supplemental educational and public outreach efforts. Overall estimated costs for the proposed projects and programs are $3,872,117.

C.3.10 Whittier Bicycle Transportation Plan (2008)

The City of Whittier updated its Bicycle Transportation Plan in 2008. Whittier is bordered by the unincorporated areas of West Whittier-Los Nietos, South Whittier and Hacienda Heights. This plan will be used to develop continuous on-street bikeway connections between the City of Whittier and these unincorporated areas of the County. The County plan proposes several bikeways connecting to, including: Workman Mill Road, Mills Avenue, Colima Road, 1st Avenue and Mulberry Drive (existing bike route, proposed bike lane). The proposed bike lane along Mills Avenue South Whittier-Sunshine Acres would connect the unincorporated community of South Whittier-Sunshine Acres to the southern terminus of the Whittier Greenway Trail. **Figure C-8** shows existing and proposed bicycle facilities in Whittier.

Whittier bicycle facilities connecting to unincorporated areas include:

- 1st Avenue (Bike lanes)
- Colima Road (Bike lanes/route)
- Leffingwell Road (Bike lanes/route)
- Pioneer Boulevard (Bike lanes/route)
- Santa Gertrudes Avenue/West Road (Bike lanes/route)
- Slauson Avenue/Mulberry Drive (Bike lanes/route)
- Whittier Greenway Trail (Bike path)

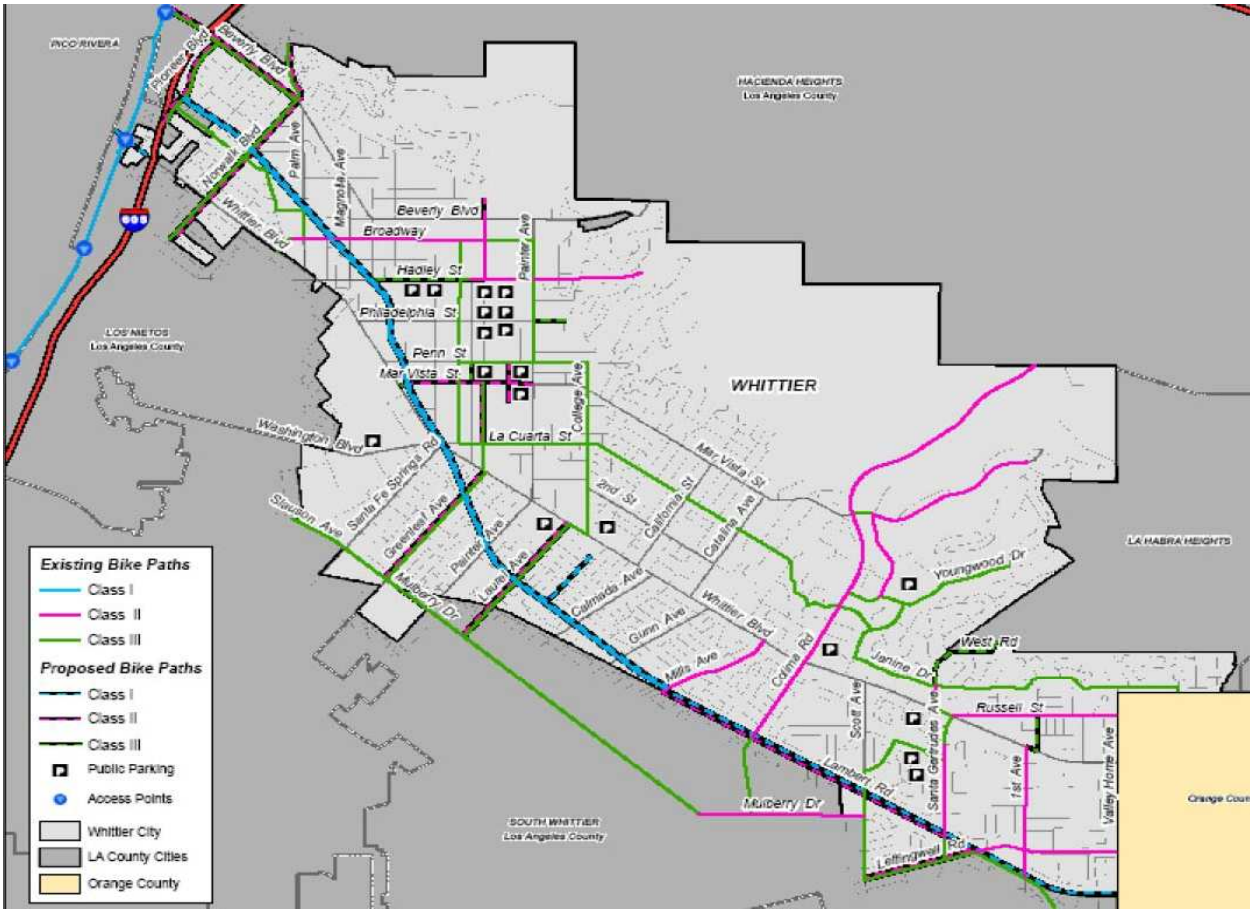

Figure C-8: Existing and Proposed Whittier Bicycle Facilities

C.3.11 Los Angeles River Revitalization Master Plan (2007)

The City of Los Angeles initiated the Los Angeles River Revitalization Master Plan (LARRMP) to identify opportunities for revitalizing the 32-mile stretch of the Los Angeles River that falls within the Los Angeles City limits. Like the 1996 County of Los Angeles LARMP, this plan envisions a continuous bikeway along the full length of the Los Angeles River and enhanced access to the corridor from surrounding neighborhoods, as shown in **Figure C-9**.

Goal: Create a Continuous River Greenway

Recommendation #5.1:
Provide opportunities for continuous and uninterrupted movement along the River.

Recommendation #5.2:
Establish a River Buffer area within and adjacent to the River that meets riparian or upland habitat requirements.

Recommendation #5.3:
Extend open space, bike paths, and multi-use trails into the tributaries.

Goal: Connect Neighborhoods to the River

Recommendation #5.4:
Provide green arterial connections to the River. Where suitable, landscaped areas should be designed to meet upland habitat requirements.

Recommendation #5.5:
Create safe, non-motorized routes between the River and cultural institutions, parks, civic institutions, transit-oriented development, schools, transit hubs, and commercial and employment centers within 1 mile of the River.

Recommendation #5.6:
Increase direct pedestrian and visual access to the River.

Figure C-9: Los Angeles River Revitalization Master Plan Goals

C.3.12 Pasadena Bicycle Master Plan (in progress)

The City of Pasadena is located in the San Gabriel Valley and borders the unincorporated communities of Altadena, East Pasadena-East San Gabriel, Kinneloa Mesa and San Pasqual. The Pasadena Bicycle Plan update is currently in progress and the consultant team will coordinate with the City of Pasadena to develop bikeway connections between Pasadena and the unincorporated areas of Altadena and East Pasadena. The County plan proposes many connections to the City of Pasadena, including the multi-jurisdictional bike path proposed along Eaton Wash, on-street bikeways along Woodbury Road, Windsor Avenue, Marengo Avenue, Lake Avenue and Washington Boulevard providing connections from the unincorporated community of Altadena; and Colorado Avenue, California Avenue, San Pasqual Street and Del Mar Avenue providing connections from the unincorporated community of East Pasadena-East San Gabriel.

C.3.13 Concurrent Bicycle Planning Efforts

Other cities may be developing new or updated bicycle plans in the near future (e.g., Baldwin Park, Bellflower, Burbank, and Lancaster). The project team will work with these jurisdictions as closely as possible to ensure that the development of the County of Los Angeles Bicycle Master Plan is coordinated with any concurrent municipal planning efforts. Relevant Planning Studies

The planning documents described in this section remain unadopted by the agency or agencies responsible for implementing their recommendations, but provide valuable analysis to assist the development of the County of Los Angeles Bicycle Master Plan. The use of these plans as guidance does not reflect County endorsement of specific proposals.

C.3.14 Enhanced Public Outreach Project (2004)

The Enhanced Public Outreach Project (EPOP) had two goals: (1) to significantly increase the level of public participation in the development of the LACMTABTSP; and (2) gain a better understanding of the needs, perceptions and travel behavior of all bicyclists, focusing on those in communities with low income and high transit use. Public input was collected through two surveys: a more general Countywide Bicycle Survey followed by an Origin and Destination Survey. Over 3,000 surveys were completed and analyzed. Many of the targeted communities included unincorporated areas such as Altadena, East Los Angeles, Florence-Firestone, Willowbrook, and Lennox. The findings of this report will be considered in the development of the County of Los Angeles Bicycle Master Plan, with specific attention to the data collected in or near unincorporated areas of the County. **Figure C-10** shows bicyclists origins and destinations collected through EPOP surveys.

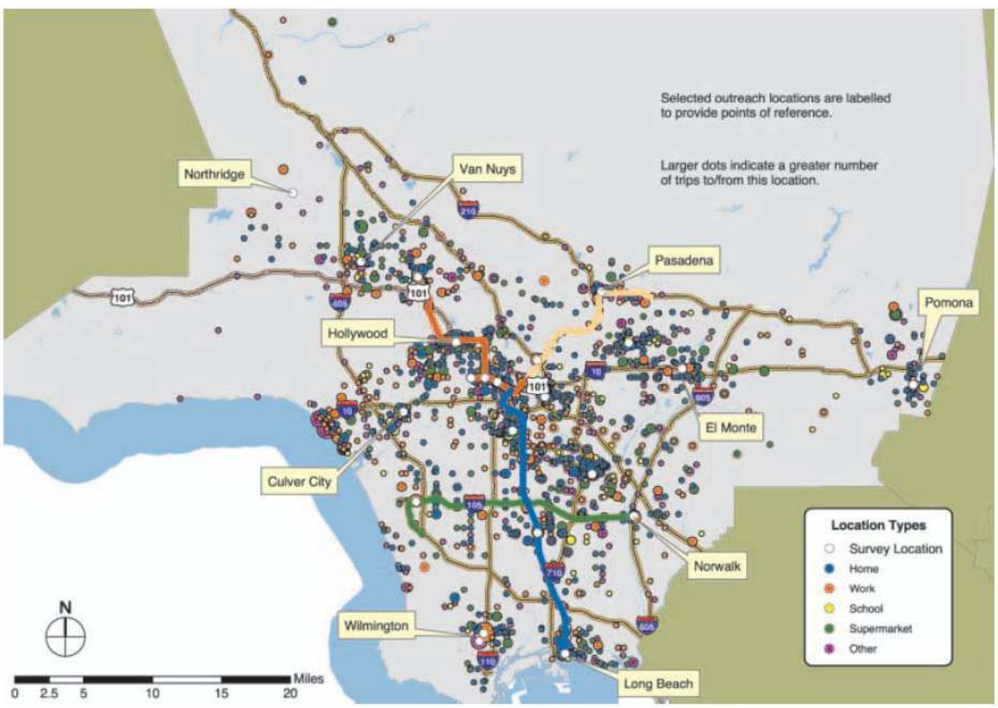

Figure C-10: Bicyclist Origins and Destinations (EPOP Surveys)

C.3.15 Eastside Light Rail Bike Interface Plan (2006)

The Eastside Light Rail Bike Interface Plan recommended bicycle transportation programs and infrastructure to promote bicycle access to future Gold Line stations. This study was led by LACMTA and funded by Caltrans. The study area included portions of the City of Los Angeles and the unincorporated County of Los Angeles. The plan has not been formally adopted by any agency. The County of Los Angeles received funding from LACMTA to develop bikeways along Arizona Avenue/Mednik Avenue, Woods Avenue, Ford Boulevard and Rowan Avenue. The purple lines in **Figure C-11** indicate the studied routes for access to the newly-opened Gold Line stations.

The County plan proposes bikeways to improve access to the new Gold Line stations are on the following roadways:

- 4th Street
- Arizona Avenue/Mednik Avenue
- Ford Boulevard
- Rowan Avenue/Eastern Avenue
- Woods Avenue

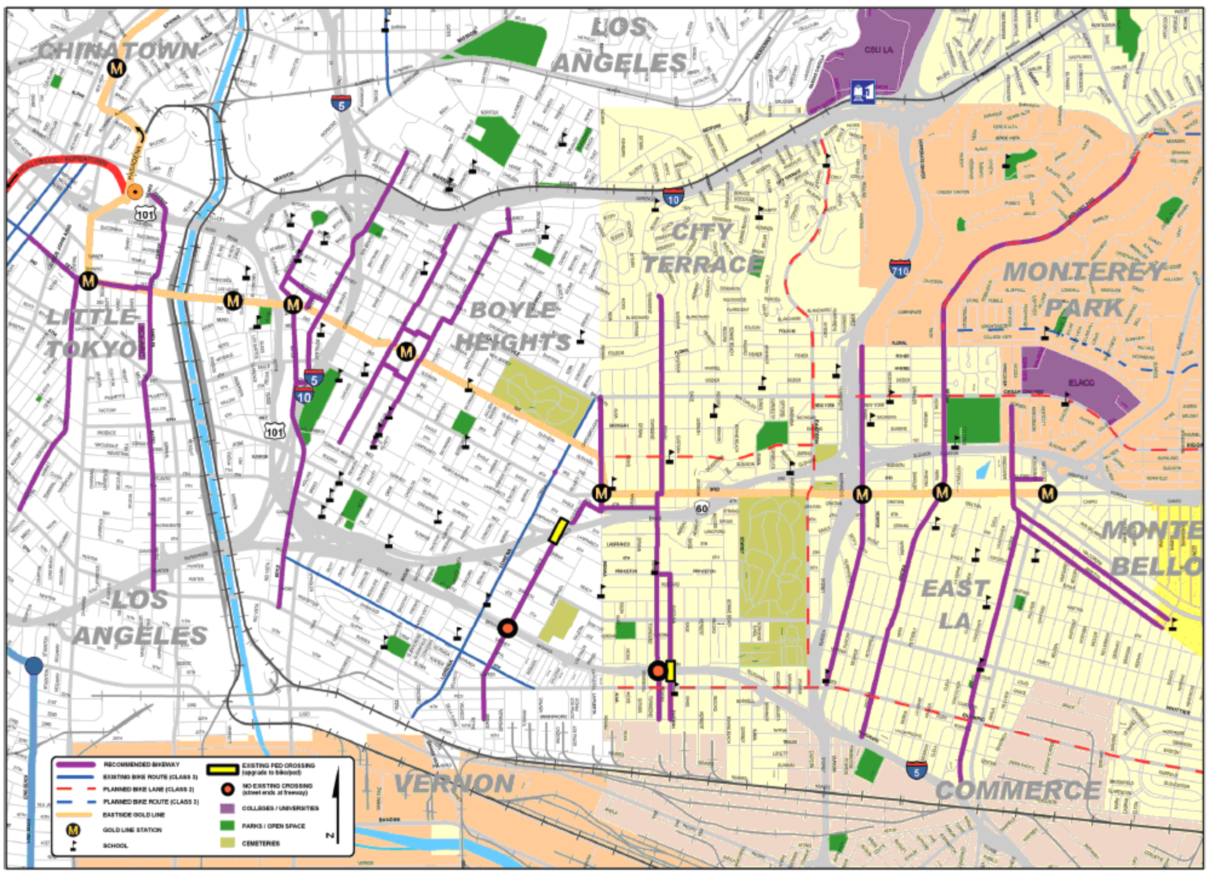

Figure C-11: Bikeway Connections to Eastside Gold Line Stations

C.3.16 Coyote Creek Trail Master Plan (2008)

Coyote Creek runs through the saw-toothed border of Los Angeles and Orange counties. As a result, the creek alternates repeatedly between the two counties and 12 incorporated cities (five in Los Angeles County and seven in Orange County) as it flows toward the San Gabriel River and ultimately the Pacific Ocean. **Figure C-12** shows the alignment of the Coyote Creek North Fork Extension and brief project descriptions. The Coyote Creek Trail Master Plan was developed by the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy to coordinate trail expansion and improvement projects across jurisdictions within the Coyote Creek watershed. In addition, the plan included a recommendation to extend the North Fork of the Coyote Creek bike path from its current terminus at Foster Road to just south of the Candlewood Country Club in the unincorporated area of South Whittier-Sunshine Acres. The County plan is including the northern extension of the bike path along Coyote Creek North Fork as a part of its recommendations.

Lower Coyote Creek Bikeway enhancements

Item	Project Description	Project Location	Jurisdiction*
94.	Extend Coyote Creek bike path northward on North Fork (a.k.a. La Cañada Verde Creek) to Candlewood Country Club.	West side of North Fork Coyote Creek from Foster Road to Coteau Dr at edge of Candlewood Country Club. T-Guide LA/OR 737, C2-C1-D1; LA 707, D7.	Santa Fe Springs and Los Angeles County
95.	Design and build inverted bike path undercrossings in the trapezoidal channel beneath an existing four-lane highway.	West side of North Fork at Foster Rd. T-Guide LA/OR 737, C2.	Santa Fe Springs
96.	Design and build inverted bike path undercrossings in the trapezoidal channel beneath three existing six-lane highways.	West side of North Fork Imperial Hwy, Meyer Rd and Leffingwell Rd. T-Guide LA/OR 737, C1-D1; LA 707, D7.	
97.	Construct a bike path bridge over North Fork Coyote Creek to provide access to bike path.	South edge of Candlewood Country Club from Ramset Dr to Coteau Dr.	

Figure C-12: Coyote Creek North Fork Extension

C.3.17 Bicycle Plans in Adjacent Counties

Bicycle plans in adjacent counties were consulted as necessary to identify cross-county linkages from unincorporated areas or other County of Los Angeles properties.

C.3.17.1 OCTA Commuter Bikeways Strategic Plan (2009)

The Orange County Transportation Authority (OCTA) updated its Commuter Bikeways Strategic Plan (CBSP) in 2009. The plan compiled the bikeway plans of all Orange County jurisdictions in order to identify all existing and proposed bikeways in the County. Other than the Coyote Creek Bikeway and the San Gabriel River Trail discussed above, key bikeway connections along the County of Los Angeles border include the Pacific Coast Highway, College Park Drive, Norwalk Avenue-Los Alamitos Boulevard, Wardlow Road-Ball Road, Carson Avenue-Lincoln Avenue, Del Amo Boulevard-Le Palma Avenue, Carmenita Road-Moody Street, South Street-Orange Thorpe Avenue, Walker Street, Rosecrans Avenue, Lambert Road, the Imperial Highway Path (La Habra), and Leffingwell Road-La Habra Boulevard.

C.3.17.2 Ventura Countywide Bicycle Master Plan (2007)

The Ventura County Transportation Commission (VCTC) developed a countywide bicycle plan to identify important regional bikeways. The proposed regional connections between Ventura County and the County of Los Angeles include: the Santa Paula Branch Line Trail, the Santa Susana Pass Road bike lanes, Thousand Oaks Boulevard bike lanes, and bike lanes along SR-1 between Las Posas Road and the Los Angeles County Line. The Santa Paula Branch Line Trail could potentially connect to a planned bikeway along the Santa Clara River in the County of Los Angeles.

C.3.17.3 San Bernardino County Non-Motorized Transportation Plan (2001)

The San Bernardino Association of Governments (SANBAG) developed this plan to coordinate bikeway planning among San Bernardino County jurisdictions. The proposed San Antonio Wash Bikeway and Southern Pacific Rail Trail are the regional bikeways which may impact the development of the County of Los Angeles Bicycle Master Plan. Bike lanes proposed for Orchard Street in San Bernardino County (Montclair) could be extended to Lincoln Avenue in County of Los Angeles (Pomona) to create a more local cross-county connection.

Appendix D. Existing Land Uses

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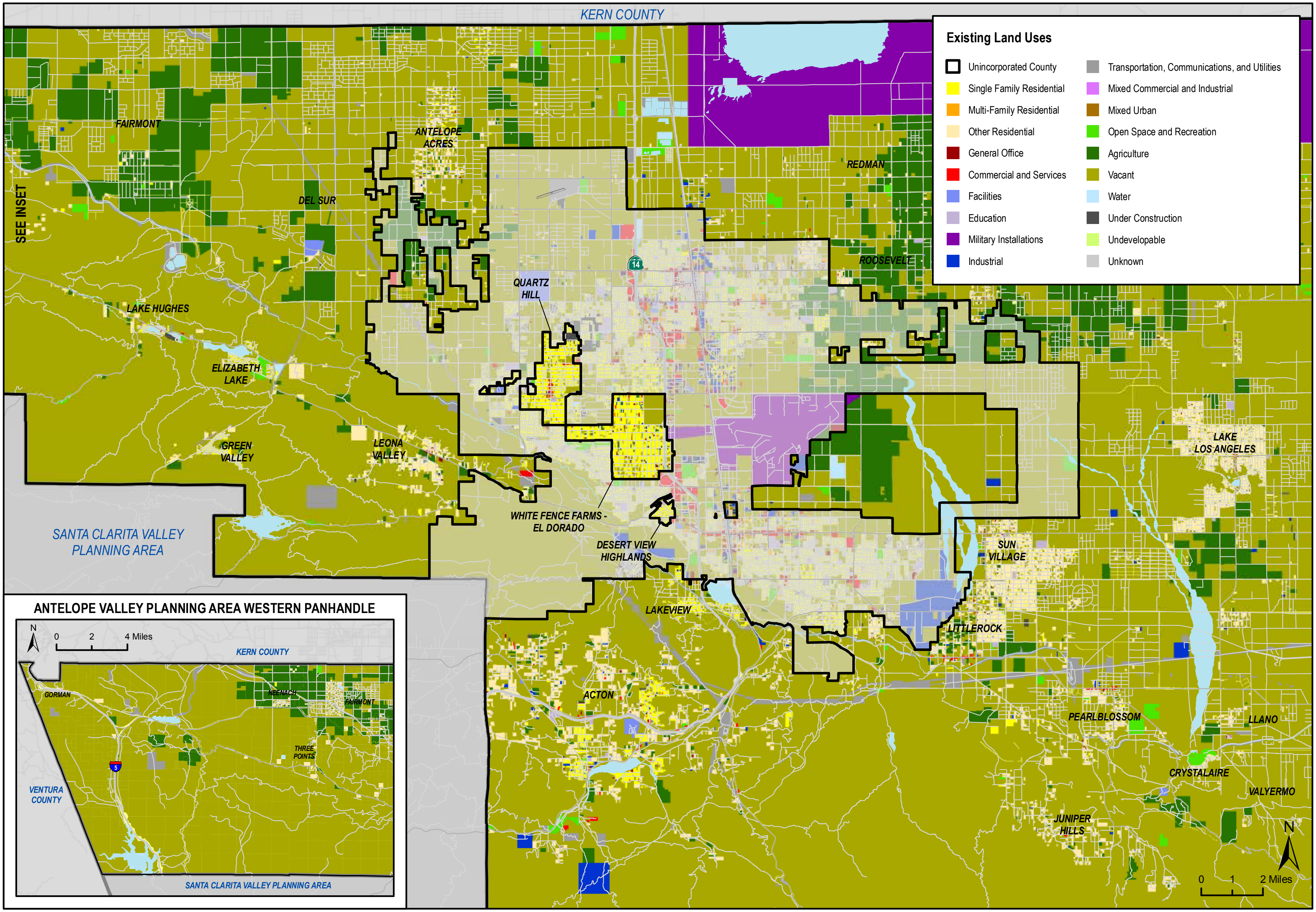

Figure D-1: Antelope Valley Planning Area Existing Land Uses

Los Angeles County Bicycle Master Plan

Source: SCAG (2008)
Date: 11/2/2010

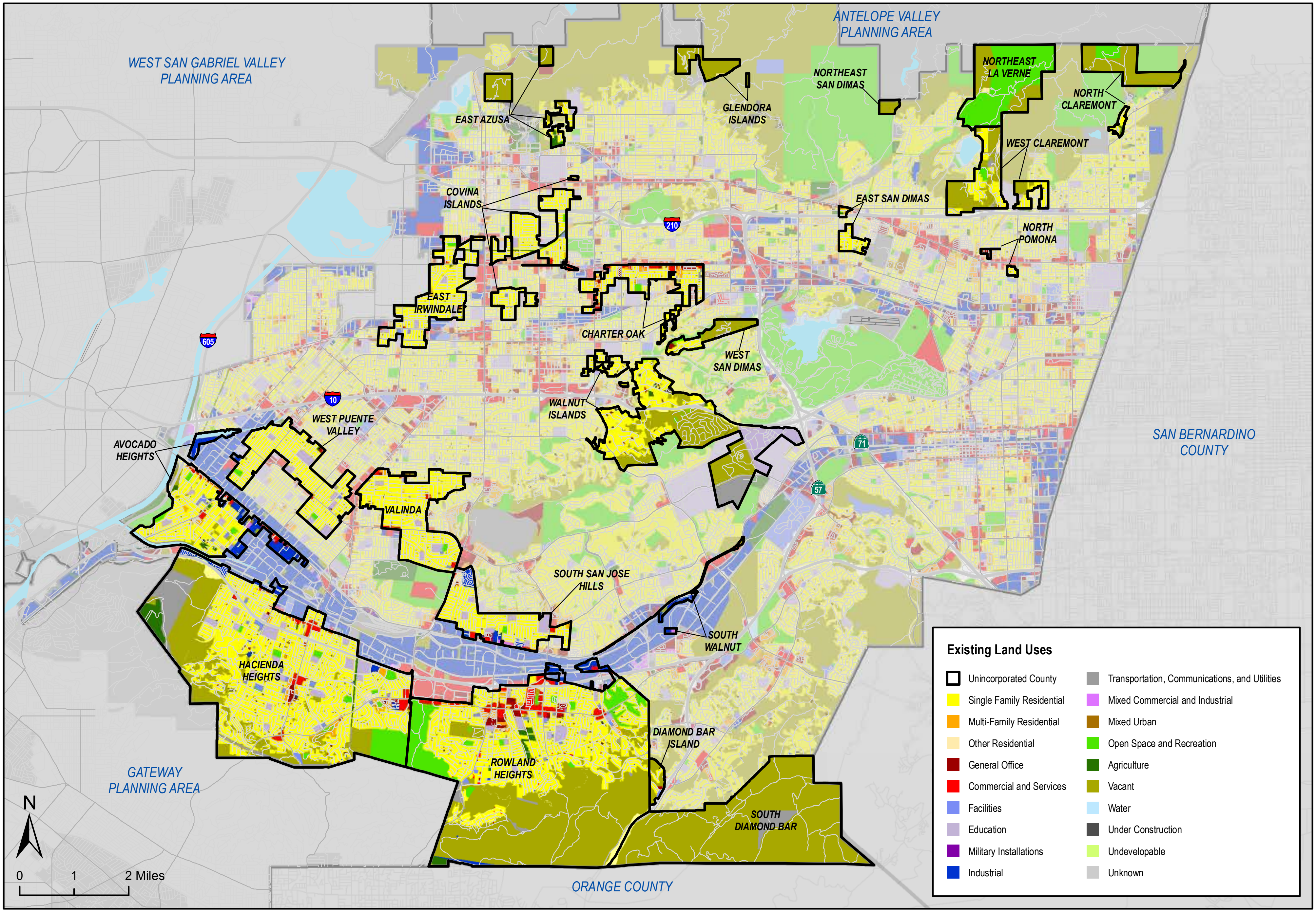

Figure D-2: East San Gabriel Valley Planning Area Existing Land Uses

Los Angeles County Bicycle Master Plan

Source: SCAG (2008)
Date: 11/2/2010

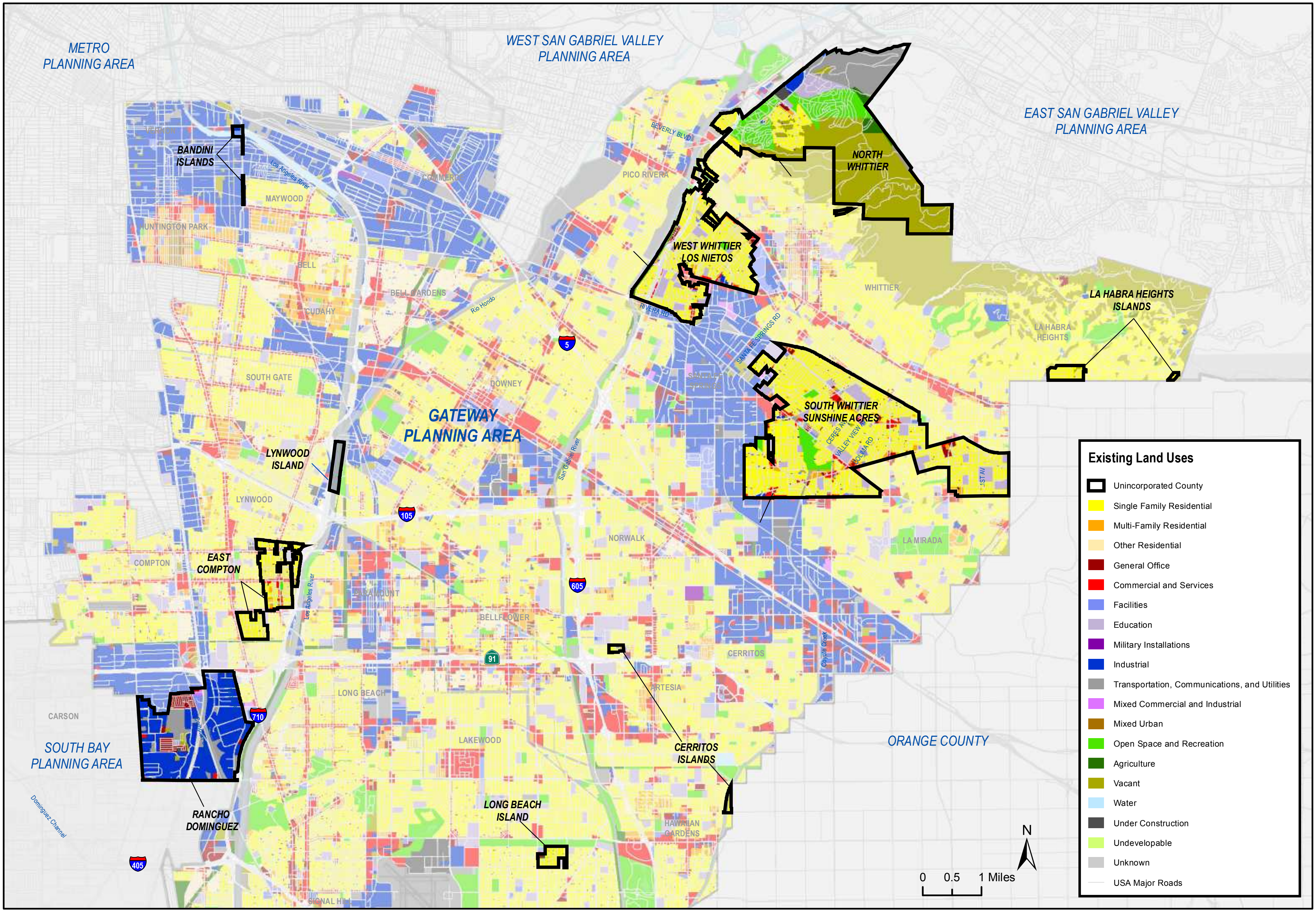

Figure D-3: Gateway Planning Area Existing Land Uses

Los Angeles County Bicycle Master Plan

Source: SCAG (2008)

Date: 9/30/2011

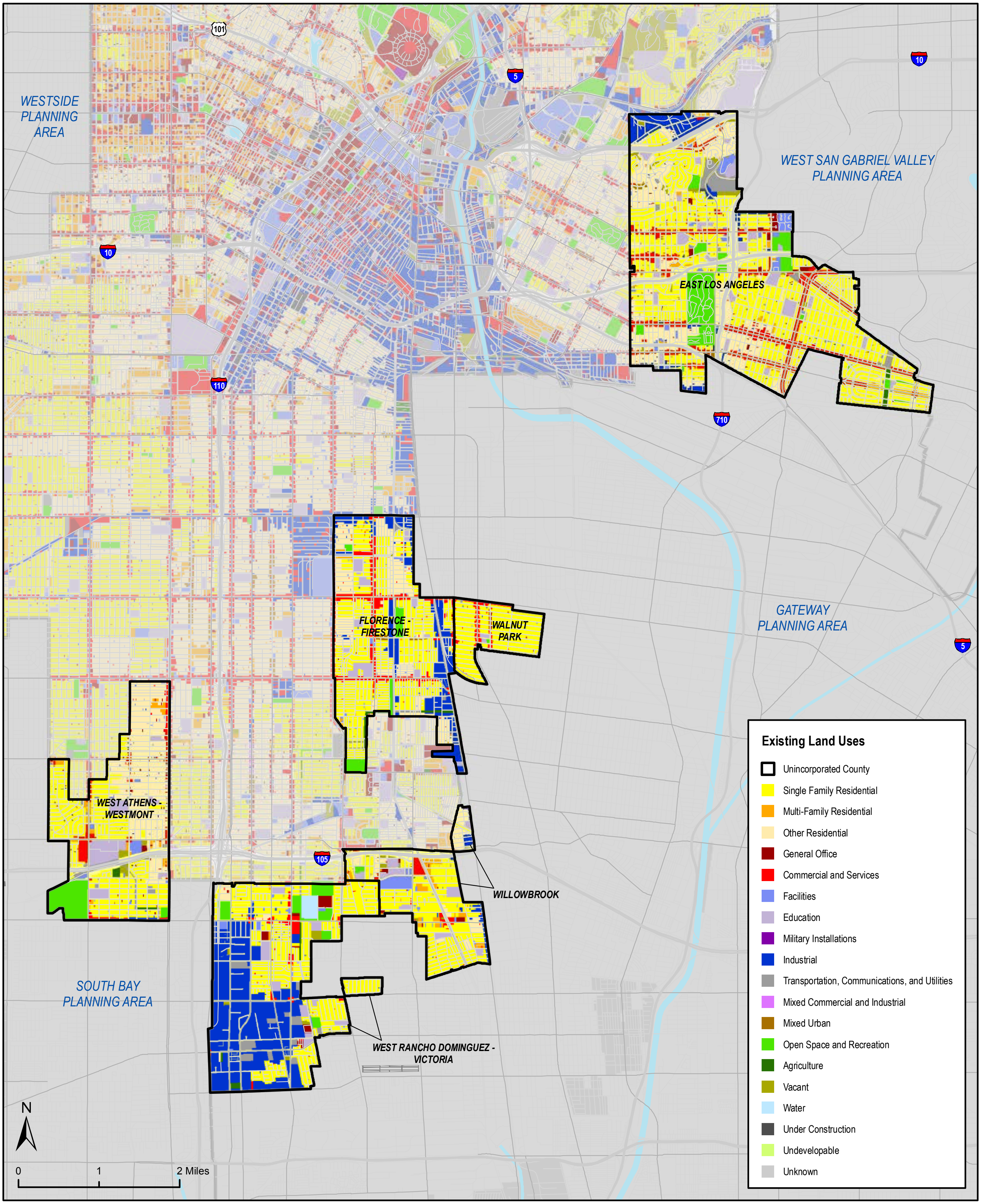

Figure D-4: Metro Planning Area Existing Land Uses

Source: SCAG (2008)
Date: 11/2/2010

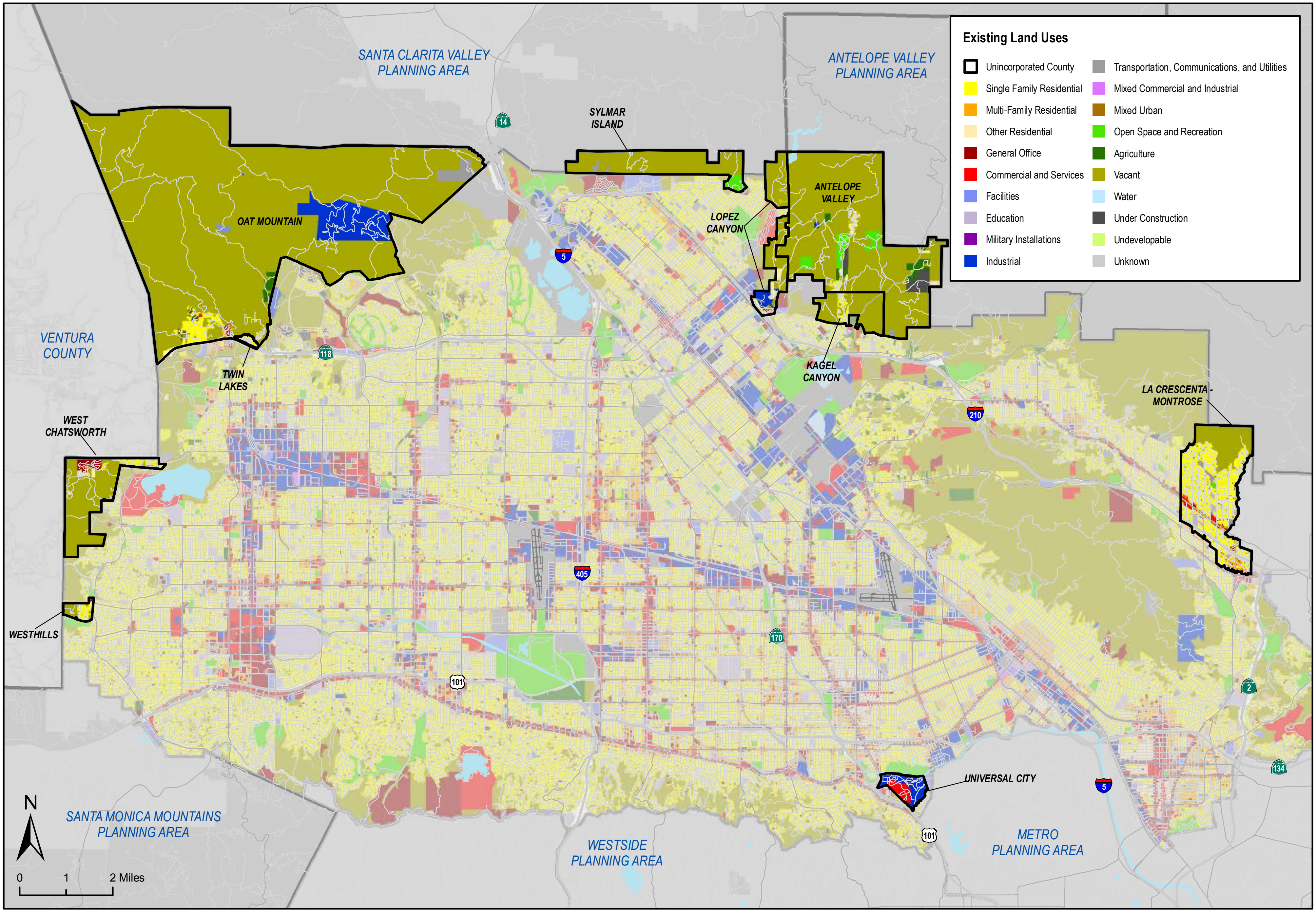

Figure D-5: San Fernando Valley Planning Area Existing Land Uses

Los Angeles County Bicycle Master Plan

Source: SCAG (2008)
Date: 11/2/2010

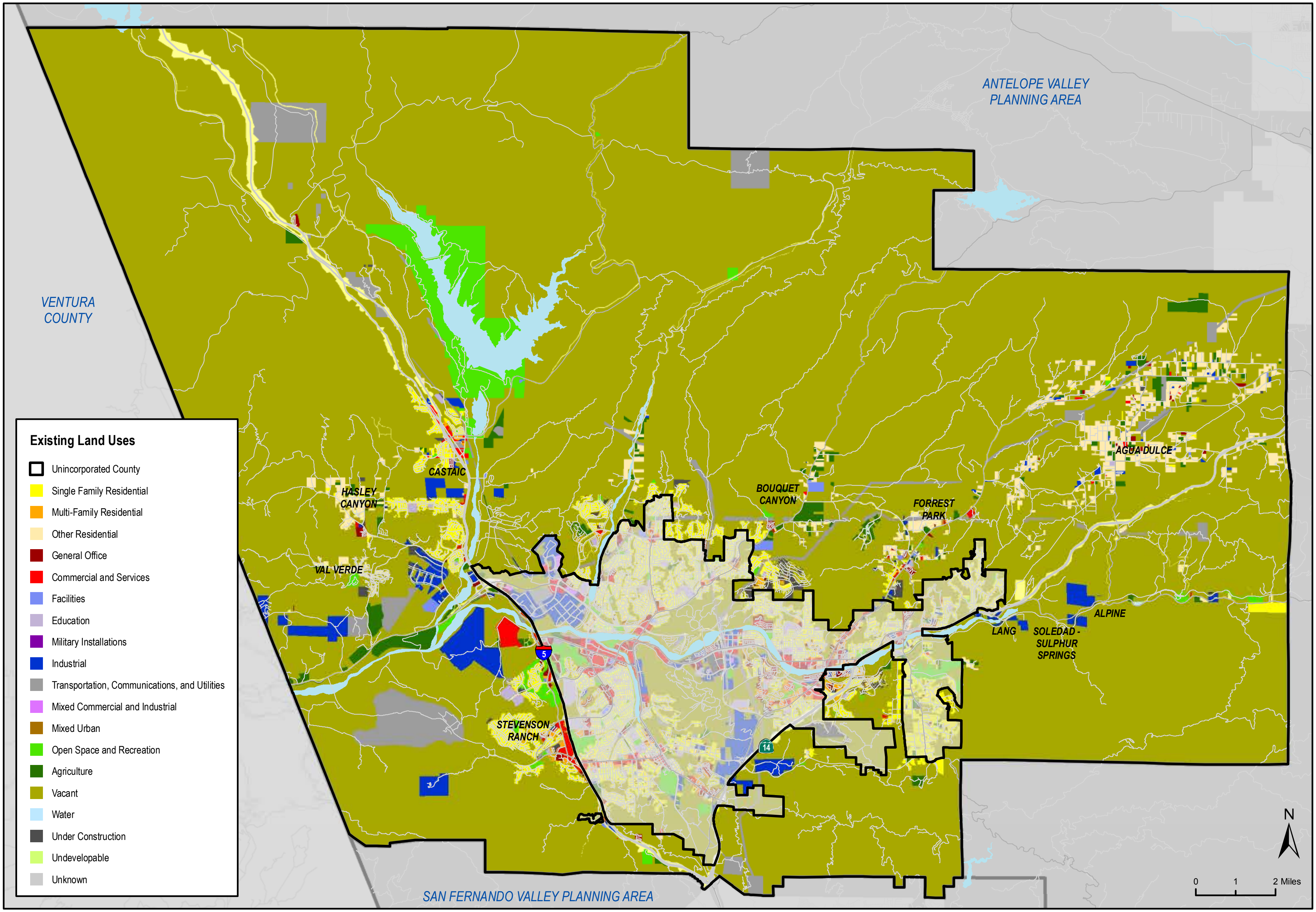

Figure D-6: Santa Clarita Valley Planning Area Existing Land Uses

Los Angeles County Bicycle Master Plan

Source: SCAG (2008)
Date: 11/2/2010

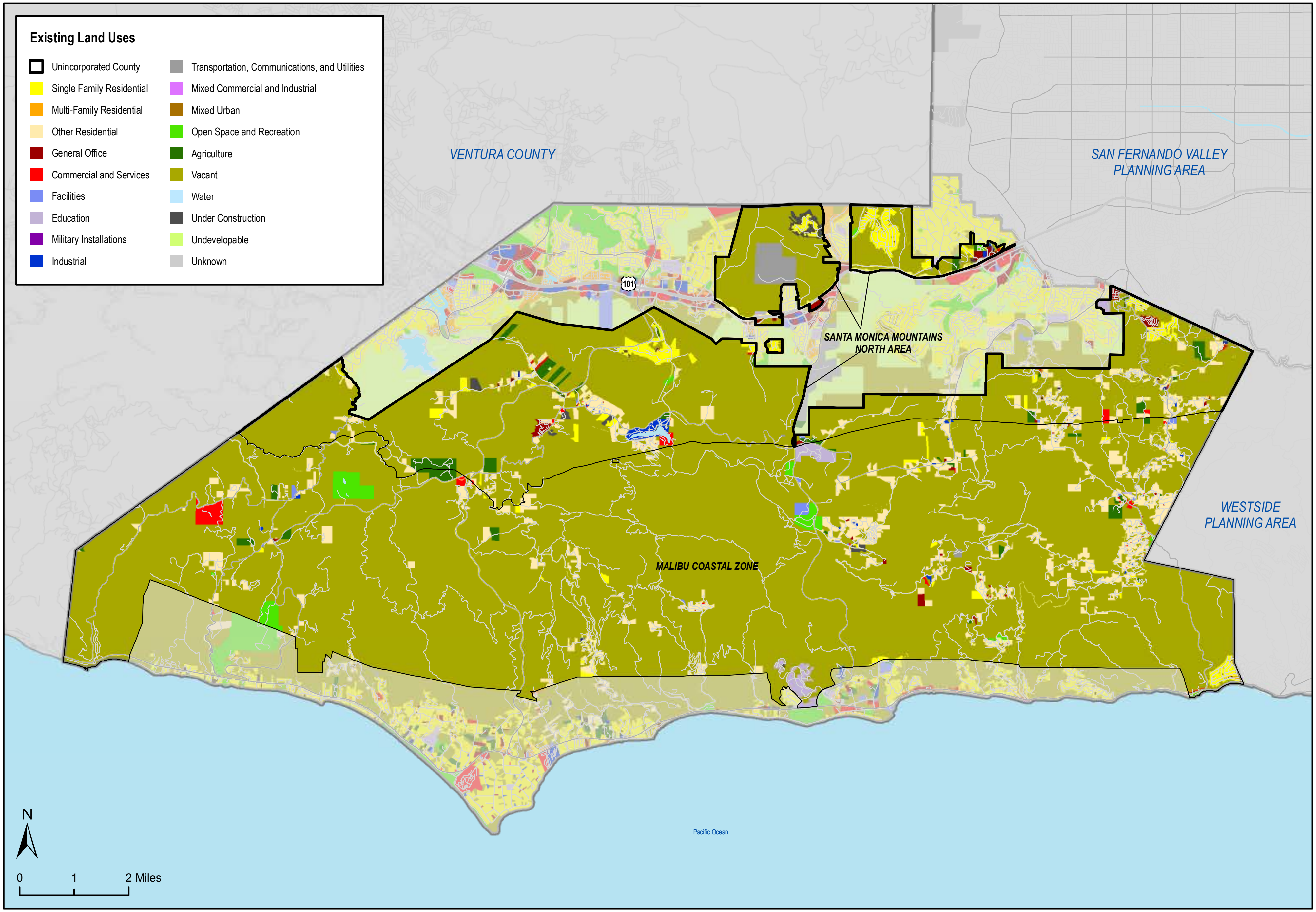

Figure D-7: Santa Monica Mountains Existing Land Uses

Source: SCAG (2008)
Date: 11/2/2010

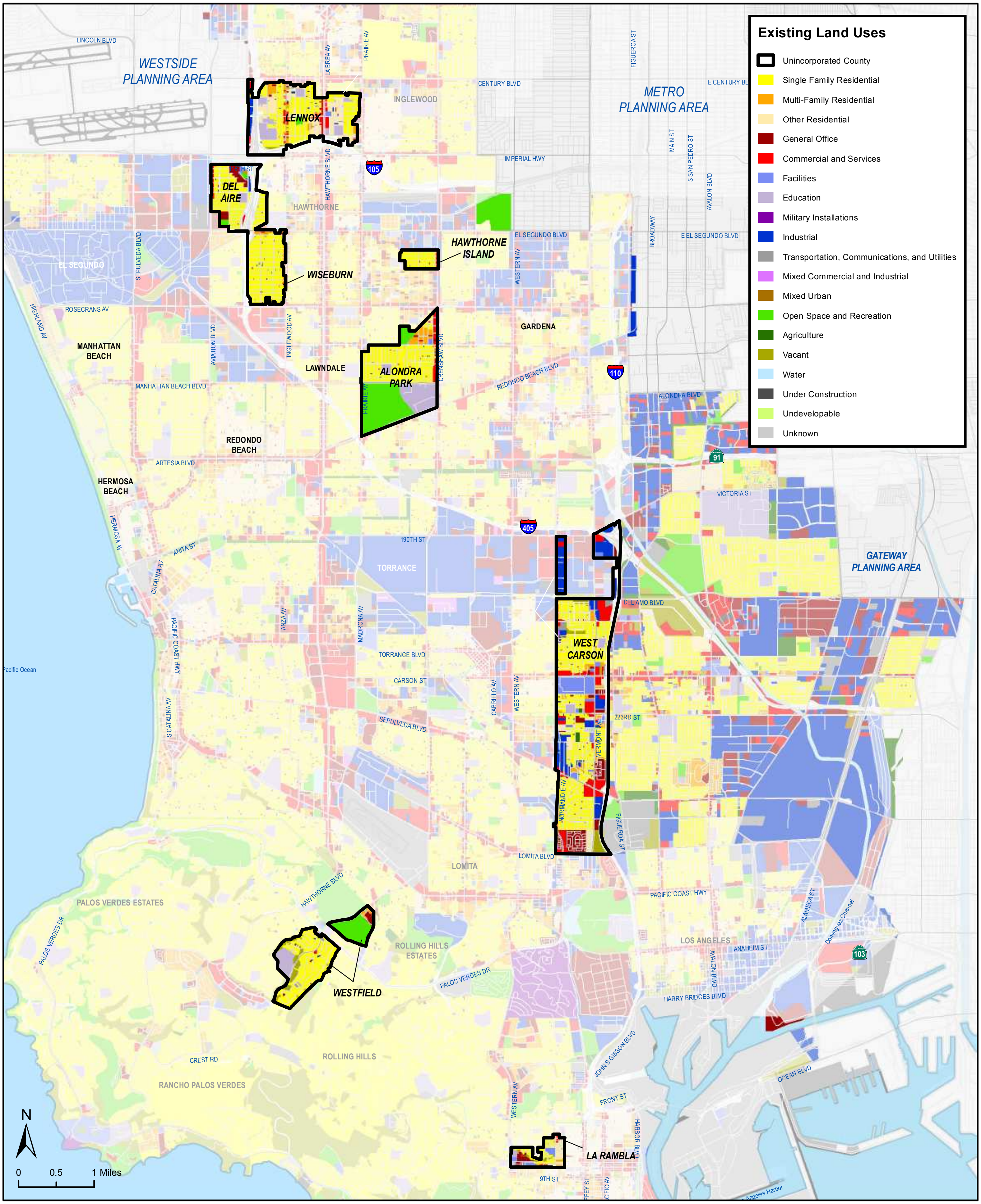

Figure D-8: South Bay Planning Area Existing Land Uses

Source: SCAG (2008)
Date: 9/30/2011

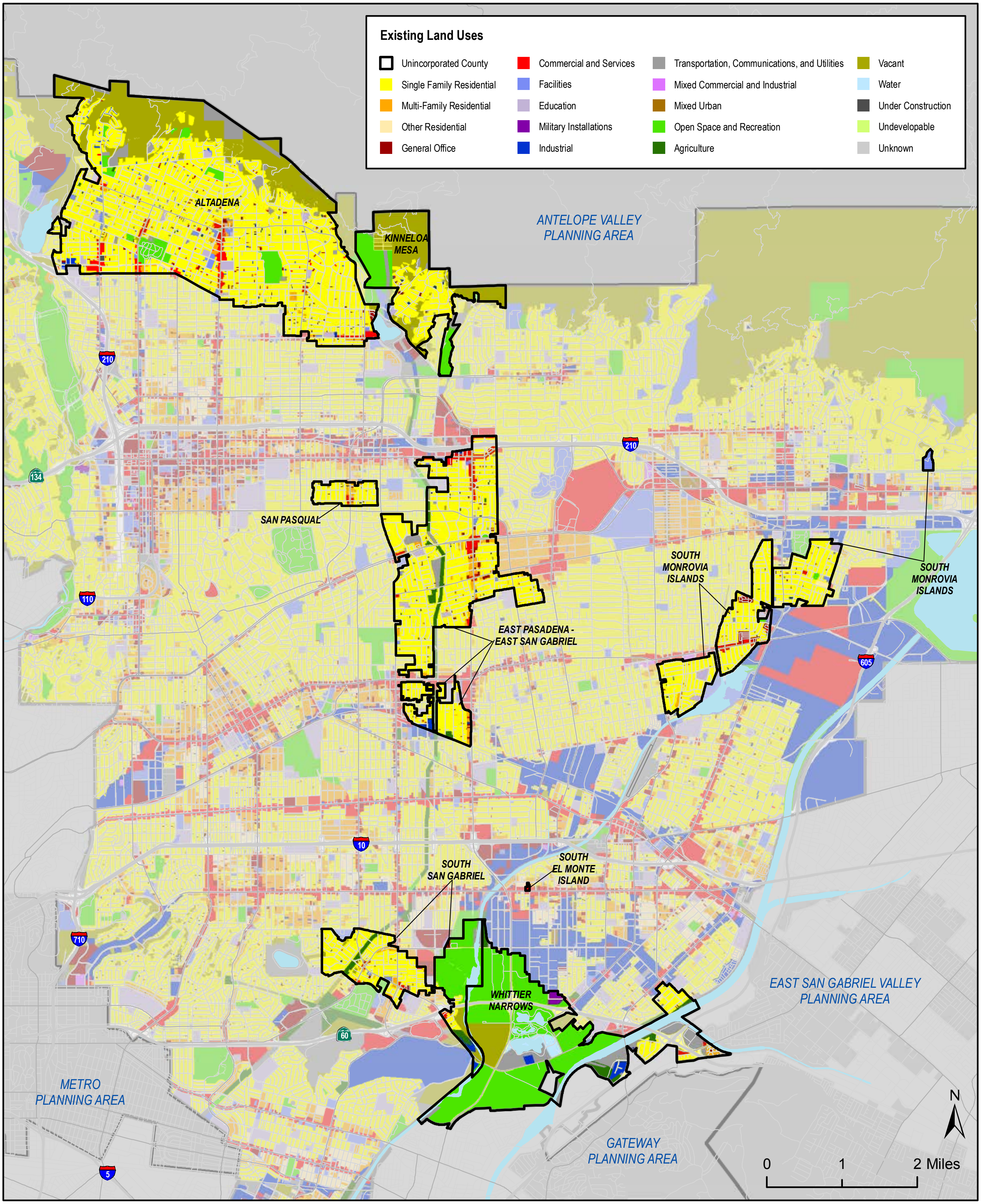

Figure D-9: West San Gabriel Valley Planning Area Existing Land Uses

Los Angeles County Bicycle Master Plan

Source: SCAG (2008)

Date: 11/2/2010

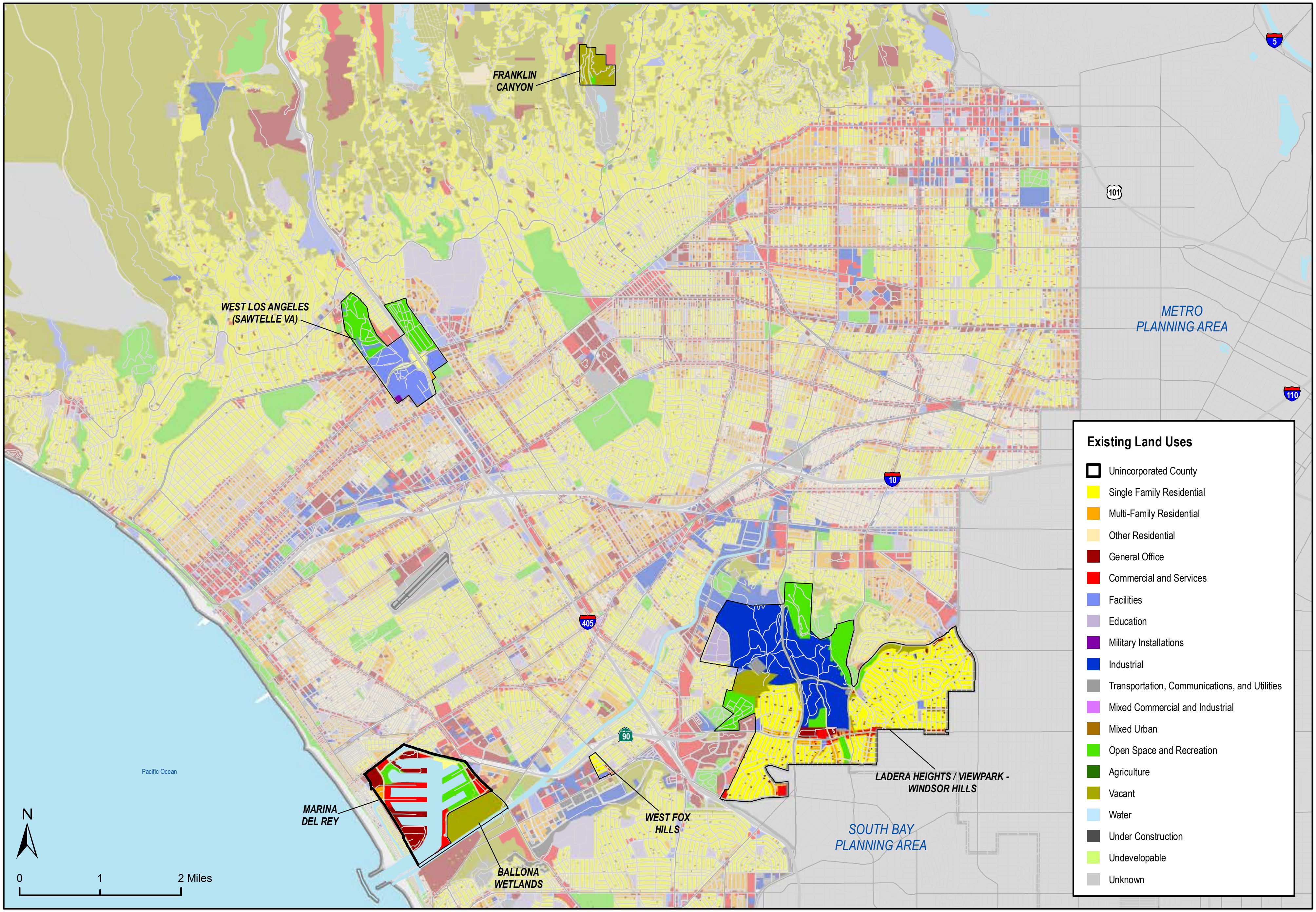

Figure D-10: Westside Planning Area Existing Land Uses

Los Angeles County Bicycle Master Plan

Source: SCAG (2008)
Date: 11/2/2010

Appendix E. End of Trip Facilities

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End of trip facilities are essential components of a bicycle system. Support facilities, such as bicycle parking racks, and showers and lockers for employees, further improve safety and convenience for bicyclists.

Bicyclists need secure, well-located bicycle parking to support nearly all utilitarian and many recreational bicycle trips. Lack of parking can be a major obstacle to using a bicycle. A robust bicycle parking program is one of the most important strategies that jurisdictions can apply to enhance the bicycling environment. The program can improve the bicycling environment and increase the visibility of bicycling in a relatively short time. Public bicycle parking programs can also be coordinated with property owners of commercial buildings to supply parking for employees and visitors.

The bicycle parking recommendations in subsequent sections were developed based upon proximity to land uses that attract bicycle trips including transit hubs and activity centers. Bicycle parking has been recommended for implementation at the following locations in unincorporated communities within the County of Los Angeles:

- Public transit stations (Metro and MetroLink)
- Mixed-use commercial
- Recreation areas
- Elementary, middle, and high schools
- Colleges/universities
- Airports
- Commercial/office areas
- Civic/government buildings

It is recommended that more secure bicycle parking options, such as bicycle lockers, be provided at particularly high-activity locations such as transit stations. For guidance on bicycle parking design issues, installation standards and types of short and long-term bicycle parking, please refer to the Bicycle Parking section in **Appendix F: Design Guidelines**.

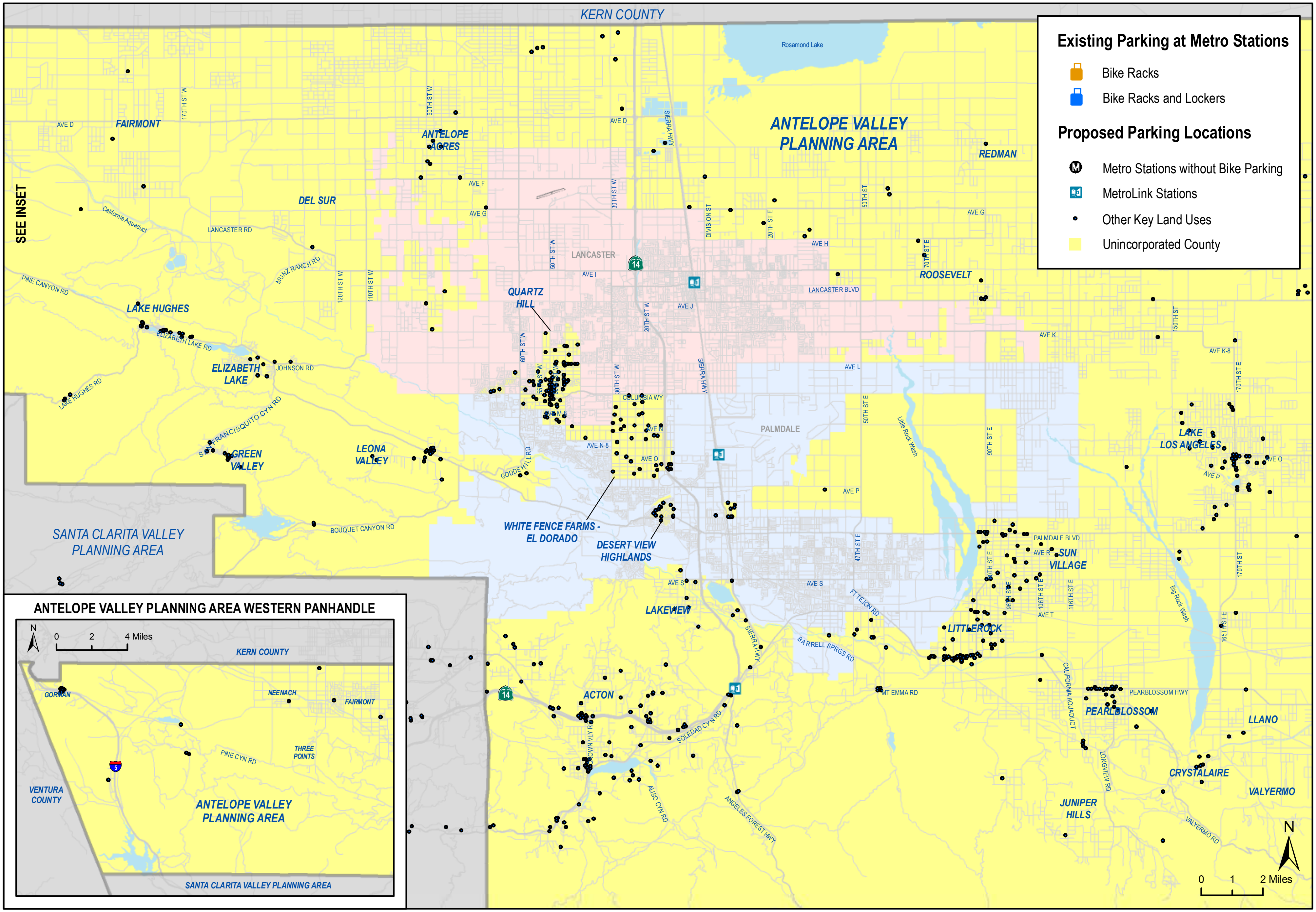

Figure E-1: Antelope Valley Planning Area Proposed Bicycle Parking

Los Angeles County Bicycle Master Plan

Source: Los Angeles Metro (2010); Alta Planning + Design (2010)
Date: 11/2/2010

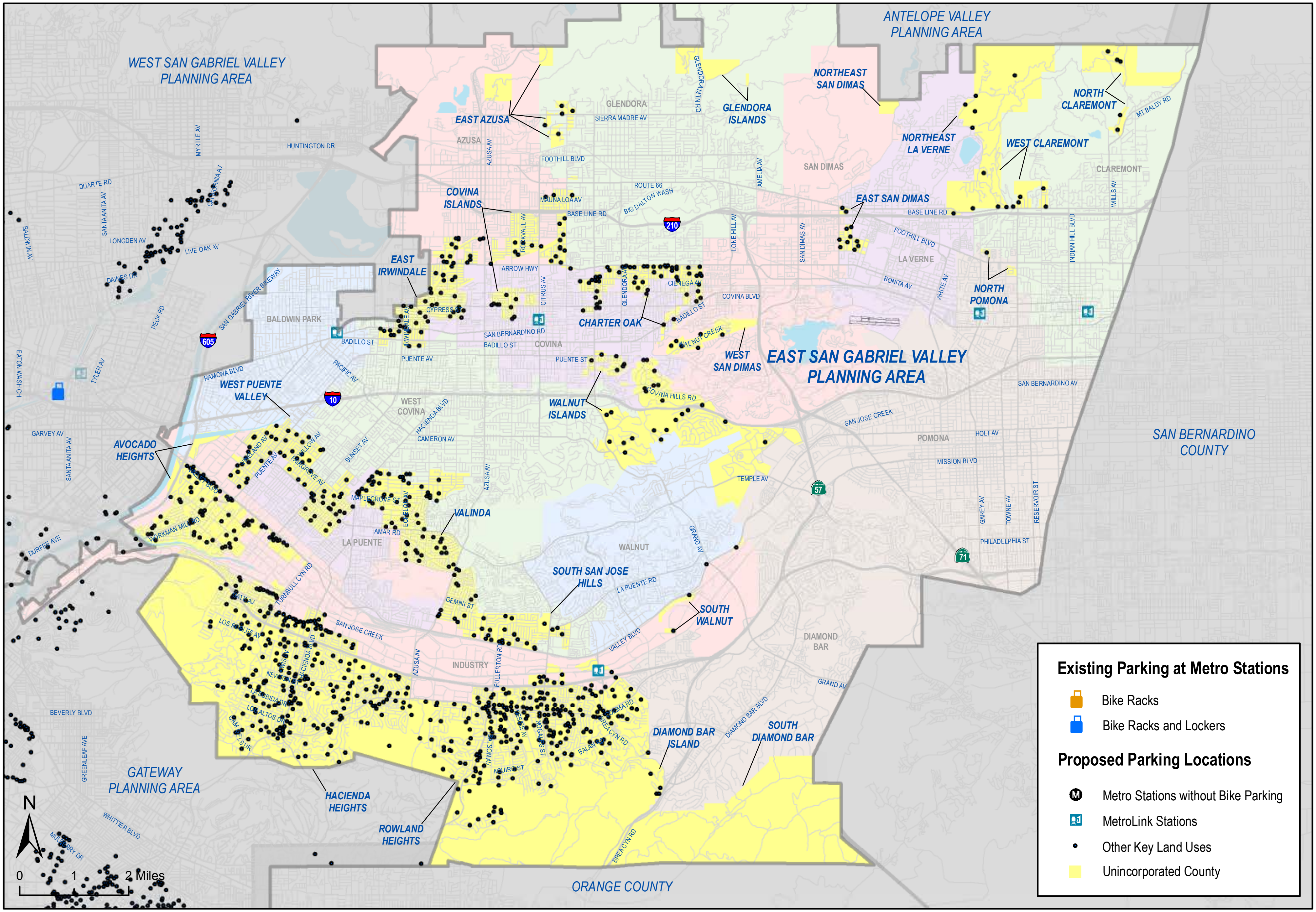

Figure E-2: East San Gabriel Valley Planning Area Proposed Bicycle Parking

Los Angeles County Bicycle Master Plan

Source: Los Angeles Metro (2010)

Date: 11/2/2010; Alta Planning + Design (2010)

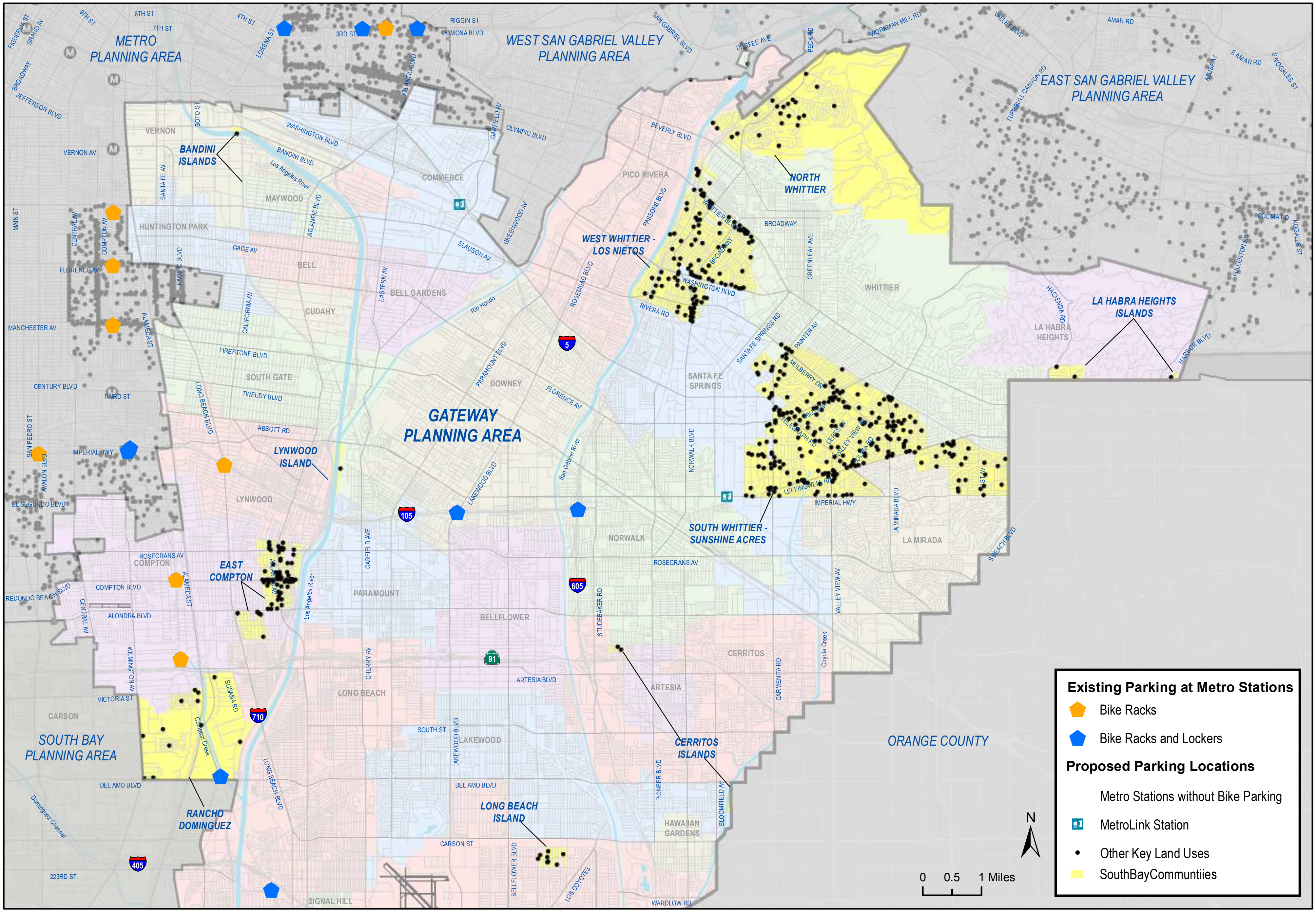

Figure E-3: Gateway Planning Proposed Bicycle Parking

Los Angeles County Bicycle Master Plan

Source: Los Angeles Metro (2010); Alta Planning + Design (2010)

Date: 10/05/11

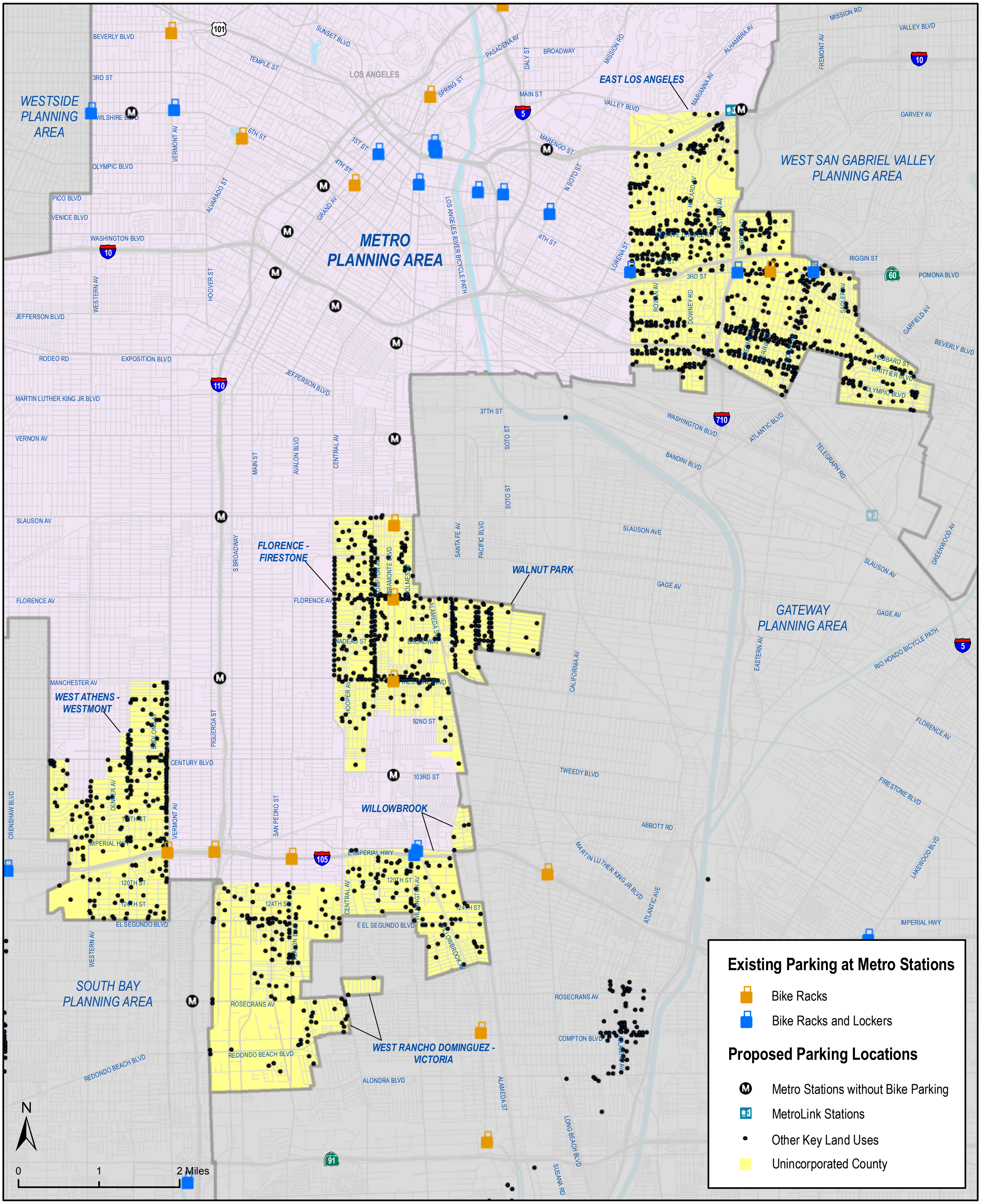

Figure E-4: Metro Planning Area Proposed Bicycle Parking

Los Angeles County Bicycle Master Plan

Source: Los Angeles Metro (2010); Alta Planning + Design (2010)

Date: 11/2/2010

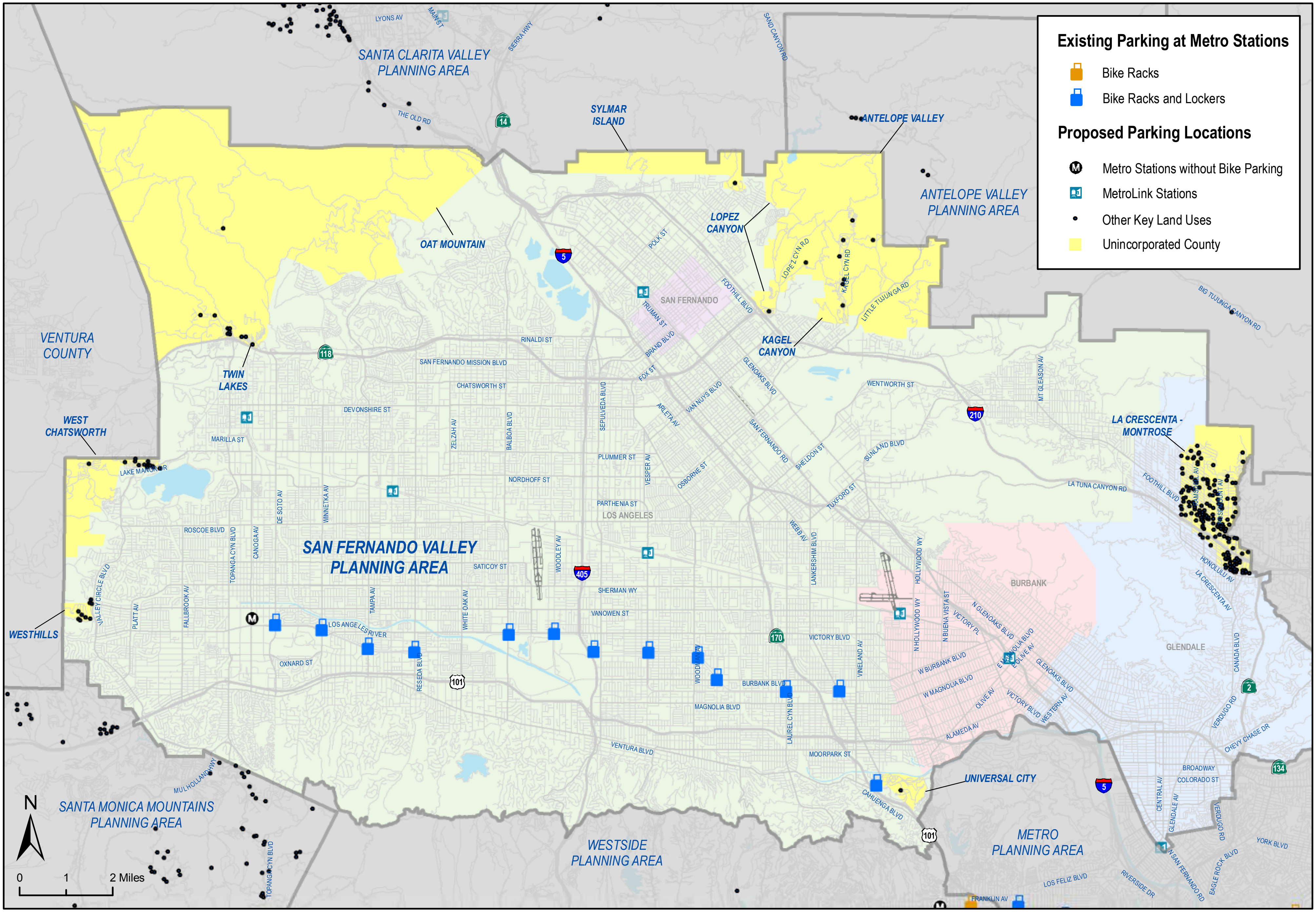

Figure E-5: San Fernando Valley Planning Area Proposed Bicycle Parking

Los Angeles County Bicycle Master Plan

Source: Los Angeles Metro (2010); Alta Planning + Design (2010)

Date: 11/2/2010

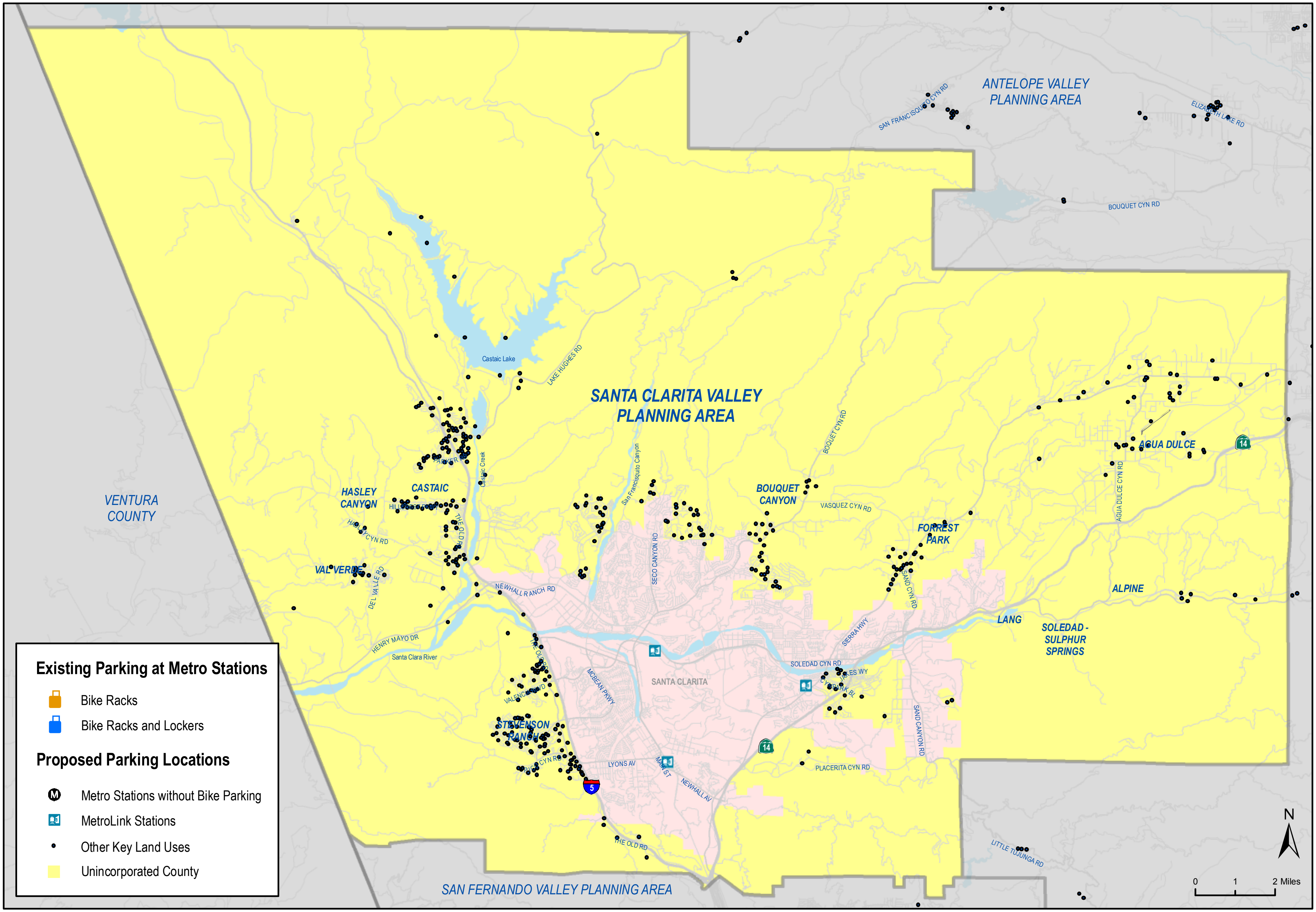

Figure E-6: Santa Clarita Valley Planning Area Proposed Bicycle Parking

Los Angeles County Bicycle Master Plan

Source: Los Angeles Metro (2010); Alta Planning + Design (2010)
Date: 11/2/2010

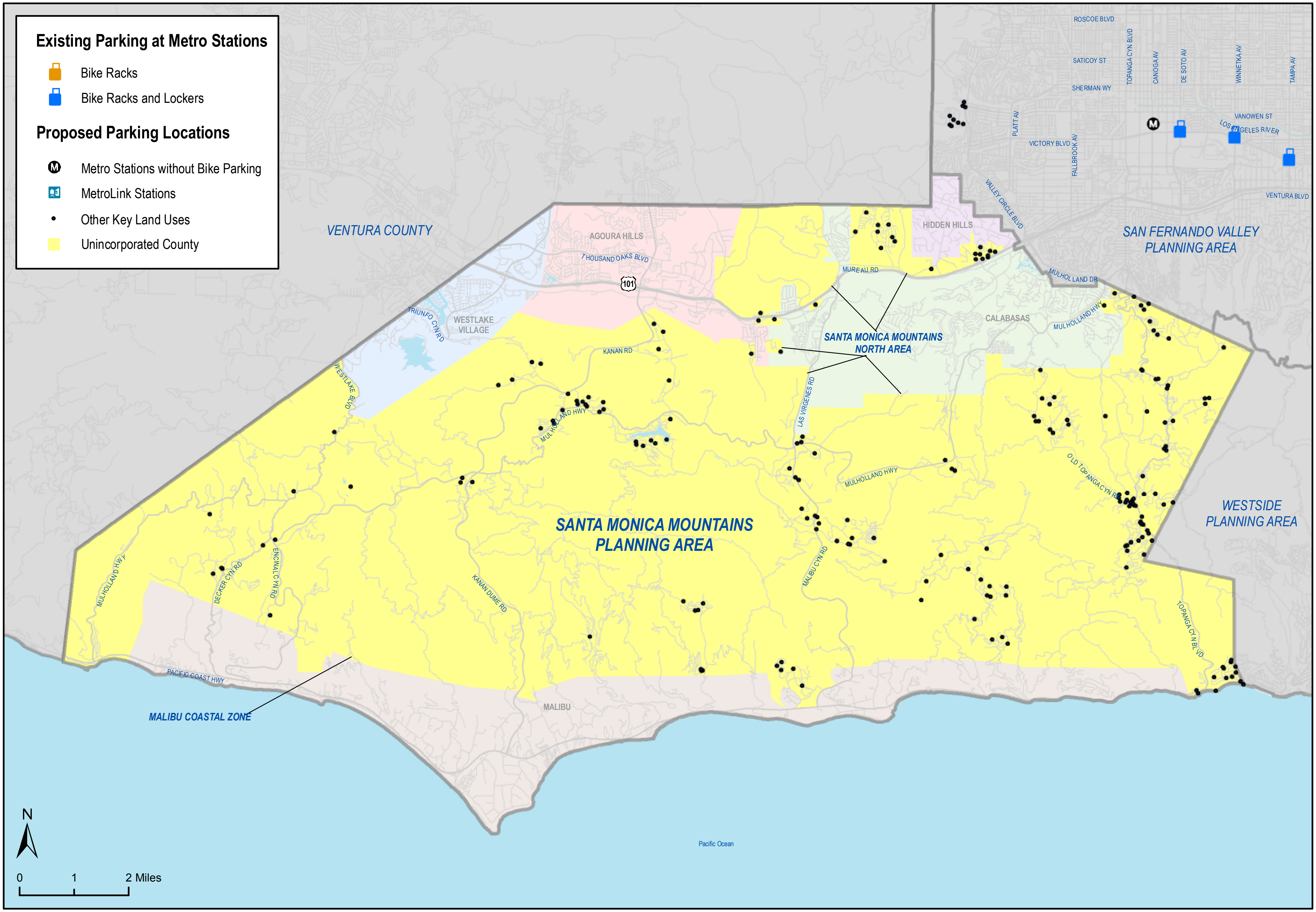

Figure E-7: Santa Monica Mountains Planning Area Proposed Bicycle Parking

Los Angeles County Bicycle Master Plan

Source: Los Angeles Metro (2010); Alta Planning + Design (2010)

Date: 11/2/2010

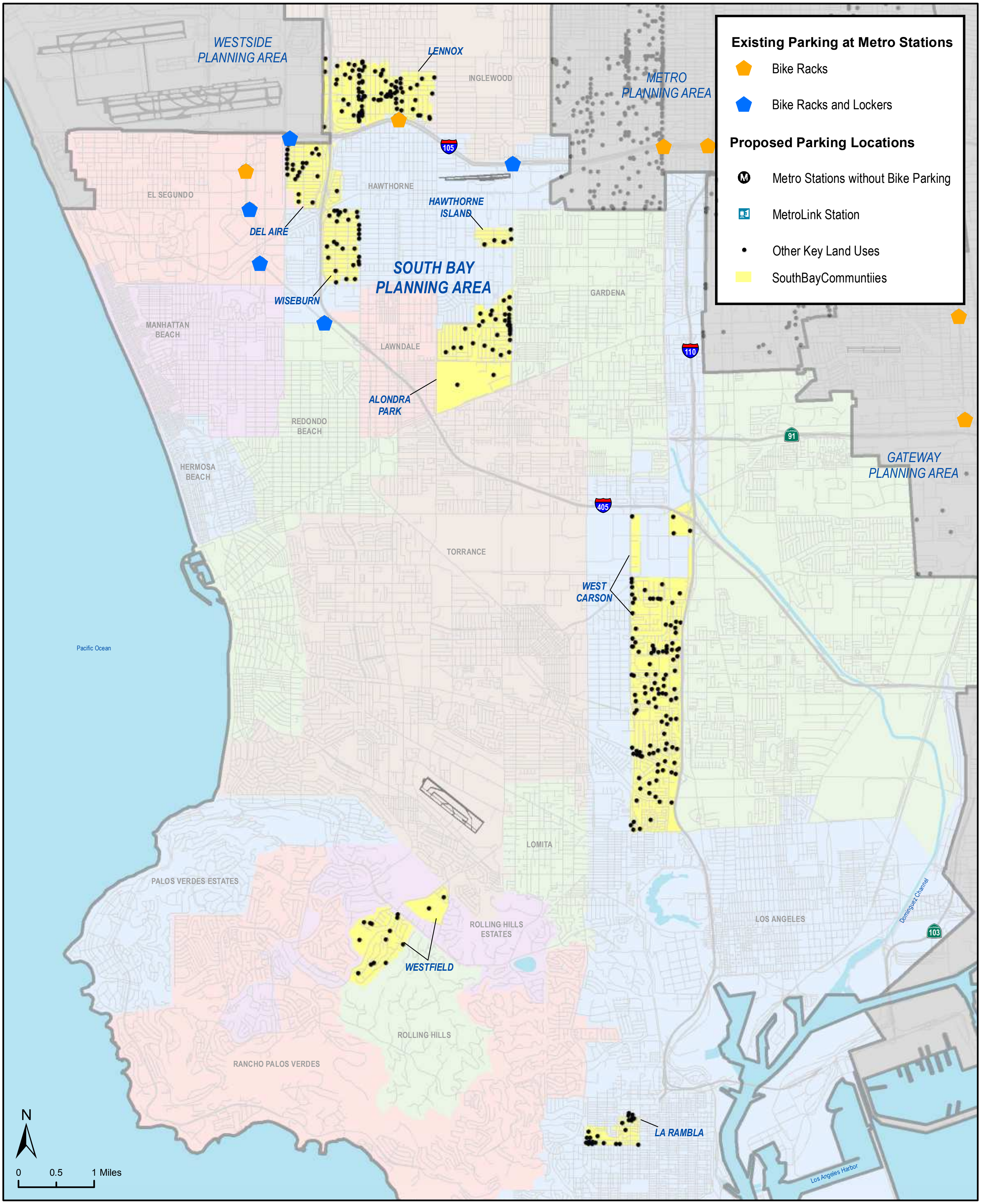

Figure E-8: South Bay Planning Area Proposed Bicycle Parking

Los Angeles County Bicycle Master Plan

Source: Los Angeles Metro (2010); Alta Planning + Design (2010)
Date: 10/05/11

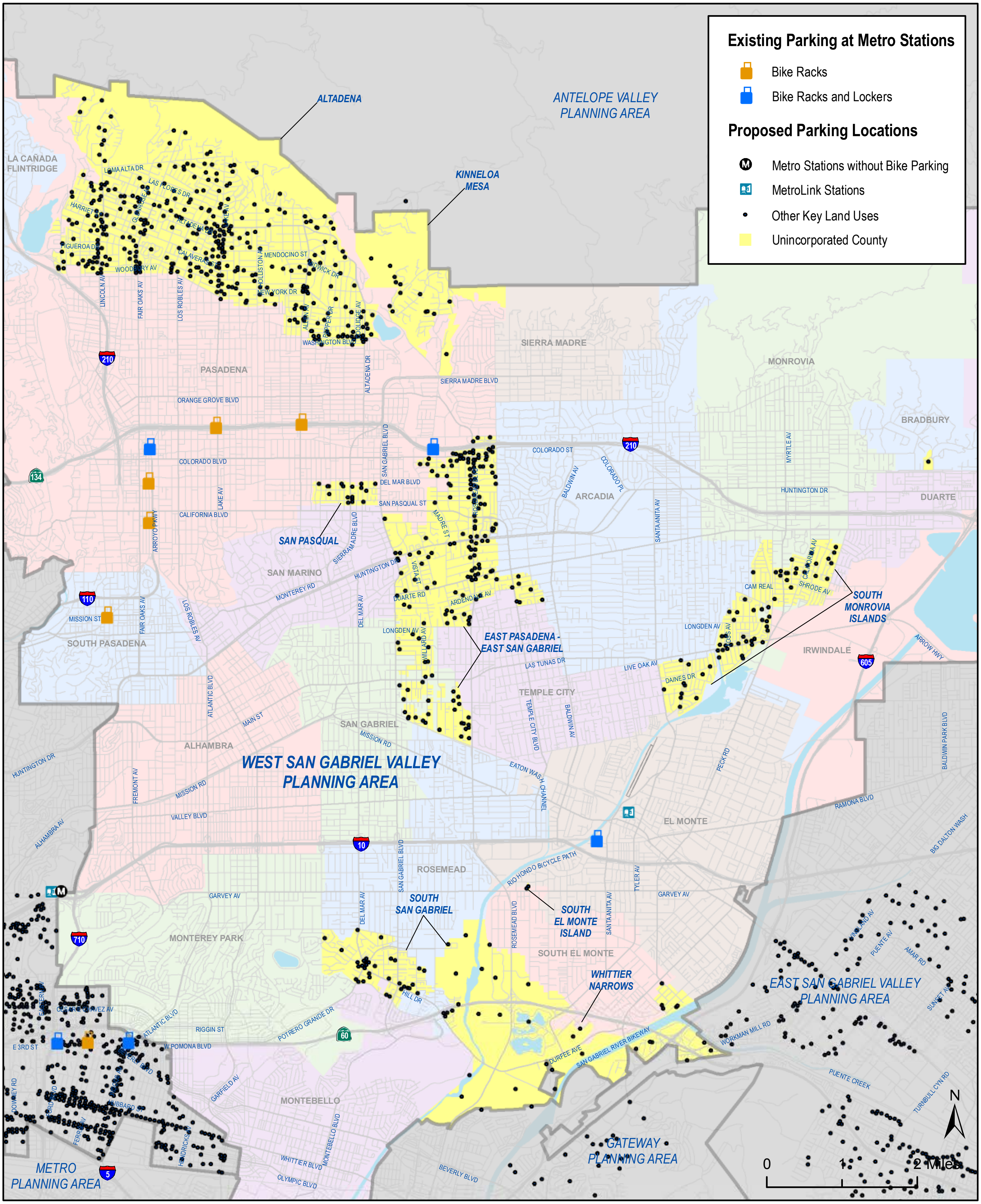

Figure E-9: West San Gabriel Valley Planning Proposed Bicycle Parking

Los Angeles County Bicycle Master Plan

Source: Los Angeles Metro (2010); Alta Planning + Design (2010)
Date: 11/2/2010

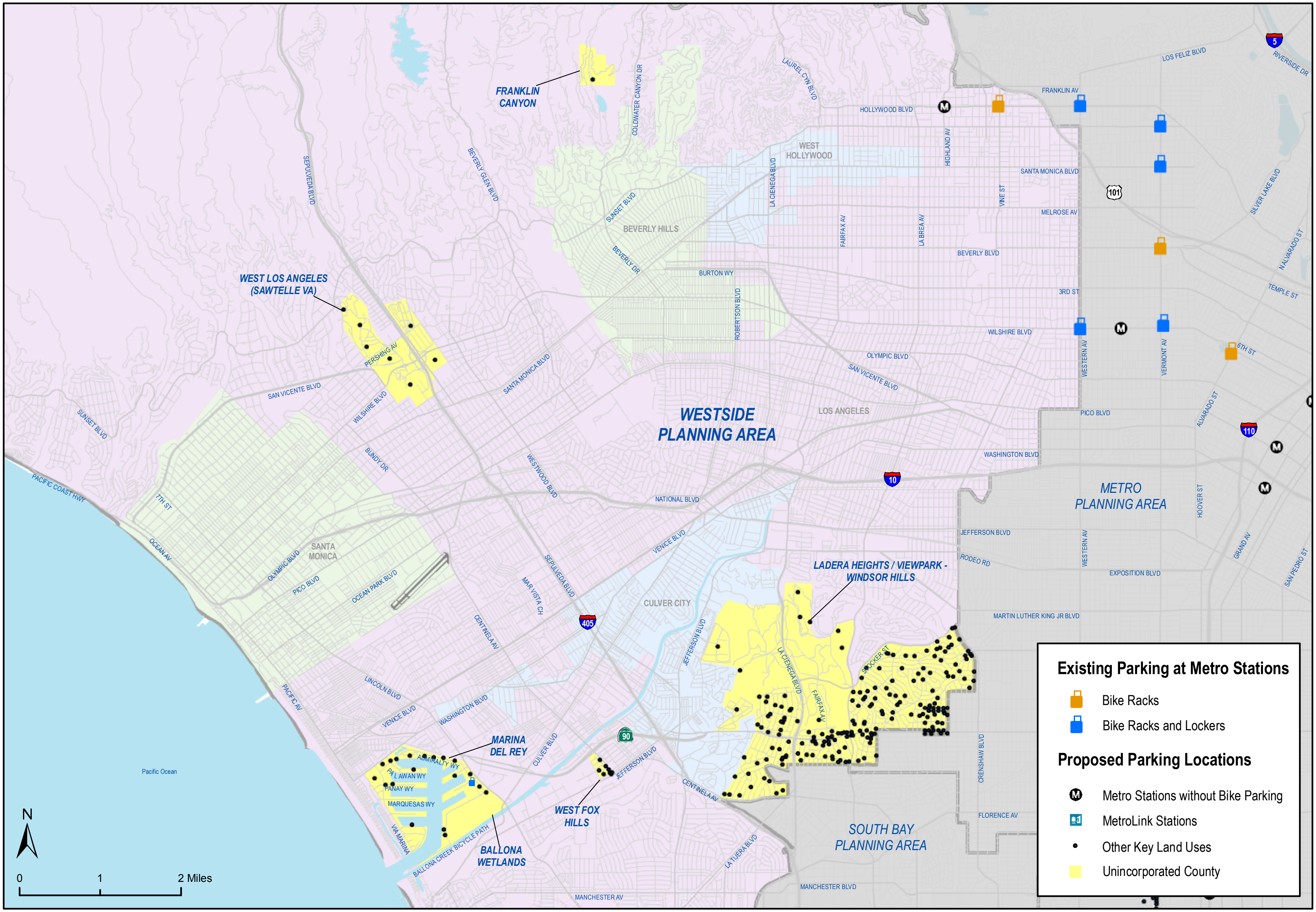

Figure E-10: Westside Planning Area Proposed Bicycle Parking

Source: Los Angeles Metro (2010); Alta Planning + Design (2010)
Date: 11/2/2010

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Appendix F.   Design Guidelines

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Bicyclists have legal access to all county streets. While this Plan identifies a specific subset of streets to be designated as bikeways, many bicyclists will need to use other streets to reach their destinations. Therefore, it is important that all roadways be designed to accommodate bicyclists.

The County of Los Angeles works to implement on-and off-street projects to encourage walking and cycling, improve safety and accessibility, and enhance the quality of the walkway and bikeway networks so that these activities become integral parts of daily life. The County of Los Angeles features a mix of urban, suburban, and rural environments, and many future projects will involve retrofitting existing streets and intersections. The County has high demand for on-street parking in commercial corridors, an auto-oriented roadway system reliant on high-capacity arterials, and many other complex situations.

The Design Guidelines are intended to provide a range of design options for bicycle treatments. The Design Guidelines provide a toolbox of ideas that may be implemented by the County of Los Angeles, but is not inclusive of all treatments that may be used and does not identify treatments intended for any specific projects. The following key principles should guide the development of all future County bikeways and bicycle facilities:

- The bicycling environment should be safe. On-and off-road bikeways described in Chapter 3 (Table 3.1) should be designed and built to be free of hazards and to minimize conflicts with external factors such as noise, vehicular traffic and protruding architectural elements.
- The bicycle network should be accessible. Future bikeway design should ensure the mobility of all users by accommodating the needs of people regardless of age or ability. Bicyclists have a range of skill levels, and facilities should be designed for use by experienced cyclists at a minimum, with a goal of providing for inexperienced / recreational bicyclists (especially children and seniors) to the greatest extent possible. In areas where specific needs have been identified (e.g., near schools) the needs of appropriate types of bicyclists should be accommodated.
- The bicycle network should connect to places people want to visit. The bikeway network should provide continuous direct routes and convenient connections between destinations, including homes, schools, offices, commercial districts, shopping areas, recreational opportunities and transit.
- The bikeway network should be clearly designated and easy to use. On-and off-road bikeways should be designed so people can easily find a direct route to a destination and delays are minimized.
- Bicyclists should be able to enjoy a positive environment. Good design should enhance the feel of the bicycling environment. A complete network of on-street bicycling facilities should connect seamlessly to the existing and proposed off-street pathways to complete recreational and commuting routes around the County.
- All roadway projects and improvements *should* accommodate bicyclists.
- Bicycle improvements should be economical. Improvements should be designed to achieve the maximum benefit for their cost, including initial cost and maintenance cost as well as reduced reliance on more expensive modes of transportation. Where possible, improvements in the right-of-way should stimulate, reinforce, and connect with adjacent private improvements.

Design guidelines are intended to be flexible and should be applied with professional judgment by designers. Specific national and state guidelines are identified in this document, as well as design treatments that may exceed these guidelines.

F.1 National, State, and Local Guidelines / Best Practices

The following is a list of references and sources utilized to develop design guidelines for the County of Los Angeles Bicycle Master Plan. Many of these documents are available online.

F.1.1 Federal Guidelines

- American Association of State Highway and Transportation Officials. (2004). *AASHTO Policy on Geometric Design of Streets and Highways*. Washington, DC. www.transportation.org
- American Association of State Highway and Transportation Officials. (1999). *AASHTO Guide for the Development of Bicycle Facilities*. Washington, DC. www.transportation.org
- Federal Highway Administration. (2009). *Manual on Uniform Traffic Control Devices (MUTCD)*.Washington, DC. http://mutcd.fhwa.dot.gov
- United States Access Board. (2007). *Public Rights-of-Way Accessibility Guidelines (PROWAG)*. Washington, D.C. http://www.access-board.gov/PROWAC/alterations/guide.htm

F.1.2 State and Local Guidelines

- California Department of Transportation. (2006). *Highway Design Manual* (HDM), *Chapter 1000: Bikeway Planning and Design.* http://www.dot.ca.gov/hq/oppd/hdm/pdf/chp1000.pdf
- California Department of Transportation. (2010). *California Manual of Uniform Traffic Control Devices for Streets and Highways, Part 9: Traffic Controls for Bicycle Facilities.* http://www.dot.ca.gov/hq/traffops/signtech/mutcdsupp/pdf/camutcd2010/Part9.pdf
- California Department of Transportation. (2005). Pedestrian and Bicycle Facilities in California: A Technical Reference and Technology Transfer Synthesis for Caltrans Planners and Engineers. http://www.dot.ca.gov/hq/traffops/survey/pedestrian/TR_MAY0405.pdf
- County of Los Angeles, Department of Public Works. (2004). *Los Angeles River Master Plan Landscaping Guidelines and Plant Palettes.* http://ladpw.org/wmd/watershed/LA/LAR_planting_guidelines_webversion.pdf

F.1.3 Best Practices Documents

- Alta Planning + Design and the Initiative for Bicycle & Pedestrian Innovation (IBPI). (2009). *Fundamentals of Bicycle Boulevard Planning & Design.* http://www.ibpi.usp.pdx.edu/media/BicycleBoulevardGuidebook.pdf
- Association of Pedestrian and Bicycle Professionals (APBP). (2010). *Bicycle Parking Design Guidelines, 2nd Edition.*
- City of Berkeley. (2000). *Bicycle Boulevard Design Tools and Guidelines*. http://www.ci.berkeley.ca.us/contentdisplay.aspx?id=6652
- City of Chicago and the Pedestrian and Bicycle Information Center (PBIC). (2002). Bik*e Lane Design Guide.*http://www.activelivingresources.org/assets/chicagosbikelanedesignguide.pdf
- City of Portland Bureau of Transportation. (2010). *Portland Bicycle Master Plan for 2030.*http://www.portlandonline.com/transportation/index.cfm?c=44597

- Federal Highway Administration. (2005). *Report HRT-04-100, Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations.* http://www.tfhrc.gov/safety/pubs/04100/
- Federal Highway Administration. (2001). *Designing Sidewalks and Trails for Access.*http://www.fhwa.dot.gov/environment/sidewalk2/contents.htm
- Institute of Transportation Engineers Pedestrian and Bicycle Council. (2003). *Innovative Bicycle Treatments.*
- King, Michael, for the Pedestrian and Bicycle Information Center. (2002). *Bicycle Facility Selection: A Comparison of Approaches.* Highway Safety Research Center, University of North Carolina – Chapel Hill. http://www.bicyclinginfo.org/pdf/bikeguide.pdf
- National Association of City Transportation Officials, NACTO Urban Bikeway Design Guide, (2011), http://nacto.org/cities-for-cycling/design-guide/
- Oregon Department of Transportation. (1995). *Oregon Bicycle and Pedestrian Plan.* http://www.oregon.gov/ODOT/HWY/BIKEPED/planproc.shtml
- Rosales, Jennifer. (2006). *Road Diet Handbook: Setting Trends for Livable Streets.* Institute of Transportation Engineers.

F.2 Experimental Projects

Most of the design concepts in **Section F.5** are based on uniform standards outlined in the *California Highway Design Manual, Chapter 1000 – Bikeway Planning and Design*; *Manual of Uniform Traffic Control Devices* (CA MUTCD) 2010, Part 9 Traffic Controls for Bicycle Facilities and the American Association of State Highway and Transportation Officials (AASHTO) *Guide for the Development of Bicycle Facilities*. The toolbox also includes treatments that as yet have not been approved by the State of California Department of Transportation and/or the Federal Highway Administration. California State law requires the State to adopt uniform standards, and for local agencies to conform to these standards. California allows approved experimental projects on a case by case basis as approved by the California Traffic Control Devices Committee (CTCDC) and FHWA. These approved experimental projects are studied by the CTCDC and FHWA as a means to consider changes to these uniform standards.

These Design Guidelines contain several innovative treatments, such as cycle tracks, for which other jurisdictions both in California and in other states are experimenting. The State of California may at some future time approve these treatments, or other treatments not provided in these Design Guidelines, for use by all local agencies. As additional designs and standards are adopted by the State of California, the County will include those innovative treatments in the Plan's toolbox of treatments. The County promotes the use of these innovative treatments and will apply for and implement experimental projects utilizing them where cost effective and where such projects enhance the safety of bicycles, pedestrians, and motorists.

The process and requirements related to requests for approval for an experimental project from FHWA and CTCDC is outlined in the CA MUTCD. Examples of the processes to request and conduct experimental projects from the CTCDC and FHWA are shown in **Chart F-1** and **Chart F-2**, respectively. Per State guidelines, "experimental projects shall terminate at the end of the approved period unless an extension is granted, and all experimental devices and applications shall be removed unless specific permission is given for continued operation."

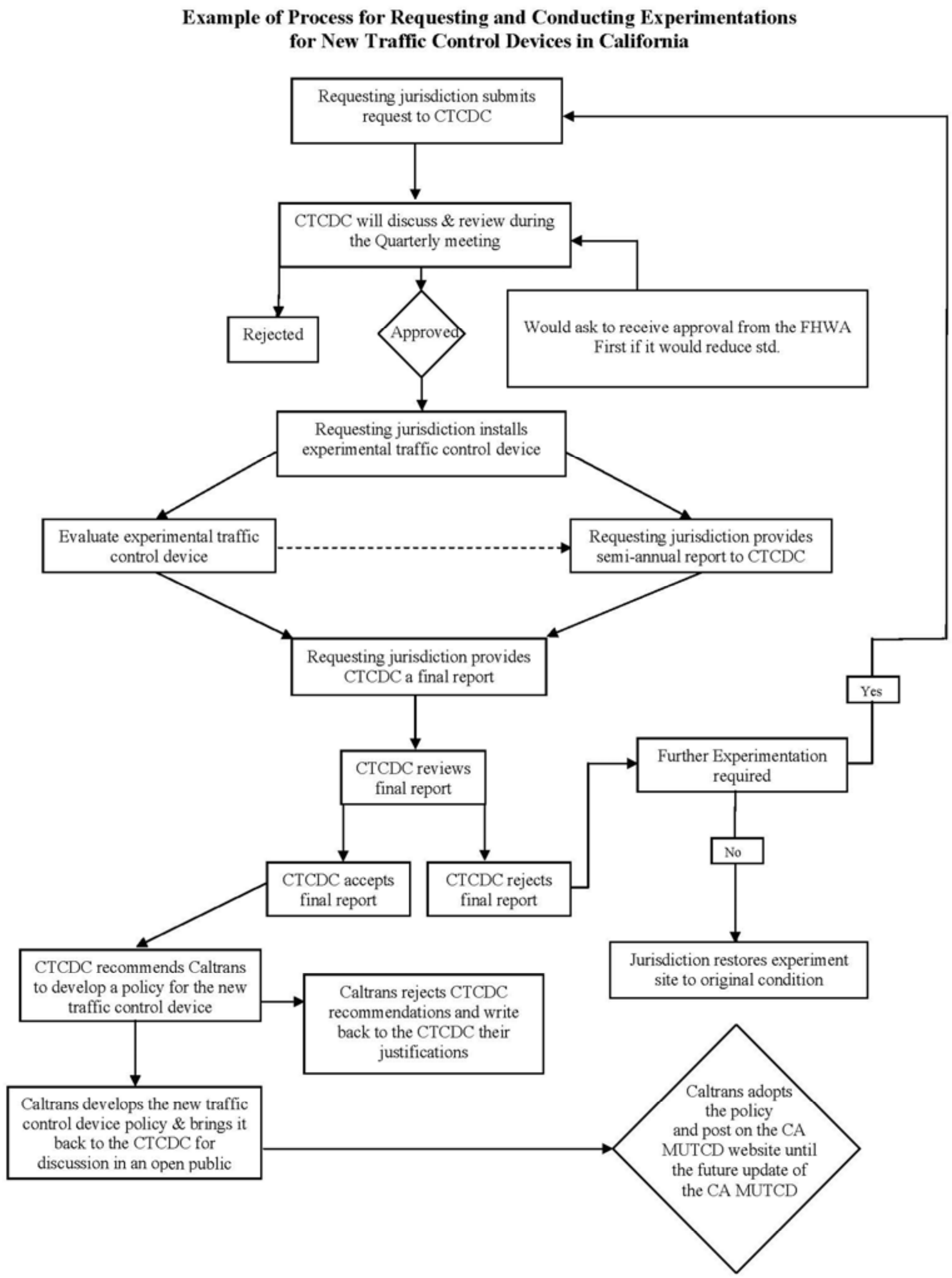


Chart F-1 – CTCDC Experimental Process

Reference: California Department of Transportation website

link: http://www.dot.ca.gov/hq/traffops/signtech/newtech/others/example-implementation.pdf

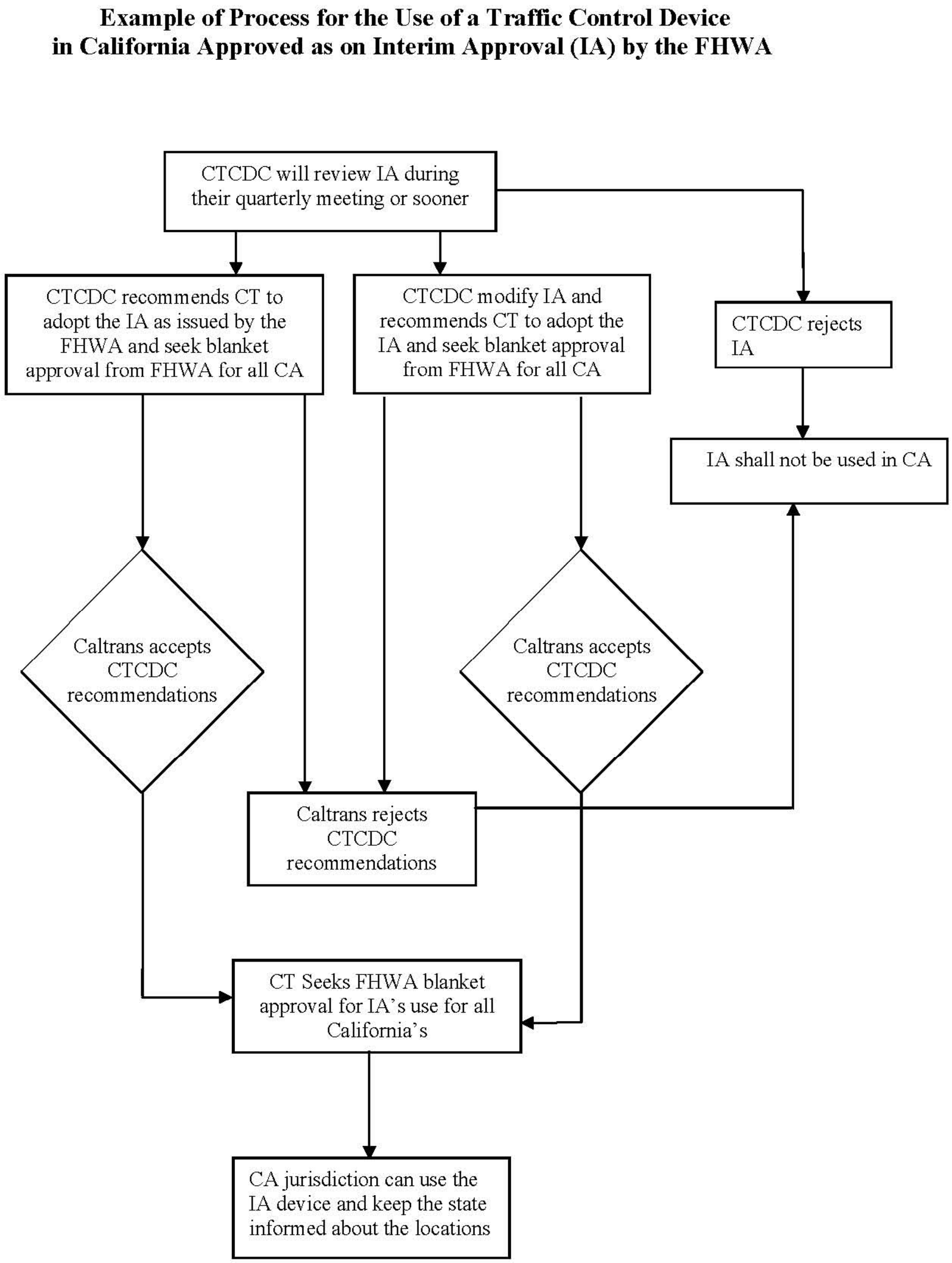


Chart F-2 – FHWA Experimental Process

Reference: California Department of Transportation website

link: http://www.dot.ca.gov/hq/traffops/signtech/newtech/others/example-experimentprocess.pdf

F.3 The Bicycle as a Design Vehicle

Similar to motor vehicles, bicyclists and their bicycles come in a variety of sizes and configurations. This variation can take the form of the variety in types of vehicle (such as a conventional bicycle, a recumbent bicycle, or a tricycle), or the behavioral characteristics and comfort level of the cyclist riding the vehicle. Any bicycle facility undergoing design should consider what types of design vehicles will be using the facility and design with that set of critical dimensions in mind.

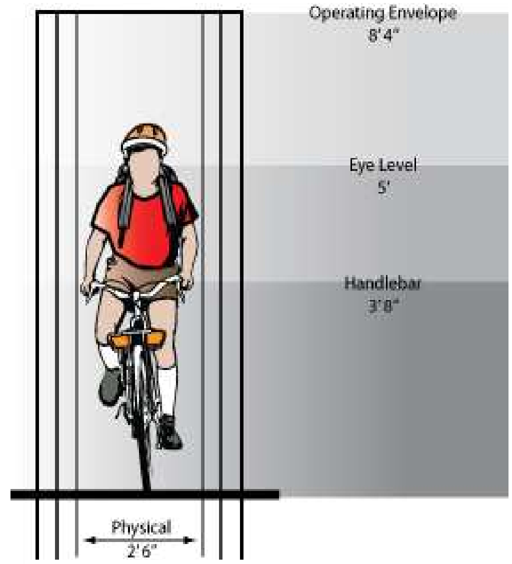


Figure F-1: Standard Bicycle Rider Dimensions

F.3.1 Physical Dimensions

The operating space and physical dimensions of a typical adult bicyclist are shown in **Figure F-1**. Clear space is required for the bicyclist to be able to operate within a facility; this is why the minimum operating width is greater than the physical dimensions of the bicyclist. Although four feet is the minimum acceptable operating width, five feet or more is preferred.

Outside of the design dimensions of a typical bicycle, there are many commonly used pedal driven cycles and accessories that should be considered when planning and designing bicycle facilities. The most common types of bicycles are depicted in **Figure F-2.**

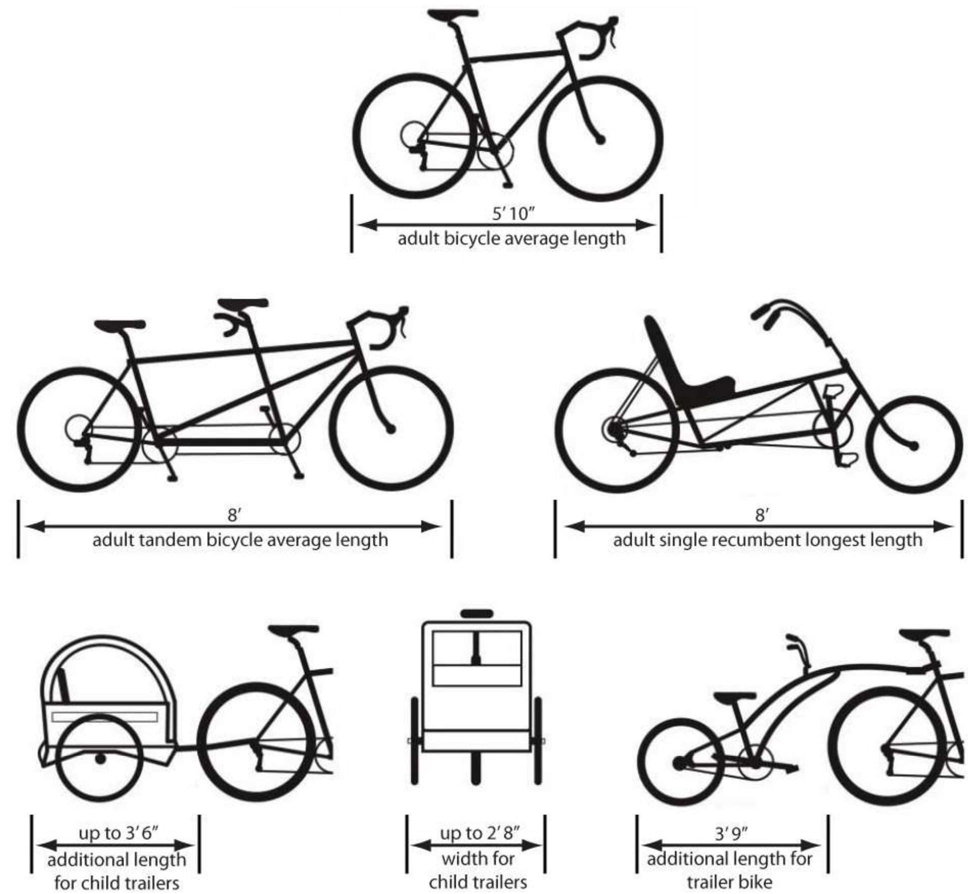


Figure F-2: Various Bicycle Dimensions

Table F-1 summarizes the typical dimensions for most commonly encountered bicycle design vehicles.

Table F-1: Bicycle as Design Vehicle – Typical Dimensions

Bicycle Type	Feature	Typical Dimensions
Upright Adult Bicyclist	Physical width	2 ft 6 in
	Operating width (Minimum)	4 ft
	Operating width (Preferred)	5 ft
	Physical length	5 ft 10 in
	Physical height of handlebars	3 ft 8 in
	Operating height	8 ft 4 in
	Eye height	5 ft
	Vertical clearance to obstructions (tunnel height, lighting, etc.).	10 ft
	Approximate center of gravity	2 ft 9 in to 3 ft 4 in
Recumbent Bicyclist	Physical length	7 ft
	Eye height	3 ft 10 in
Tandem Bicyclist	Physical length	8 ft
Bicyclist with child trailer	Physical length	10 ft
	Physical width	2 ft 6 in
Hand Bicyclist	Eye height	2 ft 10 in
Inline Skater	Operating width (sweep width)	5 ft

F.3.2 Design Speed

The speed that various types of bicyclists can be expected to maintain under various conditions can also have influence over the design of facilities such as shared use paths. **Table F-2** provides typical speeds of various types of bicyclists for a variety of conditions.

Table F-2: Bicycle as Design Vehicle – Design Speed Expectations

Bicycle Type	Feature	Typical Speed
Upright Adult Bicyclist	Level surface	15 mph
	Crossing Intersections	10 mph
	Downhill	30 mph
	Uphill	5-12 mph
Recumbent Bicyclist	Level surface	18 mph

F.3.3 Types of Cyclists

The skill level of the cyclist also provides a dramatic variance on expected speeds and expected behavior. There are several systems of classification currently in use within the bicycle planning and engineering professions. These classifications can be helpful in understanding the characteristics and infrastructure preferences of different cyclists. However, it should be noted that these classifications may change in type or proportion over time as infrastructure and culture evolve. Often times an instructional course can instantly change a less confident cyclist to one that can comfortably and safely share the roadway with vehicular traffic. Bicycle infrastructure should be planned and designed to accommodate as many user types as possible with separate or parallel facilities considered to provide a comfortable experience for the greatest number of cyclists.

A classification system that is currently in use in the Pacific Northwest and also under consideration for the Draft 2009 AASHTO *Guide for the Development of Bicycle Facilities* provides the following bicycle user types:

- **Strong and Fearless** (Very low percentage of population) – Characterized by bicyclists that will typically ride anywhere regardless of roadway conditions or weather. These bicyclists can ride faster than other user types, prefer direct routes and will typically choose roadway connections, even if shared with vehicles, over separate bicycle facilities such as class I pathways.
- **Enthused & Confident** (5-10% of population) – This user group encompasses the 'intermediate' cyclists who are mostly comfortable riding on all types of bicycle facilities but will usually prefer low traffic streets or class I pathways when available. These cyclists may deviate from a more direct route in favor of a preferred facility type. This group includes all kinds of cyclists including commuters, recreationalists, racers, and utilitarian cyclists.
- **Interested But Concerned** (approximately 60% of population) – This user type makes up the bulk of the cycling population and represents cyclists who typically only ride a bicycle on low traffic streets or class I pathways under favorable conditions and weather. These cyclists perceive significant barriers towards increased use of cycling with regards to traffic and safety. These cyclists may become "Enthused & Confident" with encouragement, education and experience.
- **No Way, No How** (approximately 30% of population) – Persons in this category are not cyclists, and perceive severe safety issues with riding in traffic. Some people in this group may eventually give

cycling a second look and may progress to the user types above. A significant portion of these people will never ride a bicycle under any circumstances.

F.4 Routine Accommodation of Bicyclists (Complete Streets)

Bicyclists have legal access to all County streets. While this Plan identifies a specific subset of streets to be designated as bikeways, many bicyclists will need to use other streets to reach their destinations. Therefore, it is important that all roadways be designed to accommodate bicyclists. The California Complete Streets Act of 2008 (AB 1358) mandates that cities and counties plan for all users of roadways.

> *"Commencing January 1, 2011, upon any substantive revision of the circulation element, the legislative body shall modify the circulation element to plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways for safe and convenient travel in a manner that is suitable to the rural, suburban, or urban context of the general plan....*
>
> *For purposes of this paragraph, "users of streets, roads, and highways" means bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, users of public transportation, and seniors."*

An engineering study, accounting for various site-specific factors including traffic speeds, parking turnover, bus and truck volumes, will determine whether it is safe to use "absolute minimum" travel and turn lane widths in order to accommodate bike lanes.

Figure F-3 through **Figure F-8** illustrate potential ways to configure roadways in order to enhance bicycle access. For roads without curb and gutter, the minimum bike lane width allowed in the Caltrans Highway Design Manual is four feet. The cross-sections shown below are not intended to be standards; they are merely illustrations how bikeways may be included on County roadways.

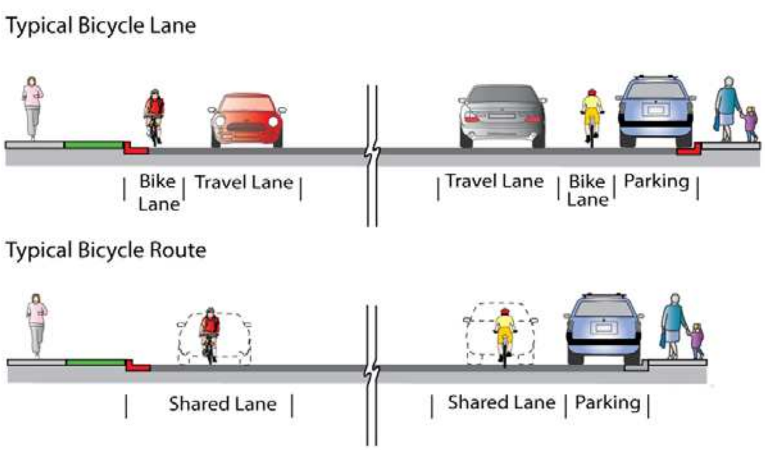


Figure F-3: Typical bicycle lane and bicycle route accommodation with and without on street parking

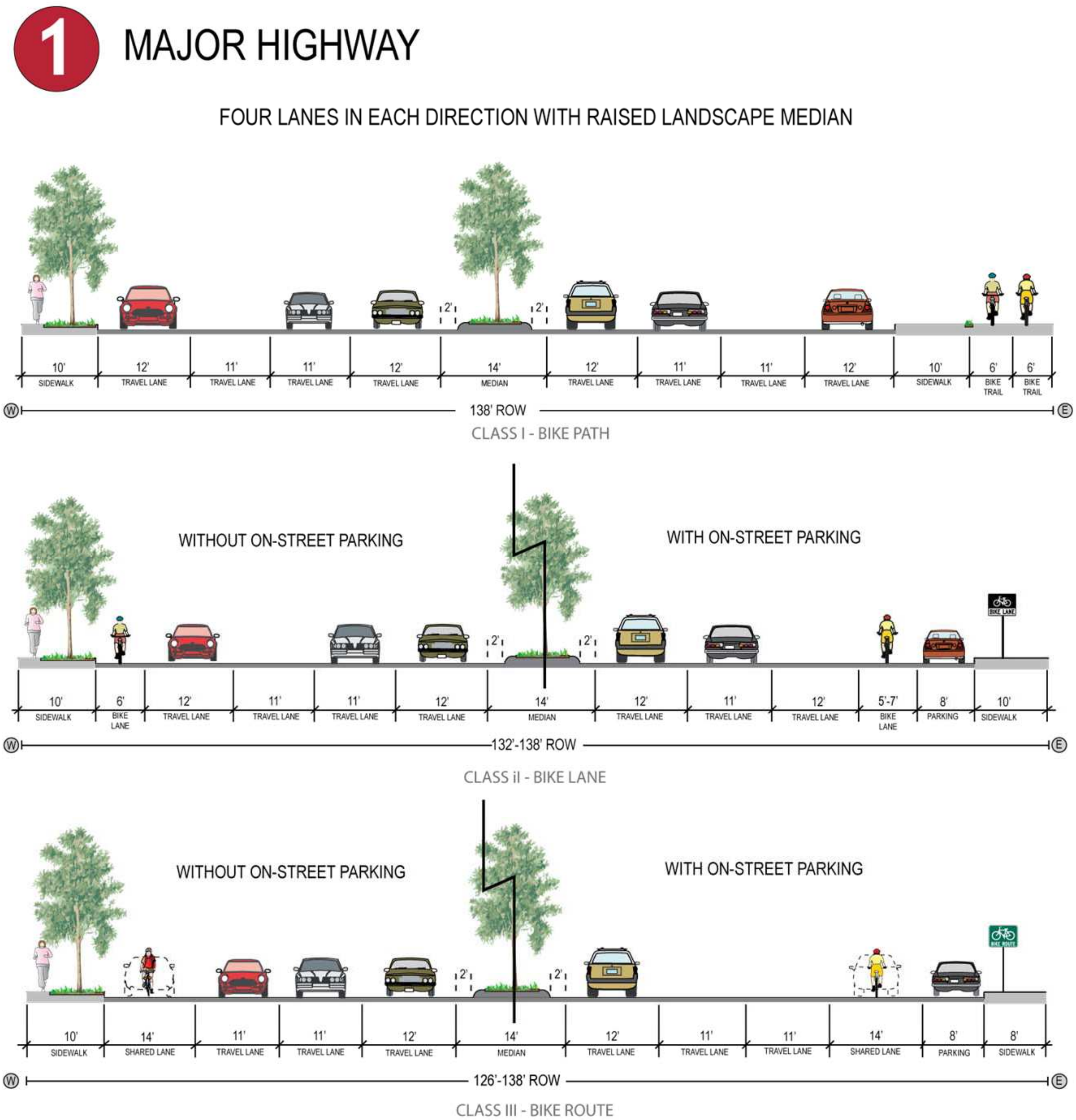


Figure F-4: Major Highway with four traffic lanes, ROW ≥100’

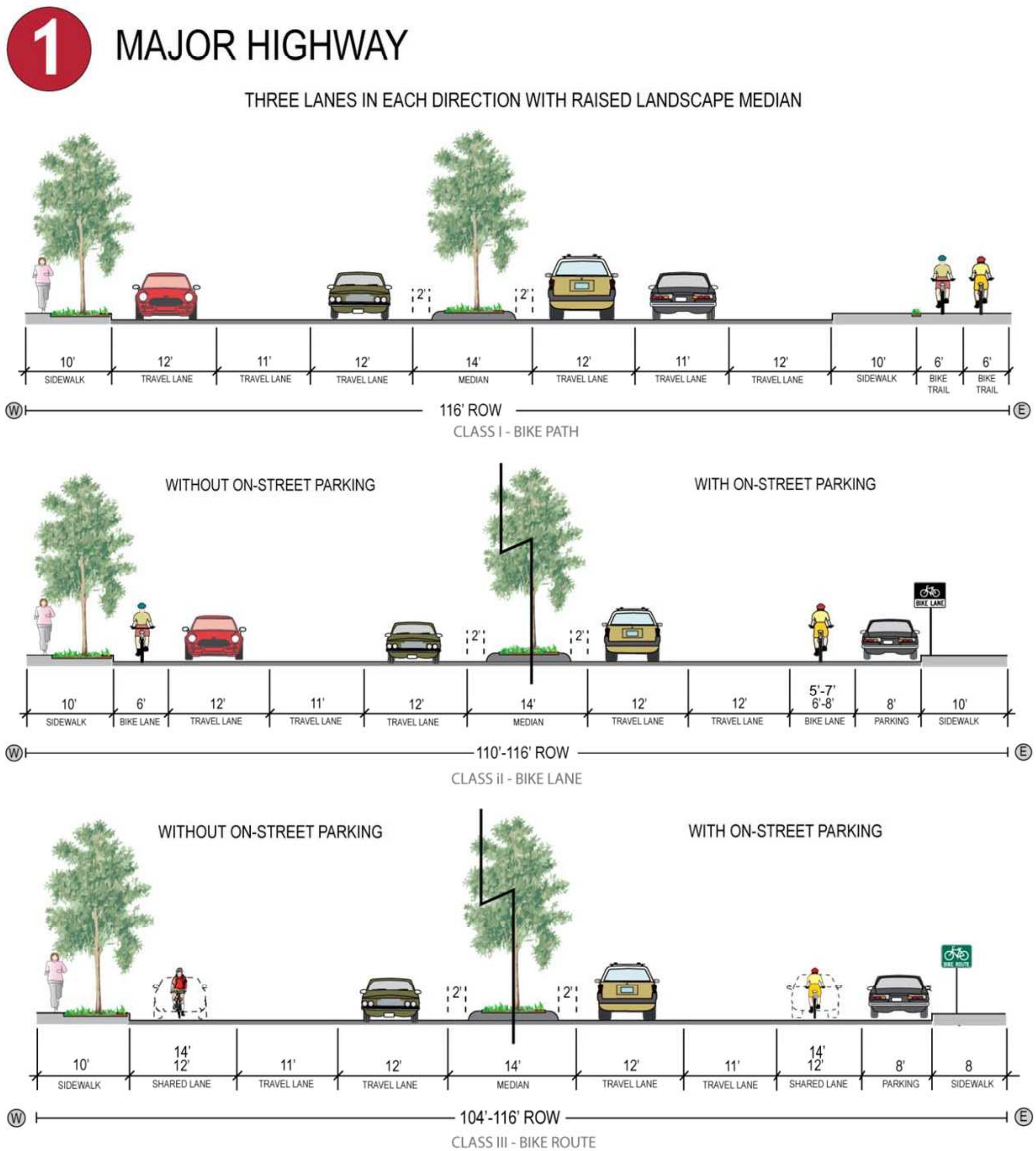


Figure F-5: Major Highway with three traffic lanes, ROW ≥100'

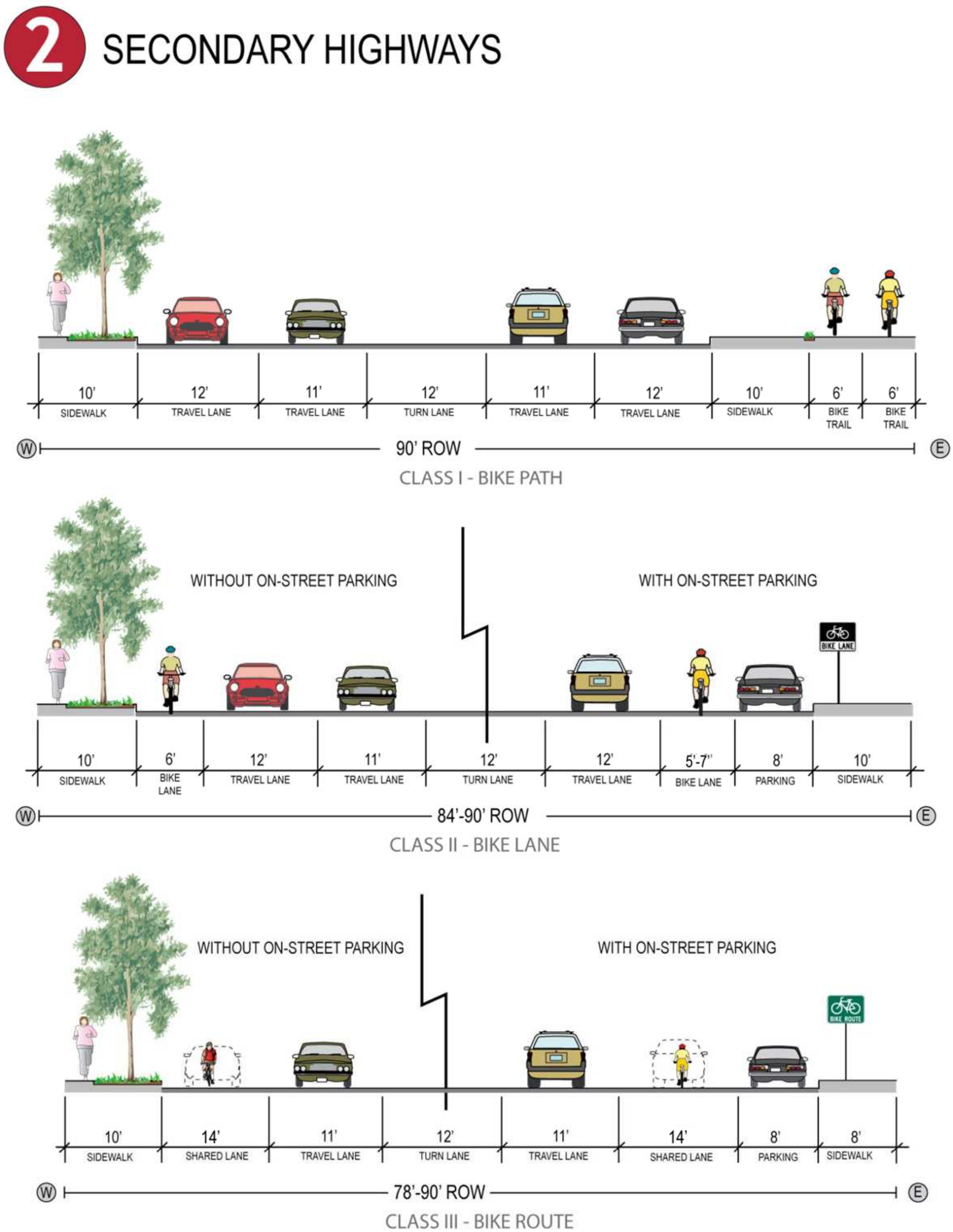


Figure F-6: Secondary Highway ROW 80'-90'

3 LIMITED SECONDARY HIGHWAY

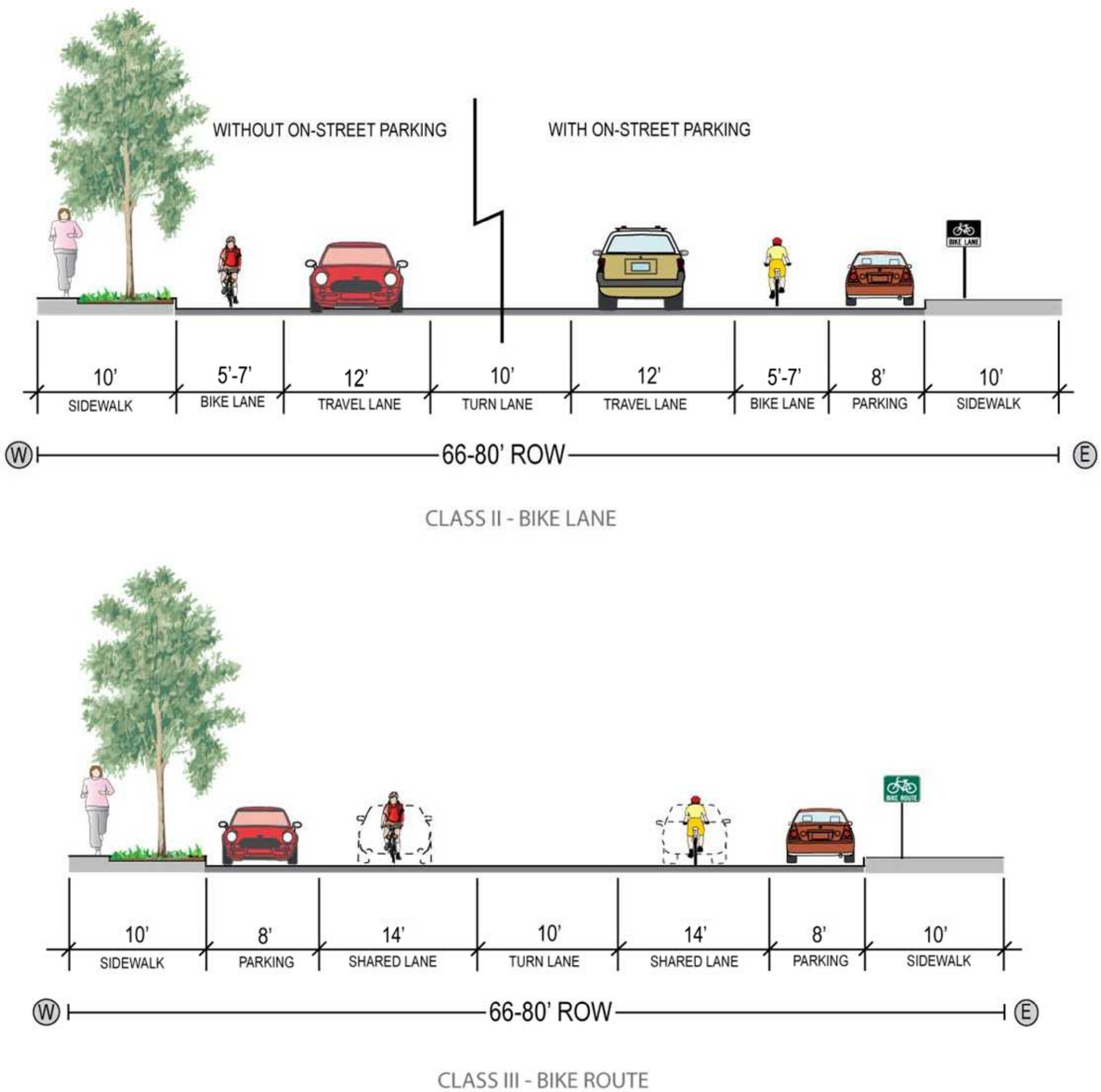


Figure F-7: Limited Secondary Highway ROW 66'-79'

4 LOCAL STREET

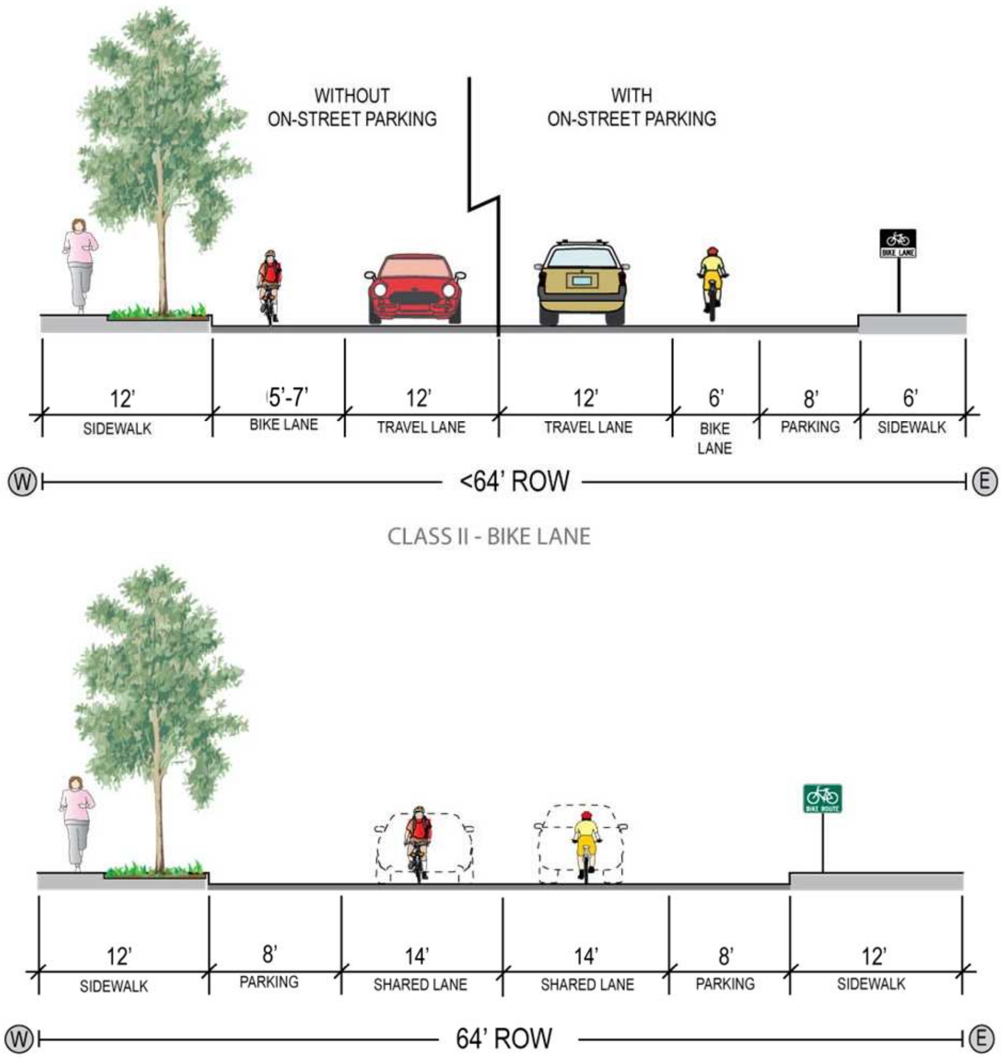


Figure F-8: Local street ROW <64'

F.5 Design Toolbox

F.5.1 Class I Bikeway

Bike Path (Class I Bikeway) Design Guidelines

A Class I facility allows for two-way, off-street bicycle and pedestrian traffic and also may be used by pedestrians, skaters, wheelchair users, and other non-motorized users. These facilities are frequently found in parks, along rivers, and in greenbelts or utility corridors where there are few conflicts with motorized vehicles. Class I facilities can also include amenities such as lighting, signage, and fencing (where appropriate). In California, design of Class I facilities is dictated by Chapter 1000 of the Highway Design Manual. Class I facilities can provide a desirable facility particularly for novice riders, recreational trips, and cyclists of all skill levels preferring separation from traffic. Class I bikeways should generally provide new travel opportunities.

Class I facilities serve bicyclists and pedestrians and provide additional width over a standard sidewalk. Facilities may be constructed adjacent to roads, through parks, or along linear corridors such as active or abandoned railroad lines or waterways. Regardless of the type, paths constructed next to the road must have some type of vertical (e.g., curb or barrier) or horizontal (e.g., landscaped strip) buffer separating the path area from adjacent vehicle travel lanes.

Class I Bikeways (also referred to as "bike trails" or "paths") are often viewed as recreational facilities, but they are also important corridors for utilitarian trips.

Elements that enhance Class I bikeway design include:

- Providing frequent access points from the local road network; if access points are spaced too far apart, users will have to travel out of direction to enter or exit the path, which will discourage use
- Placing directional signs to direct users to and from the path
- Building to a standard high enough to allow heavy maintenance equipment to use the path without damage
- Terminating the path where it is easily accessible to and from the street system, preferably at a controlled intersection or at the beginning of a dead-end street. If poorly designed, the point where the path joins the street system can put pedestrians and cyclists in a position where motor vehicle drivers do not expect them
- Identifying and addressing potential safety and security issues up front
- Whenever possible, and especially where heavy use can be expected, separate bicycle paths and pedestrian walkways should be provided to reduce conflicts
- Providing accessible parking space(s) at trailheads and access points
- Limiting the number of at-grade crossings with streets or driveways

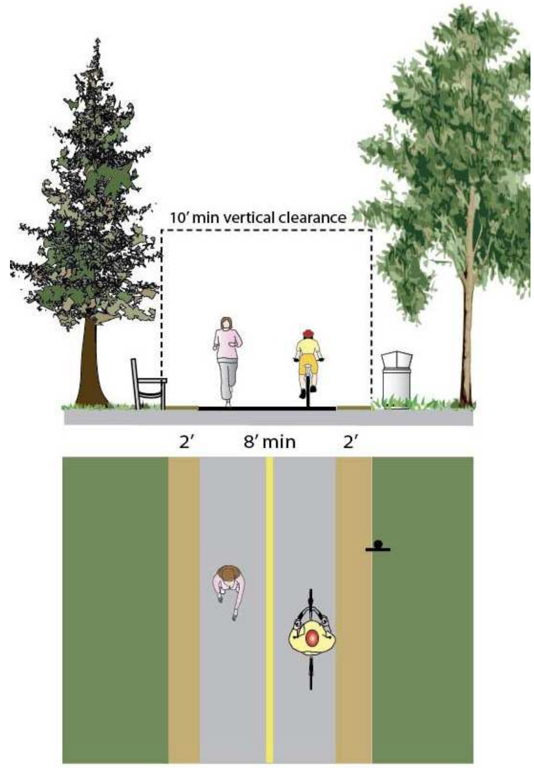
Bike Path (Class I Bikeway) Design Guidelines (continued)

A hard surface should be used for Class I bikeways. Concrete, while more expensive than asphalt, is the hardest of all surfaces and lasts the longest. Dyes, such as reddish pigments, can be added to concrete to increase the aesthetic value of the facility itself. When concrete is used the Class I bikeway should be designed and installed using the narrowest possible expansion joints to minimize the amount of 'bumping' cyclists experience on the facility.

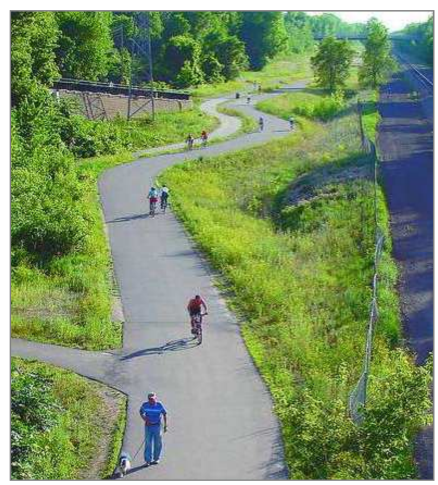
Where possible, Class I bikeways should be designed according to ADA standards. Topographic, environmental, or space constraints may make meeting ADA standards difficult and sometimes prohibitive. Prohibitive impacts include harm to significant cultural or natural resources, a significant change in the intended purpose of the trail, requirements of construction methods that are against federal, state or local regulations, or presence of terrain characteristics that prevent compliance.

Design Considerations

- Width standards:
  - 8' is the minimum allowed for a two-way bikeway and is only recommended for low traffic situations
  - 10' is recommended in most situations and will be adequate for moderate to heavy use
  - 12' is recommended for heavy use situations with high concentrations of multiple users such as joggers, bicyclists, rollerbladers, and pedestrians
- Lateral Clearance: 2' minimum or 3' preferred shoulder on both sides (required by Caltrans' HDM, Chapter 1000)
- Overhead Clearance: 8' minimum, 10' recommended to accommodate first responders such as fire trucks or ambulance
- Minimum design speed: 25 mph. Speed bumps or other surface irregularities should never be used to slow bicycles
- Recommended maximum grade: 5%. Steeper grades can be tolerated for short distances (see guidelines following)
- Loading: AASHTO H-20. Heavy duty traffic load requirement



Recommended Class I Bikeway design.



The Cedar Lake Regional Trail in Minneapolis, MN has sufficient width to accommodate a variety of users.

Reference

California Highway Design Manual Chapter 1000
AASHTO Guide for the Development of Bicycle Facilities
U.S. Access Board, Public Rights-of-Way Accessibility Guidelines (PROWAG).
FHWA. Designing Sidewalks and Trails for Access.

Class I Bikeway: Along Utility Corridors/Waterway Corridors

Several utility and waterway corridors in Los Angeles offer excellent Class I bikeway and bikeway gap closure opportunities. Utility corridors typically include power line and sewer corridors, while waterway corridors include canals, drainage ditches, rivers, and beaches. Class I bikeway development along these corridors already exists in the Los Angeles area (e.g., along the Los Angeles and San Gabriel rivers). The LARMP Landscape Guidelines (2004) require service road access on both sides of the river and wash, which is compatible with bicycle path use.

Access Points

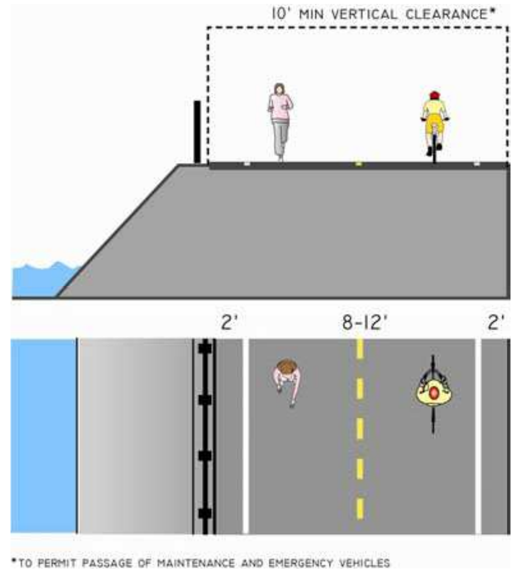
Any access point to the bikeway should be well-defined with appropriate signage designating the pathway as a bicycle facility and prohibiting motor vehicles. Removable bollards can prevent motorized access while preserving maintenance access to authorized vehicles (see bollards section for additional guidance). A gate that can prevent any access to the facility should also be present in case of path closure, to prevent public access to the bike path during maintenance activities or flooding. Advanced warning signs with detour information for path closures should be posted 14 days prior to planned closure. Signs should be posted at the closed access point and at the two adjacent access points in either direction.

Fencing

Public access to flood control channels or canals is undesirable for public safety. Hazardous materials, deep water or swift current, steep, slippery slopes, and debris are all potential hazards. Fencing can help keep path users within the designated travel way. The County of Los Angeles requires a 5' minimum height fences or railings to retain bicyclists. Fencing on the channel side should be constructed out of metal such as chain link or wrought iron, and allow a view down to the channel. Fencing on the non-channel side can take several forms. Bike path owners should consider constructing a masonry wall if the path is adjacent to high-security land-uses. Visually permeable fencing is acceptable for non-sensitive areas, with fence types including chain link or wrought iron in urban areas, to picket, split rail, or post and cable fencing in rural areas.

Landscaping

The Los Angeles and San Gabriel River Watershed Councils provide guidelines for sustainable re-vegetation of public right-of-way. Landscaping along bikeways within river corridors will conform to the Los Angeles River Master Plan Landscaping Guidelines and Plant Palettes and standards established by relevant Los Angeles County River Master Plans.



Recommended design for bikeways in flood control channels.

Flood control channels are a good opportunity to develop a continuous off-street pathway.

Gate at access point to San Gabriel River Bikeway.

Class I Bikeway: Along Utility Corridors/Waterway Corridors (continued)

Ownership and Liability

Owners of Bike Paths shall fund landscaping and landscaping maintenance at their cost. Bike paths and landscaping shall be non-invasive and compatible with existing and future flood control and maintenance uses. Operators of bike paths shall indemnify the Los Angeles County Flood Control District (LACFCD) for liability associated with bike paths within LACFCD right-of-way. Operators of bike paths shall assume all responsibility for opening and closing access points.

Design Considerations

- Meet or exceed Caltrans standards
- Use permeable surfacing where possible; where asphalt is required, grade towards infiltration strips
- Meet ADA standards to the maximum extent feasible
- 12' minimum vertical clearance to permit passage of maintenance and emergency vehicles
- Operators of bike paths shall indemnify the Los Angeles County Flood Control District (LACFCD) for liability associated with Bike Paths usage within LACFCD right-of-way
- Operators of bike paths are to fund landscaping and landscaping maintenance at their cost.
- Bike path landscaping is to be non-invasive. The plant palette in the LA River Master Plan is a good source for selecting low maintenance California Native Plants that are well suited to the environment
- Bike paths and landscaping along rivers and channels are to be compatible with existing and future flood control and maintenance uses
- Operators of Bike paths are to assume all responsibility for opening and closing access points

Reference

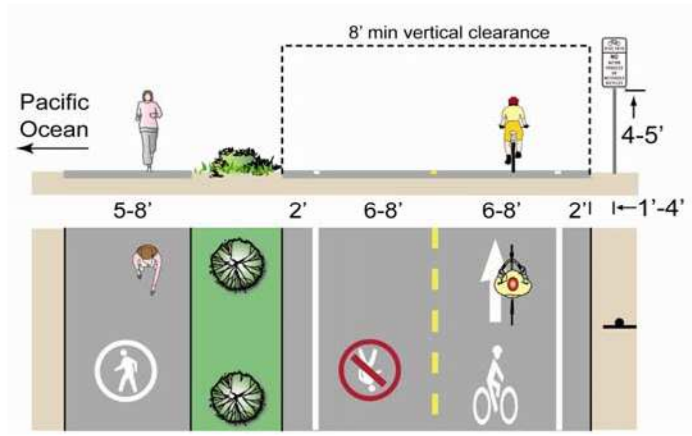
- AASHTO Guide for the Development of Bicycle Facilities
- California Highway Design Manual Chapter 1000
- LARMP Landscape Guidelines (2004)

Class I Bikeway: Coastal Paths

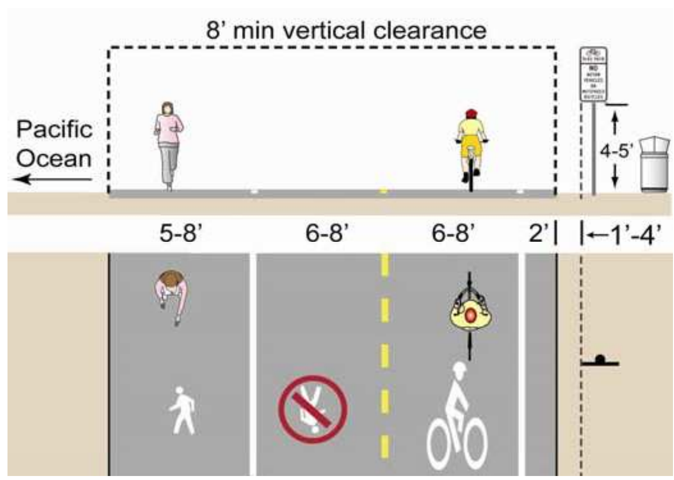
Coastal Paths attract many types of pathway users and conveyances. Bicyclists, pedestrians, rollerbladers, strollers, and pedal cabs typically compete for space. To provide an adequate and pleasant facility, adequate widths and separation are needed to maintain a good pathway environment.

Offsetting of the pedestrian path should be provided if possible. Otherwise, physical separation should be provided in the form of striping or landscaping.

The multi-use path should be located on whichever side of the path will result in the fewest number of anticipated pedestrian crossings. For example, the multi-use path should not be placed adjacent to large numbers of destinations. Site analysis of each project is required to determine expected pedestrian behavior.



Preferred design, with separation.



Preferred design, no separation.

Design Considerations

- Preferred Width: 17 feet
- Multi-use path: 12 feet minimum; 17 feet with parallel 5 foot pedestrian path, with 1 foot clearance for signage
- Pavement Markings: Facility should have graphic markings for non-English speakers
- Striping: Dashed centerline and shoulder striping should be used
- Surfacing: Paved surface adequate to support maintenance vehicles. Required thickness dependent upon paving material and subgrade

Reference

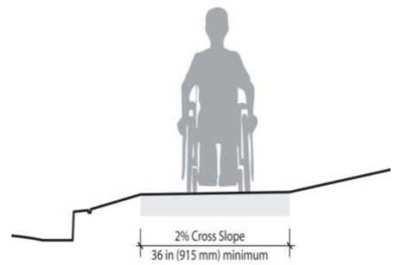
- California MUTCD
- Caltrans Highway Design Manual (Chapter 1000)
- AASHTO Guide for the Development of Bicycle Facilities

Class I Bikeway: Accessibility

Slopes typically should not exceed 5%. However certain conditions may require the use of steeper slope. For conditions exceeding a 5% slope, the recommendations are as follows:

- Up to an 8.33% slope for a 200-feet maximum run, with landings or resting intervals at minimum of 200 feet must be provided
- Up to a 10% slope for a 30-foot maximum run, with resting intervals spaced at a 30 feet minimum
- Up to 12.5 % slope for a 10-foot maximum run, with resting intervals spaced at a 10 feet minimum

The surface shall be firm and stable. The Forest Service Accessibility Guidelines defines a firm surface as one that is not noticeably distorted or compressed by the passage of a device that simulates a person who uses a wheelchair. Where rights-of-way are available, Class I bikeways can be made more accessible by creating side paths that meander away from a roadway that exceeds a 5% slope.



ADA clearance requirement.

Design Considerations

3 foot minimum clear width where clear width of facility is less than 5 feet; passing space (5 foot section or wider) should be provided at least every 100 feet

Cross slope should not exceed 5%

Signs shall be provided indicating the length of the accessible trail segment

Ramps should be provided at roadway crossings. Tactile warning strips and auditory crossing signals are recommended.

FHWA recommends that when trails intersect roads, the design of trail curb ramps should, as a minimum, follow the recommendations provided in Chapter 7: Curb Ramps (FHWA *Designing Sidewalks and Trails for Access;*
www.fhwa.dot.gov/environment/sidewalk2/sidewalks207.htm

Class I bikeways surfacing materials affects which types of users can benefit from the facility.

Reference

- American with Disabilities Act (ADA) for accessible trails
- See also FHWA. (2001).Designing Sidewalks and Trails for Access, Chapter 14: Shared Use Path Design, Section 14.5.1: Gradewww.fhwa.dot.gov/environment/sidewalk2/sidewalks212.htm#tra2

Class I Bikeway: Managing Multiple Users

On Class I bikeways that have high bicycle and pedestrian use, conflicts can arise between faster-moving bicyclists and slower bicyclists, as well as pedestrians and other users. As this is a common problem in more urban areas, a variety of treatments have been designed to alleviate congestion and minimize conflicts.

Centerline Striping

On trails of standards widths, striping the centerline identifies which side of the trail users should be on.

Trail Etiquette Signage

Informing trail users of acceptable trail etiquette is a common issue when multiple user types are anticipated. Yielding the right-of-way is a courtesy and yet a necessary part of a safe trail experience involving multiple trail users. Trail right-of-way information should be posted at trail access points and along the trail. The message must be clear and easy to understand. Where appropriate, trail etiquette systems should instruct trail users to the yielding of cyclists to pedestrians and equestrians and the yielding of pedestrians to equestrians.

Centerline striping and directional arrows encourage trail users to provide space for other users to pass.

Design Considerations

- Barrier separation – vegetated buffers or barriers, elevation changes, walls, fences, railings and bollards
- Distance separation – differing surfaces
- User behavior guidance signage

Reference

- The 2009 CA-MUTCD Section 9C.03 contains additional information about centerline striping on a trail

Class I Bikeway: Roadway Crossings

While at-grade crossings create a potentially high level of conflict between Class I bikeway users and motorists, well-designed crossings have not historically posed a safety problem for path users. This is evidenced by the thousands of successful paths around the United States with at-grade crossings. In most cases, at-grade path crossings can be properly designed to a reasonable degree of safety and can meet existing traffic and safety standards.
Evaluation of crossings involves analysis of vehicular and anticipated path user traffic patterns, including

- Vehicle speeds
- Street width
- Sight distance
- Traffic volumes (average daily traffic and peak hour traffic)
- Path user profile (age distribution, destinations served)

Consideration must be given for adequate warning distance based on vehicle speeds and line of sight. Visibility of any signing used to mark the crossing is absolutely critical. Catching the attention of motorists jaded to roadway signs may require additional alerting devices such as a flashing light, roadway striping or changes in pavement texture. Signing for Class I bikeway users must include a standard "STOP" sign and pavement marking, sometimes combined with other features such as a kink in the pathway to slow bicyclists.

Design Considerations

At-grade Class I bikeway/roadway crossings that provide assistance for cyclists and pedestrians crossing the roadway generally will fit into one of four basic categories:

- Type 1: Marked/Unsignalized - Uncontrolled crossings include trail crossings of residential, collector, and sometimes major arterial streets or railroad tracks.
- Type 1+: Marked/Enhanced – Unsignalized intersections can provide additional visibility with flashing beacons and other treatments.
- Type 2: Route Users to Existing Signalized Intersection - Trails that emerge near existing intersections may be routed to these locations, provided that sufficient protection is provided at the existing intersection.
- Type 3: Signalized/Controlled - Trail crossings that require signals or other control measures due to traffic volumes, speeds, and trail usage.
- Type 4: Grade-separated crossings - Bridges or under-crossings provide the maximum level of safety but also generally are the most expensive and have right-of-way, maintenance, and other public safety considerations.

An offset crossing forces pedestrians to turn and face the traffic they are about to cross.

Reference

- California Highway Design Manual Chapter 1000
- AASHTO Guide for the Development of Bicycle Facilities
- Federal Highway Administration (FHWA) Report, Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations

Class I Bikeway: Roadway Crossings (continued)

Summary of Path/Roadway At-Grade Crossing Recommendations[iv]

Roadway Type	Vehicle ADT ≤ 9,00			Vehicle ADT > 9,000 to 12,000			Vehicle ADT >12,000 to 15,000			Vehicle ADT > 15,000		
	Speed Limit (mph)**											
	30	35	40	30	35	40	30	35	40	30	35	40
2 Lanes	1	1	1/1+	1	1	1/1+		1	1+/3		1/1+	1+/3
3 Lanes		1	1/1+		1/1+	1/1	1/1+	1/1+	1+/3	1	1+	1+/3
Multi-Lane (4 +) w/ raised median***	1	1	1/1+	1	1/1+	1+/3	1/1+	1/1+	1+/3	1+/3	1+/3	1+/3
Multi-Lane (4 +) w/o raised median	1	1/1+	1+/3	1/1+	1/1+	1+/3	1+/3	1+/3	1+/3	1+/3	1+/3	1+/3

**General Notes: Crosswalks should not be installed at locations that could present an increased risk to pedestrians, such as where there is poor sight distance, complex or confusing designs, a substantial volume of heavy trucks, or other dangers, without first providing adequate design features and/or traffic control devices. Adding crosswalks alone will not make crossings safer, nor will they necessarily result in more vehicles stopping for pedestrians. Whether or not marked crosswalks are installed, it is important to consider other pedestrian facility enhancements (e.g., raised median, traffic signal, roadway narrowing, enhanced overhead lighting, traffic-calming measures, curb extensions), as needed, to improve the safety of the crossing. These are general recommendations; good engineering judgment should be used in individual cases for deciding which treatment to use.*

For each pathway-roadway crossing, an engineering study is needed to determine the proper location. For each engineering study, a site review may be sufficient at some locations, while a more in-depth study of pedestrian volume, vehicle speed, sight distance, vehicle mix, etc. may be needed at other sites.

*** Where the speed limit exceeds 40 mph marked crosswalks alone should not be used at unsignalized locations.*

**** The raised median or crossing island must be at least 4 ft (1.2 m) wide and 6 ft (1.8 m) long to adequately serve as a refuge area for pedestrians in accordance with MUTCD and AASHTO guidelines. A two-way center turn lane is not considered a median. Los Angeles County prefers a 14 ft wide raised median, although a 12 ft wide median without a median nose could be used.*

1= Type 1 Crossings. Ladder-style crosswalks with appropriate signage should be used.

1/1+ = With the higher volumes and speeds, enhanced treatments should be used, including marked ladder style crosswalks, median refuge, flashing beacons, and/or in-pavement flashers. Ensure there are sufficient gaps through signal timing, as well as sight distance.

1+/3 = Carefully analyze signal warrants using a combination of Warrant 2 or 5 (depending on school presence) and EAU factoring. Make sure to project pathway usage based on future potential demand. Consider Pelican, Puffin, or Hawk signals in lieu of full signals. For those intersections not meeting warrants or where engineering judgment or cost recommends against signalization, implement Type 1 enhanced crosswalk markings with marked ladder style crosswalks, median refuge, flashing beacons, and/or in-pavement flashers. Ensure there are sufficient gaps through signal timing, as well as sight distance.

[iv] *This table is based on information contained in the U.S. Department of Transportation Federal Highway Administration Study, "Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations," February 2002.*

Class I Bikeway: Marked/Unsignalized Crossings

If well-designed, multi-lane crossings of higher-volume arterials of over 15,000 ADT may be unsignalized with features such as a combination of some or all of the following: excellent sight distance, sufficient crossing gaps (more than 60 per hour), median refuges, and/or active warning devices like flashing beacons or in-pavement flashers. These are referred to as "Type 1 Enhanced" (Type 1+). Such crossings would not be appropriate; however, if a significant number of schoolchildren used the path. Furthermore, both existing and potential future path usage volume should be taken into consideration.

On two-lane residential and collector roads below 15,000 ADT with average vehicle speeds of 35 MPH or less, crosswalks and warning signs ("Path Xing") should be provided to warn motorists, and stop signs and slowing techniques (bollards/geometry) should be used on the path approach. Curves in paths that orient the path user toward oncoming traffic are helpful in slowing path users and making them aware of oncoming vehicles. Care should be taken to keep vegetation and other obstacles out of the sight line for motorists and path users. Engineering judgment should be used to determine the appropriate level of traffic control and design.

On roadways with low to moderate traffic volumes (<12,000 ADT) and a need to control traffic speeds, a raised crosswalk may be the most appropriate crossing design to improve pedestrian visibility and safety. These crosswalks are raised 75 millimeters above the roadway pavement (similar to speed humps) to an elevation that matches the adjacent sidewalk. The top of the crosswalk is flat and typically made of asphalt, patterned concrete, or brick pavers. Brick or unit pavers should be discouraged because of potential problems related to pedestrians, bicycles, and ADA requirements for a continuous, smooth, vibration-free surface. Detectable warning strips are needed at the sidewalk/street boundary so that visually impaired pedestrians can identify the edge of the street.

Design Considerations

A marked/unsignalized crossing (Type 1) consists of a crosswalk, signage, and often no other devices to slow or stop traffic. The approach to designing crossings at mid-block locations depends on an evaluation of vehicular traffic, line of sight, path traffic, use patterns, vehicle speed, road type and width, and other safety issues such as proximity to schools.

Maximum traffic volumes:

- Up to 15,000 ADT on two-lane roads, preferably with a median
- Up to 12,000 ADT on four-lane roads with median

Maximum travel speed:

- 35 MPH

Minimum line of sight:

- 25 MPH zone: 155 feet
- 35 MPH zone: 250 feet
- 45 MPH zone: 360 feet

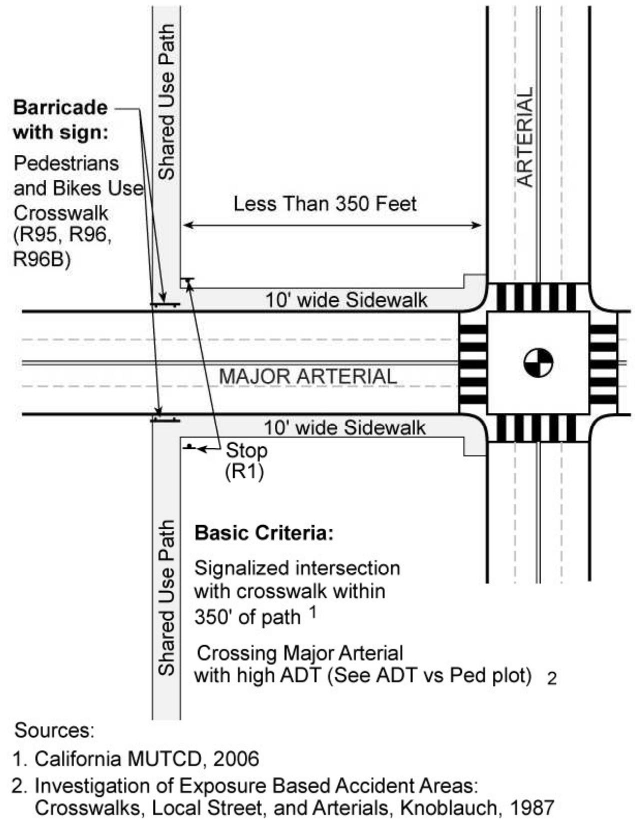
Type 1 crossings include signage and pavement markings.

Reference

- California *Highway Design Manual* Chapter 1000
- AASHTO Guide for the Development of Bicycle Facilities
- Federal Highway Administration (FHWA) Report, Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations

Class I Bikeway: Route Users to Existing Signalized Intersection

Crossings within 350 feet of an existing signalized intersection with pedestrian crosswalks are typically diverted to the signalized intersection for safety purposes. For this option to be effective, barriers and signing may be needed to direct shared-use path users to the signalized crossings. In most cases, signal modifications would be made to add pedestrian detection and to comply with ADA.



Recommended at-grade crossing of a major arterial at an intersection where trail is within 350' of a roadway intersection

Design Considerations

- A Class I bikeway should cross at a signalized intersection if there is a signalized intersection within 350 feet of the path and the crossroad is crossing a major arterial with a high ADT.
- Intersection Warning (W2-1 through W2-5) signs may be used on a path in advance of the intersection to indicate the presence of the crossing and the possibility of turning or entering traffic. A trail-sized stop sign (R1-1) should be placed about 5 feet before the intersection.

Reference

- Caltrans *Highway Design Manual* (Chapter 1000)
- *California MUTCD*, Part 9
- AASHTO *Guide for the Development of Bicycle Facilities*
- AASHTO *Policy on the Geometric Design of Highways and Streets*
- FHWA-RD-87-038 *Investigation of Exposure-Based Pedestrian Accident Areas: Crosswalks, Sidewalks, Local Streets, and Major Arterials*

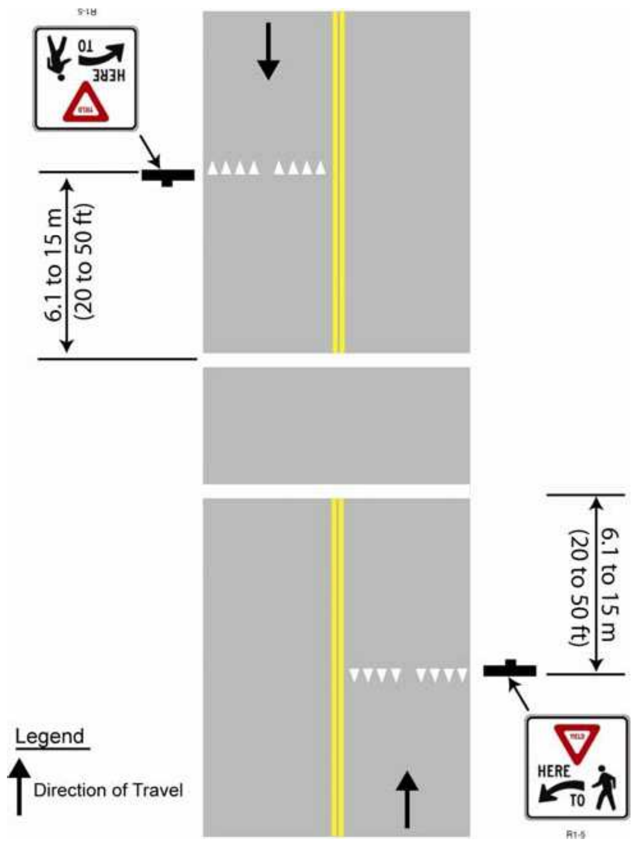
Class I Bikeway: Uncontrolled Mid-Block Crossing

The National MUTCD requires yield lines and "Yield Here to Pedestrians" signs at all uncontrolled crossings of a multi-lane roadway. Yield lines are not required by the CA MUTCD. The National MUTCD includes a trail crossing sign, shown to the right on the next page (W11-15 and W11-15P), which may be used where both bicyclists and pedestrians might be crossing the roadway, such as at an intersection with a shared-use path.

Design Considerations

- Installed where there is a significant demand for crossing and no nearby existing crosswalks
- If yield lines are used for vehicles, they shall be placed 20–50 feet in advance of the nearest crosswalk line to indicate the point at which the yield is intended or required to be made and "Yield Here to Pedestrians" signs shall be placed adjacent to the yield line. Where traffic is not heavy, stop or yield signs for pedestrians and bicyclists may suffice.
- The Bicycle Warning (W11-1) sign alerts the road user to unexpected entries into the roadway by bicyclists, and other crossing activities that might cause conflicts

A ladder crosswalk should be used. Warning markings on the path and roadway should be installed.



Recommended design from CA-MUTCD, Figure 3B-15.

Reference

- California MUTCD, Part 9
- AASHTO Guide for the Development of Bicycle Facilities

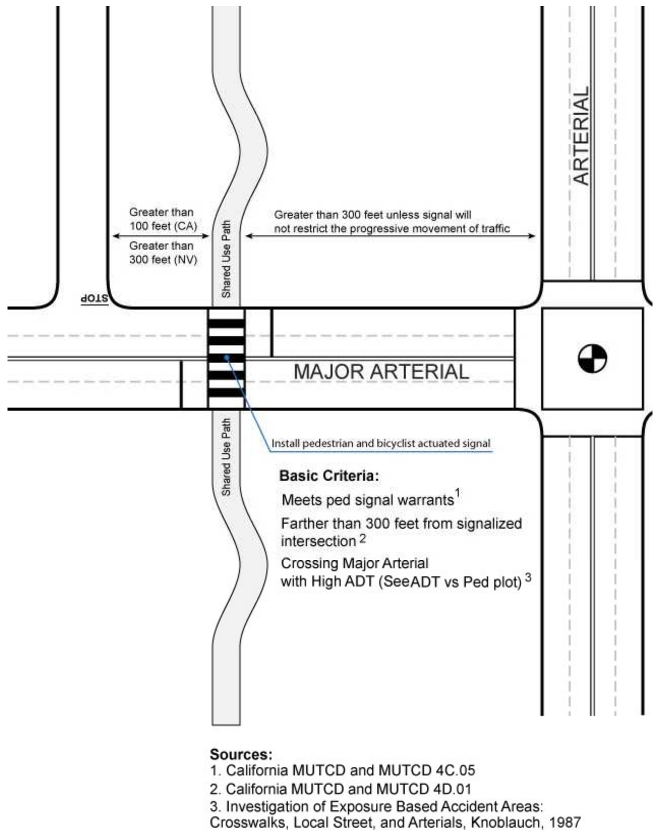
Recommended signage.

Class I Bikeway: Signalized Mid-Block Crossing

Warrants from the MUTCD combined with sound engineering judgment should be considered when determining the type of traffic control device to be installed at path-roadway intersections. Traffic signals for path-roadway intersections are appropriate under certain circumstances. The MUTCD lists 11 warrants for traffic signals, and although path crossings are not addressed, bicycle traffic on the path may be functionally classified as vehicular traffic and the warrants applied accordingly. Pedestrian volumes can also be used for warrants.

Design Considerations

- Section 4C.05 in the CAMUTCD describes pedestrian volume minimum requirements (referred to as warrants) for a mid-block pedestrian-actuated signal
- Stop lines at midblock signalized locations should be placed at least 40 feet in advance of the nearest signal indication



CA-MUTCD guidance for a signalized mid-block crossing.

Reference

- MUTCD, Sections 4C.05 and 4D
- California MUTCD, Chapters 3 and 9 and Section 4C.05 and 4D
- AASHTO Guide for the Development of Bicycle Facilities, Chapter 2

Class I Bikeway: Grade Separated Undercrossing

Undercrossings should be considered when high volumes of bicycles and pedestrians are expected along a corridor and:

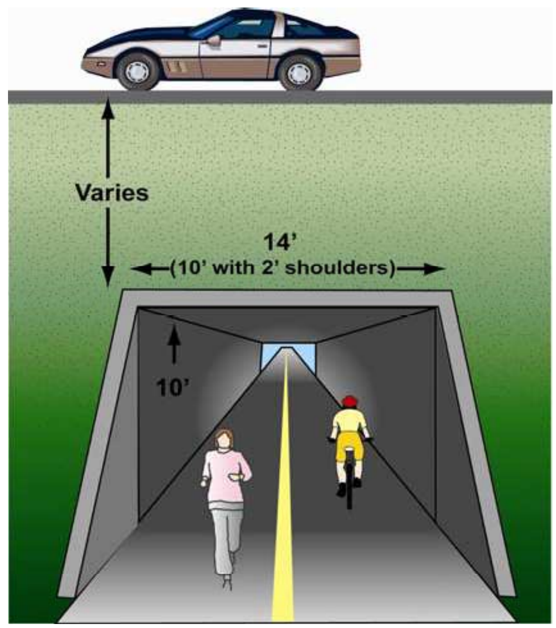
- Vehicle volumes/speeds are high
- The roadway is wide
- A signal is not feasible
- Crossing is needed under another grade-separated facility such as a freeway or rail line

Advantages of grade separated undercrossings include:

- Improves bicycle and pedestrian safety while reducing delay for all users
- Eliminates barriers to bicyclists and pedestrians
- Undercrossings require 10 feet of overhead clearance from the path surface. Undercrossings often require less ramping and elevation change for the user versus an overcrossing, particularly for railroad crossings.

Disadvantages or potential hazards include:

- If crossing is not convenient or does not serve a direct connection it may not be well utilized
- Potential issues with vandalism and maintenance
- Security may be an issue if sight lines through undercrossing and approaches are inadequate. Lighting or openings for sunlight may be desirable for longer crossings to enhance users' sense of security, especially at tunnels and underpasses under freeways and major highways. Lighting should follow Caltrans-accepted lighting design guidelines.
- High cost



Recommended undercrossing design.

Design Considerations

- 14' minimum width to allow for access by maintenance vehicles if necessary
- 10' minimum overhead height (AASHTO)
- The undercrossing should have a centerline stripe even if the rest of the path does not have one

Reference

- Caltrans *Highway Design Manual* (Chapter 1000)
- ASHTO *Guide for the Development of Bicycle Facilities*

Undercrossings provide key connections and allow path users to avoid a potentially dangerous at-grade crossing of a major street.

Class I Bikeway: Grade Separated Overcrossing

Overcrossings require a minimum of 17' of vertical clearance to the roadway below versus a minimum elevation differential of around 12' for an undercrossing. This results in potentially greater elevation differences and much longer ramps for bicycles and pedestrians to negotiate.

Overcrossings should be considered when high volumes of bicycles and pedestrians are expected along a corridor and:

- Vehicle volumes/speeds are high
- The roadway is wide
- A signal is not feasible
- Crossing is needed over a grade-separated facility such as a freeway or rail line

Advantages of grade separated overcrossings include:

- Improves bicycle and pedestrian safety while reducing delay for all users
- Eliminates barriers to bicyclists and pedestrians

Disadvantages and potential hazards include:

- If crossing is not convenient or does not serve a direct connection it may not be well utilized
- Overcrossings require at least 17 feet of clearance to the roadway below involving up to 400 feet or greater of approach ramps at each end. Long ramps can sometimes be difficult for the disabled
- Potential issues with vandalism, maintenance
- High cost

Design Considerations

- 12 foot minimum width
- If overcrossing has any scenic vistas additional width should be provided to allow for stopped path users
- A separate 6 foot pedestrian area may be provided in locations with high bicycle and pedestrian use
- Minimum of 17 feet of vertical clearance to the roadway below
- 10 foot headroom on overcrossing
- Clearance below will vary depending on feature being crossed
- The overcrossing should have a centerline stripe even if the rest of the path does not have one.
- Ramp slopes should be ADA-accessible: 5% (1:20) grade with landings at 400-foot intervals, or 8.33% (1:12) with landings every 30 feet

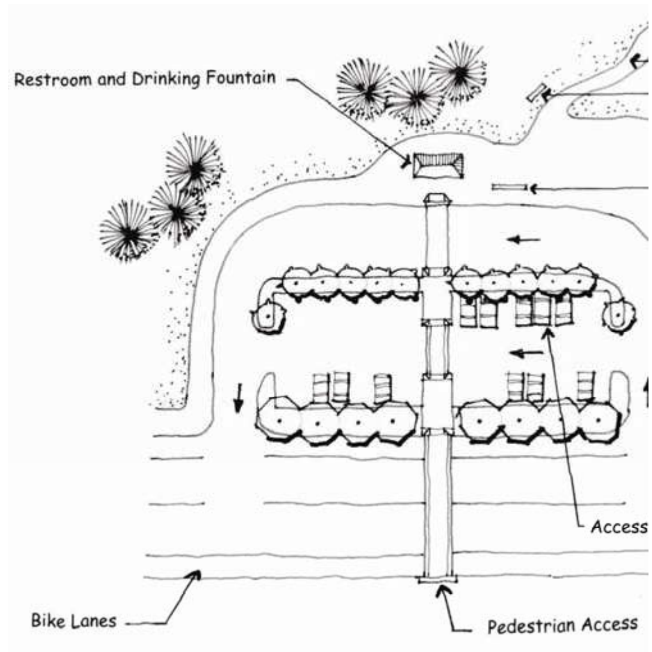
Overcrossings are frequently used over a major roadway.

Reference

- Caltrans *Highway Design Manual* (Chapter 1000)
- AASHTO *Guide for the Development of Bicycle Facilities*

Class I Bike Paths: Trailheads

Good access to a path system is a key element for its success. Trailheads (formalized parking areas) serve the local and regional population arriving to the path system by car, transit, bicycle or other modes. Trailheads provide essential access to the shared-use path system and include amenities like parking for vehicles and bicycles, restrooms (at major trailheads), and posted maps. Trailheads with a small parking area should additionally include bicycle parking and accessible parking. Neighborhood access should be achieved from all local streets crossing the trail. In some situations "No Parking" signs on the adjacent streets are desirable to minimize impact on the neighborhood.



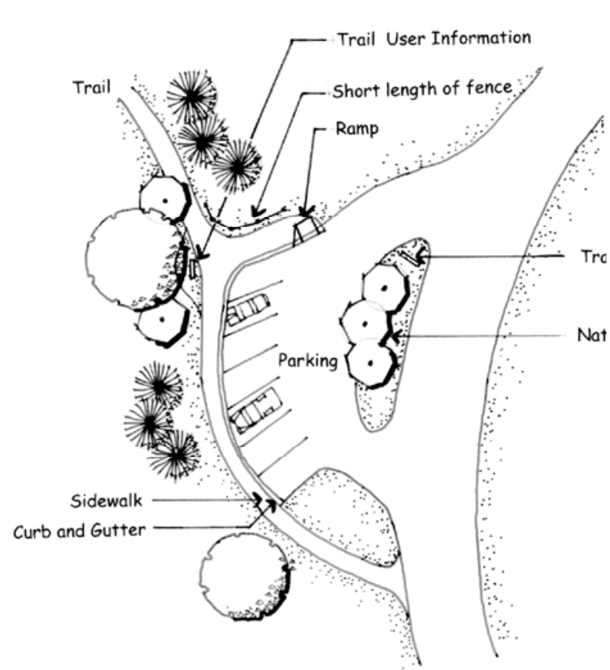
Example major trailhead.

Design Considerations

- Major trailheads should include automobile and bicycle parking, trail information (maps, user guidelines, wildlife information, etc.), garbage receptacles and restrooms
- Minor trailheads can provide a subset of these amenities
- Any trailhead improvements installed within Los Angeles County Flood Control District (LACFCD) right-of-way needs to be operated and maintained by the project sponsor

Reference

- AASHTO Guide for the Development of Bicycle Facilities



Example minor trailhead.

F.5.2 Class II Bikeway

On-Street Facility Design Guidelines

There are a range of different types of bicycle facilities that can be applied in various contexts, which provide varying levels of protection or separation from automobile traffic. This section summarizes best practice on-street bicycle facility design from North America and elsewhere.

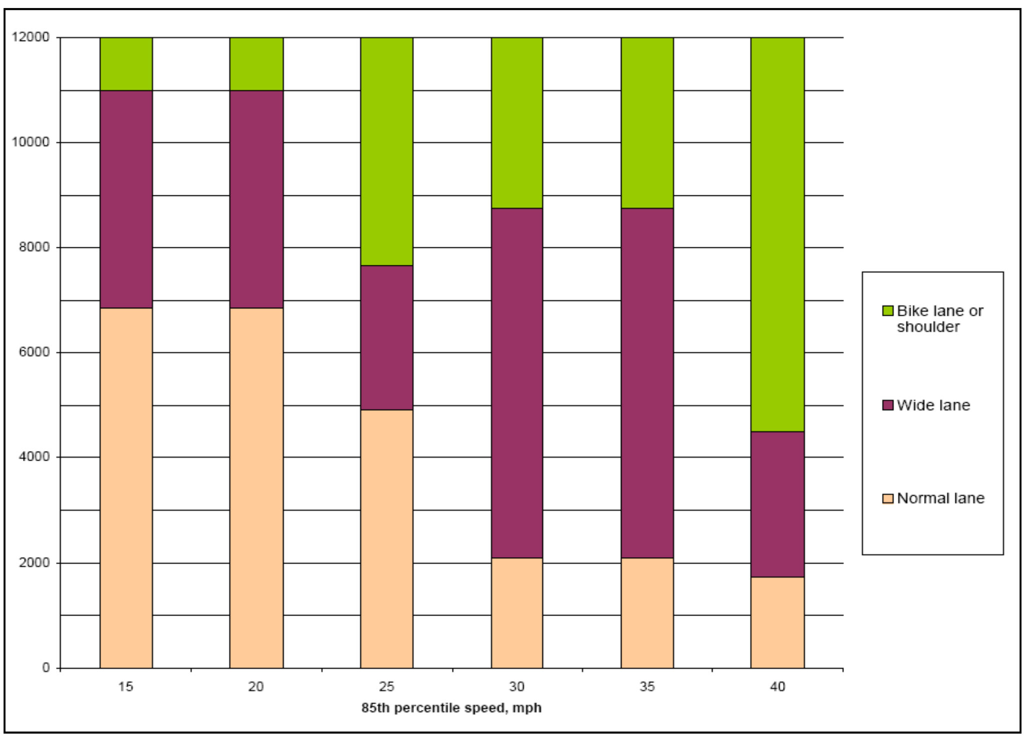
Facility Selection

There are a wide variety of techniques for selecting the type of facility for a given context. Roadway characteristics that are often used include:

- Motor vehicle speed and volume
- Presence of heavy vehicles/trucks
- Roadway width
- Demand for bicycle facilities
- User preference
- Land use/urban or rural context

There are no 'hard and fast' rules for determining the most appropriate type of facility for a particular location; engineering judgment and planning skills are critical elements of this decision.

A 2002 study combined bikeway dimension standards for ten different communities in North America. The goal of the study was to survey the varying requirements available and provide a best practices approach for providing bicycle facilities. The study included a comparison with European standards, and found that "North Americans rely much more on wide lanes for bicycle accommodation than their counterparts overseas." The table below shows the results of this analysis, which recommends use of bike lanes or shoulders, wide lanes, or normal lanes.



North American bicycle facility selection chart.

(King, Michael. (2002). Bicycle Facility Selection: A Comparison of Approaches. Pedestrian and Bicycle Information Center and Highway Safety Research Center, University of North Carolina – Chapel Hill.)

Class II Bikeway

Bike lanes or Class II bicycle facilities (Caltrans designation) are defined as a portion of the roadway that has been designated by striping, signage, and pavement markings for the preferential or exclusive use of bicyclists. Bike lanes are generally found on major arterial and collector roadways and are 5-8 feet wide. Bike lanes can be found in a large variety of configurations, and can have special characteristics including coloring and placement if beneficial.
Bike lanes enable bicyclists to ride at their preferred speed without interference from prevailing traffic conditions and facilitate predictable behavior and movements between bicyclists and motorists. Bicyclists may leave the bike lane to pass other cyclists, make left turns, avoid obstacles or debris, and to avoid other conflicts with other roadway users.

Design Considerations

Width varies depending on roadway configuration, see following pages for design examples. 4-8 feet is standard, measured from edge of gutter pan, although a maximum of 7 feet is recommended to prevent parking or driving in the bike lane.

Striping

- Separating vehicle lane from bike lane (typically left sideline): 6 inches
- Delineate conflict area in intersections (optional): Length of conflict area
- Separating bike lane from parking lane (if applicable): 4 inches
- Dashed white stripe when:
  - o Vehicle merging area (optional): Varies
  - o Approach to intersections: 100-200 feet
  - o Delineate conflict area in intersections (optional): Length of conflict area

Approved R-81 Sign.

Signing: use R81 Bike Lane Sign at:

- Beginning of bike lane
- Far side of all bike path (class I) crossings
- At approaches and at far side of all arterial crossings
- At major changes in direction
- At intervals not to exceed ½ mile

Pavement markings: the preferred pavement marking for bike lanes is the bike lane stencil with directional arrow to be used at:

- Beginning of bike lane
- Far side of all bike path (class I) crossings
- At approaches and at far side of all arterial crossings
- At major changes in direction
- At intervals not to exceed ½ mile
- At beginning and end of bike lane pockets at approach to intersection

Approved California bike lane stencils (either is optional, as is arrow).

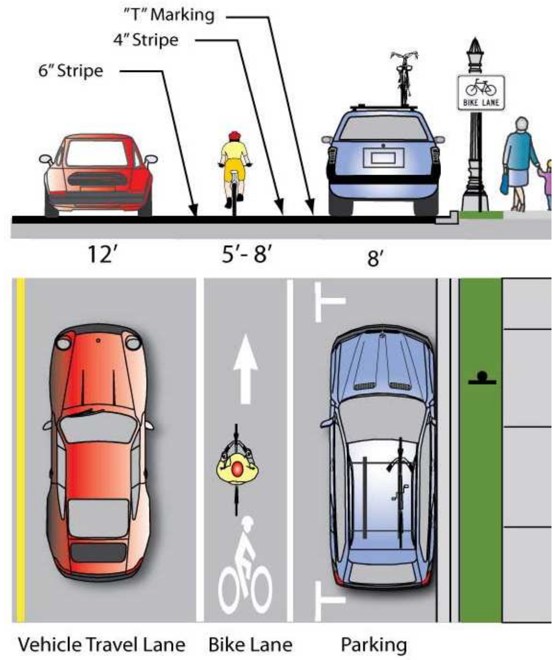
Reference

- Caltrans *Highway Design Manual* (Chapter 1000)
- *California MUTCD*
- AASHTO *Guide for the Development of Bicycle Facilities*
- Additional standards and treatments for bike lanes are provided in the following pages

Class II Bikeway: Bike Lane Adjacent to On-Street Parallel Parking

Bike lanes adjacent to on-street parallel parking are common in the U.S. and can be dangerous for bicyclists if they do not provide adequate separation from parked cars. Crashes caused by a suddenly-opened vehicle door are a common hazard for bicyclists using this type of facility. On the other hand, wide bike lanes may encourage the cyclist to ride farther to the right (door zone) to maximize distance from passing traffic. Wide bike lanes may also cause confusion with unloading vehicles in busy areas where parking is typically full. Treatments to encourage bicyclists to ride away from the 'door zone' include:

- Provide a buffer zone (preferred design). Bicyclists traveling in the center of the bike lane will be less likely to encounter open car doors. Motorists have space to stand outside the bike lane when loading and unloading.
- Installing parking "T's" and smaller bike lane stencils placed to the left.



Parking 'T' bike lane design.

Design Considerations

Bike Lane Width:

- 6 feet recommended when parking stalls are marked
- 5 feet minimum in constrained locations
- 8 feet maximum (greater widths may encourage vehicle loading in bike lane)

Shared bike and parking lane width:

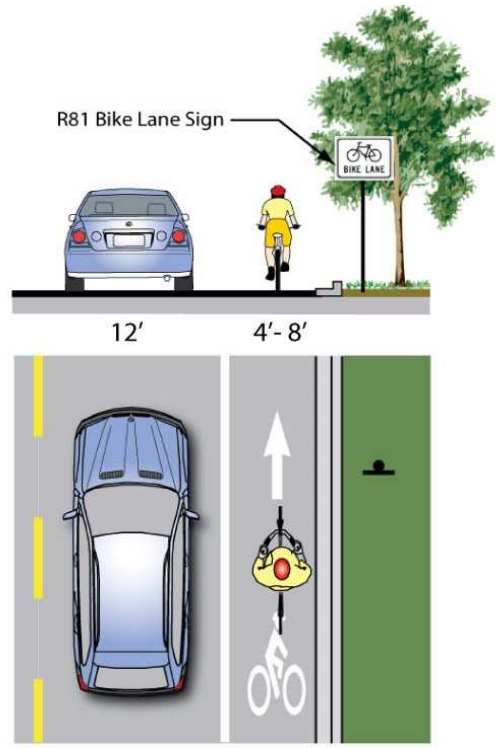
- 13-14 feet for a shared bike/parking lane where parking is permitted but not marked on streets without curbs
- If the parking volume is substantial or turnover is high, an additional 1-2 feet of width is desirable

Reference

- Caltrans *Highway Design Manual* (Chapter 1000)
- California *MUTCD*
- AASHTO *Guide for the Development of Bicycle Facilities*

Class II Bikeway: Bike Lanes on Streets Without Parking

Wider bike lanes are desirable in certain circumstances such as on higher speed arterials (45 mph+) where a wider bike lane can increase separation between passing vehicles and cyclists. Wide bike lanes are also appropriate in areas with high bicycle use. A bike lane width of 6-7 feet makes it possible for bicyclists to ride side-by-side or pass each other without leaving the bike lane, increasing the capacity of the lane. Appropriate signing and stenciling is important with wide bike lanes to ensure motorists do not mistake the lane for a vehicle lane or parking lane.



Where on-street parking is not allowed adjacent to a bike lane, bicyclists do not require additional space to avoid opened car doors.

Design Considerations

Bike lane width:

- 4 foot minimum when no curb & gutter is present, 6 foot preferred (rural road sections). Parking may be allowed on the adjacent shoulder.
- 7 feet preferred when adjacent to curb and gutter (5′ more than the gutter pan width if the gutter pan is wider than 2′).
- 6 feet recommended where right-of-way allows.

Maximum width:

- 7 feet Adjacent to arterials with high travel speeds (45 mph+) and widen curb lanes by 2 feet.

Reference

- Caltrans *Highway Design Manual* (Chapter 1000)
- *California MUTCD*
- *AASHTO Guide for the Development of Bicycle Facilities*

Class II Bikeway: Retrofitting Existing Streets, Roadway Widening

Bike lanes could be accommodated on several streets with excess right-of-way through shoulder widening. Although street widening incurs higher expenses compared with re-striping projects, bike lanes could be added to streets currently lacking curbs, gutters and sidewalks without the high costs of major infrastructure reconstruction.

Roadway widening is preferred on roads lacking curbs, gutters and sidewalks

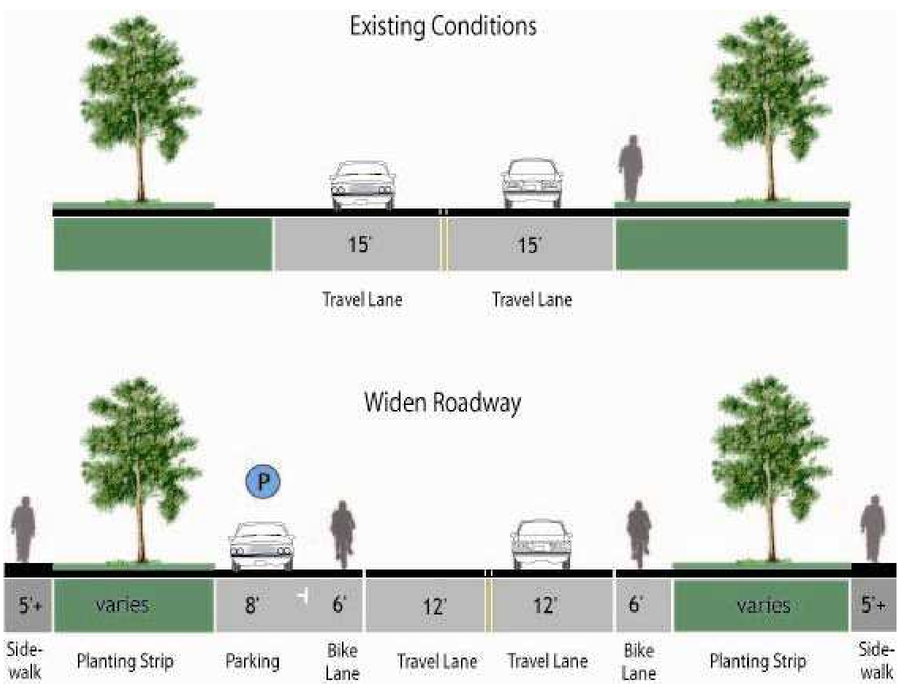
Design Considerations

Bike lane width:

- 6 feet preferred
- 4 feet minimum (see bike lane guidance)

Reference

- Caltrans *Highway Design Manual* (Chapter 1000)
- AASHTO *Guide for the Development of Bicycle Facilities*
- Rosales, Jennifer. (2006). *Road Diet Handbook: Setting Trends for Livable Streets*



Example of roadway widening to accommodate bike lanes and sidewalks.

Class II Bikeway: Retrofitting Existing Streets, Lane Narrowing

Lane narrowing utilizes roadway space that exceeds minimum standards to create the needed space to provide bicycle lanes. Many roadways have lanes that are wider than currently established minimums contained in the AASHTO *Policy on the Geometric Design of Highways and Streets* and the Caltrans HCM. Most standards allow for the use of 11' and sometimes 10' travel lanes. Lane widths can be narrowed on a case by case basis to connect to bikeways in neighboring jurisdictions.

Special considerations should be given to the amount of heavy vehicle traffic and horizontal curvature before the decision is made to narrow travel lanes. Center turn lanes can also be narrowed in some situations to free up pavement space for bicycle lanes.

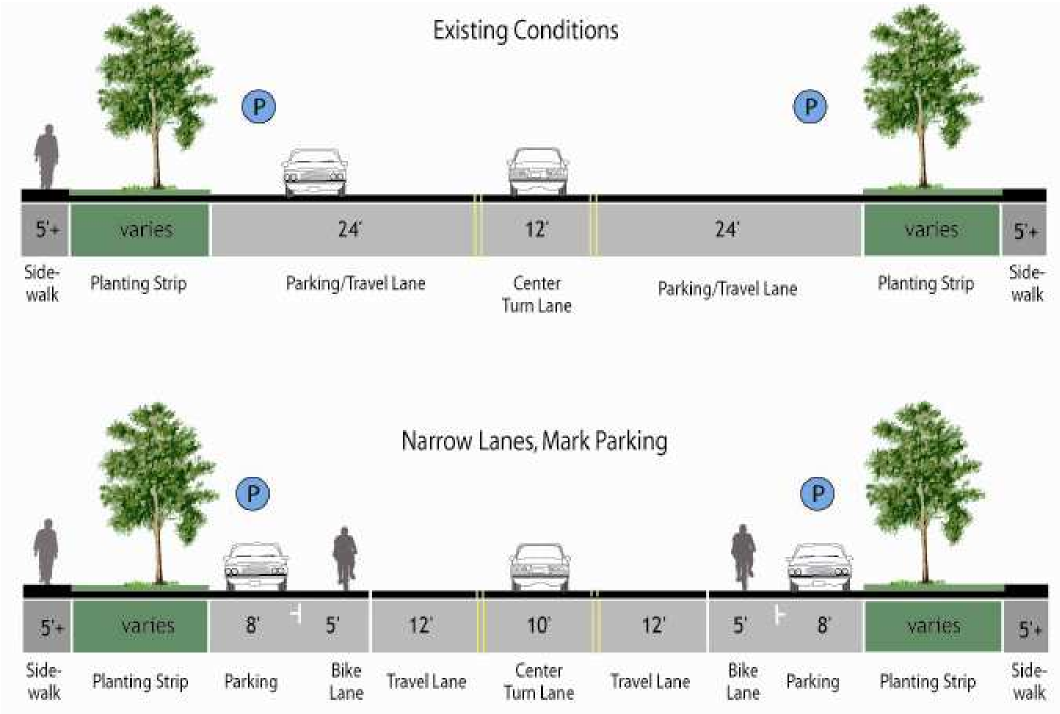
This street in Portland, Oregon previously had 13' lanes, which were narrowed to accommodate bike lanes without removing a lane.

Design Considerations

- Vehicle lane: before 12 feet to 15 feet; after: 10 feet to 11 feet
- Bike lane width: see bike lane design guidance

Reference

- Caltrans Highway Design Manual (Chapter 1000)
- AASHTO *Guide for the Development of Bicycle Facilities*
- Rosales, Jennifer. (2006). *Road Diet Handbook: Setting Trends for Livable Streets*



Example of vehicle travel lane narrowing to accommodate bike lanes.

Class II Bikeway: Retrofitting Existing Streets, Lane Reconfiguration

The removal of a single travel lane, also called a "Road Diet", will generally provide sufficient space for bike lanes on both sides of a street. Streets with excess vehicle capacity provide opportunities for bike lane retrofit projects. Depending on a street's existing configuration, traffic operations, user needs, and safety concerns, various lane reduction configurations exist. For instance, a four-lane street (with two travel lanes in each direction) could be modified to include one travel lane in each direction, a center turn lane, and bike lanes. Prior to implementing this measure, a traffic analysis should identify impacts.

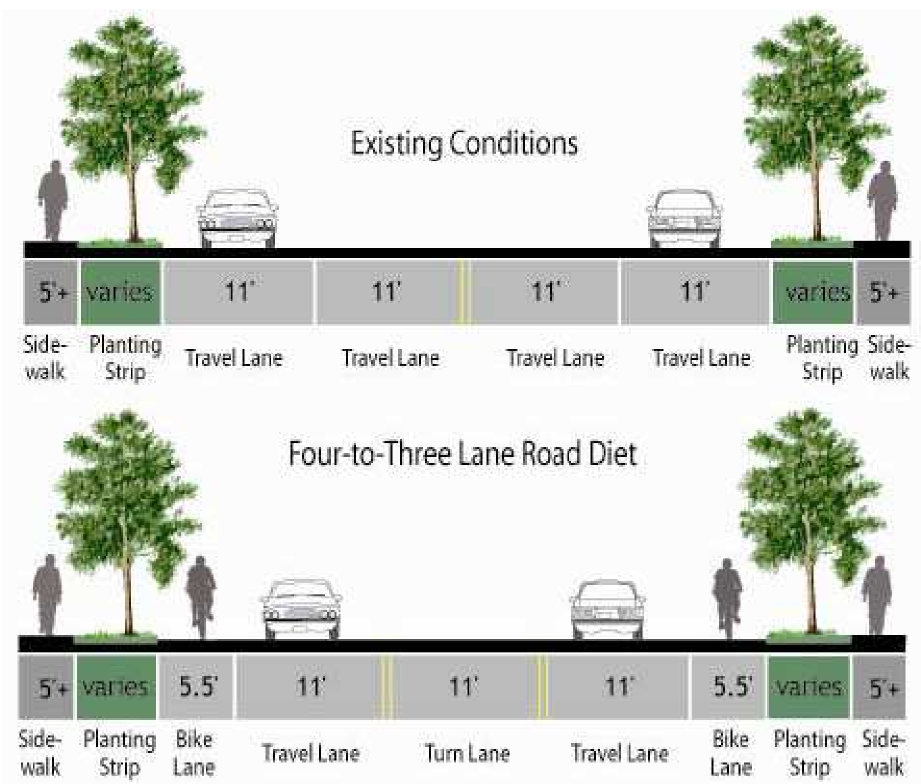
This road was re-striped to convert four vehicle travel lanes into three travel lanes with bike lanes.

Design Considerations

- Vehicle lane width depends on project. No narrowing may be needed if a lane is removed.
- Bike lane width: see bike lane design guidance

Reference

- Slated for inclusion in the update to the AASHTO *Guide for the Development of Bicycle Facilities*
- Rosales, Jennifer. (2006). *Road Diet Handbook: Setting Trends for Livable Streets*



Example of bikeway lane reconfiguration to accommodate bike lanes.

Class II Bikeway: Retrofitting Existing Streets, Parking Reduction

Bike lanes could replace one or more on-street parking lanes on streets where excess parking exists and/or the importance of bike lanes outweighs parking needs. For instance, parking may be needed on only one side of a street (as shown below and at right). Eliminating or reducing on-street parking also improves sight distance for cyclists in bike lanes and for motorists on approaching side streets and driveways. Prior to reallocating on-street parking for other uses, a parking study should be performed to gauge demand and to evaluate impacts to people with disabilities. On streets where parking is at a premium and the roadway width constrains bicycle lane implementation, a Class III Bike Route can be considered.

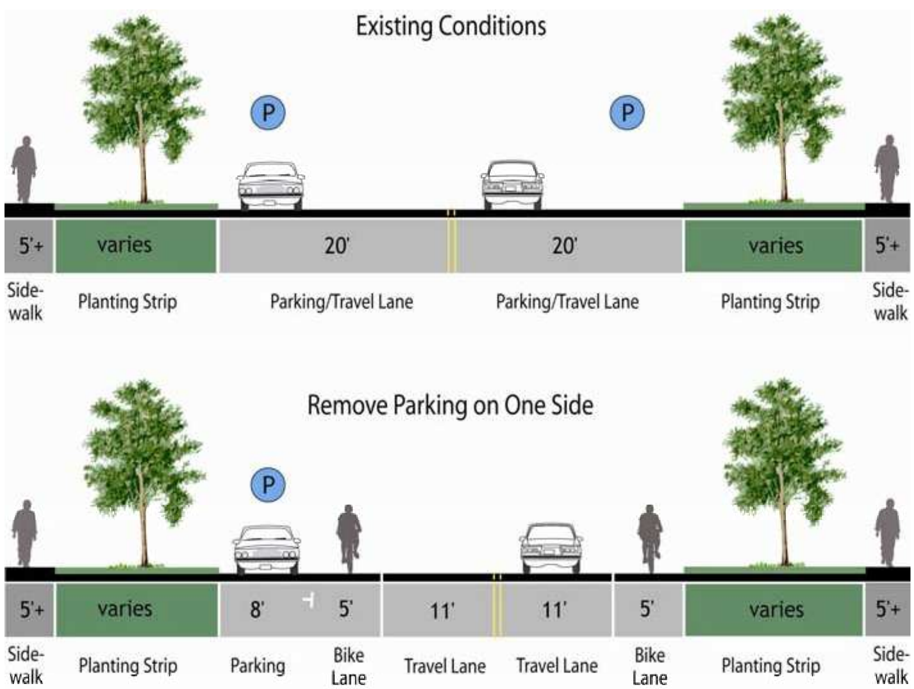
Some streets may not require parking on both sides.

Design Considerations

- Vehicle lane width depends on project. No narrowing may be needed depending on the width of the parking lane to be removed.
- Bike lane width: see bike lane design guidance

Reference

- Rosales, Jennifer. (2006). Road Diet Handbook: Setting Trends for Livable Streets



Example of parking removal to accommodate bike lanes.

Class II Bike Lane: Intersection Treatments, Bicycle Signal Actuation

Loop Detectors

Bicycle-activated loop detectors are installed within the roadway to allow a bicycle to trigger a change in the traffic signal. This allows the cyclist to stay within the lane of travel rather than maneuvering to the side of the road to trigger a push button.

All new loop detectors installed will be capable of detecting bicycles. Identify loops that detect bicycles with the "Bicycle Detector Symbol" shown in Figure 9C-7(CA) in the CA- MUTCD.

Detection Cameras

Video detection cameras can also be used to determine when a vehicle is waiting for a signal. These systems use digital image processing to detect a change in the image at the location. Cameras can detect bicycles, although cyclists should wait in the center of the lane, where an automobile would usually wait, in order to be detected. Video camera system costs range from $20,000 to $25,000 per intersection.

Detection cameras are currently used for cyclists in the City of San Luis Obispo, CA, where the system has proven to detect pedestrians as well.

Remote Traffic Microwave Sensor Detection (RTMS)

RTMS is a system developed in China, which uses frequency modulated continuous wave radio signals to detect objects in the roadway. This method is marked with a time code which gives information on how far away the object is. The RTMS system is unaffected by temperature and lighting, which can affect standard detection cameras.

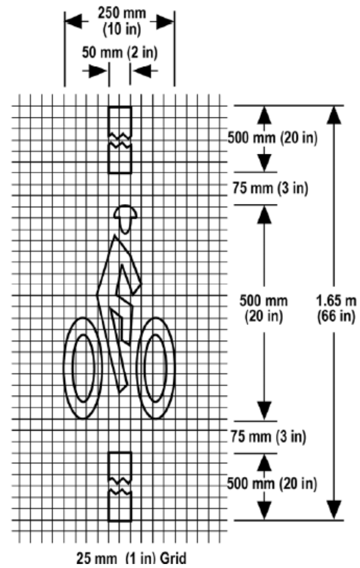
Design Considerations

At signalized intersections, cyclists should be able to trigger signals when cars are not present. Requiring cyclists to dismount to press a pedestrian button is inconvenient and requires the cyclist to merge in into traffic at an intersection. It is particularly important to provide bicycle actuation in a left-turn only lane where cyclists regularly make left turn movements.

Reference

Additional technical information is available at:

- www.humantransport.org/bicycledriving/library/signals/detection.htm
- ITE Guidance for Bicycle—Sensitive Detection and Counters: http://www.ite.org/councils/Bike-Report-Ch4.pdf



Recommended loop detector marking (MUTCD-CA Supplement Figure 9C-7).

Example bicycle actuator marking.

Instructional Sign
(MUTCD-CA Supplement Sign R62C).

Class II Bikeway: Intersection Treatments, Channelized Right Turn Pocket

The shared bicycle/right turn lane places a standard-width bike lane on the left side of a dedicated right-turn lane. A dashed strip delineates the space for bicyclists and motorists within the shared lane. This treatment includes signage advising motorists and bicyclists of proper positioning within the lane.

According to the CA MUTCD and Chapter 1000, the appropriate treatment for right-turn only lanes is to place a bike lane pocket between the right-turn lane and the right-most through lane or, where right-of-way is insufficient, to drop the bike lane entirely approaching the right-turn lane. Dropping the bike lane is not recommended, and should only be done when a bike lane pocket cannot be accommodated.

An optional through-right-turn lane next to a right-turn only lane should not be used where there is a through bicycle lane. If a capacity analysis indicates the need for an optional through-right turn lane, the bicycle lane should be discontinued at the intersection approach.

Advantages:

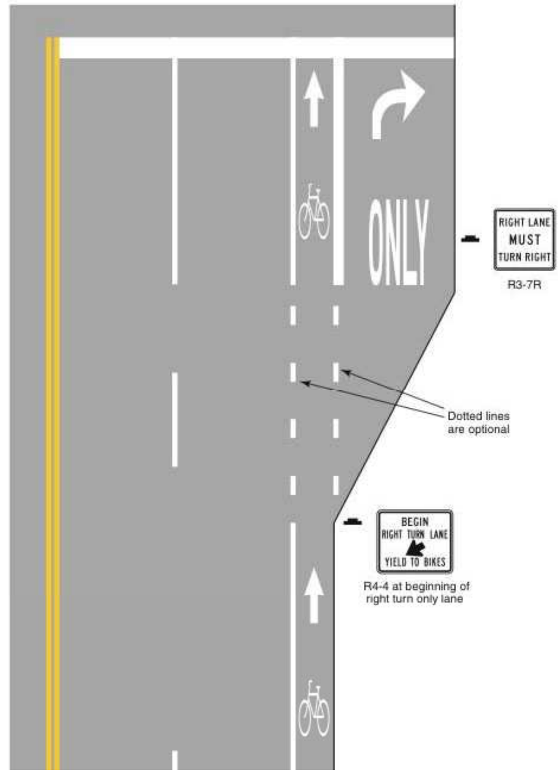
- Aids in correct positioning of cyclists at intersections with a dedicated right-turn lane without adequate space for a dedicated bike lane
- Encourages motorists to yield to bicyclists when using the right-turn lane
- Reduces motor vehicle speed within the right-turn lane

Disadvantages/potential hazards:

- May not be appropriate for high-speed arterials or intersections with long right-turn lanes
- May not be appropriate for intersections with large percentages of right-turning heavy vehicles

Design Considerations

- Right-turn lane width – minimum 12-foot width.
- Bike lane pocket width – minimum 4-5 feet preferred.
- Works best on streets with lower posted speeds (30 MPH or less) and with low traffic volumes (10,000 ADT or less)



Recommended bike/right turn lane design (MUTCD-CA Supplement Figure 9C-3).

Shared bike-right turn lanes require warning signage as well as pavement markings.

Reference

- Caltrans Highway Design Manual (Chapter 1000)
- California MUTCD, Section 9C.04
- AASHTO Guide for the Development of Bicycle Facilities

Class II Bike Lane: Intersection Treatments, Interchanges

At highway interchanges, motor vehicles often make turns at higher speeds than on surface roads. Bike lanes through interchange areas should clearly warn motorists to expect bicyclists, and signage should alert bicyclists that they should not turn to enter the highway.

Figure 9C-104 (right) depicts the current guidance provided by the California MUTCD. On high traffic bicycle corridors, non-standard treatments may be desirable. Dashed bicycle lane lines with or without colored bike lanes may be applied to provide increased visibility for bicycles in the merging area. The use of double-turn lanes should be discouraged because of the difficulties they present for pedestrians and bicyclists (see previous treatment). Existing double-turn lanes should be studied and converted to single-turn lanes, unless found to be absolutely necessary for traffic operations.

Design Considerations

Bike lane width:

- 4-foot minimum when no curb & gutter is present (rural road sections).
- 5-foot minimum when adjacent to curb and gutter (5 feet more than the gutter pan width if the gutter pan is wider than 2 feet).
- 6 feet recommended where right-of-way allows

Maximum Width:

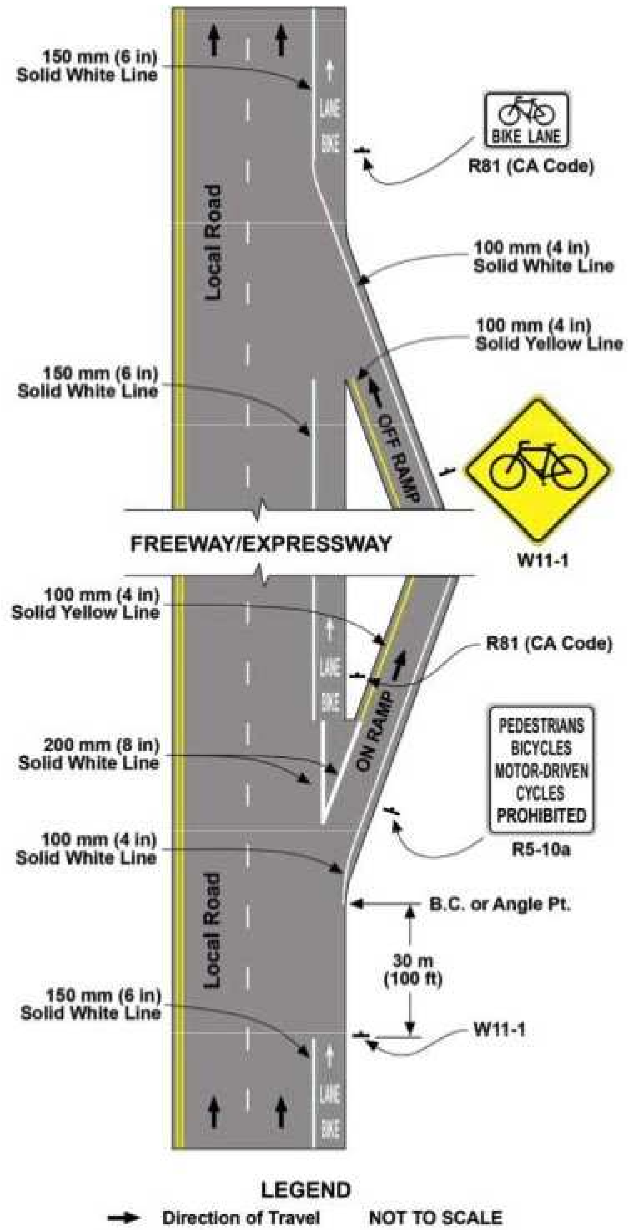
- 8 feet adjacent to arterials with high travel speeds (45 mph+)

Treatment for Interchange Ramp Ingress / Egress:

- Design intersections and ramps to limit the conflict areas or eliminate unnecessary uncontrolled ramp connections to urban roadways
- Follow AASHTO guidance (pp. 62 and 63) on methods for delineating or not delineating a bike lane through an interchange

Reference

- Caltrans *Highway Design Manual* (Chapter 1000)
- *California MUTCD*
- AASHTO *Guide for the Development of Bicycle Facilities*



California MUTCD Figure 9C-104 provides guidance for continuing bike lanes through intersection areas.

F.5.3 Class III Bike Routes

Class III Bikeway: Bike Route

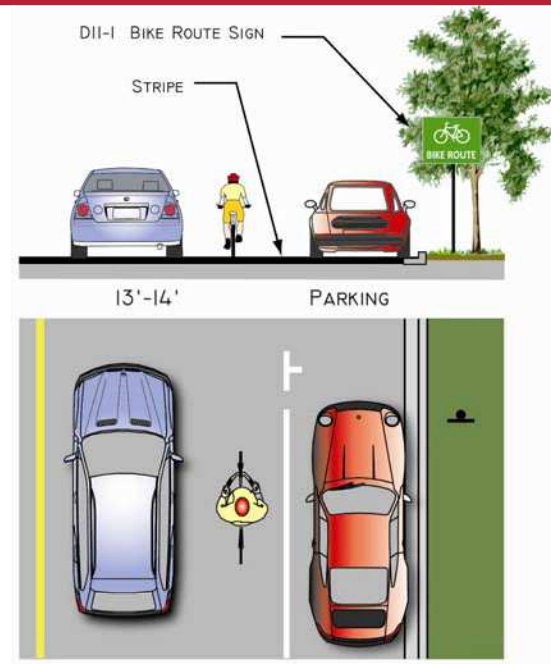
Class III bicycle facilities – (Caltrans designation) are defined as facilities shared with motor vehicles. They are typically used on roads with low speeds and traffic volumes; however, they can be used on higher volume roads with wide outside lanes or with shoulders. Roadways appropriate as shared roadways often have a centerline stripe only, and no designated shoulders.

Bike routes are indicated exclusively by signage, which provide key connections to destinations and trails where providing additional separation is not possible.

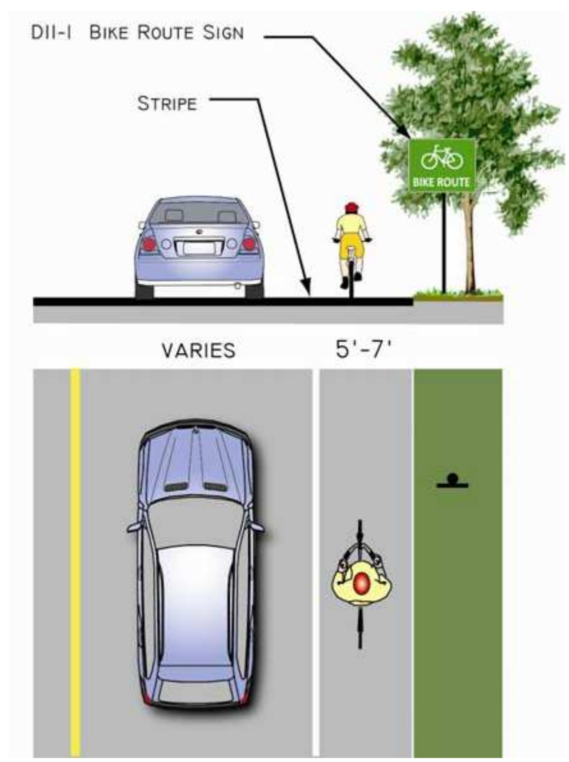
Rural roads with a large shoulder may already accommodate bicycle travel. Reclassifying these large shoulders as "shoulder bikeways" may encourage additional cyclist use. This type of facility can be developed on a rural roadway without curb and gutter. Bike routes along shoulders are appropriate and preferable to bike lanes in rural areas. The separation between the shoulder and the travel lane should be marked with an edge line, and the shoulder should be paved and maintained. A shoulder bikeway could also be used on an urban road where traffic speeds and volumes are low, although shared lane markings in addition to signage may be more appropriate in these locations.

When a roadway with a shoulder bikeway is reconstructed, widened, or overlaid, open drainage grates should be oriented with openings perpendicular to the direction of bicycle travel, so that bicycle wheels are not caught in the openings.

Rumble strips are placed along the sides of high-speed and rural roads, in order to alert drivers when their vehicles have left the roadway. Rumble strips can be dangerous for bicyclists, as a cyclist who runs over a strip could lose control of the bicycle. Conversely, rumble strips can help bicyclists feel more comfortable, knowing that drivers will be alerted if they are near the edge of the roadway. The bike-able area should have sufficient width (5-foot minimum) to accommodate bicycle travel. Rumble strips along shoulder bikeways should also include gaps to allow bicyclists to cross the rumble strip area.



Shared roadway recommended configuration.



Recommended shoulder bikeway configuration.

Class III Bikeway: Bike Route (continued)

Design Considerations

Shared Roadway Considerations:

Use D11-1 Bike Route sign at:

- Beginning or end of bike route (with applicable M4 series sign below)
- Entrance to bike path (class I) – optional
- At major changes in direction or at intersections with other bike routes (with applicable M7 series arrow sign)
- At intervals along bike routes not to exceed ½ mile

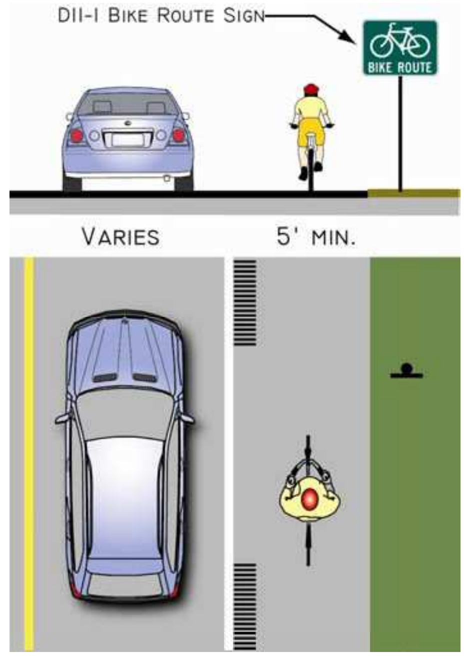
Shoulder Bikeway Considerations:

Widths (measured from painted edge line to edge of pavement or gutter pan):

- The shoulder should be a minimum of 4 feet and preferably, 6 feet wide
- On steep hills, additional width should be provided in the uphill direction, both for cyclists to pass each other and to allow cyclists to 'traverse' the hill by weaving slightly back and forth
- For shoulder bikeways along high-speed roadways, a buffer between the shoulder and vehicle lane using paint or bike-friendly rumble strips (see right) may be considered.

Additional considerations:

- Locate 5 feet from the face of the guardrail, curb, or other roadside barrier
- Use D11-1 "Bike Route" sign as specified for shared roadways



Shoulder bikeway with bike-friendly rumble strip

D11-1 "Bike Route" sign should be used along designated shared roadways.

Reference

- From Caltrans Highway Design Manual (HDM) Chapter 1000: "Class III bikeways (bike routes) are intended to provide continuity to the bikeway system. Bike routes are established along through routes not served by Class I or II bikeways, or to connect discontinuous segments of bikeway (normally bike lanes). Class III facilities are shared facilities, either with motor vehicles on the street, or with pedestrians on sidewalks, and in either case bicycle usage is secondary. Class III facilities are established by placing Bike Route signs along roadways."
- 2010 California MUTCD states," provide a right-of-way designated by signs or permanent markings and shared with pedestrians or motorists. Refer California Streets and Highways Code Section 890.4."
- 2010 California MUTCD Section 9C.04 states, "Class III Bikeways (Bike Route) are shared routes and do not require pavement markings. In some instances, a 100 mm (4 in) white edge stripe separating the traffic lanes from the shoulder can be helpful in providing for safer shared use. This practice is particularly applicable on rural highways and on major arterials in urban areas where there is no vehicle parking."
- AASHTO Guide for the Development of Bicycle Facilities
- Caltrans Standard Plan (2006 Edition).

Class III Bikeway: Shared Roadway Bicycle Marking (Sharrow)

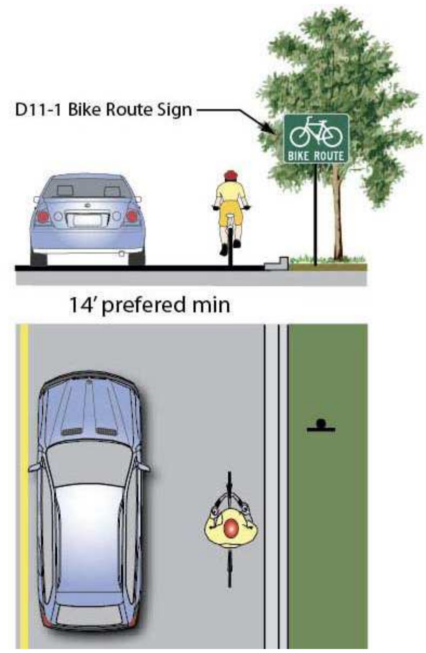
Shared lane marking stencils (also called “sharrows”) have been introduced for use in California as an additional treatment for Class III facilities. The California MUTCD states that the shared roadway bicycle marking is intended to:

- Reduce the chance of collisions between open doors of parked vehicles and bicyclists on a roadway with on-street parallel parking
- Alert road users within a narrow traveled way of the lateral location where bicyclists ride
- Be used only on roadways without marked bicycle lanes or shoulders

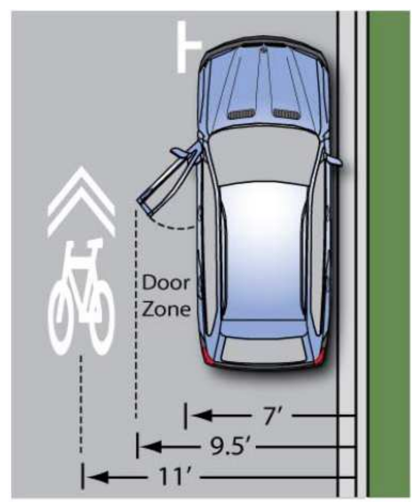
The stencil can serve a number of purposes, such as making motorists aware of bicycles potentially in their lane, showing bicyclists the direction of travel, and, with proper placement, reminding bicyclists to bike further from parked cars to prevent “dooring” collisions.

A wide outside lane can be used on roadways where bike lanes might otherwise be used, but the existing road width does not allow for restriping. The wide lane allows motor vehicles to pass bicycles while providing the recommended 3 feet of clearance.

When a roadway with a shoulder bikeway is reconstructed, widened, or overlaid, open drainage grates should be oriented with openings perpendicular to the direction of bicycle travel, so that bicycle wheels are not caught in the openings.



Wide curb lanes can include shared lane pavement markings to increase visibility.



Shared lane marking placement guidance for streets with on-street parking.

Design Considerations

- Use D11-1 “Bike Route” sign as specified for shared roadways
- Place in a linear pattern along a corridor at least 11’ from face of curb (or shoulder edge) on streets with on-street parking. The longitudinal spacing of the markings may be increased or reduced as needed for roadway and traffic conditions.
- Shared lane markings should not be placed on roadways with a speed limit at or above 40 MPH (CA MUTCD)
- Marking should be placed immediately after an intersection and spaced at intervals no greater than 250 feet hereafter
- Use only on a roadway Class III Bikeway (bike route) or shared roadway (no bikeway designation) which has on-street parallel parking

Reference

- Caltrans *Highway Design Manual* (Chapter 1000)
- Use of shared lane markings was adopted by Caltrans in 2005 as California MUTCD Section 9C.103 and Figure 9C-107
- AASHTO *Guide for the Development of Bicycle Facilities*

F.5.4 Bicycle Boulevards

Bicycle Routes/Bicycle Boulevards

Design Summary

- Roadway width varies depending on roadway configuration.
- Use D11-1 "Bike Route" sign as specified for shared roadways.
- Intersection treatments, traffic calming, and traffic diversions can be utilized to improve the cycling environment, as recommended in the following pages.

Discussion

Bicycle boulevards are low-volume streets where motorists and bicyclists share the same space. Treatments for bicycle boulevards include five "application levels" based on their level of physical intensity, with Level 1 representing the least physically-intensive treatments that could be implemented at relatively low cost. Identifying appropriate application levels for individual bicycle Traffic calming and other treatments along the corridor reduce vehicle speeds so that motorists and bicyclists generally travel at the same speed, creating a more-comfortable environment for all users. Bicycle boulevards incorporate treatments to facilitate convenient crossings where the route crosses a major street. They work best in well-connected street grids where riders can follow reasonably direct and logical routes and when higher-order parallel streets exist to serve thru vehicle traffic.

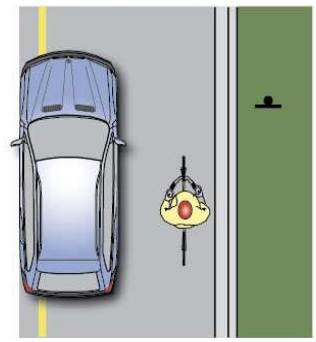
Bicycle boulevards/bike routes can be treated with shared lane markings, directional signage, traffic diverters, chicanes, chokers, and /or other traffic calming devices to reduce vehicle speeds or volumes.

Bicycle boulevards can employ a variety of treatments from signage to traffic calming and pavement stencils. The level of treatment provided at a specific location depends on several factors, discussed following.

Guidance

- Bicycle boulevards have been implemented in Berkeley, Emeryville, Palo Alto, San Luis Obispo, and Pasadena, CA; Portland and Eugene, OR; Vancouver, BC; Tucson, AZ; Minneapolis, MN; Ocean City, MD; and Syracuse, NY.
- Alta Planning + Design and IBPI. *Bicycle Boulevard Planning and Design Handbook.* www.ibpi.usp.pdx.edu/guidebook.php
- City of Berkeley. (2000). *Bicycle Boulevard Design Tools and Guidelines.* http://www.ci.berkeley.ca.us/contentdisplay.aspx?id=6652
- AASHTO *Guide for the Development of Bicycle Facilities.*
- *MUTCD* – California Supplement.

Local Street - Width Varies



Recommended design for bike routes/ bicycle boulevards.

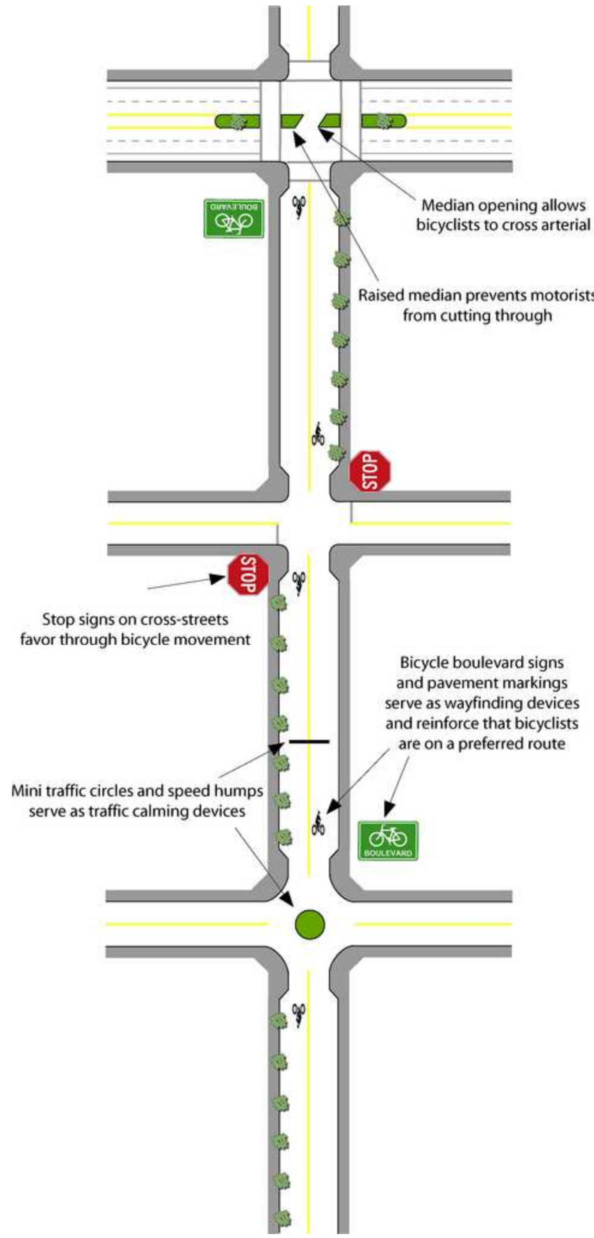
Bicycle boulevards are low-speed streets that provide a comfortable and pleasant experience for cyclists.

Bicycle Routes/Bicycle Boulevards

Discussion (continued)

Bicycle boulevards serve a variety of purposes:

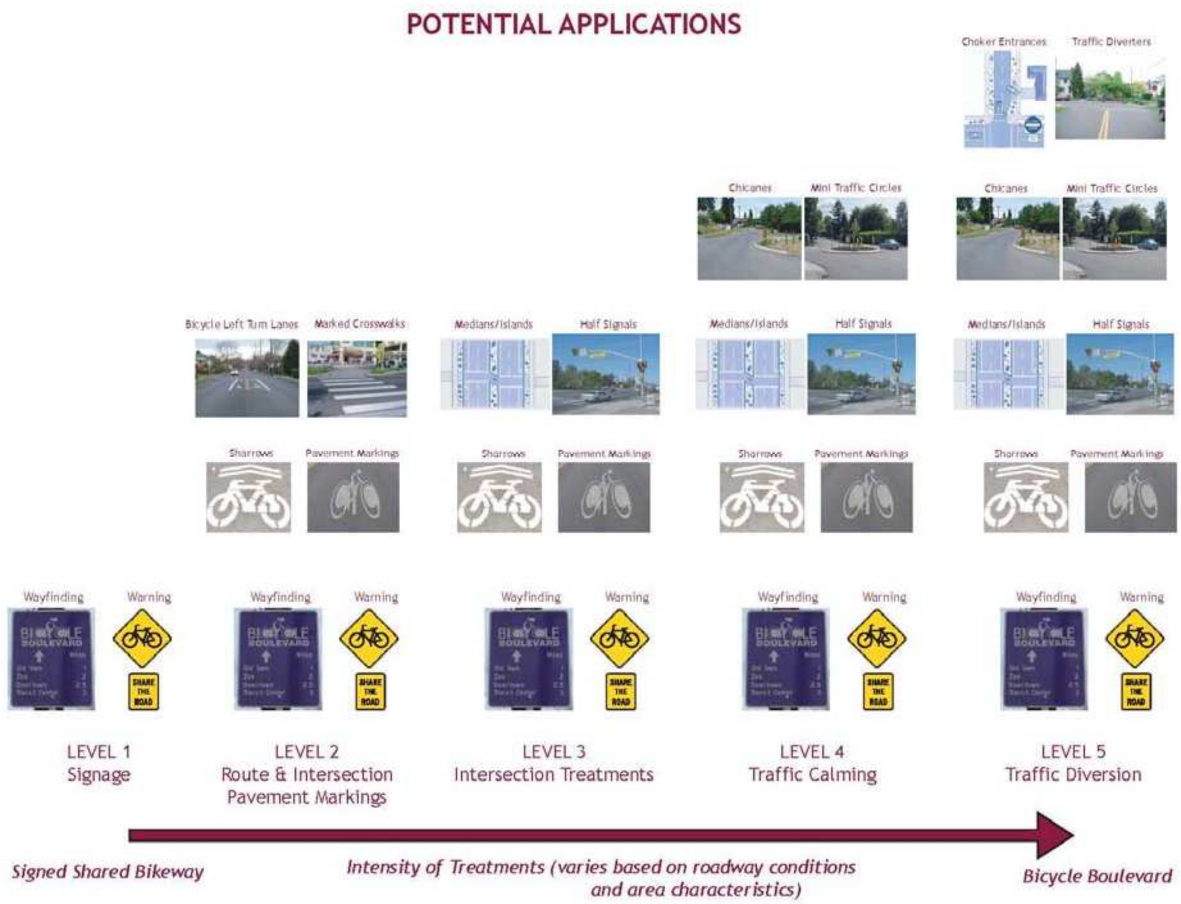
- Parallel major streets lacking dedicated bicycle facilities: Higher-order streets typically include major bicyclist destinations (e.g., commercial and employment areas). However, these corridors often lack bike lanes or other dedicated facilities creating an uncomfortable, unattractive and potentially unsafe riding environment. Bicycle boulevards serve as alternate parallel facilities that allow cyclists to avoid major streets for longer trips.
- Parallel major streets with bicycle facilities that are uncomfortable for some users: Some users may not feel comfortable using bike lanes on major streets due to high traffic volumes and vehicle speeds, conflicts with motorists entering and leaving driveways, and/or conflicts with buses loading and unloading passengers. Children and less-experienced riders might find these environments especially challenging. Utilizing lower-order streets, bicycle boulevards provide alternate route choices for these bicyclists. It should be noted that bike lanes on major streets provide important access to key land uses, and the major street network often provides the most direct routes between major destinations. For these reasons, bicycle boulevards should complement a bike lane network and not serve as a substitute.
- Ease of implementation on most local streets: bicycle boulevards incorporate cost-effective and less physically-intrusive treatments than bike lanes and cycle tracks. Most streets could be provided relatively inexpensive treatments like new signage, pavement markings, striping and signal improvements to facilitate bicyclists' mobility and safety. Other potential treatments include curb extensions, medians, and other features that can be implemented at reasonable cost and are compatible with emergency vehicle accessibility.
- Benefits beyond an improved bicycling environment: Residents living on bicycle boulevards benefit from reduced vehicle speeds and thru traffic, creating a safer and more-attractive environment. Pedestrians and other users can also benefit from boulevard treatments (e.g., by improving the crossing environment where boulevards meet major streets).



Sample bicycle boulevard treatments.

Bicycle Routes/Bicycle Boulevards

Bicycle Boulevard Application Levels



This section describes various treatments commonly used for developing Bicycle Boulevards. The treatments fall within five main "application levels" based on their level of physical intensity, with Level 1 representing the least physically-intensive treatments that could be implemented at relatively low cost. Identifying appropriate application levels for individual Bicycle Boulevard corridors provides a starting point for selecting appropriate site-specific improvements. The five Bicycle Boulevard application levels include the following:

Level 1: Signage	See Section 5.4.1
Level 2: Pavement markings	See Section 5.4.2
Level 3: Intersection treatments	See Sections 5.4.3-5.4.5
Level 4: Traffic calming	See Sections 5.4.6.
Level 5: Traffic diversion	See Sections 5.4.7.

It should be noted that corridors targeted for higher-level applications would also receive relevant lower-level treatments. For instance, a street targeted for Level 3 applications should also include Level 1 and 2 applications as necessary. It should also be noted that some applications may be appropriate on some streets while inappropriate on others. In other words, it may not be appropriate or necessary to implement all "Level 2" applications on a Level 2 street. Furthermore, several treatments could fall within multiple categories as they achieve multiple goals. To identify and develop specific treatments for each bicycle boulevard, Los Angeles County should involve the bicycling community and neighborhood groups. Further analysis and engineering work may also be necessary to determine the feasibility of some applications.

F.5.4.1 Bike Route/Boulevard Signing

Level 1: Bike Route/Boulevard Signing

Design Summary

- Signage is a cost-effective yet highly-visible treatment that can improve the riding environment on a bicycle boulevard.
- The County should adopt consistent signage and paint markings throughout the region.

Discussion

Wayfinding Signs

Wayfinding signs are typically placed at key locations leading to and along bicycle boulevards, including where multiple routes intersect and at key bicyclist "decision points." Wayfinding signs displaying destinations, distances and "riding time" can dispel common misperceptions about time and distance while increasing users' comfort and accessibility to the boulevard network.

Wayfinding signs also visually cue motorists that they are driving along a bicycle route and should correspondingly use caution. Note that too many signs tend to clutter the right-of-way, and it is recommended that these signs be posted at a level most visible to bicyclists and pedestrians, rather than per vehicle signage standards.

Warning signs

Warning signs advising motorists to "share the road" and "watch for bicyclists" may also improve bicycling conditions on shared streets. These signs are especially useful near major bicycle trip generators such as schools, parks and other activity centers. Warning signs should also be placed on major streets approaching bicycle boulevards to alert motorists of bicyclist crossings.

Guidance

- Alta Planning + Design and IBPI. *Bicycle Boulevard Planning and Design Handbook.* www.ibpi.usp.pdx.edu/guidebook.php
- City of Berkeley. (2000). *Bicycle Boulevard Design Tools and Guidelines*.
- AASHTO *Guide for the Development of Bicycle Facilities.*
- *MUTCD* – California Supplement.

F.5.4.2 Bike Route/Boulevard Pavement Markings

Level 2: Bike Route/Boulevard Pavement Markings

Design Summary

- The shared lane marking is the only approved wayfinding/ bicycle boulevard pavement marking by the California MUTCD.

Discussion

Directional Pavement Markings

Directional pavement markings (also known as "bicycle boulevard markings" or "breadcrumbs") lead cyclists along a boulevard and reinforce that they are on a designated route. Markings can take a variety of forms, such as small bicycle symbols placed every 600-800 feet along a linear corridor, as previously used on Portland, Oregon's boulevard network.

Recently, jurisdictions have been using larger, more visible pavement markings. Shared lane markings could be used as bicycle boulevard markings. See shared lane marking guidelines for additional information on this treatment.

In Berkeley, California, non-standard pavement markings include larger-scale lettering and stencils to clearly inform motorists and bicyclists of a street's function as a bicycle boulevard.

On-Street Parking Delineation

Delineating on-street parking spaces with paint or other materials clearly indicates where a vehicle should be parked, and can discourage motorists from parking their vehicles too far into the adjacent travel lane. This helps cyclists by maintaining a wide enough space to safely share a travel lane with moving vehicles while minimizing the need to swerve farther into the travel lane to maneuver around parked cars.

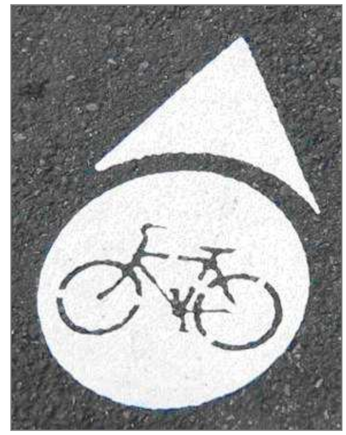
In addition to benefiting cyclists, delineated parking spaces also promote the efficient use of on-street parking by maximizing the number of spaces in high-demand areas.

Centerline Striping Removal

Automobiles have an easier time passing cyclists on roads without centerline stripes for the majority of the block length. If vehicles cannot easily pass each other using the full width of the street, it is likely that there is too much traffic for the subject street to be a successful bicycle boulevard. In addition, not striping the centerline reduces maintenance costs. Berkeley paints a double yellow centerline from 40-50' at uncontrolled or stop-controlled intersections, as well as pavement reflectors to identify the center of the street.

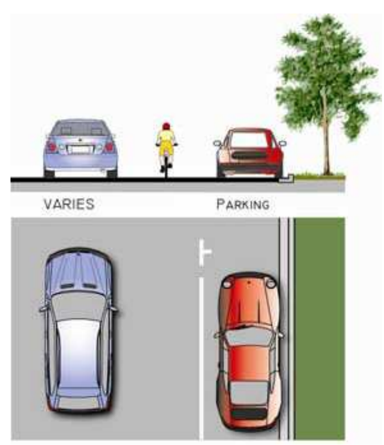
Guidance

- Alta Planning + Design and IBPI. *Bicycle Boulevard Planning and Design Handbook*. www.ibpi.usp.pdx.edu/guidebook.php
- City of Berkeley. (2000). *Bicycle Boulevard Design Tools and Guidelines*.
- AASHTO *Guide for the Development of Bicycle Facilities.*
- *MUTCD* – California Supplement.



Bicycle boulevard directional marker.

Shared lane markings also provide directional support for bicyclists.



Example of on-street parking delineation.

F.5.4.3 Bike Routes/Boulevards at Minor Unsignalized Intersections

Level 3: Bike Routes/Boulevards at Minor Unsignalized Intersections

Design Summary

- To encourage use of the boulevard and improve cyclists' safety, reduce bicycle travel time by eliminating unnecessary stops and improving intersection crossings.

Stop signs effectively minimize conflicts along bicycle boulevards.

Discussion

Stop Sign on Cross-Street
Unmarked intersections can be dangerous for bicyclists, because cross-traffic may not be watching for cyclists. Stop signs on cross streets require crossing motorists to stop and proceed when safe. Stop signs are a relatively inexpensive treatment that is quite effective at minimizing bicycle and cross-vehicle conflicts. However, stop signs at intersections along bicycle boulevards may be unwarranted as a traffic control device.

Curb Extensions and High-Visibility Crosswalks
This treatment is appropriate near activity centers with large amounts of pedestrian activity, such as schools or commercial areas. Curb extensions should only extend across the parking lane and not obstruct bicyclists' path of travel or the travel lane. Curb extensions and high-visibility crosswalks both calm traffic and also increase the visibility of pedestrians waiting to cross the street, although they may impact on-street parking.

Curb extensions can be a good location for pedestrian amenities, including street trees.

Bicycle Forward Stop Bar
A second stop bar for cyclists placed closer to the centerline of the cross street than the first stop bar increases the visibility of cyclists waiting to cross a street. This treatment is typically used with other crossing treatments (i.e. curb extension) to encourage cyclists to take full advantage of crossing design. They are appropriate at unsignalized crossings where fewer than 25 percent of motorists make a right turn movement.

Bicycle forward stop bars encourage cyclists to wait where they are more visible.

Guidance

- Alta Planning + Design and IBPI. *Bicycle Boulevard Planning and Design Handbook.* www.ibpi.usp.pdx.edu/guidebook.php
- City of Berkeley. (2000). *Bicycle Boulevard Design Tools and Guidelines.*
- AASHTO *Guide for the Development of Bicycle Facilities.*
- *MUTCD* – California Supplement.

F.5.4.4 Bike Routes/Boulevards at Major Unsignalized Intersections

Level 3: Bike Routes/Boulevards at Major Unsignalized Intersections

Design Summary

- Increase crossing opportunities with medians and refuge islands.
- Instructional and regulatory signage should be included with installation of a bicycle signal. This signage is not standard and will have to be created for the application. Part 4 of the California MUTCD covers bicycle signals.

Discussion

Medians/Refuge Islands

At uncontrolled intersections at major streets, a crossing island can be provided to allow cyclists to cross one direction of traffic at a time when gaps in traffic allow. The bicycle crossing island should be at least 8' wide to be used as the bike refuge area. Narrower medians can accommodate bikes if the holding area is at an acute angle to the major roadway. Crossing islands can be placed in the middle of the intersection, prohibiting left and thru vehicle movements.

Half-Signals

Bicycle signals are an approved traffic control device in the state of California after the technology was studied and approved after years of service in the City of Davis. A bicycle signal provides an exclusive signal phase for bicyclists traveling through an intersection. This takes the form of a new signal head installed with red, amber, and green bicycle indications. Bicycle signals can be actuated with bicycle sensitive loop detectors, video detection, or push buttons.

Where cyclists have few crossable gaps and where vehicles on the major street do not stop for pedestrians and cyclists waiting to cross, "half signals" could be installed to improve the crossing environment. Half signals include pedestrian and bicycle activation buttons and may also include loop detectors on the bicycle boulevard approach. Many of these models have been used successfully for years overseas, and their use in the U.S. has increased dramatically over the last decade.

Medians on bicycle boulevards should provide space for a bicyclist to wait.

Half-signals for bicyclists should be clearly marked to minimize confusion.

Guidance

Note: While bicycle signals are approved for use in California, local municipal code should be checked or modified to clarify that at intersections with bicycle signals, bicycles should only obey the bicycle signal heads.

- Alta Planning + Design and IBPI. *Bicycle Boulevard Planning and Design Handbook.* www.ibpi.usp.pdx.edu/guidebook.php
- City of Berkeley. (2000). *Bicycle Boulevard Design Tools and Guidelines*.
- AASHTO *Guide for the Development of Bicycle Facilities.*
- *MUTCD* – California Supplement.

F.5.4.5 Bike Routes/Boulevards at Offset Intersections

Bike Routes/Boulevards at Offset Intersections

Design Summary

- Provide turning lanes or pockets at offset intersection , providing cyclists with a refuge to make a two-step turn.
- Bike turn pockets - 5′ wide, with a total of 11′ required for both turn pockets and center striping.

Example of a bicycle left-turn pocket.

Discussion

Offset intersection can be challenging for cyclists, who need to transition onto the busier cross-street in order to continue along the boulevard.

Bicycle Left-Turn Lane

Similar to medians/refuge islands, bicycle left-turn lanes allow the crossing to be completed in two phases. A bicyclist on the boulevard could execute a right-hand turn onto the cross-street, and then wait in a delineated left-turn lane (if necessary to wait for a gap in oncoming traffic). The bike turn pockets should be at least 5 feet wide, with a total of 11 feet for both turn pockets and center striping.

Bicycle Left Turn Pocket

A bike-only left-turn pocket permits bicyclists to make left turns while restricting vehicle left turns. If the intersection is signal-controlled, a left arrow signal may be appropriate, depending on bicycle and vehicle volumes. Signs should be provided prohibiting motorists from turning. Ideally, the left turn pocket should be protected by a raised curb, but the pocket may also be defined by striping if necessary. Because of the restriction on vehicle left-turning movements, this treatment also acts as traffic diversion.

This bike-only left-turn pocket guides cyclists along a popular bike route.

Guidance

- Alta Planning + Design and IBPI. *Bicycle Boulevard Planning and Design Handbook.* www.ibpi.usp.pdx.edu/guidebook.php
- AASHTO *Guide for the Development of Bicycle Facilities.*

F.5.4.6 Bicycle Boulevard Traffic Calming

Level 4: Bicycle Boulevard Traffic Calming

Design Summary

- Traffic calming treatments reduce vehicle speeds to the point where they generally match cyclists' operating speeds, enabling motorists and cyclists to safely co-exist on the same facility.

Discussion

Chicanes: Chicanes are a series of raised or delineated curb extensions on alternating sides of a street forming an S-shaped curb, which reduce vehicle speeds through narrowed travel lanes. Chicanes can also be achieved by establishing on-street parking on alternate sides of the street. These treatments are most effective on streets with narrower cross-sections.

Chicanes require all vehicles to slow down.

Mini Traffic Circles: Mini traffic circles are raised or delineated islands placed at intersections, reducing vehicle speeds through tighter turning radii and narrowed vehicle travel lanes (see right). These devices can effectively slow vehicle traffic while facilitating all turning movements at an intersection. Mini traffic circles can also include a paved apron to accommodate the turning radii of larger vehicles like fire trucks or school buses.

Traffic circles provide an opportunity for landscaping, but visibility should be maintained.

Speed Humps: Shown right, speed humps are rounded raised areas of the pavement requiring approaching motor vehicles to reduce speed. These devices also discourage thru vehicle travel on a street when a parallel route exists.

Speed humps should never be constructed so steep that they may cause a bicyclist to lose control of the bicycle or be distracted from traffic. In some cases, a gap could be provided, whereby a bicyclist could continue on the level roadway surface, while vehicles would slow down to cross the barrier.

Speed humps are a common traffic calming treatment.

Other: The Count also has a Neighborhood Traffic Management Program toolbox, providing information on numerous traffic calming devices that be considered on any bicycle boulevard. The toolbox provides explanations of the pros and cons of these devices, as well as their level of effectiveness. Additional information is available at www.ladpw.org/TNL/NTMP.

Guidance

- Alta Planning + Design and IBPI. *Bicycle Boulevard Planning and Design Handbook.* www.ibpi.usp.pdx.edu/guidebook.php
- City of Berkeley. (2000). *Bicycle Boulevard Design Tools and Guidelines*.
- AASHTO *Guide for the Development of Bicycle Facilities.*

F.5.4.7 Bicycle Boulevard Traffic Diversion

Level 5: Bicycle Boulevard Traffic Diversion

Design Summary

- Traffic diversion treatments maintain thru-bicycle travel on a street while physically restricting thru vehicle traffic.
- Traffic diversion is most effective when higher-order streets can sufficiently accommodate the diverted traffic associated with these treatments.

Discussion

Choker Entrances

Choker entrances are intersection curb extensions or raised islands allowing full bicycle passage while restricting vehicle access to and from a bicycle boulevard. When they approach a choker entrance at a cross-street, motorists on the bicycle boulevard must turn onto the cross-street while cyclists may continue forward. These devices can be designed to permit some vehicle turning movements from a cross-street onto the bicycle boulevard while restricting other movements.

Traffic Diverters

Similar to choker entrances, traffic diverters are raised features directing vehicle traffic off the bicycle boulevard while permitting thru travel.

Advantages:

- Provides safe refuge in the median of the major street so that bicyclists only have to cross one direction of traffic at a time; works well with signal-controlled traffic platoons coming from opposite directions.
- Provides traffic calming and safety benefits by preventing left turns and/or thru traffic from using the intersection.

Disadvantages:

- Potential motor vehicle impacts to major roadways, including lane narrowing, loss of some on-street parking and restricted turning movements.
- Crossing island may be difficult to maintain and may collect debris.

Guidance

- Alta Planning + Design and IBPI. *Bicycle Boulevard Planning and Design Handbook.* www.ibpi.usp.pdx.edu/guidebook.php
- City of Berkeley. (2000). *Bicycle Boulevard Design Tools and Guidelines*.
- AASHTO *Guide for the Development of Bicycle Facilities.*

Choker entrances prevent vehicular traffic from turning from a main street onto a traffic-calmed bicycle boulevard.

Traffic diverters prevent access to both directions of motor vehicle traffic.

F.5.4.8 Bike Signage and Wayfinding

Signing Standards and Guidelines

Bikeways have unique signage requirements and are included in a separate chapter in the Manual of Uniform Traffic Control Devices (MUTCD). In the MUTCD there are three types of signs:

- Regulatory signs indicate to cyclists the traffic regulations which apply at a specific time or place on a bikeway
- Warning signs indicate in advance conditions on or adjacent to a road or bikeway that will normally require caution and may require a reduction in vehicle speed
- Guide and information signs indicate information for route selection, for locating off-road facilities, or for identifying geographical features or points of interest

In addition to MUTCD signs, Los Angeles County uses regulatory signs to alert trail users to the rules and regulations in effect within river path corridors. Under the California Public Resources Code, rules must be posted in order to be enforced by patrolling police officers.

Design Considerations

- Bicycle signs shall be standard in shape, legend, and color
- All signs shall be retroreflective for use on bikeways, including shared-use paths and bicycle lane facilities
- Signs for the exclusive use of bicyclists should be located so that other road users are not confused by them
- Where signs serve bicyclists as well as other road users, vertical mounting height and lateral placement shall be as specified in Part 2 (Signs)

Reference

- Caltrans *Highway Design Manual* (Chapter 1000)
- California MUTCD
- AASHTO *Guide for the Development of Bicycle Facilities*
- Los Angeles River Master Plan Sign Guidelines

MUTCD Sign R5-1b and R9-3c are regulatory sign. The bicycle path exclusion sign (R44A) is specific to the CA MUTCD.

Warning signs are yellow, such as this combination of W11-15 and W11-15P from the MUTCD

Bicycle guide signs are green, and can include destination, direction and distance information. (MUTCD sign D1-3C).

Los Angeles County Department of Public Works regulatory signs post rules and provide contact information.

Wayfinding Guidelines

The ability to navigate through a region is informed by landmarks, natural features, and other visual cues. Wayfinding is a cost-effective and highly visible treatment that can improve the bicycling environment through:

- Helping to familiarize users with the pedestrian and bicycle network
- Helping users identify the best routes to destinations
- Helping to address misperceptions about time and distance
- Helping overcome a "barrier to entry" for infrequent cyclists or pedestrians (e.g., "interested but concerned" cyclists)

A bikeway wayfinding system is composed of three elements:

- Signs: Wayfinding signs throughout Los Angeles County can indicate to pedestrians and bicyclists their direction of travel, location of destinations, and travel time/distance to those destinations.
- Pavement Markings: Pavement markings indicate to cyclists the traffic regulations which apply at a specific time or place on a bikeway. Markings also reinforce to bicyclists that they are on a designated route and remind motorists to drive courteously.
- Maps and Kiosks: Provides users with valuable information regarding bicycle facilities and route options throughout Los Angeles County. Maps and kiosks provide bicyclists with key information such as the rules of the road, tips on safe cycling practices, and other bicycle safety information.

Design Considerations

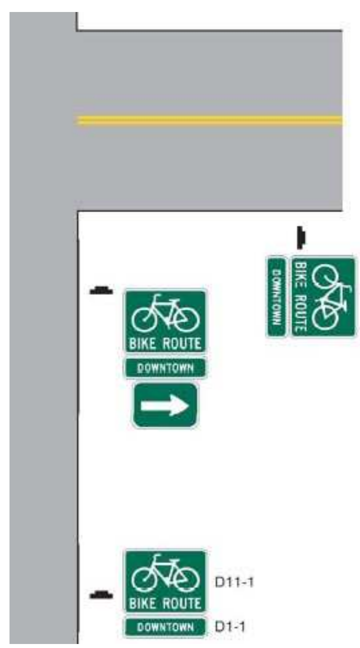
Destinations for on-street signage can include: On-street bikeways, commercial centers, regional parks and trails, public transit sites, civic/community destinations, local parks and trails, hospitals, and schools.

Recommended uses for on-street signage include:

- Confirmation signs confirm that a cyclist is on a designated bikeway. Confirmation signs can include destinations and their associated distances, but not directional arrows.
- Turn signs indicate where a bikeway turns from one street onto another street. Turn signs are located on the near-side of intersections.

Custom bike route guide sign for the Los Angeles River Bikeway.

Pavement markings along the San Gabriel River Bikeway indicate mileage at quarter mile intervals.



Example of signing for an on-roadway bicycle route (MUTCD-CA Figure 9B-6).

Wayfinding Guidelines (continued)

- Decision signs mark the junction of two or more bikeways. Decision signs are located on the near-side of intersections. They can include destinations and their associated directional arrows, but not distances.

Signs are typically placed at key locations leading to and along bicycle routes, including the intersection of multiple routes. Too many road signs tend to clutter the right-of-way, and it is recommended that these signs be posted at a level that is most visible to bicyclists and pedestrians, rather than per vehicle signage standards. Additional recommended guidelines include:

- Place the closest destination to each sign in the top slot. Destinations that are further away can be placed in slots two and three. This allows the nearest destination to 'fall off' the sign and subsequent destinations to move up the sign as the bicyclist approaches.
- Use pavement markings to help reinforce routes and directional signage. Markings, such as bicycle boulevard symbols, may be used in addition to or in place of directional signs along bike routes. Pavement markings can help cyclists navigate difficult turns and provide route reinforcement.

Reference

- Caltrans *Highway Design Manual* (Chapter 1000)
- California MUTCD 9B.19
- AASHTO *Guide for the Development of Bicycle Facilities*
- Los Angeles River Master Plan Sign Guidelines
- City of Oakland. (2009). *Design Guidelines for Bicycle Wayfinding Signage*
- City of Portland (2002). *Bicycle Network Signing Project*

F.5.5 Innovative Bicycle Treatments

Class II - Colored Bike Lanes

Design Summary

<u>Bicycle Lane Width:</u>
5' minimum and 7' maximum.

Colored bike lanes are a common treatment in many European Cities and are starting to garner acceptance in US cities.

Discuss ion

A contrasting color for the paving of bicycle lanes can also be applied to continuous sections of roadways. These situations help to better define road space dedicated to bicyclists and make the roadway appear narrower to drivers resulting in beneficial speed reductions.

Colored bicycle lanes require additional cost to install and maintain. Techniques include:

- Paint – less durable and can be slippery when wet
- Colored asphalt – colored medium in asphalt during construction – most durable.
- Colored and textured sheets of acrylic epoxy coating.
- Thermoplastic – Expensive, durable but slippery when worn.

Guidance

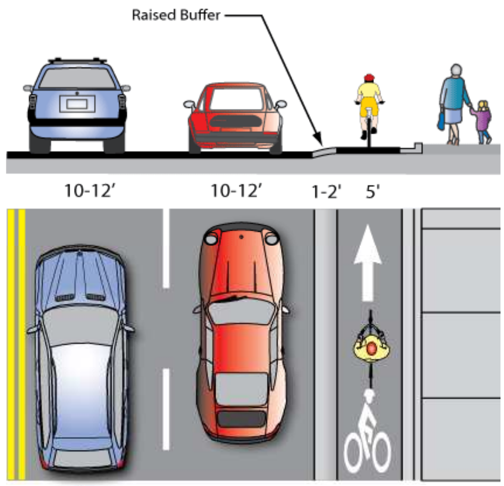
Currently this treatment has been granted interim approval per FHWA.

National Association of City Transportation Officials (NACTO) *Urban Bikeway Design Guide (2011).*

Class II - Raised Bicycle Lanes

Design Summary

Bicycle Lane Width:
5 feet minimum. Bicycle lane should drain to street. Drainage grates should be in travel lane.
Mountable Curb Design:
Mountable curb should have a 4:1 or flatter slope and have no lip that could catch bicycle tires.
Signage & Striping:
Same as traditional Class II bicycle lanes



Discussion

Raised bicycle lanes are bicycle lanes that have a mountable curb separating them from the adjacent travel lanes. Raised bicycle lanes provide an element of physical separation from faster moving vehicle traffic. For drivers, the mountable curb provides a visual and tactile reminder of where the bicycle lane is. For bicyclists the mountable curb makes it easy to leave the bicycle lane if necessary, when passing another bicyclist, or to merge to the left for turning movements. The raised bicycle lane should return to level grade at intersections.

Raised bicycle lanes cost more than traditional bicycle lanes and typically require a separate paving operation. Maintenance costs are lower as the bicycle lane receives no vehicle wear and resists debris accumulation.

Raised bicycle lanes work well adjacent to higher speed roadways with few driveways.

Guidance

Currently this treatment is not present in any State or Federal design standards

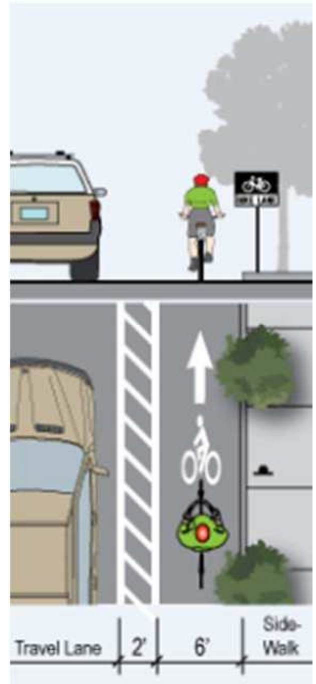
National Association of City Transportation Officials (NACTO) *Urban Bikeway Design Guide (2011).*

Crow Design Manual for Bicycle Traffic - Chapter 5

Class II - Buffered Bicycle Lanes

Design Summary

Bicycle Lane Width:
Signage & Striping:
Same as traditional Class II bicycle lanes



Discussion

Provides cushion of space to mitigate friction with motor vehicles on streets with frequent or fast motor vehicle traffic. Buffered Bike lanes allow bicyclists to pass one another or avoid obstacles without encroaching into the travel lane.
These facilities increase motorist shy distance from bicyclist in the bike lane and reduce the risk of "dooring" compared to a conventional bike lane.
Buffered bike lanes require additional roadway space and maintenance.

Guidance

Currently this treatment is not present in any State or Federal design standards
National Association of City Transportation Officials (NACTO) *Urban Bikeway Design Guide (2011).*
Crow Design Manual for Bicycle Traffic - Chapter 5

Class II - Cycletrack

Design Summary

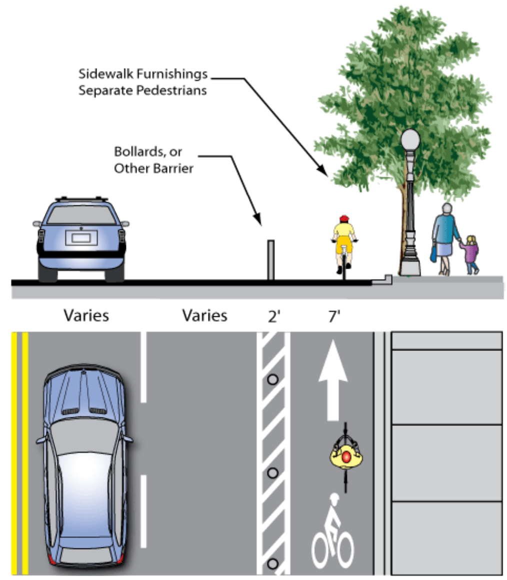
Cycle Track Width:
7 feet preferred to allow passing and obstacle avoidance
12 feet minimum for two-way facility

Discussion

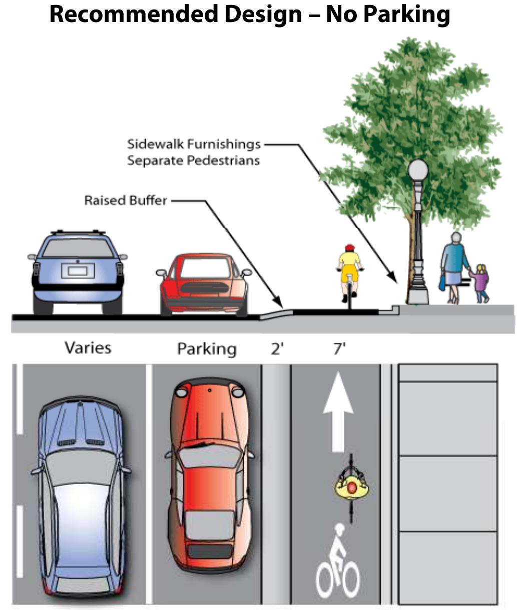
A cycle track is a hybrid type bicycle facility that combines the experience of a separated path with the on-street infrastructure of a conventional bicycle lane. Cycle tracks have different forms, but all share common elements. Cycle tracks provide space that is intended to be exclusively or primarily for bicycles, and is separated from vehicle travel lanes, parking lanes and sidewalks. Cycle tracks can be either one-way or two-way, on one or both sides of a street. They are separated from vehicles and pedestrians by either striping, colored pavement, bollards, curbs/medians or a combination of these elements.

Guidance

Currently this treatment is not present in any State or Federal design standards
National Association of City Transportation Officials (NACTO) *Urban Bikeway Design Guide (2011)*
Crow Design Manual for Bicycle Traffic - Chapter 5



Recommended Design – No Parking

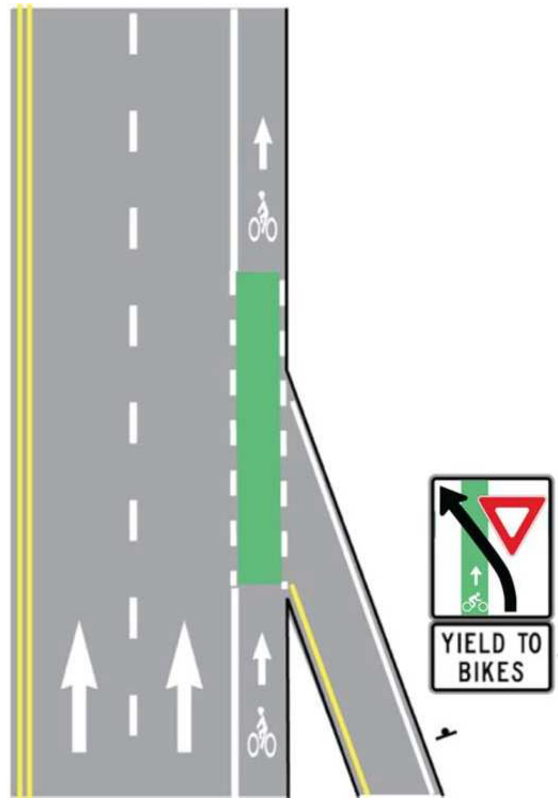


Recommended Design – On-Street Parking

Class II - Colored Bike Lanes at Interchanges

Design Summary

Bicycle Lane Width:
The bicycle lane width through the interchange should be the same width as the approaching bicycle lane (minimum five feet).



Discussion

On high traffic bicycle corridors non-standard treatments may be desirable over current practices outlined in the MUTCD. Dashed bicycle lane lines with or without colored bicycle lanes may be applied to provide increased visibility for bicycles in the merging area.

Guidance

Currently this treatment is not present in any State or Federal design standards
National Association of City Transportation Officials (NACTO) *Urban Bikeway Design Guide (2011).*
City of Chicago - Green Pavement Markings for Bicycle Lanes (Ongoing) - FHWA Experiment No. 9-77(E)
Portland's Blue Bicycle Lanes
http://www.portlandonline.com/shared/cfm/image.cfm?id=58842

Class II - Bicycle Box
Single Lane – No Vehicle Right Turns On Red

Design Summary

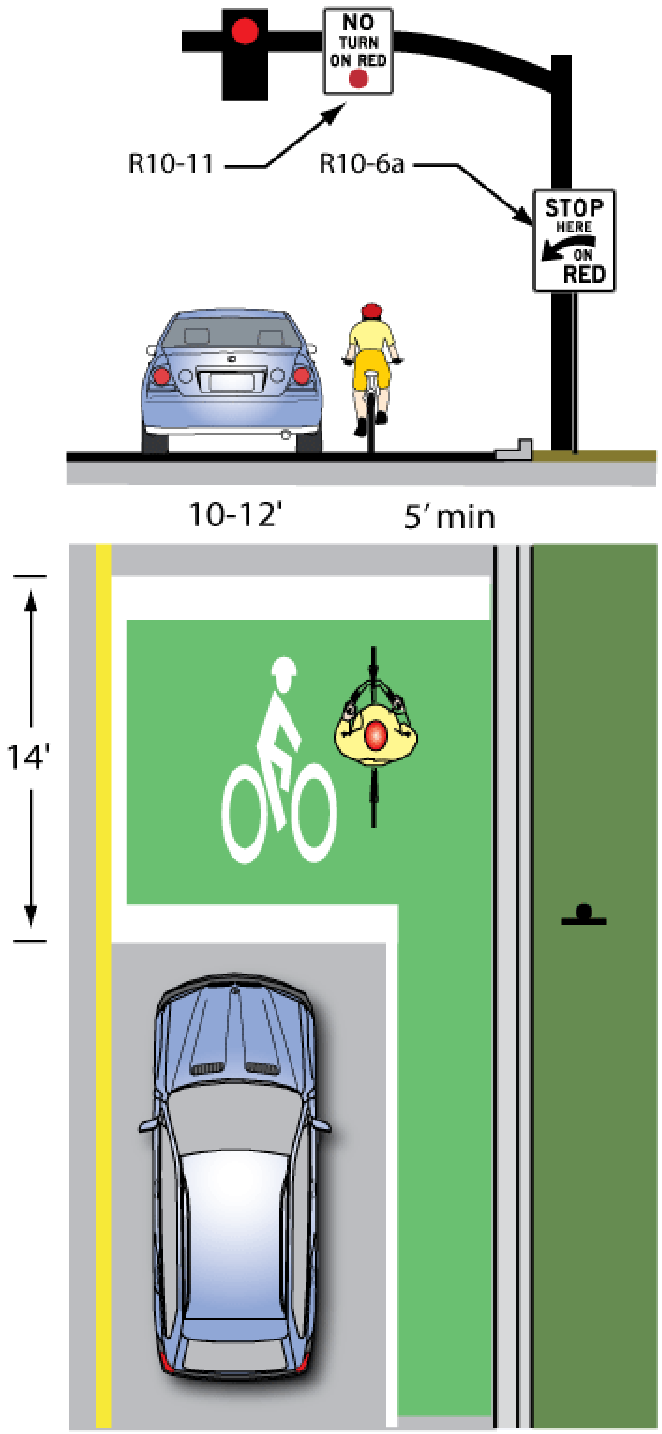
Bicycle Box Dimensions:
The Bicycle Box should be 14' deep to allow for bicycle positioning.
Signage:
Appropriate signage as recommended by the MUTCD applies. Signage should be present to prevent 'right turn on red' and to indicate where the motorist must stop.

Discussion

Bicycle boxes provide additional space for bicyclists to move to the front of the vehicular queue while waiting for a green light. On a two-lane roadway, the bicycle box can also facilitate left turning movements for bicyclists as well as through bicycle traffic. Motor vehicles must stop behind the white stop line at the rear of the bicycle box and may not turn right on red.

Guidance

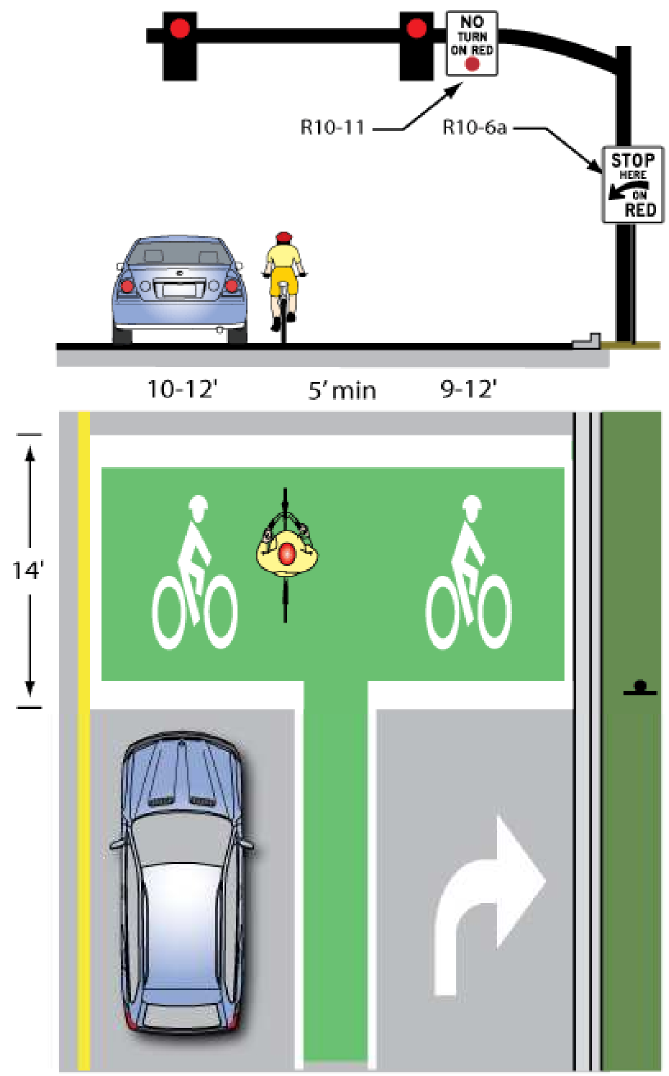
Currently this treatment is not present in any U.S. State or Federal design manuals.
National Association of City Transportation Officials (NACTO) *Urban Bikeway Design Guide (2011).*
Examples of this treatment can be found in Cambridge, Portland and Vancouver



Class II - Bicycle Box
Multi Lane – No Vehicle Right Turns On Red

Design Summary

Bicycle Box Dimensions:
The Bicycle Box should be 14’ deep to allow for bicycle positioning.
Signage:
Appropriate signage as recommended by the MUTCD applies. Signage should be present to prevent ‘right turn on red’ and to indicate where the motorist must stop.



Discussion

On wider roadways, the Bicycle Box can allow for movements in all directions for bicyclists providing for right turning, through, and left turning movements ahead of traffic. This treatment can be combined with a bicycle signal or an advanced signal phase to clear queuing bicyclists before vehicles are given a green phase.
At multi-lane bicycle boxes there can be a safety issue if a bicyclist is using the bicycle box to maneuver for a left turn just as the signal turns green. This would put the bicyclist possibly in the path of an approaching vehicle. It is recommended that installations wider than one lane across from the access point to the bicycle box be studied carefully before installation.

Guidance

Currently this treatment is not present in any State or Federal design standards

Class II - Bicycle Box
Multi Lane – Vehicle Right Turns On Red Allowed

Design Summary

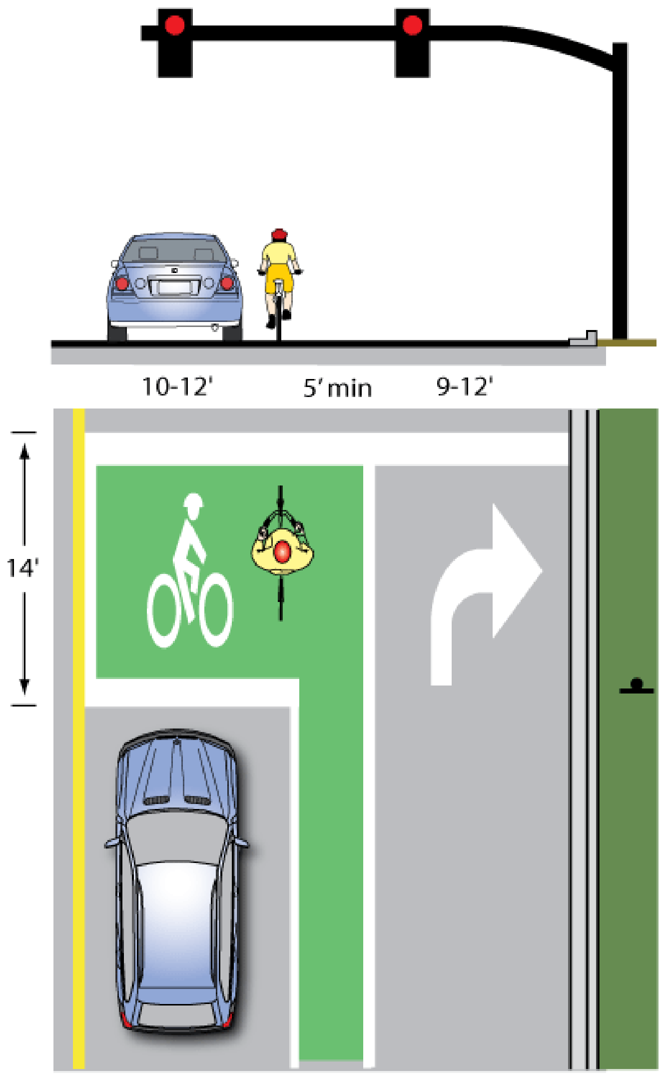
Bicycle Box Dimensions:
The Bicycle Box should be 14’ deep to allow for bicycle positioning.
Signage:
Appropriate signage as recommended by the MUTCD applies.

Discussion

In some areas there may be a situation where a freeway ramp exists where bicycles are prohibited or areas where bicycles may not need to access such as parking garages. In these limited cases a vehicle right turn only lane may be provided to the outside of the bicycle box. Right turns on red are permitted in these instances.

Guidance

Currently this treatment is not present in any State or Federal design standards



F.5.6 Bicycle Parking

Bicycle Parking

- Short-term parking accommodates visitors, customers, messengers and others expected to depart within two hours; requires approved standard rack, appropriate location and placement, and weather protection.
- Long-term parking accommodates employees, students, residents, commuters, and others expected to park more than two hours. This parking is to be provided in a secure, weather-protected manner and location.

Design Considerations

Design Issue	Recommended Guidance
Minimum Rack Height	To increase visibility to pedestrians, racks should have a minimum height of 33 inches or be indicated or cordoned off by visible markers.
Signing	Where bicycle parking areas are not clearly visible to approaching cyclists, signs at least 12 inches square should direct them to the facility. The sign should include the name, phone number, and location of the person in charge of the facility, where applicable.
Lighting	A minimum of one foot-candle illumination at ground level should be provided in all high capacity bicycle parking areas.
Frequency of Racks on Streets	In popular retail areas, two or more racks should be installed on each side of each block. This does not eliminate the inclusion of requests from the public which do not fall in these areas. Areas officially designated or used as bicycle routes may warrant the consideration of more racks.
Location and Access	Access to facilities should be convenient; where access is by sidewalk or walkway, ADA-compliant curb ramps should be provided where appropriate. Parking facilities intended for employees should be located near the employee entrance, and those for customers or visitors near main public entrances. (Convenience should be balanced against the need for security if the employee entrance is not in a well traveled area). Bicycle parking should be clustered in lots not to exceed 16 spaces each. Large expanses of bicycle parking make it easier for thieves to be undetected.
Locations within Buildings	Provide bike racks within 50’ of the entrance. Where a security guard is present, provide racks behind or within view of a security guard. The location should be outside the normal flow of pedestrian traffic.
Locations near Transit Stops	To prevent bicyclists from locking bikes to bus stop poles - which can create access problems for transit users, particularly those who are disabled - racks should be placed in close proximity to transit stops where there is a demand for short-term bike parking.

Bicycle Parking (continued)

Locations within a Campus-Type Setting	Racks are useful in a campus-type setting at locations where the user is likely to spend less than two hours, such as classroom buildings. Racks should be located near the entrance to each building. Where racks are clustered in a single location, they should be surrounded by a fence and watched by an attendant. The attendant can often share this duty with other duties to reduce or eliminate the cost of labor being applied to bike parking duties; a cheaper alternative to an attendant may be to site the fenced bicycle compound in a highly visible location on the campus. For long-term parking needs of employees and students, attendant parking and/or bike lockers are recommended.
Retrofit Program	In established locations, such as schools, employment centers, and shopping centers, the County should conduct bicycle audits to assess bicycle parking availability and access, and add additional bicycle racks where necessary.

The County could require bicycle parking as part of new developments. Quantities should be linked to land uses; the Association of Pedestrian and Bicycle Professionals (APBP) provides recommended quantities (see APBP reference).

Reference

- Caltrans Highway Design Manual (Chapter 1000)
- California MUTCD
- AASHTO Guide for the Development of Bicycle Facilities
- APBP Bicycle Parking Guidelines (2010.)www.apbp.org/?page=Publications

Short-Term Bicycle Parking

Short-term bicycle parking facilities include racks which permit the locking of the bicycle frame and at least one wheel to the rack and support the bicycle in a stable position without damage to wheels, frame or components. Short-term bicycle parking is currently provided at no charge at various locations in The County of Los Angeles. Such facilities should continue to be free, as they provide minimal security, but encourage cycling and promote proper bicycle parking.

The majority of short-term bicycle parking is provided via a 'staple' on the sidewalk, located within the buffer zone.

Art racks can be an attractive way of providing bicycle parking facilities. Costs can be subsidized by businesses sponsoring racks that are appropriate to their business (e.g., a pair of glasses for an optician).

Bollard-type bicycle racks can also accommodate short-term bicycle parking.

Bike corrals are high capacity bicycle racks installed in areas previously designated for automobile parking. The County shall evaluate requests for bike corrals if property owners and local stakeholders approve removing automobile parking spots.

Design Considerations

- See dimensions below

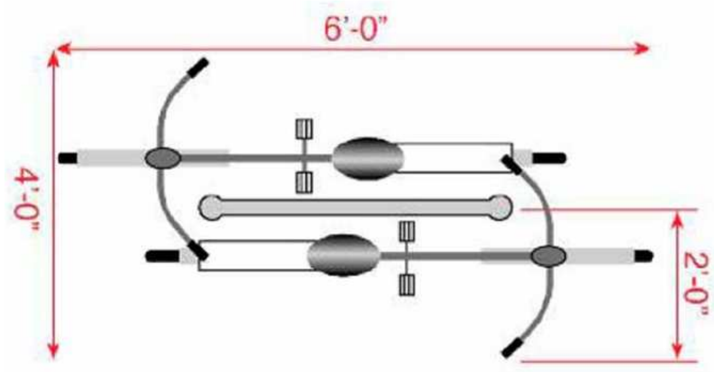
Reference

- Caltrans Highway Design Manual (Chapter 1000)
- California MUTCD
- AASHTO Guide for the Development of Bicycle Facilities

Standard bicycle 'staple' rack.

Art racks can be an attractive way of marketing the bicycle parking.

Bicycle parking can also be on a single post to minimize sidewalk obstructions.



Staple rack parking configuration.

Long-Term Bicycle Parking

Long-term bicycle parking facilities are intended to provide secure long-term bicycle storage. Long-term facilities protect the entire bicycle, its components and accessories against theft and against inclement weather, including snow and wind-driven rain. Examples include lockers, check-in facilities, monitored parking, restricted access parking, and personal storage. Check-in facilities are typically secured facilities that require an access code or key to access. Monitored parking facilities provide some form of supervision, e.g., an attendant.

Long-term parking facilities are more expensive to provide than short-term facilities, but are also significantly more secure. Although many bicycle commuters would be willing to pay a nominal fee to guarantee the safety of their bicycle, long-term bicycle parking should be free wherever automobile parking is free. Potential locations for long-term bicycle parking include transit stations, large employers and institutions where people use their bikes for commuting, and not consistently throughout the day. Coordination between different agencies and property owners would be needed to install parking at many locations.

Bike lockers at a transit station.

Design Considerations

- Dimensions and configuration depends on type of parking

Reference

- Caltrans *Highway Design Manual* (Chapter 1000)
- California MUTCD
- AASHTO *Guide for the Development of Bicycle Facilities*

F.5.7 Bikeway Maintenance

Bikeway Maintenance

Guidelines for regularly maintaining bicycle facilities are provided below.

Sweeping

Bicyclists often avoid shoulders and bike lanes filled with gravel, broken glass and other debris; they will ride in the roadway to avoid these hazards, 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.

Action items involving sweeping activities include:

- Establish a seasonal sweeping schedule that prioritizes roadways with major bicycle routes.
- Sweep walkways and bikeways whenever there is an accumulation of debris on the facility.
- 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.
- Provide extra sweeping in the fall where leaves accumulate.

Roadway Surface

Bicycles are more sensitive to subtle changes in roadway surface than motor vehicles. Some paving materials are smoother than others, and compaction/uneven settling can affect the surface after trenches and construction holes are filled. Uneven settlement after trenching can affect the roadway surface nearest the curb where bicycles travel. Sometimes compaction is not achieved to a satisfactory level, and an uneven pavement surface can result due to settling over the course of days or weeks. When resurfacing streets, the county should use the smallest chip size and ensure that the surface is as smooth as possible to improve safety and comfort for bicyclists.

Recommended action items involving maintaining the roadway surface include:

- On all bikeways, use the smallest possible chip for chip sealing bike lanes and shoulders
- Use sealants with the same color as the pavement. This avoids sealing cracks in concrete segments with asphalt
- During chip seal maintenance projects, if the pavement condition of the bike lane is satisfactory, it may be appropriate to chip seal the travel lanes only
- Ensure that on new roadway construction, the finished surface on bikeways does not vary more than ¼ inch
- Maintain a smooth surface on all bikeways that is free of potholes
- Maintain pavement so ridge build-up does not occur at the gutter-to-pavement transition or adjacent to railway crossings
- Inspect the pavement two to four months after trenching construction activities are completed to ensure that excessive settlement has not occurred
- Remove existing markings before reapplying new markings
- When applying thermoplastic stencils for signalizing bikeways, ensure that maximum thickness is 90 millimeters.

Gutter-to-Pavement Transition

On streets with concrete curbs and gutters, 10-20 inches of the curbside area is typically devoted to the gutter pan, where water collects and drains into catch basins. On many streets, the bikeway is situated near the transition between the gutter pan and the pavement edge. It is at this location that water can erode the transition, 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 environment for bicyclists. Since it is the most likely place for bicyclists to ride, this issue is significant for bike travel.

Bikeway Maintenance (continued)

Action items related to maintaining a smooth gutter-to-pavement transition include:

- Ensure that gutter-to-pavement transitions have no more than a ¼ inch vertical transition
- Examine pavement transitions during every roadway project for new construction, maintenance activities, and construction project activities that occur in streets

Drainage Grates

Drainage grates are typically located in the gutter area near the curb of a roadway. Drainage grates typically have slots through which water drains into the municipal wastewater system. Many grates are designed with linear parallel bars spread wide enough for a tire to get caught so that if a bicycle were to ride over them, the front tire would get caught and fall through the slot. This would cause the cyclist to tumble over the handlebars and sustain potentially serious injuries. The County should consider the following:

- Continue to require all new drainage grates be bicycle-friendly, including grates that have horizontal slats on them so that bicycle tires and assistive devices do not fall through the vertical slats
- Create a program to inventory all existing drainage grates and replace hazardous grates as necessary – temporary modifications such as installing rebar horizontally across the grate is no alternative to replacement

Pavement Overlays

Pavement overlays represent good opportunities to improve conditions for cyclists if it is done carefully. A ridge should not be left in the area where cyclists ride (this occurs where an overlay extends part-way into a shoulder bikeway or bike lane). Overlay projects offer opportunities to widen a roadway, or to re-stripe a roadway with bike lanes. Action items related to pavement overlays include:

- Extend the overlay over the entire roadway surface to avoid leaving an abrupt edge
- If there is adequate shoulder or bike lane width, it may be appropriate to stop at the shoulder or bike lane stripe, provided no abrupt ridge remains
- Ensure that inlet grates, manhole, and valve covers are within ¼ inch of the pavement surface and are made or treated with slip resistant materials
- Pave gravel driveways to property line to prevent gravel from spilling onto shoulders or bike lanes

Signage

Signage is crucial for safe and comfortable use of the bicycle and pedestrian network. Such signage is vulnerable to vandalism or wear, and requires regular maintenance and replacement as needed. The County should consider:

- Check regulatory and wayfinding signage along bikeways for signs of vandalism, graffiti, or normal wear
- Replace signage along the bikeway network as-needed
- Perform a regularly-scheduled check on the status of signage with follow-up as necessary
- Create a Maintenance Management Plan (see below)

Landscaping

Bikeways can become inaccessible due to overgrown vegetation. All landscaping needs to be designed and maintained to ensure compatibility with the use of the bikeways. After a flood or major storm, bikeways should be checked along with other roads, and fallen trees or other debris should be removed promptly. Landscaping maintenance action items include:

- Ensure that shoulder plants do not hang into or impede passage along bikeways

After major damage incidents, remove fallen trees or other debris from bikeways as quickly as possible.

Reference

- Caltrans *Highway Design Manual* (Chapter 1000)
- California MUTCD

Appendix G. StreetPlan Analysis

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A critical component of bikeway analysis was the use of Alta Planning + Design's 'StreetPlan' model. The StreetPlan model is a method to determine how an existing roadway cross section can be modified to include bike lanes. Assuming acceptable minimum widths for each roadway element, the model analyzes a number of factors to determine strategies to retrofit bike lanes on each surveyed roadway segment. Factors used in this analysis include:

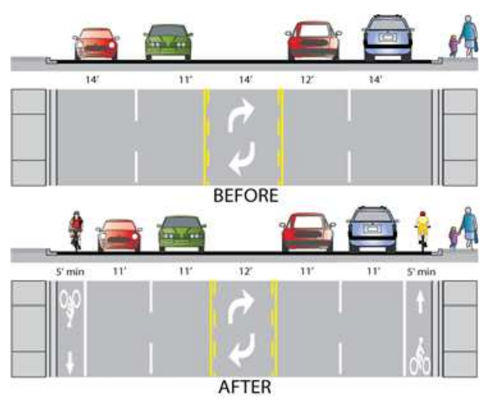
- Current roadway width
- Raised or painted median
- Number and width of travel lanes
- Presence and number of turn lanes and medians
- Location and utilization of on-street parking
- One-way vs. two-way traffic

In some cases, the retrofit is simple and only requires the addition of a bike lane in readily available roadway space while other circumstances may be more challenging and require the narrowing of a travel lane, the removal of on-street parking or a more detailed engineering study. This model is useful as it clearly illustrates locations where projects can be completed easily and locations where adding bike lanes may be challenging. Retaining a uniform roadway configuration throughout a corridor can simplify travel for motorists and cyclists alike, creating a safer and more comfortable experience for all users.

For the model, acceptable minimum roadway dimensions were set at the following widths provided by the County of Los Angeles:

- Travel lane width:[v] 11 feet
- Right turn lane width: 12 feet
- Left or Center Turn Lane width: 10 feet
- Parking lane width: 8 feet

In running the StreetPlan model, multiple strategies for accommodating bike lanes were possible for many segments of roadway. During the first public workshop, approximately 100 members of the public were given the strategies below for retrofitting bike lanes within existing County collectors and arterials. The participants were asked to rate each strategy according to their level of support. The following section lists the options for retrofitting bike lanes given the physical curb-to-curb roadway constraints found in the County. These options were analyzed in this order through the public workshop feedback and project steering committee feedback. Not all of the options below were possible strategies for all segments.

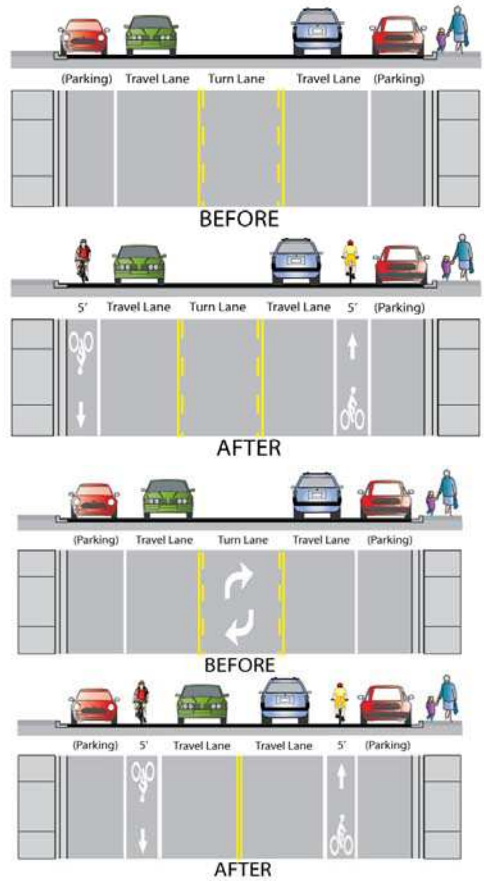


[v] *The County will consider reduced travel lane widths of 10 feet on a case by case basis and as recommended using engineering judgment considering such factors as vehicle speeds, and truck and bus volumes.*

Bike Lanes Fit With Existing Roadway Configuration – In this option, enough surplus road space exists to simply add the bike lane stripes and stencils without impacting the number of lanes or configuration of the roadway. This is by far the most desirable and easily implemented option available.

Narrow Travel Lanes and/or Parking Lanes – In this option bike lanes can be added by simply adjusting wide travel lanes or parking lanes within the established minimums presented above. As before, no modifications to the number of total lanes are required.

Remove Redundant or Unneeded On-Street Parking – In this option, unnecessary on-street parking on one side of the street is removed to create space for bike lanes. Acceptable situations for this scenario include collector or arterial roadways that pass by back fences of homes rather than frontages, or areas that have large surface parking lots adjacent to existing on-street parking.



Remove Center Turn Lane – In this option, the center turn lane is removed to provide road space for the addition of bicycle lanes. This strategy preserves all on-street parking. The turn lane can be restored at intersections if needed. This option will have minor impacts to turning vehicles mid-block, however this situation already exists in several locations within Los Angeles County and is common throughout the country.

Remove On-Street Parking – In this option, on-street parking is removed on one side of the road even if it may currently be utilized in residential or commercial areas. This option is seen as a less desirable option and may only be considered as a last resort in short sections to maintain bike lane continuity. A full parking study should be conducted to determine if excess parking capacity exists before making changes to the roadway configuration.

Bike Lanes Will Not Fit – In this last case, the existing roadway geometry will not allow for the addition of bike lanes. Either a bike route or major reconstruction of the roadway may be necessary for bikeway continuity.

Appendix H. Engineering Unit Cost Estimates

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Table H-1: Class II Bike Lane Striping Unit Cost Estimate

Installations	Unit Price	Unit	Quantity	Item Total
Signs (2 minimum per block * 8 blocks per mile)	$300	Each	16	$4,800
Striping	$4	Linear Foot	5,280	$21,120
Total Contract Cost				$25,920
Contingency (20% of contract)				$5,184
Total P.E. (20% of contract)				$5,184
Construction Engineering (20% of contract)				$5,184
Project Total				$41,472
Rounded Total				**$40,000 per mile**

Table H-2: Class II Bike Lane with Median/Curb Reconstruction Unit Cost Estimate

Removals	Unit Price	Unit	Quantity	Item Total
Concrete Pavement	$75	Cubic Yard	8,580	$643,500
Striping	$6	Linear Foot	5,280	$31,680
Installations	**Unit Price**	**Unit**	**Quantity**	**Item Total**
AC Pavement	$25	Linear Foot	5,280	$132,000
Aggregate Base	$10	Linear Foot	5,280	$52,800
PCC Curb and Gutter over 6” CMB	$22	Linear Foot	5,280	$116,160
Signs (2 minimum per block * 8 blocks per mile)	$300	Each	16	$4,800
Striping	$8	Linear Foot	5,280	$42,240
Total Contract Cost				$1,023,180
Contingency (20% of contract)				$204,636
Total P.E. (15% of contract)				$255,795
Construction Engineering (20% of contract)				$204,636
Project Total				$1,688,247
Rounded Total				**$1,700,000 per mile**

Table H-3: Class II or III – Bike Lane / Route (Road Widening /Added Paved Shoulder) Unit Cost Estimate

Removals	**Unit Price**	**Unit**	**Quantity**	**Item Total**
Striping	$6	Linear Foot	5,280	$31,680
Installations	**Unit Price**	**Unit**	**Quantity**	**Item Total**
AC Pavement	$25	Linear Foot	5,280	$132,000
Aggregate Base	$10	Linear Foot	5,280	$52,800
Signs (2 minimum per block * 8 blocks per mile)	$300	Each	16	$4,800
Striping	$4	Linear Foot	5,280	$21,120
Total Contract Cost				$242,400
Contingency (20% of contract)				$48,480
Total P.E. (15% of contract)				$60,600
Construction Engineering (20% of contract)				$48,480
Project Total				$399,960
Rounded Total				**$400,000 per mile**

Table H-4: Class III – Bike Routes (Signing Only) Unit Cost Estimate

Installations	**Unit Price**	**Unit**	**Quantity**	**Item Total**
Signs (4 minimum per block * 8 blocks per mile)	$300	Each	32	$9,600
Total Contract Cost				$9,600
Contingency (20% of contract)				$1,920
Total P.E. (20% of contract)				$1,920
Construction Engineering (20% of contract)				$1,920
Project Total				$15,360
Rounded Total				**$15,000 per mile**

Table H-5: Class III – Bike Routes (Signing and Sharrows) Unit Cost Estimate

Installations	Unit Price	Unit	Quantity	Item Total
Signs (4 minimum per block * 8 blocks per mile)	$300	Each	32	$9,600
Sharrow Pavement Marking (4 minimum per block * 8 blocks per mile)	$155	Each	32	$4,960
Total Contract Cost				$14,560
Contingency (20% of contract)				$2,912
Total P.E. (20% of contract)				$2,912
Construction Engineering (20% of contract)				$2,912
Project Total				$23,296
Rounded Total				**$25,000 per mile**

Table H-6: Class II – Bike Lane (Road Diet, 4 to 3 lanes) Unit Cost Estimate

Removals	Unit Price	Unit	Quantity	Item Total
Striping	$6	Linear Foot	5,280	$31,680
Installations	Unit Price	Unit	Quantity	Item Total
Signs (2 minimum per block * 8 blocks per mile)	$300	Each	16	$4,800
Striping	$8	Linear Foot	5,280	$42,240
Signal Modification/Loop Restoration	$20,000	Lump Sum	1	$20,000
Total Contract Cost				$98,720
Contingency (20% of contract)				$19,744
Total P.E. (15% of contract)				$24,680
Construction Engineering (20% of contract)				$19,744
Project Total				$162,888
Rounded Total				**$165,000 per mile**

Table H-7: Bicycle Boulevard Unit Cost Estimates

Installations	Unit Price	Unit	Quantity	Item Total
Signs (2 minimum per block * 8 blocks per mile)	$300	Each	16	$4,800
Sharrow Pavement Marking (4 minimum per block * 8 blocks per mile)	$155	Each	32	$4,960
Striping (200 LF x 8 intersections)	$2	Linear Foot	1,600	$3,200
Total Contract Cost				$17,760
Contingency (20% of contract)				$3,552
Total P.E. (20% of contract)				$3,552
Construction Engineering (20% of contract)				$3,552
Project Total				$28,416
Rounded Total[vi]				**$30,000 per mile**

[vi] *An additional $250,000 was added to the cost estimate of Bicycle Boulevard project for each instance it intersects an arterial roadway at an uncontrolled location. This additional cost is for the installation of a signalized crossing.*

Appendix I. Prioritization and Phasing Plan

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Sixteen different criteria were used to assign prioritization scoring. The criteria fall under two main category themes: Utility and Implementation. Next to the full prioritization scores listed in **Table I-2** through **Table I-4** are two sub-scores which display the breakdown between Utility score and Implementation score.

The first category, Utility Criteria – for which there are 10 inputs for a maximum of 145 points – considers a project's usefulness toward enhancing the current bicycle network and providing service to key land uses. The second category, Implementation Criteria – for which there are 6 inputs for a maximum of 50 points – considers prioritizing projects with fewer implementation obstacles.

I.1 Utility Criteria

Connects to Existing Bikeway Facility (0, 15, or 20 points)

Points were awarded if a project makes a connection to an existing bicycle facility. For projects connecting to an existing Class I facility, the full 20 points were awarded. For projects connecting to existing on-street bicycle facilities, 15 points were awarded.

Connects to Proposed Bikeway Facility (0 or 10 points)

Points were awarded to projects connecting with other proposed bicycle facilities.

Alternative Route Availability (0 or 10 points)

Points were awarded if a project did not have a parallel existing facility running along a similar span for the extent of the project within a distance of several blocks. If a bicycle project was proposed over an existing bicycle facility (for instance, if an existing Class III were proposed to become a Class II), points were not awarded.

Connects to University, Community College or Other Institutions of Higher Learning (0 or 20 points)

Points were awarded if a proposed project was adjacent to a college or university. For-profit institutions of higher learning were not included in this criterion.

Connects to Mass Transit Station (0 or 20 points)

Points were awarded if a proposed project was adjacent to a Metro or MetroLink Station or if a proposed project provided an extension of an existing facility adjacent to a Metro or MetroLink Station.

Connects to K-12 School (0, 10 or 20 points)

Points were awarded if a proposed project was adjacent to a K-12 School. If multiple schools were adjacent to a proposed project, then the full 20 points were awarded. If a single K-12 school was adjacent to a proposed project, then 10 points were awarded.

Within an Area of High Employment Density (0 or 10 points)

Proposed bicycle projects were scored for this criterion by obtaining the total number of jobs which fall along the blocks adjacent to the extent of the proposed project. To normalize, the total number of jobs was divided by the length of the project, to obtain a jobs-per-mile figure.

After this data was collected for all proposed projects, the totals were divided into 5 categories separated by percentile, and the projects in the top fifth category received the points.

Employment data was obtained for 2008, the most recent year available, from the Longitudinal-Employer Household Dynamics (LEHD) website. LEHD is a program of the US Census designed to provide high quality and up-to-date local labor market information to decision-makers. LEHD data can be downloaded to GIS as detailed as the city block level (as centroid points to a city block) for geographies as large as counties from this website: http://lehd.did.census.gov/led/index.php

Connects to Park, Library or Recreation Center (0, 10 or 20 points)

Points were awarded if a proposed project was adjacent to a park, library or recreation center. If more than one of these land uses were adjacent to a proposed project, then the full 20 points were awarded. If only one of these uses was adjacent to a proposed project, then 10 points were awarded.

Collision Analysis (0 or 5 points)

Proposed bicycle projects were scored for this criterion by summing together all of the bicycle crashes which fall along the extent of the proposed project to obtain a total number of crashes along the project extent. To normalize, the total number of crashes was divided by the length of the project, to obtain a crash per mile figure.

After this data was collected for all proposed projects, the totals were divided into five categories separated by Natural Breaks, and the projects within the top quantile of the natural breaks categories received the points.

Within part of County with Higher than Average Zero-Vehicle-Ownership Households (0 or 10 points)

If the proposed project is within a census tract whose percentage of zero-vehicle-ownership households was higher than the county average (12.5%), then points were awarded for this criterion.

Community Support (0 to 10 points)

Points were awarded if a proposed project was recognized by at least one community member as a priority. If more than one comment was received supporting the proposed project, then 10 points were awarded. If only one comment was received supporting the proposed project, then 5 points were awarded. Community support input was collected through the public comment process undertaken for the preparation of this Plan.

I.2 Implementation Criteria

Information was obtained from the engineering feasibility analysis.

Project Cost (0-20 points)

Prioritization points were awarded to proposed projects on the basis of project cost. Points and project cost were assigned an inverse relationship—projects received higher points for being lower cost. Points were awarded as shown in **Table I-1**.

Table I-1: Project Cost Prioritization Criteria

Cost of Proposed Project	Points Received
$100,000 or Less	20
$100,001 - $500,000	15
$500,001 - $1,500,000	10
$1,500,001 - $3,000,000	5
Greater than $3,000,000	0

Project Coordination (0 or 10 points)

Projects were awarded with points for this criterion if jurisdictional coordination was not required for implementation of the project.

Requires Travel Lane Removal (0 or 5 points)

Projects were awarded points if travel lane removal was not required.

Requires Reduction in Width of Landscaped Median (0 or 5 points)

Projects were awarded with points if the median width reduction was not required.

Requires Street Widening of Paved Surface (0 or 5 points)

Projects were awarded with points if widening the roadway was not required.

Requires Parking Removal (0 or 5 points)

Projects were awarded with points if parking removal was not required.

Table I-2: Phase I Bikeway Projects

Segment	From	To	Class	Mileage	Priority Score	Utility Score	Implementation Score	Planning Area
N. Sunset Avenue	Amar Road	Temple Avenue	2	0.4	145	100	45	East San Gabriel Valley
Workman Mill Road	San Jose Creek Bicycle Path	Strong Avenue	2	3.6	145	100	45	Gateway
Woods Avenue	1st Avenue	Olympic Boulevard	BB	1.3	145	105	40	Metro
Cesar Chavez	Mednik Avenue	Roscommon	2/3	2.0	145	95	50	Metro
Crocket Boulevard	76th Place	83rd Street	3	0.6	145	95	50	Metro
Hawthorne Boulevard	104th Street.	111 Street	2	0.5	145	95	50	South Bay
Redondo Bch Boulevard	Prairie Avenue	Crenshaw Boulevard	2	1.1	145	100	45	South Bay
Madre Street / Muscatel	San Pasqual	Longden Drive	3	1.7	145	95	50	West San Gabriel Valley
Del Mar Boulevard	Pasadena City Limit	Rosemead Avenue	3	0.5	145	95	50	West San Gabriel Valley
San Jose Creek	7th Avenue	Murchison Avenue	1	15.6	140	120	20	East San Gabriel Valley
Normandie Avenue	98th Street	El Segundo Boulevard	2	2.1	140	105	35	Metro
E. 68th Street	Central Avenue	Compton Avenue	3	0.5	135	85	50	Metro
Maie Avenue / Miramonte Boulevard	Slauson Avenue	92nd Street	BB	2.5	135	85	50	Metro
Redondo Beach Boulevard	S Figueroa Street	Avalon Boulevard	2	1.0	135	95	40	Metro
Florence Avenue	Central Avenue	Mountain View Avenue	2	2.2	135	100	35	Metro
Vermont Avenue	87th Street	El Segundo Boulevard	2	2.9	135	110	25	Metro
Rosemont Avenue	Rockdell Street	Honolulu Avenue	3	1.9	135	85	50	San Fernando Valley
Budlong Avenue	N County Border	El Segundo Boulevard	BB	3.0	130	80	50	Metro
El Segundo Boulevard	Figueroa	Central	2	1.6	130	90	40	Metro
Compton Avenue	Slauson Avenue	92nd Street	2	2.5	130	90	40	Metro
Broadway	E. 121st Street	E. Alondra Boulevard	2	2.5	130	90	40	Metro
Firestone Boulevard	Central Avenue	Alameda Street	2	1.4	130	95	35	Metro
Imperial Hwy	Van Ness Avenue	Vermont Street	2	1.5	130	105	25	Metro

Table I-2: Phase I Bikeway Projects (continued)

Segment	From	To	Class	Mileage	Priority Score	Utility Score	Implementation Score	Planning Area
La Cresenta Avenue	Orange Avenue	Foothill Boulevard	3	0.6	130	80	50	San Fernando Valley
111th Street	Buford Avenue	Prairie Avenue	3	1.1	130	80	50	South Bay
Allen Avenue	Pinecrest Drive.	New York Drive	3	0.9	130	80	50	West San Gabriel Valley
Pathfinder Road	Paso Real Avenue	Alexdale Lane	2	0.4	125	75	50	East San Gabriel Valley
Vineland Avenue	Nelson Avenue	Proposed bike path	3	1.3	125	75	50	East San Gabriel Valley
Killian Avenue	Paso Real Avenue	Otterbien	3	0.4	125	75	50	East San Gabriel Valley
Paso Real Avenue	Colima Road	Pathfinder Road	3	0.9	125	75	50	East San Gabriel Valley
Denker Avenue	Century Boulevard	Imperial Hwy	3	1.0	125	75	50	Metro
Holmes Avenue	Slauson Avenue	Gage Avenue	2	0.5	125	80	45	Metro
Rosecrans Avenue	Figueroa Street	Central Avenue	2	1.7	125	95	30	Metro
Manhattan Beach Boulevard	Prairie	Crenshaw	2	1.0	125	85	40	South Bay
Eaton Wash Channel	New York Drive	Rio Hondo Bikeway	1,3	8.3	125	110	15	West San Gabriel Valley
30th Street West	Avenue M	Avenue 0-12	2	2.7	120	85	35	Antelope Valley
Los Padres Drive/ Jellick Avenue	Greenbay Drive	Aguiro Street	3	1.5	120	70	50	East San Gabriel Valley
Amar Road	Vineland Avenue	N. Puente Avenue	2	0.4	120	75	45	East San Gabriel Valley
W Gladstone Street	Blender Street	Big Dalton Wash	3	0.8	120	80	40	East San Gabriel Valley
Ford Boulevard	Floral Drive	Olympic Boulevard	3	1.8	120	70	50	Metro
Hazard Avenue	City Terrace Drive	Cesar Chavez Avenue	3	1.1	120	70	50	Metro
6th Street	Ford Boulevard	Harding Avenue	3	1.8	120	70	50	Metro
92nd Street E	Central Avenue	Alameda Street	3	0.8	120	70	50	Metro
Nadeau Street / Broadway	Central Avenue	E County Border	2	2.6	120	80	40	Metro
Altura Avenue	La Crescenta Avenue	Rosemount Avenue	3	0.3	120	70	50	San Fernando Valley

Table I-2: Phase I Bikeway Projects (continued)

Segment	From	To	Class	Mileage	Priority Score	Utility Score	Implementation Score	Planning Area
La Crescenta Avenue	Foothill Boulevard	Montrose Avenue	3	0.6	120	75	45	San Fernando Valley
104th Street	Buford Avenue	Prairie Avenue	3	1.1	120	70	50	South Bay
Marine Avenue	Gerkin Avenue	Crenshaw Boulevard	3	0.9	120	70	50	South Bay
Balan Rd / Annandel Avenue	Cul-de-sac s/o Pathfinder Rd	Brea Canyon Cut Off Rd	3	1.0	115	65	50	East San Gabriel Valley
Batson Avenue	Colima Rd	Dragonera Drive	3	1.1	115	65	50	East San Gabriel Valley
Nogales Street	La Puente Road	Hollingworth Street	2	0.4	115	75	40	East San Gabriel Valley
Pathfinder Road	Fullerton Road	Paso Real Avenue	2	1.6	115	75	40	East San Gabriel Valley
Fullerton Road	Colima Road	Pathfinder Road	2	1.6	115	75	40	East San Gabriel Valley
Whiteside Street	Hebert Avenue	Eastern Avenue	3	0.6	115	65	50	Metro
Seville Avenue	E. Florence Avenue	Broadway	2	0.5	115	75	40	Metro
Pico Canyon Rd	The Old Road	Whispering Oaks	2	1.2	115	65	50	Santa Clarita Valley
Normandie Avenue	225th Street	Sepulveda Boulevard	2	0.6	115	70	45	South Bay
Longden Avenue	8th Avenue	Peck Road	3	1.0	115	65	50	West San Gabriel Valley
Holliston Avenue	S County Border	Altadena Drive	3	1.1	115	65	50	West San Gabriel Valley
Fiji Way	0.7 Miles South of Lincoln Boulevard	Lincoln Boulevard	3,2	0.8	115	65	50	Westside
Fiji Way	Lincoln Boulevard	Admiralty Way	3	0.1	115	65	50	Westside
Elizabeth Lake Rd	10th Street	Dianron Rd	2	0.8	110	60	50	Antelope Valley
170th Street E	Avenue M	Palmdale Boulevard	2	0.9	110	60	50	Antelope Valley
Nogales Street	Arenth Avenue	Pathfinder Rd	2	1.8	110	70	40	East San Gabriel Valley
Pathfinder Road	Alexdale Lane	Canyon Ridge Road	2	1.9	110	70	40	East San Gabriel Valley
Mills Avenue	Telegraph Rd	Lambert Rd	2	1.4	110	75	35	Gateway
Mednik Avenue	Floral Drive	Olympic Boulevard	2	1.9	110	85	25	Metro

Table I-2: Phase I Bikeway Projects (continued)

Segment	From	To	Class	Mileage	Priority Score	Utility Score	Implementation Score	Planning Area
124th Street E	Slater Avenue	Alameda Street	3	1.5	110	60	50	Metro
Whittler Boulevard	Indiana Street	Ford Boulevard	3	1.2	110	60	50	Metro
Success Avenue/Slater Avenue	Imperial Hwy	El Segundo Boulevard	3	0.9	110	70	40	Metro
Avalon Boulevard	121st Street	E Alondra Boulevard	2	2.5	110	70	40	Metro
Briggs Avenue	Shields Street	Foothill Boulevard	3	1.3	110	60	50	San Fernando Valley
Las Virgenes Rd / Malibu Canyon Rd	Mureau Rd	Pacific Coast Hwy	3	7.9	110	95	15	Santa Monica Mountains
Lennox Boulevard.	Felton Avenue	Osage Avenue	3	1.1	110	60	50	South Bay
Daines Drive/ Lynd Avenue	Santa Anita Avenue	Mayflower Avenue	3	1.3	110	60	50	West San Gabriel Valley
Lake Avenue	Loma Alta Drive	S County Border	3	1.9	110	60	50	West San Gabriel Valley
Sierra Hwy	915' s/o Avenue s	Pearlblossom Hwy	2	2.7	105	70	35	Antelope Valley
Mauna Loa Avenue	Citrus Avenue	E County Border	3	0.6	105	65	40	East San Gabriel Valley
Colima Rd	Mulberry Drive	Poulter Drive	3	1.2	105	55	50	Gateway
Whitter Boulevard	Ford Boulevard	Via Clemente Street	3	2.4	105	60	45	Metro
Imperial Hwy	Central Avenue	Wilmington	2	0.9	105	70	35	Metro
Alondra Boulevard	Figueroa Street	Avalon Boulevard	2	1.0	105	85	20	Metro
Mureau Rd	Las Virgenes Road	Calabasas Rd	2	1.8	105	55	50	Santa Monica Mountains
S Freeman Avenue	W 104th Street	W 111th Street	3	0.5	105	55	50	South Bay
S. Lemoli Avenue	Marine Avenue	Manhattan Beach Boulevard	3	0.5	105	55	50	South Bay
Doty Avenue	Marine Avenue	Manhattan Beach Boulevard	3	0.5	105	55	50	South Bay

Table I-2: Phase I Bikeway Projects (continued)

Segment	From	To	Class	Mileage	Priority Score	Utility Score	Implementation Score	Planning Area
Aviation Boulevard	Imperial Hwy	154th Street	2	0.7	105	70	35	South Bay
Huntington Drive	San Gabriel Boulevard	Michillinda Avenue	2	1.4	105	60	45	West San Gabriel Valley
Sierra Madre Villa Avenue	I-210	Green Street	3	0.2	105	65	40	West San Gabriel Valley
Avenue L-8	65th Street West	60th Street West	2	0.5	100	60	40	Antelope Valley
Willow Avenue	Amar Rd	Francisquito Avenue	3	0.8	100	50	50	East San Gabriel Valley
Las Lomitas Drive / Newton Street	Vallecito Drive	Hacienda Boulevard	3	1.1	100	50	50	East San Gabriel Valley
Los Robles Avenue	7th Avenue	Kwis Avenue	3	1.3	100	50	50	East San Gabriel Valley
Fairway Drive / Brea Canyon Cut Off Rd	Walnut Rd	Bickford Drive	2	1.0	100	55	45	East San Gabriel Valley
Glendora Avenue	Arrow Hwy	Cienega Avenue	2	0.3	100	60	40	East San Gabriel Valley
Ceres Avenue	Broadway	Telegraph Rd	3	0.7	100	50	50	Gateway
Mulberry Drive	Greenbay Drive	Colima Road	2	2.2	100	50	50	Gateway
Atlantic Avenue	Rosecrans Avenue	Alondra Boulevard	3	1.0	100	60	40	Gateway
E. Victoria Street	S. Santa Fe Avenue	Susana Road	2	0.5	100	60	40	Gateway
Compton Boulevard	Harris Avenue	LA River Bikeway	2	0.8	100	75	25	Gateway
Leffingwell Rd	Imperial Hwy	Scott Avenue	2	3.3	100	75	25	Gateway
Rowan Avenue	Floral	Olympic Boulevard	BB	1.8	100	50	50	Metro
120th Street	Central Avenue	Wilmington	2	0.8	100	60	40	Metro
Willowbrook Avenue	Imperial Hwy	119th street	1	0.3	90	50	40	Metro
The Old Rd	Sloan Canyon Road	Weldon Cyn Rd	2	13.4	90	65	25	Santa Clarita Valley
Emerald Necklace Gateway	San Gabriel River Path	Park Entrance parking lot	1	1.1	90	60	30	West San Gabriel Valley
Duarte Rd	San Gabriel Boulevard	Sultana Avenue	3	1.0	90	40	50	West San Gabriel Valley

Table I-2: Phase I Bikeway Projects (continued)

Segment	From	To	Class	Mileage	Priority Score	Utility Score	Implementation Score	Planning Area
San Gabriel Boulevard/ Hill Drive	Graves Avenue	Lincoln Avenue	2	2.6	85	70	15	West San Gabriel Valley
San Jose Creek	Workman Mill Rd	San Gabriel River Bikeway	1	0.7	80	65	15	East San Gabriel Valley
Bouquet Canyon Road	Hob Ct	Elizabeth Lake Rd	3	19.6	75	50	25	Santa Clarita Valley
Rosemead Boulevard	Colorado	Callita Street	2	1.9	45	20	25	West San Gabriel Valley

Table I-3: Phase II Bikeway Projects

Segment	From	To	Class	Mileage	Priority Score	Utility Score	Implementation Score	Planning Area
LA River Path	Lankershim Boulevard	Barham Boulevard	1	1.0	145	120	25	San Fernando Valley
Compton Creek Bikeway	Del Amo Boulevard	LA River Bikeway	1	0.5	120	90	30	Gateway
Santa Anita Wash	Live Oak Avenue	Longden Avenue	1	0.3	110	70	40	West San Gabriel Valley
Elizabeth Lake Road	Lake Hughes Road	Munz Ranch Road	2	3.4	110	75	35	Antelope Valley
Dominguez Channel	Redondo Beach Boulevard	PCH	1	2.7	105	80	25	South Bay
Sierra Hwy	.3 mi s/o Ryan Ln	Pearblossom Highway	3	24.3	105	80	25	Santa Clarita Valley
Beverly Boulevard	Pomona Boulevard	Gerhart Avenue	3	0.8	100	50	50	Metro
Hubbard Street	Ford Boulevard	Mobile Street	BB	2.2	100	50	50	Metro
Gerhart Avenue	Via San Delarro	Whittier Boulevard	2,3	0.7	100	50	50	Metro
120th Street	Wilmington	Mona Av	3	0.6	100	60	40	Metro

Table I-3: Phase II Bikeway Projects (continued)

Segment	From	To	Class	Mileage	Priority Score	Utility Score	Implementation Score	Planning Area
Eastern Avenue	0.1 miles N of Whiteside St	Olympic Boulevard	2	3.1	100	65	35	Metro
Olympic Boulevard	Indiana Street	Concurse Avenue	2	3.3	100	65	35	Metro
Wilmington Avenue	Imperial Hwy	El Segundo Boulevard	2	0.6	100	65	35	Metro
Western	108th	El Segundo Boulevard	2	1.5	100	70	30	Metro
Stevenson Rch Rd	Poe Parkway	Pico Canyon Rd	2	0.2	100	50	50	Santa Clarita Valley
The Old Road	Weldon Canyon Road	Sierra Hwy	2	1.2	100	60	40	Santa Clarita Valley
Buford Avenue	104th Street	111th Street	3	0.5	100	50	50	South Bay
Isis Avenue	116th Street	El Segundo Boulevard	3	0.9	100	50	50	South Bay
223rd Street	Normandie Avenue	Vermont Avenue	2	0.5	100	55	45	South Bay
Colorado Boulevard	Kinneola Avenue	Michillinda Avenue	2	1.1	100	65	35	West San Gabriel Valley
Palawan Way	Washington Boulevard	(cul-de-sac)	3	0.2	100	50	50	Westside
Bali Way	0.1 miles west of Marvin Braude Bicycle Path	Marvin Braude Bicycle Path	2	0.1	100	55	45	Westside
Mindano Way	0.2 miles west of Marvin Braude Bicycle Path	Marvin Braude Bicycle Path	2	0.2	100	55	45	Westside
50th Street W	Avenue M-2	Avenue N	3	0.9	95	45	50	Antelope Valley
55th Street W	Avenue L	Avenue M-8	2	1.5	95	45	50	Antelope Valley
Kwis Avenue	Gale Avenue	Newton Street	3	0.6	95	45	50	East San Gabriel Valley
Ranlett Avenue/ Echelon Avenue/ Walnut Avenue	Francisquito Avenue	Temple Avenue	3	1.6	95	45	50	East San Gabriel Valley
La Monde Street	Hacienda Boulevard	Stimson Avenue	2	0.2	95	45	50	East San Gabriel Valley
Temple	Azusa Av	Woodgate Drive	2	0.4	95	45	50	East San Gabriel Valley
Azusa Avenue	Colima Road	Glenfold Drive	2'3	0.7	95	45	50	East San Gabriel Valley
Gale Avenue	7th Avenue	Stimson Avenue	2	2.0	95	60	35	East San Gabriel Valley

Table I-3: Phase II Bikeway Projects (continued)

Segment	From	To	Class	Mileage	Priority Score	Utility Score	Implementation Score	Planning Area
Rivera Rd	Cul-de-sac w/o Slauson Avenue	Norwalk Boulevard	3	0.7	95	45	50	Gateway
1st Avenue	Lambert Rd	Imperial Hwy	2	0.8	95	55	40	Gateway
Rosecrans Avenue	Butler Avenue	560' e/o Gibson Avenue	2	0.5	95	60	35	Gateway
S. Susana Road	E. Artesia Boulevard	Dl Amo Boulevard	2	2.0	95	60	35	Gateway
Medford/Hebert	Indiana Street	City Terrace	3,2	0.6	95	45	50	Metro
1st Street	Indiana Street	Eastern Avenue	2	1.8	95	60	35	Metro
Ramsdell Avenue	Markridge Rd	Montrose Avenue	3	1.6	95	45	50	San Fernando Valley
San Francisquito Creek Trail	Copper Hill	San Francisquito Canyon Road	1	0.6	95	55	40	Santa Clarita Valley
Woodbury Avenue	Santa Rosa Avenue	Lake Avenue	3	0.5	95	45	50	West San Gabriel Valley
Foss Avenue / Center Street	Longden Avenue	Daines Drive	3	0.6	95	45	50	West San Gabriel Valley
California Avenue	Hurstview Avenue	Novice Ln	3	0.9	95	45	50	West San Gabriel Valley
Pepper Drive	Washington Boulevard	Glen Canyon Rd	3	0.9	95	45	50	West San Gabriel Valley
Altadena Drive	Allen Avenue	Canyon Close Road	3	1.0	95	45	50	West San Gabriel Valley
Ardendale Avenue/ Naomi Avenue	Muscatel Avenue	Golden West Avenue	3	1.4	95	45	50	West San Gabriel Valley
Glenrose Avenue	Loma Alta Drive	Woodbury Rd	3	1.5	95	45	50	West San Gabriel Valley
New York Drive	Lake Avenue	Creekside Court	3	2.2	95	45	50	West San Gabriel Valley
Altadena Drive	245' w/o Ridgeview	Allen Avenue	3	3.1	95	45	50	West San Gabriel Valley
Lincoln Avenue	Altadena Drive	Woodbury	2	1.1	95	50	45	West San Gabriel Valley
Ventura Street/ N. Fair Oaks	Windsor Avenue	Allen Avenue	BB	3.6	95	55	40	West San Gabriel Valley
Peck Rd	N Community Boundary	Working Mill Rd	2	0.9	95	80	15	West San Gabriel Valley

Table I-3: Phase II Bikeway Projects (continued)

Segment	From	To	Class	Mileage	Priority Score	Utility Score	Implementation Score	Planning Area
Ridge Route Road/Pine Canyon Road/Elizabeth Lake Road	Lancaster Road	0.3 miles east of Cherry Tree Lane	3	30.8	95	70	25	Antelope Valley
40th Street East	Avenue H	Lancaster Boulevard	3	1.5	90	55	35	Antelope Valley
40th Street West	Avenue K-4	Avenue M	2	1.7	90	60	30	Antelope Valley
Avenue O	90th Street E	180th Street E	3,2	6.5	90	60	30	Antelope Valley
Gemini Street	Azusa Avenue	Cul-de-sac e/o Shipman Avenue	3	0.6	90	40	50	East San Gabriel Valley
Aguiro Street	Fullerton Rd	Sierra Leone Rd	3	0.7	90	40	50	East San Gabriel Valley
Amar Road	Willow Avenue	N. Unruh Avenue	2	1.5	90	50	40	East San Gabriel Valley
Broadway	Mills Avenue	Colima Rd	3	0.9	90	40	50	Gateway
Santa Fe Avenue	Artesia Blvd.	0.1 miles s/o Reyes Avenue	2	1.0	90	40	50	Gateway
Colima Rd	Poulter Drive	Leffingwell Rd	2	0.3	90	45	45	Gateway
Saragosa/Pioneer	Norwalk Boulevard	Los Nietos Rd	3	1.1	90	50	40	Gateway
Angeles Forest Hwy	Aliso Canyon Rd.	Sierra Hwy	3	7.1	90	60	30	Antelope Valley
Margaret Avenue	Hubbard Street	Sadler Avenue	3	0.8	90	40	50	Metro
Willowbrook Avenue	El Segundo Boulevard	S County Border	3	1.2	90	40	50	Metro
S La Verne Avenue / Gratian Street / Ferris Avenue	3rd Street	Telegraph Rd	3	1.5	90	40	50	Metro
Floral Drive	Indiana Street	Mednick Avenue	3	1.8	90	40	50	Metro
Lohengrin Street / 110th Street	Imperial Hwy	Budlong Avenue	BB	1.3	90	40	50	Metro
City Terrace Drive	Rowan Avenue	Eastern Avenue	3,2	0.9	90	45	45	Metro
Hooper Avenue	Slauson Avenue	Florence Avenue	2	2.7	90	60	30	Metro
Slauson Av	Central Av	Alameda Street	2	1.1	90	75	15	Metro

Table I-3: Phase II Bikeway Projects (continued)

Segment	From	To	Class	Mileage	Priority Score	Utility Score	Implementation Score	Planning Area
Hillcrest Pkwy	Sloan Cyn Rd	The Old Rd	2	2.0	90	40	50	Santa Clarita Valley
Magic Mountain Pkwy	0.4 miles w/o The Old Rd	The Old Rd	2	0.5	90	50	40	Santa Clarita Valley
Compton Creek Bikeway	Greenleaf Boulevard	91 Fwy	1	0.8	90	60	30	Gateway
Lake Vista Drive	Mulholland Hwy	Mulholland Hwy	3	1.4	90	40	50	Santa Monica Mountains
220th Street	Normandie Av	Vermont Street	3	0.5	90	40	50	South Bay
Del Amo Boulevard	Normandie Avenue	Interstate 110	2	0.8	90	40	50	South Bay
Imperial Hwy	La Cienega Boulevard	Inglewood Av	2	0.5	90	50	40	South Bay
Crenshaw Blvd	Palos Verdes area	Indian Peak	2	1.2	90	50	40	South Bay
Windsor Avenue	Ventura Street	Figueroa Drive	3	0.5	90	40	50	West San Gabriel Valley
Loma Alta Drive	Lincoln Avenue	Lake Avenue	3	1.6	90	40	50	West San Gabriel Valley
Glenview Terrace / Glen Canyon Rd/Roosevelt Avenue	Allen Avenue	Washington Boulevard	BB	1.6	90	40	50	West San Gabriel Valley
Valley Ridge/54th	Stocker Street	Hillcrest Drive	3	1.4	90	40	50	Westside
Arroyo Seco Channel	San Fernando Road	Avenue 26th	1	0.3	85	55	30	Metro
Avenue N-8/Bolz Ranch Rd	Rancho Vista	30th Street	3	1.5	85	35	50	Antelope Valley
45th Street W	Avenue M-8	Avenue N-8	2	1.0	85	35	50	Antelope Valley
Avenue P	160th Street	170th Street	3	1.6	85	50	35	Antelope Valley
W Avenue O	30th Street W	10th Street W (Sierra Hwy)	2	2.0	85	50	35	Antelope Valley
Big Dalton Wash	Irwindale Avenue	Barranca Avenue	1,3	3.8	85	60	25	East San Gabriel Valley
Coyote Creek	Leffingwell Road	Foster Rd	1	0.8	85	60	25	Gateway
Fiji Way Bike Path	Fiji Way	Admiralty Way	1	0.7	85	60	25	Westside
Three Palms/Farmdale	Kwis Avenue	Stimson Avenue	3	1.0	85	35	50	East San Gabriel Valley
Cam Del Sur	Vallecito Drive	Colima Rd	2	0.9	85	35	50	East San Gabriel Valley
Colima Rd	Casino Drive	Allenton Avenue	2	1.2	85	35	50	East San Gabriel Valley

Table I-3: Phase II Bikeway Projects (continued)

Segment	From	To	Class	Mileage	Priority Score	Utility Score	Implementation Score	Planning Area
Halliburton Rd	Hacienda Boulevard	Stimson Avenue	2	0.2	85	40	45	East San Gabriel Valley
Fairgrove Avenue, et al	Vineland Av	Lark Ellen Avenue	BB	3.0	85	45	40	East San Gabriel Valley
Palo Verde Av	Carson Street	Conant Street	3	0.4	85	45	40	Gateway
Central Avenue	121st Street	127th Street	2	0.5	85	35	50	Metro
Mulholland Hwy	PCH	Decker	3	7.5	85	55	30	Santa Monica Mountains
Prairie Avenue	Redondo Beach Boulevard	Street. Marine Avenue	2	1.2	85	50	35	South Bay
Lomita Boulevard	Frampton Avenue	Vermont Avenue	2	0.5	85	55	30	South Bay
El Segundo Boulevard	Isis Av	Inglewood Av	2	0.8	85	60	25	South Bay
Windsor Avenue	Figueroa Drive	S County Border	3,2	0.4	85	35	50	West San Gabriel Valley
San Pasqual Street	Madre Street	Rosemead Avenue	2	0.5	85	35	50	West San Gabriel Valley
Tyler Ave/W. Hondo Pkwy	E. Live Oak Avenue	Temple City limits	3	1.0	85	35	50	West San Gabriel Valley
Altadena Drive	Canyon Close Road	Washington Boulevard	2	1.0	85	50	35	West San Gabriel Valley
Via Dolce	Washington Boulevard	Via Marina	3	0.4	85	45	40	Westside
110th Street	Johnson Rd	Avenue G	3	4.5	80	30	50	Antelope Valley
10th Street	Elizabeth Lake Rd	Auto Center Drive	2	0.3	80	30	50	Antelope Valley
105th	Palmdale Boulevard	Avenue S	2	1.5	80	30	50	Antelope Valley
Lancaster Boulevard	40th Street	55th Street	2	1.5	80	30	50	Antelope Valley
Barrel Springs Rd	Tierra Subida Avenue	Sierra Hwy	2	2.0	80	30	50	Antelope Valley
Tierra Subida Avenue	Avenue S	Barrel Springs Rd	2	0.8	80	40	40	Antelope Valley
Avenue U	87th Street	96th Street	2	1.0	80	40	40	Antelope Valley
Avenue M	30th Street West	State Route 14	2	1.7	80	45	35	Antelope Valley
20th Street West	Avenue O-12	West Avenue M	2	2.8	80	45	35	Antelope Valley
Avenue H	Division Street (30th)	40th Street E	2	4.1	80	50	30	Antelope Valley
Rockvale Avenue	N County Border (cul-de-sac)	Utility Corridor 1	3	0.8	80	30	50	East San Gabriel Valley

Table I-3: Phase II Bikeway Projects (continued)

Segment	From	To	Class	Mileage	Priority Score	Utility Score	Implementation Score	Planning Area
Los Altos Drive	Vallecito Drive	Hacienda Boulevard	3	0.9	80	30	50	East San Gabriel Valley
Colima Rd	450' s/o Calbourne Drive	Fairway Drive/Brea Cyn Cutoff Rd	2	0.7	80	35	45	East San Gabriel Valley
Irwindale Avenue	Cypress Street	Badillo Street	2	0.6	80	45	35	East San Gabriel Valley
Puente Avenue	Nelson Avenue	Barrydale Street	2	3.2	80	65	15	East San Gabriel Valley
Leland Avenue	Mills Avenue	Leffingwell Rd	3	1.2	80	30	50	Gateway
Carmenita Rd	Mulberry Drive	Leffingwell Rd	3	2.5	80	40	40	Gateway
Lambert Rd	Mills Avenue	Scott Avenue	2	1.3	80	50	30	Gateway
Hendricks Avenue	N County Border	Ferguson Drive	3	0.8	80	30	50	Metro
Sadler Avenue	Pomona Boulevard	Whittier Boulevard	3	1.0	80	30	50	Metro
Downey Rd	3rd Street	Noakes Street	3	1.5	80	30	50	Metro
120th Street	Western Avenue	Vermont Avenue	2	1.0	80	40	40	Metro
El Segundo Boulevard	Wilmington Avenue	Alameda Street	2	0.9	80	55	25	Metro
Orange Avenue / Whittier Avenue	Pennsylvania Avenue	Briggs Avenue	3	1.2	80	30	50	San Fernando Valley
Castaic Rd	Lake Hughes Rd	Parker Rd	3	0.5	80	30	50	Santa Clarita Valley
Sloan Canyon Rd	Lake Hughes Rd	Quail Valley Rd	2	0.8	80	30	50	Santa Clarita Valley
Jakes Way	Canyon Park Boulevard	Eleanor Cir	2	1.0	80	30	50	Santa Clarita Valley
Escondido Canyon Road	Agua Dulce Canyon	Red Rover Mine	3	6.9	80	50	30	Santa Clarita Valley
Corral Canyon Road	Mesa Peak Road	Pacific Coast Hwy	3	7.7	80	55	25	Santa Monica Mountains
Latigo Canyon Road	Mulholland Hwy	Pacific Coast Hwy	3	10.6	80	55	25	Santa Monica Mountains
Tuna Canyon Road	Fernwood Pacific Drive	Pacific Coast Hwy	3	5.4	80	60	20	Santa Monica Mountains
Old Topanga Cyn Rd	Valsez Road	Pacific Coast Hwy	3	8.3	80	65	15	Santa Monica Mountains
120th Street	Aviation Boulevard	Inglewood Av	3	0.7	80	40	40	South Bay

Table I-3: Phase II Bikeway Projects (continued)

Segment	From	To	Class	Mileage	Priority Score	Utility Score	Implementation Score	Planning Area
Vermont Avenue	190th Street	Lomita Boulevard	2	3.7	80	40	40	South Bay
Figueroa Drive	Windsor Avenue	Fair Oaks Avenue	3	0.8	80	30	50	West San Gabriel Valley
Las Flores	Glenrose Avenue	Lake Avenue	3	1.0	80	30	50	West San Gabriel Valley
Marengo Avenue	Loma Alta Drive	S County Border	3,2	1.8	80	30	50	West San Gabriel Valley
Via Marina	Marquesas Way	End/Jetty	2	0.9	80	30	50	Westside
Overhill Drive	N Community Boundary	62nd Street	2,3	0.9	80	40	40	Westside
Sepulveda Channel	Washington Boulevard	Ballona Creek	1	0.8	80	50	30	Westside
Avenue T	80th Street	126th Street	2	4.7	75	30	45	Antelope Valley
30th Street East	E. Avenue Q	E, Avenue P	3	1.0	75	35	40	Antelope Valley
Avenue K	52nd Street West	40th Street West	2	1.2	75	35	40	Antelope Valley
W Avenue S	1700' e/o The Groves	Tierra Subida Avenue	2	1.3	75	40	35	Antelope Valley
Crown Valley Road	Sierra Hwy	Soledad Canyon Rd.	3	1.9	75	40	35	Antelope Valley
Avenue R	90th Street	110th Street	2	2.0	75	40	35	Antelope Valley
Division Street	Avenue H	Avenue E	2	3.0	75	40	35	Antelope Valley
Sierra Highway	Avenue P-8	E Avenue Q	2	0.5	75	45	30	Antelope Valley
90th Street West	Avenue G	Avenue G-8	3	0.5	75	45	30	Antelope Valley
W Avenue L-8	60th Street	50th Street	2	0.7	75	45	30	Antelope Valley
Covina Hills Rd	San Joaquin Rd	Via Verde	3	2.0	75	35	40	East San Gabriel Valley
Colima Rd	Larkvane Rd	Brea Cyn Cutoff	2	2.3	75	50	25	East San Gabriel Valley
Laurel Park Road	E. Victoria Street	S. Rancho Way	2	0.6	75	30	45	Gateway
Los Angeles River Proposed Bicycle Path	Washington Boulevard	Atlantic Boulevard	1,3	3.4	75	50	25	Gateway
Telegraph Rd	Carmenita Rd	Huchins Drive	2	2.4	75	50	25	Gateway
Plum Canyon Road	Via Joice Drive	Ashbro Drive	2	1.7	75	35	40	Santa Clarita Valley

Table I-3: Phase II Bikeway Projects (continued)

Segment	From	To	Class	Mileage	Priority Score	Utility Score	Implementation Score	Planning Area
Soledad Canyon Rd	Mammoth Lane	Sierra Highway	3	17.5	75	60	15	Santa Clarita Valley
Decker Canyon Rd	Mulholland Hwy	Pacific Coast Hwy	3	5.9	75	55	20	Santa Monica Mountains
Inglewood Av	Century Boulevard	Imperial Hwy	3	1.0	75	35	40	South Bay
La Cienega Boulevard	Imperial Hwy	El Segundo Boulevard	2	1.0	75	60	15	South Bay
Dominguez Creek	Main Street	Pacific Coast Hwy	1	6.3	75	60	15	South Bay
S. 10th Avenue	Arcadia City Limits	E. Live Oak Avenue	3	0.6	75	25	50	West San Gabriel Valley
Casitas Avenue	Ventura Street	W. Altadena Drive	3	0.5	75	30	45	West San Gabriel Valley
Duarte Rd	Sultana Avenue	Oak Avenue	2	0.4	75	35	40	West San Gabriel Valley
Woodbury Avenue	Windsor Avenue	Santa Rosa Avenue	2	1.7	75	45	30	West San Gabriel Valley
Marvin Braude	Washington Boulevard	0.1 Miles South of Yawl Street	1	1.1	75	40	35	Westside
Mackennas Gold Avenue	connect to 170th Street	Avenue P	3	0.9	70	20	50	Antelope Valley
116th	Avenue S	Avenue T	2	1.0	70	20	50	Antelope Valley
Avenue M-8	60th Street	45th Street	2	1.5	70	20	50	Antelope Valley
45th Street West	Avenue K-4	Avenue L	2	1.0	70	35	35	Antelope Valley
San Francisquito Rd	Johnson Rd	Portal	3	3.5	70	35	35	Antelope Valley
90th Street West	Avenue H-8	Avenue K	3	2.5	70	45	25	Antelope Valley
Angelcrest Drive	Newton Drive	La Subuda Drive	3	0.4	70	20	50	East San Gabriel Valley
La Subida Drive	Vallecito Drive	Hacienda Boulevard	3	0.9	70	20	50	East San Gabriel Valley
Vallecito Drive	Cam del Sur	Los Robles Av	3	1.6	70	20	50	East San Gabriel Valley
Fairway Drive / Brea Canyon Cut Off Rd	Bickford Drive	Pathfinder Rd	3	0.5	70	35	35	East San Gabriel Valley
Arrow Hwy	Glendora Av	Valley Center Boulevard	2	1.5	70	45	25	East San Gabriel Valley
Puente Creek	San Jose Creek	Azusa Avenue	1,3	4.3	70	50	20	East San Gabriel Valley
Valley View Avenue	Broadway	Imperial Hwy	3,2	1.4	70	20	50	Gateway

Table I-3: Phase II Bikeway Projects (continued)

Segment	From	To	Class	Mileage	Priority Score	Utility Score	Implementation Score	Planning Area
S. Rancho Way	Laurel Park Road	Del Amo Boulevard	2	0.7	70	30	40	Gateway
Verdugo Flood Control Channel	New York Avenue	Shirly Jean Street	1	1.2	70	45	25	San Fernando Valley
Parker Rd/Ridge Route Rd	Sloan Cyn Rd	Lake Hughes Rd	2	1.2	70	20	50	Santa Clarita Valley
Lost Canyon Road	Via Princessa Road	Canyon Park Boulevard	2	0.5	70	25	45	Santa Clarita Valley
Agua Dulce Cyn Rd	Sierra Hwy	Soledad Canyon Rd.	3	6.5	70	40	30	Santa Clarita Valley
Vista Street	Huntington Drive	Longden Drive	3	1.1	70	20	50	West San Gabriel Valley
San Pasqual Street	Greenwood Avenue	San Gabriel Boulevard	3	0.9	70	20	50	West San Gabriel Valley
Mayflower Avenue	Longden Avenue	Live Oak Avenue	2	0.3	70	20	50	West San Gabriel Valley
S. Golden West Avenue	W Naomi Avenue	E. Lemon Avenue	3	0.4	70	30	40	West San Gabriel Valley
Cam Real/ Shrode Avenue	W County Border	Mountain Avenue	3,2	1.0	70	30	40	West San Gabriel Valley
Washington Boulevard	Bellford Drive	Altadena Drive	2	0.7	70	35	35	West San Gabriel Valley
60th Street/62nd Street	Fairfax Av	Buckler Av	3	0.7	70	30	40	Westside
Slauson	Buckingham Parkway	Angeles Vista Rd	3	1.6	70	30	40	Westside
106th Street	Sun Village	Pearblossom Hwy	2	2.5	65	20	45	Antelope Valley
Sierra Hwy	Avenue G	Avenue A	2	6.1	65	20	45	Antelope Valley
Escondido Canyon Rd.	SR-14	Crown Valley Rd	3	2.3	65	30	35	Antelope Valley
96th Street E	Avenue R8	Avenue U	2	2.5	65	30	35	Antelope Valley
Pearblossom Hwy	62nd Street E	87th Street E	2	3.0	65	30	35	Antelope Valley
Avenue S	0.5 miles west of 90th Street E	116th Street E	2	3.2	65	30	35	Antelope Valley
Co Hwy N2 / Johnson Rd	Munz Ranch Rd	110th Street	3	3.4	65	30	35	Antelope Valley
E Avenue P	15th Street	50th	2	3.6	65	30	35	Antelope Valley
Avenue K	85th Street West	90th Street West	3	0.5	65	35	30	Antelope Valley
Avenue H	80th Street West	70th Street West	3	1.0	65	35	30	Antelope Valley

Table I-3: Phase II Bikeway Projects (continued)

Segment	From	To	Class	Mileage	Priority Score	Utility Score	Implementation Score	Planning Area
Avenue G	25th Street West	Division Street	2	2.3	65	35	30	Antelope Valley
Godde Hill	Avenue M-8	Elizabeth Lake Rd	3	1.4	65	40	25	Antelope Valley
7th Avenue	Palm Avenue	Beech Hill Drive	3	0.8	65	20	45	East San Gabriel Valley
7th Avenue	Clark Avenue	Palm Avenue	2	0.5	65	20	45	East San Gabriel Valley
Hacienda Boulevard	N Community Boundary	Colima Rd	2	2.4	65	40	25	East San Gabriel Valley
Amar Rd	Allieron Avenue	Azusa Av	2	1.6	65	50	15	East San Gabriel Valley
La Mirada Boulevard	Colima Rd	Leffingwell Rd	2	1.1	65	35	30	Gateway
Oak Springs Cyn Rd	Oak Springs/ Soledada Cyn	Los Cyn Rd	1	0.2	65	35	30	Santa Clarita Valley
Via Princessa Rd	Sierra Hwy	Lost Canyon Rd	2	0.8	65	40	25	Santa Clarita Valley

Table I-4: Phase III Bikeway Projects

Segment	From	To	Class	Mileage	Priority Score	Utility Score	Implementation Score	Planning Area
Thompson Creek	Lockhaven Way	White Avenue	1,3	3.7	100	85	15	East San Gabriel Valley
Santa Clara River	McBean Parkway	Ventura County Line	1	10.2	70	55	15	Santa Clarita Valley
Cornell Road	Kanan Road	Mulholland Hwy	3	2.3	65	40	25	Santa Monica Mountains
223rd Street	Vermont Avenue	Harbor FWY	2	0.2	65	25	40	South Bay
Fairfax Avenue	W 57th Street	W 62nd Street	3	0.4	65	20	45	Westside
Centinela Avenue	Green Valley Cir	La Tijera Boulevard	2	0.9	65	20	45	Westside

Table I-4: Phase III Bikeway Projects (continued)

Segment	From	To	Class	Mileage	Priority Score	Utility Score	Implementation Score	Planning Area
Angeles Vista Road	Slauson Avenue	Vernon Avenue	2	1.7	65	30	35	Westside
40th Street	Barrel Springs Road	N County Border	3	0.3	60	20	40	Antelope Valley
50th Street E	M Avenue	Q Avenue	3	4.0	60	30	30	Antelope Valley
Barrel Springs Road	630' w/o 47th Street	Cheesboro Road	3	5.0	60	30	30	Antelope Valley
Aliso Canyon Road	Soledad Cyn	Angeles Forest Hwy	3	7.4	60	30	30	Antelope Valley
90th Street/87th	Avenue M	Avenue Q	3,2	8.2	60	30	30	Antelope Valley
Palmdale Boulevard	60th Street E	170th Street E	2,3	10.7	60	30	30	Antelope Valley
San Francisquito Canyon Road	Calle Siemerino	Santa Clara River Trail	3	14.8	60	35	25	Antelope Valley
Avenue G W	110th Street	70th Street	2	4.1	60	40	20	Antelope Valley
Countrywood Avenue	Wedgeworth Drive	Colima Road	2	0.5	60	10	50	East San Gabriel Valley
Valley Center Avenue	Arrow Hwy	Badillo Street	2	0.6	60	25	35	East San Gabriel Valley
Glendora Mt. Road.	Big Dalton Canyon Road	Park area	3	4.4	60	30	30	East San Gabriel Valley
Milan Creek	Marquardt Avenue	Telegraph avenue	1	1.8	60	40	20	Gateway
Canyon Pk Boulevard	Sierra Highway	Lost Canyon Road	2	0.8	60	20	40	Santa Clarita Valley
Henry Mayo Drive	Commerce Center Drive	The Old Road	2	0.8	60	20	40	Santa Clarita Valley
Vasquez Canyon Road	Sierra Hwy	Bouquet Cyn Road	2	3.6	60	25	35	Santa Clarita Valley
Castaic Creek	Lake Hughes Road	Henry Mayo Drive	1	5.5	60	35	25	Santa Clarita Valley
Kanan Road / Kanan Dume Road	Agoura Road	Pacific Coast Hwy	3	12.1	60	45	15	Santa Monica Mountains
W. 7th Street	S Weymounth Avenue	S. Cabrillo Avenue	BB	0.9	60	20	40	South Bay
Willard Avenue	Longden Avenue	S County Border	3	0.7	60	20	40	West San Gabriel Valley
California Boulevard	Rosemead Boulevard	Michillinda Avenue	2	1.0	60	20	40	West San Gabriel Valley

Table I-4: Phase III Bikeway Projects (continued)

Segment	From	To	Class	Mileage	Priority Score	Utility Score	Implementation Score	Planning Area
Avenue N	50th Street	14 FWY	2	3.6	55	20	35	Antelope Valley
Avenue J	110th Street West	70th Street West	3	4.0	55	35	20	Antelope Valley
70th Street West	Avenue F	Avenue J	3	4.5	55	35	20	Antelope Valley
Lancaster/Fairmont Neenach/120th/Avenue I	160th Street W	70th Street W	3	9.8	55	40	15	Antelope Valley
Davenport Road	Sierra Hwy	Agua Dulce Canyon Road	2	3.7	55	20	35	Santa Clarita Valley
Lake Hughes Road	Sloan Cyn Road	Northern Limit	3	23.0	55	30	25	Santa Clarita Valley
Fernwood Pacific Drive	Topanga Canyon Boulevard	Tuna Canyon Road	3	1.7	55	30	25	Santa Monica Mountains
Longden Avenue	San Gabriel Boulevard	Rosemead Boulevard	3	1.0	55	20	35	West San Gabriel Valley
Temple City Boulevard	Duarte Road	Lemon Avenue	2	0.5	55	20	35	West San Gabriel Valley
Munz Ranch Road	Fairmont Neenach Road	Co Hwy N2	3	4.4	50	20	30	Antelope Valley
Ocean View	Foothill Boulevard	Honolulu Avenue	2	0.9	50	20	30	San Fernando Valley
Sand Canyon Road	Sierra Hwy	Vista Point Lane	3	1.0	50	20	30	Santa Clarita Valley
Hasley Cyn Road	Sloan Cyn Road	Henry Mayo Drive	3	4.0	50	20	30	Santa Clarita Valley
Stocker Street	Fairfax Avenue	Santa Rosa Avenue	2	2.0	50	30	20	Westside
Placerita Canyon Road	Santa Clarita Planning Area	Sand Canyon Road	3	5.0	45	25	20	Santa Clarita Valley
Decker Canyon Road	Lechusa Road	Lyndon Drive	3	22.1	45	30	15	Santa Monica Mountains
Fairfax Avenue	La Cienega Boulevard	W 57th Street	2	0.6	45	10	35	Westside

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Appendix J. Removed Facilities

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The following segments of the proposed network were removed from the final plan based upon public comments on the April 2011 Draft Plan. They are documented in **Table J-1** below for informational purposes only.

Table J-1: Removed Facility Inventory

Planning Area	Project	From	To	Class	Source of Recommendation	Reason for Exclusion
South Bay	Inglewood Avenue	120th Street	Rosecrans Avenue	2	Third round of public comments – Draft Plan April 2011	Community request
West San Gabriel Valley	Harriet Street	El Nido Drive	N. Raymond Avenue	BB	Third round of public comments – Draft Plan April 2011	Relocated to an adjacent street
West San Gabriel Valley	Raymond Avenue	Harriet Street	Calaveras Street	BB	Third round of public comments – Draft Plan April 2011	Relocated to an adjacent street
West San Gabriel Valley	Coolidge Avenue	Glen Canyon Road	Washington Boulevard	BB	Third round of public comments – Draft Plan April 2011	Relocated to an adjacent street
West San Gabriel Valley	Midwick Drive	North Allen Avenue	Glenview Terrace	BB	Third round of public comments – Draft Plan April 2011	Relocated to an adjacent street
Westside	Sepulveda Channel Proposed Bicycle Path	Palms Blvd	Venice Blvd	1	Comments received for Regional Planning Commission Public Hearing	Community request and Board of Supervisors Motion

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Appendix K. Acronyms

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Table K-1: Acronyms and Definitions

Acronym	Definition
AASHTO	Guide for the Development of Bicycle Facilities, *California Highway Design Manual*, Chapter 1000: Bikeway Planning and Design
AB	Assembly Bill
ADA	American Disabilities Act
ADT	average daily traffic
APBP	Association of Pedestrian and Bicycle Professionals
BAC	Bicycle Advisory Committee
BTA	State of California Bicycle Transportation Account
BTSP	Bicycle Transportation Strategic Plan
Caltrans	California Department of Transportation
CAMUTCD	California Manual Uniform Traffic Control Devices
CBSP	Commuter Bikeways Strategic Plan
CFP/Call	call for projects
CMAQ	Congestion Mitigation and Air Quality
CPTED	Crime Prevention Through Environmental Design
CTC	California Transportation Commission
DPR	County of Los Angeles Department of Parks and Recreation
DPH	County of Los Angeles Department of Public Health
DPW	County of Los Angeles Department of Public Works
DRP	County of Los Angeles Department of Regional Planning
DOT	State Department of Transportation
EEMP	Environmental Enhancement and Mitigation Program
EPOP	Enhanced Public Outreach Project
FHWA	Federal Highway Administration
GHG	greenhouse gases
GIS	Geographical Information Systems
HDM	Highway Design Manual
IBPI	Initiative for Bicycle & Pedestrian Innovation
ISTEA	Intermodal Surface Transportation Efficiency Act
LAB	League of American Bicyclists
LACBC	Los Angeles County Bicycle Coalition
LACFCD	Los Angeles County Flood Control District
LARMP	Los Angeles River Master Plan
LACOE	Los Angeles County Office of Education
LARRMP	Los Angeles River Revitalization Master Plan
LEHD	Longitudinal-Employer Household Dynamics
LRTP	Long Range Transportation Plan
LACMTA	Los Angeles County Metropolitan Transportation Authority
MPH	miles per hour
MUTCD	Manual of Uniform Traffic Control Devices

Table K-1: Acronyms and Definitions (continued)

Acronym	Definition
OCTA	Orange County Transportation Authority
OTS	Office of Traffic Safety
PBIC	Pedestrian and Bicycle Information Center
PROWAG	Public Rights-of-Way Accessibility Guidelines
PROWAG	Public Rights-of-Way Accessibility Guidelines
RMC	San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy
RSTI	Regional Surface Transportation Improvements
RSTP	Regional Surface Transportation Program
RTCA	Rivers, Trails and Conservation Assistance Program
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act
SANBAG	San Bernardino Association of Governments
SB	Senate Bill
SCAG	Southern California Association of Governments
SCRRA	Southern California Regional Rail Authority
SGRCMP	San Gabriel River Corridor Master Plan
SRTS	Safe Routes to School
SWITRS	California Highway Patrol Statewide Integrated Traffic Records System
TAC	Technical Advisory Committee
TCSP	Transportation, Community, and System Preservation Program
TDA	Transportation Development Act
TDM	Transportation Demand Management
TEA	Transportation Enhancements Activation
TEA-21	Transportation Equity Act for the 21st Century
TIP	Transportation Improvement Program
TSM	Transportation Systems Management
VCTC	Ventura County Transportation Commission
VMT	Vehicle Miles Traveled
VPD	Vehicles Per Day

COUNTY OF LOS ANGELES
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GAIL FARBER, Director

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

February 28, 2012

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, California 90012

Dear Supervisors:

HEARING ON THE COUNTY OF LOS ANGELES BICYCLE MASTER PLAN
(ALL SUPERVISORIAL DISTRICTS)
(3 VOTES)

SUBJECT

The recommended action is to certify the Final Program Environmental Impact Report and approve the County of Los Angeles Bicycle Master Plan (Plan) superseding the 1975 Los Angeles County Plan of Bikeways and guiding the development of future County bicycle and bicycle support facilities through 2032.

IT IS RECOMMENDED THAT YOUR BOARD:

AFTER THE PUBLIC HEARING:

1. Consider the proposed Final Program Environmental Impact Report for the proposed 2012 Bicycle Master Plan, including the comments received and responses thereto; find that the Final Program Environmental Impact Report reflects the independent judgment and analysis of the County; certify that the Final Program Environmental Impact Report has been completed in compliance with the California Environmental Quality Act and that your Board has reviewed and considered the information contained therein prior to approving the Plan; determine that the significant adverse effects of the projects included in the Plan have been reduced to an acceptable level as outlined in the Findings of Fact, which findings are incorporated herein by reference; and adopt the Mitigation Monitoring and Reporting Program included in the Final Program Environmental Impact Report. Finding that pursuant to Public Resources Code Section 21081.6 the Mitigation Monitoring and Reporting Program is adequately designed to ensure compliance with the mitigation measures during Plan implementation.

2. Approve the resolution to adopt the 2012 Bicycle Master Plan as a subelement of the Transportation Element and determine that the Final Bicycle Master Plan is compatible with and supports the goals and policies of the Los Angeles County General Plan as recommended by the Regional Planning Commission.

3. Repeal the Master Plan of Bikeways, which was adopted by your Board in 1975, upon effect of the 2012 Bicycle Master Plan.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

The purpose of the recommended action is to adopt the enclosed 2012 Bicycle Master Plan (Plan), which replaces the 1975 Master Plan of Bikeways. The 2012 Plan recommends 832 miles of new bikeways throughout the County. Along with the existing and proposed bicycle network under County jurisdiction, the Plan describes bicycle-related programs that are essential facets of the overall bicycle system envisioned for the County, including education, encouragement, enforcement, and evaluation. The Plan also includes design guidelines for bicycle treatments, funding options, and a phased implementation strategy for the proposed bikeway facilities.

Implementation of Strategic Plan Goals

The Plan directs the provisions of Operational Effectiveness (Goal 1), Community and Municipal Services (Goal 3), and Health and Mental Health (Goal 4). The Plan will be used to guide the development of bicycle and bicycle support facilities in the County, which will enhance residents' ability to utilize a bicycle as a viable means of transportation. A more bicycle-friendly County will contribute to resolving several complex and interrelated issues, including traffic congestion, air quality, climate change, public health, and livability.

FISCAL IMPACT/FINANCING

The Plan recommends bicycle transportation facilities that the County intends to construct starting Fiscal Year 2012-13 and continuing through Fiscal Year 2031-32 at an estimated cost of $331 million. The implementation of the Plan is proposed to be in three phases over 20 years. The breakdown of the phase implementation is as follows: Phase I - Fiscal Year 2012-13 through Fiscal Year 2016-17 at an estimated cost of $83 million; Phase II - Fiscal Year 2017-18 through Fiscal Year 2026-27 at an estimated cost of $166 million; and Phase III - Fiscal Year 2027-28 through Fiscal Year 2031-32 at an estimated cost of $82 million. Outside funding, such as grants, is necessary to implement all of the Plan recommendations.

Funding for the projects proposed in the Plan will be made available from various Department of Public Works (Public Works) funds, including but not limited to the Road Fund, Bikeway Fund, Proposition C Local Return Fund, Measure R Local Return Fund, and possibly the County General Fund. Should an unanticipated need arise in other Public Works operating funds, the work will be financed from the appropriate fund.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

On January 6, 2009, your Board authorized Public Works to execute a contract with Alta Planning and Design to develop the County of Los Angeles Bicycle Master Plan. Utilizing this contract, Public Works created a plan intended to guide the development and maintenance of a comprehensive bicycle network and set of programs throughout the unincorporated communities of the County of Los Angeles for the next 20 years (2012 to 2032).

The Plan team solicited community involvement and stakeholder input throughout the development of the Plan. The project website provided information on the Plan's development and schedule, and hosted Plan documents for public review and comment.

Two committees were set up to guide the development of the Plan: the Technical Advisory Committee (TAC) and the Bicycle Advisory Committee (BAC). The TAC consists of members from the County of Los Angeles Departments of Public Works, Regional Planning, Public Health, Parks & Recreation, and Beaches and Harbors. BAC has 12 members. Two members were selected to represent each of the five Supervisorial Districts, which comprise ten of the members. The other two members are from the State of California Department of Transportation and the Los Angeles County Metropolitan Transportation Authority (LACMTA).

The Plan team held three rounds of public workshops to present the Plan and receive feedback from the public on the Plan's findings and recommendations. A total of 32 public workshops were conducted. In addition, the Plan team performed other extensive outreach efforts, including but not limited to sending out electronic e-mail blasts to multiple stakeholders; issuing a press release; distributing postcards at LACMTA's Bike to Work Week; mailing comment cards to local bike shops, libraries, parks, and recreational facilities; and posting public service announcements in bus shelters and on buses and shuttles that serve the unincorporated areas. Furthermore, the Plan team contacted numerous stakeholders and had additional discussions regarding the comments received and how they were being addressed in the Plan.

The Plan proposes a vision for a diverse regional system of interconnected bicycle corridors, support facilities, and programs to make bicycling more practical and desirable to a broader range of people in the County (see enclosed Project Summary). The Plan recommends 832 miles of new bikeways throughout the County. The Plan also includes non-infrastructure programs that are essential facets of a bicycle-friendly County. These non infrastructure programs include education, encouragement, enforcement, and evaluation programs. Furthermore, the Plan includes design guidelines for bicycle treatments, funding options, and a phased implementation strategy for the proposed bikeway facilities. The Plan organizes the County into ten planning areas, which are identical to those used for the Draft General Plan, with the exception of the Coastal Islands Planning Area, that contains no County-maintained roadways or bicycle facilities.

To comply with the California Environmental Quality Act (CEQA), the County contracted with ICF International to prepare a Program Environmental Impact Report (Program EIR). The cost of the Program EIR was partially funded by a grant received by the Department of Public Health (Public Health) through the American Recovery and Reinvestment Act. This grant program is titled Communities Putting Prevention to Work administered by the Centers for Disease Control and Prevention and delivered locally by Public Health through its Renewing Environments for Nutrition, Exercise, and Wellness initiative.

The Regional Planning Commission (Commission) conducted an initial public hearing on the proposed County Bicycle Master Plan on November 16, 2011. A Public Notice in form of a legal ad was published in the Los Angeles Times and La Opiñion newspapers on October 15, 2011, pursuant to Public Resources Code Section 21092. Notices were also mailed to approximately 3,700 individuals and organizations and were e-mailed to an additional 1,600 recipients.

At the initial public hearing (see enclosed Summary of Public Hearing Proceedings), the Commission heard testimony from ten individuals and numerous written comments were received. A second public hearing was held on January 11, 2012, and testimony was heard from two individuals. Following completion of the testimony, staff addressed the comments, and the Commission voted unanimously (5 to 0) to close the public hearing and approve the enclosed Resolution recommending a public hearing by your Board to consider approval and adoption of the proposed Plan and Program EIR.

A public hearing is required pursuant to Section 22.16.200 of the County Code and §65353-65356 of the Government Code. Required notice must be given pursuant to the procedures and requirements set forth in Section 22.60.174 of the County Code (see enclosed Legal Notice of Board Hearing). These procedures exceed the minimum standards of Sections 6061, 65090, and 65856 of the Government Code relating to the notice of public hearing.

ENVIRONMENTAL DOCUMENTATION

Draft Program EIR and Public Comment

In accordance with CEQA, a Notice of Preparation was distributed on April 4, 2011, to the Office of Planning and Research and responsible Federal and State agencies, in addition to public agencies and organizations and individuals with a possible interest in the Plan. The purpose of the Notice of Preparation was to provide notification that the County planned to prepare a Program EIR and to solicit input on the scope and content of the Program EIR. Sixteen written comment letters were received from various agencies, organizations, and individuals.

Public scoping meetings were held on April 19, 2011, at the LACMTA Headquarters in downtown Los Angeles to seek input from public agencies and the general public regarding environmental issues that may result from the projects included in the Plan. Approximately six people attended the April 19, 2011, meetings and 23 written comments were submitted.

An Initial Study was prepared for the proposed Plan in compliance with CEQA. The Initial Study concluded that there was substantial evidence that the Plan may have a significant effect on the environment and determined that a Program EIR would be required.

A Public Notice of Availability of the Draft Program EIR was published in the La Opiñion on August 9, 2011, and in the Los Angeles Times on August 10, 2011. Notices were mailed to the State Clearinghouse; various Federal, State, regional, local government agencies; and organizations of interest. Copies of the Draft Program EIR were posted online. Hard copies were made available for viewing at the Public Works Headquarters. Electronic copies of the Draft Program EIR were made available at all County of Los Angeles Public Libraries. A public meeting was held at the Hall of Records in Los Angeles on September 15, 2011. A 45-day public comment period started August 9, 2011, and was extended until November 10, 2011. Fourteen comment letters were received.

The comment letters and the County's responses are included in the Final Program EIR.

Final Program EIR, Findings of Fact, and Mitigation and Monitoring Program (see enclosed environmental document)

The Final Program EIR prepared for this Plan concluded that the Plan may have significant impacts on the environment in the following areas: air quality and greenhouse gas emissions, aesthetics and visual resources, biological resources, cultural resources, traffic and transportation, hazards and hazardous materials, hydrology and water quality, and mineral resources. All identified significant environmental effects of the Plan can be avoided or reduced to a level of insignificance through the implementation of the mitigation measures identified in the Final Program EIR. A Mitigation Monitoring and Reporting Program consistent with the conclusions and recommendations of the Final Program EIR has been prepared. The Mitigation Monitoring and Reporting Program identifies in a detailed manner how compliance with the adopted measures will mitigate or avoid potential adverse impacts of the Plan on the environment. The requirements of the Mitigation Monitoring and Reporting Program have been incorporated into the Plan.

The location of the documents and other materials constituting the record of the proceedings upon which your Board's decision is based on this matter is Public Works, Programs Development Division, 900 South Fremont Avenue, 11th Floor, Alhambra, CA 91803. The custodian of such documents and materials is the Environmental Planning and Assessments Section, Programs Development Division, Public Works.

The Plan is not exempt from payment of a fee to the California Department of Fish and Game pursuant to Section 711.4 of the Fish and Game Code. Such fee is authorized to defray the costs of fish and wildlife protection and management incurred by the California Department of Fish and Game. Upon approval of the Final Program EIR by your Board, Public Works will file a Notice of Determination in accordance with Section 21152(a) of the California Public Resources Code and pay the required filing and processing fees with the Registrar-Recorder/County Clerk in the amount of $2,994.00.

IMPACT ON CURRENT SERVICES (OR PROJECTS)

The County Bicycle Master Plan is a planning tool that combines the visions of our communities and the County for the future of biking. Implementation of the Plan will improve County services by promoting bicycling as a viable transportation option and delivering projects and programs to the public to support the vision.

CONCLUSION

Please return one adopted copy of this letter and enclosed resolution to the Department of Public Works, Programs Development Division.

Respectfully submitted,

Gail Farber

GAIL FARBER
Director

GF:JTW:pr

Enclosures

c: Chief Executive Office
County Counsel
Executive Office
Director of Beaches and Harbors
Director of Parks and Recreation
Director of Public Health
Director of Regional Planning