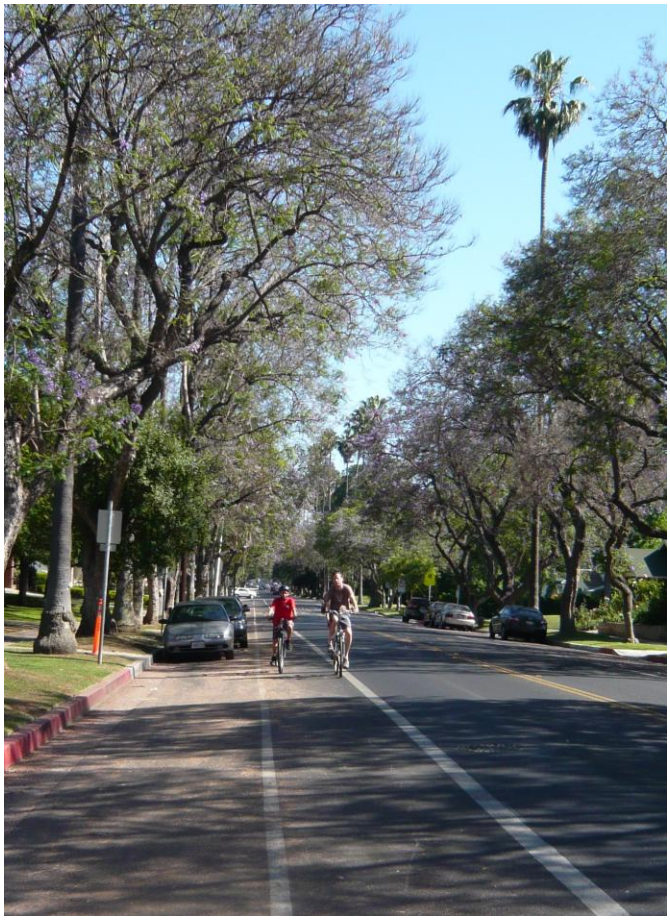
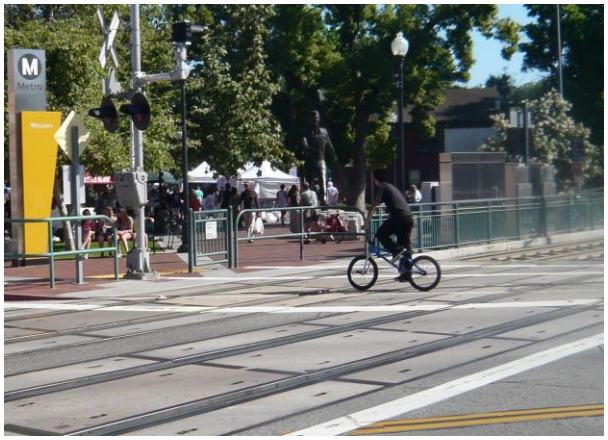
Cycle South Pasadena

Bicycle Master Plan Update

ADOPTED AUGUST 17, 2011





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In Association With:
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City of South Pasadena
Adopted Bicycle Master Plan Update

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City of South Pasadena Bicycle Master Plan Update

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RESOLUTION NO. 7175

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SOUTH PASADENA, CALIFORNIA, ADOPTING A NEGATIVE DECLARATION, AND APPROVING AN UPDATE TO THE CITY'S BICYCLE MASTER PLAN

WHEREAS, on September 16, 2009, the City Council directed City staff to update the Bicycle Master Plan, which is consistent with the Policy 2.2 of the Circulation and Accessibility Element of the General Plan; and

WHEREAS, the Bicycle Master Plan ("BMP") Update is designed to meet the requirements of the Caltrans Bicycle Transportation Account as well as other State, Federal and Regional guidelines; and

WHEREAS, pursuant to the provisions of the California Environmental Quality Act (CEQA), an Initial Study was prepared for the proposed BMP update (the project), which found that the project would not have significant effects on the environment, and therefore, a Negative Declaration was prepared and circulated for public comment beginning July 20, 2011, and included the Draft BMP; and

WHEREAS, after notices issued pursuant to the requirements of South Pasadena Municipal Code and CEQA, the City Council held a duly noticed public hearing on August 17, 2011, at which all interested parties were given the opportunity to be heard and present evidence; and

WHEREAS, as a California Department of Transportation requirement for bicycle plans requires a public outreach, a public meeting was held on May 12, 2011, at the South Pasadena Public Library Community Room to inform the public about the update to the Bicycle Master Plan (BMP) and to solicit comments about bicycling in South Pasadena; and

WHEREAS, the public was provided with the opportunity to comment in person at the May 12, 2011, meeting as well as by email, comment card, letter and in person at the City Clerk's Office until May 27, 2011; and

WHEREAS, the residents on Grand Avenue were invited to attend a July 28, 2011, meeting to discuss and provide input on bicycle issues specific to Grand Avenue; and

WHEREAS, the updated BMP is intended to serve as a blueprint for the implementation of bicycle facilities and programs that upon build out will offer people an

opportunity to bicycle to schools, parks, shops, offices, government facilities (Library, Senior Center, City Hall, post office), special events, as well as neighboring cities and the region when combined with transit such as the Metro Gold Line; and

WHEREAS, the update to the BMP reinforces South Pasadena's commitment to providing viable multi-modal transportation solutions; and

WHEREAS, upon implementation, the updated BMP can lead to a reduction in traffic congestion and related auto emissions, and provide healthy lifestyle choices and improved economic vitality.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF SOUTH PASADENA, CALIFORNIA, DOES RESOLVE, DECLARE, DETERMINE AND ORDER AS FOLLOWS:

SECTION 1. The City Council hereby adopts a Negative Declaration for the Bicycle Master Plan (BMP) Update. Upon completion of an initial study, the Negative Declaration states that there is no substantial evidence that the BMP Update will have a significant effect on the environment.

SECTION 2. The City Council hereby approves the Bicycle Master Plan (BMP) Update and directs staff to initiate implementation.

SECTION 3. The South Pasadena City Council reiterates its support for further development and implementation of the elements of the BMP, thereby providing multi-modal solutions that include but are not limited to, an integrated comprehensive network of bicycle systems, light-rail, heavy-rail, and bus throughout the region.

SECTION 4. This resolution shall become effective immediately upon its adoption.

SECTION 5. The City Clerk shall certify to the passage and adoption of this resolution and enter it into the book of original resolutions.

PASSED, APPROVED AND ADOPTED ON this 17th day of August, 2011.

Mike Ten, Mayor

ATTEST:

Sally Kilby, City Clerk

APPROVED AS TO FORM:

Richard L. Adams II, City Attorney

I HEREBY CERTIFY the foregoing resolution was duly adopted by the City Council of the City of South Pasadena, California, at a regular meeting held on the 17th day August, 2011, by the following vote:

AYES: Cacciotti, Putnam, Schneider, Sifuentes and Mayor Ten

NOES: None

ABSENT: None

ABSTAINED: None

Sally Kilby, City Clerk

Caltrans BTA Requirements Checklist

Approved	Caltrans Bicycle Transportation Account (BTA)	Page(s)
	a) Existing and future bicycle commuters	4.2-4.3
	Description	4.2-4.3
	Table	4.2
	b) Existing and proposed land use patterns description and map	2.2-2.4
	Description	2.2
	Maps	2.3, 2.4
	c) Existing and proposed bikeways description and map	4.5-4.12
	Description	4.5, 4.7, 4.8
	Maps	4.6, 4.7, 4.12
	Tables	4.9, 4.10, 4 .11
	d) Existing and proposed bicycle parking description and map	4.13-4.17, 7.37-7.39
	Description	4.13, 4.14, 4.15
	Maps	4.16,4.17
	Tables	4.14,4.18
	Priority Project Sheet	7.37-7.39
	e) Existing and proposed multimodal connections description and map	3.7, 4.6, 4.12-4.20
	Description	3.7, 4.13-4.15, 4.18-4.20
	Maps	4.6, 4.12, 4.16, 4.17
	Tables	4.14, 4.18
	Appendix E	E.1-E.10
	f) Existing and proposed changing and storage facilities description and map	4.18-4.19
	Description	4.18, 4.19
	Table	4.18
	g) Bicycle safety and education programs with safety collision analysis	5.1-5.6
	Description	5.1-5.5
	Map	5.6

Caltrans BTA Requirements Checklist

Approved	Caltrans Bicycle Transportation Account (BTA)	Page(s)
	h) Citizen and community involvement	1.4-1.5
	i) Consistency with transportation, air quality, and energy plans	2.2, 2.5-2.12
	Description	2.2, 2.5, 2 .8-2.12
	Map	2.7
	Tables	2.6, 2.8, 2.12
	j) Proposed projects and priority implementation	7.1-7.41
	Description	7.1-7.6, 7.9
	Map	7.8
	Tables	7.3, 7.6, 7.7
	Priority Project Sheets	7.10-7.41
	k) Past expenditures for bicycle facilities and future financial needs	7.5-7.6

CHAPTER 1
INTRODUCTION

1.0 REASON FOR THE BICYCLE MASTER PLAN

The South Pasadena Bicycle Master Plan update (The Plan) is a comprehensive Plan that upon implementation and build-out is intended to make bicycling a viable transportation option. It complements the small town atmosphere of South Pasadena and reinforces the City and region's commitment to multi-modal transportation solutions.

The Plan Update builds upon the existing Bicycle Master Plan (adopted in 2005) by incorporating current planning issues, community involvement, and the accessibility of existing resources, bicycle facility design, multi-modal integration, safety, education, and support facilities, as well as outlines implementation and maintenance recommendations.

The core of the Plan is the goals, objectives and policies upon which the chapters and recommendations within the Plan are based. Implementation of the Plan's recommendations will lead to a comprehensive citywide bicycle infrastructure consisting of bicycle paths, lanes and routes. When combined with recommended bicycle programs, support infrastructure, and amenities, the intended outcome will make bicycling a viable transportation option for riders of all skill levels and for local, regional, commuter, and recreational trips.

The General Plan, "embraces a policy direction to make South Pasadena a place where bicycling (and walking) are encouraged and fostered … and facilities are provided as an ongoing part of transportation planning".

Combining bicycling with public transit extends the distance one could effectively travel without the use of a car. Additionally, implementation of the Plan is intended to offer opportunities to improve health through exercise, reduced traffic congestion, and improved air quality through a reduction in the number of vehicle miles traveled (VMT).

At the national and regional level, there has been increasing awareness of the need to reduce air pollutants produced from the burning of fossil fuels. The Federal and State governments have passed legislation, such as the Federal Clean Air Act, the California Complete Streets Act, California Senate Bill 375 (SB 375), and California Assembly Bill 32 (AB 32), all highlighting the need to find solutions to mobility, land use, and air quality challenges. Compliance with these laws and regulations can lead to an improvement in the quality of life of our cities and regions. Planning organizations are adopting and implementing Bicycle Master Plans as a mechanism to enhance non-motorized, sustainable transportation options and embrace a full-breadth multi-modal transportation network, where the bicycle is one of the essential transportation modes.

1.1 USING THE BICYCLE MASTER PLAN

The South Pasadena Bicycle Master Plan includes eight (8) topic-related chapters and five (5) appendices for quick and easy reference. Each chapter begins with an overview identifying the purpose and need of the chapter. Much of the information in each chapter is required to fulfill California Department of Transportation (Caltrans) requirements, and the content of the Plan consists of recommendations for infrastructure and programs specific to South Pasadena. All of the chapters are interrelated and support each other.

Chapter 4 (Bicycle Network) and Chapter 7 (Implementation) identify projects upon which Chapter 6 (Funding Resources) can be utilized to match potential projects with available funding sources. Chapter 3 (Goals, Objectives and Policies) establishes the reasons for Chapters 4 (Bicycle Network), 5 (Bicycle Safety Programs), 6 (Funding Resources) and 7 (Implementation). To ensure execution of the Plan, Chapters 3, 4, 5, 6 and 7 identify specific City departments responsible for implementing the various aspects of the plan in a collaborative effort. The appendices provide background information.

1.2 BICYCLE MASTER PLAN VISION

The Bicycle Master Plan update is intended to serve as a blueprint for the implementation of citywide bicycle facilities and programs. Upon implementation, the bicycle network will allow people of varying bicycling abilities to reach their desired destinations throughout the community. These destinations include schools, local businesses, places of employment, parks, and government facilities such as City Hall, the public library, and the post office. To ensure that users can easily navigate to these destinations, a way finding signage network will be established. The Bicycle Master Plan incorporates multi-modal bicycle linkages to transit at the Metro Gold Line station and along Metro Bus routes, and this will assist users to reach destinations throughout the region.

This Bicycle Master Plan includes support facilities, called bicycle amenities, such as bicycle racks and bicycle lockers. These bicycle amenities allow the bicyclists to know that they can conveniently park their bicycle once they reach their destination.

This Plan has a component that establishes safety and education programs that will encourage adults and children to bicycle. These include but are not limited to events, informational campaigns, maps, and pamphlets.

The Bicycle Master Plan meets the requirements of Caltrans' Bicycle Transportation Account (BTA) as well as Federal, State, and regional guidelines and regulations, ensuring that the Plan will eligible for a full range of funding opportunities.

1.3 BICYCLE MASTER PLAN BACKGROUND

The City of South Pasadena, in 1998, acknowledged the importance of bicycles as part of the transportation network with its first Bicycle Master Plan. The plan was received and filed by City Council as a long range planning document.

During the mid-2000s, another Bicycle Master Plan was drafted. The 2005 Bicycle Master Plan was seen as a work in progress that would increase bicycle facilities and improvements to meet the increasing demand for bicycling.

In 2009, City Council requested a complete Bicycle Master Plan Update, which follows policy direction from the General Plan.

1.4 COMMUNITY PROFILE

The City of South Pasadena prides itself on its small town character, as mentioned in numerous local pieces of literature and documents. Relatively small and independent with less than three and one-half square miles in area, South Pasadena has preserved its status as a distinct community. It is known for its tree lined streets, historic California Craftsman style homes, unique small businesses and outstanding public schools.

With a year 2010 population of 25,619 (Census 2010), South Pasadena is a low-to-medium density urban community located in the west San Gabriel Valley adjacent to the cities of Pasadena, Alhambra, San Marino, and Los Angeles.

South Pasadena Parade

The City's topography is generally flat in the central and eastern areas. The northern part of the City slopes up towards Pasadena, and there is a large hilly section in the southwest.

The City has an established network of arterial, collector, and local streets. Many streets in the central part of the City are aligned along a grid pattern.

A bicycle network will improve the transportation options for residents, businesses, and visitors by making bicycling more convenient and accessible.

1.5 PUBLIC PROCESS

The Bicycle Master Plan Update included a public process, as required by the Caltrans Bicycle Transportation Account (BTA). As part of this process, the public was invited to attend a workshop to share their vision of a bicycle friendly future. The workshop was held on May 12, 2011 at the South Pasadena Public Library Community Room.

The workshop was announced by press release, flyer, website posting, and other relevant social media. A press release was sent to the local publications, including print newspaper and online news media. Seven (7) publications featured the South Pasadena Bicycle Master Plan in a print and online article.

Flyer notifications were sent to the South Pasadena City Council and City Commissions as well as distributed to the City's library, parks and recreation building, senior center, and golf course. Flyers were also available at the local bicycle shop.

Website posting included an article for the City's E-newsletter. Other social media, such as Facebook, were accessible through the City's website. Informal noticing also occurred through blogs, twitter, and social media. Posting about the workshop was seen on cobicycle.com and bicyclecritics.com. A podcast was hosted by robocaster.com.

The workshop kicked off with a bicycle tour. It looped around the library, towards the Farmers Market, around Orange Grove Park, along the Mission commercial district, past the Metro Gold Line, and back to the library. The purpose of the bicycle tour was to show the potential places people could travel by bicycle: community centers, parks, retail, and transit. Participants experienced the benefits of bicycling, such as less reliance on the automobile, connections to transit, economic vitality, and healthy living.

South Pasadena Bicycle Tour

The workshop included a presentation that provided an overview of the Bicycle Master Plan's vision, benefits, project examples, and a general schedule. After the presentation, attendees were asked to join in a mapping/project ranking exercise.

Bicycle Master Plan Workshop

In addition, comments could be made by email at CycleSouthPasadena@gmail.com or comment cards. The City Clerk's office collected written comment cards and letters.

Prior to final adoption of the plan, the public was also given an opportunity to comment on the Draft Bicycle Master Plan through the environmental review process. Comments were submitted to City Council for consideration.

1.6 BICYCLE TRANSPORTATION ACCOUNT (BTA)

The Caltrans Bicycle Transportation Account is the primary source of funding for a Bicycle Master Plan's proposed projects and programs. Funds are allocated to cities and counties on a matching basis of 10% of the total project cost. The 2011 appropriation for BTA funds is $7.2 million for the annual year.

The City of South Pasadena must have a Bicycle Master Plan approved by Caltrans, with all of the BTA requirements for funding eligibility. These include the following:

- Estimation of existing and future bicycle commuters
- Description of existing and proposed land use patterns
- Land use planning
- Map of existing bikeways
- Maps of proposed bikeways
- Description of existing bikeways
- Description of proposed bikeways
- Maps of existing and proposed bicycle facilities
- Description of existing and proposed bicycle amenities
- Maps of existing and proposed multi-modal connections
- Description of existing and proposed multi-modal connections
- Maps of existing and proposed changing and storage facilities
- Description of existing and proposed changing and storage facilities
- Bicycle safety education and enforcement programs
- Citizen participation
- Consistency with transportation, air quality, and energy plans
- Project descriptions and priority ranking
- Past expenditures and future financial needs

The South Pasadena Bicycle Master Plan includes all required elements for the City to become eligible for BTA funding.

CHAPTER 2
BICYCLE PLAN CONTEXT

2.0 BICYCLE PLAN CONTEXT OVERVIEW

The Bicycle Plan Context Chapter reviews the South Pasadena Bicycle Master Plan for consistency with Federal, State, regional, and local transportation and air quality-related plans, projects, policies, and regulations. The Bicycle Transportation Account (BTA) requires that a Bicycle Master Plan approved by Caltrans include a review of relevant City and regional planning documents. These documents are discussed here in sections 2.1, 2.2, and 2.3.

The City General Plan Circulation and Accessibility Element, the Fair Oaks Avenue Street Improvement Project, Fremont Avenue Traffic Calming Concept Plan, and Fair Oaks Avenue/SR-110 Interchange Improvement Project have been reviewed and the Bicycle Master Plan is consistent with these transportation plans and projects in the City.

The Bicycle Master Plan also considers its relationship to other regional plans and legislation related to transportation and air quality. The relevant transportation plans include the Southern California Association of Governments (SCAG) Regional Transportation Plan (RTP), South Coast Air Quality Management District (AQMD), Los Angeles Metro Bicycle Transportation Strategic Plan (BTSP), Los Angeles County Congestion Management Program (CMP) and California Complete Streets Act (CCSA). The air quality emissions legislation includes the AB 32 Global Warming Solutions Act and the SB 375 Reduce Vehicle Miles Traveled and Emissions.

In addition, the South Pasadena Bicycle Master Plan considered the elements of adjacent city plans. The City of Los Angeles and City of Pasadena bicycle plans were reviewed for connectivity and planning consistency.

The Bicycle Master Plan is consistent with regional plans and legislation by furthering their goals and intent.

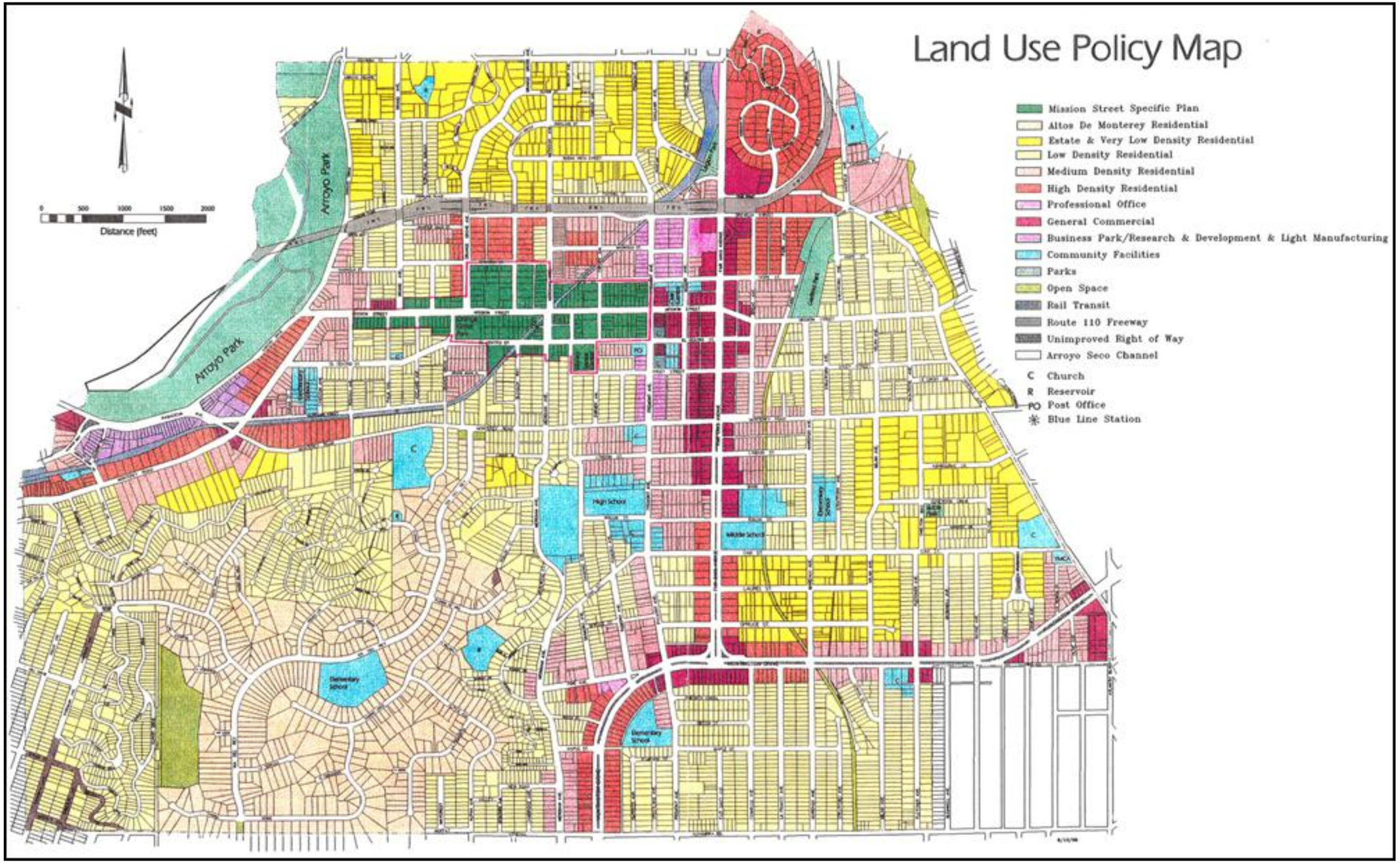
2.1 RELEVANT CITY PLANS

General Plan Land Use

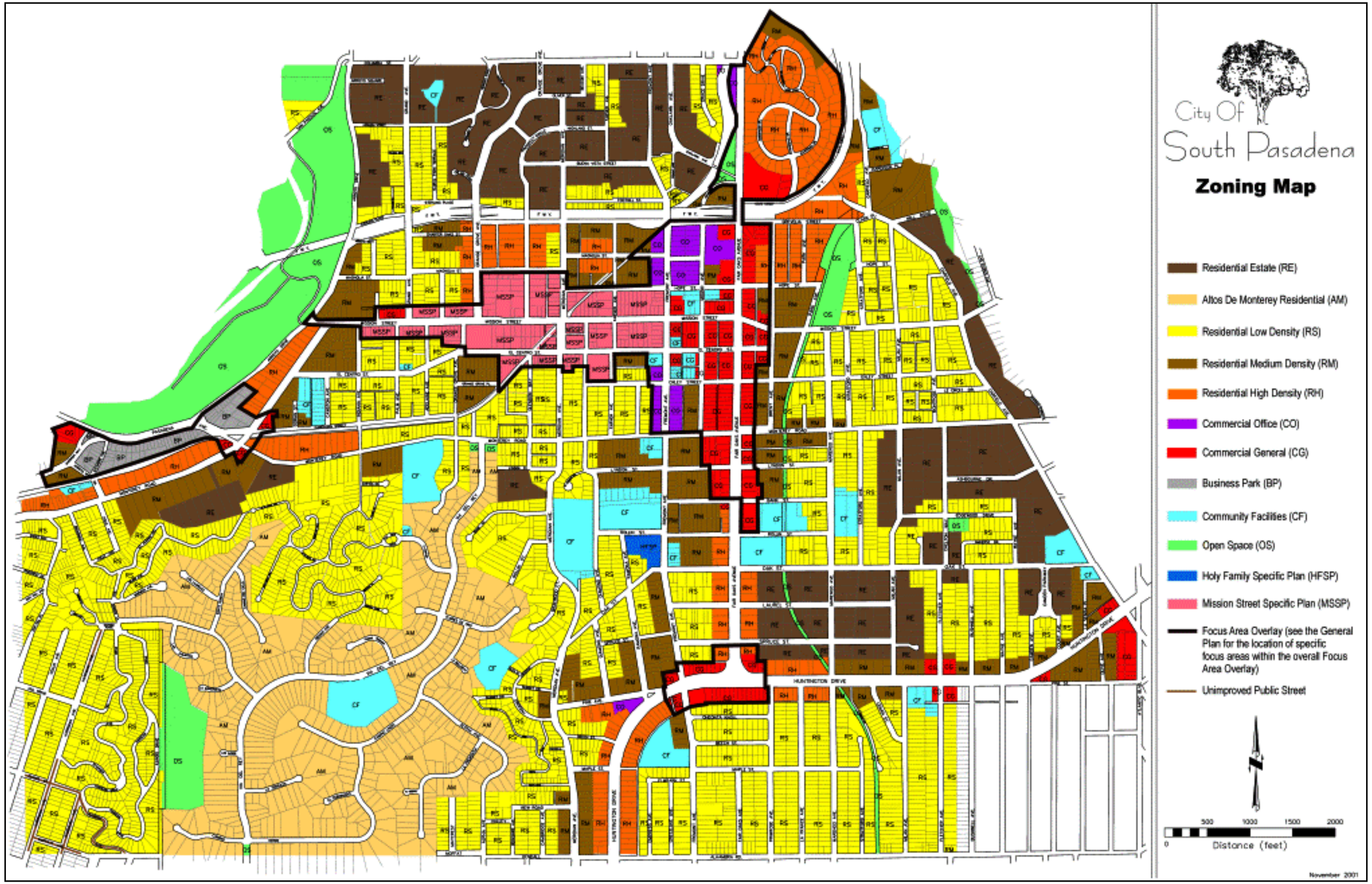
The General Plan demonstrates the relationship between the Land Use Element and Circulation and Accessibility Element, as it promotes a, "safe, efficient and reliable movement of goods and people throughout South Pasadena," as described in the Plan.

In reference to land use, the City consists of a variety of residential, commercial, retail, and open space land uses, as illustrated in Map 2.1 and 2.2. Commercial land uses are primarily found along Fair Oaks Avenue, Mission Street, and Huntington Drive. Multi-family and higher-density housing is primarily located in the northeastern and north central areas as well as along Pasadena Avenue, West Monterey Road, South Fair Oaks Avenue, and Huntington Drive. Single-family housing makes up the largest proportion of residential land area but does not make up the majority of units of housing. Several small open space areas (parks, the golf course, utility corridors) are located in various areas of the City, and one large park (Arroyo Seco Park) and the golf course are located adjacent to the Arroyo Seco along the western boundary with Los Angeles.

Map 2.1 General Plan Land Use



Map 2.2 General Plan Zoning

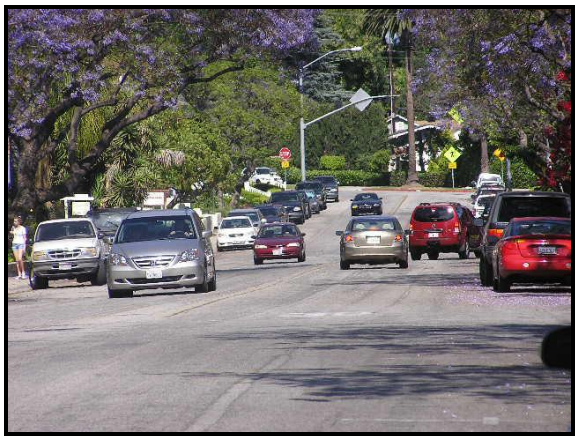


General Plan Circulation and Accessibility Element

Roadways

The roadway network consists of an organized hierarchy of major and minor arterials, collector and local streets, as presented in Table 2.1 and illustrated in Map 2.3. Fair Oaks Avenue and Mission Street serve as the commercial axes of the City. Huntington Drive and Fair Oaks Avenue are regional major arterials with Monterey Road/Pasadena Avenue and Fremont Avenue acting as regional minor arterials. The Arroyo Seco Parkway (SR-110 and previously known as the Pasadena Freeway) traverses the northern portion of the City in a general east-west alignment and connects the City with Downtown Los Angeles and Pasadena.

Monterey Road west of Via del Rey

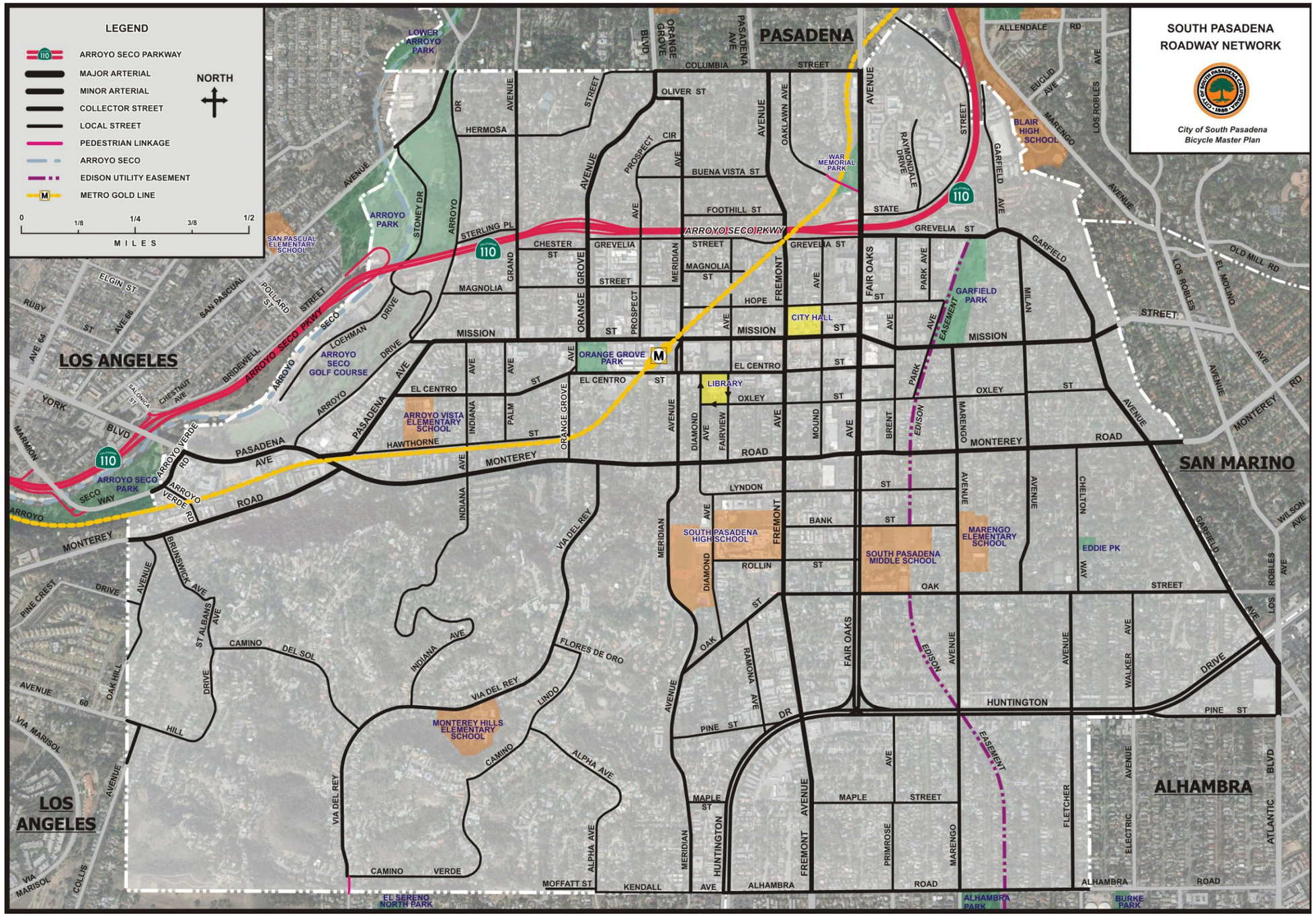


Grevelia Street east of Fair Oaks Avenue

Table 2.1 City Roadway Characteristics

Classification	Roadway	Limits (from, to)	Lanes (each direction)
Major Arterial	**Huntington Drive**	South city limit to Atlantic Boulevard	3
	Fair Oaks Avenue	North city limit to Monterey Road	2
		Monterey Road to Huntington Drive	3
	Atlantic Boulevard	Garfield Avenue to Pine Street	2
Minor Arterial	**Mission Street**	Pasadena Avenue to Fair Oaks Avenue	2
		Fair Oaks Avenue to east city limit	1
	Pasadena Avenue	West city limit to Mission Street	2
	Monterey Road	West city limit to Fair Oaks Avenue	2
		Fair Oaks Avenue to east city limit	1
	Orange Grove Avenue	North city limit to Grevelia Street (NB)	2
		North city limit to Grevelia Street (SB)	1
		Grevelia Street to Mission Street	1
	Fremont Avenue	North city limit to south city limit	1
	Garfield Avenue	Clark Street to Atlantic Boulevard	1
	Grevelia Street	Fair Oaks Avenue to Clark Street	1
Collector	**Clark Street**	Stratford Avenue to Garfield Avenue	1
	El Centro Street	Pasadena Avenue to Brent Avenue	1
	Oak Street	Meridian Avenue to Garfield Avenue	1
	Pine Street	Huntington Drive to Atlantic Boulevard	1
	Grand Avenue	North city limit to Mission Street	1
	Via Del Rey	Monterey Road to Camino Verde	1
	Oliver Street	Orange Grove Avenue to Meridian Avenue	1
	Meridian Avenue	Oliver Street to south city limit	1
	Marengo Avenue	Mission Street to south city limit	1
	Collis Avenue	West city limit to Hill Drive	1
	Fletcher Avenue	Alhambra Road to Huntington Drive	1
	Arroyo Drive	North city limit to Pasadena Avenue	1
	Camino Del Sol	Via Del Rey to St. Albans	1
	Hill Drive	St. Albans to west city limit	1
	Flores de Oro	Via Del Rey to Camino Lindo	1
	Camino Lindo	Flores de Oro to Alpha Avenue	1
	Alpha Avenue	Camino Lindo to south city limit	1
	Indiana Avenue	Monterey Road to Alta Vista	1
	Brunswick Avenue	Monterey Road to St. Albans	1
	St. Albans	Brunswick Avenue to Hanscom Drive	1
	Mission Street	Arroyo Drive to Pasadena Avenue	1
	San Pascual	West city limit to north city limit	1
	Orange Grove Avenue	Mission Street to Monterey Road	1
Local (Residential)	All roadways and roadway segments not listed above.		

Map 2.3 South Pasadena Roadway Network



Transit

South Pasadena is served by the Los Angeles Metro Gold Line light rail system and Los Angeles County Metro buses.

Metro Gold Line, Mission Station

Several Metro bus lines traverse the City, including one Metro Rapid line, a Metro Express line, and other local service routes. South Pasadena's Metro-funded Dial-A-Ride service provides transportation to seniors and the disabled for local trips and medical appointments.

A summary of transit services provided within the City is presented in Table 2.2 and illustrated in Map 2.4.

Table 2.2 Transit Services in South Pasadena

Service Provider	Line	Service Type	Routing	Destinations
Metro	Gold Line	Light Rail	Metro-owned Rail Corridor	Pasadena, Downtown Los Angeles, East Los Angeles
Metro	762	Metro Rapid	Fair Oaks Ave, Huntington Dr, Atlantic Blvd	Pasadena, East Los Angeles
Metro	485	Metro Express	Huntington Dr, Fremont Ave	Altadena, Downtown Los Angeles
Metro	79	Metro Local	Huntington Dr	Downtown Los Angeles, Arcadia
Metro	176	Metro Local	Pasadena Ave, Mission St, Garfield Ave	Highland Park, El Monte
Metro	260	Metro Local	Fair Oaks Ave, Huntington Dr, Atlantic Blvd	Pasadena, East Los Angeles

Park and Ride Locations

A Metro Park-and-Ride lot is available for patrons of the Metro Gold Line in the Mission-Meridian Village located at 805 Meridian Avenue, just north of Mission Street. It provides a multimodal connection for automobiles, bicycles and buses, and trains. A second Park-and-Ride is located at 435 North Fair Oaks Avenue adjacent to War Memorial Park.

Bicycle Facilities

The 1998 General Plan references the need for bicycle facilities and a recommendation to develop a Bicycle Master Plan (General Plan page III-13). It does not indicate specific bicycle lanes or routes.

Fair Oaks Avenue Street Improvement Project

The Fair Oaks Avenue Street Improvement Project is designed to improve movement along Fair Oaks Avenue, with an emphasis on pedestrian safety. Although these improvements are not planned for bicycle enhancements, the results will provide some additional roadway space for bicyclists between the rightmost travel lane and on-street parking. Although this extra space does not meet the Caltrans design guidelines for a Class II bike lane, it is intended as a Class III bike route and is reflected in this South Pasadena Bicycle Master Plan. A more detailed discussion of this issue is provided in Chapter 7 (Implementation).

Fremont Avenue Traffic Calming Concept Plan

Adopted in 2009, the Fremont Avenue Traffic Calming Concept Plan states that it is designed to "increase safety, better accommodate pedestrians and cyclists along the corridor, achieve driving behavior that is sensitive to the street's context and be cost conscious and implementable in stages" as described in the project literature. Traffic calming measures are used to reduce speed along Fremont Avenue. The reduced traffic speeds benefit bicycle riders. The Plan is being designed and implemented in phases as funding becomes available.

Figure 2.1 Fremont Avenue Traffic Calming Concept Plan

2009 Rendering by Glatting Jackson Kercher Anglin, Inc.

Fair Oaks Avenue/SR-110 Interchange Improvement Project

The improvements planned for the interchange of SR-110 and Fair Oaks Avenue will reconfigure ramps and lanes at this location. The improvements will replace the existing southbound ramp at Fair Oaks Avenue, which will allow removal of the northbound double left-turn lanes on the overcrossing and increase usable roadway space. It will also expand the existing northbound off-ramp from two to four lanes, which will involve the closure of Grevelia Street just west of Fair Oaks Avenue. These improvements are intended to improve the intersection, which may in turn better manage traffic so bicyclists can travel on the major arterial more safely. As of the date of this Bicycle Master Plan, funding for this project has not yet been identified.

2.2 CONSISTENCY WITH REGIONAL PLANS

Southern California Association of Governments (SCAG) Regional Transportation Plan (RTP) and Non-Motorized Transportation Report (2008)

The 2008 Regional Transportation Plan (RTP) is a transportation plan that provides a framework for the region's transportation needs and challenges. The RTP supports non-motorized transportation, which includes bicycling, by promoting land use development that is less reliant up the use of automobiles. In relation to bicycling, the RTP emphasis is placed on increasing bicycling as a commute option. The South Pasadena Bicycle Master Plan's goals are consistent with the goals and policies of the RTP by furthering these goals and implementing projects that promote it.

Southern California Air Quality Management District (AQMD)

The Southern California Air Quality Management District (AQMD) delegates its transportation planning to the Southern California Association of Governments (SCAG) through the Regional Transportation Plan's (RTP) air quality conformance. The RTP is required to meet air quality standards set by Federal transportation planning and

funding policy. As part of a Southern California air quality non-attainment area, the AQMD assists SCAG in the implementation of the RTP's clean air goals by funding utilitarian bicycling projects at the local and regional level. The South Pasadena Bicycle Master Plan proposes to implement a bicycle network that will contribute to efforts in reducing emissions harmful to the environment.

Los Angeles County Congestion Management Program (CMP)

The Los Angeles County Congestion Management Program allocates credits and debits in funding eligibility for various transportation improvements. For example, implementation of bicycle facilities would give the City CMP credits as a clean air improvement. These credits could be used to offset other transportation improvements that wouldn't qualify as "clean air" elsewhere in the City.

This South Pasadena Bicycle Master Plan is consistent with the CMP by establishing an implementation plan to establish "clean air" bicycle improvements throughout the City.

Metro Bicycle Transportation Strategic Plan (BTSP)

The Bicycle Transportation Strategic Plan (BTSP), developed by the Los Angeles County Metropolitan Transportation Authority (Metro), assists planning organizations in the identification of bikeways that could eventually provide continuity with bicycling. South Pasadena's Bicycle Master Plan considers regional connections to the greater County-wide network of bikeways as well as a multi-modal connections to the Gold Line and Metro buses.

2.3 CONSISTENCY WITH STATE LEGISLATION

Assembly Bill (AB) 1358: California Complete Streets Act (CCSA)

The California Complete Streets Act of 2008 requires that every jurisdiction promote a balanced and multi-modal transportation network by planning its roads to include all types of users, including bicyclists. South Pasadena's Bicycle Master Plan identifies specifically designated lanes and routes, but in no way does the Plan preclude the remaining street network from being used by bicyclists. The CCSA's goal of creating a balanced and multi-modal transportation network for all users is reflected in the South Pasadena Bicycle Master Plan through its goals (Chapter 3), network recommendations (Chapter 4), and proposed implementation plan (Chapter 7).

Assembly Bill (AB) 32: Global Warming Solutions Act of 2006

The Global Warming Solutions Act establishes a comprehensive program to reduce greenhouse gas emissions from all sources throughout the state. The Act requires the California Air Resources Board (CARB) to reduce California's greenhouse gas emissions to 1990 levels by 2020, representing a 25% reduction statewide, through the implementation of non-motorized transportation plans. The South Pasadena Bicycle Master Plan furthers the Act's goals of reducing greenhouse gas emissions through

developing a more balanced transportation network.

Senate Bill (SB) 375 Reduce Vehicle Miles Traveled and Emissions

SB 375 enhances California's ability to reach its AB 32 goals by promoting good planning and more sustainable communities. SB 375 requires the California Air Resources Board (CARB) to develop regional greenhouse gas emission reduction targets for passenger vehicles.

For South Pasadena, the Southern California Association of Governments (SCAG) prepares a "sustainable communities strategy (SCS)" that demonstrates how the region will meet its greenhouse gas reduction target through integrated land use, housing and transportation planning, of which bicycle planning is a critical part. The South Pasadena Bicycle Master Plan furthers SB 375's goal of reducing vehicle miles traveled (VMT) and related emissions and increases the use of non-motorized transportation through the development of bicycle facilities that aim to increase utilitarian and commuter bicycling.

2.4 ADJACENT CITY PLANS

Caltrans requires that a City's Bicycle Master Plan provide connectivity with adjacent jurisdictions wherever possible. These connections further Caltrans' goal of being able to provide a seamless and continuous bikeway network across the region.

Pasadena and Los Angeles Bicycle Master Plans

The South Pasadena Bicycle Master Plan provides continuity with the bicycle planning efforts in the neighboring cities of Pasadena and Los Angeles. The Bicycle Master Plans of these two neighboring cities include local and regional connections to South Pasadena.

The following proposed bikeways designated as Class II or III are currently planned to connect with South Pasadena's bikeway network:

Table 2.3 Adjacent Jurisdiction Bikeway Continuity

Pasadena Bicycle Master Plan	Los Angeles Bicycle Master Plan
Arroyo Drive	San Pascual Avenue
Orange Grove Boulevard	York Boulevard
Pasadena Avenue	Monterey Road
	Avenue 60
	Collis Avenue
	Huntington Drive

The cities of San Marino and Alhambra do not have bicycle master plan documents, as of the date of this South Pasadena Bicycle Master Plan document.

CHAPTER 3
GOALS, OBJECTIVES AND POLICIES

3.0 GOALS, OBJECTIVES AND POLICIES OVERVIEW

The goals, objectives and policies are the guiding principles for the South Pasadena Bicycle Master Plan. Goals are established to state the general purpose. Objectives provide more details about the purpose. Policies create action items to support them. Thus, the goals, objectives and policies support the vision of the Bicycle Master Plan, as outlined in Chapter 1 (Introduction).

Bicycle Master Plan Goals:

GOAL I:
Create a citywide bicycle network that includes facilities and amenities that will increase bicycle use commensurate with the average percentage of bicycle riders in the region.

GOAL II:
Encourage bicycling in the community by developing a comprehensive safety and promotion program that supports the bicycle network.

GOAL III:
Develop an implementation component that establishes a process, pursues funding opportunities and creates a maintenance plan.

GOAL IV:
Enhance the multi-modal network of transportation options by integrating bicycling with buses, trains, and park-and-ride lots.

3.1 GOAL I: BICYCLE NETWORK

Objective 1: Bicycle Network

Develop a comprehensive bicycle network that includes facilities and innovative progressive elements.

Responsible Department: City Manager's Office, Public Works, Community Services, Police Department, Planning and Building

Policies:

a) Create a bicycle network of bicycle corridors, east/west and north/south, throughout the City.
b) Develop a variety bicycle routes, lanes, and paths to serve bicyclists of all levels of experience.
c) Connect the bicycle network to adjacent cities and the region.
d) Ensure that the bicycle network is linked to residential areas and activity centers such as schools, recreation centers, shopping centers, and businesses.
e) Integrate the bicycle network with other transportation systems to encourage multi-modal use.
f) Implement a way finding signage program for the bikeway network to guide bicyclists.
g) Include technologies, such as bicycle actuation at intersections, that improve the effectiveness of the bicycle network.
h) Implement innovative pavement markings and treatments, such as green lanes, sharrows and bicycle boxes, as part of the bicycle network.
i) Acquire or obtain land easements, such as utility and/or railroad rights-of-way, for bicycle facilities to expand the bicycle network.

Long Beach Green Lane

Objective 2: Bicycle Amenities

Provide bicycle amenities, such as bicycle parking and other support facilities.

Responsible Departments: Public Works, Community Services

Policies

a) Provide public bicycle parking (bike racks and bike lockers) and storage facilities (clothing lockers) at municipal buildings, schools, recreational centers, and public parking lots.
b) Install bicycle parking within the public right-of-way, especially in commercial areas.
c) Require that bicycle parking (bike racks and bike lockers) and storage facilities

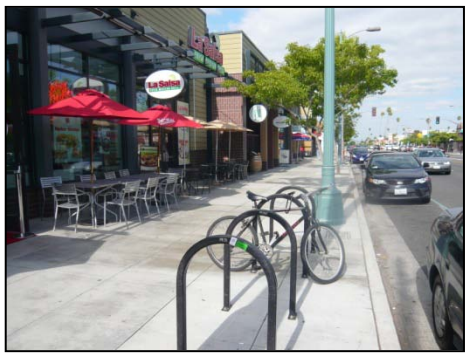
(clothing lockers) be provided in new development projects, including multi-family housing, retail, and commercial locations.

d) Provide attended parking services, such as a bicycle valet, at major City events, Farmer's Market, holiday festivals, and other community events.

e) Ensure that there is adequate bicycle parking at the Gold Line Station.

f) Install bicycle racks on buses.

g) Require other amenity facilities, such as showers, and equipment/clothing storage, for new land use development, changes in land use, building additions, and intensification of use.



Bicycle Parking on sidewalks in Pasadena

3.2 GOAL II: BICYCLE SAFETY AND PROMOTION

Objective 1: Bicycle Safety Education

Promote bicycle safety through education, resource guides, events and law enforcement.

Responsible Departments: Police Department, Community Services

Policies

a) Promote bicycle safety education at schools, community events, the library, and recreation programs.
b) Publish a bicycle resource guide that would include a bikeway map, safety tips, rules of the road, and bicycling techniques.
c) Involve the Police Department's bicycle fleet to promote bicycle safety through programs such as helmet safety day and bicycle licensing.
d) Enforce the vehicle codes that pertain to bicycle safety.

Objective 2: Bicycle Promotion

Promote bicycling in the community through a public awareness campaign, media communications, and other incentives.

Responsible Departments: Public Works, Police Department, Community Services, Planning and Building

Policies

a) Develop a city-wide bicycle awareness program that promotes bicycling in schools, community events, and in recreational programs.
b) Involve civic clubs and organizations in the public awareness campaign by co-sponsoring events with the City.
c) Participate in local, regional, and State bicycle campaigns such as Bike to Work Week, Safe Routes to School, and Rideshare Week.
d) Encourage the Chamber of Commerce and the business community to promote bicycling in commercial areas to stimulate economic vitality.
e) Promote new projects such as bicycle lanes, way finding signage, through publications and events.

Bicycle Fair (Claremont)

f) Feature bicycling updates on the City's website and other communications media.
g) Require new developments to implement an incentive program to encourage the use of bicycling.

3.3 GOAL III: BICYCLE IMPLEMENTATION

Objective 1: Process of Implementation

Establish a process that identifies responsibilities within each City department to implement the Bicycle Master Plan.

Department Responsibilities:

- Set a schedule based upon priorities – Public Works
- Secure funding – City Manager's Office, Public Works
- Public Outreach – City Manager's Office, Community Services, Police, Public Library, City Clerk
- Programs and events – Community Services, Police
- New development – Planning and Building
- Maintenance – Public Works
- Funding and purchase of bike racks and bike lockers – City Manager's Office, Public Works
- Installation of project elements (signage, striping, stencils, drainage grates) – Public Works

Policies

a) Designate that a coordinator within each City department be responsible for implementing the bicycle plan.
b) Establish a review process in the City, led by Public Works, to ensure that bicycle projects are properly implemented.
c) Update City ordinances and the zoning code for bicycle planning that includes bicycle facilities and ancillary accommodations, to be led by Planning and Building.
d) Adopt design guidelines for bicycle facilities and support elements.
e) Update the Bicycle Master Plan every 5 years to maintain compliance with Caltrans Bicycle Transportation Account (BTA) funding eligibility.

Objective 2: Bicycle Project Funding

Actively pursue funding opportunities for bicycle facilities and programs.

Responsible Departments: City Manager's Office, Public Works, Finance

Policies

a) Allocate City funds and other revenue sources specifically for bicycle projects.
b) Seek funding opportunities for grants in transportation, health, clean air, safe schools, and other resources.
c) Prioritize projects to maximize funding eligibility in grant applications.
d) Prepare projects in accordance with State and Federal guidelines to ensure funding eligibility.

e) Plan the capital improvement program (CIP) budget to include bicycle facility projects and improvements wherever possible.
f) Consider an assessment for new developments to set aside funds for bicycle projects.
g) Coordinate with neighboring cities to jointly apply for grant funding for inter-jurisdictional projects where opportunities allow.
h) Collect bicycle counts on a regular basis to measure bicycle use, which can be included as part of funding grant applications.

Objective 3: Bikeway Maintenance

Develop a maintenance plan to ensure implementation of the bicycle projects.

Responsible Department: City Manager's Office, Public Works

Policies

a) Develop a review process where all capital improvement projects consider bicycle accommodations, such as road widening opportunities or restriping.
b) Implement a pavement surface management program to maintain street pavement in a condition suitable for bicycles.
c) Develop a maintenance program to maintain bicycle facility markings in good condition.
d) Ensure that bicycle and way finding signage is maintained and replaced when needed.

3.4 GOAL IV: MULTI-MODAL INTEGRATION

Objective 1: Multi-Modal Connectivity

Improve opportunities for multi-modal trip-making linking bicycling with buses, trains and, park-and-ride lots.

Responsible Departments/Agencies: Public Works, Los Angeles County Metro

Policies

a) Ensure that the bicycle network is connected to the Gold Line through bicycle facilities such as lanes and routes.
b) Continue to maintain bicycle access at Gold Line entrances.
c) Improve bicycle parking (bike, racks) and/or bicycle storage (bike lockers) and consider the installation of a bike station at the Gold Line station.
d) Seek opportunities to make bicycle improvements on the City buses, such as installation of bicycle racks.
e) Improve bicycle parking (bike, racks) and/or bicycle storage (bike lockers) at public parking lots to encourage the bicycle connection with cars.
f) Promote the bicycle connections to the buses, trains and parking lots through the public awareness campaign.

Gold Line Multi-Modalism

CHAPTER 4
BICYCLE NETWORK

4.0 BICYCLE NETWORK OVERVIEW

This Chapter evaluates the existing conditions and needs of bicyclists and makes specific recommendations for the planning and building of a comprehensive bicycle network.

The bicycle network connects people to places, such as City Hall, Metro Gold Line, shops, parks, and offices. It is intended to create a bicycle network for residents, businesses, and visitors of all skill levels.

The network is made up of bicycle facilities as well as support facilities such as bicycle parking (racks and lockers) and amenities, defined as clothing lockers, changing areas, and shower facilities. The Bicycle Master Plan Update recommends specific bicycle facilities, including routes, lanes, and paths. It also suggests amenities for parking and changing facilities.

In addition, there are suggestions for City ordinance changes to support the bicycle network.

4.1 TYPES OF BICYCLISTS

It is important to consider bicyclists of all skill levels and interests in creating a bicycle plan.

There are three general categories of bicycle skill types, according to the Federal Highway Administration (FHWA). These include advanced or experienced riders, basic or less confident riders, and children. Each of these types of bicycle riders possesses a different skill level.

The skill level often determines where a bicyclist is most comfortable riding. Some bicyclists with more experience prefer a direct route on an arterial roadway while a less experienced bicyclist may prefer a route on a local or residential street.

In addition to skill levels, there are different levels of interest in bicycling. The typical categories are for recreational and commuter bicyclists. There is a growing group of working bicyclists, such as law enforcement bicycle

"Most adult riders are less confident and prefer to use roadways with a more comfortable amount of operating space, perhaps with designated space for bicyclists"

AASHTO Guide 1999

patrols and special event patrols.

Recreational bicycling is done for enjoyment. It may involve a family ride to a park, a bicycle club ride, or friends riding to meet for lunch. Typical bicycle destinations include parks, local retail, and community centers.

Commuter bicyclists use their bicycle as a means of transportation to get to work or school. Destinations for commuters are employment centers and schools. Multi-modal trip-making is often associated with commuter bicycling.

Working bicyclists are people who use a bicycle to conduct their business. There is a growing number of law enforcement agencies, including in South Pasadena, with officers on bicycle patrols. These bicyclists need access to all parts of the city, including neighborhoods and commercial areas.

4.2 CURRENT AND POTENTIAL COMMUTER BICYCLING

The Caltrans Bicycle Transportation Account (BTA) requires that the current number of bicycle commuters is determined and an estimated increase in that number would result from implementation of the Bicycle Master Plan.

The data used to determine such estimations were obtained from the U.S. Census American FactFinder's 2005-2009 databases.

According to the U.S. Census (2009), 79% of South Pasadena city workers drove to work alone in 2005-2009, 9% carpooled, 4% took public transportation, and 4% used other means, including bicycling.

The national average number of bicycle commuters has increased from 0.4% to 6%, according to the American Community Survey by the U.S. Census Bureau (2009). South Pasadena is within the range of bicycling commuters with approximately 0.4% of its working population commuting by bicycle.

Table 4.1 shows the results of the estimated number of commuters who could potentially be attracted to bicycling for shorter commutes if a bicycle program is fully implemented.

Table 4.1 Current and Potential Bicycling

City population	25,881	people
Working population	12,585	people
Workers currently bicycling	50	people
Workers currently driving alone	9,879	people
Census average commute time of all commuters	28.1	minutes
Bicycle commute distance for 28.1 minutes at 10mph	4.7	miles
Drive commute time of 4.7 miles at 25mph	11.2	minutes
Census drive-alone commute times less than 10 minutes	978	people
Potential number of new bicycle commuters	978	people

The total number of bicycle commuters could conceivably be increased by 978, to a total of 1028 bicyclists. This is based on the fact that a commute which is less than 10 minutes and/or less than 5 miles is an ideal bicycle commute. So, a commuter under both of those conditions, miles and time, could potentially commute by bicycle. The South Pasadena Bicycle Master Plan, once fully implemented, is expected to increase the bicycle commute mode share from 0.4% to 8%.

4.3 BICYCLE FACILITIES

Bikeways are part of the roadway network. Official bicycle facility definitions are established by Caltrans. These include a Class I Bicycle Path, Class II Bicycle Lane, and Class III Bicycle Route.

Class I Bike Paths

A Class I Bikeway facility is designed specifically for bicycles and is a paved right-of-way separated from a street or highway providing a dedicated area for bicycle travel. It is often located along waterways (Arroyo Seco), utility corridors (Southern California Edison), or at the beach (Santa Monica). Paths are often shared with pedestrians unless specifically prohibited.

Bike Path along Ballona Creek

Class II Bike Lanes

A Class II Bikeway facility is a lane striped and stenciled on the pavement of a roadway that is for the preferential use of bicycists. It is most often located to the right of through travel lanes on streets and roadways that are not limited-access (such as freeways). Bike lane striping and pavement markings are intended to promote an orderly flow of traffic by establishing specific lines of demarcation between roadway space reserved for bicycles and lanes to be occupied by motor vehicles.

Bike Lane on Marengo Avenue

Class III Bicycle Routes

A Class III Bikeway facility is a shared facility, either with motor vehicles on the street or with pedestrians on sidewalks. They are established along preferred cycling routes not served by Class I or II bikeways. The term "preferred" is used here as a route that is of particular importance for bicycling where a Class I or II is not feasible. Class III Bike Routes often connect discontinuous segments of bikeway (typically bike lanes).

Bike Route in Pasadena

Special Roadway Markings

Special markings are often used with bicycle facilities. In particular, Class III Bicycle Routes may be enhanced with shared roadway markings (sharrows) or green lanes. More detailed information and references are provided in Chapter 8 (Design Guidelines).

Sharrows

Shared roadway markings, commonly known as sharrows, are intended to delineate where cars and bicycles share the travel lane. The sharrow marking indicates the proper position for cyclists to ride for ease of travel as well as to avoid obstructions such as unexpected car door openings. It also shows drivers where a bicycle can legally ride within the lane. A sharrow is often used along a Class III Bicycle Route that has been designated as part of a larger bicycle network.

Sharrow in Venice

Green Lanes

Green colored pavement may be used along a lane to enhance the conspicuity of a Class III bicycle route. These are often referred to as "green lanes" which highlight areas where bicycle and cars may share the road. The green lane is paired with a sharrow marking along bicycle routes where there is not enough width for a designated bicycle lane. The green lane treatment is also a way to raise awareness of bicycling on a particular street, such as along commercial streets.

Green Lane in Long Beach

Bicycle Box

The bicycle box is an intersection design which creates a designated area for bicyclists to position themselves in front of cars at signalized intersections. It is intended to allow bicyclists to wait in a visible location for making a right or left turn. A bicycle box is a painted green box on the pavement accompanied by a white bicycle symbol.

Bike Box in Portland

Signal Detection for Bicycles

Similar to vehicle signal detection, bicycle detection can be placed at signalized intersections. Bicycle signal detection occurs either through the use of push-buttons or by automated means, most often in-pavement induction loops or video. Proper bicycle detection also has a pavement marking and sign, indicating where the bicyclist must be positioned and instructions to accurately detect bicyclists and provide clear guidance to bicyclists on how to call a green phase for their desired crossing.

4.4 EXISTING BIKEWAY NETWORK

South Pasadena currently has two existing bikeways, totaling 1.3 miles. The two existing bikeways in South Pasadena are illustrated in Map 4.2 and include Class II Bike Lanes on Raymondale Avenue and Marengo Avenue:

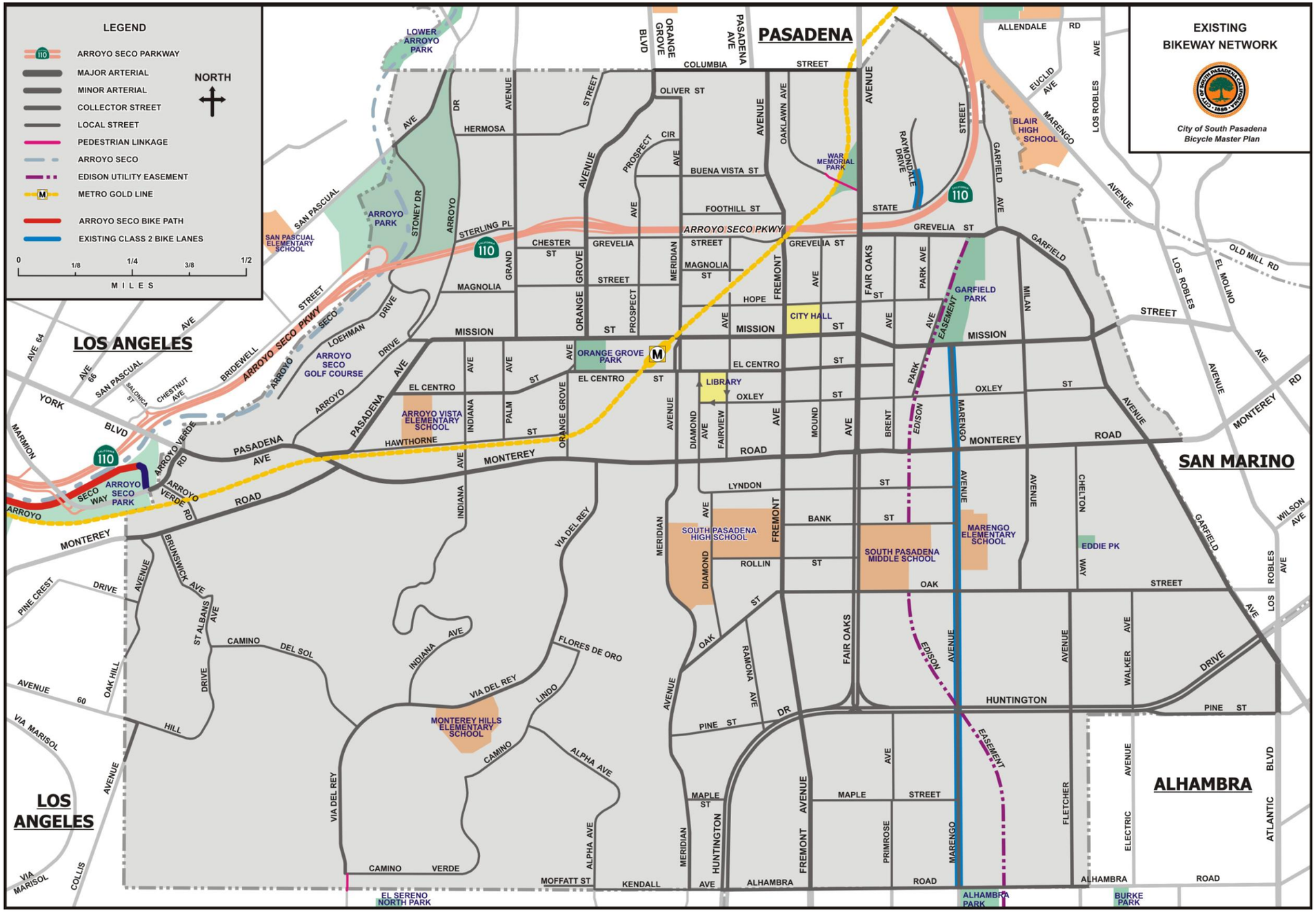
- **Raymondale Avenue**
  State Street to Amberwood Drive
  0.1 miles

- **Marengo Avenue**
  Mission Street to Alhambra Road
  1.2 miles

Raymondale Drive

Marengo Avenue

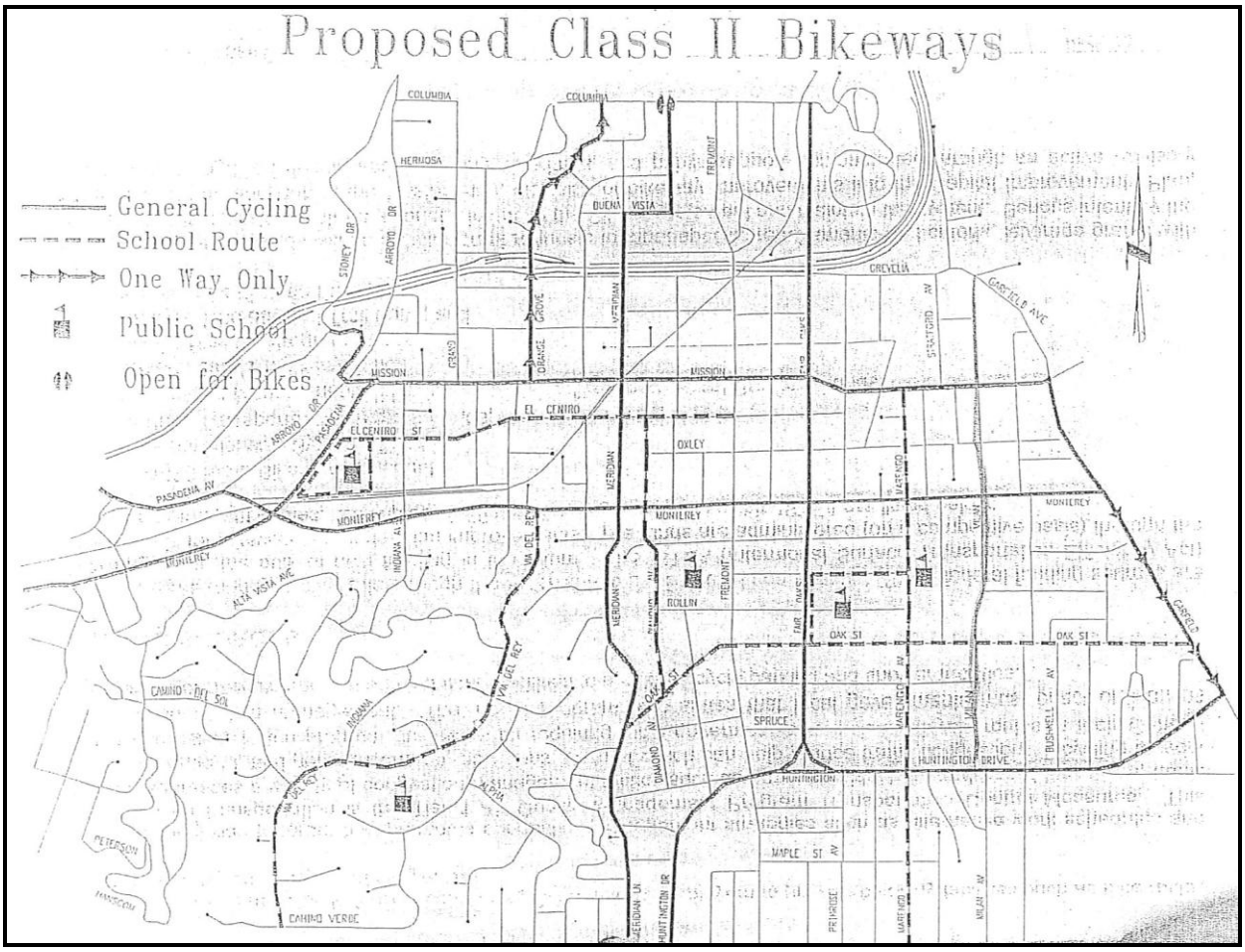
Map 4.1 Existing Bikeways



4.5 ADOPTED 2005 BICYCLE MASTER PLAN BIKEWAYS

The Bicycle Master Plan adopted in 2005 proposed several bikeways. At that time, no bikeways existed in the City. Map 4.2 illustrates the proposed bikeways as presented for adoption by the City Council on February 16, 2005. Of these, only the Class II Bike Lanes on Marengo Avenue have been implemented. This 2011 Update of the Plan includes the 2005 proposed bikeways plus many others to form a complete network.

Map 4.2 2005 Proposed Bikeways



This Chapter describes the Bicycle Plan's proposed bikeways, bicycle facilities, and programs as well as relevant changes to the municipal code.

4.6 2011 PROPOSED BIKEWAYS

This South Pasadena Bicycle Master Plan proposes a comprehensive network of bikeways that serves destinations within the City and provides for local and regional connectivity. A total of 22.8 miles of bicycle facilities are proposed.

The network includes a total of 21 bikeway projects that include 2 miles of Class I Bike Paths, 7.3 miles of Class II Bike Lanes, and 14 miles of Class III Bike Routes. Each project includes segments of roadway combined to produce a viable and continuous project.

The entire bikeway network of existing and proposed bikeways will total 24.1 miles of bike paths, bike lanes and bike routes

The proposed bicycle projects are organized in three tiers for implementation. The project tiers will be implemented in phases as funding becomes available. Tier I projects are intended for implementation in the short term and are presented in more detail in Chapter 7 (Implementation). Tier II projects are considered mid-term and will require further development and detail. And, Tier III projects include the remainder, including the Class I Bike Path projects that will be implemented later in the life of the Plan.

Tables 4.2, 4.3, and 4.4 present the list of individual projects, their component segments, destinations served, and length in miles. The color shading indicates the bikeway classification of each segment as defined below.

- **Red: Class I Bike Paths**
- **Blue: Class II Bike Lanes**
- **Green: Class III Bike Routes**

Map 4.4 illustrates the City's complete bikeway network including existing and proposed bikeways.

Table 4.2 Proposed Tier I Bikeways (13.7 miles)

Project	Project Name	Destinations	Class	Project Segments			Segment Mileage	Project Mileage
				Street	From	To		
1	**Pasadena/Mission**	Arroyo Seco Stables, Arroyo Vista Elementary, Orange Grove Park, Gold Line Station, Farmers' Market, Mission Street Commercial District, Fair Oaks Commercial District, Garfield Park	**2**	**Marmion Way**	West City Limit	Arroyo Verde Rd	0.05	2.2
			2	**Arroyo Verde Rd**	Marmion Way	Pasadena Ave	0.05	
			2	**Pasadena Ave**	Arroyo Verde Rd	Monterey Rd	0.3	
			2	**Pasadena Ave**	Monterey Rd	Mission St	0.3	
			2	**Mission St**	Pasadena Ave	Grand Ave	0.2	
			Green Lane	**Mission St**	Grand Ave	Fair Oaks Ave	0.7	
			2	**Mission St**	Fair Oaks Ave	East City Limit	0.6	
2	**Fair Oaks**	Fair Oaks Commercial District	**2**	**Fair Oaks Ave**	Monterey Rd	Huntington Dr	0.5	1.3
			3	**Fair Oaks Ave**	North City Limit	Monterey Rd	0.8	
3	**El Centro/Oxley**	Arroyo Vista Elementary, Orange Grove Park, Gold Line Station, Farmers' Market, Public Library	**2**	**El Centro St**	Pasadena Ave	Orange Grove Ave	0.4	1.55
			3	**El Centro St**	Orange Grove Ave	Mound Ave	0.5	
			3	**Mound Ave**	El Centro St	Oxley St	0.05	
			3	**Oxley St**	Mound Ave	Garfield Ave	0.6	
4	**Meridian**	Gold Line Station, Farmers' Market, Mission Street Commercial District, South Pasadena High School	**3**	**Oliver St**	Orange Grove Ave	Meridian Ave	0.05	1.75
			3	**Meridian Ave**	Oliver St	South City Limit	1.7	
5	**Huntington**	Regional Bikeway (Los Angeles, San Marino)	**2**	**Huntington Dr**	South City Limit	East City Limit	1.5	1.5
6	**Fremont**	Post Office, Mission Street Commercial District, South Pasadena High School,	**3**	**Fremont Ave**	North City Limit	South City Limit	1.8	1.8
7	**Oak**	South Pasadena Middle School, YMCA	**3**	**Oak St**	Meridian Ave	Garfield Ave	1.2	1.2
8	**Monterey**	Arroyo Seco Stables, Regional Connection, Crosstown Bikeway, Fair Oaks Commercial Corridor	**2**	**Monterey Rd (west)**	West City Limit	Monterey Rd/Gold Line	0.5	2.4
			3	**Arroyo Verde Rd**	Marmion Wy	Monterey Rd	0.1	
			TBD	**Monterey Rd**	Monterey Rd/Gold Line	Fair Oaks Ave	1.1	
			3	**Monterey Rd**	Fair Oaks Ave	East City Limit	0.7	
9	**Bicycle Parking Program**		**See Page 7.34**					
10	**Bikeway Way Finding Program**		**See Page 7.35**					

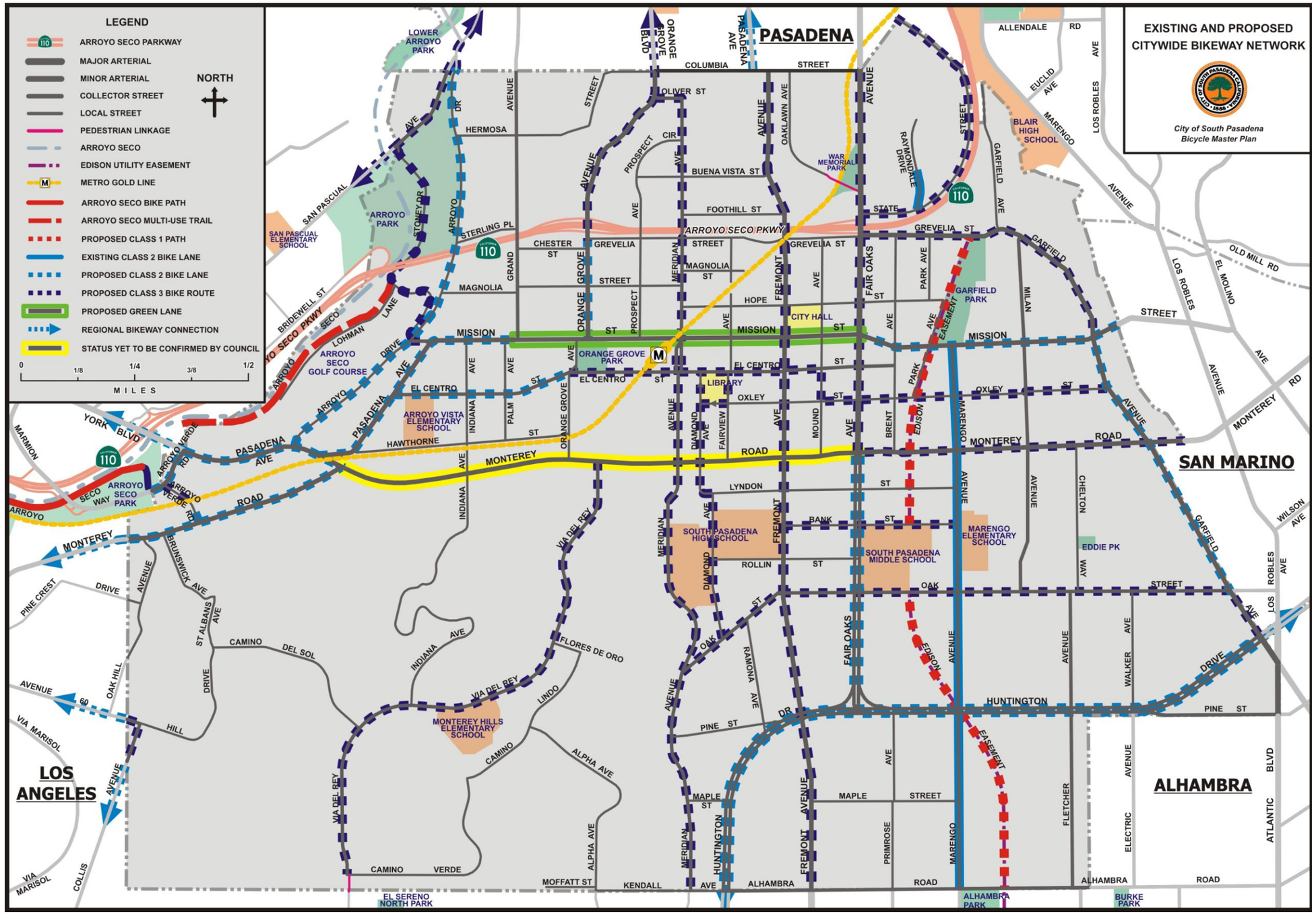
Table 4.3 Proposed Tier II Bikeways (7.0 miles)

Project	Project Name	Destinations	Class	Project Segments			Segment Mileage	Project Mileage
				Street	From	To		
11	**Garfield/Grevelia**	Garfield Park, YMCA	3	**Grevelia St**	Fair Oaks Ave	Clark Ave	0.3	1.35
			3	**Clark Pl**	Grevelia St	Garfield Ave	0.05	
			3	**Garfield Ave**	Clark Pl	Mission St	0.3	
			2	**Garfield Ave**	Mission St	Oak St	0.6	
			3	**Garfield Ave**	Oak St	Huntington Dr	0.1	
12	**Orange Grove**	Orange Grove Park	3	**Orange Grove Ave**	Columbia St	Grevelia St	0.5	0.7
			2	**Orange Grove Ave**	Grevelia St	Mission St	0.2	
13	**Monterey Hills**	Monterey Hills Elementary	3	**Via del Rey**	Monterey Rd	Camino Lindo	1.2	1.2
14	**Bank**	South Pasadena High School, South Pasadena Middle School, Marengo Elementary	3	**Bank St**	Fremont Ave	Marengo Ave	0.4	0.4
15	**Diamond**	Public Library, South Pasadena High School	3	**Fairview Ave (one-way SB)**	El Centro St	Oxley St	0.1	0.75
			3	**Oxley St (one-way WB)**	Diamond Ave	Fairview Ave	0.05	
			3	**Diamond Ave (one-way NB)**	El Centro St	Oxley St	0.1	
			3	**Diamond Ave**	Oxley St	Oak St	0.5	
16	**Stoney/San Pascual**	Arroyo Seco, Arroyo Park, Regional Connection	3	**San Pascual Ave**	West City Limit	North City Limit	0.3	0.9
			3	**Stoney Dr**	San Pascual Ave	Arroyo Dr	0.6	
17	**Arroyo Drive**	Arroyo Park	2	**Arroyo Dr**	Pasadena Ave	North City Limit	1.1	1.1

Table 4.4 Proposed Tier III Bikeways (2.7 miles)

Project	Project Name	Destinations	Class	Project Segments			Segment Mileage	Project Mileage
				Street	From	To		
18	**Edison Bike Path**	Garfield Park, South Pasadena Middle School	**1**	**Edison Utility Easement**	Grevelia St	Bank St	0.7	1.4
				Edison Utility Easement	Oak St	Huntington Dr	0.3	
				Edison Utility Easement	Huntington Dr	Alhambra Rd	0.4	
19	**Arroyo Seco Trail**	Arroyo Seco, Arroyo Park, Golf Course	**1**	**Arroyo Seco Trail / Path**	Stoney Dr	West city limit	0.6	0.6
20	**State**	Local Bikeway	**3**	**State St**	Fair Oaks Ave	North City Limit	0.6	0.6
N/A	N/A	Los Angeles Connection	**3**	**Avenue 60**	West City Limit	Collis Ave/Hill Dr	0.05	0.05
N/A	N/A	Los Angeles Connection	**3**	**Collis Ave**	West City Limit	Avenue 60/Hill Dr	0.05	0.05

Map 4.3 Existing and Proposed Bikeways



4.7 BICYCLE PARKING

Bicycle parking is an essential component of the City's bicycle network. Just as vehicle users rely on a place to park their vehicles at their destination, bicyclists need to be provided a place to park their mode of transportation. More detailed information regarding bicycle parking is provided in Chapter 8 (Design Guidelines).

There are three types of bicycle parking: racks, lockers and valet.

Bicycle racks are used for short-term or temporary parking, perhaps for a few hours. The racks are placed at destinations, such as shops, parks, and municipal buildings. Details for bicycle rack design, placement, and installation are explained in detail in Chapter 8 (Design Guidelines).

Bicycle lockers are used for long-term parking for all day or overnight use. It is often used at employment centers or to assist in multi-modal connections, such as with the Gold Line.

Valet parking for bicycles is becoming an increasingly popular way to provide secure parking at local events. It operates the same way as a car valet, with a valet service storing the bicycles at a central location. Private valet parking companies as well as the Los Angeles County Bicycle Coalition (LACBC) provide bicycle valet services.

Existing Bicycle Parking

Existing bicycle parking availability is not prevalent, convenient, or reliable at most destinations within the City.

South Pasadena currently has bicycle parking racks at some activity centers, mainly public places. Specific locations include:

- Gold Line station
- Public library
- City Hall
- Local schools

Bicycle Rack at the Gold Line Station

Although the City has not identified existing locations of bicycle parking (bike racks or bike lockers) at places of employment, there may be some bicycle parking located at small business locations.

Bicycle lockers are not found in the City at this time, and there are no bicycle valet services at City events.

Proposed Bicycle Parking

One of the Plan's programs is a citywide bicycle parking program, as discussed in Chapter 5 (Bicycle Safety Programs) that includes bicycle racks, bicycle lockers, and valet services.

Bicycle parking should be easily accessible, convenient, secure, and reliable. Thus, the program proposes bicycle parking at community destinations, retail areas, places of employment, and in public rights-of-way, such as on sidewalks.

The City may implement a bicycle parking program for municipal and public places. It would install bicycle parking at these locations through a grant project. The City may also apply for a grant to provide bicycle parking for retail areas and private establishments.

Recommended locations for bicycle parking in municipal, public, and some private locations are identified in Table 4.6.

Table 4.5 Proposed Bicycle Parking Locations

Destination	Racks	Lockers
City Hall	Additional Racks	New Lockers
Gold Line Station	Additional Racks	New Lockers
Public Library	Additional Racks	New Lockers
Farmers Market	Additional Racks	
Post Office	Additional Racks	
Parks	Additional and New Racks	
Golf Course (city-leased)	Additional and New Racks	New Lockers
Schools	Additional and New Racks	
Downtown Mission	New Racks	
Fair Oaks Retail	Additional Racks	
Local Businesses	Additional Racks	
YMCA	Additional Racks	
Places of Worship	Additional and New Racks	
San Pascual Stables (city-leased)	New Racks	

Existing Bicycle Parking Codes

The City of South Pasadena Municipal Code specifies requirements for bicycle use and facilities. It describes where a bicycle may ride, bicycle licenses and bicycle parking. This plan provides recommendations for bicycle parking and amenities to help qualify for Caltrans funding.

The Municipal Code, Chapter 7 Bicycles, Section 7.13 Bicycle Parking Spaces and Racks, authorizes the City Manager to designate and establish bicycle parking spaces as necessary. This section also states that bicycles shall only be parked in "bicycle only" spaces when marked or signed.

Municipal Code, Chapter 19 Motor Vehicles and Traffic, Article VII, Trip Reduction and Travel Demands, discusses requirements for bicycle parking racks and lockers for non residential development based on square footage.

The Zoning Code Division 36.310.100 (Bicycle Parking) provides guidelines for bicycle parking in development for multi family and retail commercial uses based on percentages of vehicle parking required. It also provides specific rack equipment and placement of the equipment.

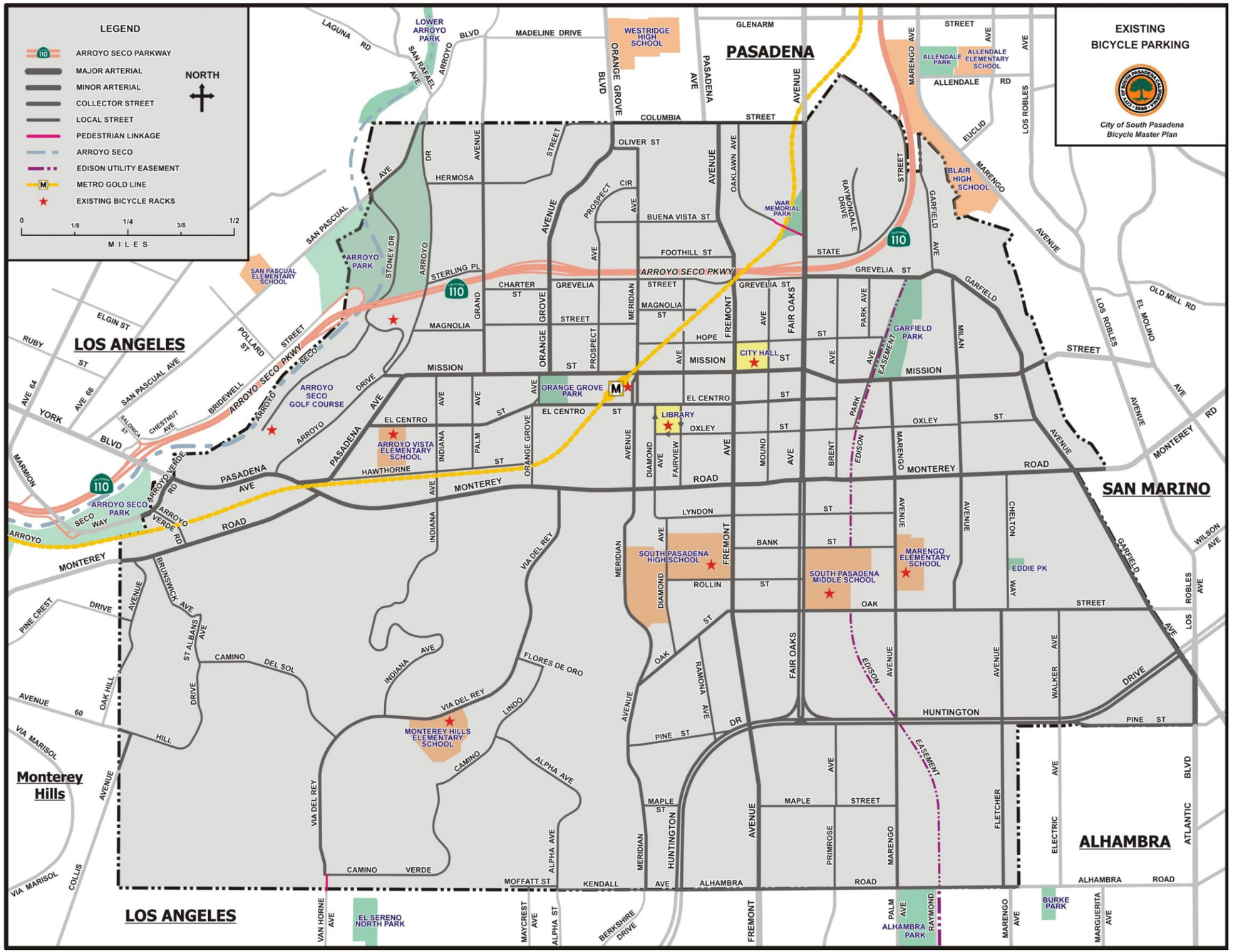
Proposed Bicycle Parking Codes

The existing municipal and zoning codes requires bicycle parking. However, there are some recommended modifications to these codes:

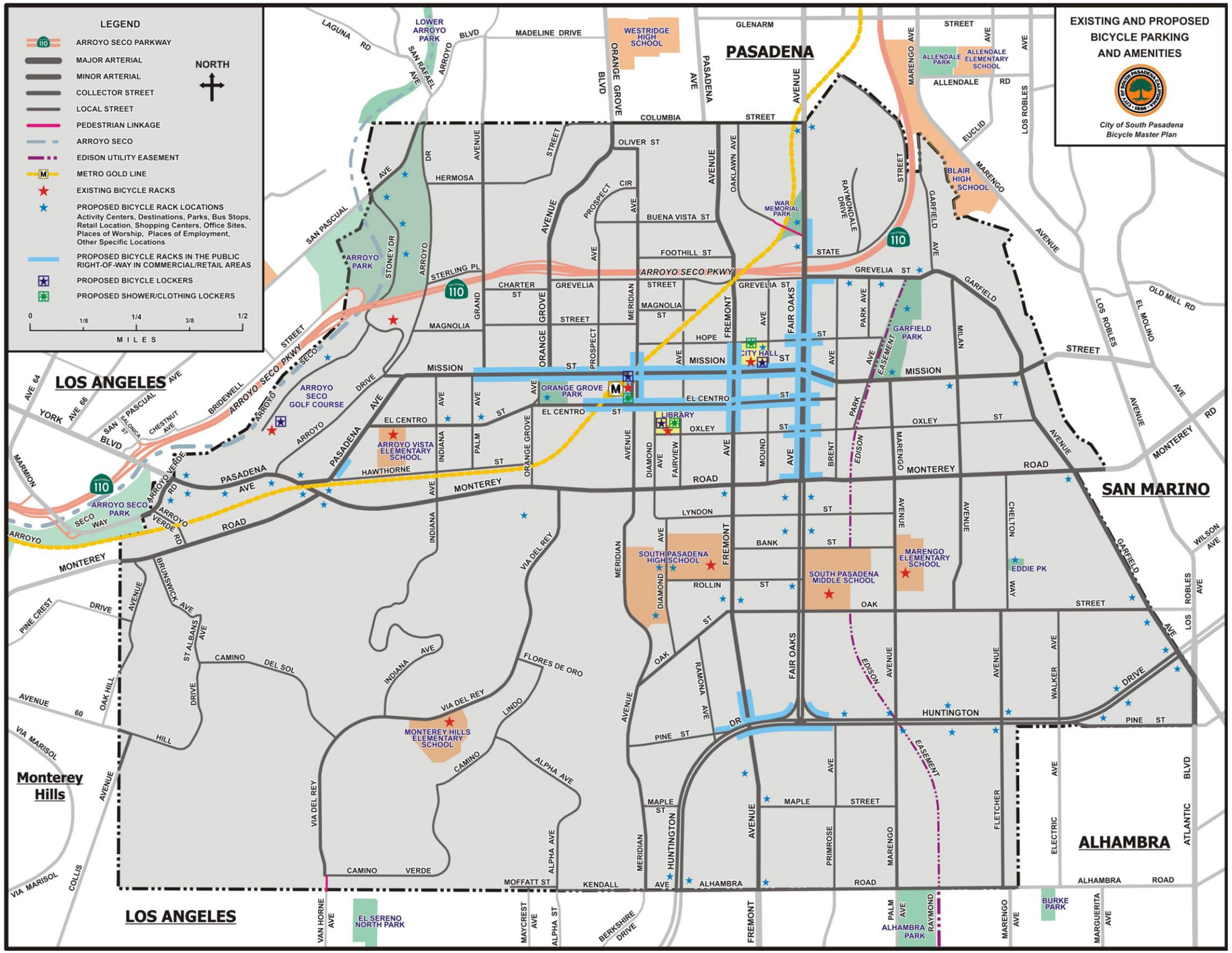
- Any new development of at least 15,000 square feet should be required to provide bicycle parking (bike racks).
- Bicycle lockers for longer-term parking should be provided at City Hall, the Gold Line Station, and new commercial and office developments of at least 50,000 square feet, or at the discretion of the City Planning and Building Department.
- The equipment and placement of bicycle racks and bicycle lockers is discussed in Chapter 8 (Design Guidelines).

Bicycle Parking signs should be included in the code with specific guidelines for type and placement, as illustrated in the Bicycle Master Plan Design Guidelines.

Map 4.4 Existing Bicycle Parking and Amenities



Map 4.5 Proposed Bicycle Parking and Amenities



4.8 BICYCLE AMENITIES

In order to encourage bicycle commuting, bicycle amenities, defined in this Bicycle Master Plan as showers, changing areas and clothing lockers, should be provided. These amenities are especially important to commuter bicyclists who may need to change clothing and store gear at their place of work.

Existing Bicycle Amenities

Currently, no shower and clothing locker facilities available to bicyclists have been identified at City Hall or other municipal locations. Municipal code currently does not require showers, changing areas, or clothing lockers in new development.

Existing Municipal Codes for Bicycle Amenities

There is no municipal or zoning code that reference bicycle amenities, such as showers, changing areas or clothing lockers.

Proposed Bicycle Amenities

Bicycle Amenities should include shower, clothing locker, and changing areas. Recommendations for the location of bicycle amenities include:

Table 4.7 Proposed Bicycle Amenities Locations

Destination	Amenities	Public/Private
Municipal Buildings	Showers, Lockers, Changing	Public
Gold Line Station	Showers, Lockers, Changing	Public
New Development	Showers, Lockers, Changing	Private

Proposed Municipal Codes for Bicycle Amenities

Recommendations for ensuring that bicycle amenities are installed for commuter bicyclists, the City should consider codes that require:

- One shower per gender should be required for commercial development of at least 25,000 square feet.
- One changing area per gender with storage lockers for clothing and gear should be required for commercial development of at least 25,000 square feet.
- A shared-use option for showers and changing areas with clothing lockers is an option. The shared-use may be with an adjacent commercial use or with a public or private establishment, such as the YMCA.

Other Proposed Municipal Code Changes

The City currently has two sections of the municipal code that address the issue of riding bicycles on sidewalks. The first code is South Pasadena Municipal Code Section 7.12 Bicycles, which states:

> "It is unlawful to ride a bicycle upon any sidewalk in front of any church, school, place of business, or place of public assembly. The rider shall give the right of way to pedestrians in all other sidewalk areas."

It is recommended that the language be modified to be simpler as follows:

> "Bicyclists shall give the right of way to pedestrians when riding on sidewalks. Bicyclists shall walk their bicycle on sidewalks where there is limited space to share comfortably with pedestrians."

The second code is South Pasadena Municipal Code Section 20.42 Wheeled Toys, which states:

> "No person shall operate any bicycle or wheeled toy upon any sidewalk in a business district or adjacent to any place of public assembly. "wheeled toy" includes all wheeled objects regardless of motive power not classified as a bicycle in the vehicle code. Wheeled toy DOES NOT include an electric personal assistive mobility device (Segway)."

It is recommended that the language be modified to remove the words "bicycle or" in the first line as a bicycle is not a wheeled toy. The recommended changes to Section 7.12 above cover the issue that Section 20.42 wishes to address with regard to bicycles (riding on sidewalks).

4.9 MULTI-MODAL INTEGRATION

Bicycling is an integral part of the City's multi-modal strategy and the Bicycle Master Plan supports the development of this mode and its connections to transit. The Plan ensures that bicycle facilities and amenities support the use of the Metro Gold Line and Metro buses.

There are 3 recommended bikeway projects that provide direct access to the Gold Line station. Access to the station is provided on the north (Mission/Meridian) and south (El Centro) ends of the station. These projects, outlined in Chapter 7 (Implementation) include the following.

- Pasadena/Mission
- El Centro/Oxley
- Meridian

Bicycle parking (bike racks and bike lockers) are recommended as support facilities that will further enhance the multi-modal connection. There will be long-term and short-term bicycle parking available at the station, as recommended in Chapter 7 (Implementation).

CHAPTER 5
BICYCLE SAFETY PROGRAMS

5.0 BICYCLE SAFTETY PROGRAM OVERVIEW

Safety is a primary concern for those riding bicycles on the roadway network. A safety education component is an integral part of the Bicycle Master Plan and is required for Caltrans approval. This Chapter includes programs that provide bicycle safety education, events, and other campaigns. The programs outlined in this Chapter are examples of programs that can be implemented by the City of South Pasadena.

5.1 EXISTING BICYCLE SAFTETY PROGRAMS

The City of South Pasadena Police Department has a bicycle patrol unit. The City's bicycle patrol unit often leads community safety education events. The City's bicycle patrols have presented a Bike and Walk to School week open house event every October. Children are instructed in bicycle safety and appropriate riding behavior. Attendees can have their bicycles registered and are often provided a bicycle helmet. Due to decreased funding this past year, bicycle helmets were not made available as part of the event.

The Police Department conducts an "Arrive Alive" safety program that is required of teens who receive citations from South Pasadena police officers for violating the rules of the road while on foot, bike, scooter or skateboard. The program is designed to promote road and pedestrian safety among teens. The program was instituted four years ago after a series of accidents involving teen pedestrians on Fair Oaks Avenue near South Pasadena Middle School.

There are no other bicycle education programs, such as Bike to Work Week, currently organized by the City.

Bicycle Rodeo (Claremont)

5.2 PROPOSED BICYCLE SAFTETY PROGRAMS

There are three primary components of the Bicycle Safety Program: general education, encouragement, and enforcement. These program components teach bicycling skills, encourage bicycling through events and campaigns, and enforce rules of the road. The following are potential programs and events the City of South Pasadena may implement.

Bicycle Safety Education

Department Responsibility – Community Services, Library, Police

There are a variety of activities and literature that can be used to teach bicycle safety to children, adults, and others who use the public right-of-way.

Bicycle Skills

Programs such as Bicycle Rodeos or "Traffic Skills 101" one-day courses use a training course to help people develop bicycle skills, such as proper stopping techniques, turning signals, and other rules of the road. In addition, safety tips and safety inspections are integrated into the course. This program is geared to both children and adults. The League of American Bicyclists and the Los Angeles County Bicycle Coalition (LACBC) offers curriculum and classes.

Bicycle Demonstrations

As part of a school assembly or community event, bicycle safety can be demonstrated by professional bicyclists who perform stunts to engage the audience. The bicyclists interact with the community, showing them bicycle safety tips. These appeal to children and adults. Bicycle Motocross teams can also be hired to perform at these.

Community Bicyclist Speakers

Professional cyclists can be invited to speak about bicycle safety. The speakers may combine a motivational safety speech with a community service component. This is often done for civic groups, girl and boy scouts, senior centers, and other community groups. The U.S. Cycling Federation as well as College Cycling Teams offers these services.

Motorist Education

Motorists can be educated about bicycle laws by explaining the rights of each user on the City's roadways. There should be an educational guide or brochure created with the

laws as well as safety guidelines. It can be distributed to drivers through the high school, community centers, and local businesses.

Bicycle Signage

A bicycle signage program can be used to educate the community by providing greater visibility to and information about the City's bicycle network. There can be way finding signs that identify different routes or destinations. Other types of signage, such as "Share the Road" signs, can be used to teach motorists and bicyclist the proper use of a travel lane. There may also be literature developed, as part of a bicycle guide, to explain the signage program.

Encouragement

Department Responsibility – City Manager's Office, Community Services, Police

Encouraging people to ride their bicycle is an exciting way to create a safe environment for bicycling. The "Cycle South Pasadena" theme can be the cornerstone of bicycle encouragement. Encourage can consist of communication campaigns, health fairs, special events, and incentive programs.

Communication Campaign

Maintain a webpage, entitled "Cycle South Pasadena" that can be used to communicate the City's bicycle programs and implementation of facilities. It may announce the grand opening of a new bicycle lane, feature a story about a South Pasadena bicyclist, or highlight the latest trends in bicycle safety.

Business District Promotion

A local business promotion may reward bicyclists for riding their bicycle to the commercial district. The entire district, such as Mission Street, may create a themed campaign with posters, flyers, and/or events. Bicyclists may receive discounts or free products. It may be coordinated with the local Chamber of Commerce.

Community Bicycle Ride (Los Angeles)

Community Rides or Ciclovias

Riding the streets of South Pasadena in a community ride or ciclovia is a positive way to encourage community members to see their City on a bicycle. The ideal bicycle route would traverse through the City, highlighting its parks, commercial areas and neighborhoods. It will also demonstrate the benefits of bicycling in South Pasadena.

Community Events

Bicycling should be integrated into existing community events, such as the Farmers Market, Home Tours, Garden Tours, and the City's Spring Egg Hunt and Health Fairs. Residents and visitors should be encouraged to attend bicycle events through advertisements at the weekly Farmers Market and at other community events. There should be information on these public announcements encouraging people to bicycle to the location. If possible, there could be a bicycle information booth or bicycle expert in attendance.

Regional Events

It is a good opportunity to join with other regional bicycle events. These events may include California Bicycle to Work Week, Countywide Bicycle Ride, and Bike to School. The City may sponsor a bicycling "pit stop", host a safety workshop, or sponsor a similar local event.

Multi-Modal Bicycle Guide

A bicycle and multi-modal guide may be produced. It would include a map of the South Pasadena bicycle network and its connections to other modes of transportation, including the Gold Line and connecting Metro bus lines. It will be important to explain to riders how to use their bicycles on the Gold Line and on racks on Metro buses. In addition, there can be safety tips, sign definitions, and bicycle amenities.

Enforcement

Department Responsibility – Police

Historically, police departments have been involved with educating through enforcement coupled with safety promotions.

Bicycle Patrol Unit

South Pasadena has a bicycle patrol unit. These patrol officers should be trained in bicycle related laws, so they can enforce them. This may include rules of the road and other safety requirements such as sharing the road rules, bicycle lighting, and helmets for children. Safety campaigns related to these laws can be administered by the patrol unit; bicycle light, safety bell ringers and helmet give-aways.

Speed Limits

Speed enforcement for automobiles along bikeways could be implemented as a way of reducing bicycle accidents. Typically, the City's Police Department enforces the speed limits along bicycle facilities, either by speed trailer or other surveillance. It may be paired with another bicycle safety campaign, such as Bike to School week, to increase awareness of the dangers of speed.

Bicycle License

In accordance with the City's municipal code, bicycle licenses are required to be issued. However, bicycle licensure is rarely enforced and most bicycles go unlicensed. An annual community event for bicycle safety could be held in which bicycle licensing could be done. The process of licensing bicycles adds to the bicycling safety education process and assists the Police Department in recovering stolen bicycles.

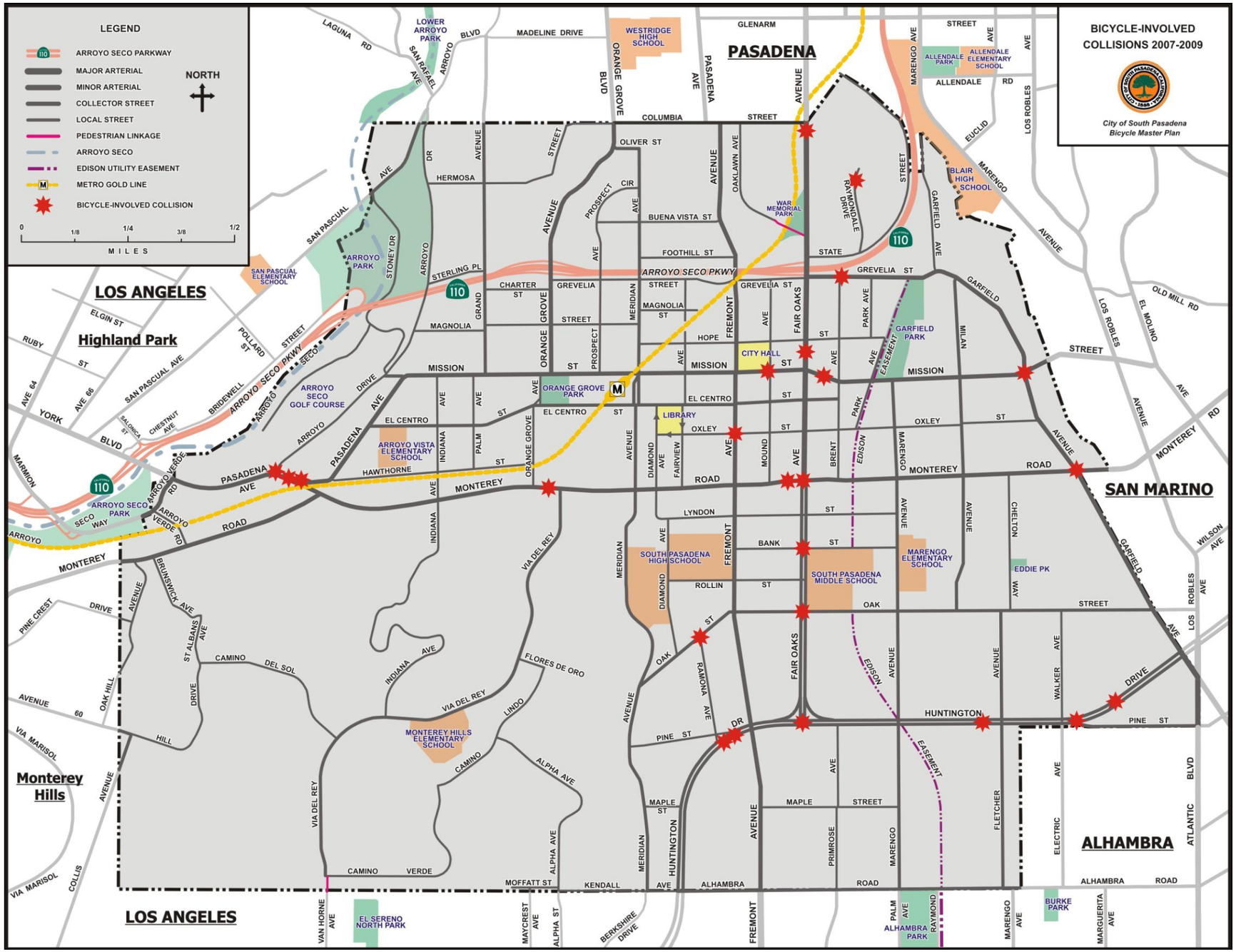
5.3 BICYCLE COLLISION ANALYSIS

Bicycle safety is of primary importance for bicyclists. One measure of safety is bicycle collisions. Caltrans BTA requires an analysis of bicycle-related collision data for the most recent available three years. The analysis of bicycle collisions assists the Police Department in enforcing traffic laws in specific areas where bicycles are involved in collisions.

The California Highway Patrol (CHP) keeps collision statistics for jurisdictions throughout California as part of the State's Statewide Integrated Traffic Records System (SWITRS). In addition to SWITRS, the City of South Pasadena's Police Department keeps its own record of traffic collisions as well. The Department's records indicate that 24 collisions involving bicyclists occurred during the period 2007-2009. The vast majority occurred along the 3 busiest arterial roadways in the City: 6 along Fair Oaks Avenue, 6 along Huntington Drive, and 7 along the Pasadena Avenue/Monterey Road corridor.

Map 5.1 illustrates the locations of bicycle-related traffic collisions as reported by the South Pasadena Police Department.

Map 5.1 Reported Police Department Bicycle-Involved Collisions



CHAPTER 6
FUNDING RESOURCES

6.0 FUNDING OVERVIEW

Bicycle Master Plan projects are funded through a variety of local, State, and Federal funding sources. There are few funds dedicated towards bicycle projects, although the majority of the funds are transportation or environmental resources where bicycling may be eligible. A summary of funding resources that are most applicable to South Pasadena is provided as a guide to help implement the Bicycle Master Plan.

In order to be eligible for many of the funding sources, especially Caltrans Bicycle Transportation Account (BTA) funds, the City must have a Bicycle Master Plan approved by Caltrans.

To be eligible for Bicycle Transportation Account (BTA) funds, a city or county must prepare and adopt a Bicycle Transportation Plan
Caltrans

6.1 FEDERAL FUNDING RESOURCES

Land & Water Conservation Fund (LWCF)

The LWCF program is intended to create and maintain a nationwide legacy of high quality recreational facilities. Specifically, the LWCF program provides matching grants for the acquisition and development of public outdoor recreation areas and facilities. It is administered through the State Department of Parks and Recreation. The LWCF could fund the development of river-adjacent bicycle facilities, for example along the Arroyo Seco.

Federal Safe Routes to School (SRTS) Program

The Federal Safe Routes to School (SRTS) Program was established by Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users (SAFETEA-LU) and is implemented by Caltrans. Federal SRTS grants are for bicycling and walking projects that create safe environments for children commuting to school. The funds are appropriated for engineering infrastructure and programming. South Pasadena's bicycle routes that are along school corridors could be eligible for funding under a Federal SRTS grant.

Transportation Enhancements (TE)

The Federal Highways Administration's Transportation Enhancements (TE) activities are related to surface transportation enhancements, such as bicycle facilities and programs. The programs, "expand transportation choices and enhance the transportation experience," as stated in the TE guidelines. TE funds are distributed through Los Angeles Metro's Call for Projects. Typical projects include bicycle facilities and safety programs. South Pasadena may consider a funded project for the section of the Mission Street Green Lane (Chapter 7, Project 1), which connects the downtown historic retail area of South Pasadena with the Gold Line. Such elements as striping, bicycle parking, and bicycle signage are eligible activities for TE funds.

6.2 STATE FUNDING RESOURCES

Bicycle Transportation Account (BTA)

The State of California Bicycle Transportation Account (BTA) is the most relevant funding program for bicycle projects in California. It is administered through the Caltrans Bicycle Facilities Unit. The primary goal for the BTA is to improve bicycle commuting through local projects. These projects vary from bicycle planning to the installation of bicycle lanes to bicycle parking. The majority of the project is funded through the BTA, with a minimum 10% local match. South Pasadena's Class II bicycle lanes, Class III Bicycle Routes, and Green Lane bikeways are ideal BTA funded projects.

Office of Traffic Safety (OTS) Grant

The California Office of Traffic Safety Grants (OTS) is used to mitigate traffic safety program deficiencies. There is a category entitled, Pedestrian and Bicycle Safety (PS), which includes programs to increase safety and awareness and skills for bicyclists. Typical OTS grants include safety helmet distribution, bicycle rodeos, and safety educational events. South Pasadena could apply for grants to develop their bicycle safety education with eligible programming provided by OTS.

Recreational Trails Program (RTP)

The Recreational Trails Program (RTP), administered through the California Department of Parks and Recreation, provides funds for recreational trails and related projects. Bicycle related projects would fall under the non-motorized category. The Santa Ana Bicycle Trail Gap Closure in Orange County is an example of a project funded through this program . South Pasadena's Arroyo Seco Trail could be partly funded by it as well.

State Safe Routes to School (SR2S) Program

Much like the Federal Safe Routes to School (SRTS) Program, the State's Safe Routes to School (SR2S) program's goals are to, "increase the number of children walking and bicycling to school by making it safer." The difference in the programs is the funding

source and program requirements, but both are administered by Caltrans. The majority of the State SR2S funds are for infrastructure, with only 10% for programming. South Pasadena may use these funds for intersection crossing improvements and bicycle markings in front of schools.

Transportation Development Act (TDA) Article 3 (SB 821)

Transportation Development Act (TDA) Article 3 funds are distributed by the State of California and administered by Los Angeles Metro for planning and construction of bicycle and pedestrian facilities. The TDA funds for bicycle improvements are available for most phases of a bicycle facility including design, construction, installation as well as signal controls, parking, and multimodal connections. South Pasadena may apply for funds for the design and implementation of the Class II bikeways as well as bicycle amenities such as bicycle parking.

6.3 LOCAL AND REGIONAL FUNDING RESOURCES

Metro Call for Projects (CFP)

As part of the Los Angeles Metro's Transportation Improvement Program (TIP), the Call for Projects (CFP) is a funding program that distributes transportation funds to regionally significant projects. There are eight transportation modal categories which includes Bikeway Improvements, Regional Surface Transportation Improvements (RSTI), Transportation Enhancements (TE) and Transportation Demand Management (TDM). Typical approved Metro Call for Projects include bicycle improvements that are part of a regional connection, have multimodal component, or have a historic significance. An ideal project for South Pasadena may be Mission Street (Chapter 7, Project 1), which has regional connections, multimodal Gold Line connections to rail and buses, and connections to the historic Arroyo Seco.

Assembly Bill (AB) 2766 Subvention Fund (Air Quality)

The South Coast Air Quality Management District (AQMD) allocates a percentage of Assembly Bill 2766 funds from automobile registration to projects that improve air quality. Approximately 40% of the funds are distributed to the cities as discretionary funds which can be used for bicycle projects that result in bicycle riding in lieu of driving alone. Such projects may include bike lane and bike routes. The other 60% is allocated through a competitive grant program for special projects to improve air quality. South Pasadena may utilize AB2766 funds for bicycle enhancements, such as expanding the Police Department's bicycle patrol unit or provide incentives for bicycling as part of a Transportation Demand Management (TDM) Plan.

Proposition C

Proposition C finances Transit Development Programs in Los Angeles County, which is administered through Los Angeles Metro. The funds are often used in a, "category for public transit projects such as street and road improvements that benefit transit, bikeways and congestion management activities", according to the funding guidelines.

It is a discretionary program which also allocates monies to local jurisdictions. South Pasadena may enhance the multimodal connections between transit and bicycles through Proposition C funds.

Table 6.1 Summary of Funding Resources for Bicycle Facilities Development

Category	Program	Disbursing Agency	Due Date	Required Match	Additional Information	Potentially Applicable to a South Pasadena Project Refer to Tables 4.2, 4.3, 4.4 and Map 4.3
Federal	**Land & Water Conservation Fund (LWCF)**	State Dept of Parks and Recreation	May	50%, including in-kind	Federal Funds: Projects that acquire and develop recreational trails and other outdoor facilities.	18, 19
	Safe Routes to School Federal (Federal SRTS)	Caltrans	April	--	Federal Funds: Infrastructure improvements for school safety within 2 miles of elementary or middle schools.	3, 4, 6, 7, 13, 14, 15
	Transportation Enhancements (TE)	Metro	January (Odd-numbered years)	20% to 35%	Federal Funds: Projects that expand the viability and effectiveness of bicycle travel.	All Projects and Programs would qualify.
State	**Bicycle Transportation Account (BTA)**	Caltrans	December	minimum 10% for construction	State Funds: Projects that improve the safety, effectiveness, and viability of bicycle commuting.	All Projects and Programs would qualify.
	Office of Traffic Safety (OTS)	Caltrans Office of Traffic Safety (OTS)	January	--	State Funds: Programs that promote bicyclist safety.	Safety programs defined in Chapter 5.
	Recreational Trails Program (RTP)	Metro	October	20%	State Funds: For recreational multi-use or single-use trails, including Class 1 bikeways.	18, 19
	Safe Routes to School (State SR2S)	Caltrans	May	11.5% minimum	State Funds: For the construction of projects that enhance the safety of pedestrians and bicyclists along primary school routes.	3, 4, 6, 7, 13, 14, 15
	Transportation Development Act (TDA) Article 3	Metro	January (Odd-numbered years)	--	State Funds: For the purchase and installation of bicycle parking and end-of-trip bicycle facilities. Also funds the retrofit of existing bicycle facilities for ADA compliance.	9, Safety programs defined in Chapter 5.
Local	**Metro Call for Projects**	Metro	January (Odd-numbered years)	20% to 35%	Federal, State, and Local Funds: Projects that serve regional connectivity or have a multi-modal component.	1, 2, 3, 4, 5, 8, 9, 12, 16
	AB 2766 Subvention Fund	AQMD	March	Varies	Local Funds: Projects that promote the effectiveness and viability of bicycle commuting in lieu of driving alone. Emphasis is on projects that can produce quantifiable results.	1, 3, 4, 9
	Proposition C	Metro Local Return	Ongoing	none	Local Funds: Projects and programs that benefit linkages to transit.	1, 3, 4

CHAPTER 7
IMPLEMENTATION & PROJECT SHEETS

7.0 IMPLEMENTATION CHAPTER PURPOSE

The purpose of this Chapter is to outline steps that lead to implementation of the 2011 Bicycle Master Plan update. This Chapter provides guidance by:

- Assigning the responsibility of tasks to specific City departments
- Proposing an implementation timeline
- Presenting project rankings (based upon criteria)
- Outlining detailed project descriptions of the recommended Tier I projects proposed in the Plan

Implementation of the Plan is dependent upon the various City departments executing specific tasks as outlined in Table 7.1 below. Implementation of all tasks and aspects of the Plan will lead to:

- A comprehensive interconnected system of bicycle lanes, routes, and paths
- A comprehensive network of bicycle facilities and support amenities
- Citywide way finding signage
- Bicycle safety, education, and awareness programs
- Convenient connections to all areas of the City for local trips
- Convenient connections to buses and the Gold Line
- Bike valet options at special events
- Municipal code regulations requiring bicycle support facilities in new developments
- Clarify City policy regarding riding on the sidewalks

This Chapter has 7 sections. Section 7.1 proposes timelines and department responsibilities for the various tasks that must be completed for implementation of the Plan. For Caltrans purposes, this Plan is a five-year Plan. For the City of South Pasadena, this Plan is a 20-year organic blueprint for the future of bicycling in the City. It provides a solid foundation of infrastructure and programs that can be augmented with additional programs, such as bicycle sharing.

Sections 7.3 and 7.4 contain information necessary for the Plan to be approved by Caltrans.

Section 7.5 is also required by Caltrans and provides detailed project descriptions for Tier I recommended projects allowing the City to apply for funding. Tier I projects are selected as the result of a ranking process that included input from the public, the consultant team, City staff, and the City Council.

There are a total of three Tiers. Tier I projects are defined in Section 7.5 and contain

project sheets outlining the details of each recommended Tier I project and are recommended for implementation within 1 to 5 years. Tiers II and III are identified in Chapter 4, Section 4.6, and are recommended for implementation in 6-20 years as identified in Section 7.1 below.

Tiers II and III projects do not need to be implemented upon completion of Tier I projects. Tier I, II, and III projects can be implemented independently, concurrently, or in a different order or ranking than is presented in this Chapter. The Tiers are recommendations that provide guidance to ensure that implementation proceeds. The timing of implementation can be adjusted as new information or resources become available. For example, the repaving of a roadway where a bikeway is proposed presents an ideal opportunity to implement the bikeway facility at the same time regardless of its specific ranking in the Plan.

Table 7.1 below presents the tasks required by City department to achieve implementation of the Plan's proposed projects (bikeways and programs). Each task is assigned to one or more departments with a direct reference to the relevant chapter where detailed information about that task can be found. As with the Tiers, individual tasks do not need to be implemented in any sequential order or one at a time.

It is incumbent upon each department to identify, fund, and implement each of its assigned tasks. Each department is also responsible to report to the City Manager or his/her designee on the progress of Plan implementation. This assignment of tasks is intended to ensure full implementation of this 2011 Bicycle Master Plan Update. The tasks in Table 7.1 are not necessarily presented in any order, but fulfillment of all tasks is necessary for the full implementation of the Plan.

Table 7.1 City Department Responsibilities

Department	Responsibility	Reference
City Manager's Office	Secure Funding	Chapter 6
	Project Prioritization	Chapters 4 and 7
	Coordinate Bike Parking with Metro	Chapters 4, 7, and 8
	Project Status Reporting	
Planning and Building	Secure Funding	Chapter 6
	Municipal Code Implementation	Chapter 4
Public Works	Secure Funding	Chapter 6
	Project Prioritization	Chapters 4 and 7
	Bikeway Striping	Chapters 7 and 8
	Bikeway Signage	Chapters 7 and 8
	Bikeway Stencils	Chapters 7 and 8
	Bikeway Maintenance	Chapter 8
	Bicycle Racks on Sidewalks	Chapters 4, 7, and 8
	Proper Design of all Bicycle Facilities	Chapter 8
Community Services	Secure Funding	Chapter 6
	Bicycle Racks in Other Locations	Chapters 4, 7, and 8
	Bicycle Parking Valet Services	Chapter 5
	Bicycle Lockers	Chapters 4, 7, and 8
	Proper Design of Bicycle Parking	Chapter 8
Police	Secure Funding	Chapter 6
	Safety Programs	Chapter 5
	Modify Bicycle-Related City Ordinances	Chapter 4
	Enforce Bicycle-Related Ordinances	Chapters 4 and 7

7.1 PLAN IMPLEMENTATION TIMELINE

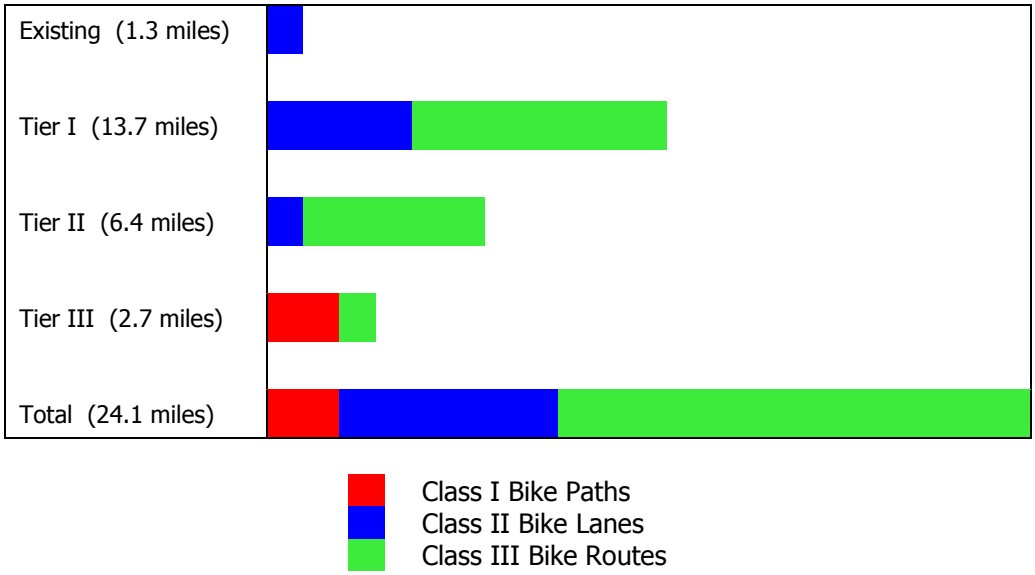
The strategy for implementing the Bicycle Master Plan includes a recommended three-tier timeline of project development. Bicycle programs, such as Bicycle Parking, Way Finding Signage, and Safety Education, are intended to be ongoing parts of the Plan. Tier I projects are those described in more detail later in this chapter. Tiers II and III are projects that are listed and mapped in Chapter 4 (pages 4.10 to 4.12).

- Tier I: 1-5 years
- Tier II: 6-10 years
- Tier III: 11-20 years

The timeline and priority phasing of the projects is an element of the Plan that is required to be presented to Caltrans. However, the City Council and City Departments may use their discretion as to the ultimate order and ranking of projects within Tiers or across Tiers. Projects may also be combined with each other or implemented concurrently. The implementation of projects can be accelerated as funding becomes available.

Figure 7.1 illustrates the distribution of bikeway project mileage for each Tier as recommended in this Plan.

Figure 7.1 Project Phasing Plan in Bikeway Mileage



7.2 BICYCLE PROJECT RANKING CRITERIA

Of the 21 proposed bikeways, 8 bicycle facilities and 2 programs have been identified as top priority in the first tier. The priority ranking is based upon the following criteria.

- Activity Centers – Providing linkages to locations of community activity, such as the Public Library, Farmers Market, parks, and the golf course.
- Connectivity – Creating linkages between different bikeways proposed in this Plan. Also, providing linkages to adjacent cities and planned bikeways in their Bicycle Master Plans.
- Safety – Establishing bikeways along roadways with a disproportionately higher incident of bicyclist collisions, and also taking into consideration areas near schools for children's safety.

- Destinations – Providing linkages to specific locations in the City, such as shopping centers, retail areas, City Hall, schools, the YMCA, the Gold Line station, and places of worship.

- Schools – Connecting with schools in the community.

- Transit Connections – Access to the Gold Line station as well as Metro buses promotes multi-modal connectivity and increases regional bicyclist mobility.

- Public Ranking – Members of the community have provided input on the Plan's top priorities. They have done so via attendance at the public workshop, comments delivered to City Hall on comment cards, via the City's website, and personal visits to City Hall.

- Agency Ranking – City of South Pasadena department staff have identified top priorities and their input has been considered in the ranking of projects.

The priority criteria are based upon industry standards, agency direction, and professional expertise. In addition, the local community provided input into the ranking criteria. Taking into account these criteria, Table 7.2 presents the top tier projects in their order of priority for implementation as part of the Bicycle Master Plan, and Map 7.1 illustrates them as well.

In addition to the eight Tier I bikeway projects, there are two programming projects recommended. This includes a bicycle parking program and a way finding signage program.

7.3 PAST EXPENDITURES FOR BICYCLE PROJECTS

The City of South Pasadena implemented one bicycle-related project in 2010. As part of the City's Capital Improvement Project (CIP) resurfacing of Marengo Avenue, the street was newly restriped with Class II Bike Lanes along its entire length in the City (Mission Street to Alhambra Road). The funds used were from the City's General Fund, and the bike lane portion of the project was not a separate effort within the resurfacing project. Total cost of the resurfacing project was $1,045,261, and the striping component was $38,700. The striping cost was for the entire roadway, and the bike lane striping is not broken out from the total project cost.

7.4 FUTURE BICYCLE PLAN FINANCIAL NEEDS

The City's bikeway network would require a total implementation cost of approximately $5,777,600, with the top priority projects making up $323,600. These costs are based upon most recently available planning-level estimates as found in similar bicycle plans in the Los Angeles area and are presented in Table 7.2. These costs include the planning, design, and construction of all elements of the bikeway, including signage, striping, stencils, and any other components identified in each project.

Table 7.2 Planning-Level Project Cost Assumptions

Class I Bike Path	$2,640,000 / mile
Class II Bike Lane	$28,000 / mile
Class III Bike Route	$20,000 / mile

7.5 PRIORITY PROJECT SHEETS

This section describes each individual project in more detail and includes the following information:

- Map of the project
- Segment composition
- Destinations served
- Primary criteria for priority
- Segment and project length
- Planning-level cost estimate
- Diagram of bikeway treatment where appropriate
- Discussion of special circumstances, if required

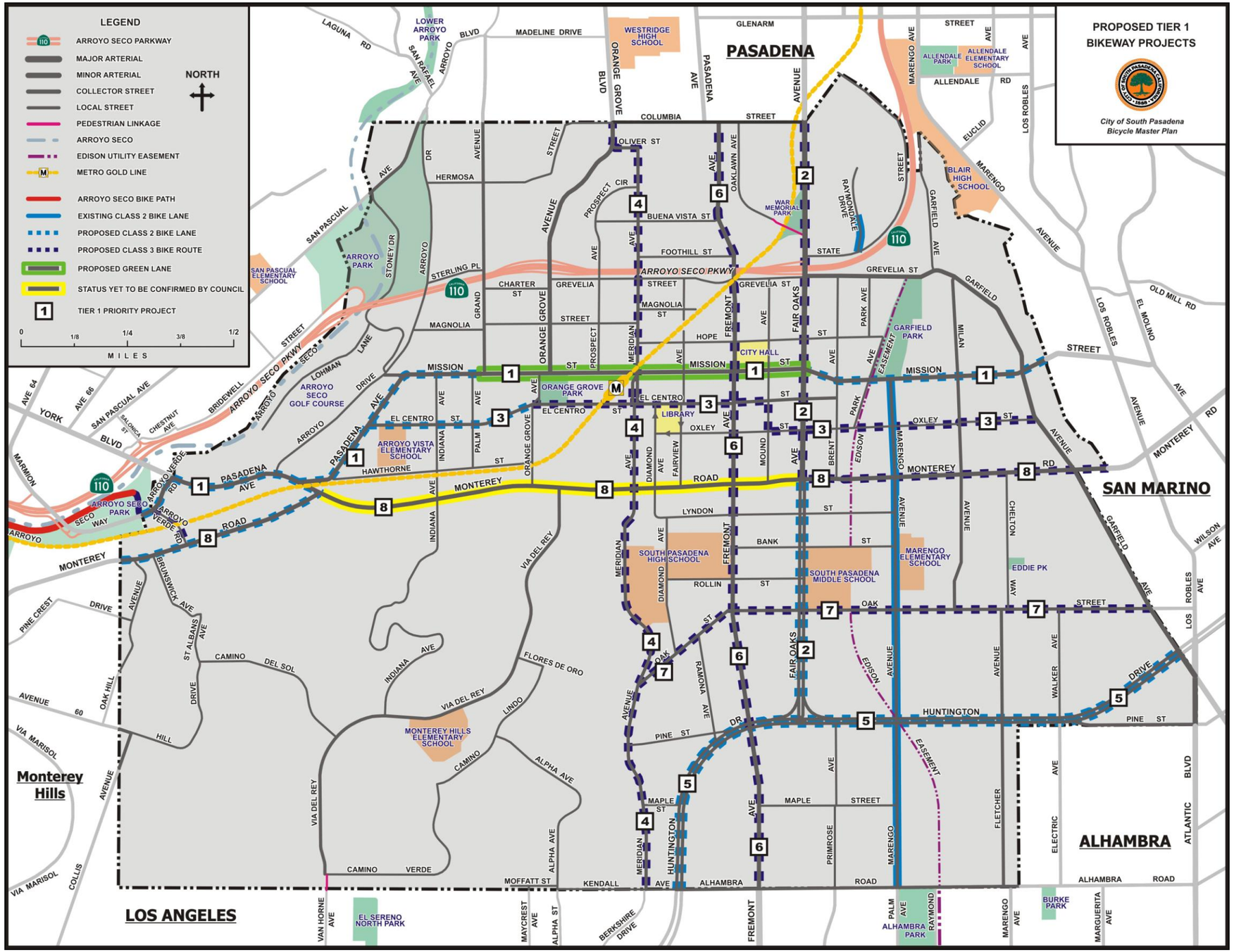
The top priority projects are considered the primary bikeway network, while the remaining projects represent the secondary network.

Although the top tier priority projects are ranked in order, the City is under no obligation to follow this particular ranking in the development of individual bikeway projects.

Table 7.2 Tier I Priority Projects (13.7 miles)

Project	Project Name	Destinations	Class	Project Segments			Segment Mileage	Project Mileage
				Street	From	To		
1	**Pasadena/Mission**	Arroyo Seco Stables, Arroyo Vista Elementary, Orange Grove Park, Gold Line Station, Farmers' Market, Mission Street Commercial District, Fair Oaks Commercial District, Garfield Park	**2**	**Marmion Way**	West City Limit	Arroyo Verde Rd	0.05	2.2
			2	**Arroyo Verde Rd**	Marmion Way	Pasadena Ave	0.05	
			2	**Pasadena Ave**	Arroyo Verde Rd	Monterey Rd	0.3	
			2	**Pasadena Ave**	Monterey Rd	Mission St	0.3	
			2	**Mission St**	Pasadena Ave	Grand Ave	0.2	
			Green Lane	**Mission St**	Grand Ave	Fair Oaks Ave	0.7	
			2	**Mission St**	Fair Oaks Ave	East City Limit	0.6	
2	**Fair Oaks**	Fair Oaks Commercial District	**2**	**Fair Oaks Ave**	Monterey Rd	Huntington Dr	0.5	1.3
			3	**Fair Oaks Ave**	North City Limit	Monterey Rd	0.8	
3	**El Centro/Oxley**	Arroyo Vista Elementary, Orange Grove Park, Gold Line Station, Farmers' Market, Public Library	**2**	**El Centro St**	Pasadena Ave	Orange Grove Ave	0.4	1.55
			3	**El Centro St**	Orange Grove Ave	Mound Ave	0.5	
			3	**Mound Ave**	El Centro St	Oxley St	0.05	
			3	**Oxley St**	Mound Ave	Garfield Ave	0.6	
4	**Meridian**	Gold Line Station, Farmers' Market, Mission Street Commercial District, South Pasadena High School	**3**	**Oliver St**	Orange Grove Ave	Meridian Ave	0.05	1.75
			3	**Meridian Ave**	Oliver St	South City Limit	1.7	
5	**Huntington**	Regional Bikeway (Los Angeles, San Marino)	**2**	**Huntington Dr**	South City Limit	East City Limit	1.5	1.5
6	**Fremont**	Post Office, Mission Street Commercial District, South Pasadena High School,	**3**	**Fremont Ave**	North City Limit	South City Limit	1.8	1.8
7	**Oak**	South Pasadena Middle School, YMCA	**3**	**Oak St**	Meridian Ave	Garfield Ave	1.2	1.2
8	**Monterey**	Arroyo Seco Stables, Regional Connection, Crosstown Bikeway, Fair Oaks Commercial Corridor	**2**	**Monterey Rd (west)**	West City Limit	Monterey Rd/Gold Line	0.5	2.4
			3	**Arroyo Verde Rd**	Marmion Wy	Monterey Rd	0.1	
			TBD	**Monterey Rd**	Monterey Rd/Gold Line	Fair Oaks Ave	1.1	
			3	**Monterey Rd**	Fair Oaks Ave	East City Limit	0.7	
9	**Bicycle Parking Program**		**See Chapter 5 and Page 7.34**					
10	**Bicycle Safety Program**		**See Chapter 5**					

Map 7.1 Tier I Priority Projects



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- Destinations served
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- Segment and project length
- Planning-level cost estimate
- Diagram of bikeway treatment where appropriate

The top priority projects are considered the primary bikeway network, while the remaining projects represent the secondary network.

Although the top tier priority projects are ranked in order, the City is under no obligation to follow this particular ranking in the development of individual bikeway projects.

Project 1: Pasadena/Mission Bikeway

Project Description

This Pasadena/Mission Bikeway project spans the City in an east/west alignment from each end of the City limits. It includes Class II and III routes. The primary feature of the bikeway is a Green Lane, along the Class II roadway segment. The Green Lane through this area is intended to provide enhanced visibility for bicyclists in the high-activity Mission Street commercial district. Along the route, there is access to City Hall as a major destination. Orange Grove Park and Garfield Park are along the route for recreation. A multimodal connection can be made at the Gold Line. This corridor is a regional connector to the surrounding cities as well.

Mission at Diamond

Mission at Meridian

Map 7.2 Pasadena/Mission Project

Project Features

- City East/West Connection
- Regional Connection to Adjacent Cities
- Multimodal Connection to the Gold Line
- Destinations: Farmers Market, City Hall, Mission Retail Area
- Parks and Schools: Garfield Park and Orange Grove Park

Special Roadway Markings

- Green Lane: Mission Street
  Grand Avenue to Fair Oaks Avenue

- Sharrows: Mission Street
  Grand Avenue to Fair Oaks Avenue
  (to accompany the Green Lane)

- Intersections with Bicycle Boxes (12):
  Mission and Orange Grove (one each approach)
  Mission and Meridian (one each approach)
  Mission and Fremont (one each approach)

Street Modifications

- Parking Removal: Pasadena Avenue
  Arroyo Verde Road to Arroyo Drive
  North side of the street only

- Center Turn Lane Replaces 2 Travel Lanes: Pasadena Avenue
  Monterey Road to Grand Avenue

Responsible Departments

- Transportation, Public Works

Project Roadway Segments

Marmion Way
- ❖Class II: West City Limit to Arroyo Verde Road

Arroyo Verde Road
- ❖Class II: Marmion Way to Pasadena Avenue

Pasadena Avenue
- ❖Class II: Arroyo Verde Road to Mission Street

Mission Street
- ❖Class II: Pasadena Avenue to Grand Avenue
- ❖Class III Green Lane Treatment: Grand Avenue to Fair Oaks Avenue
- ❖Class II: Fair Oaks Avenue to East City Limit

Project Length: 2.2 miles
Project Cost $61,600

Primary Priority Criteria:
Activity centers
Connectivity, Destinations
Transit connections
Public and Agency ranking

Signage

- Class II: Monterey to Huntington
- Class III Green Lane: Grand to Fair Oaks
- Way Finding/Destinations

Related Projects

- Capital Improvement Project (CIP) to resurface the roadway in FY 2011-2012
  Pasadena Avenue: Arroyo Verde Road to Mission Street

Concept Drawings

The following figures provide a conceptual illustration of the lane modifications.
The first in each pair is existing and the second is proposed.

Figure 7.2 Pasadena Avenue and Mission Street Bike Lanes
Monterey Road to Grand Avenue

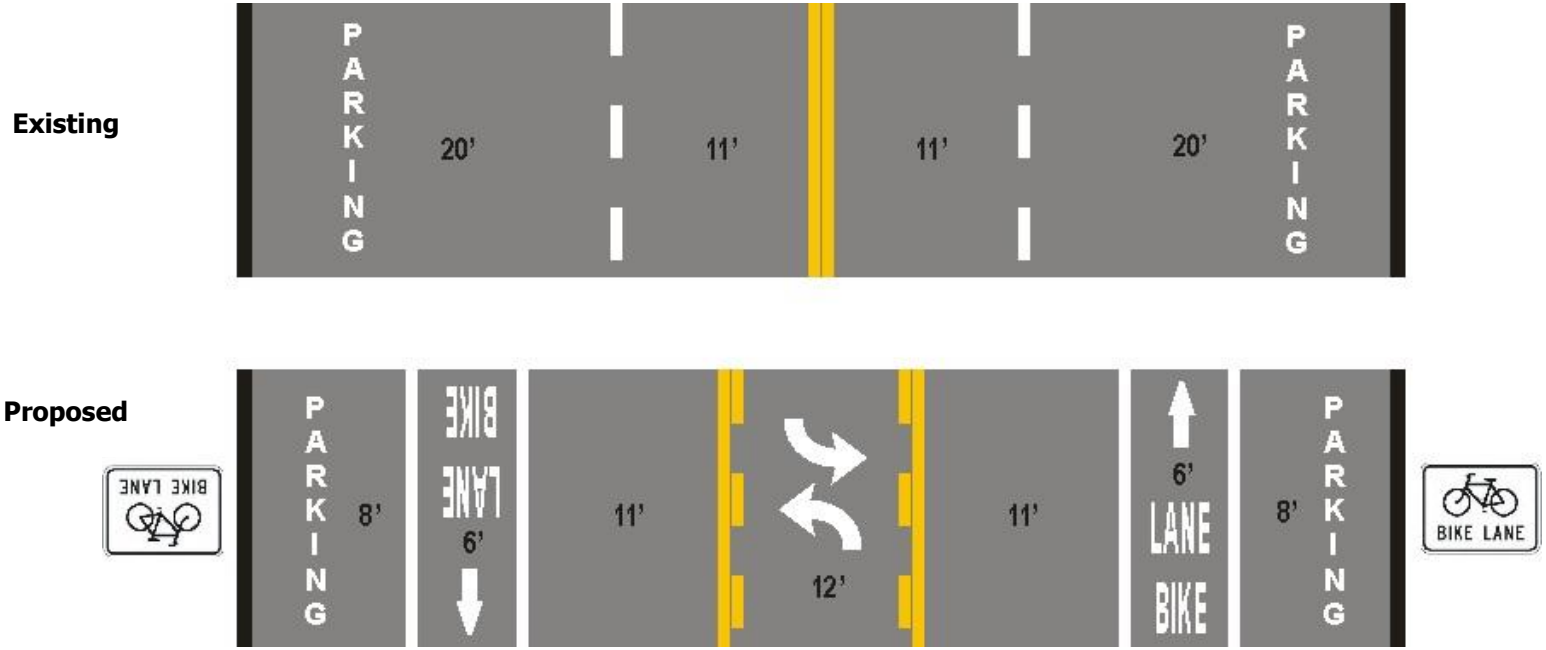
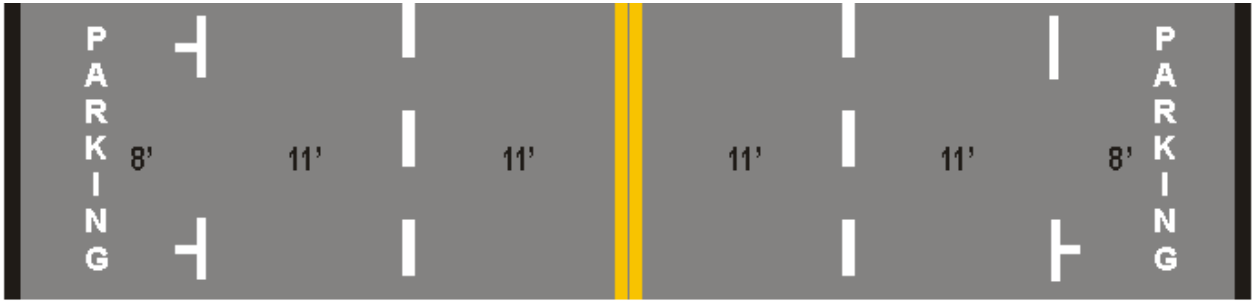


Figure 7.3 Mission Street Green Lane
Grand Avenue to Fair Oaks Avenue

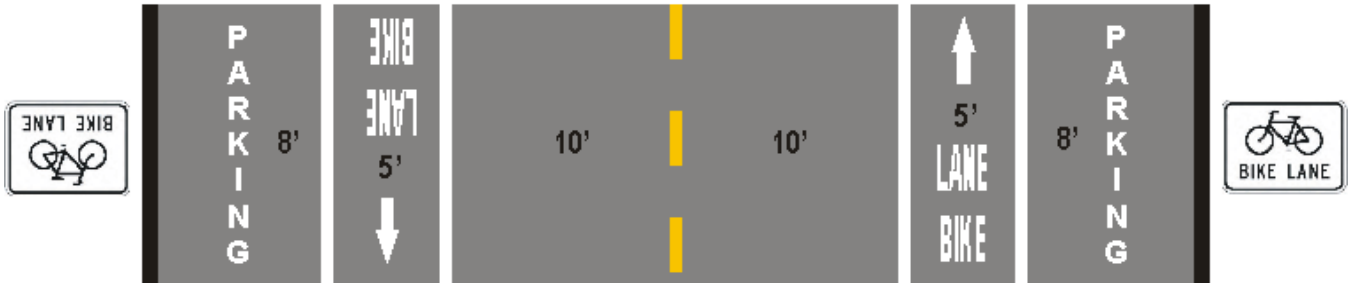


Existing

Proposed

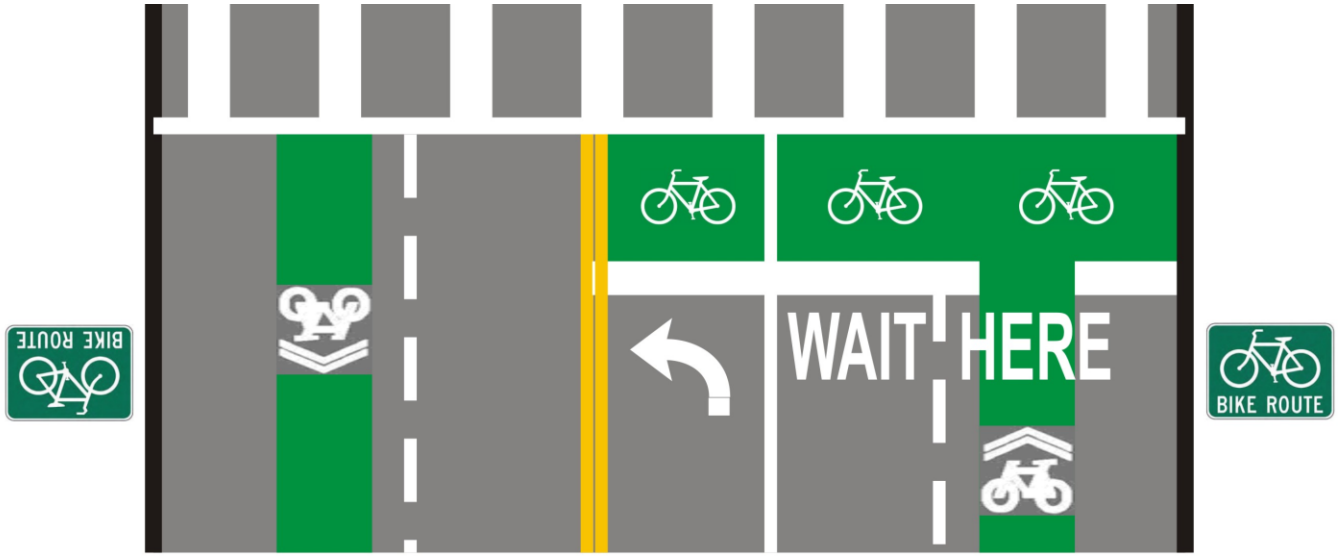
Figure 7.4 Mission Street Bike Lanes
Fair Oaks Avenue to East City Limit

Existing



Proposed

Figure 7.5 Mission Street Bike Boxes at Intersections
Grand Avenue to Fair Oaks Avenue



Project 2: Fair Oaks Bikeway

Project Description

The Fair Oaks Bikeway project extends from the north city limit to Huntington Drive in a north/south alignment. It contains Class II Bike Lanes between Monterey Road and Huntington Drive, and a Class III Bike Route north of Monterey Road. It traverses a major commercial area. In addition, the South Pasadena Middle School can be accessed on this route. The northern section of the route is a connector to the neighboring City of Pasadena.

Fair Oaks at Mission

Middle School on Fair Oaks

Map 7.3
Fair Oaks Project

Project Features

- City North/South Connection
- Regional Connection to an Adjacent City (Pasadena)
- Destinations: Retail Centers
- Parks and Schools: South Pasadena Middle School

Special Bicycle Pavement Markings

- Sharrows:
  North City Limit to Monterey Road

- Intersections with Bicycle Boxes (12):
  Fair Oaks and Grevelia (NB, WB approaches)
  Fair Oaks and Hope (NB, SB approaches)
  Fair Oaks and Mission (NB, SB approaches)
  Fair Oaks and El Centro (NB, SB approaches)
  Fair Oaks and Oxley (NB, SB approaches)
  Fair Oaks and Monterey (NB, SB approach)

Project Roadway Segments

Fair Oaks Avenue
❖Class III: North City Limit to Monterey Road 0.8 miles

Fair Oaks Avenue
❖Class II: Monterey Road to Huntington Drive 0.5 miles

Project Length: 1.3 miles
Project Cost $30,000

Primary Priority Criteria:
Destinations, Connectivity
Safety, Schools
Public and Agency ranking

Street Modification

- From Monterey Road to Huntington Drive:
  Reduce the width of each travel lane from 12 feet to 11 feet, stripe bike lanes

Signage

- Class II: Monterey to Huntington
- Class III: North City Limit to Monterey
- Way Finding/Destinations

Responsible Departments

- Public Works

Special Consideration: Concrete "Gutter" Area

The recently completed Fair Oaks Avenue Street Improvement Project (between the north city limit and Monterey Road) includes a 6-foot wide concrete area between the parking lane (along the curb) and the adjacent traffic lane. Gutters are typically built immediately adjacent to the curb. However, along Fair Oaks the gutter has been built within the 6-foot concrete area. The flow line is where run-off collects and flows downstream (the gutter flow line) is positioned off-center. The flow line is located 1 foot left of the concrete's right edge. The remaining area to the left of the flow line is 5 feet. Please see Figure 7.6.

Gutter pans are typically 1.5 feet to 2 feet wide on either side of a gutter flow line, and the 6-foot gutter on Fair Oaks is unusual in its design. Three feet of the concrete area could be officially designated as gutter, thus leaving the remaining 3 feet available for travel. The adjacent traffic lane would then be 13 feet wide rather than 10. Although not enough space to provide a striped Class II Bike Lane, a Class III Bike Route with sharrows could be provided. The sharrow stencils would be placed within the 3-foot non-"gutter" concrete area.

Figure 7.6 illustrates the concrete area's dimensions. Figure 7.7 illustrates the adjusted dimensions if the "gutter" is officially defined as 3 feet and the remaining 3 feet is allocated to the adjacent traffic lane. Sharrows would be placed in the concrete area as shown.

Figure 7.6 Fair Oaks Avenue Concrete Area
North City Limit to Monterey Road

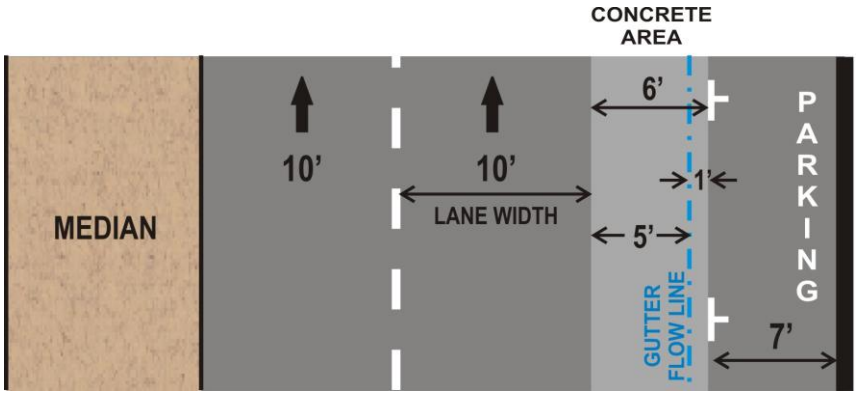
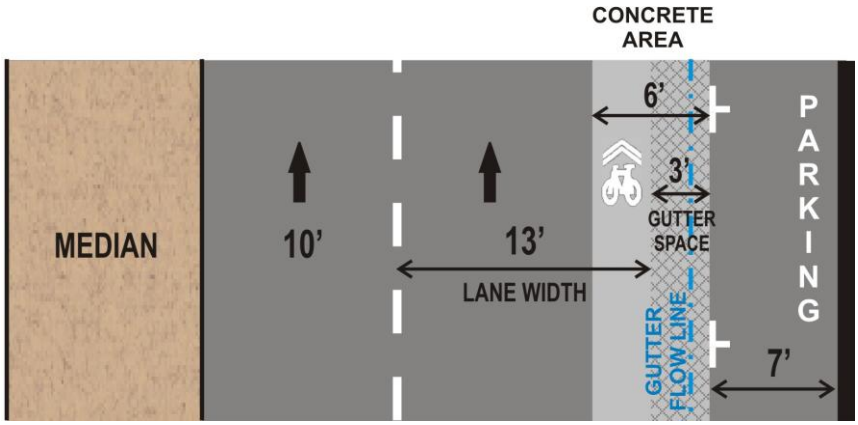


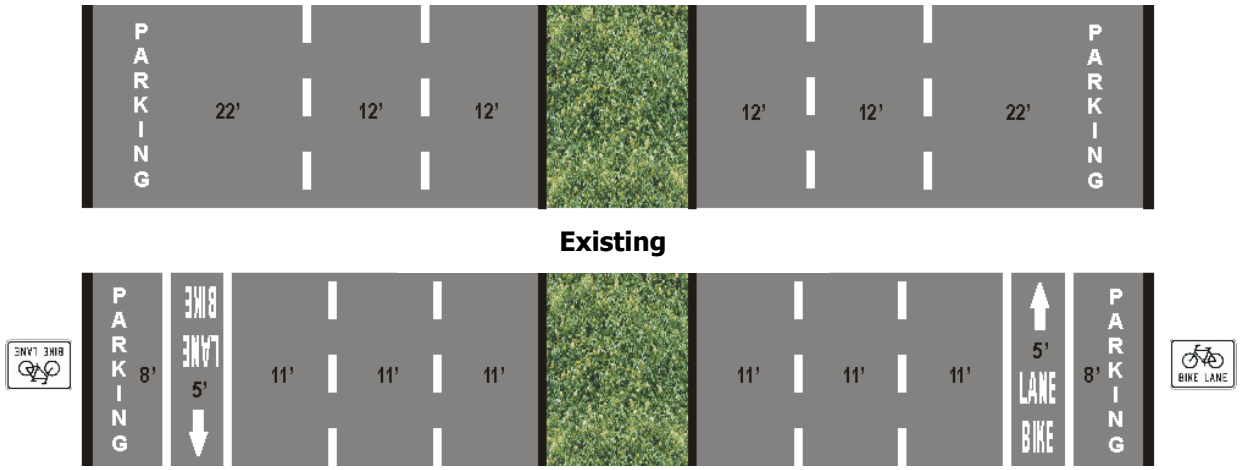
Figure 7.7 Fair Oaks Avenue Redefined Concrete "Gutter" Space
North City Limit to Monterey Road



Concept Drawings

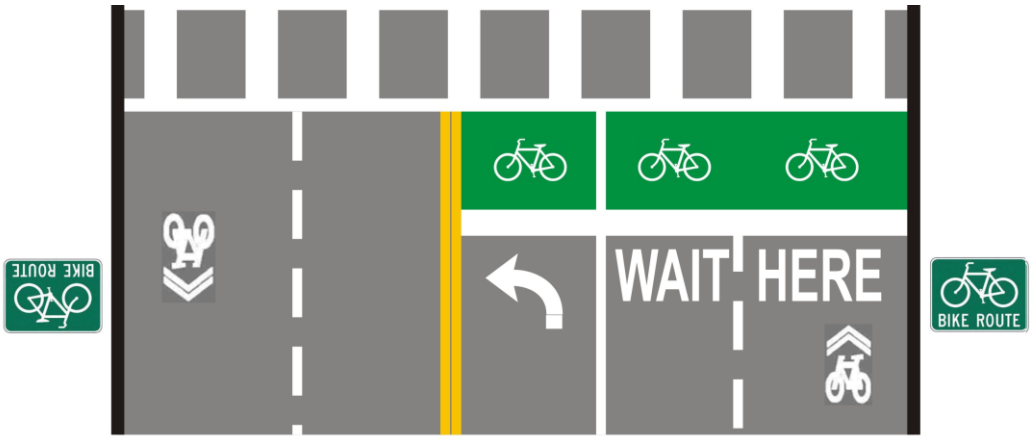
The figures below provides a conceptual illustration of the lane modifications for the Class II bike lane section of the project. The first is existing and the second is proposed.

Figure 7.8 Fair Oaks Avenue Bike Lanes
Monterey Road to Huntington Drive



Proposed

Figure 7.9 Fair Oaks Avenue Bike Boxes at Intersections
North City Limit to Monterey Road



Project 3: El Centro/Oxley Bikeway

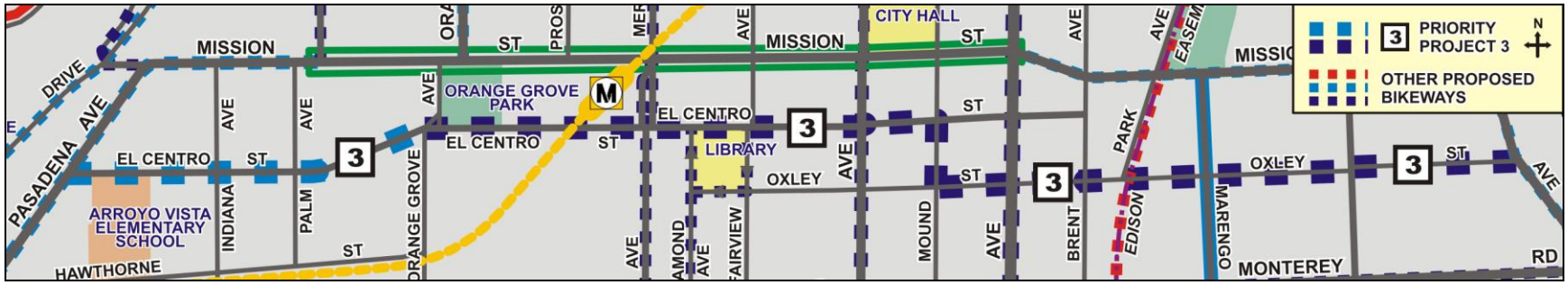
Project Description

The El Centro/Oxley Bikeway project spans the City in an east/west alignment from Pasadena Avenue to the east city limit. It consists of Class II Bike Lanes and a Class III Bike Route. There are linkages to the Public Library, the Gold Line Station, the Post Office, Orange Grove Park, and Arroyo Vista Elementary. It also provides connection with the adjacent retail destinations along Mission Street.

Shops on El Centro at Diamond

Public Library on El Centro

Map 7.4 El Centro/Oxley Project



Project Features

- City East/West Connection
- Multimodal Linkage to the Gold Line and Metro Buses
- Destinations: Public Library, Post Office, Commercial/Retail
- Schools and Parks: Arroyo Vista Elementary School, Orange Grove Park

Special Roadway Markings

- Sharrows
  El Centro Street: Orange Grove to Mound
  Mound Avenue: El Centro to Oxley
  Oxley Street: Mound to Marengo

Signage

- Class II: El Centro Street
  Pasadena Ave to Orange Grove Ave
- Class III: El Centro Street
  Orange Grove Ave to Mound Ave
- Class III: Mound Ave
  El Centro Street to Oxley Street
- Class III: Oxley Street
  Mound Ave to East City Limit
- Way Finding/Destinations

Responsible Departments

- Transportation, Public Works

Project Roadway Segments

El Centro Street
- ❖Class II: Pasadena Avenue to Orange Grove Avenue
- ❖Class III: Orange Grove Avenue to Mound Avenue

Mound Avenue
- ❖Class III: El Centro Street to Oxley Street

Oxley Street
- ❖Class III: Mound Avenue to Garfield Avenue

Project Length: 1.55 miles
Project Cost $34,200

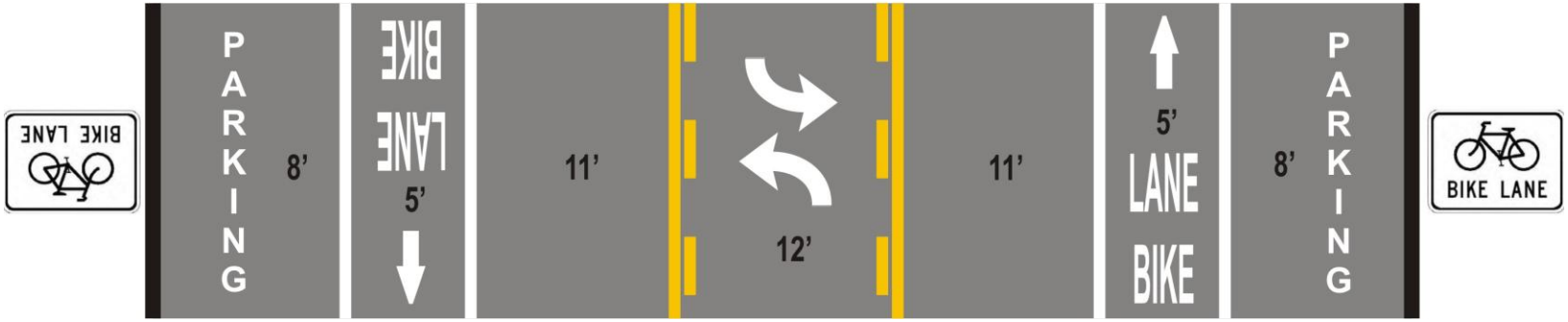
Primary Priority Criteria:
Multi-Modal Connection
Destinations, Safety, Schools
Public and Agency ranking

Concept Drawings

The following figures provide a conceptual illustration of the lane modifications. The first in each pair is existing and the second is proposed.

Figure 7.9 El Centro Street Bike Lanes
Pasadena Avenue to Orange Grove Avenue

Existing



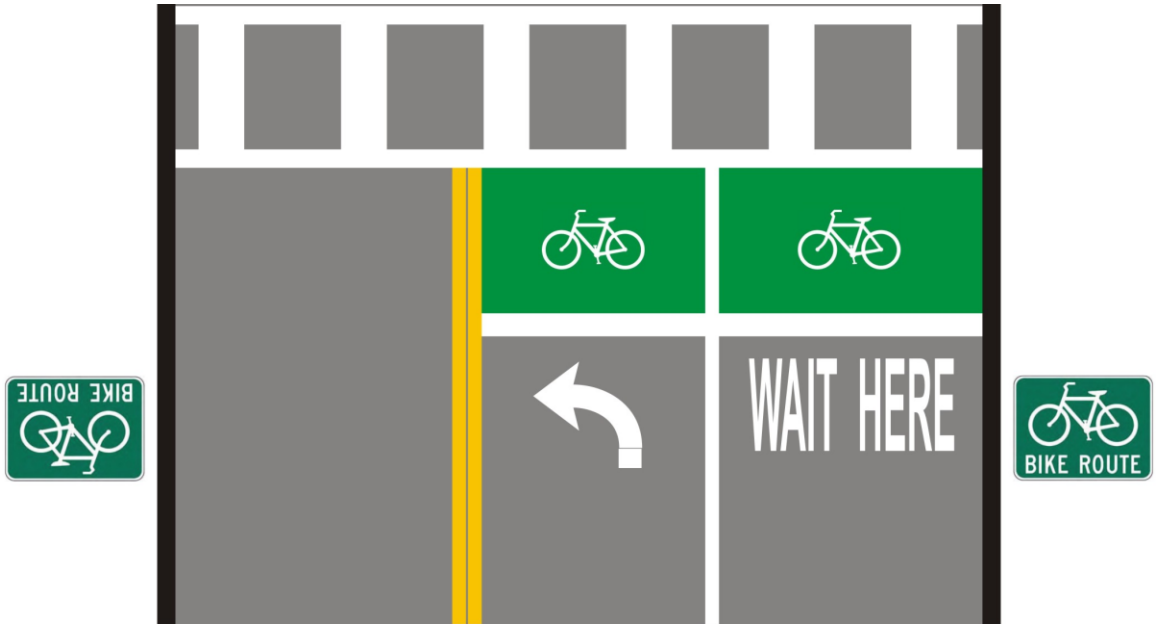
Proposed

Figure 7.10 Bike Route with Sharrows
Orange Grove Avenue to Garfield Avenue

Existing

Proposed

Figure 7.11 Bike Box
Oxley Street at Fair Oaks Avenue



Project 4: Meridian Bikeway

Project Description

The Meridian Bikeway project extends in a north/south alignment from Orange Grove Avenue just south of the city limit to the south city limit in a north-south alignment. It consists of a Class III Bike Route, with "sharrows" along the segment from Mission Street to El Centro Street. Meridian Avenue serves the heart of the City with connections to Mission Street, Gold Line Station, and South Pasadena High School.

Map 7.5
Meridian Project

Gold Line Station at Meridian and Mission

Mission Street at Meridian

Project Features

- City North/South Connection
- Regional Connection to Adjacent Cities (Pasadena, Alhambra)
- Multimodal Connection to Gold Line
- Destinations: Gold Line, Farmers Market, Mission Street
- Schools and Parks: South Pasadena High School

Special Bicycle Pavement Markings

- Sharrows:
  Meridian - Mission to El Centro

- Intersections with Bicycle Boxes (2):
  Meridian and Mission (NB, SB approaches)

Street Modifications

- None

Signage

- Class III
- Way Finding/Destinations

Responsible Departments

- Public Works

Project Roadway Segments

Oliver Street
❖Class III: Orange Grove Avenue to Meridian Avenue
0.05 miles
$1,000

Meridian Avenue
❖Class III: Oliver Street to South City Limit
1.7 miles
$34,000

Project Length: 1.75 miles
Project Cost $35,000

Primary Priority Criteria:

Gold Line Multi-Modal Connection
Destinations and Activity Centers
Regional and Local Connectivity
Schools, Safety
Public and Agency Ranking

Concept Drawing

The figure below provides a conceptual illustration of the lane modifications for the Class II bike lane section of the project. The first is existing and the second is proposed.

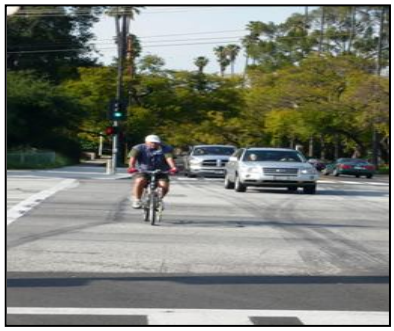
Figure 7.12 Bike Route with Sharrows
Mission Street to El Centro Street

Project 5: Huntington Bikeway

Project Description

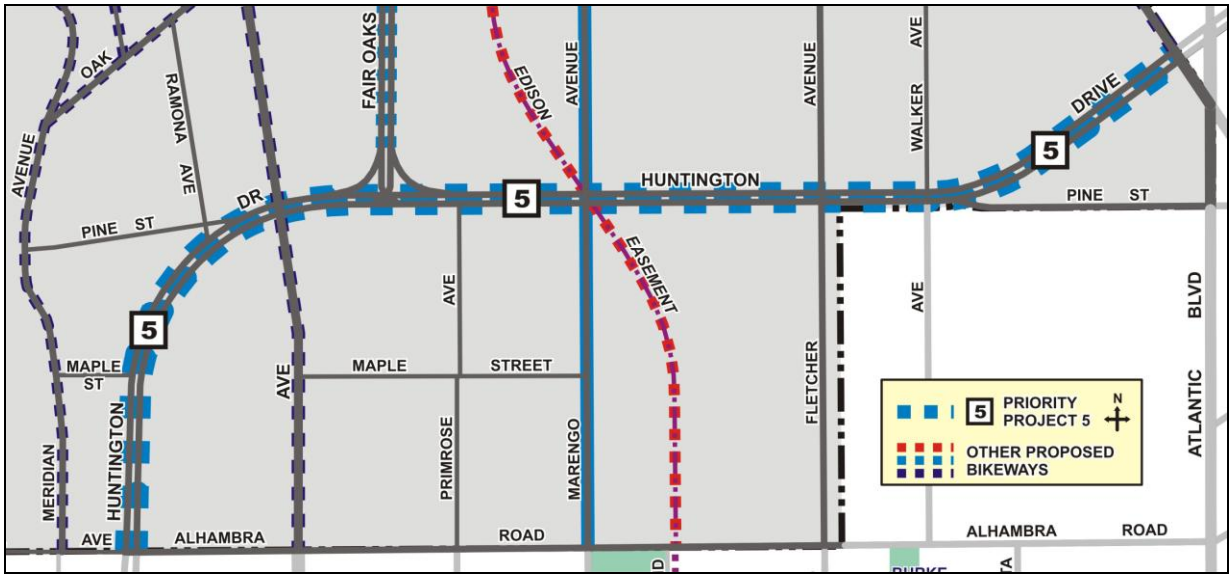
This Huntington Bikeway adds Class II Bike Lanes to Huntington Drive along its length within the City. There are retail areas along the route and is a major regional connector to San Marino and Los Angeles.

Huntington at Fletcher Avenue



Huntington Drive at Marengo Avenue

Map 7.6 Huntington Project



Project Features

- City East/West Connection
- Regional Connection to Adjacent Cities (Los Angeles, San Marino)
- Destinations: Access to Fair Oaks retail

Special Bicycle Pavement Markings

- None

Street Modifications

- Reduce travel lanes width from 12 feet to 11 feet, stripe bike lanes

Signage

- Class II
- Way Finding/Destinations

Responsible Departments

- Public Works

Project Roadway Segments

Huntington Drive
❖Class II: South City Limit to East City Limit 1.5 miles

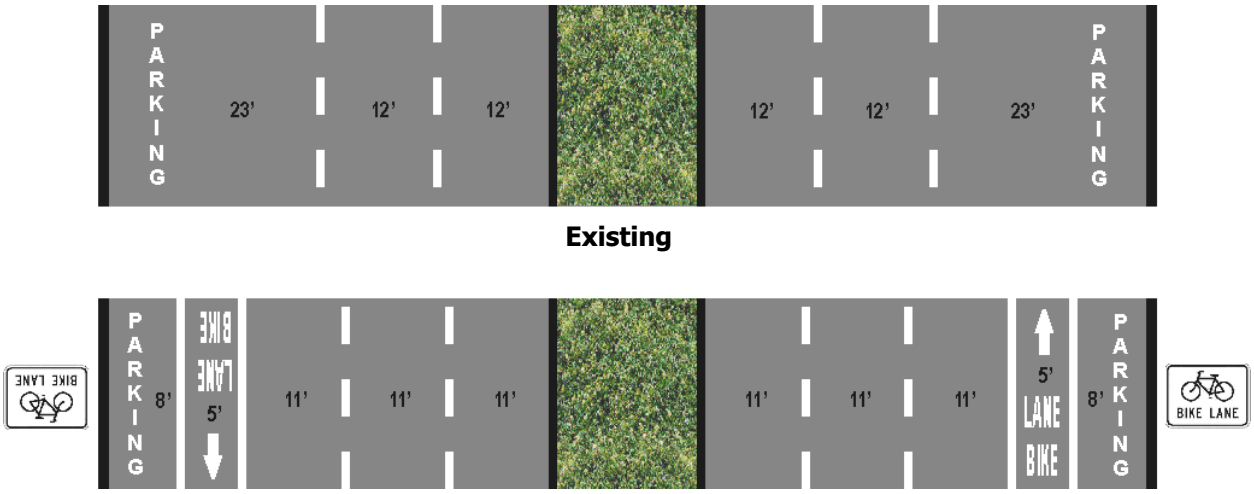
Project Length: 1.5 miles
Project Cost $42,000

Primary Priority Criteria:
Connectivity
Safety
Transit Connections
Public ranking
Agency ranking

Concept Drawings

The following figure provides a conceptual illustration of the Project. The first cross section is existing and the second is proposed. These are "before" and "after" illustrations.

Figure 7.13 Huntington Drive Bike Lanes



Project 6: Fremont Bikeway

Project Description

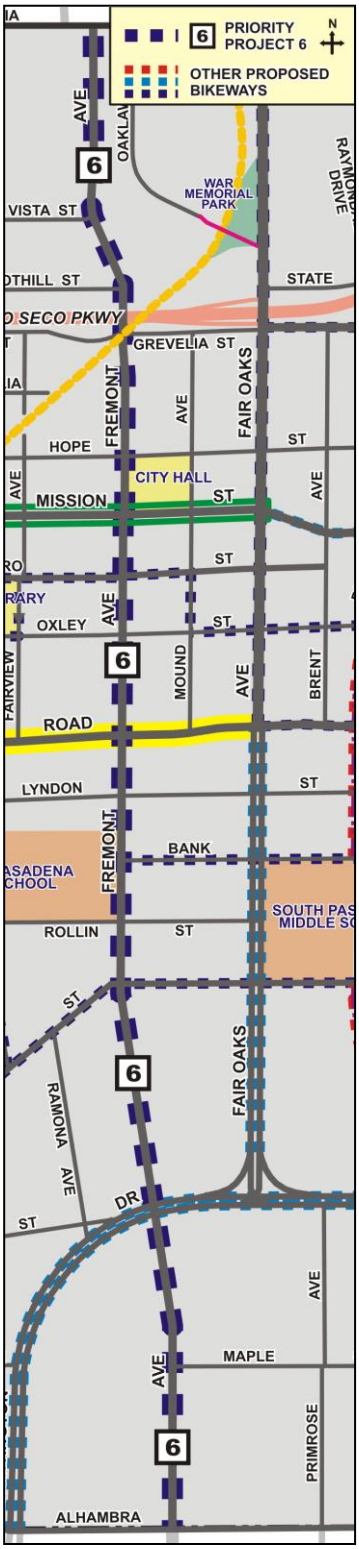
This Fremont Bikeway project extends from the Pasadena city limit in the north to the Alhambra city limit in the south. Some of the destinations served include the Post Office, City Hall, the Mission Street commercial area, and South Pasadena High School.

The Fremont Avenue Traffic Calming Plan proposes to install features designed to calm traffic. This Class III bikeway project would dovetail nicely with the Traffic Calming Plan.

Holy Family Catholic Church on Fremont

Post Office at El Centro

Map 7.7
Fremont Project



Project Features

- City North/South Connection
- Connection to an Adjacent Cities (Pasadena, Alhambra)
- Destinations: Post Office, City Hall, Holy Family School
- Schools and Parks: South Pasadena High School

Special Bicycle Pavement Markings

- Sharrows
  North City Limit to South City Limit

- Intersections with Bicycle Boxes (8):
  Fremont and Mission (NB, SB approaches)
  Fremont and El Centro (NB, SB approaches)
  Fremont and Monterey (NB, SB approaches)
  Fremont and Huntington (NB, SB approaches)

Street Modifications

- Sharrow stencils

Signage

- Class III
- Way Finding/Destinations

Responsible Departments

- Public Works

Concept Drawing

The following figure provides a conceptual illustration of the Bicycle Box elements of the Project.

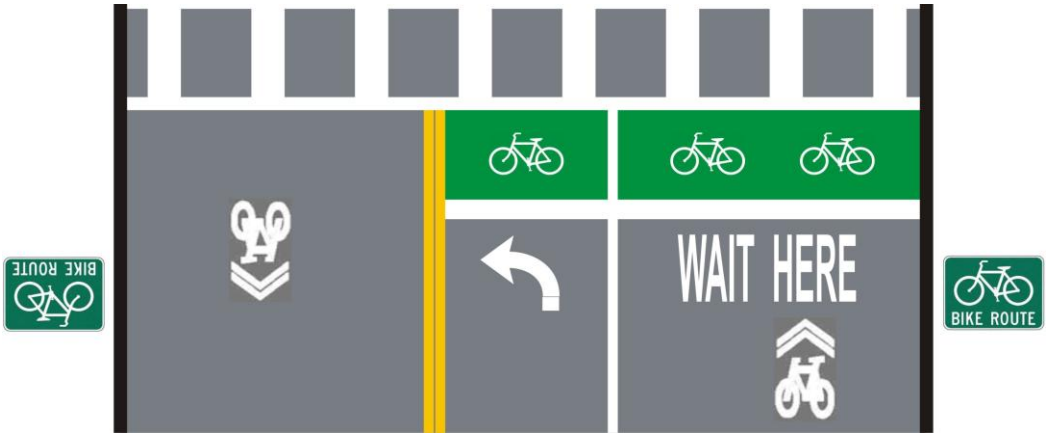
Project Roadway Segments

Fremont Avenue
❖Class III: North City Limit to South City Limit 1.8 miles

Project Length: 1.8 miles
Project Cost $36,000

Primary Priority Criteria:
Connectivity
Destinations
Transit Connections
Public ranking

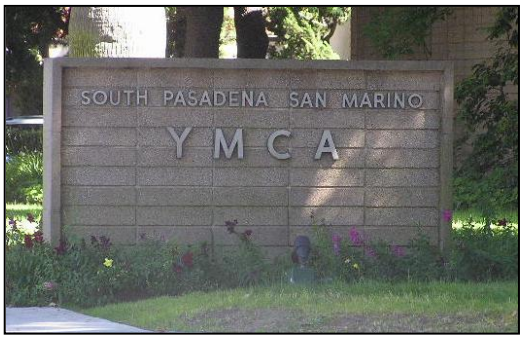
Figure 7.14 Bicycle Box Example



Project 7: Oak Street Bikeway

Project Description

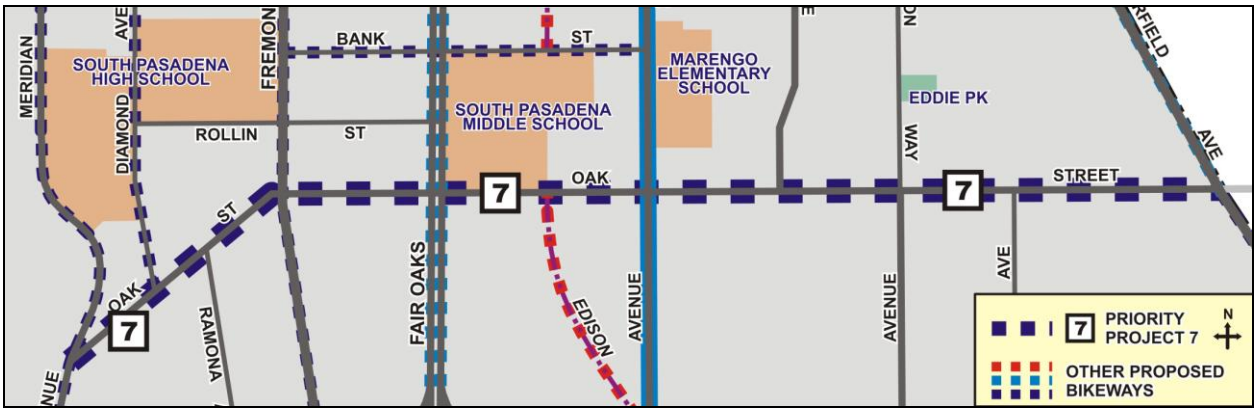
The Oak Street Bikeway project provides east/west bikeway connectivity in the southern area of the City. It extends from Meridian Avenue to Garfield Avenue and serves the Middle School as well as close connections to South Pasadena High School and Marengo Elementary. The YMCA also is connected to the greater network.



YMCA at Oak and Garfield

South Pasadena Middle School

Map 7.8 Oak Street Project



Project Features

- City East/West Connection
- Connection to an Adjacent City (San Marino)
- Destinations: Fair Oaks Retail, YMCA
- Schools and Parks:
  South Pasadena Middle School
  South Pasadena High School
  Marengo Elementary

Special Bicycle Pavement Markings

- None

Street Modifications

- None

Signage

- Class III
- Destinations

Responsible Departments

- Public Works

Concept Drawings

- None

Project Roadway Segments

Oak Street
❖Class III: Meridian Avenue to to Garfield Avenue 1.2 miles

Project Length: 1.2 miles
Project Cost $24,000

Primary Priority Criteria:
Connectivity, Activity centers
Agency ranking

Project 8: Monterey Bikeway

Project Description

The Monterey Bikeway project is an east/west connection that spans the City from Los Angeles to San Marino. This bikeway is primarily a crosstown regional route connecting with proposed bike lanes in Los Angeles and many other projects in South Pasadena.

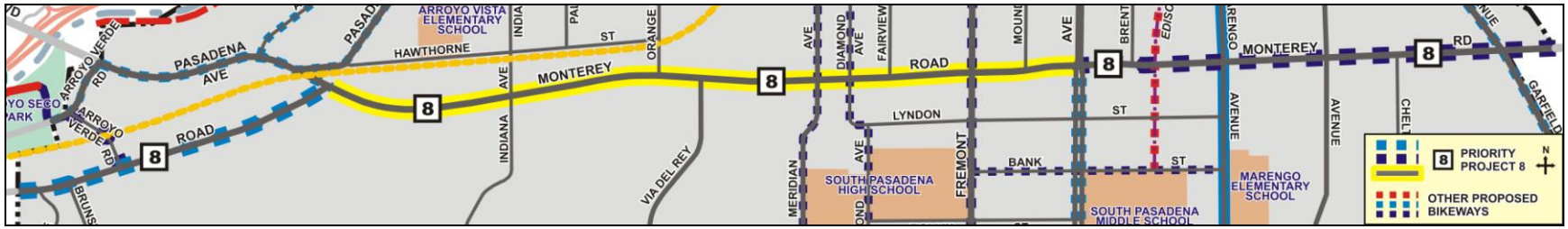
The Monterey Bikeway provides access to the Fair Oaks Avenue business area. The Arroyo Verde Road portion of the project would simply provide a bikeway "spur" to Marmion Way and the terminus of the Arroyo Seco Class I Bike Path in Los Angeles.

The yellow-highlighted segment of Monterey Road between Pasadena Avenue and Fair Oaks Avenue is under study by the City to determine the bikeway classification. Page 7.36 provides a discussion of this segment.

Monterey Road

Charlie's Coffee House

Map 7.9 Monterey Project



Project Features

- City East/West Regional Connection
- Connection to Adjacent Cities (Los Angeles, San Marino)
- Destinations: Fair Oaks Retail Corridor, Arroyo Seco Stables

Special Roadway Markings

- None

Street Modifications

- Yet to be determined

Signage

- Class II: Monterey Road
  West City Limit to Pasadena Ave
- Bikeway yet to be determined: Monterey Road
  Pasadena Ave to Fair Oaks Ave
- Class III: Monterey Road
  Fair Oaks Ave to East City Limit
- Class III: Arroyo Verde Road
  Marmion Way to Monterey Road
- Way Finding/Destinations

Responsible Departments

- Transportation, Public Works

Project Roadway Segments

Monterey Road

❖Class II: West City Limit to Pasadena Avenue
0.5 miles
$14,000

❖Bikeway yet to be determined: Pasadena Avenue to Fair Oaks Avenue
1.1 miles
Cost yet to be determined

❖Class III: Fair Oaks Avenue to East City Limit
0.7 miles
$14,000

Arroyo Verde Road

❖Class III: Marmion Way to Monterey Road
0.1 miles
$2,000

Project Length: 2.4 miles
Project Cost Pending

Primary Priority Criteria:
Regional Connectivity
Destinations
Public ranking
Agency ranking

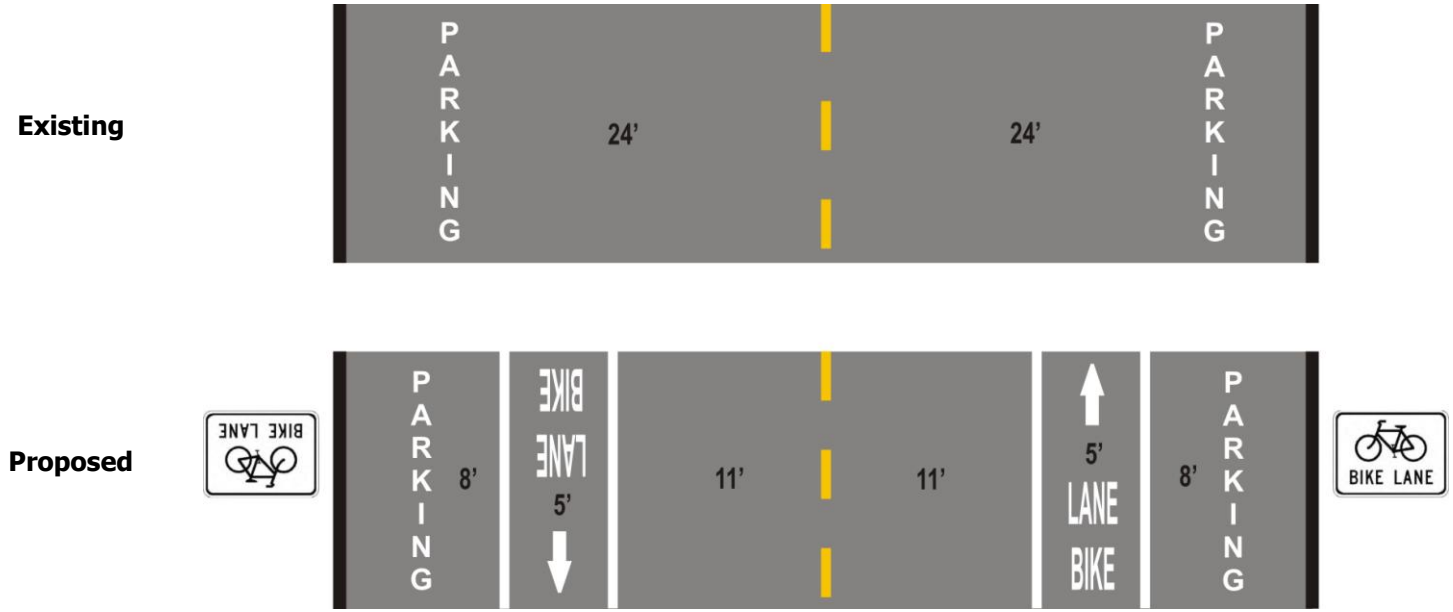
Related Projects

Monterey Road between Pasadena Avenue and Fair Oaks Avenue is part of the City's Capital Improvements Program (CIP) for the Fiscal Year 2011-12. The project includes a resurfacing of this segment of roadway and incorporating Americans with Disabilities Act (ADA) accessibility. The City Council is exploring several options regarding the type of bikeway that will be installed, including Class II Bike Lanes, a Class III Bike Route, protected bike lanes, and a Class I cycle track on one side of the roadway. The City Council will determine the class of bikeway following community outreach and additional engineering and design work. The City is committed to establishing a continuous and integrated bikeway facility along the entire Monterey Road corridor within the City.

Concept Drawing

The following figure shows a conceptual illustration of the lane modifications. The first is existing and the second proposed.

Figure 7.15 Monterey Road Bike Lanes
West City Limit to Gold Line Crossing/Pasadena Avenue



Project 9: Bicycle Parking

Project Description

The purpose of this project is to provide guidance and support to City staff in a future grant application to Caltrans for bicycle parking. The details of a grant application will be determined at the time of submittal.

Project Features

- Bike Racks for short-term bicycle parking
- Bike Lockers for all-day and long-term bicycle parking
- Bike Racks in the public right-of-way in retail areas (sidewalks as determined by the Public Works Department)
- Valet parking at City events (primarily Farmers Market) as part of a public/private partnership

Improvements

- Replace existing bike racks with the recommended "U"-Rack design as outlined in Chapter 8 (Design Guidelines)
- Install bike racks at activity centers, destinations, places of employment, shopping centers, parks, bus stops, and additional racks at the Gold Line Station
- Install bike lockers at City Hall, the Public Library, and the Gold Line station
- A more specific set of bike rack and bike locker locations will be determined as part of the grant application process

Bicycle Parking

- Municipal and Public Buildings
- Retail Areas
  Mission Street
  Fair Oaks Avenue
- Shopping Centers
- Parks
  Orange Grove Park
  Garfield Park
  Arroyo Park
- City Events
  Farmers Market
- Multimodal Linkages
  Gold Line, Bus Stops

Project Cost:

- 6 Bike Lockers @ $3,000 each
  Gold Line Station (2)
  City Hall (2)
  Library (1)
  Golf Course (1)
  $18,000
- 20 Bike Racks @ $250 each
  $5,000
- **Total Project - $23,000**

Primary Priority Criteria:

Activity centers
Destinations
Public Input
Agency Input

Programming

- City to provide racks and lockers through grant funding
- Coordinate with Metro for additional bike racks and bike lockers at the Gold Line station

Responsible Departments

- City Manager's Office, Public Works, Community Services, Los Angeles County Metro

Project 10: Bikeway Way Finding

Project Description

The purpose of this project is to provide guidance and support to City staff in a future grant application to Caltrans for a bikeway way finding signage program. The details of a grant application will be determined by staff at the time of submittal.

Project Features

- Destinations Citywide
- Bikeway Network Navigation
- Green Lane Signage
- Green Lane Banners
- Regional Destinations
- Multimodal Connections

Improvements

- Affix destination signage to accompany existing Class II and III signage
- Install signage in accordance with MUTCD guidelines (see Chapter 8 – Design Guidelines)

Wayfinding Signage

- Bikeway Network Destinations
  Parks, Schools
  Municipal Buildings
  Retail Areas
- Green Lane Signage (Banner)
  Mission Street Green Lane
- Regional Connections
  Huntington Drive
  Fair Oaks Avenue
  Monterey Road
- Multimodal Connections
  Gold Line Station

Project Cost
$20,000

Primary Priority Criteria
Public Input
Agency Input

Programming

- Create a themed "Cycle South Pasadena" way finding signage logo
- Develop a consistent and seamless network of way finding signage throughout the City
- Develop a "Cycle South Pasadena" map and guide

Responsible Departments

- City Manager's Office, Public Works

7.6 ADDITIONAL PROJECT IMPLEMENTATION

The implementation of the Bicycle Master Plan also includes other aspects of bicycle planning such as bicycle ordinances, safety programs and bicycle amenities.

Ordinances

The ordinances should be drafted and adopted by City Council in order to support the Bicycle Master Plan. Bicycle related ordinances are described in Chapter 4 (Bicycle Network). This should be complete within the first year of plan adoption.

Responsible Departments: City Manager's Office, Planning and Building, Police

Bicycle Safety Programs

Bicycle safety programs, as described in Chapter 5 (Bicycle Safety Programs), support the bicycle network. The City may decide which programs can be implemented, once funding is secured. Priority should be given to projects that support a particular bicycle facility, such as the Green Lane. For example, a safety education campaign may create a brochure with the new bicycle facility and explain the benefits of the Green Lane.

Responsible Departments: Public Works, Community Services, Police Department

Bicycle Amenities

An initial bicycle parking program is included as a top tier priority in the project sheets, and should be implemented within one to five years. However, bicycle parking should continue to be expanded throughout the City as needed.

Bicycle clothing locker storage, as explained in Chapter 4 (Bicycle Network), is typically part of a building development. The ordinance will specify the bicycle clothing storage requirements. It will be implemented when a building is complete.

Responsible Departments: Public Works, Community Services, Planning and Building

CHAPTER 8
DESIGN GUIDELINES

8.0 DESIGN GUIDELINES OVERVIEW

Design guidelines provide direction for implementing bicycle facilities. It includes basic concepts with descriptions and samples of bicycle improvements.

The Caltrans Highway Design Manual (HDM) Chapter 1000, American Association of State Highway and Transportation Officials (AASHTO) and Manual Uniform Traffic Control Devices (MUTCD) contain more detailed standards which must be followed.

Projects may require specific plan and engineering studies. These studies will provide the technical detail required by the federal, state and local guidelines.

California Complete Streets Act

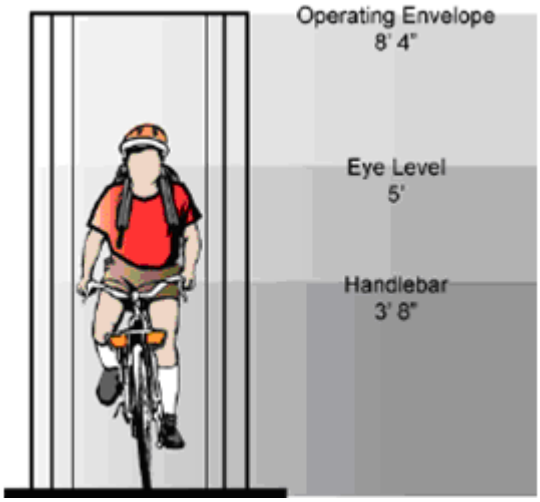
Assembly Bill (AB) 1358 mandates that cities plan for what is known as "complete streets". It states that a City's circulation element is required to plan for a balanced, multimodal transportation network that addresses the accommodations of all users of streets, roads and highways for safe and convenient travel. This includes bicycles.

This Chapter provides support and guidance for the implementation of the Bicycle Plan's projects, programs, and multimodal connections to transit that meet the goals of the California Complete Streets Act. It is important to provide design guidelines to ensure the development of a bicycle network system is safe, convenient, user-friendly, and efficient.

8.1 BICYCLE DEFINITION

There are a variety of bicycles which cyclists use. The typical types of bicycles, as determined by AASHTO, are considered in designing bicycle facilities. A bicyclist needs an operating width that is slight greater than the dimensions of the bicycle. The minimum width to safely ride a bicycle on a street is four feet, but it is preferred to provide at least five to allow a margin of safety.

Figure 8.1 Bicycle Traveling Space (AASHTO)



8.2 BIKEWAY FACILITIES

A bicycle facility is a term used to denote a specific space or designation for bicycle travel, such as on a path, lane, or street. It is also used to describe such elements as bike racks and bike lockers. The term ancillary facility is used to denote items of bicycle support, such as showers, lockers, and changing rooms.

Class I Bicycle Path

A Bicycle Path is a facility designed for bicycles specifically and is paved right of way separated from the street or highway that provides a dedicated area for bicycle travel. It is often located along waterways (Arroyo Seco), utility corridors (Southern California Edison), or at the beach (Santa Monica and Venice). Paths are often shared with pedestrians unless specifically prohibited.

The minimum paved width for a two-way bike path is required to be 8 feet (2.4m). A typical path is 10 to 14 feet (3.0m to 4.3m). A minimum 2-foot- (0.6m-) wide graded area shall be provided adjacent to the pavement, according to the Reference Guides below.

The minimum paved width for a one-way bike path shall be 5 feet (1.5m) and have 2 feet (0.6m) of graded area adjacent to the pavement. The path center line is a painted dashed yellow stripe with solid white striping for shoulders.

Bicycle Path signage is required for a Class I bikeway is a white sign that indicates "BIKE PATH, NO MOTOR VEHICLES OR MOTORIZED BICYCLES".

Pavement markings for bicycle paths include a white lettered stencil: "BIKE PATH".

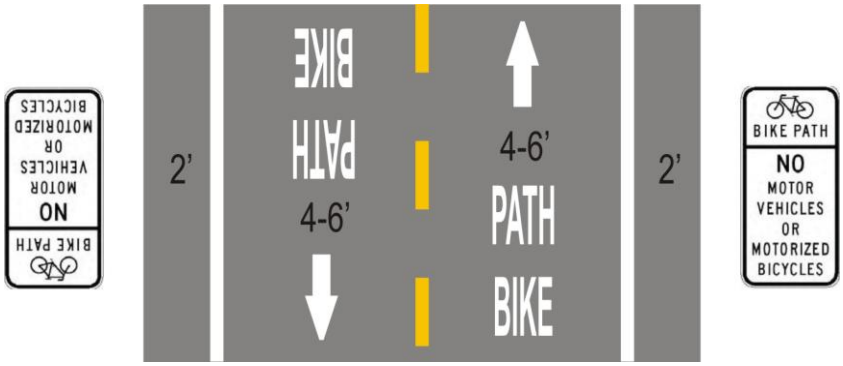
Multi-use trails and unpaved facilities that are for recreational purposes rather than for transportation commuting and are not designed Class I facilities unless they meet the required design criteria.

<u>Reference Guides</u>

- Caltrans HDM Chapter 1000
- MUTCD and California Supplement
- AASHTO

Figure 8.2 illustrates Bicycle Lane striping cross sections with and without on-street parallel parking. Figure 8.3 and 8.4 provide examples of Bike Paths.

Figure 8.2 Class I Bike Path Cross Section Diagram



Figures 8.3, 8.4 Class I Bike Path Examples

Ballona Creek/South Bay Bike Path

Marina del Rey Bike Path

Class II Bicycle Lane

A Bike Lane is a lane striped and stenciled on the pavement of a roadway that is for the preferential use of bicyclists. It is located to the right of through travel lanes on streets and roadways that are not limited-access (such as a freeway). Bike lane striping and pavement markings are intended to promote an orderly flow of traffic, by establishing specific lines of demarcation between roadway space reserved for bicycles and lanes to be occupied by motor vehicles. Examples include Marengo Avenue and Raymondale Avenue in South Pasadena.

The standard for a bicycle lane with adjacent on-street parallel parking is a minimum 5 feet (1.5m) as indicated by the Caltrans Highway Design Manual, Chapter 1000. On higher-speed roadways (above 40mph), 6 feet is recommended. Adjacent to a curb, the Bike Lane may be 4 feet wide if the gutter pan is a maximum width of 12 inches and is flush with the roadway pavement. The preferred width is 6 to 7 feet (1.8m) to (2.1m) where additional lane width is available. Solid white striping separating the vehicle lane from the bicycle lane is typically 4- to 6-inches wide. On the approach to an intersection, the solid white stripe becomes dashed where right-turning vehicles may enter to prepare for their right turn.

The required Bike Lane signage is white with black lettering that reads: "BIKE LANE" with a picture of a bicycle above it. The placement of these signs is required at intervals not to exceed ½-mile.

Pavement markings for bike lanes include a white lettered stencil with the words "BIKE LANE" and/or a stencil of a bicyclist and an arrow facing forwards. See Figures 8.5 and 8.6.

<u>Reference Guides</u>

- Caltrans HDM Chapter 1000
- MUTCD and California Supplement
- AASHTO

Figures 8.5 and 8.6 illustrate Bicycle Lane striping cross sections with and without on-street parallel parking. Figures 8.7 and 8.8 provide examples of Bike Lanes.

Figure 8.5, 8.6 Class II Bike Lane Cross Sections

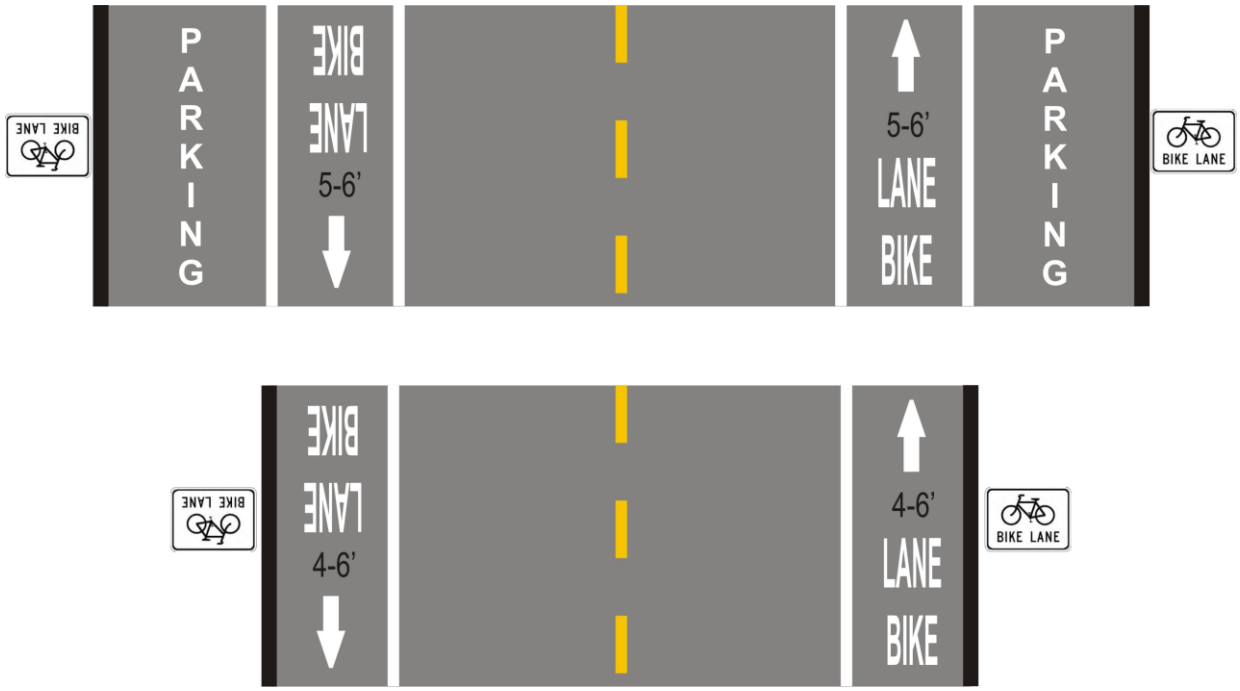


Figure 8.7 Class II Bike Lane Example

Washington Blvd in Venice

Figure 8.8 Class II Bike Lane Example

Washington Blvd in Venice

Class III Bicycle Route

Class III facilities are shared facilities, either with motor vehicles on the street, or with pedestrians on sidewalks. They are established along preferred cycling routes not served by Class I or II bikeways. The term "preferred" is used here as a route that is of particular importance for bicycling where a Class I or II is not feasible. Class III Bike Routes often connect discontinuous segments of bikeway (typically bike lanes). An example is Raymond Avenue in Pasadena.

There is no roadway striping or stencils associated with a Class III Bike Route.

The required Bike Route signage is green with white lettering that reads: "BIKE ROUTE" with a picture of a bicycle above it. Signage is required placed at intervals not to exceed ½-mile.

The following guides may be used when designing a Class III Bike Route facility:

- Caltrans HDM Chapter 1000
- MUTCD and California Supplement
- AASHTO

Figure 8.9 illustrates a roadway designated as a Bicycle Route. Figures 8.10 and 8.11 provide example of a Bike Route.

Figure 8.9 Class III Bike Route

Figure 8.10, 8.11 Class III Bike Route Examples

Bike Route in Pasadena

Bike Route in Santa Monica

8.3 BIKEWAY ENHANCEMENTS

An enhancement to a bikeway includes additional items that can be used to increase the safety, visibility, effectiveness, or accessibility of a bikeway. Enhancements are most often used along Class III Bike Routes. An enhancement may be a sign, a stencil, or another item either approved by Caltrans, AASHTO, or MUTCD or as an experimental treatment under review. A Bike Route bikeway with enhancements is called an Enhanced Class III Bike Route. This section presents several enhancements that are used in conjunction with bikeways.

Shared Lane Marking (Sharrow)

Shared lane markings, known as "sharrows", are intended to delineate where cars and bicycles share the lane. The sharrow marking indicates the position for cyclists to ride; for ease of travel as well as to avoid obstructions such as open car doors. It visually shows drivers where a bicycle can legally ride within the travel lane. Sharrows can only be used on Class III Bike Routes, but not all Class III Bike Routes require sharrows. It is an option that may be used on (but not limited to) roadways with high on-street parking demand or along Class III sections of bikeways without continuous Class II lanes.

The sharrow is placed a minimum of 11 feet (3.6m) from the curb. Included in this width is a required 3-foot buffer zone between parked cars and the sharrow stencil. This 3-foot space is known as the "door zone". The use of sharrows does not require any other pavement markings, but must include a standard Class III Bike Route sign at minimum ½-mile intervals.

Sharrows may also be accompanied by a "Share-the-Road" sign (as shown on page 8.23), but this is not required. "Share-the-Road" signs provide additional bicyclist visibility.

The pavement marking is a bicycle facing left with two upward facing chevrons above it, as shown in Figure 8.12. There is currently no requirement for the spacing of sharrows on the street, but it is recommended that they be placed at the beginning of each block and every 100 feet.

There is no specific paint required to be used for sharrow stencils.

Figure 8.13 illustrates the specific spacing requirements for the use of a sharrow.

<u>Reference Guides</u>

- Caltrans HDM Chapter 1000

- MUTCD and California Supplement
- AASHTO

Figure 8.12 Sharrow Stencil Design (MUTCD)

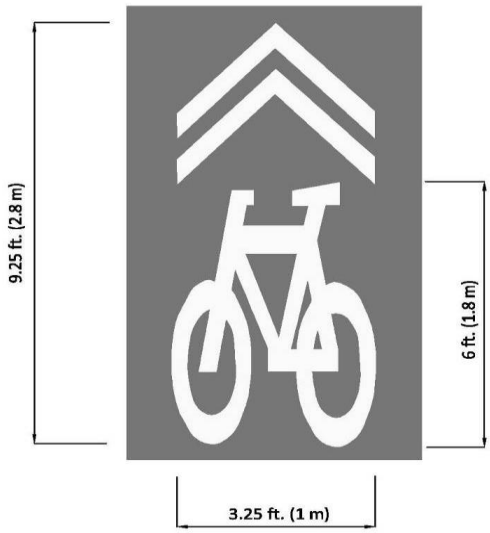


Figure 8.13 Sharrow Stencil Design (C.I.C.L.E.)

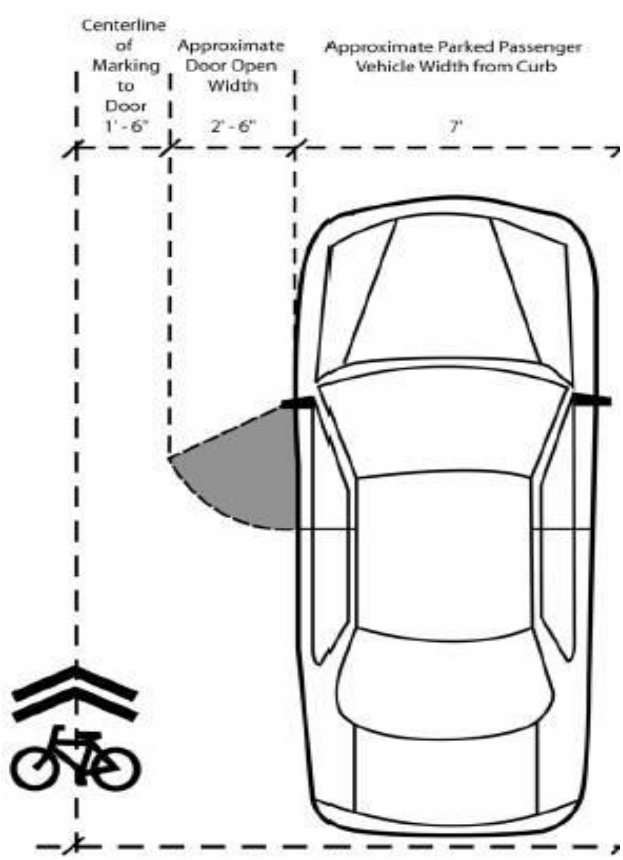
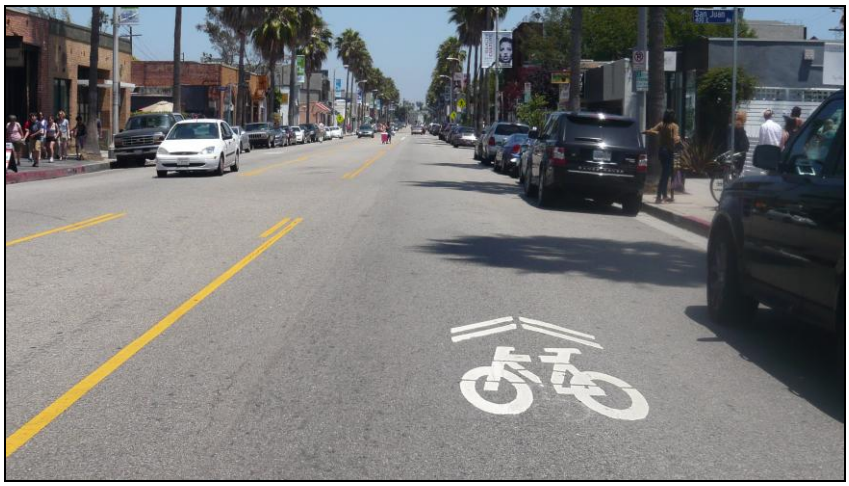


Figure 8.14 Sharrow Example



Abbott Kinney Blvd in Venice

Green Lane

Green colored pavement may be used within a travel lane to enhance the visibility of bicyclists and of bicycle routes. These are often referred to as "Green Lanes", which highlight with a green pavement treatment the area within the travel lane where bicycle and cars share the road. It is a used in high-conflict areas, such as on roadways with high on-street parking demand or on slower-speed streets through commercial retail areas, as along 2nd Avenue in Long Beach. The Green Lane could be installed along bicycle routes where there is not enough width for a designated bicycle lane. The Green Lane treatment is also a way to raise awareness of bicycling on a particular street, such as in commercial areas.

The preferred width for a Green Lane is 5 feet (1.6m) with the right-most edge 3 feet (1m) to the outside of parked cars. The Green Lane has a green pavement with no white striping.

Signage for a Green Lane is the same as for a Bike Route and is an enhancement of a Class III facility.

Pavement markings for a Green Lane include a painted green area on the roadway within the outside travel lane. The use of a "Sharrow" stencil can be used in conjunction with the Green Lane. Although the Green Lane with a sharrow is not currently found in a design manual, it is an accepted practice as demonstrated by their use in Portland, Oregon.

The paint that is typically used for green lanes is thermoplastic. It is more durable than most other types of paint, contains tiny glass particles for reflectivity, is embedded with silica aggregate for skid resistance. However, other paint is acceptable.

<u>Reference Guides</u>

- Caltrans HDM Chapter 1000
- MUTCD and California Supplement
- AASHTO

Figure 8.15 Green Lane Cross Section

Figure 8.16 Green Lane Example (RussRoca.com)

2nd Avenue in Long Beach

Bicycle Box

A bicycle box is designed to prevent conflicts between bicyclists and motor vehicles at intersections. This treatment specifically addresses conflicts between bicyclists going straight through an intersection on green and right turning vehicles turning right. The correct positioning of both users is often confused at these locations, and a bicycle box clearly identifies where bicyclists may position themselves to reduce conflict through a visual enhancement.

The treatment is a green-painted pavement area in the shape of a rectangle with a white bicycle stencil inside it. The painted area is installed across travel lanes adjacent to and behind the crosswalk. The vehicle stop bar is then placed behind the bicycle box. This enhances the visibility of bicyclists while also recognizing their protection on the road. At a red light, cyclists are more visible to motorists by being in front of them.

Figure 8.17 Bicycle Box

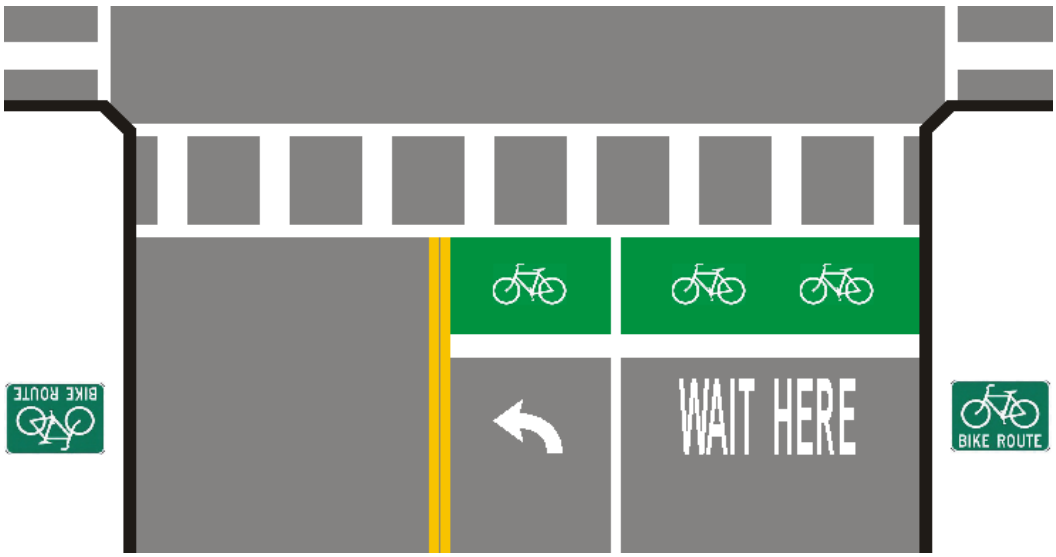


Figure 8.18 Bicycle Box Example (Portland)

Uphill/Downhill Grade Class II/Class III Combination

For the purposes of this discussion, a roadway grade is the incline of a roadway where the downhill speeds of bicyclists could approach the speeds of motor vehicles on the same grade. The exact slope of the grade would depend on the length of the grade (in feet or miles) and therefore is not specifically defined here. Downhill bicyclist speeds of more than 20mph are relevant to this discussion.

If bicyclist speeds approach vehicle speeds in the downhill direction, an exclusive bicycle lane is not necessary because the function of the lane would be sufficient for bicycle travel as a shared Class III Bike Route. However, bicycle speeds in the uphill direction would be considerably slower than they typically would be on a flat surface. In the uphill direction, bicyclists would be better served by a Class II Bike Lane where slow-moving bicyclists would be appropriately provided space outside of the flow of vehicular traffic in a Class II where their slower speed wouldn't impede the flow of vehicle traffic. (see Figure 8.19)

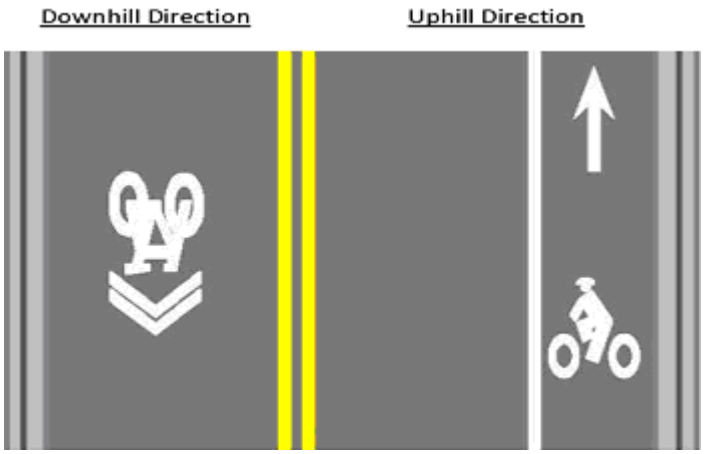
In the uphill direction, the bicycle lane would require be the standard minimum width of 5 feet. It would also require striping and stencils per a Class II lane. A bicycle lane sign indicating "Bike Lane" would be required for the uphill section.

The downhill direction may be designated a Class III with sharrows to denote that bicyclists would be sharing the lane with traffic. The downhill direction must be signed with required "Bike Route" signage.

<u>Reference Guides</u>

- Caltrans HDM Chapter 1000
- MUTCD and California Supplement
- AASHTO

Figure 8.19 Uphill Bike Lane Design (AASHTO)



Signal Detection for Bicycles at Intersections

A traffic signal at an intersection can be designed as an "actuated" traffic signal. This involves installing detection devices to detect when a vehicle arrives at one of the approaches and indicates to the signal controller that a green phase is needed for that approach. The most common devices used are in-pavement loop detectors (magnetic induction) and video detection. Microwave and radar detection technologies are also being tried in some jurisdictions.

Signal detection is most often designed without bicyclists in mind, and therefore an additional effort must be made to actuate them for bicycles. For loop detection, a smaller loop design is created with a visual cue as to where to position the bicycle to induce the detector to call a green phase. The loop would be placed in the bike lane or adjacent to vehicle loop detectors on a Class III bike route.

Figure 8.20 shows the proper bicyclist signage for a loop-detected traffic signal. Figure 8.20 shows the pavement marking used to assist bicyclist in the proper position to call the green phase.

The stencil is placed before the stop bar of the intersection approach.

<u>Reference Guides</u>

- Caltrans HDM Chapter 1000
- MUTCD and California Supplement
- AASHTO

Figure 8.20 Bicycle Signal Detection Pavement Stencil (AASHTO)

Figure 8.21, 8.22 Bicycle Loop Detector Signage and Stencil Examples

Washington Blvd in Venice

Washington Blvd in Venice

Drainage Grates

Drainage grates are used on streets with curbs and gutters to drain water into the sewer system. They are placed at various intervals on a given street depending on a host of factors at the determination of the Public Works Department. Grates are usually designed with bars and slats that allow water through but not a vehicle tire. Since bicycle travel often occurs in the curb lane of a street near the gutter, it is important to ensure that the drainage grates be designed in such a way that bicycle tires do not get caught in them.

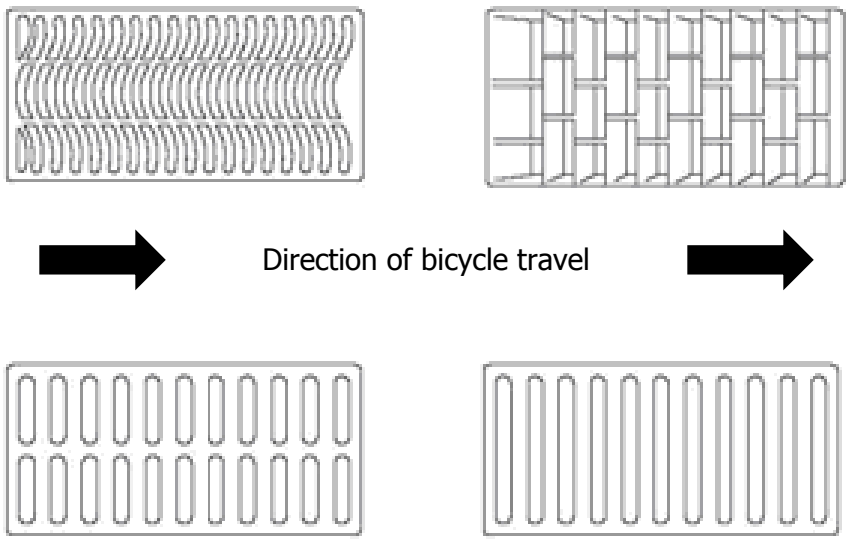
Drainage inlet grates on bikeways shall have openings narrow enough and short enough to assure bicycle tires will not drop into the grates. Where it is not immediately feasible to replace existing grates with standard grates designed for bicycles, 25mm x 6mm steel cross straps should be welded to the grates at a spacing of 150mm to 200mm to reduce the size of the openings adequately, according to the Caltrans Highway Design Manual, Chapter 1000.

Street drainage grates are maintained as part of routine street maintenance.

<u>Reference Guides</u>

- Caltrans HDM Chapter 1000
- MUTCD and California Supplement
- AASHTO

Figure 8.23 Examples of Proper Drainage Grates (AASHTO)



8.4 BICYCLE PARKING

Parking is an essential part of bicycle transportation. Just as vehicle users rely on a place to park their vehicles at their destination, bicyclists too need to be provided a place to park their mode of transportation. Too often, bicycle parking is not provided and bicyclists are left to find unsecure locations to lock their bicycle, if any such location is even available.

Figure 8.24 Standard Bike Parking Signage (MUTCD)

Bicycle Rack

A bicycle rack is designed to safely secure a bicycle, typically for short-term parking. They typically have a metal design, sometimes with a special design or surface coating.

The most common and effective rack is a standard inverted "U" Bicycle Rack, typically 35 inches high and 30 inches in width, and there are many differing designs, manufacturers, and dimensions to them. Although "U"-Racks are preferred, others are acceptable as long as they allow for one bicycle wheel and the bicycle frame to be locked together.

Bike racks are typically placed on sidewalks, in public rights of way, or on private property. Of primary importance, the location of bike racks should be safe and convenient. They should be purchased from a manufacturer that installs them in a way that prevents the theft of bicycles or the racks when placed on sidewalks. Specific bolting techniques as well as the design of the racks themselves are important criteria in the selection of a bike rack manufacturer.

For bike racks that are installed on City sidewalks, the horizontal space required for the rack plus 2 bicycles parked to it is 4 feet. Racks should be installed parallel to the curb wherever possible to minimize the sidewalk space needed for them. The space required from the curb is 2 feet.

The MUTCD provides a standard accompanying parking sign that is to be used at the bicycle parking location.

Reference Guides

- Caltrans HDM Chapter 1000
- MUTCD and California Supplement
- AASHTO

Figure 8.25 Proper "U" Bike Rack Usage (Boulder, Colorado)

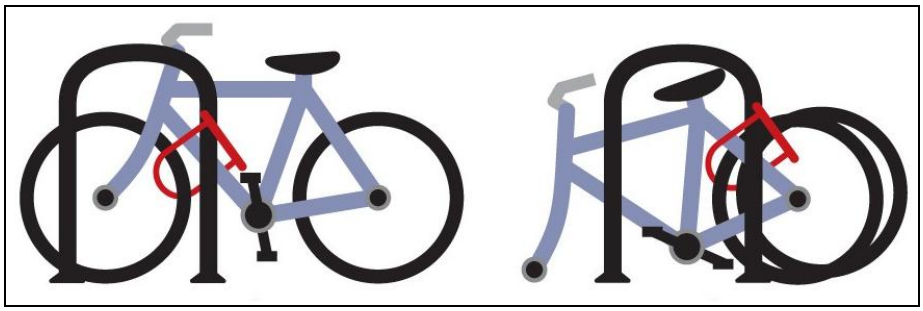
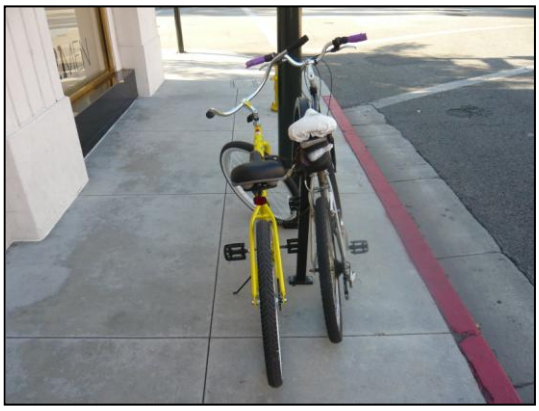


Figure 8.26 Examples of "U" Racks

"U"-Rack Pasadena



"U"-Rack Pasadena

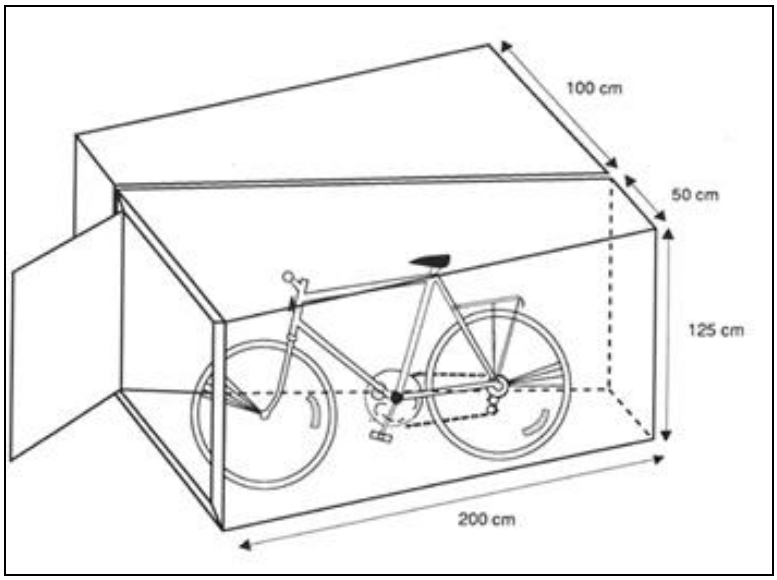
Bicycle Locker

A bicycle locker is an enclosed locker space designed to safely secure a bicycle, typically for all-day or long-term parking. Lockers can vary in size by manufacturer. Lockers are typically placed in parking garages, at transit stations, and/or on public or private property. The MUTCD provides the same standard accompanying parking sign as for bicycle racks. Many jurisdictions prefer perforated or "see-through" lockers to fully enclosed lockers. Greater visibility inside the locker prevents non-bicycle storage from occurring or, in some cases, people residing in them.

Reference Guides

- Caltrans HDM Chapter 1000
- MUTCD and California Supplement
- AASHTO

Figure 8.27 Typical Bike Locker Design (National Urban Institute)



Figures 8.28, 8.29 Bike Locker Examples

Bicycle Lockers in Marina del Rey

Bicycle Lockers at Oakland BART Station

8.5 BIKEWAY SIGNAGE

Bikeway signage is roadway signage specifically designed for bicyclists. It is required by Caltrans, AASHTO, and the MUTCD to accompany Class I Bike Path, Class II Bike Lane, and Class III Bike Route bikeways. The reason for their usage is to identify bikeways for bicyclists and what type of bikeway it is. It is also useful to other users of the road (vehicles and pedestrians) that the road has been specifically designated for use by bicyclists, and that these users should expect to encounter bicyclists on that roadway.

Bikeway signs are required to be placed at intervals of ½-mile or less. Common practice in cities such as Portland, Oregon and San Francisco is to place a bikeway sign every ¼-mile. In addition to required bikeway signage, "Share the Road" signs may be added where deemed appropriate by the local jurisdiction as a way of providing additional bicyclist visibility and awareness. Share-the-Road signage is not required.

<u>Reference Guides</u>

- Caltrans HDM Chapter 1000
- MUTCD and California Supplement
- AASHTO

Figure 8.30 Standard Bicycle Facility Signage (MUTCD)

Way Finding Signage

Way finding signage provides destination, distance, and routing information to users of a roadway. The system of way finding for streets and highways is well developed for motor vehicles. For bicyclists, it is not well-developed but such a network of way finding signage can be found in several cities, including Portland, Seattle, San Francisco, Oakland, and San Diego. Such signage provides destination- and corridor-specific guidance along a bikeway facility and/or among a network of bicycle facilities. Destination signs with names of activity centers. Mileage is an optional and often helpful feature. Way finding signage placed along a bicycle facility would not take the place of standard bikeway signage.

As shown in Figure 8.31, themed way finding signage is often designed in a way uniquely tailored to the City for whose bicycle way finding network is developed. For example, a South Pasadena way finding network of signage could display the City's official logo or Bicycle Master Plan logo entitled *Cycle South Pasadena.*

<u>Reference Guides</u>

- MUTCD and California Supplement

Figure 8.31 Way Finding Signage Examples (Oakland)

Wayfinding Sign in Long Beach

Wayfinding Sign in Seattle

APPENDIX A
BICYCLE TRANSPORTATION ACCOUNT
CALTRANS REQUIREMENTS

Bicycle Transportation Plan Checklist

BTP TITLE: _____

LOCAL AGENCY: _____ ADOPTED Y N DATE:

TRANSPORTATION PLANNING AGENCY: _____ APPROVED Y N DATE:

BFU REVIEW: APPROVED DISAPPROVED DATE:

Yes	No	Requirement	Pages	Comments
		(a) The estimated number of existing bicycle commuters in the plan area and the estimated increase in the number of bicycle commuters resulting from implementation of the plan.		
		(b) A map and description of existing and proposed land use and settlement patterns which shall include, but not be limited to, locations of residential neighborhoods, schools, shopping centers, public buildings, and major employment centers.		
		(c) A map and description of existing and proposed bikeways.		
		(d) A map and description of existing and proposed end-of-trip bicycle parking facilities. These shall include, but not be limited to, parking at schools, shopping centers, public buildings, and major employment centers.		
		(e) A map and description of existing and proposed bicycle transport and parking facilities for connections with and use of other transportation modes. These shall include, but not be limited to, parking facilities at transit stops, rail and transit terminals, ferry docks and landings, park and ride lots, and provisions for transporting bicyclists and bicycles on transit or rail vehicles or ferry vessels.		
		(f) A map and description of existing and proposed facilities for changing and storing clothes and equipment. These shall include, but not be limited to, locker, restroom, and shower facilities near bicycle parking facilities.		
		(g) A description of bicycle safety and education programs conducted in the area included within the plan, efforts by the law enforcement agency having primary traffic law enforcement responsibility in the area to enforce provisions of the Vehicle Code pertaining to bicycle operation, and the resulting effect on accidents involving bicyclists.		
		(h) A description of the extent of citizen and community involvement in development of the plan, including, but not limited to, letters of support.		
		(i) A description of how the bicycle transportation plan has been coordinated and is consistent with other local or regional transportation, air quality, or energy conservation plans, including, but not limited to, programs that provide incentives for bicycle commuting.		
		(j) A description of the projects proposed in the plan and a listing of their priorities for implementation.		
		(k) A description of past expenditures for bicycle facilities and future financial needs for projects that improve safety and convenience for bicycle commuters in the plan area.		

APPENDIX B
PRIORITY RANKING AND PROPOSED ROADWAY MODIFICATIONS

Table B.1 Recommended Project Ranking

Initial Ranking	Destinations	Class	Project Segments			Public Ranking	Agency Ranking 0-5	Activity Centers 0-3	Destinations 0-3	Connectivity 0-3	Schools 0-3	Transit 0-3	Safety 0-3	Cumulative Ranking	Priority Ranking
			Street	From	To										
3	Arroyo Seco Stables, Arroyo Vista Elementary, Orange Grove Park, Gold Line Station, Farmers' Market, Mission Street Commercial District, Fair Oaks Commercial District, Garfield Park	2	**Marmion Way**	West City Limit	Arroyo Verde Rd	3	5	3	3	3	1	3	2	**23**	**1**
		2	**Arroyo Verde Rd**	Marmion Way	Pasadena Ave										
		2	**Pasadena Ave**	Arroyo Verde Rd	Monterey Rd										
		2	**Pasadena Ave**	Monterey Rd	Mission St										
		2	**Mission St**	Pasadena Ave	Grand Ave										
		Green Lane	**Mission St**	**Grand Ave**	**Fair Oaks Ave**										
		2	**Mission St**	Fair Oaks Ave	East City Limit										
7	Fair Oaks Commercial District	2	**Fair Oaks Ave**	Monterey Rd	Huntington Dr	1	3	1	3	3	1	2	3	**17**	**2**
		3	**Fair Oaks Ave**	North City Limit	Monterey Rd										
1	Arroyo Vista Elementary, Orange Grove Park, Gold Line Station, Farmers' Market, Public Library	2	**El Centro St**	Pasadena Ave	Orange Grove Ave	2	4	3	3	3	1	3	0	**19**	**3**
		3	**El Centro St**	Orange Grove Ave	Mound Ave										
		3	**Mound Ave**	El Centro St	Oxley St										
		3	**Oxley St**	Mound Ave	Garfield Ave										
6	Farmers' Market, Public Library, South Pasadena High School, South Pasadena Middle School, Marengo Elementary, YMCA	3	**Oak St**	Meridian Ave	Garfield Ave	1	4	3	3	2	3	1	1	**18**	**4**
		3	**Bank St**	Fremont Ave	Marengo Ave										
		3	**Fairview Ave (one-way SB)**	El Centro St	Oxley St										
		3	**Oxley St (one-way WB)**	Diamond Ave	Fairview Ave										
		3	**Diamond Ave (one-way NB)**	El Centro St	Oxley St										
		3	**Diamond Ave**	Oxley St	Oak St										
2	Gold Line Station, Farmers' Market, South Pasadena High School	3	**Oliver St**	Orange Grove Ave	Meridian Ave	1	2	2	2	3	1	2	1	**14**	**5**
		3	**Meridian Ave**	Oliver St	South City Limit										
4	Regional Bikeway (Los Angeles, San Marino)	2	**Huntington Dr**	South City Limit	East City Limit	2	2	0	0	3	0	2	3	**12**	**6**
11	Post Office, Mission Street Commercial District, South Pasadena High School,	3	**Fremont Ave**	North City Limit	South City Limit	2	1	1	1	3	1	1	1	**11**	**7**
9	Arroyo Seco Stables, Regional Connection, Crosstown Bikeway, Fair Oaks Commercial Corridor	2	**Monterey Rd (west)**	West City Limit	Monterey Rd/Gold Line	2	1	0	1	3	0	1	3	**11**	**8**
		3	**Arroyo Verde Rd**	Marmion Wy/Arroyo Verde Rd	Monterey Rd										
		2	**Monterey Rd**	Monterey Rd/Gold Line	Fair Oaks Ave										
		3	**Monterey Rd**	Fair Oaks Ave	East City Limit										
8	Garfield Park, YMCA	3	**Grevelia St**	Fair Oaks Ave	Clark Ave	0	2	1	1	3	0	1	2	**10**	**9**
		3	**Clark Pl**	Grevelia St	Garfield Ave										
		3	**Garfield Ave**	Clark Pl	Mission St										
		2	**Garfield Ave**	Mission St	Huntington Dr										
	Orange Grove Park	3	**Orange Grove Ave**	Columbia St	Mission St	1	1	1	1	3	0	0	0	**7**	**10**
10	Monterey Hills Elementary	3	**Via del Rey**	Monterey Rd	Camino Lindo	1	1	0	0	1	1	1	0	**5**	**11**
13	Arroyo Seco,Arroyo Park, Golf Course	1	**Arroyo Seco Trail / Path**	Stoney Dr	West city limit	1	0	0	1	2	0	0	0	**4**	**12**

Table B.1 Recommended Project Ranking (continued)

Initial Ranking	Destinations	Class	Project Segments			Public Ranking	Agency Ranking 0-5	Activity Centers 0-3	Destinations 0-3	Connectivity 0-3	Schools 0-3	Transit 0-3	Safety 0-3	Cumulative Ranking	Priority Ranking
			Street	From	To										
12	Garfield Park, South Pasadena Middle School	1	**Edison Utility Easement**	Grevelia St	Bank St	1	0	0	1	1	1	0	0	**4**	**13**
			Edison Utility Easement	Oak St	Huntington Dr										
			Edison Utility Easement	Huntington Dr	Alhambra Rd										
14	Arroyo Park	2	**Arroyo Dr**	Pasadena Ave	North City Limit	0	1	0	1	2	0	0	0	**4**	**14**
15	Arroyo Seco, Arroyo Park	3	**Stoney Dr**	San Pascual Ave	Arroyo Dr	0	0	0	1	2	0	0	0	**3**	**15**
17	Arroyo Park, Regional Connection	3	**San Pascual Ave**	West City Limit	North City Limit	0	0	0	1	2	0	0	0	**3**	**16**
18	Regional Connection	3	**Avenue 60**	West City Limit	Collis Ave	0	0	0	0	2	0	0	0	**2**	**17**
19	Regional Connection	3	**Collis Ave**	West City Limit	Avenue 60/Hill Dr	0	0	0	0	2	0	0	0	**2**	**18**
16		3	**State St**	Fair Oaks Ave	North City Limit	0	0	0	0	0	0	0	0	**0**	**19**

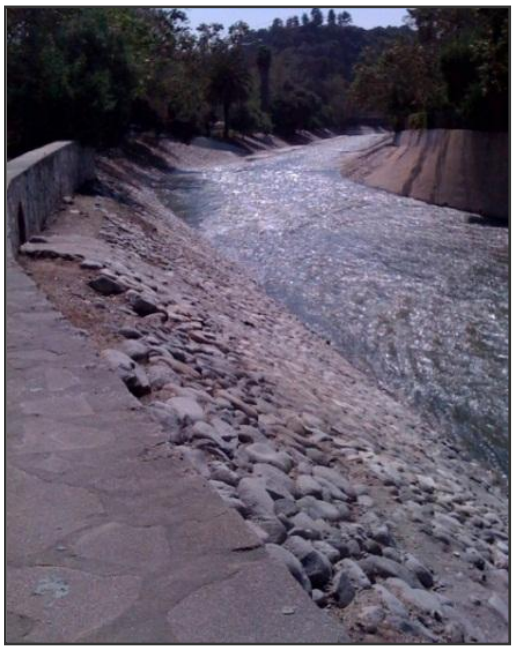
Table B.2 Summary of Proposed Roadway Modifications

Project	Project Name	Destinations	Class	Project Segments			Roadway Modifications
				Street	From	To	
1	**Pasadena/Mission**	Arroyo Seco Stables, Arroyo Vista Elementary, Orange Grove Park, Gold Line Station, Farmers' Market, Mission Street Commercial District, Fair Oaks Commercial District, Garfield Park	2	**Marmion Way**	West City Limit	Arroyo Verde Rd	
			2	**Arroyo Verde Rd**	Marmion Way	Pasadena Ave	
			2	**Pasadena Ave**	Arroyo Verde Rd	Monterey Rd	Parking removed on the north side of the street only
			2	**Pasadena Ave**	Monterey Rd	Mission St	One travel lane removed in each direction, a center left-turn lane added
			2	**Mission St**	Pasadena Ave	Grand Ave	One travel lane removed in each direction, a center left-turn lane added
			Green Lane	**Mission St**	Grand Ave	Fair Oaks Ave	
			2	**Mission St**	Fair Oaks Ave	East City Limit	
8	**Monterey**	Arroyo Seco Stables, Regional Connection, Crosstown Bikeway, Fair Oaks Commercial Corridor	2	**Monterey Rd (west)**	West City Limit	Monterey Rd/Gold Line	
			3	**Arroyo Verde Rd**	Marmion Wy/Arroyo Verde Rd	Monterey Rd	
			2	**Monterey Rd**	Monterey Rd/Gold Line	Fair Oaks Ave	Parking removed on one side of the street (side would be determined by the Public Works Department); Parking removed on both sides where there is a raised center median
			3	**Monterey Rd**	Fair Oaks Ave	East City Limit	
11	**Garfield/Grevelia**	Garfield Park, YMCA	3	**Grevelia St**	Fair Oaks Ave	Clark Ave	
			3	**Clark Pl**	Grevelia St	Garfield Ave	
			3	**Garfield Ave**	Clark Pl	Mission St	
			2	**Garfield Ave**	Mission St	Huntington Dr	Parking removed on one side of the street only (side would be determined by the Public Works Department)
18	**Arroyo Drive**	Arroyo Park	2	**Arroyo Dr**	Pasadena Ave	North City Limit	Parking removed on the west side of the street only

APPENDIX C
ARROYO SECO TRAIL PROJECT

A description of the Arroyo Seco Trail project is included in this appendix because there are special circumstances that need to be addressed.

The Arroyo Seco Trail is a multi-use trail project being undertaken by the City Community Services Department. It is currently in its planning and conceptual design stages. The Trail would be built on the south bank of the channel adjacent to the Arroyo Seco Golf Course along its southern half and along Lohman Lane along its northern half. The Arroyo Seco Trail is identified as Project 20 on page 4.9 of this Bicycle Master Plan.

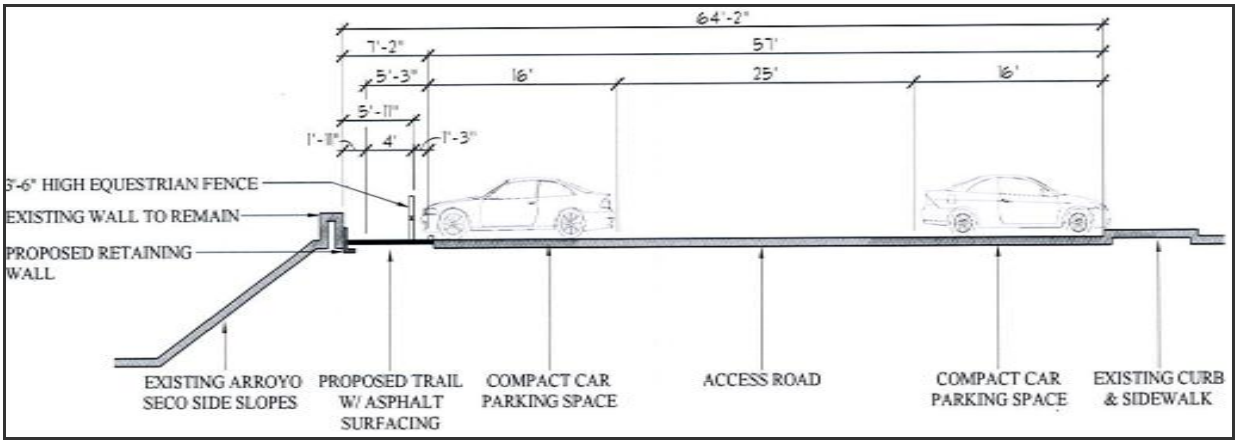


Arroyo Seco near the Arroyo Seco Golf Course

Current planning efforts call for encroachment into the golf course driving range and into the golf course parking lot. Negotiations with the golf course are ongoing as to the extent of the proposed encroachments.

The planned design of the Trail would have varying widths at different locations, many of which are below the Caltrans-required width for a Class I Bike Path (12 feet). As shown in the figure below, the Trail would encroach into the clubhouse parking lot by 7 feet. An additional 5 feet would be needed to bring it up to the Caltrans required width of 12 feet.

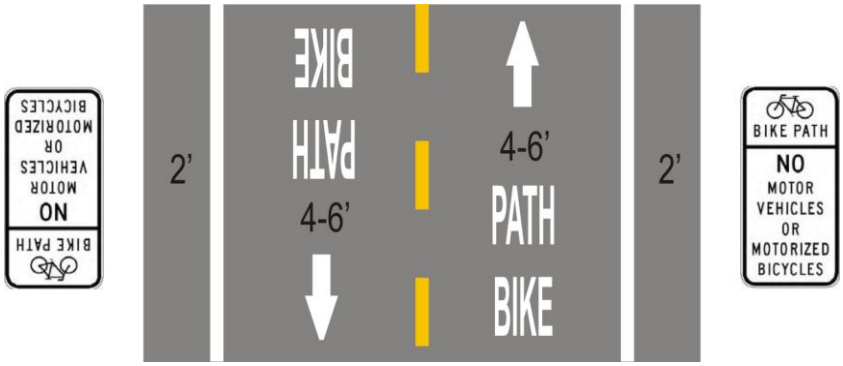
Figure C.1 Arroyo Seco Planned Trail at the Golf Course Parking Lot



An official Caltrans-standard Class I Bike Path needs to include a paved area of minimum 8 feet in width. An additional 2 feet on each side is required as "shoulders". The shoulders need not be paved, but they must be a graded ride-able surface. The entire area required for an official Class I Bike Path is 12 feet. Please see Figure C.2.

In order for the project to qualify for BTA funding and be officially classified as a Class I Bike Path, it would need to be designed to meet the minimum width requirement (as described above) along the project's entire length.

Figure C.2 Caltrans-Required Class I Bike Path Cross Section



Class I Bike Path vs. Multi-Use Trail

If the Arroyo Seco Trail is not designed to meet the Caltrans requirement of 12 feet, it can still be constructed as a Multi-Use Trail. A Class I Bike Path must meet the minimum width, but a Multi-Use Trail for bicycle, pedestrian, or other non-motorized use has no width or pavement requirements.

For funding purposes, a Class I Bike Path is eligible for BTA and Metro grant funding as a transportation or commuting bicycle facility. Although a Multi-Use Trail less than 12 feet wide would not qualify for BTA or Metro funding, other funding resources are still applicable. Chapter 6 includes descriptions of funding resources available for bicycle facilities. Of these, the following two would be applicable to a Multi-Use Trail:

- Land & Water Conservation Fund (LWCF)
- Recreational Trails Program (RTP)

Additional recreational trail funding resources may also be available as part of other Federal, State, or Local programs.

Arroyo Seco Trail Connection to Los Angeles

The existing Arroyo Seco Class I Bike Path in the City of Los Angeles ends at the Arroyo Seco Stables with a short connection to Marmion Way. It does not end at the South Pasadena city limit. The planned Arroyo Seco Trail in South Pasadena extends to the city limit. Currently, there are no plans to fill the gap between the Path in Los Angeles and the planned Trail in South Pasadena.

A future planning study would be required to complete the gap and create a continuous bikeway facility. The planning study would likely require participation from the following departments and agencies outside South Pasadena:

- Caltrans District 7
- Metro
- State Senator Kevin Deleon's office
- City of Los Angeles Councilman Jose Huizar's office
- Los Angeles County Supervisor Michael Antonovich's office
- County of Los Angeles Dept of Public Works
  (Office managing the County Bicycle Master Plan)
- Arroyo Seco Foundation
- Council of Arroyo Seco Organizations
- Other stakeholders

APPENDIX D
CATCH BASIN SURVEY

Purpose:

To update the locations and type of storm water collection basins as indicated on the proposed draft map (page D.2) on the streets identified as a part of the proposed bikeway projects in the 2005 South Pasadena City Bicycle Master Plan (adopted on 2/16/05)

Catch Basin type A

Catch Basin type B

The two grate types below are typically found in the city. Type A is usually a 4-6 foot long slot in the curb. But when the length of the catch basin is needed to be longer it is reinforced with steel rods to support the concrete above. Type B is very similar to Type A except that at every opening there are vertical and horizontal steel rods that help keep large debris from going into the storm water system.

Catch Basin type C

This grate type is found in select areas around the city. These types of collection basins show up in area where the roads have a steeper grade than others. The drain has a slot in the curb as well as a grate in the gutter area. Alongside is a picture of the grate from above. For perspective a U.S. quarter-dollar coin is photographed on the grates.

Roadway Classifications:

Arroyo Verde Drive:
This is a local street.[i] The speed limit on this street is 25 mph, and on average this road handles up to 4,000 vehicles per day. [ii]

Meridian Avenue:
This is a collector street.[1] The speed limit on this street is 30 mph, and on average this road handles 4,000-20,000 vehicles per day. [2]

Oliver Street:
This is a collector street.[1] The speed limit on this street is 25 mph, and on average this road handles 4,000-20,000 vehicles per day. [2]

Orange Grove Avenue
This is a minor arterial street.[1] The speed limit on this street is 35 mph, and on average this road handles 4,000-20,000 vehicles per day. [2]

Via Del Rey:
This is a collector street.[1] The speed limit on this street is 25 mph, and on average this road handles 4,000-20,000 vehicles per day.[2]

Hermosa Street:
This is a local street.[1] The speed limit on this street is 25 mph, and on average this road handles up to 4,000 vehicles per day.[2]

Fair Oaks Avenue:
This is a Major Arterial street.[1] The speed limit on this street is 35 mph, and on average this road handles 20,000-40,000 vehicles per day.[2]

State Street:
This is a local street.[1] The speed limit on this street is 35 mph, and on average this road handles up to 4,000 vehicles per day.[2]

Raymondale Drive:
This is a local street.[1] The speed limit on this street is 25 mph, and on average this road handles up to 4,000 vehicles per day.[2]

Grevelia Street:
This is a collector street.[1] The speed limit on this street is 25 mph, and on average this road handles up to 4,000 vehicles per day. [2]

Bank Street:
This is a local street. [1] The speed limit on this street is 25 mph, and on average this road handles up to 4,000 vehicles per day.[2]

Columbia Street:
This is a Minor Arterial street.[1] The speed limit on this street is 25 mph, and on average this road handles 4,000-20,000 vehicles per day.[2]

Clark Place:
This is a collector street.[1] The speed limit on this street is 30 mph, and on average this road handles 4,000-20,000 vehicles per day.[2]

Garfield Avenue:
This is a Minor Arterial street.[1] The speed limit on this street is 30 mph, and on average this road handles 4,000-20,000 vehicles per day.[2]

Results:

		Catch Basin Types		
Main Street	Cross Streets	Type A	Type B	Type C
Meridian Ave	Kendall Ave- Maple St	0	0	0
	Maple St- Pine St	0	2	0
	Pine St-Oak St	0	0	0
	Oak St- Monterey Rd	5	0	0
	Monterey Rd- Oxley St	0	2	1
	Oxley St- El Centro St	0	0	0
	El Centro St-Mission St	3	0	0
	Mission St- Magnolia St	0	1	0
	Magnolia St- Grevelia St	0	0	0
	Grevelia St-Foothill St	0	0	5
	Foothill St- Prospect Cir	4	0	0
	Prospect Cir- Oliver St	1	0	0
Arroyo Verde Rd	City Limit- Arroyo Verde Rd	2	0	0
	Arroyo Verde Rd- Pasadena Ave	0	0	2
	Arroyo Verde Rd- Monterey Rd	0	2	0
Grevelia St	Meridian Ave- Fairview Ave	1	0	0
	Fairview Ave- Fremont Ave	2	0	0
	Fremont Ave-Mound Ave	1	0	0
	Mound Ave- Fair Oaks Ave	1	0	0
	Fair Oaks Ave- Brent Ave	0	0	0
	Brent Ave- Park Ave	0	0	0
	Park Ave-Stratford Ave	1	0	0
Columbia St	Orange Grove Ave- Pasadena Ave	0	1	0
	Pasadena Ave- Oaklawn Ave	0	0	0
	Oaklawn Ave- Fair Oaks Ave	2	0	0

Type A

Type B

Type C

		Catch Basin Types		
Main Street	Cross Streets	Type A	Type B	Type C
Fair Oaks Ave	Huntington Dr- Spruce St	1	0	0
	Spruce St- Rollin St	0	3	0
	Rollin St- Bank St	0	0	0
	Bank St-Lyndon St	0	0	0
	Lyndon St- Monterey Rd	0	0	0
Via del Rey	Camino Verde-Camino del Sol	0	9	0
	Camino del Sol-Indiana Ave	0	3	0
	Indiana Ave- Flores del Oro	0	6	3
	Flores del Oro- Monterey Rd	0	0	6
Bank St	Fremont Ave- Fair Oaks Ave	0	0	0
	Fair Oaks Ave- Marengo Ave	0	2	0
State St	Fair Oaks Ave- Raymondale Dr	0	0	3
	Raymondale Dr- City Limit	0	0	0
Raymondale Dr	State St- Amberwood Dr	0	0	2
Hermosa St	Grand Ave- Columbia St	0	0	0
Oliver St	Meridian Ave- Orange Grove Ave	0	0	0
Orange Grove Ave	Oliver St- Columbia St	0	0	0
Clark Pl	Stratford Ave-Garfield Ave	1	0	0
Garfield Ave	Mission St- Montrose Ave	0	2	0
	Montrose Ave- Milan Ave	0	0	0
	Milan Ave- Garfield Ave	0	0	0

Type A

Type B

Type C

References

[i] City of South Pasadena; (adopted, Oct. 1998) *South Pasadena General Plan*, Sections 3.2A-3.2B, pgs

[ii] Willdan, (March 2008), *Engineering and Traffic Survey for the City of South Pasadena*, pg 11-17

APPENDIX E
SURVEY OF TRANSIT STOPS

Purpose:

The purpose of this report is to provide a reference guide and matrix categorizing and mapping the locations of public transit stops in the City of South Pasadena. These stops are served by Los Angeles County Metropolitan Transportation Authority (Metro) transit lines. The Metro stops located within the City serve several Metro Bus lines and one Metro Light Rail Station (Gold Line).

Organization:

This guide has three major components; stop typology (pages E.1-E.2), transit maps (pages E.3-E.6), and a matrix of transit stop amenities (pages E.7-E.10). The three are cross-referenced for easy identification of transit stop locations, amenities, and transit lines they serve.

Types of Transit Stops:

Metro Stops with Benches

Metro Bus stop
at Garfield & Monterey

Metro Bus stop
at Mission & Milan

Above are examples of a typical bus stop found in the City of South Pasadena. These bus stops serve the Metro Bus system. The stops consist of a concrete bench, a trash can, and a bus line identification sign. At some locations, transit maps are posted. None of the bus stops in the City has shelters.

Metro Stops with Only a Sign

Metro Bus Stop at Mission & Meridian

Metro Bus Stop at Mission & Meridian

These stops are configured for the Metro Bus system. It is marked only by a bus line identification sign and usually has no other amenities.

Gold Line Light Rail Stop:

Gold Line Station at Mission & Meridian

This transit station is located at Mission Street and Meridian Avenue and is the only light rail station in the City of South Pasadena. It has real-time arrival and departure times, maps, shelters, benches, lighting, ticket machines, and bike racks.

Metro and Local Bus Maps:

Map of Metro Bus Lines

This map depicts the routing of each bus line within the City of South Pasadena.

Map of Metro Bus Stops

This map depicts the location of bus stops within the City of South Pasadena.

Map of Metro Bus Stops for Amenities Matrix

This map, when used in conjunction with the Bus Stop Matrix on pages E.7-E.10, identifies amenities at specific stops.

Map of Metro Bus Lines

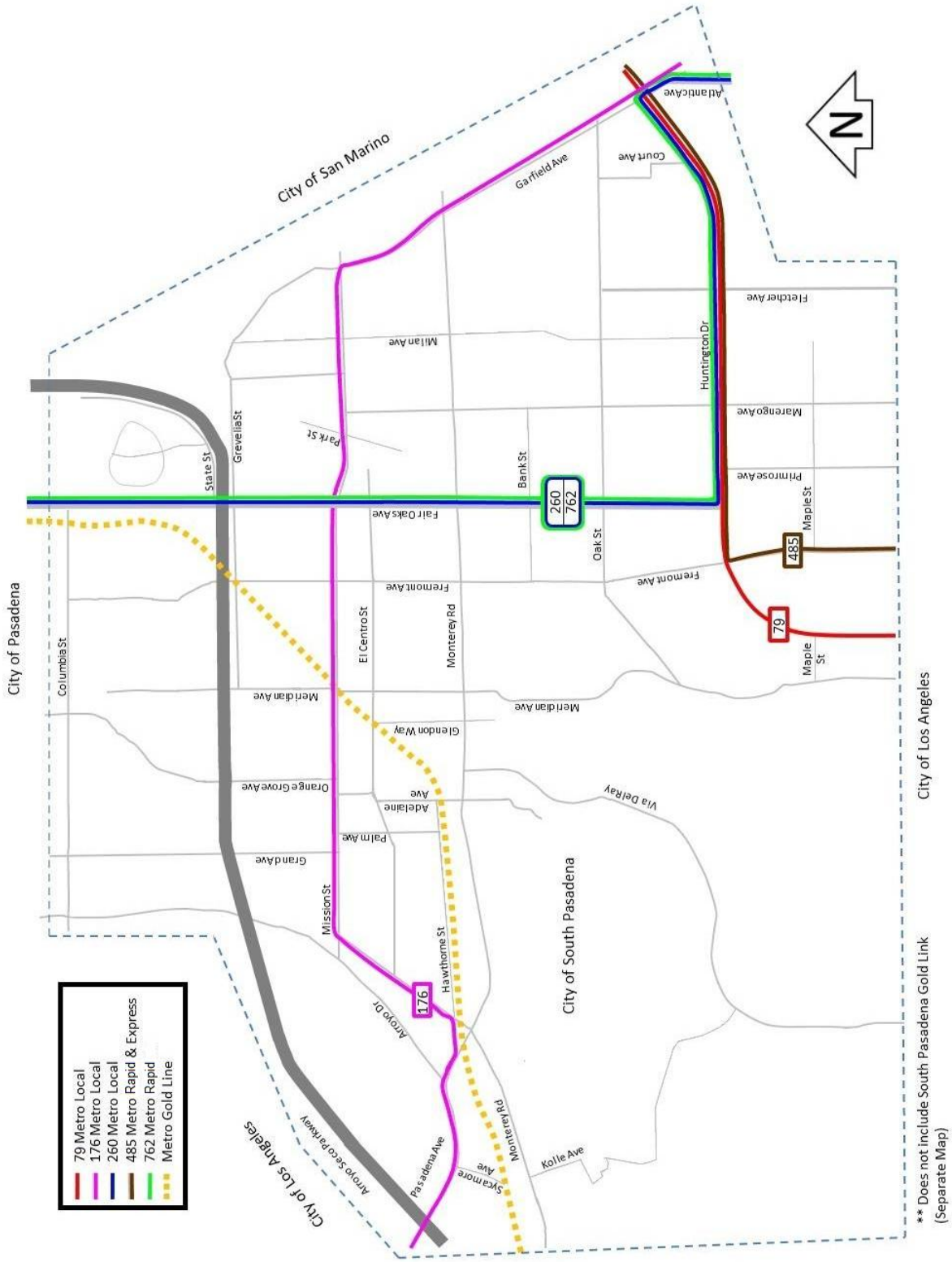


Figure 1: Map of Transit Lines

Map of Metro Bus Stops

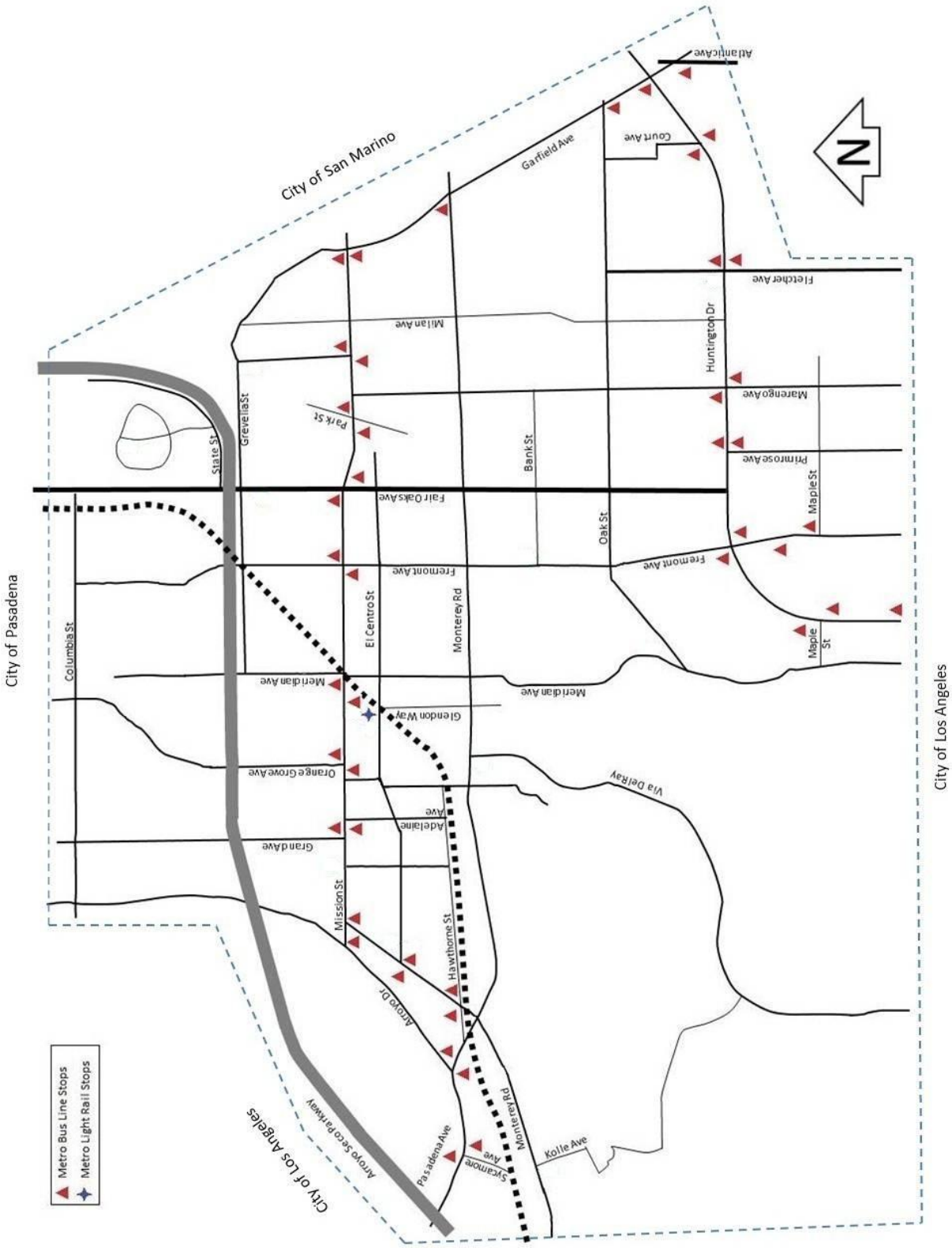
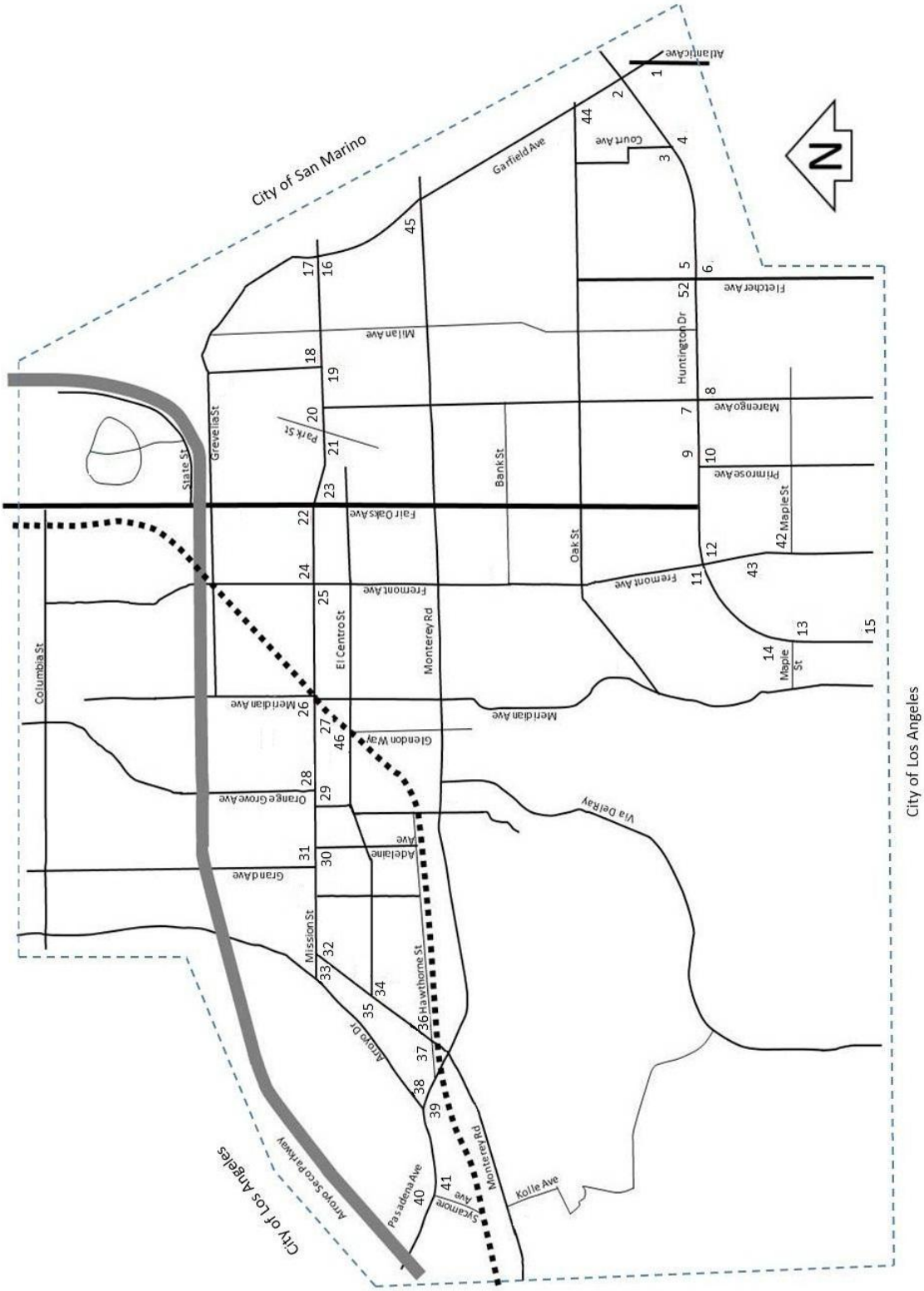


Figure 2: Map of Transit Stops

Map of Metro Bus Stops for Amenities Matrix.

This map, when used in conjunction with the Bus Stop Matrix on pages E7-E10, identifies amenities at specific stops.

Figure 3: Map of Transit Stops for Amenities Matrix



Metro Bus Stop Amenities Matrix

	Stop ID	Side of Street	Lines	Transit Map	Benches	Shelter	Line ID Sign		Trash	NextTrip Sign*	Ped. Light	Street Light	Real Time Sign	Real Time Smart Phone App	Bike Racks	Operated by Metro	Operated by So. Pas	Posted Time Table	Bike Racks on Bus
Atlantic/Garfield																			
	1	West	260, 762	✓			✓							✓		✓			✓
Huntington/Garfield																			
	2	North	79, 260, 485, 762	✓	✓		✓		✓					✓		✓			✓
Huntington/Court																			
	3	North	79, 260, 485				✓		✓					✓		✓			✓
	4	South	79, 260, 485		✓		✓		✓			✓		✓		✓			✓
Huntington/Fletcher																			
	5	North	79, 260, 485		✓		✓		✓			✓		✓		✓			✓
	6	South	79, 260, 485		✓		✓		✓			✓		✓		✓			✓
Huntington/Marengo																			
	7	North	79, 260, 485, 762	✓	✓		✓		✓			✓		✓		✓			✓
	8	South	79, 260, 485, 762	✓	✓		✓		✓			✓		✓		✓			✓
Huntington/Primrose																			
	9	North	79, 485		✓		✓		✓			✓		✓		✓			✓
	10	South	79, 485		✓		✓		✓			✓		✓		✓			✓
Huntington/Fremont																			
	11	North	79, 260, 485		✓		✓		✓					✓		✓			✓
	12	South	79, 260, 485		✓		✓		✓			✓		✓		✓			✓
Huntington/Maple																			
	13	East	79		✓		✓		✓			✓		✓		✓			✓
	14	West	79		✓		✓		✓					✓		✓			✓
Huntington/Alhambra																			
	15	East	79		✓		✓		✓			✓		✓		✓			✓

*** See Page E.10**

Metro Bus Stop Amenities Matrix (Continued)

	Stop ID	Side of Street	Lines	Transit Map	Benches	Shelter	Line ID Sign		Trash	NextTrip Sign **	Ped. Light	Street Light	Real Time Sign	Real Time Smart Phone App	Bike Racks	Operated by Metro	Operated by So. Pas	Posted Time Table	Bike Racks on Bus
Mission/Garfield																			
	16	North	176		✓		✓		✓			✓		✓		✓			✓
	17	South	176		✓		✓		✓					✓					✓
Mission/Milan																			
	18	North	176		✓		✓		✓			✓		✓		✓			✓
	19	South	176				✓					✓		✓		✓			✓
Mission/Park																			
	20	North	176		✓		✓		✓					✓		✓			✓
	21	South	176		✓		✓		✓					✓		✓			✓
Mission/Fair Oaks																			
	22	North	176		✓		✓		✓			✓		✓		✓			✓
	23	South	176		✓		✓		✓					✓		✓			✓
Mission/Fremont																			
	24	North	176		✓		✓		✓			✓		✓		✓			✓
	25	South	176		✓		✓		✓			✓		✓		✓			✓
Mission/Meridian																			
	26	North	176				✓							✓		✓			✓
	27	South	176		✓		✓		✓			✓		✓		✓			✓
Mission/Orange Grove																			
	28	North	176		✓		✓		✓					✓		✓			✓
	29	South	176		✓		✓		✓					✓		✓			✓
Mission/Adelaine																			
	30	South	176		✓		✓		✓			✓		✓		✓			✓
Mission/Grand																			
	31	North	176		✓		✓		✓			✓		✓		✓			✓

**** See Page 10**

Metro Bus Stop Amenities Matrix (Continued)

	Stop ID	Side of Street	Lines	Transit Map	Benches	Shelter	Line ID Sign		Trash	NextTrip Sign**	Ped. Light	Street Light	Real Time Sign	Real Time Smart Phone App	Bike Racks	Operated by Metro	Operated by So. Pas	Posted Time Table	Bike Racks on Bus
Pasadena/Mission																			
	32	East	176		✓		✓		✓			✓		✓		✓			✓
	33	West	176		✓		✓		✓			✓		✓		✓			✓
Pasadena/El Centro																			
	34	East	176		✓		✓		✓			✓		✓		✓			✓
	35	West	176		✓		✓		✓			✓		✓		✓			✓
Pasadena/Hawthorne																			
	36	East	176		✓		✓		✓			✓		✓		✓			✓
	37	West	176		✓		✓		✓					✓		✓			✓
Pasadena/Arroyo																			
	38	North	176		✓		✓		✓					✓		✓			✓
	39	South	176		✓		✓		✓					✓		✓			✓
Pasadena/Sycamore																			
	40	North	176		✓		✓		✓					✓		✓			✓
	41	South	176		✓		✓		✓					✓		✓			✓
Fremont/Maple																			
	42	East	485		✓		✓		✓			✓		✓		✓			✓
Fremont/Huntington																			
	43	West	485		✓		✓		✓			✓		✓		✓			✓
Garfield/Oak																			
	44	East	176		✓		✓		✓					✓		✓			✓
Garfield/Monterey																			
	45	West	176		✓		✓		✓					✓		✓			✓

**** See Page 10**

Metro Bus Stop Amenities Matrix (Continued)

	Stop ID	Side of Street	Lines	Transit Map	Benches	Shelter	Line ID Sign		Trash	NextTrip Sign**	Ped. Light	Street Light	Real Time Sign	Real Time Smart Phone App	Bike Racks	Operated by Metro	Operated by So. Pas	Posted Time Table	Bike Racks on Bus
Mission/Meridian																			
	46	South	Gold Line	✓	✓	✓	✓		✓		✓		✓	✓	✓	✓		✓	✓
**** See Page 10**																			

*****NexTrip Signs:***

NexTrip is a new program from Metro that will provide real-time bus departure times for Metro buses. These blue signs will soon be added to each stop to assist in planning riders' trips. Each stop has a unique stop number, and by entering any stop number in NexTrip, the predicted departure times for all routes serving that stop are displayed.

Example of NexTrip Sign

Each bus have an onboard GPS system that tracks its location. As a bus travels along its route, NexTrip tracks its location and provides an estimate of when the bus will arrive at a selected stop. Access to NexTrip is available by going to metro.net/nextrip, by texting Metro and the stop number to 41411 , by using m.metro.net on a mobile web-enabled phone, or by calling 511 or (323) GO-METRO and saying "NexTrip". So, simply choose your route, direction and stop location and NexTrip will inform you when the next buses will be leaving that stop. For more information about NexTrip please visit the Metro Website at www.metro.net/service/nextrip/