CITY OF MANHATTAN BEACH
DEPARTMENT OF COMMUNITY DEVELOPMENT

TO: Planning Commission
Parking and Public Improvements Commission
Parks and Recreation Commission

FROM: Richard Thompson, Director of Community Development
Richard Gill, Director of Parks and Recreation

BY: Clay Curtin, Management Analyst

DATE: August 25, 2011

SUBJECT: South Bay Bicycle Master Plan

RECOMMENDATION:
Staff recommends that the Commissioners discuss and provide comments to be shared with the City Council.

BACKGROUND:
In March 2010, the Los Angeles County Department of Public Health (DPH) awarded the RENEW grant to the partnership of the South Bay Bicycle Coalition (SBBC) and the Los Angeles County Bicycle Coalition (LACBC) to develop the South Bay Bicycle Master Plan ("the plan"). The plan's purpose is to regionally connect the cities of Manhattan Beach, El Segundo, Hermosa Beach, Gardena, Lawndale, Redondo Beach, and Torrance via a bicycle network, which will improve the health, environment, and quality of life for the region. While Manhattan Beach and many of the other participating cities have existing bike plans, implementation of those bike plans has either not been prioritized or has not been coordinated with surrounding jurisdictions. The result has been an existing bike network that suffers from a lack of consistency and connectivity. The South Bay Bicycle Master Plan is focused on rectifying these challenges.

The RENEW grant funds one full-time staff position to coordinate and oversee the planning process, as well as the bike planning consultant, Alta Planning + Design ("Alta"). Alta has been an advisor for various bike plans including the City of Los Angeles Bike Plan and the County of Los Angeles Bike Plan, among many others in the region. The RENEW grant funding has made it possible for each of the seven participating cities to benefit from a first-class bike plan with no direct financial commitment required from the City.

The South Bay Bicycle Master Plan serves as the region's first multi-jurisdictional bike plan. As each participating city becomes eligible for additional infrastructure funding in the future, this plan will serve as a guiding document for increasing the City's bikeability.

The plan development has been a collaborative process with regular meetings consisting of city staff, elected officials, and community members. There have been two rounds of public workshops in each of the seven cities, which have been publicized and promoted through a wide variety of

mediums. This final draft incorporates suggestions gathered from city staff and the community over three different revision periods. The primary objective has been a well-informed and fully vetted plan.

DISCUSSION:

The Bicycle Master plan provides guidelines for improving the prioritization of bicycling and its supporting infrastructure beyond the current conditions in the South Bay. The policies proposed in the plan encourage the City to explore options that improve safety, convenience and prominence of active transportation. Specifically, the plan proposes an expanded bikeway network and associated policies and programs to which each participating city may refer when implementing bike facility improvements.

The plan is divided into regional policies, recommended programs that will aide in meeting those policies, and conceptual regionally-consistent signage improvements. The plan also includes City-specific chapters that outline existing conditions, baseline data and proposed improvements for each participating city. There are numerous available options for funding bikeways, including various local return sources, aligning implementation with the CIP and grants from the local, state and federal level. Many cities implement a vast majority of their bike plans by utilizing outside grant funding sources.

Attachment:

A. Manhattan Beach excerpt of the South Bay Bicycle Master Plan

The South Bay Bicycle Master Plan

Draft Final Plan - August 2011

alta PLANNING + DESIGN

County of Los Angeles Public Health

RENEW LOS ANGELES COUNTY

Los Angeles County Bicycle Coalition WWW.LA-BIKE.ORG

South Bay Bicycle Coalition

South Bay Bicycle Master Plan: Draft Final Plan

Acknowledgements

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PLANNING + DESIGN

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Foreword

The South Bay Bicycle Master Plan is the result of an innovative partnership between long-standing bike advocacy non-profit Los Angeles County Bicycle Coalition (LACBC) and local grass-roots bike advocates the South Bay Bicycle Coalition (SBBC). The two groups came together with the common goal of improving the safety and convenience of bicycling in Los Angeles County, and specifically in the South Bay Region.

In December of 2009, the South Bay Bicycle Coalition approached a number of South Bay cities (defined as those cities encompassed by the South Bay Cities Council of Governments) to ask for their support and involvement in a multi-city bicycle master planning process. Seven of the cities responded favorably and within the specified time frame for grant eligibility. Those seven responsive cities are the cities that are represented in this master plan. The participating cities include: El Segundo, Gardena, Hermosa Beach, Lawndale, Manhattan Beach, Redondo Beach, and Torrance. This plan seeks to provide improved and increased connectivity across these seven cities. All seven City Councils have adopted supportive resolutions and have dedicated in-kind staff time to assist with plan review and data gathering.

Funding for this master planning process is made possible through the Department of Health and Human Services through the Los Angeles County Department of Public Health's Renew Environments for Nutrition, Exercise and Wellness in Los Angeles County (RENEW-LAC) initiative. RENEW-LAC is made possible by funds from the Center for Disease Control and Prevention – Communities Putting Prevention to Work Initiative. RENEW seeks to implement policy, systems and environmental change to improve nutrition, increase physical activity and reduce obesity, especially in disadvantaged communities. Engaging communities in active transportation through pedestrian and bicycle-friendly policies is one objective of the RENEW initiative.

The Los Angeles County Bicycle Coalition and the South Bay Bicycle Coalition are partnering to improve bicycling in the South Bay.

Photo Source: Kelly Morphy/WALC Institute for Vitality City

- **Chapter Ten: Recommended Programs** expands upon a few of the ideas presented through policy and provides the cities with further toolbox strategies to address the "six E's" of a successful bike plan
- **Chapter Eleven: Wayfinding and Signage** presents the regional wayfinding plan for the participating cities to inform bicyclists how to navigate through the network
- **Chapter Twelve: Funding** identifies potential funding sources that the cities could apply for to implement the proposed network presented in this Plan

As previously stated, this plan has a 20-year implementation time line. Adoption of this plan is the first of many steps that will need to be taken prior to implementation of any given proposed facility. Prior to facility implementation, each city will need to have their traffic engineering staff review the proposed facility and design the appropriate treatments. The majority of these facilities will be exempt from environmental review, although some may be subject to the California Environmental Quality Act (CEQA), as well as further public hearings and Council approval.

This Executive Summary contains a glossary of terms; the existing regional bike network; proposed regional and city-specific bikeway network maps; and a city-by-city breakdown of proposed bikeway mileage.

The following table discusses terms that are presented in this plan.

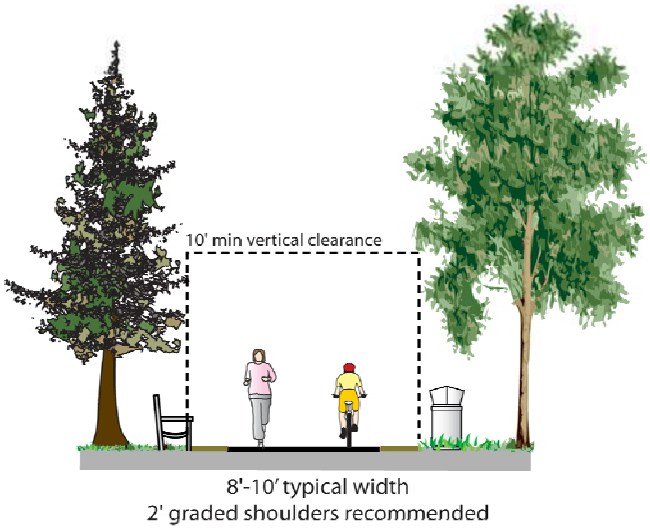
Word	Definition
Assembly Bill 1358	California Assembly Bill 1358, also known as the Complete Streets Act of 2008, amended the California Government Code §65302 to require that all major revisions to a city or county's Circulation Element include provisions for the accommodation of all roadway users including bicyclists and pedestrians. Accommodations include bikeways, sidewalks, crosswalks, and curb extensions.. See section 2.2.2.1 of this plan for more information.
Mobility Coordinator	A part- or full-time employee dedicated to the implementation of alternative transportation, which can include bicycle program administration. As related to bicycles, a mobility coordinator tracks, coordinates and oversees implementation of bike facilities, programs, grant applications and data collection.
Bicycle Facility	A street or off-road path designed for bicycle travel
Bike Path	A completely separated, paved right-of-way designated for the exclusive use of bicycles and pedestrians
Bike Lane	A restricted right-of-way striped on a street and designated for the exclusive use of bicycles, with crossflows by pedestrians and motorists permitted

Word	Definition
Bike Route	An on-street right-of-way designated by signs or pavement markings to be shared between bicyclists and motorists
Bicycle Transportation Account (BTA)	An annual program of the State of California providing state funds for city and county projects that improve safety and convenience for bicycle commuters. To establish eligibility for these funds, local agencies must have a Bicycle Transportation Plan that complies with Caltrans requirements in CA Streets and Highways Code Section 891.2. This plan complies with BTA requirements.
Class I, II, and III Bikeways	State of California definitions for Bicycle Paths, Bicycle Lanes, and Bicycle Routes, respectively, in the California Streets and Highways Code Section 890.4. For additional detail see Section 1.3 of this plan.
Complete Streets	Complete streets refers to the principle that all transportation improvements should address the safety, access, and mobility of all travelers, including motorists, bicyclists, pedestrians, transit riders, and the disabled. Caltrans Deputy Directive 64 formally states that Caltrans views all transportation improvements as opportunities to improve conditions for all users, and adopts such a policy for all planning, programming, design, construction, operations, and maintenance activities and products on the State Highway System.
Bike Friendly Street	Local roads that have been enhanced with treatments that prioritize bicycle travel. These treatments include wayfinding signage, pavement markings and traffic calming
Bike Station	Modeled after the secure indoor bicycle parking facilities provided by the private firm BikeStation, these are locations that provide bicycle storage and other amenities such as showers and bicycle repair stations. They are often located near transit stations.
Bike Valet	The provision of monitored bicycle parking, typically at a large event
Sharrows	Pavement markings denoting the safe and legal riding position for bicyclists. The name "sharrows" derives from "shared-use arrows." Among other things, sharrows clarify bicyclists' right to occupy the center of a travel lane, and encourage bicyclists to ride away from parked cars, so that they are not in danger of being struck by opening doors.

The following graphics describe the proposed bicycle facility types presented in this Plan: Class I Bike Paths, Class II Bike Lanes, Class III Bike Routes, and Bicycle Friendly Streets.

Class I Bike Paths

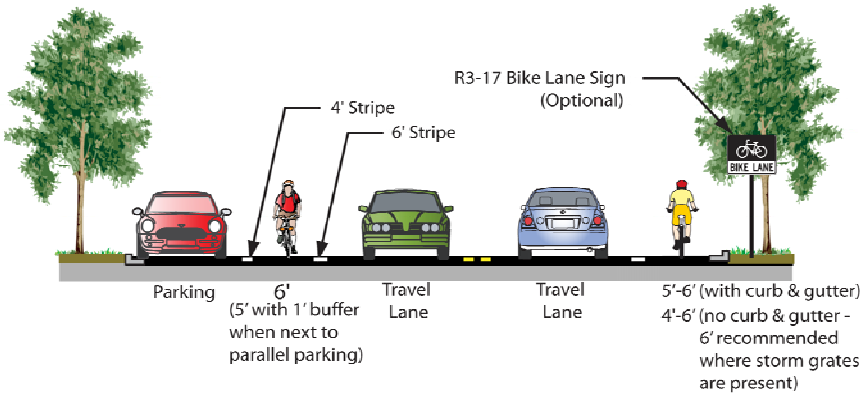
Provide completely separated right-of-way for exclusive use by bicycles and pedestrians with cross-flow minimized.



R5-3: No Motor Vehicles sign
R9-7: Shared-Use Path Restriction sign

Class II Bike Lanes

Provide striped lane for one-way bike travel on a street or highway

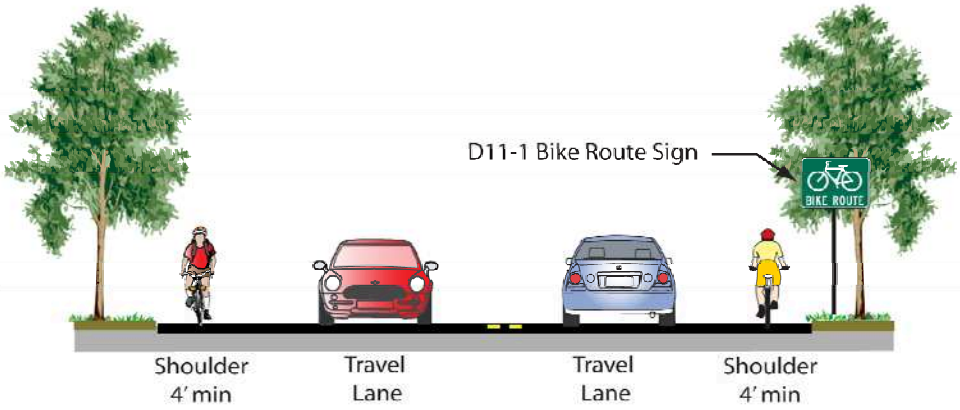


R3-17: Bike Lane sign
Placed at periodic intervals along bicycle lanes

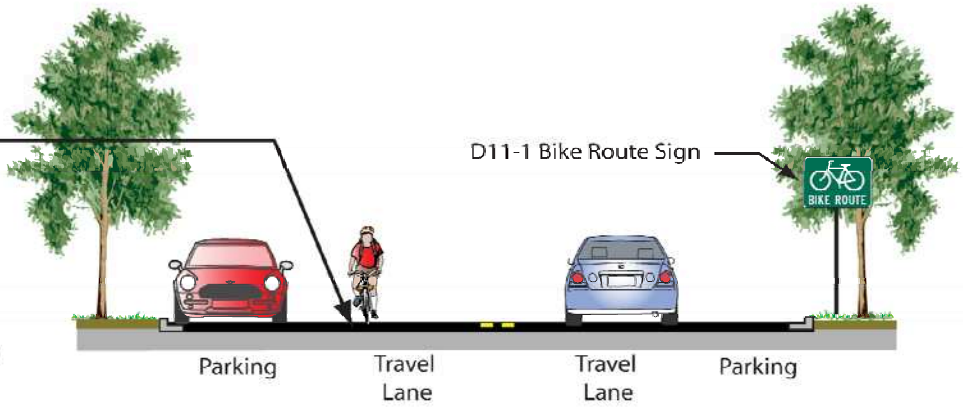
Class III Bike Routes

Provide for shared-use with motor vehicles, typically on lower volume roadways.

D11-1
Bike Route sign

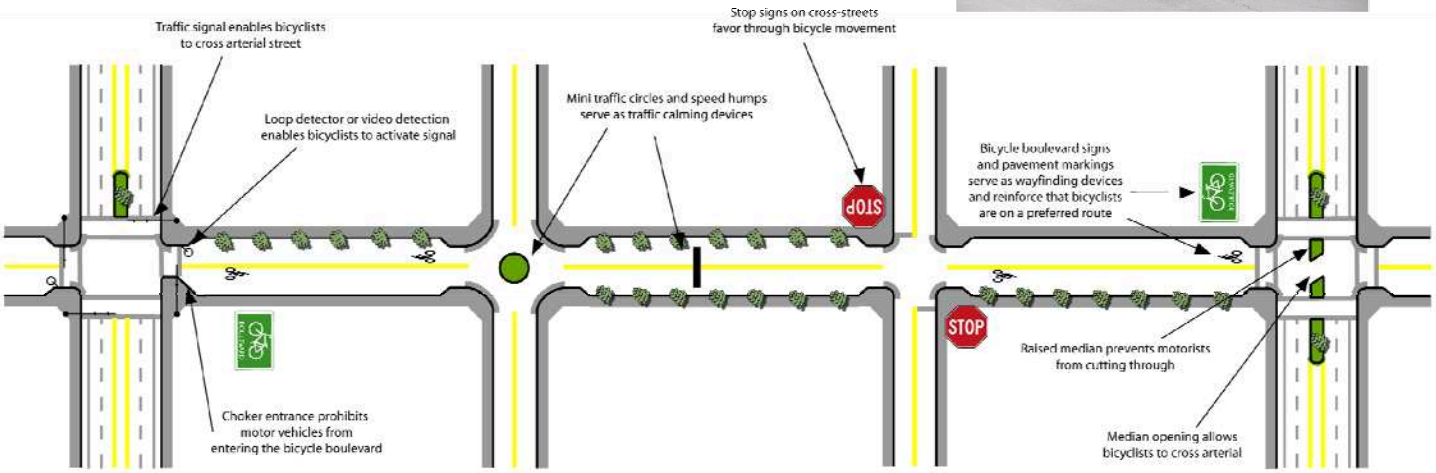


Recommended
Shared Lane Marking
11' (min) center to curb



Bike Friendly Streets

Local roads or residential streets that have been enhanced with traffic calming and other treatments to prioritize children, pedestrians, neighborhood traffic, and bicycles



The table below displays the mileage of existing and proposed bicycle facilities in each city by facility type. There are 73.2 existing miles of bikeways in the South Bay region. This Plan proposed an additional 213.8 miles of bicycle facilities. Following the table are maps presenting the existing and proposed bikeways in the seven participating cities.

City	Existing Mileage	Proposed Mileage
El Segundo		
Class I Bike Path	1.0	1.2
Class II Bike Lane	2.8	8.7
Class III Bike Route	2.0	5.0
Bicycle Friendly Street	0.0	6.4
TOTAL	**5.8**	**21.3**
Gardena		
Class I Bike Path	1.1	0.2
Class II Bike Lane	1.9	10.4
Class III Bike Route	12.7	3.9
Bicycle Friendly Street	0.0	16.8
TOTAL	**15.7**	**31.3**
Hermosa Beach		
Class I Bike Path	1.8	0.0
Class II Bike Lane	0.5	0.9
Class III Bike Route	2.8	4.7
Bicycle Friendly Street	0.0	3.8
TOTAL	**5.1**	**9.4**
Lawndale		
Class I Bike Path	0.0	0.4
Class II Bike Lane	0.0	9.7
Class III Bike Route	0.0	0.4
Bicycle Friendly Street	0.0	9.2
TOTAL	**0.0**	**19.7**

City	Existing Mileage	Proposed Mileage
Manhattan Beach		
Class I Bike Path	2.1	0.2
Class II Bike Lane	0.0	7.0
Class III Bike Route	1.1	7.1
Bicycle Friendly Street	0.0	16.7
TOTAL	**3.2**	**31.0**
Redondo Beach		
Class I Bike Path	3.5	0.8
Class II Bike Lane	5.9	18.9
Class III Bike Route	4.7	7.5
Bicycle Friendly Street	0.0	10.9
TOTAL	**14.1**	**38.1**
Torrance		
Class I Bike Path	0.0	0.5
Class II Bike Lane	14.3	28.0
Class III Bike Route	15.0	16.2
Bicycle Friendly Street	0.0	18.3
TOTAL	**29.3**	**63.0**
TOTAL	**73.2**	**213.8**

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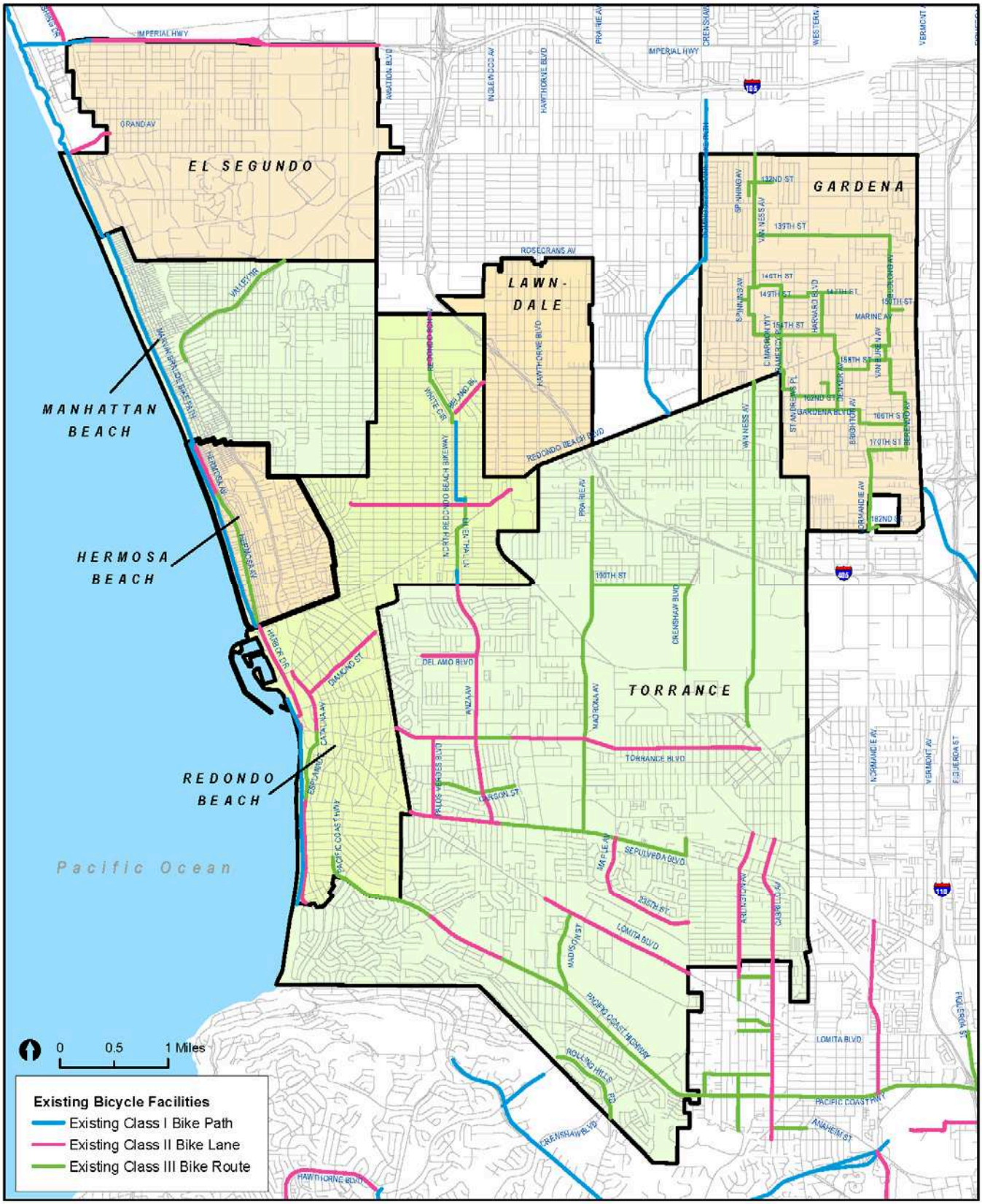
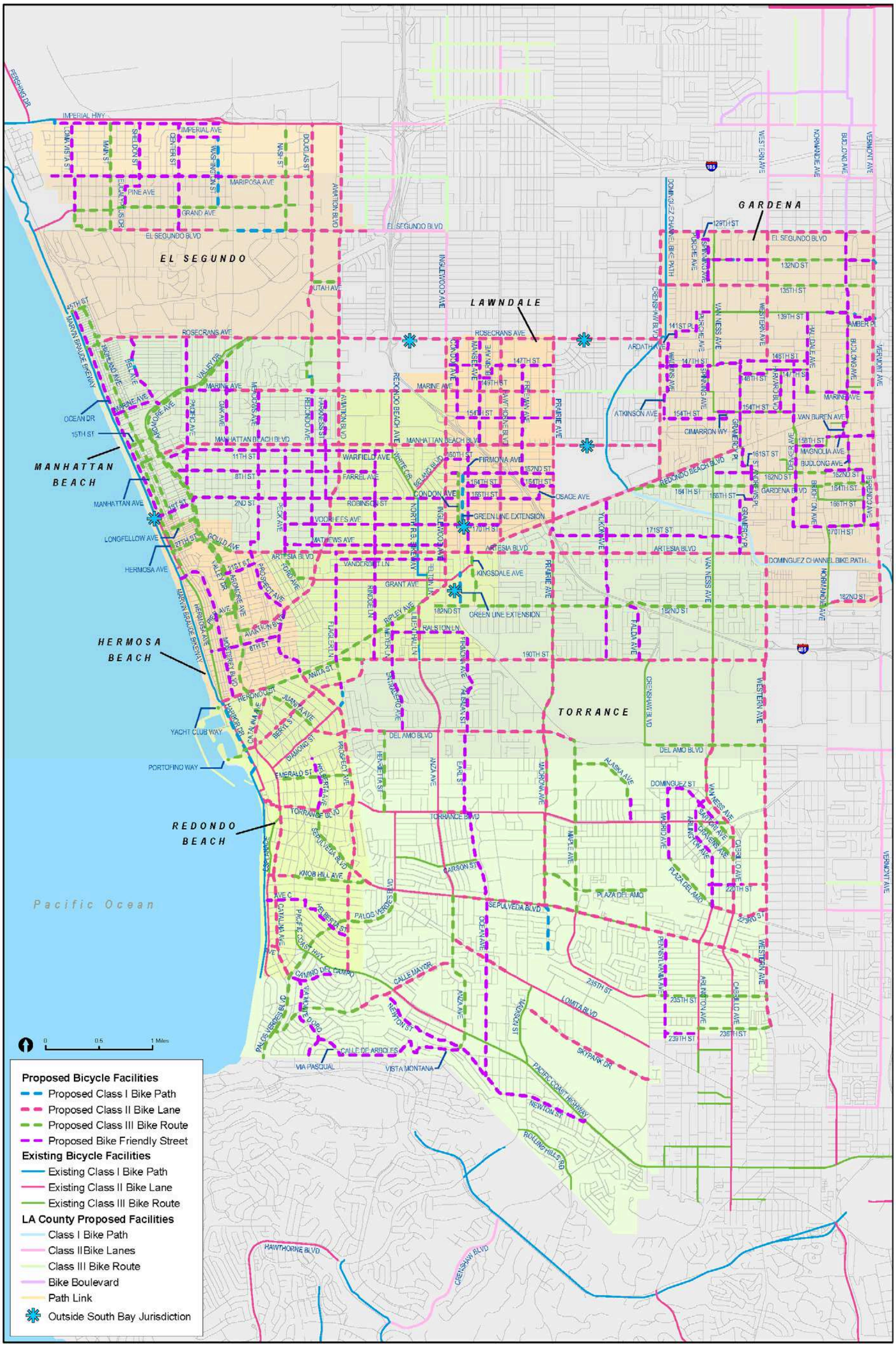
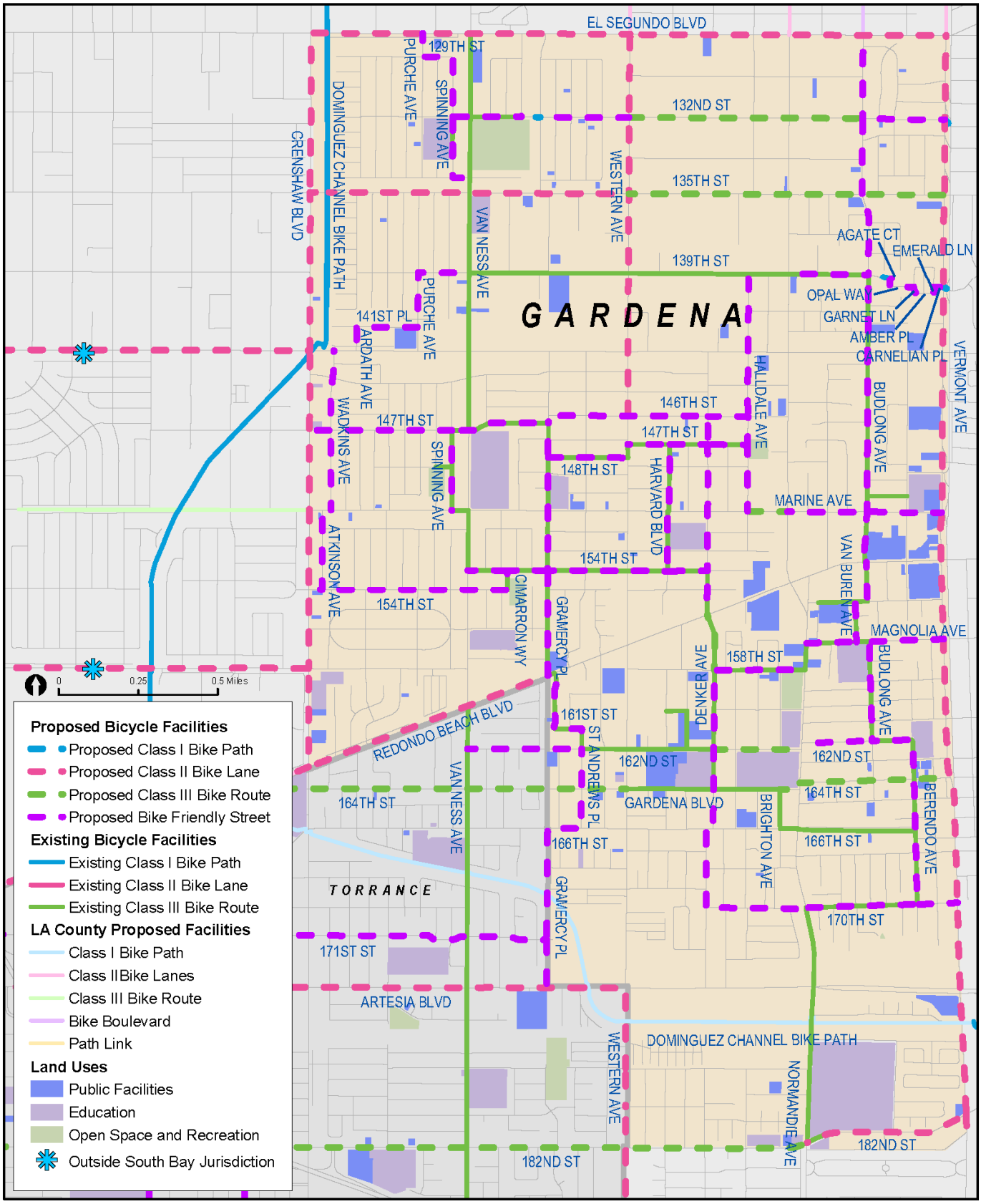


Existing Bicycle Facilities in the South Bay region



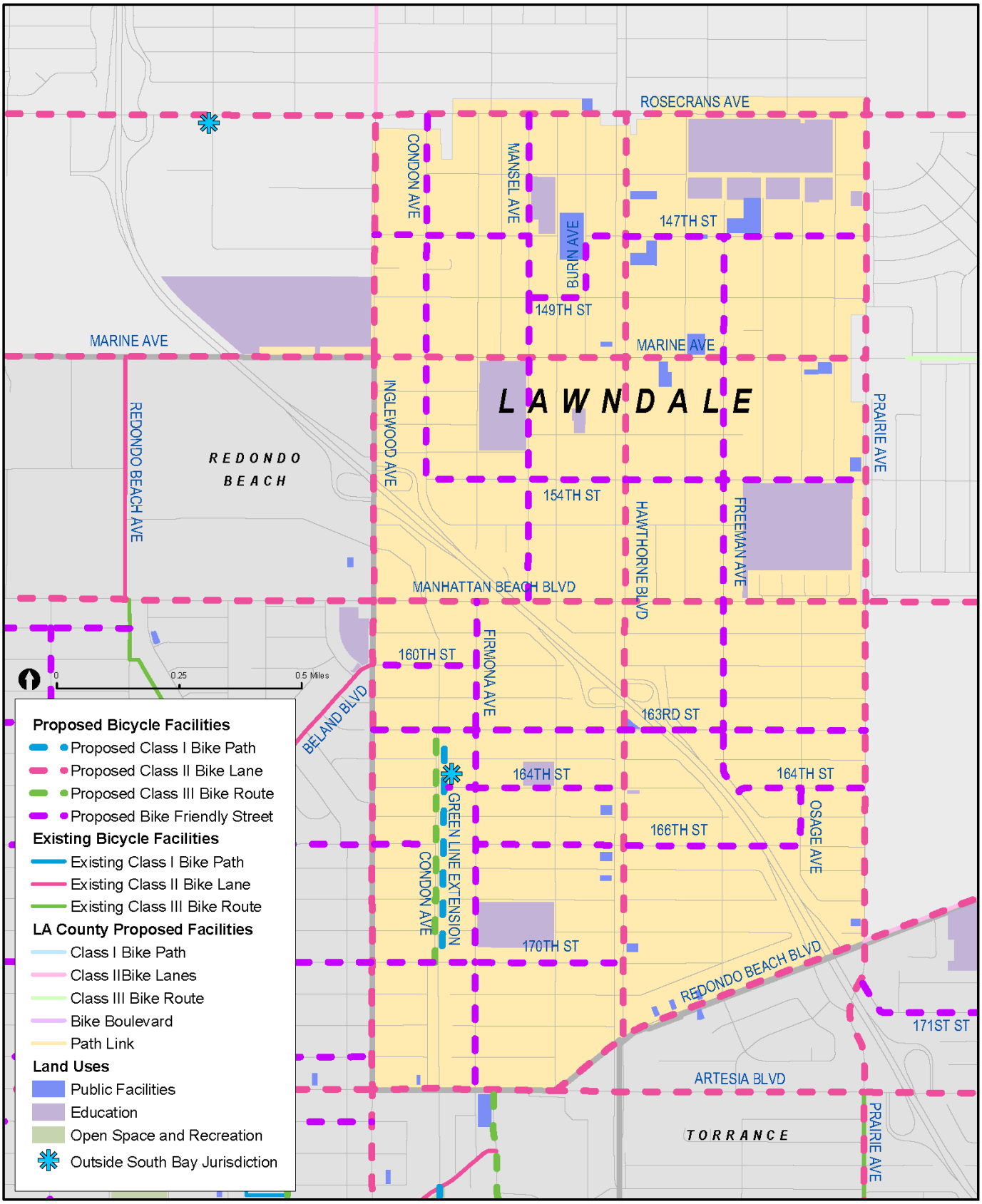
Proposed Bicycle Facilities in the South Bay region

Proposed Bicycle Facilities in El Segundo

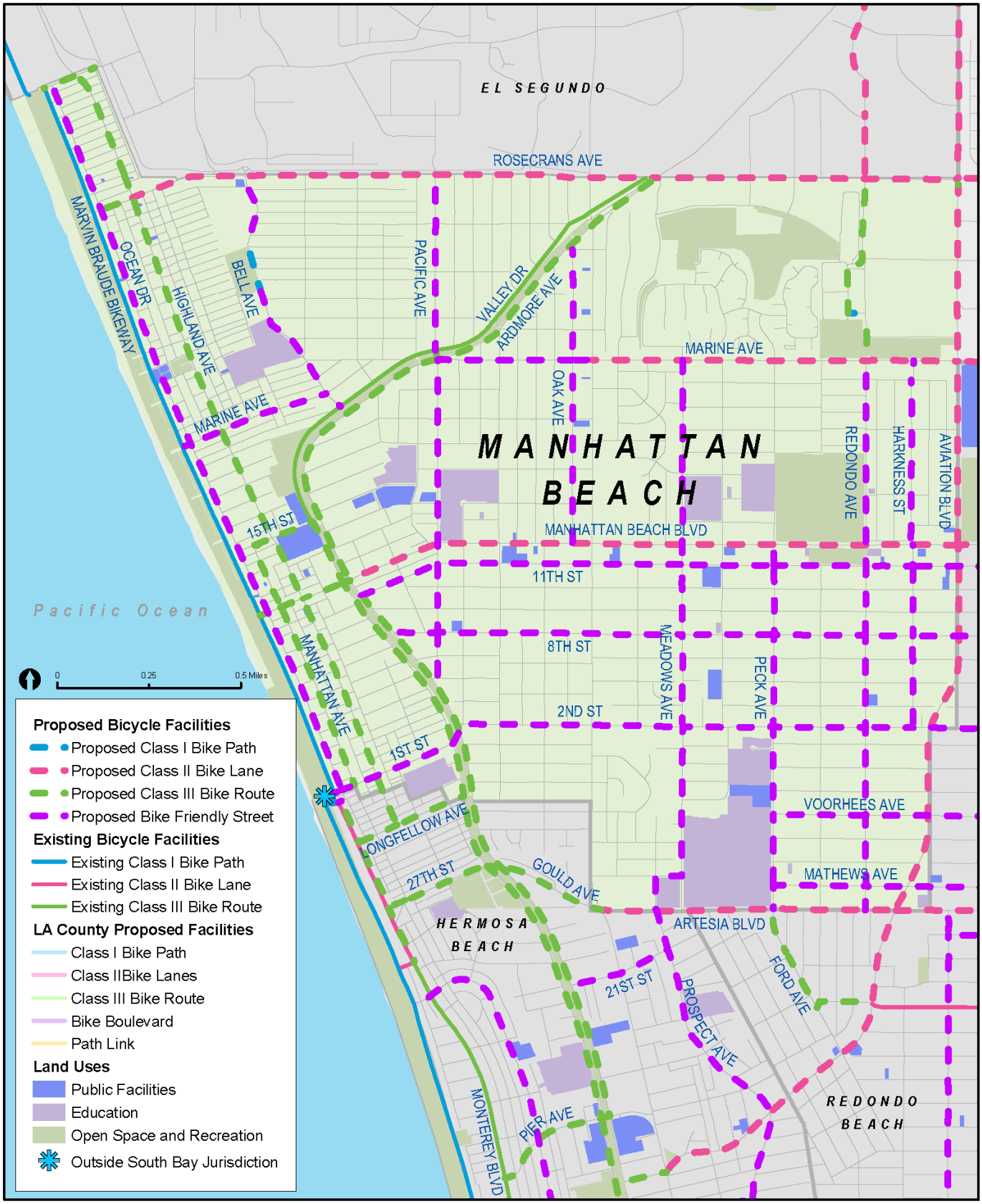


Proposed Bicycle Facilities in Gardena

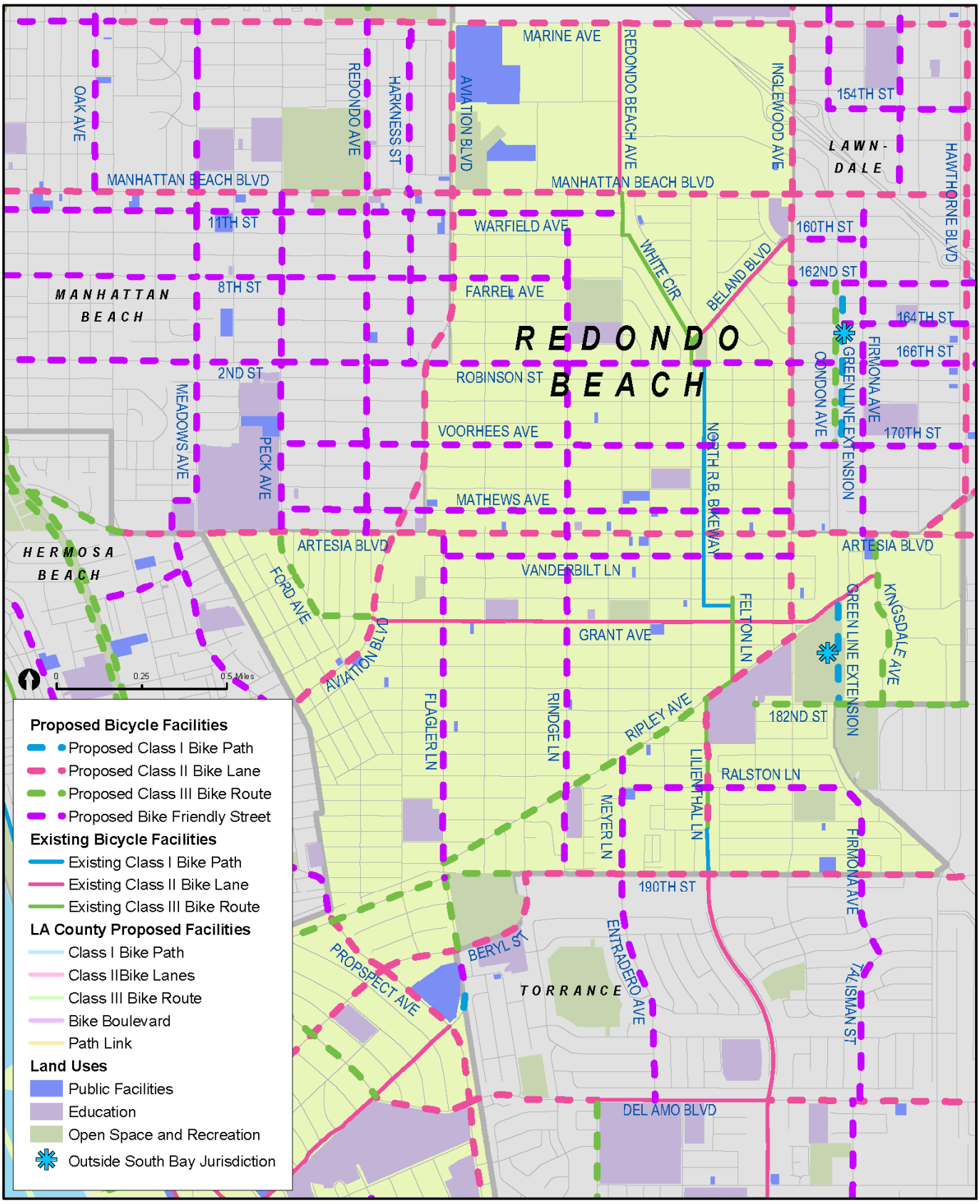
Proposed Bicycle Facilities in Hermosa Beach



Proposed Bicycle Facilities in Lawndale

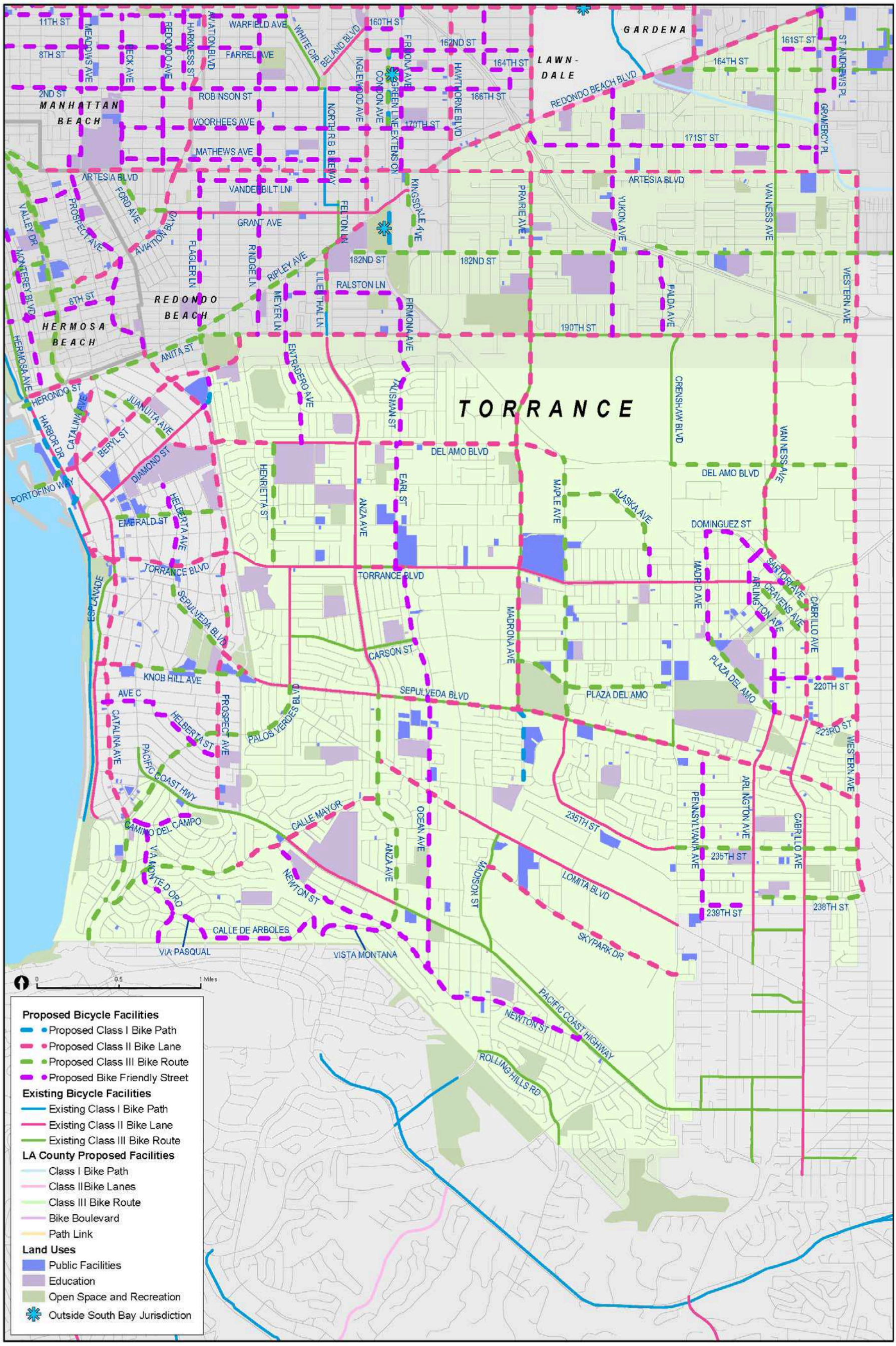


Proposed Bicycle Facilities in Manhattan Beach



Proposed Bicycle Facilities in North Redondo Beach

Proposed Bicycle Facilities in South Redondo Beach



Proposed Bicycle Facilities in Torrance

Executive Summary

The South Bay Bicycle Master Plan is intended to guide the development and maintenance of a comprehensive bicycle network and set of programs and policies throughout the cities of El Segundo, Gardena, Hermosa Beach, Lawndale, Manhattan Beach, Redondo Beach, and Torrance for the next 20 years. As the first-ever multi-jurisdictional bike plan, it has a unique focus on cross-city consistency and connectivity that is often lacking in singular city bike plans. Upon plan adoption, each participating city will be eligible for grant funding sources which they are not currently receiving.

Implementation of this plan is meant to promote and increase bicycle ridership for all levels of ability across the South Bay.

Implementation of this plan is meant to promote and increase bicycle ridership for all levels of ability across the South Bay. The South Bay has an existing base of recreational and enthusiast bicyclists; this plan's primary objective is to increase the number of those bicyclists, as well as create a larger base of utilitarian bicyclists, including bicycle commuters, through safe, accessible and consistent bicycle infrastructure, and the policies and programs that support it.

As discussed in Chapter One, there are numerous benefits that a bicycle master plan provides to both community members and the cities that implement it, including improved community health and quality of life, increased property values, decreased bicycle collisions and improved air quality mitigation, among others.

For a condensed review of the plan, please see the following sections:

- **Chapter Two: Goals, Objectives, and Policies** are meant to compliment the proposed network and are focused upon the six Es of a successful bike plan: evaluation and planning, engineering, education, enforcement, encouragement, and equity
- **Chapters Three through Nine: Individual City Chapters** include a discussion of a given city's existing bikeways, a high-level needs analysis, and the proposed bicycle facility improvements; the verbiage presented in each of these chapters is very similar to one another; as such it is recommended that the reader focuses on the city chapter of their preference

Chapter 2

Goals, Objectives, and Policy Actions

2 Goals, Objectives, and Policy Actions

The vision of the South Bay Bicycle Master Plan is to create a bicycle-oriented South Bay region in which bicycling is a safe, convenient, attractive, and viable transportation option for all levels of bicycling abilities. This chapter outlines the goals, objectives, and policies that support this vision and will serve as guidelines in the development of a bicycle-friendly South Bay. These policies provide the framework and accountability for plan implementation. This chapter also includes the goals, objectives, and policy actions' relationship with regional existing plans and policies as mandated by State law. The relationship to existing City-specific plans and policies is located in each City's chapter.

The vision of the South Bay Bicycle Master Plan is to create a bicycle-oriented South Bay region in which bicycling is a safe, convenient, attractive, and viable transportation option for all levels of bicycling abilities.

2.1 South Bay Goals, Objectives, and Policies

In order to ensure a thorough and successful planning process, it is important to establish a set of goals, objectives, and policies that will serve as the basis for the recommendations in this Plan. The goals, objectives, and policies in this Plan are derived from information gathered over the course of the planning process, including community input from public workshops, as well as a review of bicycle master plans from other cities.

Goals are broad statements that express general public priorities. Goals are formulated based on the identification of key issues, opportunities, and problems that affect the bikeway system and were formed by public input.

Objectives are more specific than goals and are usually attainable through strategic planning and implementation activities. Implementation of an objective contributes to the fulfillment of a goal.

Policies are rules and courses of action used to ensure plan implementation. Policies often accomplish a number of objectives. Policies are generally carried out by the City. In the case that a particular group or individual is identified, the City will ensure those groups or individuals are in place to carry forward their responsibility or will find other means to implement the relevant policies.

The following tables outline the goals, objectives, and policies of the South Bay Bicycle Master Plan. Each policy has an implementation time frame assigned to it ranging from immediate (2012), to the first 0-5 years (2012-2017), 5-10 years (2017-2022), or ongoing throughout the length of the 20-year plan starting in 2012 (2012-2032).

Goal 1.0: Create a Bicycle-Friendly South Bay	
Create a bicycle-friendly environment throughout the South Bay region for **all types** of bicycle riders and all trip purposes in accordance with the 6 Es (Equity, Education, Encouragement, Enforcement, Engineering, Evaluation) as a means of improving regional health, increased road safety, reduced carbon emissions and an overall increase in bike ridership.	
Objective 1.1	**Connectivity through an Expanded Bikeway Network** Expand the existing bicycle network to provide a comprehensive, regional network of Class I, Class II, and Class III facilities that increases connectivity between homes, jobs, public transit, schools and recreational resources for a variety of road users in the South Bay.
Policy Actions	**1.1.1** Develop a 20-year implementation strategy for the South Bay Bicycle Master Plan that will begin to implement the policies and facilities herein. Schedule: 2012 **1.1.2** Develop an extensive bikeway network through the use of standard and appropriate innovative treatments as provided in the Manual on Uniform Traffic Control Devices or the National Association of City Transportation Officials and other such guidelines and standards, with available funding. Schedule: 2012-2032 **1.1.3** Establish Bicycle Friendly Streets to encourage bicycling on streets with low traffic volumes (existing ADT under 7,000 and 3,000 ADT after implementation) and slow speeds (25 mph or under). Appropriate streets will be determined by staff review. Schedule: 2012 - 2032 **1.1.4** Review and encourage implementation of policies and facilities proposed in the South Bay Bicycle Master Plan whenever planning new bicycle facilities or Capital Improvement Projects that may be related to bicycle improvements. Schedule: 2012-2032 **1.1.5** Incorporate the proposed policies, facilities and programs from the South Bay Bicycle Master Plan in whole or by reference into the City's Circulation Element upon future General Plan updates. Schedule: 0 – 5 years **1.1.6** Coordinate with adjoining jurisdictions on bicycle planning and implementation activities on east-west corridors to link inland cities to coastal resources and on north-south corridors to link the region to neighboring communities. Schedule: 2012-2032
Objective 1.2	**Consistent Design and Engineering for Bicycles** Promote safe and equitable bicycle access on all roadways by integrating bicycle travel considerations into all roadway planning, design, construction and maintenance, as well as incorporation of Complete Street standards into all Capital improvements, in accordance with AB 1358.

Policy Actions	**1.2.1** Evaluate and encourage reallocation of roadway rights-of-way where appropriate to accommodate bicycling and bicycle facilities. Schedule: 2012-2032 **1.2.2** Consider adopting Complete Streets policies that are incorporated into all Capital Improvements and generally align with the policy elements defined by the National Complete Streets Coalition (see Appendix N for policy language from the Complete Streets Act of 2008 and complete streets policies from the National Complete Streets Coalition). Schedule: **1.2.3** Prioritize opportunities that improve walkability and bikeability by utilizing Complete Streets standards for all Capital Improvement Projects. Schedule: 2012-2032 **1.2.4** Consider removal of on-street parking to accommodate striped bike lanes, to the extent feasible. Schedule: 2012-2032 **1.2.5** Ensure that existing on-street bicycle routes, bicycle lanes, and off-street bicycle paths are appropriately signed, marked, and/or traffic-calmed. Schedule: 0-5 years **1.2.6** Promote consistent signage that directs bicyclists to neighborhood destinations and increases the visibility of the regional bicycle network and is consistent with the signage plan herein. Schedule: 2012-2032 **1.2.7** Provide amenities and enhancements, such as traffic calming treatments, streetscape improvements, bicycle parking and wayfinding signage along City bikeways that increase their utility and convenience for all bicyclists. Schedule: 2012-2032 **1.2.8** Explore the use of the "sharrow" markings on all existing and proposed Class III facilities, as feasible and in accordance with the most current edition of the Manual on Uniform Traffic Control Devices. Schedule: 0-5 years **1.2.9** Coordinate bicycle facility improvements or upgrades with the City's resurfacing schedule. Schedule: 2012-2032 **1.2.10** Explore opportunities to include bicycle detection as part of all traffic signal improvements in conformance with the current edition of the California Manual on Uniform Traffic Control Devices, to the extent feasible.

	Schedule: 2012-2032 **1.2.11** Considering adopting an updated streets and highways manual that includes comprehensive Complete Streets standards. Schedule: 0-5 years **1.2.12** Begin to utilize new signage, markings and facility designs as new and innovative treatments become adopted standards at the State and Federal levels. Schedule: 2012-2032 **1.2.13** Consider instituting a pilot program that will test new facility types aimed at improving bicycle safety and convenience before they are adopted standards. Schedule: 2012-2032
Objective 1.3	**Increased Mobility through Bicycle-Transit Integration** Further improve access to major employment and activity centers and encourage multi-modal travel for longer trip distance by supporting bicycle-transit integration.
Policy Actions	**1.3.1** Support the development of bicycle facilities that provide access to regional and local public transit services. Schedule: 2012-2032 **1.3.2** Coordinate with transit providers to ensure bicycles can be accommodated on all forms of transit vehicles in the immediate future and that adequate space is devoted to their storage on board whenever possible. Schedule: 2012-2032 **1.3.3** Coordinate with transit agencies to install and maintain convenient and secure short-term and long-term bike parking facilities – racks, on-demand bike lockers, in-station bike storage, and staffed or automated bicycle parking facilities – at transit stops, stations, and terminals. Schedule: 5-10 years **1.3.4** Provide current and relevant information to bicyclists regarding bike parking opportunities and bicycle access located at transit stations through a variety of formats, such as on City websites and regional bike maps. Schedule: 0-5 years
Objective 1.4	**Provide Convenient and Consistent Bicycle Parking Facilities** Encourage the use of bicycles for everyday transportation by ensuring the provision of convenient and secure bicycle parking and support facilities region-wide and promote facilities to the public.
Policy Actions	**1.4.1** Establish bicycle parking standards for City-owned bicycle parking facilities that address the location, design and capacity that should be provided by all City bicycle parking facilities. Schedule: 0-5 years **1.4.2** Install and support high-quality, bicycle parking within the public right-of-way and on public property, especially in high demand locations, such as near commercial centers,

	employment centers, schools, colleges and parks. Schedule: 5-10 years **1.4.3** Consider providing bicycle parking (sheltered where feasible and appropriate) at all new and existing City-owned facilities, public parking lots and recreational facilities that will support an appropriate ratio of the estimated employees and daily visitors of that location. Schedule: 2012-2032 **1.4.4** Consider adopting bicycle parking ordinances or modifying existing sections of the municipal code to require bicycle-parking in new large commercial or multi-family developments. Cities with existing bike parking ordinances or Municipal Code sections exempted. Schedule: 0-5 years **1.4.5** To the extent feasible, consider conditions of approval or appropriate incentives for new commercial developments and employment to provide showers and clothing lockers along with secure bike parking in areas where employment density warrants. Schedule: 2012-2032 **1.4.6** Consider amending the Municipal Code to decrease the number of required automobile parking spaces in commercial buildings where bicycle parking is provided, as feasible and appropriate. Schedule: 0-5 years **1.4.7** Require secure bike parking at large or heavily attended events or destinations, by providing permanent bicycle parking facilities at event locations or requiring use of temporary portable facilities, such as bike valets. Schedule: 0-5 years **1.4.8** Work with Metro, local transit agencies and adjacent property owners to provide bicycle parking in proximity to bus stops and other transit facilities. Schedule: 2012-2032

Goal 2.0: Create a Safer Bicycling Environment in the South Bay	
Create a safe bicycling environment in the South Bay through comprehensive education of all road users, enforcement efforts focused on cycling safety and reduced cycling conflicts, and consistent maintenance of a variety of bikeways.	
Objective 2.1	**Increase Bicycle Education and Awareness for All Road Users** Increase education of bicycle safety through programs and trainings of the general public and City employees.
Policy Actions	**2.1.1** Partner with local bike advocacy groups, bicycle related businesses, or other such organizations to provide bicycle-safety curricula to the general public and targeted populations, including diverse age, income, and ethnic groups. Schedule: 0-5 years **2.1.2** Provide multi-lingual bicycle safety information in languages that are widely used throughout the South Bay region. Schedule: 2012-2032 **2.1.3** Work with local bike advocacy groups and schools to develop and provide bicycle-safety curricula for use in elementary, middle, and high schools. Schedule: 2012-2032 **2.1.4** Support continuous bicycle education to City staff that are involved in the design or other such decisions that affect roadways; such as traffic engineers, planners, public works engineers, and parks and recreation staff. Schedule: 2012-2032 **2.1.5** Support programs and public service announcements that educate motorists, bicyclists, and the general public about bicycle operation, bicyclists' rights and responsibilities, and safe road-sharing behavior via city's website, local newspapers, and other such publications. Schedule: 2012-2032 **2.1.6** Provide increased bicycle safety education to law enforcement that focuses on safe cycling, relevant traffic laws, and safe sharing of the roadway. Schedule: 2012-2032
Objective 2.2	**Enforcement for Improved Cycling Safety** Increase enforcement activities that enhance safety of bicyclists on bike paths and roadways.
Policy Actions	**2.2.1** As appropriate and feasible, increase enforcement of unsafe bicyclist and motorist behaviors and laws that reduce bicycle/motor vehicle collisions and conflicts, and bike lane obstruction. Schedule: 2012-2032

	2.2.2 Explore opportunities to increase motorist awareness of possibility of the presence of bicyclists, specifically at locations with a high incidence of bicycle collisions. Schedule: 2012-2032 **2.2.3** To the extent feasible, consider utilizing bicycle-mounted patrol officers to promote bicycling awareness, prominence and law enforcement accessibility. Schedule: 2012-2032 **2.2.4** Develop or promote existing mechanisms for reporting behaviors that endanger cyclists. Schedule: 2012-2032
Objective 2.3	**Maintenance for Safe and Consistent Bikeability** Maintain bikeways that are clear of debris and provide safe riding conditions.
Policy Actions	**2.3.1** Coordinate with Public Works Department regarding existing routine maintenance schedules for bikeway sweeping, litter removal, landscaping, re-striping, signage, and signal actuation devices to provide increased priority to bike facilities. Schedule: 2012-2032 **2.3.2** Prioritize roadways with existing or proposed bike facilities in the City's street resurfacing plan, as necessary or appropriate. Schedule: 2012-2032 **2.3.3** Plan for bicyclist safety during construction and maintenance activities, including prominent signage and public announcements regarding construction and improvements that may affect bicycle travel. Schedule: 2012-2032 **2.3.4** Establish a maintenance reporting program to receive and respond to issues that impact bicyclist safety, such as potholes and street sweeping. Schedule: 2012-2032

Goal 3.0: Ensure an Enduring Bicycling Culture	
Develop infrastructure and a City-wide culture that respects and accommodates all users of the road, leading to a more balanced transportation system and measurable increases in bike ridership.	
Objective 3.1	**Partner with Local Bike Advocacy Groups** Foster community support for bicycling by raising public awareness about bicycling and supporting programs that encourage more people to bicycle.
Policy Actions	**3.1.1** Partner with local bike advocacy groups to publicize updated bike maps, safety tips, bike events, classes and commuting advice. Schedule: 0-5 years **3.1.2** Provide information to local bike groups, such as the South Bay Bicycle Coalition, to assist in promoting bicycling at public events, such as Bike to Work Day/Month and various City events. Schedule: 0-5 years **3.1.3** Upon meeting eligibility requirements, apply for designation of "Bicycle Friendly Community" through the League of American Bicyclists. Schedule: 0-5 years **3.1.4** Pending funding availability, expand bicycle promotion and incentive programs for City employees to serve as a model program for other South Bay employers. Schedule: 0-5 years
Objective 3.2	**Continuous Evaluation of Implementation and Performance** Establish accountability mechanisms that will ensure the plan's success through continuous monitoring of the implementation progress of Bicycle Master Plan policies, programs, and projects.
Policy Actions	**3.2.1** Designate a Mobility Coordinator within the City or assist the South Bay Cities Council of Governments (SBCCOG) in establishing a regional position to coordinate and oversee implementation of bike facilities, programs, grant applications and data collection, and provide regular updates to SBCCOG's Livable Communities Working Group and City Councils regarding plan implementation and progress. Schedule: 2012 **3.2.2** Mobility Coordinator or designated city staff will track city and/or region-wide benefits of plan implementation and trends in bicycle commuting through the use of Census data, travel surveys, and volunteer-led bicycle counts. Schedule: 2012-2032 **3.2.3** Mobility Coordinator or designated city staff will also regularly monitor bicycle safety and seek a continuous reduction in bicycle-related collisions on a per capita basis over the next twenty years.

	Schedule: 2012-2032 **3.2.4** Mobility Coordinator or designated City staff will ensure that Bicycle Master Plan programs and projects are implemented in an equitable manner, both geographically and socioeconomically. Schedule: 2012-2032 **3.2.5** Designate a council liaison to serve on a regional Bicycle Advisory Committee (BAC) comprised of community members and council members from each City that will meet regularly and will monitor the progress of bikeway implementation for each City. Schedule: 2012-2032 **3.2.6** To ensure continued eligibility for additional funding, update the City's section of the South Bay Bicycle Master Plan every five (5) years. Schedule: 2012-2032 **3.2.7** Amend the Municipal Code to require a public hearing with the appropriate Traffic, Public Works, Planning, or other such Commission for the removal of any existing bikeway. Cities with such existing policy are exempted. Schedule: 0-5 years **3.2.8** Coordinate with SBCCOG to integrate the electric local use vehicle program with proposed bike facilities and programs, as appropriate and as government code and guidelines allow. Schedule: 2012-2032
Objective 3.3	**Consistently Apply for Available Funding Sources** Ensure implementation of bikeways in the South Bay is prompt and continuous by consistently applying to the numerous local, state and federal funding sources available for which the City is eligible.
Policy Actions	**3.3.1** To the extent feasible, consistently pursue diverse sources of funding and support efforts to maintain or increase federal, state and local funding for the implementation of the South Bay Bicycle Master Plan programs and infrastructures. Funding sources that may be applied for annually or bi-annually as well as apportioned funds that may be partially dedicated to bicycle projects, include the following: A. Metro Call for Projects (bi-annual) B. State Safe Routes to School Funding (annual) C. Office of Traffic Safety Grants (annual) D. Caltrans Highway Safety Improvement Program (annual) E. Federal Safe Routes to School Funding (annual) F. Prop A Funds (annual) G. Coastal Conservancy Funds (annual) H. Federal Lanes Highway Funds (annual)

	I. Caltrans Bicycle Transportation Account (annual) J. Caltrans Community Based Transportation Planning Grant (annual) K. Prop C Transportation Demand Management Funds (annual) Schedule: 2012-2032 **3.3.2** Reference the prioritized project list provided in this plan when determining how to prioritize funding applications and City budget allocations for bikeways and support facilities. Schedule: 2012-2032 **3.3.3** Mobility Coordinator or designated City staff should coordinate bicycle improvement funding applications among all involved cities to increase probability of receiving grant funding. Schedule: 2012-2032 **3.3.4** Mobility Coordinator or designated City staff will develop a regular report to City Council that will include a summary of funds applied for, funding applications due in the short term, and an overview of implementation progress. Schedule: 2012-2032 **3.3.5** Consider a bicycle improvements line item in the City's Capital Improvements Program (CIP). Schedule: 2012-2032 **3.3.6** Consider allocating a proportional percentage of the City's local return Measure R funds specifically to active transportation infrastructure, such as bicycle and pedestrian facilities. Schedule: 0-5 years

The South Bay Bicycle Master Plan is an opportunity to coordinate with neighboring communities' efforts to plan and build bicycle infrastructure.

2.2 Relevant Regional Existing Plans and Policies

The South Bay Bicycle Master Plan is an opportunity to coordinate with neighboring communities' efforts to plan and build bicycle infrastructure. A number of different jurisdictions border the project area, including the City of Los Angeles, unincorporated areas of the County of Los Angeles, and other incorporated cities. This section discusses the relationship between the South Bay Bicycle Master Plan and existing plans in neighboring communities.

2.2.1 Local and Regional Plans

There are six incorporated cities that lie adjacent to at least one participating city in the South Bay Bicycle Master Plan. These cities include:

- City of Hawthorne
- City of Inglewood
- City of Lomita
- City of Los Angeles
- City of Palos Verdes Estates
- City of Rolling Hills Estates

The City of Los Angeles is the only adjacent community with a Bicycle Master Plan, which is discussed in the following section.

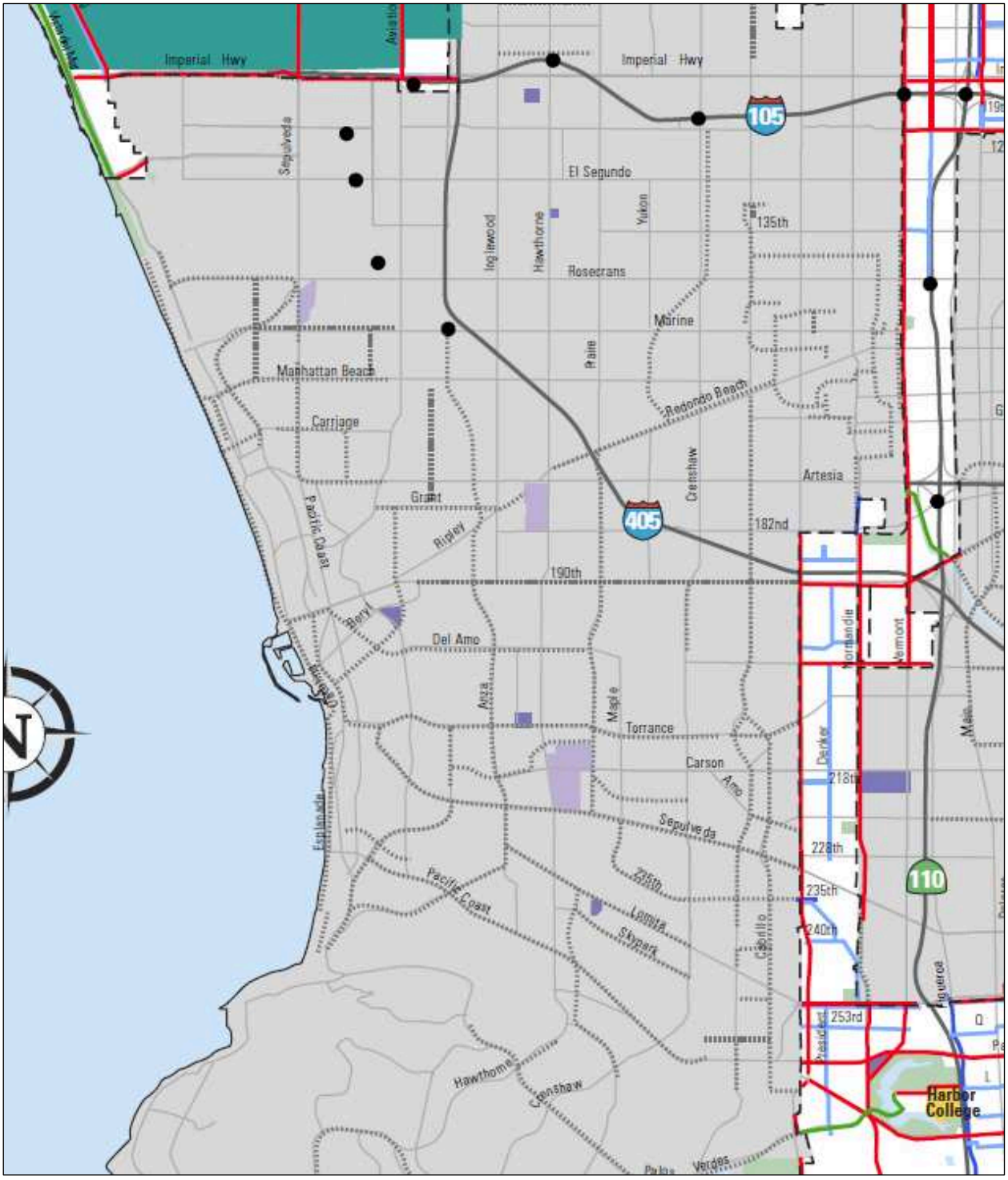
2.2.1.1 City of Los Angeles Bicycle Plan (2010)

The City of Los Angeles Bicycle Plan proposes 1,680 miles of bicycle facilities to promote bicycling as a viable transportation alternative. Of the proposed facilities, there are several that link to the participating cities of El Segundo, Gardena, and Torrance. The City of Los Angeles' proposed bikeways adjacent to the participating South Bay cities are shown in **Figure 2-1**.

2.2.1.2 Metro Bicycle Transportation Strategic Plan

As the Regional Transportation Planning Agency for Los Angeles County, the Los Angeles County Metropolitan Transportation Authority (Metro) is the primary local funding source for transportation projects, including bicycle and pedestrian projects. The Bicycle Transportation Strategic Plan (BTSP) developed by Metro provides an inventory of existing and planned facilities within Los Angeles County. This inventory assisted in identifying routes that may eventually provide trans-jurisdictional continuity

Figure 2-1: City of Los Angeles Proposed Bicycle Facilities



for bicyclists. Secondly, the BTSP outlines a strategy for prioritizing regional bikeway projects. The BTSP outlines a regional strategy to fund projects that improve bicycle access to transit or close gaps in the regional bikeway network. Upon adoption of the South Bay Bicycle Master Plan, the participating cities will have the opportunity to apply for funding through Metro to implement their proposed bikeways.

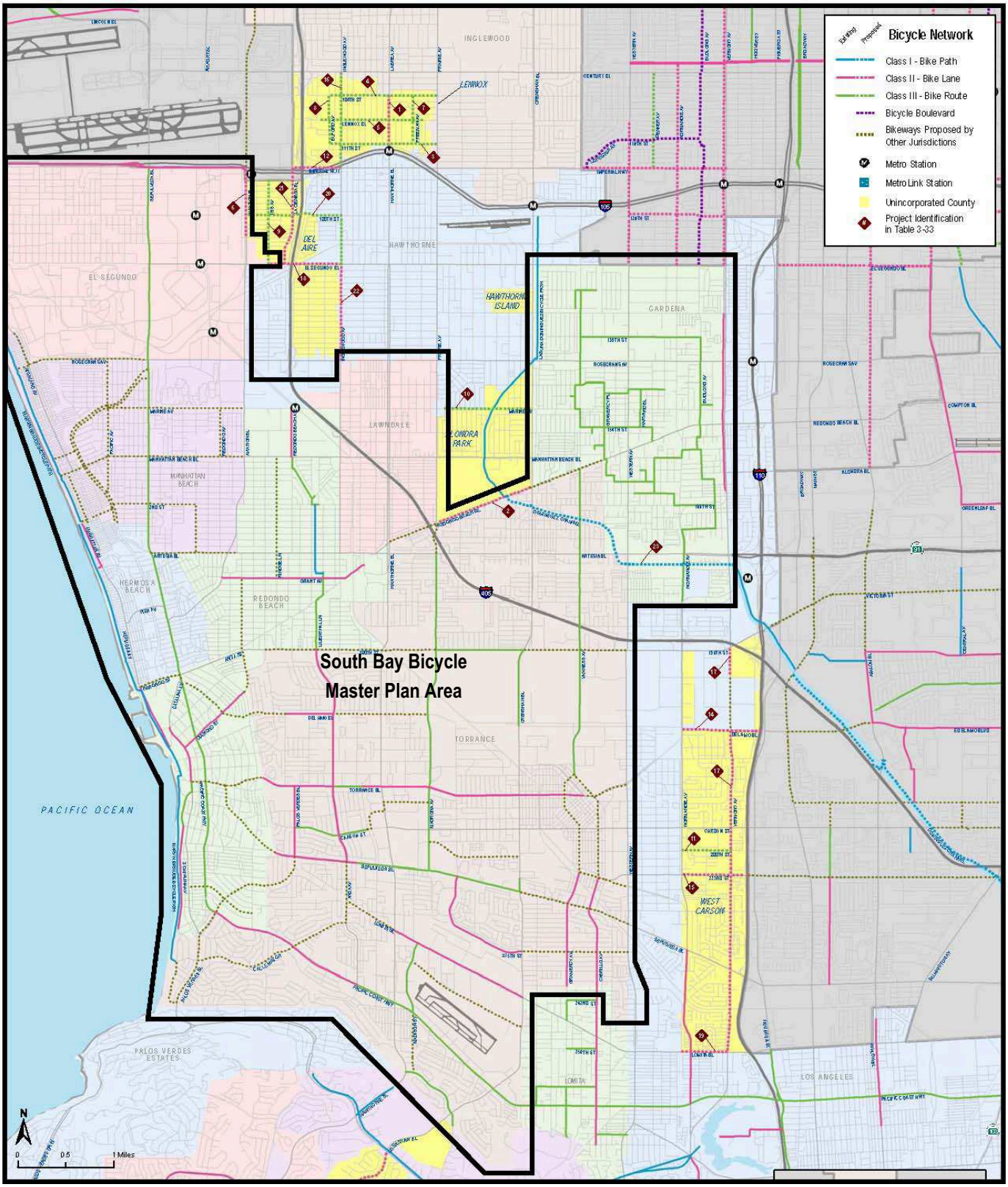
2.2.1.3 County of Los Angeles Bicycle Master Plan (BMP)

The County of Los Angeles Bicycle Master Plan guides the development and maintenance of a comprehensive bicycle network and programs within the unincorporated communities of the County of Los Angeles. The implementation of the Los Angeles County BMP will start in 2012 after California Environmental Quality Act (CEQA) review has been completed. Several proposed bikeways in the County provide potential connection opportunities to the participating South Bay cities of El Segundo, Lawndale, Gardena, and Torrance. These bikeways are shown in the yellow sections in **Figure 2-2**. The participating cities in the South Bay Bicycle Master Plan are outlined in black.

The Marvin Braude Bikeway is a prominent facility that is maintained by the County of Los Angeles and runs through five of the participating cities: El Segundo, Manhattan Beach, Hermosa Beach, Redondo Beach, and Torrance.

Appendix A-2 shows the existing bikeways in the County of Los Angeles that provide potential connection opportunities to the participating cities. The Marvin Braude Bikeway is a prominent facility that is maintained by the County of Los Angeles and runs through five of the participating cities: El Segundo, Manhattan Beach, Hermosa Beach, Redondo Beach, and Torrance. It extends for 21 miles parallel to the Pacific coastline, passing through the City of Santa Monica into the City of Los Angeles at its northernmost portion. Many bicyclists and pedestrians of all ages use the path, both for utilitarian and recreational purposes. As a consequence of its popularity, the path is often congested. Some areas have adopted measures to prevent conflicts between users; for example, when the path is crowded with pedestrians in Hermosa Beach, flashing lights and signs direct bicyclists to dismount and walk their bikes.

Figure 2-2: County of Los Angeles Proposed Bicycle Facilities



The SCAG RTP aims to integrate bicycling and other non-motorized transportation with transit to extend the commuting range of bicyclists in Southern California.

2.2.1.4 Southern California Association of Governments Regional Transportation Plan (2008)

This plan presents the transportation objectives through the year 2035 for the areas under the jurisdiction of the Southern California Association of Governments (SCAG), which includes the South Bay. The RTP aims to integrate bicycling and other non-motorized transportation with transit to extend the commuting range of bicyclists in Southern California, where the average commute length is approximately 19.2 miles.

Bicycle and pedestrian improvements are addressed as they relate to larger street maintenance and construction projects, and are recommended in general plan updates. SCAG's Compass Blueprint Program serves as a resource for local municipalities looking to enhance non-motorized transportation infrastructure under the principles of mobility, livability, prosperity and sustainability.

The RTP allocates over $1.8 billion for non-motorized transportation. Specific objectives regarding the future of bicycle transportation in the region and that apply to the South Bay Bicycle Plan include:

- Decrease bicyclist and pedestrian fatalities and injuries in the state to 25% below 2000 levels
- Increase accommodation and planning for bicyclists and pedestrians: The needs of non-motorized travel (including pedestrian, bicyclists and persons with disabilities) need to be fully considered for all transportation planning projects
- Increase bicycle and pedestrian use in the SCAG Region as an alternative to utilitarian vehicle trips: Create and maintain an atmosphere conducive to non-motorized transportation, including well-maintained bicycle and pedestrian facilities, easy access to transit facilities, and increasing safety and security. While pedestrian sidewalks are fairly well established in most areas, it is estimated that there are only 3,218 miles of dedicated bicycle facilities in the region, with an additional 3,170 miles planned
- Increase non-motorized transportation data: To make non-motorized modes an integral part of the region's intermodal transportation planning process and system, reliable data for planning are needed. Non-motorized transportation data needs include, but are not limited to, comprehensive user statistics; user demographics; bicycle

travel patterns/corridors; accident mapping; bikeway system characteristics; and sub-regional improvement projects and funding needs

- Bicyclists and pedestrians should always be included in general plan updates. SCAG also encourages the development of local Non-Motorized Plans. Also, Non-Motorized Plans that have been created or updated within the previous five years are eligible for bicycle transportation account (BTA) funds. SCAG can assist in the development of these plans through the Compass Blueprint Program
- Develop a Regional Non-Motorized Plan: SCAG will work with all counties and their cities to coordinate and integrate all Non-Motorized Plans from counties and jurisdictions in the SCAG Region in a collaborative process, including interested stakeholders

2.2.2 State of California

The State of California has recently passed several policies that affect bicycle planning in the South Bay, which are discussed in the following section.

2.2.2.1 AB 1358 - Complete Streets Act of 2008

California Assembly Bill (AB) 1358, also known as the Complete Streets Act of 2008, amended the California Government Code §65302 to require that all major revisions to a city or county's Circulation Element include provisions for the accommodation of all roadway users including bicyclists and pedestrians. Accommodations include bikeways, sidewalks, crosswalks, and curb extensions. The Government Code §65302 reads:

> (2)(A)Commencing January 1, 2011, upon any substantive revision of the circulation element, the legislative body shall modify the circulation element to plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways for safe and convenient travel in a manner that is suitable to the rural, suburban, or urban context of the general plan.
>
> (B)For purposes of this paragraph, "users of streets, roads, and highways" means bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, users of public transportation, and seniors.

The Complete Streets Act of 2008 amended the California Government Code to require that all major revisions to a city or county's Circulation Element include provisions for the accommodation of all roadway users including bicyclists and pedestrians.

2.2.2.2 Deputy Directive 64

The California Department of Transportation (Caltrans) adopted two policies in recent years relevant to bicycle planning initiatives such as this Bicycle Master Plan, namely, Deputy Directive 64 (DD-64-R1) and Traffic Operations Policy Directive 09-06.

Similar to AB 1358, Deputy Directive 64 (DD-64-R1) sets forth that Caltrans addresses the "safety and mobility needs of bicyclists, pedestrians, and transit users in all projects, regardless of funding."

2.2.2.3 Traffic Operations Policy Directive 09-06

In a more specific application of complete streets goals, Traffic Operations Policy Directive 09-06 presents bicycle detection requirements. For example, 09-06 requires that new and modified signal detectors provide bicyclist detection if they are to remain in operation. Further, the Policy Directive states that new and modified bicycle path approaches to signalized intersections must provide bicycle detection or a bicyclist pushbutton if detection is required.

One way to help meet the greenhouse gas emissions targets is to increase the bicycle mode share by substituting bicycle trips for automobile trips.

2.2.2.4 SB 375 – Sustainable Communities

Senate Bill (SB) 375 serves to complement Assembly Bill (AB) 32: The Global Warming Solutions Act of 2006 and encourages local governments to reduce emissions through improved planning. Under SB 375, the California Air Resources Board (CARB) must establish targets for 2020 and 2035 for each region covered by one of the State's 18 metropolitan planning organizations (MPOs). Each of California's MPOs must prepare a "Sustainable Communities Strategy (SCS)" that demonstrates how the region will meet its greenhouse gas (GHG) reduction target through integrated land use, housing and transportation planning. The Southern California Association of Governments (SCAG) is preparing the SCS for the County of Los Angeles.

One way to help meet the greenhouse gas emissions targets is to increase the bicycle mode share by substituting bicycle trips for automobile trips. When trips made by bicycle replace vehicle trips they reduce greenhouse gas emissions resulting from motorized transportation. The South Bay's efforts to encourage bicycling will contribute to the regional attainment of these targets.

7 Manhattan Beach

This chapter presents Manhattan Beach's portion of the South Bay Bicycle Master Plan. It begins with a discussion of how Manhattan Beach complies with Bicycle Transportation Account requirements. The chapter is then organized into the following sections:

- Existing conditions;
- City-specific goals, policies, and implementation actions;
- Needs analysis;
- Proposed bicycle network;
- Project prioritization; and
- Project costs.

7.1 Bicycle Transportation Account (BTA) Compliance

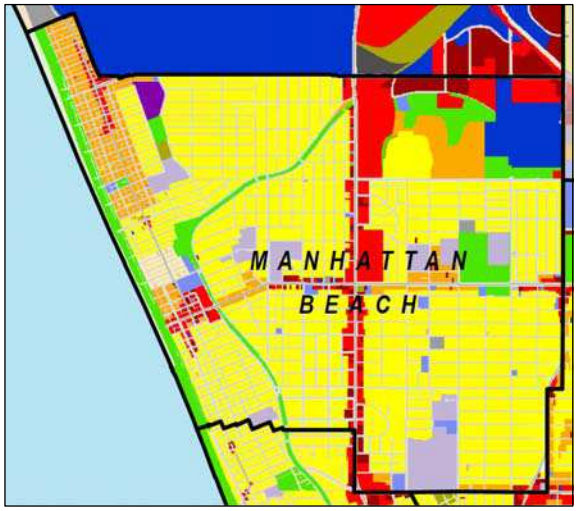
The Bicycle Transportation Account (BTA) is an annual statewide discretionary program that funds bicycle projects through the Caltrans Bicycle Facility Unit. Available as grants to local jurisdictions, the program emphasizes projects that benefit bicycling for commuting purposes. In order for Manhattan Beach to qualify for BTA funds, the South Bay Bicycle Master Plan must contain specific elements. **Appendix E** displays the requisite BTA components and their location within this plan. The table includes "Approved" and "Notes/Comments" columns for the convenience of the Metro official responsible for reviewing compliance.

7.2 Existing Conditions

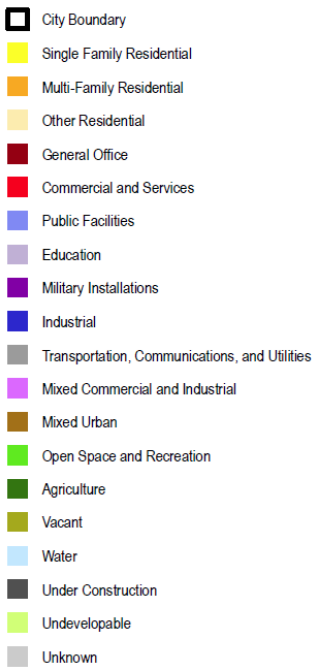
Manhattan Beach is located in the western portion of the South Bay region. It is bordered by the City of El Segundo to the north, the City of Redondo Beach to the east, the City of Hermosa Beach to the south, and the Pacific Ocean to the west. According to the 2000 Census, Manhattan Beach has a population of 34,039. The city was incorporated in 1912.

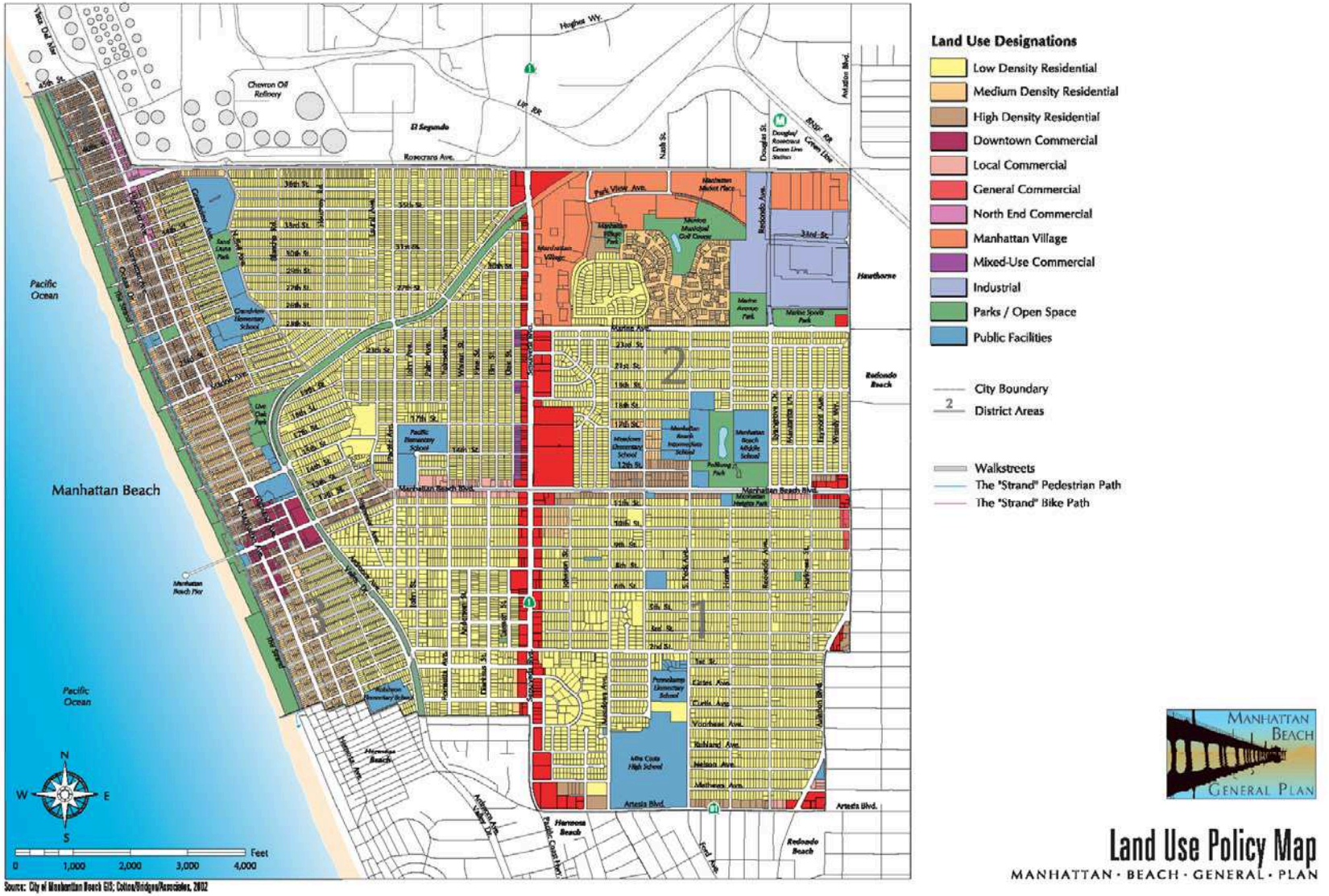
7.2.1 Land Use

Appendix A-3 displays a map of the existing land uses in the South Bay Region. Land uses in Manhattan Beach are shown at right. Almost 70 percent of the land area in Manhattan Beach is devoted to residential uses: approximately 60 percent is single family and about 8 percent is multi-family. Manhattan Beach is also approximately 10 percent open space.



Existing Land Uses in Manhattan Beach
(See Appendix A-3 for larger map)





Source: City of Manhattan Beach GIS; Cotton/Bridges/Associates, 2002

Figure 7-1: City of Manhattan Beach Land Use Policy Map

displays the proposed land uses in Manhattan Beach. As compared to the existing uses, the City plans to increase residential densities from single-family to multi-family South of Marine Avenue and west of Valley Drive, as well as south of the pier between Valley Drive and the Strand.

7.2.2 Bicycle Trip Generators

Bicycle trip generators refer to population characteristics that are correlated with higher bicycling activity levels, such as high population or employment densities or high concentrations of certain sub-populations, such as transit commuters or zero-vehicle households.

Bicycle trip generators refer to population characteristics that are correlated with higher bicycling activity levels, such as high population or employment densities.

Appendix A-4 shows population density in Manhattan Beach. The areas with the highest population densities are located along the beach, which is where much of the multi-family housing is located. This has the potential to generate bicycle trips as housing is nearby the downtown and many key community services. Population density, measured as the number of persons per acre, is a strong indicator of potential bicycle activity, because more people living in an area implies more trips to and from that area. The high population densities of urbanized environments also tend to support bicycle travel through mixed land uses, interconnected street networks, and shorter trip lengths.

Appendix A-5 displays employment density in Manhattan Beach. Employment is most dense along Sepulveda Boulevard, on the northeast portion of Rosecrans Avenue, and around the intersection of Highland Avenue and Manhattan Beach Boulevard. Both Sepulveda Boulevard and the intersection of Highland Avenue and Manhattan Beach Boulevard primarily support commercial and service land uses. Rosecrans Avenue has commercial and service uses, as well as industrial and general office space. These sites have the potential to generate bicycle activity, as they are located in environments with a variety of land uses where trips between uses can be shorter.

Appendix A-6, Appendix A-6, and **Appendix A-8** display the percent of zero-vehicle households, median annual income, and percent transit commuters by census tract in the City of Manhattan Beach. Manhattan Beach overall has low percentages of transit commuters and high median annual incomes. Most households make above $95,000 per year (in 1999 dollars). Manhattan Beach also has high rates of vehicle ownership. Households without vehicles are concentrated in the southwest and central (Tree

Section) portions of the city. These parts of the city have greater potential for increased bicycling activity because residents who do not have vehicles must use alternative modes and are likely to combine bicycle and transit trips.

In addition to the reasons discussed above, Manhattan Beach has the potential for increased bicycle activity from bicyclists passing through on their way to destinations outside of the city. A bicycle network that is connected within Manhattan Beach, as well as linked to bicycle facilities in adjacent communities, further generates bicycle traffic as it provides a viable transportation option to driving a motorized vehicle.

7.2.3 Relevant Plans and Policies

Table 7-1 outlines information regarding bicycles from the City of Manhattan Beach's Infrastructure Element, Municipal Code, and Suggested Safe Routes to School Maps.

Table 7-1: Manhattan Beach Bicycle-Related Plans and Policies

Document	Description
General Plan Infrastructure Element (2003)	This element contains a map of existing bikeways in the City (**Appendix F-4**), which include the Strand Bikeway and Veterans Parkway, which is a multi-use trail. The element also includes goals and policies relevant to bicycling, which are: • Work with the school district and private schools to improve pedestrian and bicycle safety around schools • Incorporate bikeways and pedestrian ways as part of the City's circulation system • Encourage features that accommodate the use of bicycles in the design of new development • Encourage the development of recreational bicycle routes to link residential, schools, and recreational areas east of Sepulveda Boulevard with the Strand bike path
Municipal Code	The City's Municipal Code prohibits riding bicycles on the sidewalk, except for children under 14 years old in front of schools, stores, or buildings used for business purposes. The Municipal Code provides bicycle requirements based on land use type. Parking must be in the form of a stationary object (either a freestanding bicycle rack or a wall-mounted bracket) to which a user can secure both wheels and the frame of a bicycle with a user-provided six-foot cable and lock. Before installation, the City reviews the design and location of bicycle parking through a Use Permit to ensure design compatibility with the architecture, appropriate materials, safety, and that it does not block pedestrian or vehicle paths-access. The City conducted a comprehensive bikeway study in 2009 to evaluate the needs, wants and opportunities related to bicycles. The study found that most people in the community utilize bikeways for recreation purposes rather than for commuting to and from work. Bicycle parking policies do not reflect that as they focus on providing facilities at commercial rather than recreational sites.

Document	Description
Suggested Routes to School Maps	In August of 2009, the City was awarded Safe Routes to School (SR2S) funding by the State of California. These maps are part of Manhattan Beach's larger SR2S effort. They display suggested routes for walking/biking to Meadows, Grand View, Pennekamp, Pacific, and Robinson Elementary Schools. They also highlight where traffic signals, walkstreets (streets closed to vehicular traffic), crosswalks, and crossing guards are located. Detailed bicycle parking information is presented in **Appendix G**.

7.2.4 Existing Bicycle Network

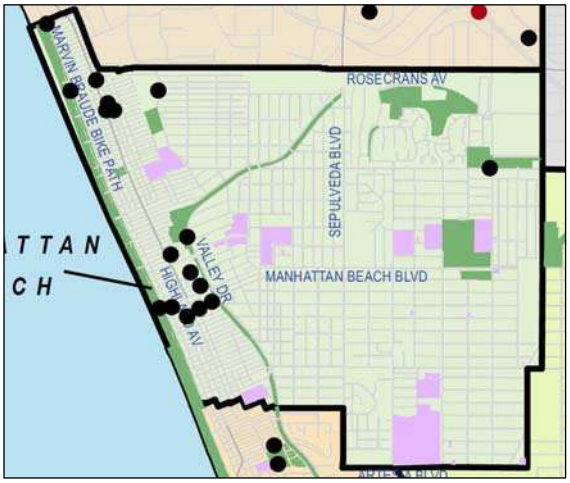
Figure 7-1 shows the existing bicycle facilities in Manhattan Beach. Appendix A-2 displays a map of the existing bicycle facilities in the South Bay Region. Bicycle facility types are discussed in Section 1.3. The bicycle network in the City of Manhattan Beach consists of approximately 3 miles of bikeways. This includes a section of the Los Angeles County-maintained Class I bicycle path on the Strand and Class III bicycle routes. Table 7-2 summarizes the classification and mileage of the existing network.

Table 7-2: Manhattan Beach Bicycle Network

Facility Type	Mileage
Class I (Bike Path)	2.1
Class II (Bike Lanes)	0.0
Class III (Bike Route)	1.1
Total Mileage	**3.2**

7.2.5 Existing End-of-Trip Parking Facilities

The BTA requires that this plan inventory publicly-accessible short-term and long-term end-of-trip bicycle facilities for the members of the bicycling public to park their bicycles, as well as change and store clothes and equipment. Short-term facilities consist of bicycle racks. Long-term facilities include, but are not limited to, locker, restroom, and shower facilities near bicycle parking facilities. Appendix A-9 displays the existing end-of-trip bicycle facilities in the South Bay. The locations of existing bicycle racks in Manhattan Beach are shown at right. These locations include parks, on sidewalks, and at the beach. Bicycle racks in Manhattan Beach include comb racks, wave racks, and several styles of artistic racks. The City does not provide any long-term bicycle parking within its jurisdiction.



Existing End-of-trip Facilities in Manhattan Beach

(See Appendix A-9 for larger map)

Existing Bike Racks
Existing Bike Lockers

Figure 7-2: Existing Bicycle Facilities in Manhattan Beach

7.2.6 Multi-Modal Connections

Transit is often best for longer trips, while bicycling is better for shorter trips. Combining transit use and bicycling can offer a high level of mobility that is comparable to travel by automobile. **Appendix A-10** shows the existing Los Angeles Metropolitan Transit Authority (Metro) transit routes that serve the City of Manhattan Beach. Metro operates bus lines with routes on the City's major arterials, though the western half of Manhattan Beach is underserved. Buses are equipped with bicycle racks, which are available on a first-come, first-served basis.

Metro operates bus lines with routes on the City's major arterials.

LADOT operates the Commuter Express bus service. Line 438 connects the cities of El Segundo, Manhattan Beach, Hermosa Beach, Redondo Beach, and Torrance to Downtown Los Angeles. Most Commuter Express buses are equipped with bicycle racks, which are available on a first-come, first-served basis. **Appendix A-11** shows the Commuter Express Line bus routes.

Beach Cities Transit (BCT) Line 109, operated by the City of Redondo Beach, and Torrance Transit Line 8, operated by the City of Torrance, also serve the City of Manhattan Beach. **Appendix A-13** shows the BCT System Map and **Appendix A-14** shows the Torrance Transit System Map. Buses are equipped with bike racks, which are available on a first-come, first-served basis.

The BTA requires that this plan inventory existing bicycle transport and parking facilities for connecting to public transit services. These facilities include, but are not limited to, bicycle parking at transit stops, rail and transit terminals, park and ride lots, and provisions for transporting bicycles on public transit vehicles. Manhattan Beach does not currently provide any intermodal end-of-trip bicycle facilities within its jurisdiction.

7.2.7 Education and Enforcement Strategies

Bicycle education programs and enforcement of bicycle-related policies help to make riding safer for all bicyclists. To promote safe bicycling at the Middle School level, the City of Manhattan Beach provides bicycle education to the school, parents, and students through the School Resource Officer (SRO) and Crime Prevention Officer. Once per year, there is a Bicycle Rodeo at Manhattan Beach Middle School and the Police Department provides a presentation and information on bicycle safety, requirements, wearing helmets, and the use of lights and reflectors. Bicycle Rodeos are meant to ensure that children bicycling to school have the appropriate and

required equipment, know where to ride, and follow the proper traffic signals, signs and markings. Throughout the school year, the SRO addresses students on campus regarding bicycle safety as needed.

There is not a SRO for the elementary schools in Manhattan Beach, so they utilize saturated enforcement with patrol and traffic officers adjacent to the schools. Officers check to make sure that children have the proper equipment when bicycling to school, and if they don't, they stop children to educate them and issue warnings. If a child receives several warnings, the officer will issue a citation, which requires the parent(s) to go to court.

In the rest of the City, enforcement is performed by patrol and traffic officers. Enforcement is focused in the Downtown and on the Bike Path during the summer months. Officers issue warnings and citations for observed violations. Whenever an officer stops someone, they also educate the person on bicycle safety and the rules of the road regardless of whether a warning or citation is issued.

7.2.8 Past Bicycle-Related Expenditures

Between 2005 and 2011, the City of Manhattan Beach incurred the following bicycle expenditures:

- $2,500 for bicycle racks and bicycle route signs
- $12,000 for labor, installation, core drilling, and concrete for new bicycle racks

The public identified major arterials as streets in need of bicycle facilities.

7.3 Needs Analysis

This section describes the needs of bicyclists in Manhattan Beach. It first summarizes feedback collected from the online survey and public workshops. The section also provides estimates and forecasts of bicycle commuting to determine the estimated bicycling demand in the city. It finally analyzes bicycle collision data between 2007 and 2009 to identify areas that would benefit from bicycle facility improvements.

7.3.1 Public Outreach

As mentioned in Chapter 1, the public had the opportunity to provide input in the planning process through an online survey and the first round of public workshops. This section summarizes locations in Manhattan Beach that the community identified as desirable for bikeways and bicycle support facilities.

The location that the community mentioned the most frequently as in need of bikeways is Valley Drive / Ardmore Avenue. Other locations that the public identified as desirable for bicycle facilities include streets that lead to the beach, such as Marine Avenue, and provide access to schools, including Longfellow Avenue. The community also identified major arterials, such as Artesia Boulevard, Manhattan Beach Boulevard, and Rosecrans Boulevard. Other locations mentioned were residential streets, like Pacific Avenue and Redondo Avenue.

The public identified Polliwog Park as a desirable location for bicycle parking.

The public identified Manhattan Beach Boulevard as desirable for bicycle facilities.

7.3.2 Bicycle Commuter Estimates and Forecasts

United States Census "Commuting to Work" data provides an indication of current bicycle system usage. **Appendix A-15** shows the percent bicycle commuters in Manhattan Beach by census tract. Manhattan Beach has the highest percentages of bicycle commuters in the central northern portion of the city, which correlates with the percentage of households without vehicles.

In addition to bicycle commuters in Manhattan Beach, bicyclists from neighboring communities use the city's bicycle network to reach their destinations and are not reflected in this data. This Plan addresses the need for regional connectivity to accommodate bicyclists passing through Manhattan Beach's bicycle network in **Section 7.4**.

Table 7-3 presents commute to work data estimates reported by the 2000 US Census for Manhattan Beach. For comparative purposes, the table includes commute to work data for the United States, California, and County of Los Angeles. According to these estimates, 0.3 percent of residents in Manhattan Beach commute predominantly by bicycle. Manhattan Beach also has low rates of carpooling and transit riding, which suggests that the city's high average median income and high car ownership rates influence mode split. It is important to note that this figure likely underestimates the true amount of bicycling that occurs in Manhattan Beach for several reasons. First, data reflects respondents' dominant commute mode and therefore does not capture trips to school, for errands, or other bike trips that would supplant vehicular trips. Also, US Census data collection methods only enable a respondent to select one mode of travel, thus

excluding bicycle trips if they constitute part of a longer multimodal trip. The percentage of commuters in Manhattan Beach that commute by transit is much lower than that of those that drive alone. Manhattan Beach also has a low percentage of commuters carpooling and walking.

In addition to bicycle commuters in Manhattan Beach, bicyclists from neighboring communities use the city's bicycle network to reach their destinations and are not reflected in this data. This Plan addresses the need for regional connectivity to accommodate bicyclists passing through Manhattan Beach's bicycle network in **Section 7.4**.

Table 7-3: Means of Transportation to Work

Mode	United States	California	Los Angeles County	Manhattan Beach
Bicycle	0.38%	0.83%	0.62%	0.32%
Drove Alone – car, truck, or van	75.70%	71.82%	70.36%	84.47%
Carpool – car, truck, or van	12.19%	14.55%	15.08%	6.89%
Transit	4.73%	5.07%	6.58%	0.38%
Walked	2.93%	2.85%	2.93%	1.26%
Other Means	0.70%	0.79%	0.76%	0.61%
Worked at Home	3.26%	3.83%	3.49%	5.99%

Source: US Census 2000

Table 7-4 presents an estimate of current bicycling within Manhattan Beach using US Census data along with several adjustments for likely bicycle commuter underestimations, as discussed above. **Table 7-5** presents the associated air quality benefits from bicycling.

Table 7-4: Existing Bicycling Demand

Variable	Figure	Source
Existing study area population	34,039	2000 US Census, P1
Existing employed population	19,030	2000 US Census, P30
Existing bike-to-work mode share	0.32%	2000 US Census, P30
Existing number of bike-to-work commuters	61	Employed persons multiplied by bike-to-work mode share
Existing work-at-home mode share	6.0%	2000 US Census, P30
Existing number of work-at-home bike commuters	114	Assumes 50% of population working at home makes at least one daily bicycle trip
Existing transit-to-work mode share	0.4%	2000 US Census, P30
Existing transit bicycle commuters	18	Employed persons multiplied by transit mode share. Assumes 25% of transit riders access transit by bicycle
Existing school children, ages 6-14 (grades K-8)	4,047	2000 US Census, P8
Existing school children bicycling mode share	2.0%	National Safe Routes to School surveys, 2003.
Existing school children bike commuters	81	School children population multiplied by school children bike mode share
Existing number of college students in study area	1,713	2000 US Census, PCT24
Existing estimated college bicycling mode share	5.0%	Review of bicycle commute share in seven university communities (source: National Bicycling & Walking Study, FHWA, Case Study No. 1, 1995).
Existing college bike commuters	86	College student population multiplied by college student bicycling mode share
Existing total number of bike commuters	360	Total bike-to-work, school, college and utilitarian bike trips. Does not include recreation.
Total daily bicycling trips	719	Total bicycle commuters x 2 (for round trips)

Table 7-5: Existing Bicycling Air Quality Impact

Variable	Figure	Source
Current Estimated VMT Reductions		
Reduced Vehicle Trips per Weekday	233	Assumes 73% of bicycle trips replace vehicle trips for adults/college students and 53% for school children
Reduced Vehicle Trips per Year	60,836	Reduced weekday vehicle trips x 261 (weekdays / year)
Reduced Vehicle Miles per Weekday	1,564	Assumes average round trip travel length of 5 miles for adults/college students and 1 mile for schoolchildren
Reduced Vehicle Miles per Year	408,315	Reduced weekday vehicle miles x 261 (weekdays / year)
Current Air Quality Benefits		
Reduced Hydrocarbons (lbs/wkday)	5	Daily mileage reduction x 1.36 grams / mi
Reduced PM10 (lbs/wkday)	0	Daily mileage reduction x 0.0052 grams / mi
Reduced PM2.5 (lbs/wkday)	0	Daily mileage reduction x 0.0049 grams / mi
Reduced NOX (lbs/wkday)	3	Daily mileage reduction x 0.95 grams / mi
Reduced CO (lbs/wkday)	43	Daily mileage reduction x 12.4 grams / mi
Reduced C02 (lbs/wkday)	1,273	Daily mileage reduction x 369 grams / mi
Reduced Hydrocarbons (lbs/yr)	1,224	Yearly mileage reduction x 1.36 grams / mi
Reduced PM10 (lbs/yr)	5	Yearly mileage reduction x 0.0052 grams / mi
Reduced PM2.5 (lbs/yr)	4	Yearly mileage reduction x 0.0049 grams / mi
Reduced NOX (lbs/yr)	855	Yearly mileage reduction x 0.95 grams / mi
Reduced CO (lbs/yr)	11,162	Yearly mileage reduction x 12.4 grams / mi
Reduced $C0_2$ (lbs/yr)	332,167	Yearly mileage reduction x 369 grams / mi

Source:

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

Table 7-6 presents projected year 2030 bicycling activity within Manhattan Beach using California Department of Finance population and school enrollment projections. The projection contains the assumption that bicycle mode share will double by 2030, due in part to bicycle network implementation. Actual bicycle mode share in 2030 will depend on many factors, including

the extent of network implementation. Table 7-7 presents the associated year 2030 air quality benefit forecasts. The calculations follow in a straightforward manner from the Projected Year 2030 Bicycling Demand.

Table 7-6: Projected Year 2030 Bicycling Demand

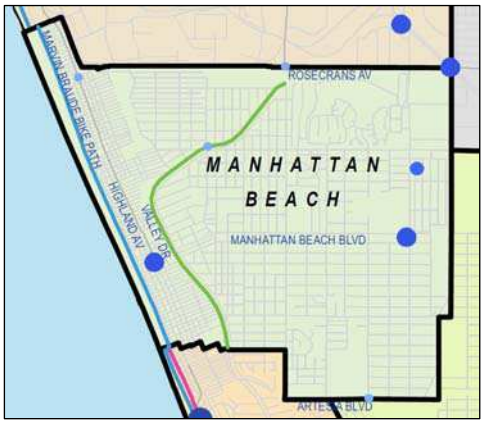
Variable	Figure	Source
Future study area population	42,359	Calculated based on CA Dept. of Finance, *Population Projections for California and Its Counties 2000-2050.*
Future employed population	23,681	Calculated based on CA Dept. of Finance, *Population Projections for California and Its Counties 2000-2050*,
Future bike-to-work mode share	0.64%	Double the rate from 2000 US Census, P30
Future number of bike-to-work commuters	152	Employed persons multiplied by bike-to-work mode share
Future work-at-home mode share	7.81%	Calculated based on change in mode share from 1990 US Census, P49, to 2000 US Census, P30
Future number of work-at-home bike commuters	185	Assumes 50% of population working at home makes at least one daily bicycle trip
Future transit-to-work mode share	0.8%	Double the rate from 2000 US Census, P30
Future transit bicycle commuters	45	Employed persons multiplied by transit mode share. Assumes 25% of transit riders access transit by bicycle
Future school children, ages 6-14 (grades K-8)	3,216	Calculated from CA Dept. of Finance, *California Public K–12 Graded Enrollment and High School Graduate Projections by County, 2010 Series.*
Future school children bicycling mode share	4.0%	Double the rate of national school commute trends. National Safe Routes to School surveys, 2003.
Future school children bike commuters	129	School children population multiplied by school children bicycling mode share
Future number of college students in study area	2,132	Calculated based on CA Dept. of Finance, Population Projections for California and Its Counties 2000-2050, Sacramento, California, July 2007.
Future estimated college bicycling mode share	7.0%	A slight increase over the existing college bicycle mode share assumption, commensurate with projected increases in bicycling for other populations
Future college bike commuters	149	College student population x college student bicycling mode share
Future total number of bike commuters	659	Total bike-to-work, school, college and utilitarian biking trips. Does not include recreation.
Total daily bicycling trips	1,319	Total bike commuters x 2 (for round trips)

Table 7-7: Projected Year 2030 Bicycling Air Quality Impact

Variable	Figure	Source
Forecasted VMT Reductions		
Reduced Vehicle Trips per Weekday	423	Assumes 73% of biking trips replace vehicle trips for adults/college students and 53% for school children
Reduced Vehicle Trips per Year	110,354	Reduced number of weekday vehicle trips x 261 (weekdays / year)
Reduced Vehicle Miles per Weekday	2,905	Assumes average round trip travel length of 8 miles for adults / college students and 1 mile for schoolchildren
Reduced Vehicle Miles per Year	758,275	Reduced number of weekday vehicle miles x 261 (weekdays / year)
Forecasted Air Quality Benefits		
Reduced Hydrocarbons (lbs/wkday)	9	Daily mileage reduction x by 1.36 grams / mi
Reduced PM10 (lbs/wkday)	0	Daily mileage reduction x by 0.0052 grams / mi
Reduced PM2.5 (lbs/wkday)	0	Daily mileage reduction x by 0.0049 grams / mi
Reduced NOX (lbs/wkday)	6	Daily mileage reduction x by 0.95 grams / mi
Reduced CO (lbs/wkday)	79	Daily mileage reduction x by 12.4 grams / mi
Reduced $C0_2$ (lbs/wkday)	2,363	Daily mileage reduction x by 369 grams / mi
Reduced Hydrocarbons (lbs/yr)	2,274	Yearly mileage reduction x by 1.36 grams / mi
Reduced PM10 (lbs/yr)	9	Yearly mileage reduction x by 0.0052 grams / mi
Reduced PM2.5 (lbs/yr)	8	Yearly mileage reduction x by 0.0049 grams / mi
Reduced NOX (lbs/yr)	1,588	Yearly mileage reduction x by 0.95 grams / mi
Reduced CO (lbs/yr)	20,729	Yearly mileage reduction x by 12.4 grams / mi
Reduced CO_2 (lbs/yr)	616,861	Yearly mileage reduction x by 369 grams / mi

Source: Emissions rates from **EPA report 420-F-05-022** *Emission Facts: Average Annual Emissions and Fuel Consumption for Gasoline-Fueled Passenger Cars and Light Trucks.* 2005.

This model uses the latest state projections for population growth and reasonable assumptions about future bicycle ridership. The benefits model predicts that the total number of bicycle commute trips could increase from the current daily estimate of 700 to 1,300, resulting in a substantial reduction of both Vehicle Miles Traveled (VMT) and associated emissions. This includes a yearly emissions reduction by 2030 of approximately 1,600 pounds of smog forming N0X and roughly 600 thousand pounds of $C0_2$, the principal gas associated with global climate change. Providing bicycle facilities will encourage new bicyclists to begin to ride, thus positively impacting air quality by reducing harmful pollutants from driving motorized vehicles. Because this plan recommends local connections throughout and regional links between the participating cities, it has the potential to have even greater air quality benefits. Bicyclists may not need to rely as heavily on vehicles for transportation because bicycling will be a viable transportation alternative upon implementation of this Plan.



Weekday Bicycle Count Results in Manhattan Beach

(See Appendix A-16 for a larger map and Appendix H for a list of count locations.)

499
100 - 152
50 - 86
30 - 46
13 - 29

7.3.3 Bicycle Counts

To assess bicycling levels at different sites throughout Manhattan Beach, volunteers conducted bicycle counts, in which they manually recorded the number of bicyclists that rode by.

7.3.3.1 Methodology

The methodology for the bicycle counts derives from the National Bicycle and Pedestrian Documentation Project (NBPD), a collaborative effort of Alta Planning + Design and the Institute of Transportation Engineers. The NBPD methodology aims to capture both utilitarian bicycling and recreational bicycling. The NBPD also provides guidance on how to select count locations.

Volunteers conducted bicycle counts in each of the seven participating cities in the South Bay on Thursday, November 4, 2010 from 3:00 p.m. to 6:00 p.m. and Saturday, November 6, 2010 from 10:30 a.m. to 1:30 p.m. These dates are meant to capture volumes of bicyclists on a typical weekday and weekend day. Fall is an appropriate time to conduct bicycle counts in California because school is back in session and vacations are typically over. In Manhattan Beach, volunteers were stationed at six locations on Thursday and seven locations on Saturday. There were 36 total locations in the South Bay region on each day.

The count locations were selected in partnership by city staff, Alta Planning + Design, Los Angeles County Bicycle Coalition staff, and

Weekend Bicycle Count Results in Manhattan Beach

(See Appendix A-17 for a larger map and Appendix H for a list of count locations.)

385 - 922
114 - 384
43 - 113
21 - 38
1 - 17

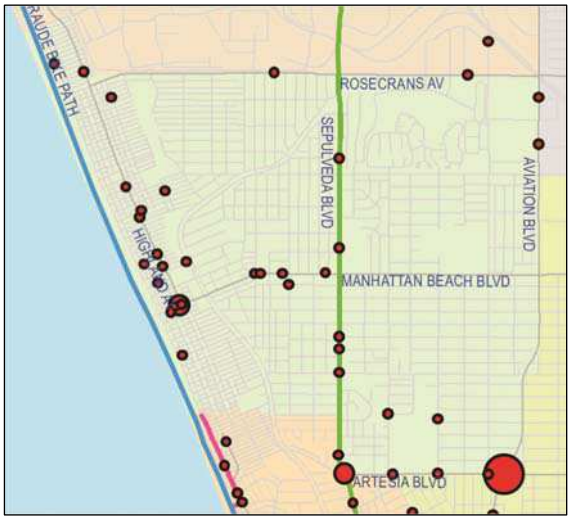
South Bay Bicycle Coalition board members. This snapshot of locations is meant to capture a diverse bicycling population using the roads and streets that span the spectrum of bike-friendliness.

7.3.3.2 Results

The count results for the South Bay are displayed in **Appendix A-16** and **Appendix A-17**. Count results for Manhattan Beach are shown on the previous page. Detailed count data, including a list of count locations, is presented in **Appendix H**. On Thursday, the Manhattan Beach station that experienced the highest volume was Manhattan Beach Boulevard and Manhattan Avenue with 75 bicyclists during the three hour count period. The station with the most bicyclists on Saturday was Manhattan Beach Boulevard and the Strand with 589 bicyclists during the three hour count period.

On both days, the locations with the highest numbers of bicyclists in the South Bay region as a whole were those along the Strand on the County-maintained Marvin Braude Bikeway. Apart from the Strand stations, the inland count locations in Lawndale and Gardena experienced the most riders during the week. On the weekend, there were overall fewer riders in the inland count stations and more riders along the coast. This suggests that more bicyclists ride a bicycle for commuting during the week and for recreation on the weekend.

In the region as a whole, approximately 83 percent of bicyclists were male. About 70 percent of those observed did not wear helmets and 41 percent rode on the sidewalks. On Thursday, there were 18 locations at which over half of the observed bicyclists rode on the sidewalk and on Saturday there were nine. Riding on the sidewalk can be an indicator of a lack of bicycle facilities, as bicyclists that are uncomfortable riding with traffic may choose to ride on the sidewalk instead.



Bicycle Collisions in Manhattan Beach 2007-2009

(See Appendix A-18 for larger map)

7.3.4 Bicycle Collision Analysis

Safety is a major concern for both existing and potential bicyclists. Concern about safety is the most common reason given for not riding a bicycle (or riding more often), according to national surveys. Identifying bicycle collision sites can draw attention to areas that warrant improvement, particularly if multiple collisions occur at the same location. This analysis employs the most reliable data source available, the California Highway Patrol's Statewide Integrated Traffic Records System. The data set only includes reported collisions, and so represents a subset of all the bicycle

collisions in Manhattan Beach. This data does not include any assessment of conditions present at the time of the collision. There are numerous factors that may contribute to a given incident including but not limited to time of day, visibility, distractions, obstacles or traffic law obedience. This data simply reflects reported incidents, resulting injuries and the party at fault. This data does not infer faulty infrastructure, but rather provides a baseline of collisions that often decreases in correlation with bike plan implementation and the improvements to facilities and road user behavior and awareness that accompanies it. Fault as determined by law enforcement is discussed below.

Table 7-8 presents the number of reported collisions involving bicyclists, number of bicyclists involved, and severity of the bicycle collisions for three consecutive years: 2007, 2008, and 2009. **Appendix A-18** shows locations of bicycle collisions in the South Bay region in the same time period. Bicycle collisions in Manhattan Beach are shown at right. There were 38 total reported collisions involving bicyclists from 2007-2009 in the City of Manhattan Beach. The intersection of Artesia Boulevard and Aviation Boulevard, which is on the border of the cities of Manhattan Beach and Redondo Beach, had four collisions involving bicyclists in the three year period. Other collisions in Manhattan Beach were concentrated on major boulevards: there were nine crashes on Manhattan Beach Boulevard, eight on Highland Avenue, and eight on Sepulveda Boulevard.

Table 7-8: Bicycle Collision Data 2007-2009

Total Crashes Involving Bicyclists	Number of Bicyclists Involved	Persons Injured	Persons Severely Injured	Persons Killed
38	38	36	5	1

Source: California Highway Patrol, Statewide Integrated Traffic Records System (SWITRS)

As reported by police officers in traffic reports, bicyclists were at fault in 63 percent of collisions involving bicycles (24 crashes) in this time period.

Providing bicycle facilities encourages more people to ride. When motorists begin to look for and expect to see bicyclists, collisions between vehicles and bicyclists are reduced. The City of New York, for example, reported that as ridership increased between 1998 and 2008, the number of annual casualties from bicycle collisions decreased (see **Appendix B**).

Appendix A-1 displays estimated weekday traffic volumes in Manhattan Beach. The streets with the highest traffic volumes are Sepulveda Boulevard, Aviation Boulevard, Rosecrans Avenue, and Manhattan Beach Boulevard. The only one of these streets with bicycle facilities is Sepulveda Boulevard, which has a Class III bike route. On Sepulveda, bicyclists must still share the traffic lanes with vehicular traffic, creating the potential for conflicts between the two modes. Installing bicycle facilities, especially on major arterials, could reduce the number and severity of collisions involving bicyclists.

7.4 Proposed Bicycle Network

This section presents the proposed bicycle network for the City of Manhattan Beach, which includes bicycle parking facilities. Upon implementation of the proposed network, the City should coordinate and collaborate with adjacent participating South Bay cities to emphasize a regional bicycle network. Bicycle facilities discussed in this Plan are described in **Section 1.3** and are shown in **Figure 1-3** and **Figure 1-4**. **Appendix C** outlines the recommended standards for each facility classification as compared to minimum standards. In addition to creating a comprehensive network of bikeways in Manhattan Beach, the recommended system ties into the proposed bicycle facilities for the other South Bay participating cities to create a connected regional network. This will give bicyclists from adjacent communities the opportunity to pass through Manhattan Beach to reach their destinations without losing bicycle facilities at city boundaries. Bikeway recommendations are also based on the existing City bicycle plans, public input, topography, traffic volumes, and traffic speeds.

The proposed bicycle network for the City of Manhattan Beach consists of Class I Bike Paths, Multi Use Paths, Class II Bike Lanes, Class III Bike Routes, and Bike Friendly Streets.

7.4.1 Proposed Bikeway Facilities

The proposed bicycle network for the City of Manhattan Beach consists of Class I Bike Paths, Multi Use Paths, Class II Bike Lanes, Class III Bike Routes, and Bike Friendly Streets, and is shown in **Figure 7-2.** Four tables identify the streets on which facilities are proposed, the extents of each proposed facility, and the length in miles of each proposed facility. **Table 7-9** lists the proposed bicycle paths, **Table 7-10** lists the proposed bicycle lanes, **Table 7-11** lists the proposed bicycle routes, and **Table 7-12** lists the proposed bicycle-friendly streets. The proposed Bicycle network for the South Bay region as a whole is presented in **Appendix A-19**. The proposed bicycle network in Manhattan Beach connects with the recommended networks in El Segundo, Hermosa Beach, and

Redondo Beach. **Figure 7-2** shows a blue asterisk at the steps between Manhattan Beach and Hermosa Beach, which is outside the jurisdiction of this plan, but is a supported improvement.

Table 7-9: Proposed Class I Bicycle Paths in Manhattan Beach

Street	From	To	Miles
Bell Ave Extension	33rd St	beginning of Bell Ave south of 30th St	0.1
Marine Ave Park	Redondo Ave Extension	Redondo Ave	0.1
Total Bicycle Path Mileage			**0.2**

Table 7-10: Proposed Class II Bicycle Lanes in Manhattan Beach

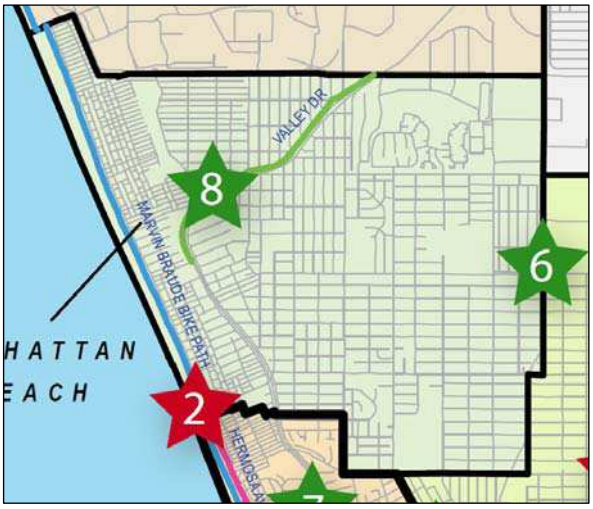
Street	From	To	Miles
Manhattan Beach Blvd	Ardmore Avenue	Aviation Blvd	1.7
Rosecrans Ave	Highland Ave	Aviation Blvd	2.3
Marine Ave	Sepulveda Blvd	Aviation Blvd	1.0
Aviation Blvd	Rosecrans Ave	South City Limits	2.1
Total Bicycle Lane Mileage			**7.0**

Table 7-11: Proposed Class III Bicycle Routes in Manhattan Beach

Street	From	To	Miles
Valley Dr	15th St	South City Limits	0.9
45th St	The Strand	Crest Dr	0.2
15th St	Ocean Dr	Valley Dr	0.2
Highland Av	45th St	33rd St	2.2
Ardmore Ave	Rosecrans Ave	South City Limits	2.1
Redondo Ave - Redondo Ave Extension	Rosecrans Ave	Marine Ave	0.6
Manhattan Ave	15th St	1st St	0.7
Manhattan Beach Blvd	Ocean Dr	Valley Dr	0.2
Rosecrans Ave	The Strand	Highland Ave	0.1
38th Pl	Highland Ave	Crest Dr	0.0
Total Bicycle Route Mileage			**7.1**

Table 7-12: Proposed Bicycle-Friendly Streets in Manhattan Beach

Street	From	To	Miles
Marine Ave	The Strand	Blanch Rd	0.4
Marine Ave	Ardmore Avenue	Sepulveda Blvd	0.4
1st St	Manhattan Avenue	John St	0.4
Bell Ave	Rosecrans Ave	North of 29th St	0.2
Bell Ave - Blanch Rd	North of 29th St	Valley Dr	0.6
Pacific Ave - 5th St	Rosecrans Ave	Ardmore Ave	1.4
Ocean Dr	45th St	1st St	2.1
Oak Ave	Ardmore Ave	Manhattan Beach Blvd	0.8
8th St	Ardmore Ave	Aviation Blvd	1.5
Redondo Ave	Marine Ave	Artesia Blvd	1.5
2nd St	John St	East City Limits	1.3
Meadows Ave - Tennyson St - Prospect Ave	Marine Ave	Artesia Blvd	1.6
11th St	Ardmore Ave	Aviation Blvd	1.6
Peck Ave	Manhattan Beach Blvd	Artesia Blvd	1.0
Voorhees Ave	Peck Ave	Aviation Blvd	0.4
Mathews Ave	Peck Ave	Aviation Way	0.4
Harkness St	Marine Ave	2nd St	1.0
Total Bicycle-Friendly Street Mileage			**16.7**



Opportunities and Constraints in Manhattan Beach

(See Appendix I for larger map)

Opportunity

Constraint

There are several opportunities and constraints to recommending new bicycle facilities in Manhattan Beach. These are shown at right and are referenced by the numbers in **Appendix I**. **Appendix I** also presents opportunities and constraints in the South Bay region as a whole.

One opportunity includes a proposed Class II on Aviation Boulevard in Redondo Beach and Manhattan Beach. This major thoroughfare provides significant connectivity between residences and major employment centers and thus a bicycle facility on Aviation Boulevard will encourage increased bike commuting to these destinations. See Vitality City's Livability Plan for further detail. Another opportunity is a proposed Class III bikeway on Valley Drive/Ardmore Avenue in Manhattan Beach: While this plan recommends a Class III route, the Vitality City Livability Plan recommends additional options. See the Vitality City Livability Plan for further detail and opportunities.

A constraint is the stairs on the Strand between Hermosa Beach and Manhattan Beach. This constraint is also noted as being outside this plan's jurisdiction because those stairs (along with the

Figure 7-3: Proposed Bicycle Facilities in Manhattan Beach

South Bay Bicycle Master Plan
El Segundo - Gardena - Hermosa Beach - Lawndale - Manhattan Beach - Redondo Beach - Torrance

rest of the Strand with the exception of Hermosa Beach) are operated by the State and maintained by the County of Los Angeles. However, this plan urges the cities to remedy the disruption caused by the stairs. This remedy could come in several forms ranging from a bike-friendly ramp that connects the two sections of the Strand to signage that warns cyclists of the disruption and safely guides them to facilities along Hermosa Avenue.

7.4.2 Proposed End-of-Trip Bicycle Facilities

The flat top bicycle rack shown above is an example of a recommended rack type. See Appendix JJ for additional recommended bicycle rack types.

Support facilities and connections to other modes of transportation are essential components of a bicycle system because they enhance safety and convenience for bicyclists at the end of every trip. With nearly all utilitarian and many recreational bike trips, bicyclists need secure and well-located bicycle parking. A comprehensive bicycle parking strategy is one of the most important things that a jurisdiction can apply to immediately enhance the bicycling environment. Moreover, a bicycle parking strategy with connections to public transit will further the geographical range of residents traveling without using an automobile.

The Manhattan Beach Municipal Code currently provides bicycle parking requirements based on percent of vehicle parking at specific land uses, as well as bicycle parking design requirements. The City should consider amending its Municipal Code to include bicycle parking requirements at new and retrofitted multi-family residential, office, and mixed-use developments of all sizes. The Municipal Code should also consider requiring bicycle parking quantities based on square footage of developments or by number of employees/residents to adequately address the bicycle demand at each development.

Manhattan Beach should also consider amending its Municipal Code to include more specific requirements on types of both short- and long-term bicycle parking facility designs, which are shown in **Appendix J**. Bicycle rack designs should be considered that provide two points of contact with the bicycle so that it can be locked from both the front wheel/frame and the rear wheel. This will provide a high degree of security and support for the bicycle. Long-term bicycle parking should be in the form of:

- Covered, lockable enclosures with permanently anchored racks for bicycles
- Lockable bicycle rooms with permanently anchored racks or
- Lockable, permanently anchored bicycle lockers

When people commute by bicycle they often sweat or become dirty from weather or road conditions. Providing changing and storing facilities encourages commuters to travel by bicycle because they have a place to clean up before work or school. Manhattan Beach's Municipal Code should require all new mid-to-large employers, offices, and businesses to supply changing and storing facilities, such as by providing showers and clothes lockers within the buildings or arranging agreements with nearby recreation centers to allow commuters to use their facilities.

Proposed end-of-trip bicycle facilities in Manhattan Beach are shown in **Figure 7-3.** The City should continue to provide short-term bicycle parking in the form of bicycle racks at all major trip attractors, including commercial and civic activity centers and transit hubs, and ensure that an adequate supply is available. The City should prioritize the installation of bicycle parking throughout the city, with particular attention directed at the following locations:

- Parks
- Schools
- Commercial/office areas
- Civic/government buildings
- Public transit stations
- Downtown Manhattan Beach
- The Beach at the Pacific Ocean

High-activity locations such as transit stations, offices, and major commercial districts could consider providing more secure, long-term bicycle parking options, such as bicycle lockers. Any future transit hubs and intermodal facilities could include secure bicycle parking areas as part of their design. Secure bicycle parking areas that provide services, such as bicycle rentals and repair, could be considered at major transit stations and commuter destinations.

High-activity locations such as transit stations, offices, and major commercial districts could consider providing more secure, long-term bicycle parking options.

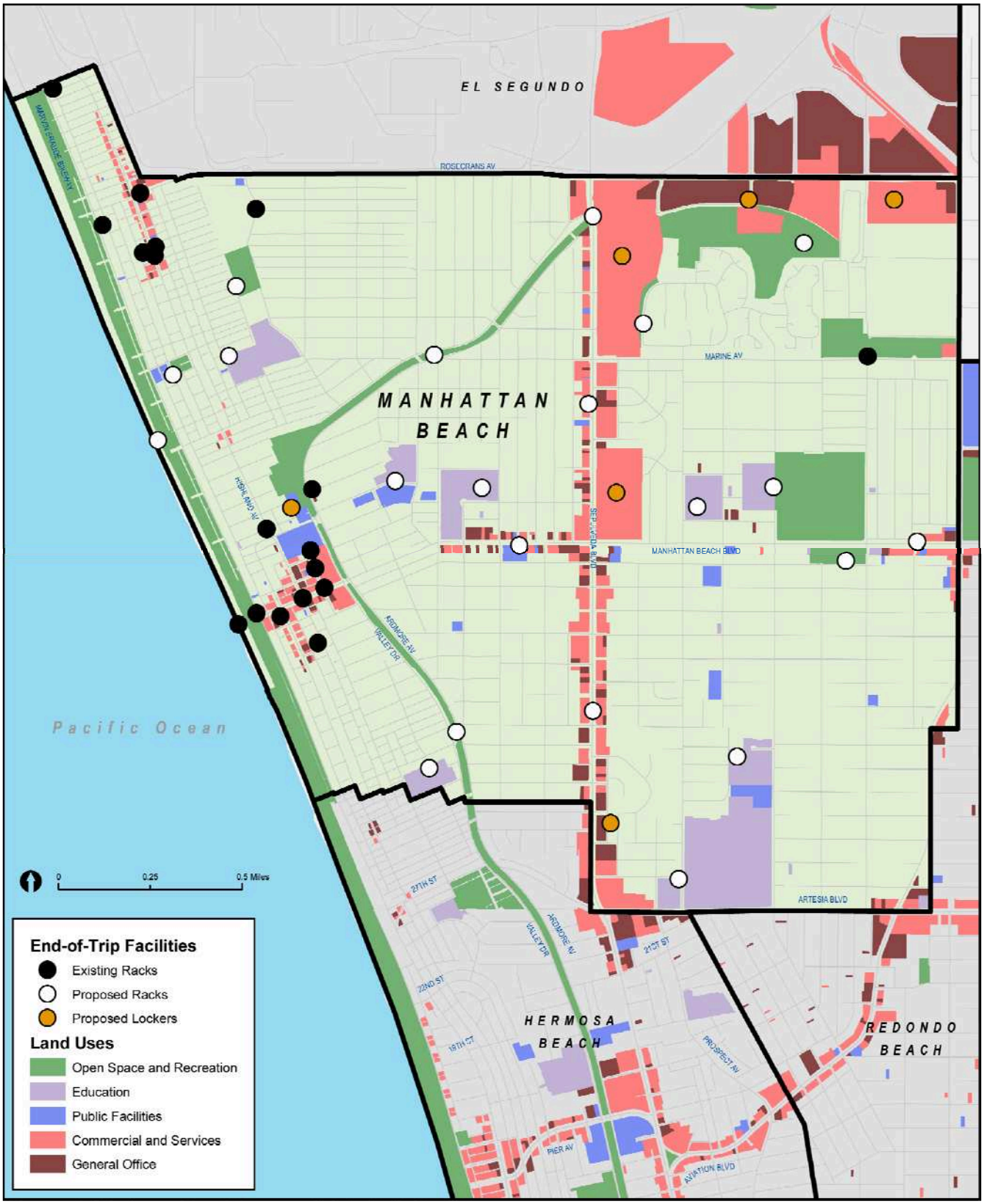


Figure 7-4: Manhattan Beach Proposed End-of-Trip Facilities

7.5 Project Costs

This section presents the cost to implement the proposed bicycle network in Manhattan Beach.

7.5.1 Cost Estimates

displays the planning-level capital cost assumptions for each facility type proposed in this plan, and **Table 7-14** displays the cost to implement the proposed network in the City of Manhattan Beach from the cost assumptions.[22] Cost assumptions are based on LA County averages and may vary depending on environmental conditions of a given facility, unforeseen construction cost variations, and similar considerations. Cost assumptions exclude specific treatments that may vary by location and must be determined by field review, such as traffic calming measures, restriping of existing travel lanes, and sign removal. Cost assumptions do not include traffic signal improvements, such as changes to phasing, recalibration of loop detectors, or installation of push buttons. For detailed cost estimations, refer to the project sheets presented in **Section 7.7**.

Table 7-13: Unit Cost Estimates for Proposed Bicycle Facility Types

Facility Type	Description	Estimated Cost[23]
Class I Bicycle Path	Paving, striping and signage	$800,000 / mile
Class II Bicycle Lanes (two sides)	Striping, signage, and travel lane restriping	$40,000 / mile
Class III Bicycle Routes (two sides)	Signage	$15,000 / mile
Class III Bicycle Routes (two sides) with sharrows	Pavement markings and signage	$25,000 / mile
Bicycle Friendly Street	Pavement markings, signage, and limited traffic calming	$30,000 / mile

[22] **Table 7-14** assumes the cost of implementing Class III Bicycle Routes with Sharrows based on the policies presented in **Chapter 2**

[23] Cost estimates include physical removals and installations (e.g. of signs and striping), contract contingency costs, preliminary engineering, and construction engineering. The source for the unit costs is the LA County Bicycle Master Plan, which are based upon a peer review of Southern California bikeway construction unit costs.

Table 7-14: Estimated Cost of Proposed Bicycle Network

Facility Type	Unit Cost per mile	Length of Proposed Network (miles)	Cost
Bicycle Path	$800,000	0.2	$ 192,000
Bicycle Lane	$40,000	7.0	$ 280,000
Bicycle Route with sharrows	$25,000	7.1	$ 179,000
Bicycle-Friendly Street	$30,000	16.7	$ 502,000
Total		**31.0**	**$ 1,153,000**

7.6 Project Prioritization

A prioritized list of bicycle projects will help guide the City of Manhattan Beach in implementing the proposed bicycle facilities presented in this Plan. Each proposed facility discussed in **Section 7.4.1** is grouped into projects based on feasibility of implementation. **Table 7-15** presents the prioritized projects based on the prioritization methodology displayed in **Appendix K**. Each criterion contains information about a facility and its ability to address an existing or future need in Manhattan Beach. The projects ranked the highest should be implemented first.

Table 7-15: Manhattan Beach Prioritized Bicycle Projects

Facility Type*	Facility Name	From	To	Gap Closure	Connectivity: Existing	Connectivity: Regional	Connectivity: Activity Centers	Connectivity: Multi-Modal	Safety	Public Input	Underserved Communities	Project Cost	Parking Displacement	Total
BR	Valley Dr	15th St	South City Limits	3	6	0	4	0	1	2	1	2	2	**21**
BFS	Marine Ave	The Strand	Blanch Rd	3	6	0	4	0	1	2	0	2	2	**20**
BFS	Marine Ave	Ardmore Avenue	Sepulveda Blvd	3	6	0	4	0	0	2	0	2	2	**19**
BL	Manhattan Beach Blvd	Ardmore Avenue	Aviation Blvd	3	6	0	4	0	2	2	1	0	1	**19**
BL	Rosecrans Ave	Highland Ave	Aviation Blvd	3	6	0	4	0	1	2	1	0	1	**18**
BFS	1st St	Manhattan Avenue	John St	3	6	0	4	0	0	0	1	2	2	**18**
BR	45th St	The Strand	Crest Dr	3	6	0	4	0	0	0	0	2	2	**17**
BR	15th St	Ocean Dr	Valley Dr	3	6	0	4	0	0	0	0	2	2	**17**
BFS	Pacific Ave - 5th St	Rosecrans Ave	Ardmore Ave	0	6	0	4	0	1	1	1	1	2	**16**
BR	Highland Av	45th St	33rd St	0	3	0	2	0	2	2	1	1	2	**13**
BFS	Ocean Dr	45th St	1st St	0	3	0	2	0	1	1	1	1	2	**11**
BFS	Oak Ave	Ardmore Ave	Manhattan Beach Blvd	0	0	0	4	0	0	2	0	2	2	**10**

Facility Type*	Facility Name	From	To	Gap Closure	Connectivity: Existing	Connectivity: Regional	Connectivity: Activity Centers	Connectivity: Multi-Modal	Safety	Public Input	Underserved Communities	Project Cost	Parking Displacement	Total
BR	Ardmore Ave	Rosecrans Ave	South City Limits	0	0	0	4	0	0	2	1	1	2	**10**
BR	Manhattan Ave	15th St	1st St	0	3	0	0	0	2	2	1	2	0	**10**
BR	Manhattan Beach Blvd	Ocean Dr	Valley Dr	0	3	0	0	0	2	2	1	2	0	**10**
BFS	8th St	Ardmore Ave	Aviation Blvd	0	0	0	4	0	1	1	0	1	2	**9**
BFS	Ardmore Ave	John St	Redondo Ave	0	0	0	2	2	0	1	1	1	2	**9**
BFS	Meadows Ave - Tennyson St - Prospect Ave	Marine Ave	Artesia Blvd	0	3	0	0	0	1	1	1	1	2	**9**
BFS	Voorhees Ave	Peck Ave	Aviation Blvd	0	3	0	0	0	1	1	0	2	2	**9**
BR	Rosecrans Ave	The Strand	Highland Ave	0	3	0	0	0	2	2	0	2	0	**9**
BFS	2nd St	John St	East City Limits	0	0	0	4	0	1	0	0	1	2	**8**
BR - BP - BR	Redondo Ave	Rosecrans Ave	Marine Ave	0	0	0	4	4	0	0	0	0	0	**8**
BL	Marine Ave	Sepulveda Blvd	Aviation Blvd	3	0	0	0	0	0	2	1	1	1	**8**

Facility Type*	Facility Name	From	To	Gap Closure	Connectivity: Existing	Connectivity: Regional	Connectivity: Activity Centers	Connectivity: Multi-Modal	Safety	Public Input	Underserved Communities	Project Cost	Parking Displacement	Total
BFS	Mathews Ave	Peck Ave	Aviation Way	0	3	0	0	0	0	1	0	2	2	**8**
BFS	Harkness St	Marine Ave	2nd St	0	3	0	0	0	0	1	0	2	2	**8**
BFS	11th St	Ardmore Ave	Aviation Blvd	0	3	0	0	0	1	0	0	1	2	**7**
BFS	Peck Ave	Manhattan Beach Blvd	Artesia Blvd	0	3	0	0	0	1	0	0	1	2	**7**
BR	38th Pl	Highland Ave	Crest Dr	0	3	0	0	0	0	0	1	2	0	**6**
BFS - BP - BFS	Bell Ave - Blanch Rd	Rosecrans Ave	Valley Dr	3	0	0	2	0	0	0	0	0	0	**5**
BL	Aviation Blvd	Rosecrans Ave	South City Limits	0	0	0	0	0	2	2	1	0	0	**5**

*BP=Bike Path, BL=Bike Lane, BR=Bike Route, BFS=Bike Friendly Street

7.7 Project Sheets

The City of Manhattan Beach selected two of its top priority projects from the previous table for more detailed concept designs. Project sheets are shown on the following pages and include:

- A review of the existing site conditions
- Site challenges
- Recommended improvements
- Estimated cost
- Photos
- Aerial images
- Concept graphics

Manhattan Beach Project #1: Manhattan Beach Boulevard (Aviation Boulevard to the Strand)

Project Site

Manhattan Beach Boulevard is an east-west corridor located in the center of the City of Manhattan Beach. It connects to Redondo Beach to the east and to the Marvin Braude Bikeway (The Strand) and beach to the west. Manhattan Beach Boulevard provides access to Polliwog Park, Manhattan Heights Park, Manhattan Beach Middle School, Meadows Elementary School, Pacific Elementary School, American Martyrs School, residential/commercial uses, and Downtown Manhattan Beach. There is existing on-street parking along most of the street that is highly utilized in certain segments, including Downtown Manhattan Beach and Polliwog Park.

Between Aviation Boulevard and Sepulveda Boulevard, Manhattan Beach Boulevard two travel lanes in each direction and center medians. The roadway width is approximately 32 feet on each side of the median with on-street parallel parking, with exception to a short segment east of Sepulveda Boulevard where the width drops to 25 feet on the north side of the road and no on-street parking is present. From Sepulveda Boulevard to Dianthus Street, Manhattan Beach Boulevard has two travel lanes in each direction and is approximately 27 feet wide on each side of center medians with parallel on-street parking. From Dianthus Street to Pacific Avenue, Manhattan Beach Boulevard has two travel lanes in each direction and the roadway width is approximately 59 feet with parallel on-street parking. The posted speed limit between Aviation Boulevard and Pacific Avenue is 35 mph. Between Pacific Avenue and Valley Drive/Ardmore Avenue, the street has one westbound travel lane and two eastbound travel lanes. This segment of Manhattan Beach Boulevard is approximately 48 to 50 feet wide with parallel on-street parking. The posted speed limit is 30 mph. West of Valley Drive, the roadway widens to approximately 58 to 60 feet wide, has one travel lane in each direction, left turn pockets, and a mix of angled and parallel on-street parking. The posted speed limit is 25 mph.

Project Challenges

Manhattan Beach Boulevard has no existing bicycle facilities, thus bicyclists must share the road with relatively high volumes of vehicles, especially east of Pacific Avenue. Rolling hills can create potential conflicts between bicyclists and motorists due to the speed differential on inclines. On-street parking along Manhattan Beach Boulevard reduces the available space for bicycle facilities.

Proposed Improvements

- Stripe 1.8 miles of Class II Bike Lanes and signs
- Install 0.3 miles of Class III Bike Route signs
- Add bicycle detection and pavement markings at all signalized intersections
- Remove approximately 69 spaces of on-street parking between Sepulveda Boulevard and Pacific Avenue
- Remove one eastbound travel lane between Pacific Avenue and Ardmore Avenue
- Convert angled parking to head out angled parking west of Valley Drive
- Install intersection crossing treatment at Valley Dr/Ardmore Ave

Estimated Cost

$110,000

Photos

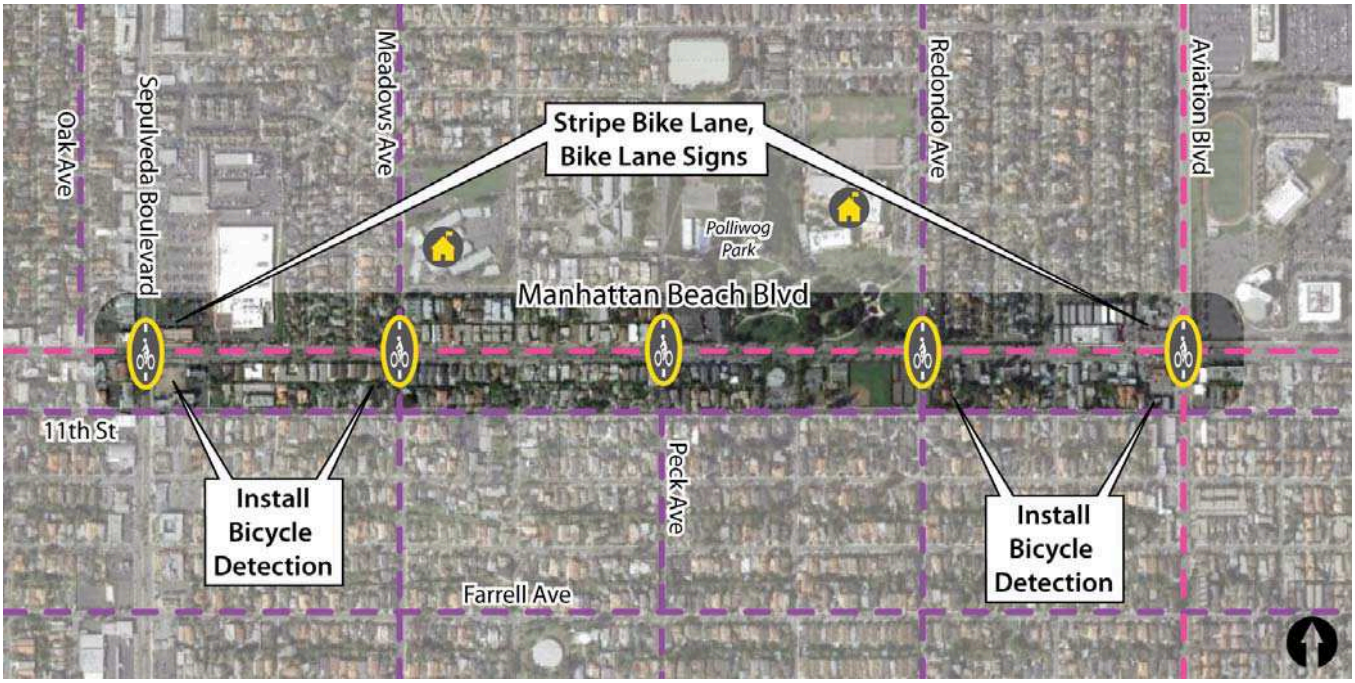
Looking west on Manhattan Beach Boulevard. Bike lanes will provide children riding to school a safer commute.

Removing the additional westbound travel lane west of Pacific Avenue will allow for bicycle lanes without parking removal.

Removing on-street parking spaces to install bicycle lanes will provide a safe and convenient bicycling environment.

Aerial Map and Concept Graphics: Manhattan Beach Boulevard

Manhattan Beach Boulevard (Aviation Boulevard to Sepulveda Boulevard)



Manhattan Beach Boulevard (Sepulveda Boulevard to the Strand)

Aerial Map and Concept Graphics: Manhattan Beach Boulevard

Head Out Angled Parking and Intersection Crossing Markings

Bicycle Loop Detector

Manhattan Beach Project #2: Redondo Avenue (Artesia Boulevard to Marine Avenue)

Project Site

Redondo Avenue is a north-south residential street located in the eastern portion of the City of Manhattan Beach with rolling hills. Redondo Avenue provides access to Marine Avenue Park, Marine Sports Complex, Manhattan Heights Park, Manhattan Beach Middle School, and Polliwog Park. North of 11th Street there is existing on-street parallel parking along both sides of Redondo Avenue. South of 11th Street there is on-street parallel parking on the northbound side only. Though private property, a connection between Marine Avenue and Rosecrans Avenue could be pursued in the future to provide a continuous route on Redondo Avenue from Redondo Beach to El Segundo (Douglas Street).

Redondo Avenue has one travel lane in each direction and a striped center line. The posted speed limit is 25 mph. There are existing striped crosswalks at signalized intersections and around Manhattan Beach Middle School.

Project Challenges

Redondo Avenue has no existing bicycle facilities, which creates potential conflicts between bicyclists and motorists. Children commuting to school and others accessing the parks by bicycle must share the road with vehicles without any treatments alerting motorists of their presence. Rolling hills create a speed differential between bicyclists and vehicular traffic and can also create conflicts.

Proposed Improvements

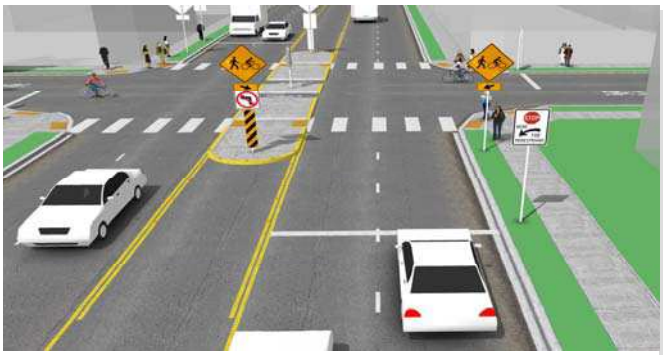
- Install signage and stripe pavement markings, such as sharrows or bike friendly street stencils
- Add bicycle detection and pavement markings at all signalized intersections
- Construct a median refuge island at the intersection of Redondo Avenue and Artesia Boulevard
- Construct bulbouts with high visibility crosswalks
- Install speed feedback signs located on the steep grade between Mathews Avenue and Artesia Boulevard

Estimated Cost

$1,750,000

Photos and Concepts

Looking south on Redondo Avenue. Pavement markings and signage will alert drivers of the presence of bicyclists



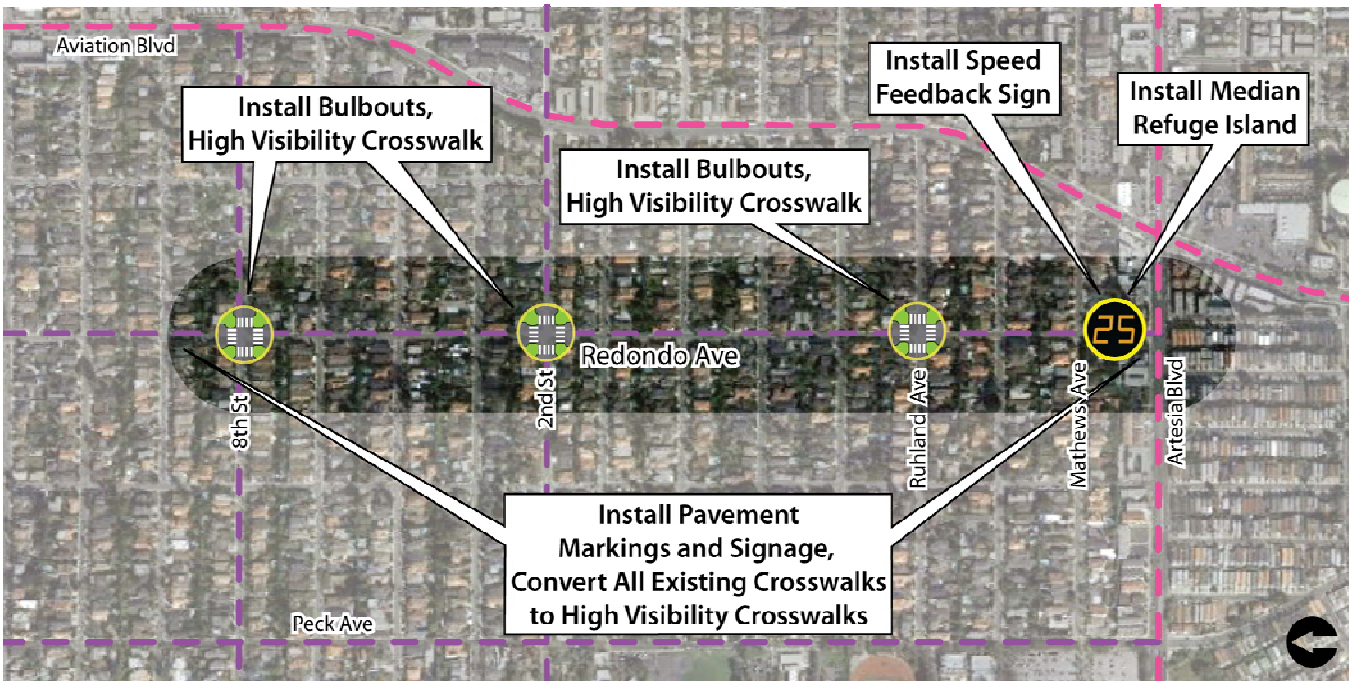
Median refuge islands provide bicyclists a protected space to wait for gaps in traffic. (Source: NACTO.org)

Bicycle detectors at intersections will allow bicycles to trigger the signal when no vehicles are present.

Aerial Map and Concept Graphics: Redondo Avenue

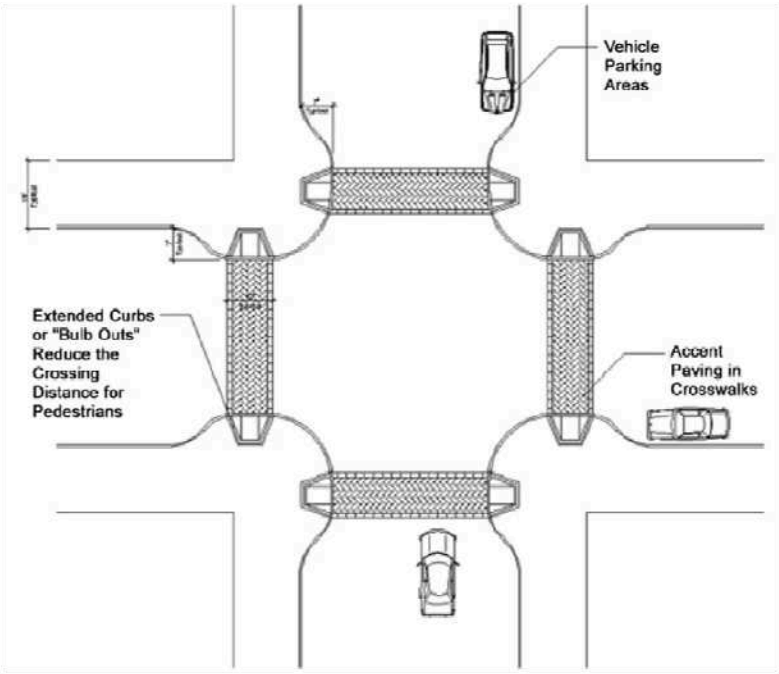
Redondo Avenue (Marine Ave to 8th Street)

8th Street to Artesia Blvd



Aerial Map and Concept Graphics: Redondo Avenue

Bulbouts and High Visibility Crosswalk



Speed Feedback Sign and Median Refuge Island