

Chapter 1

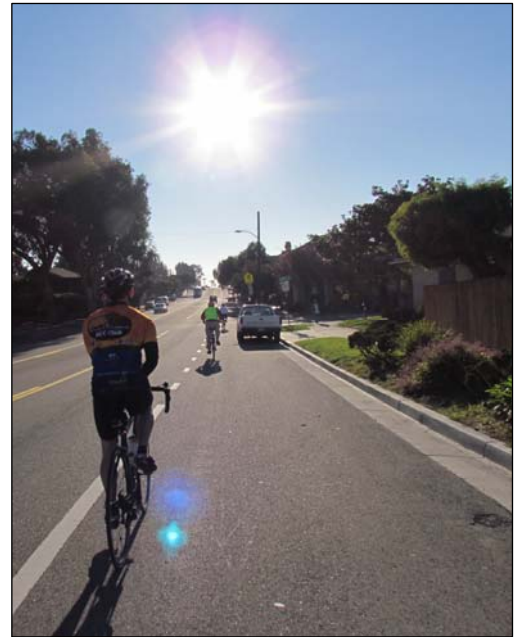
Introduction

1 Introduction

The South Bay Bicycle Master Plan is intended to guide the development and maintenance of a comprehensive bicycle network and set of programs throughout the cities of El Segundo, Gardena, Hermosa Beach, Lawndale, Manhattan Beach, Redondo Beach, and Torrance for the next 20 years. This chapter introduces the seven participating South Bay cities and the South Bay region as a whole. It also presents the reasons for creating the South Bay Bicycle Master Plan, how the community has been involved in the planning process, and the framework for the ensuing chapters.

1.1 Setting

The South Bay region is located in southwest Los Angeles County and includes the cities along and inland of southern Santa Monica Bay. This bicycle master plan focuses specifically on seven cities within the South Bay region that have agreed to participate in this planning effort. Together, these cities comprise approximately 45 square miles of land area and have a combined population of over 350,000. The seven participating cities vary in size, population, socioeconomic factors, and climate, as well as in existing levels of bicycle infrastructure and bicycle usage. Figure 1-1 displays the South Bay master plan cities within the Los Angeles region, and Table 1-1 shows the population statistics for each city as compared to the project area as a whole.



Bicyclists in the South Bay.

Photo Source: Kelly Morphy/WALC Institute for Vitality City

Table 1-1: Population of the South Bay Bicycle Master Plan Cities

Location	Population	Percent Project Area Population
El Segundo	15,970	4.4%
Gardena	57,818	16.0%
Hermosa Beach	18,442	5.1%
Lawndale	31,729	8.8%
Manhattan Beach	34,039	9.5%
Redondo Beach	63,261	17.6%
Torrance	137,933	38.4%
TOTAL	359,192	100%

Source: U.S. Census 2000

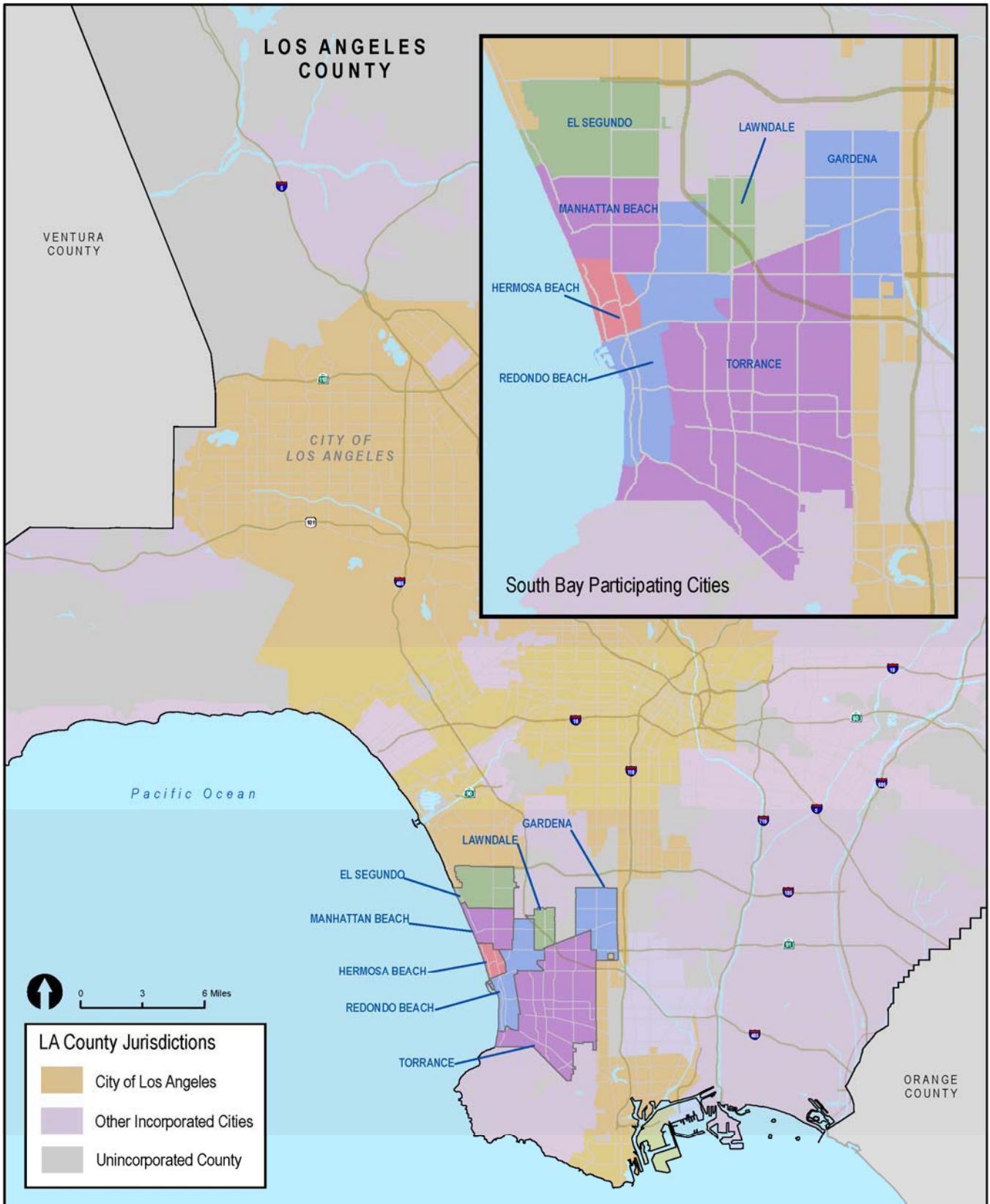


Figure 1-1: Location of South Bay Bicycle Master Plan Communities within Region

Los Angeles County Bicycle Master Plan

Source: Los Angeles County (2010)
Date: 11/2/2010

The South Bay currently faces several barriers to bicycling. This region is an area dominated by the automobile. Many streets carry high volumes of vehicles traveling at fast speeds (see Appendix A-1) creating challenging road conditions for bicyclists. Roads with fewer motorized vehicles are often residential streets that do not connect or end in cul-de-sacs, forcing bicyclists to travel far out of their way to reach their destinations. There is also a lack of regional bicycle connectivity between South Bay cities illustrated by bicycle facilities dropping at city boundaries, such as the bicycle lanes on Sepulveda Boulevard in Torrance stopping once the street enters Redondo Beach (see Appendix A-2).

1.2 Purpose of the Bicycle Master Plan

The South Bay Bicycle Master Plan provides a broad vision, as well as strategies and actions, to improve conditions for bicycling throughout the seven participating South Bay cities and address the barriers to bicycling discussed above. As a means of bettering the bicycling environment, this Plan provides direction for expanding the existing bikeway network, connecting gaps in and between the participating cities, and ensuring greater local and regional connectivity. The South Bay Bicycle Master Plan recommends a network in which bicyclists will be able to pass through the participating cities to reach their destinations without losing bicycle facilities at city boundaries, which will also allow residents of adjacent cities to benefit from the bicycle system. In addition to providing recommendations for bikeways and support facilities, the Plan offers recommendations for education, encouragement, enforcement, and evaluation programs.

In its recommendations, the South Bay Bicycle Master Plan includes facilities and programs that will encourage people of all ages and levels of ability to bike more frequently. Supported by data collected nationally since 2006, planners developed categories to address Americans' 'varying attitudes' towards bicycling, which are shown in Figure 1-2. As illustrated, less than one percent of Americans comprise a group of bicyclists who are 'Strong and Fearless'. These bicyclists typically ride anywhere on any roadway regardless of roadway conditions, weather, or the availability of bicycle facilities. The strong and fearless bicyclists can ride faster than other user types, prefer direct routes, and will typically choose roadway connections – even if shared with vehicles – over separate bicycle facilities such as bicycle paths. This category of bicyclists will be less affected by this Plan than the following groups.

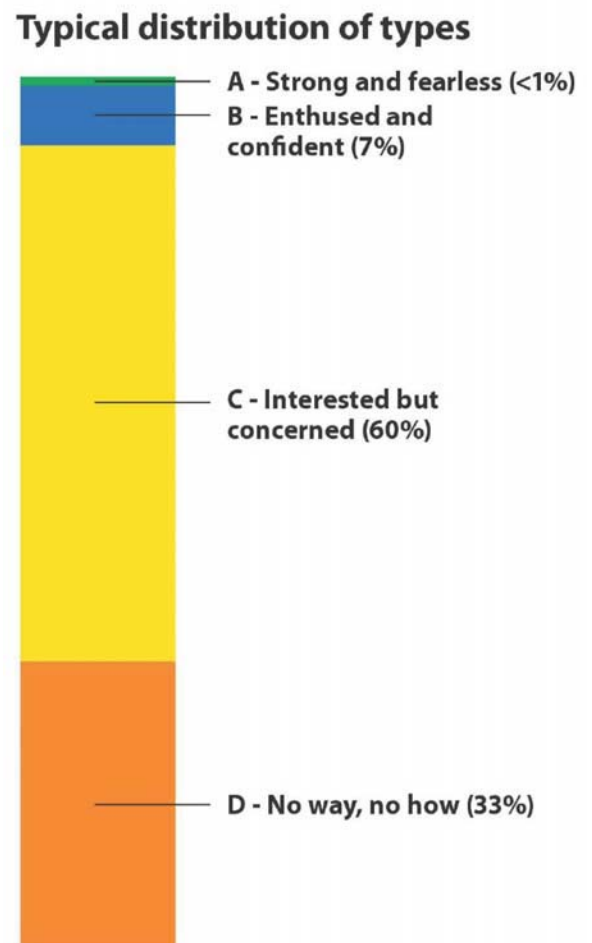


Figure 1-2: Typical Distribution of Bicyclists in the United States



Replacing vehicular trips with bicycle trips reduces human-generated greenhouse gases that are associated with climate change.

Approximately seven percent of Americans fall under the category of ‘**Enthusied & Confident**’ bicyclists who are confident and mostly comfortable riding on all types of bicycle facilities, but will usually prefer low traffic streets or multi-use pathways when available. These bicyclists may deviate from a more direct route in favor of a preferred facility type. This group includes all kinds of bicyclists including commuters, recreationalists, racers, and utilitarian bicyclists. The South Bay Bicycle Master Plan will provide this group of bicyclists more bicycle facility options, which should create a more comfortable bicycling environment for them.

The remainder of the American population does not currently ride a bicycle regularly, in large part due to perceived safety risks from riding with traffic. This Plan will affect the following two groups the most as it will provide for the facilities and programs that should encourage them to ride or ride more often. Approximately 60 percent of the population can be categorized as ‘**Interested but Concerned**’ and represents bicyclists who typically only ride a bicycle on low traffic streets or bicycle paths under favorable conditions and weather. These bicyclists may ride more regularly with encouragement, education, experience, and the availability of bicycle infrastructure.

Approximately 33 percent of Americans are not bicyclists. They are referred to in the diagram as ‘**No Way, No How.**’ Some people in this group may eventually consider bicycling and may progress to one of the user types above. A significant portion of these people will never ride a bicycle under any circumstances.

According to results from the South Bay bicycling survey administered in December of 2010 (see **Section 1.5**) 53 percent of respondents indicated that they are confident bicyclists and ride regardless of the availability of bicycle facilities. However, it is important to note that survey respondents were a self-selected group and are not necessarily representative of the entire South Bay region.

This Plan aims to shift people into higher categories, especially those in the “Interested but concerned” category into the “Enthusied and confident” category, by improving the bicycling conditions in the South Bay participating cities. In addition, the Plan targets improvements for recreational and sport bicyclists as there is a large and growing group of them in the South Bay.

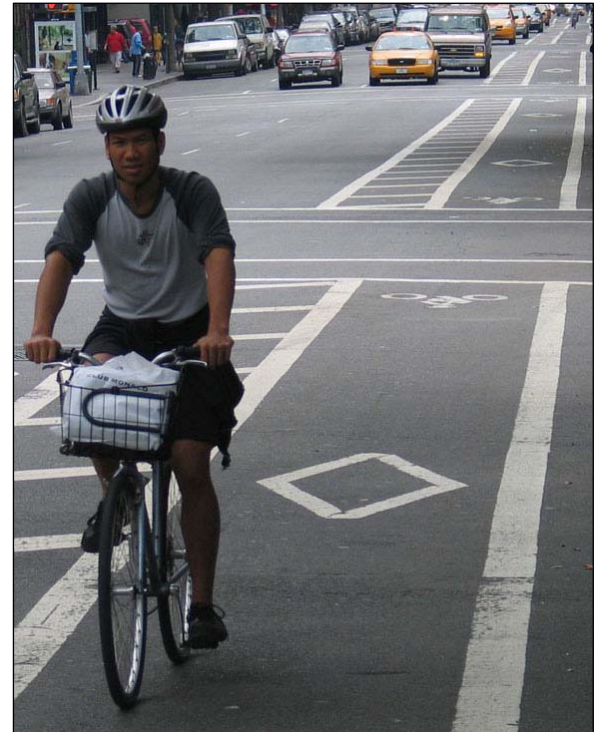
The South Bay Bicycle Master Plan should increase the numbers of new bicyclists and bicycle trips in the region by providing a safer

bicycling environment. The availability of bicycle infrastructure has been found to reduce bicycle collision rates and the frequency of injury collisions. In a 2009 study published in *Environmental Health*, Reynolds et al investigated transportation infrastructure that reduced injuries and crashes of bicyclists. The study found that on-street bicycle facilities that separated vehicles and bicyclists, mainly bicycle lanes, reduced the number of collisions between bicyclists and motorists. Pavement markings, such as intersection crossing markings, and marked bicycle routes also minimized crashes as they alerted motorists to the presence of bicyclists. Certain roadway characteristics, including wide streets and lack of lighting, increased the severity of injury collisions.¹

The City of New York recently added a significant amount of new bicycle infrastructure and has seen a steady increase in ridership, as well. Along with more bicycle facilities and bicyclists, annual casualties from bicycle collisions have also decreased. **Appendix B** presents the City's detailed data.

1.3 Bicycle Facility Types

The South Bay Bicycle Master Plan recommends four broad categories of bicycle facilities. The first three, Class I, II, and III, are defined by the State of California in the California Streets and Highways Code Section 890.4. The fourth category, bicycle-friendly streets, has emerged recently as a distinct facility type. Although bicycle-friendly streets are not yet codified by the State of California, they have been implemented with success in cities such as Berkeley, CA and Long Beach, CA. **Figure 1-3** and **Figure 1-4** illustrate recommended cross-sections for the four types of bicycle facilities, which are discussed in the following sections. Minimum standards are presented in **Appendix C**.

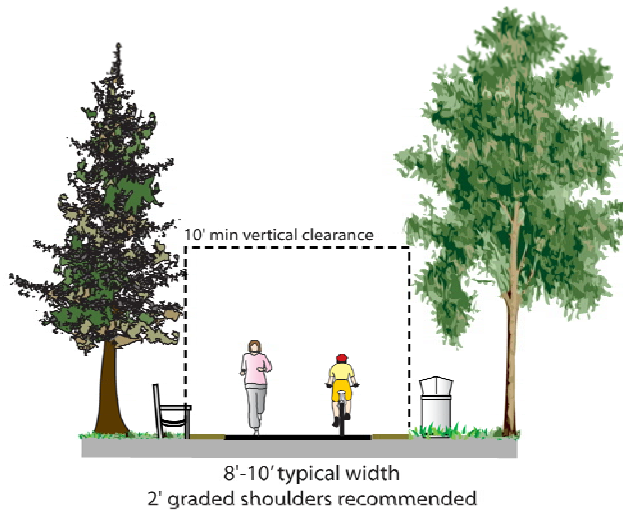


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¹Reynolds, C., Harris, M.A., Teschke, K., Cripton, P.A., Winters, M. (2009). The impact of transportation infrastructure on bicycling injuries and crashes: a review of the literature. *Environmental Health* 8, 47.

Class I Bike Paths

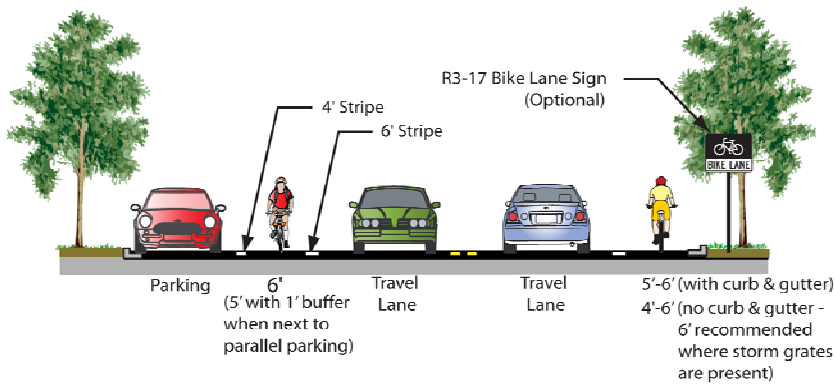
Provide completely separated right-of-way for exclusive use by bicycles and pedestrians with cross-flow minimized.



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

Figure 1-3: Bicycle Path and Bicycle Lane Recommended Standards

South Bay Bicycle Master Plan

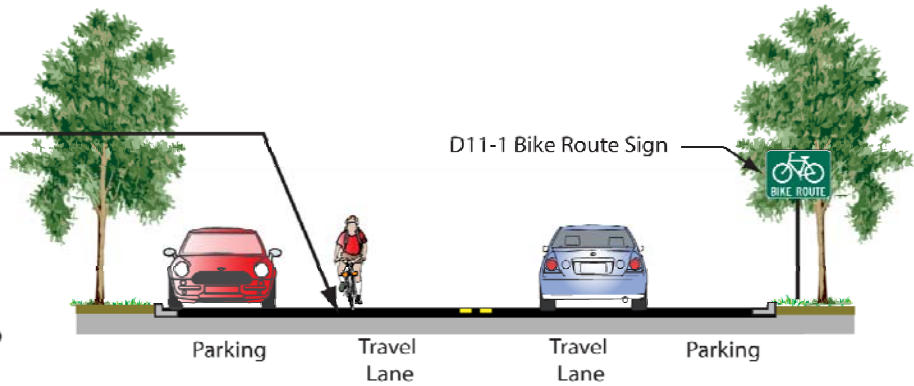
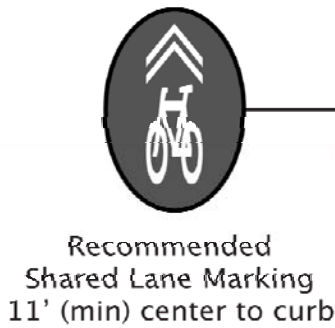
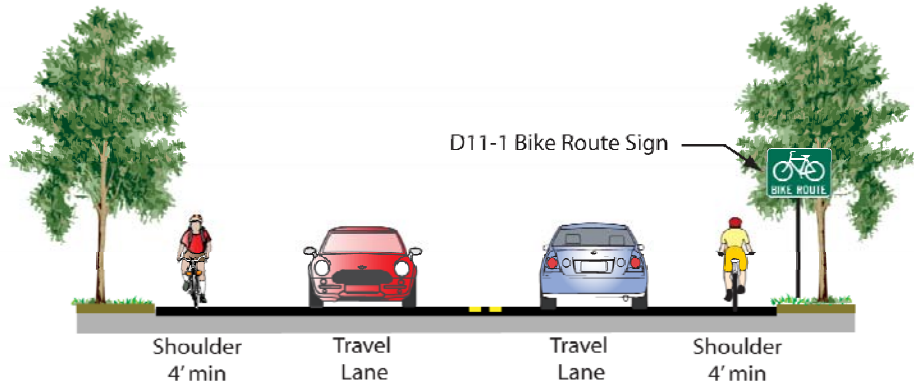
El Segundo - Gardena - Hermosa Beach - Lawndale - Manhattan Beach - Torrance

Class III Bike Routes

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



D11-1
Bike Route sign



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

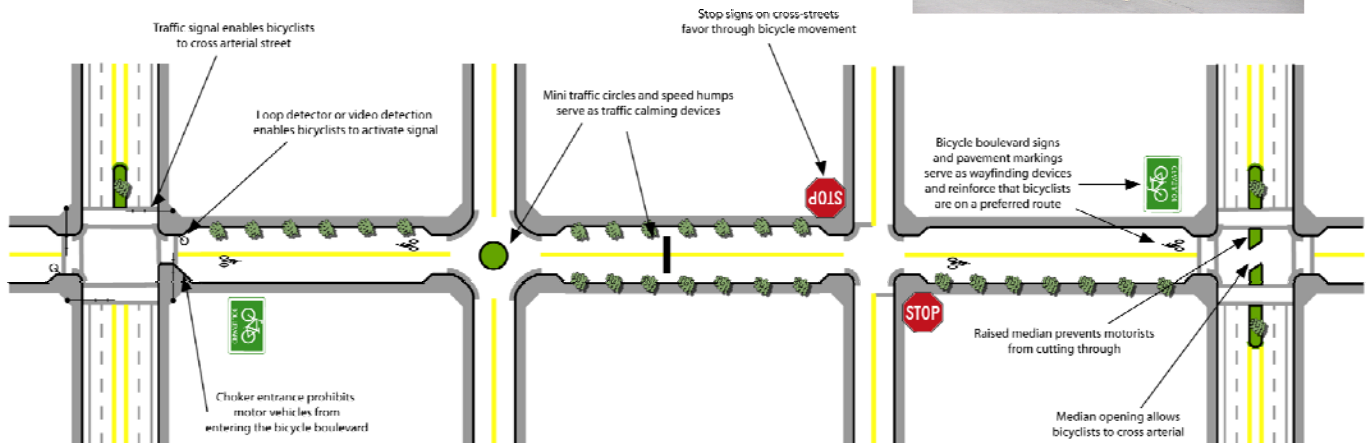


Figure 1-4: Bicycle Route and Bicycle Friendly Street Recommended Standards



Class I Bike Paths are paved rights-of-way for exclusive use by bicyclists, pedestrians, and those using non-motorized modes of transportation.

1.3.1 Class I Bike Paths

Class I Bike Paths are paved right-of-way for exclusive use by bicyclists, pedestrians, and those using non-motorized modes of transportation. Class I facilities can be constructed in roadway right-of-way or can have exclusive right-of-way off-street, such as in utility corridors. Bike Paths are beneficial to a bicycle network because they provide an alternative for bicyclists that do not feel comfortable riding with automobile traffic. When shared with pedestrians or other non-motorized modes, Class I bike paths are generally slower moving than other facility types. While they can be used by commuters to safely get to and from work, they are generally most popular with recreational cyclists, as illustrated by The Strand in the beach cities.

1.3.2 Class II Bike Lanes

Class II Bike Lanes are striped and signed on-street travel lanes exclusively for bicycles. Bike lanes provide physical separation from automobile traffic and appeal to bicyclists with moderate to high levels of experience. Because they often provide the most direct connections, these facilities tend to be most popular with experienced bicycle commuters.

1.3.3 Class III Bike Routes

Class III Bike Routes share the right-of-way between vehicles and bicyclists with signage and optional shared lane markings to indicate that the road is a shared use facility. Class III facilities are typically recommended for:

- Streets with relatively low traffic speeds (25 mph or less) and lower volumes (<3,000 ADT) such that less experienced bicyclists will feel comfortable bicycling with mixed traffic
- Streets with traffic speeds in excess of 25 mph and volumes greater than 3,000 ADT that normally warrant bike lanes but because of curb-to-curb or other ROW constraints, bicyclists must share traffic lanes with motorists; careful consideration must be given to designating these streets as shared roadways to ensure that roadway conditions are safe for bicyclists

1.3.4 Bike Friendly Streets

Bike friendly streets are local roads that have been enhanced with treatments that prioritize children, pedestrians, neighborhood traffic, and bicycles, and discourage cut-through traffic. Bike friendly streets include a wide range of treatment options, and thus the cost of implementation varies dramatically, as well. The list below includes example treatments of bike friendly streets:

- Wayfinding signage
- Pavement markings
- Traffic calming (bulb-outs, traffic diverters, chicanes, speed humps)
- High visibility pedestrian crosswalks
- Bicycle detectors at intersections
- Bicycle crossing signals



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1.4 Benefits of Bicycling

Planning to create a more bicycle friendly region contributes to resolving several complex and interrelated issues, including traffic congestion, air quality, climate change, public health, and livability. By guiding the seven participating cities toward bicycle friendly development, this plan can affect all of these issue areas, which collectively can have a profound influence on the existing and future quality of life in the South Bay.

1.4.1 Environmental/Climate Change Benefits

Replacing vehicular trips with bicycle trips has a measurable impact on reducing human-generated greenhouse gases (GHGs) in the atmosphere that contribute to climate change.² Fewer vehicle trips and vehicle miles traveled (VMT) translates into reduced fuel consumption and subsequently fewer mobile source pollutants, such as carbon dioxide, nitrogen oxides, and hydrocarbons, being released into the air. Providing transportation options that reduce VMT is an important component of decreasing greenhouse gas emissions and improving air quality.

1.4.2 Public Health Benefits

Public health professionals have become increasingly aware that the impacts of automobiles on public health extend far beyond

² Gotschi, Thomas (2011). Costs and Benefits of Bicycling Investments in Portland, Oregon. *Journal of Physical Activity and Health* (8), S49-S58.

asthma and other respiratory conditions caused by air pollution. There is a much deeper understanding of the connection between the lack of physical activity resulting from auto-oriented community designs and various health-related problems. Although diet and genetic predisposition contribute to these conditions, physical inactivity is now widely understood to play a significant role in the most common chronic diseases in the United States, including heart disease, stroke, and diabetes, and approximately 280,000 adults in the US die prematurely due to obesity-related illnesses every year.³ A study published in the *American Journal of Preventive Medicine* in 2004 by Frank et al reported that for each extra 60 minutes spent in a car there was a six percent increase in the chance of being obese⁴. A survey conducted by Vitality City administered from September 30, 2010 to November 27, 2010 reported that 60 percent of respondents from Hermosa Beach, Redondo Beach, and Manhattan Beach considered themselves overweight or obese; 25 percent have had high cholesterol; and 23 percent have had high blood pressure.⁵ In Los Angeles County as a whole, more than 20 percent of children in 5th, 7th and 9th grades are obese; 58 percent of adults are overweight or obese; and obesity rates continue to rise among adults, school-age children and kids as young as three to four years of age.⁶ 46 percent of the Beach Cities respondents of the Vitality City survey also reported feeling stressed for a significant portion of the day.



In Los Angeles County as a whole, more than 20 percent of children in 5th, 7th, and 9th grades are obese. Creating bicycle-friendly environments is one of several effective ways to encourage active lifestyles.

Creating bicycle-friendly communities is one of several effective ways to encourage active lifestyles, ideally resulting in a higher proportion of residents of the South Bay achieving increased activity levels and lower stress levels. Increased physical activity also has the potential to lower medical expenditures associated with obesity-related illnesses for South Bay residents. In a 2011 study published in the *Journal of Physical Activity and Health*, Thomas Gotschi assessed the reduction in medical costs that Portland will

³ Allison D.B., Fontaine K.R., Manson J.E., Stevens J., VanItallie T.B. Annual deaths attributable to obesity in the United States. *JAMA* 1999(282), 1530-1538.

⁴ Frank L.D., Andresen M.A., Schmid T.L. (2004). Obesity relationships with community design, physical activity, and time spent in cars. *American Journal of Preventive Medicine* 4(11), 11-13.

⁵<http://hermosabeach.patch.com/articles/vitality-city-survey-residents-healthy-but-stressed>

⁶ RENEW-LAC <http://www.choosehealthla.com/eat-healthy/>

experience from its investments in bicycling. He estimated that a half hour of bicycling everyday will reduce medical costs by \$544 per person per year.⁷

1.4.3 Economic Benefits

Bicycling is economically advantageous to individuals and communities. Replacing driving with bicycling reduces a person's expenses on vehicle maintenance, fuel costs, and insurance fees. These savings are accompanied by potential reductions in health care costs by participating in regular exercise and minimizing health complications associated with an inactive lifestyle. On a community scale, bicycle infrastructure projects are generally far less expensive than automobile-related infrastructure. Further, shifting a greater share of daily trips to bike trips reduces the impact on the region's transportation system, thus reducing the need for improvements and expansion projects. Bicycle-friendly neighborhoods have also been found to increase property values. Transit Oriented Developments (TODs), for example, are designed to encourage walking, bicycling, and use of public transit so that residents of these developments can be less dependent on motor vehicles. In a 2011 study published in *Urban Studies*, Michael Duncan reported that people were willing to pay more for condominiums in San Diego, CA located closer to transit stations,⁸ while homes within a half mile of bikeway trail improvements experienced a \$13,000 increase in property values.⁹ Increased bicycling also has the potential to increase sales at local businesses. Bicyclists might have more disposable income from fewer vehicle-related expenditures and as seen in Toronto's Bloor Street, cyclists visit their local shops and spend more than their motorist counterparts.¹⁰



A 2004 study found that homes within a half mile of bikeway trail improvements experienced a \$13,000 increase in property values.

⁷ Gotschi, Thomas (2011). Costs and Benefits of Bicycling Investments in Portland, Oregon. *Journal of Physical Activity and Health* (8), S49-S58.

⁸ Duncan, M. (2011). The impact of transit-oriented development on housing prices in San Diego, CA. *Urban Studies* 48, 101.

⁹ Lindsey G, Man J, Payton S, et al. "Property Values, Recreation Values, and Urban Greenways." *Journal of Park and Recreation Administration*, 22(3): 69-90, 2004.

¹⁰ Sztabinski, F. (2009). Bike Lanes, On-Street Parking and Business. *Clean Air Partnership* 18-20.

1.4.4 Community/Quality of Life Benefits

Fostering conditions where bicycling is accepted and encouraged increases a city's livability from a number of different perspectives that are often difficult to measure, but nevertheless important. The design, land use patterns, and transportation systems that comprise the built environment have a profound impact on quality of life issues. Studies have found that people living in communities with built environments that promote bicycling and walking tend to be more socially active, civically engaged, and are more likely to know their neighbors¹¹; whereas urban sprawl has been correlated with social and mental health problems, including stress.¹² The aesthetic quality of a community improves when visual and noise pollution caused by automobiles is reduced and when green space is reserved for facilities that enable people of all ages to recreate and commute in pleasant settings.

1.4.5 Safety Benefits

Conflicts between bicyclists and motorists result from poor riding and/or driving behavior, as well as insufficient or ineffective facility design. Encouraging development and redevelopment in which bicycle travel is fostered improves the overall safety of the roadway environment for all users. Well-designed bicycle facilities improve security for current bicyclists and also encourage more people to bike. This in turn can further improve bicycling safety. Studies have shown that the frequency of bicycle collisions has an inverse relationship to bicycling rates – more people on bicycles equates to fewer crashes.¹³ Providing information and educational opportunities about safe and lawful interactions between bicyclists and other roadway users also improves safety.

1.5 Public Participation

Community outreach is a critical part of the planning process as it helps to identify the needs of bicyclists in the study area. The public participated in the creation of the South Bay Bicycle Master Plan through an online survey and two community workshops.



The seven participating cities each held two public workshops to collect public input on the South Bay Bicycle Master Plan.

¹¹ Leyden, K. 2003. Social Capital and the Built Environment: The Importance of Walkable Neighborhoods. *American Journal of Public Health* 93: 1546-51.

¹² Frumkin, H. 2002. Urban Sprawl and Public Health. *Public Health Reports* 117: 201-17.

¹³ Jacobsen, P. Safety in Numbers: More Walkers and Bicyclists, Safer Walking and Bicycling. *Injury Prevention*, 9: 205-209. 2003.

To reach a broad cross-section of the public, the South Bay Bicycle Coalition, the Los Angeles County Bicycle Coalition, and the participating cities employed a variety of media and tactics, including:

- Radio advertisements
- Advertisements in newspapers, both print and online
- Advertisements in fitness magazines
- Flyers posted throughout the participating cities, at schools, bike shops, and community centers
- Advertisements on the city cable stations
- An advertisement on the I-405 digital marquee
- Facebook
- Emails
- In-person presentations to a variety of community groups and volunteer organizations
- Press releases
- Door-to-door flyer
- Presentations at various commission meetings
- Website postings on each City's homepage and events calendar
- Communications with Vitality City, an initiative of the Beach Cities Health District

1.5.1 **Bicycling Survey**

With input from seven participating cities, Alta Planning + Design, the South Bay Bicycle Coalition and Los Angeles County Bicycle Coalition staff developed an online survey to determine the participating South Bay cities' general needs and concerns surrounding bicycling. The survey was available online from December 15, 2010 to February 8, 2011. It was distributed to the staff liaisons in each of the participating cities and emailed to all members of the South Bay Bicycle Coalition. As an incentive to complete the survey, respondents were entered to win a \$100 gift certificate to Hermosa Cyclery in Hermosa Beach. A total of 277 people completed the survey. The data collected from respondents describe the bicycling needs, preferences, and behaviors of the South Bay community. Feedback pertaining to desired bicycle and bicycle support facilities is discussed in each City's chapter and a detailed summary of the survey results is presented in **Appendix D**.



LACBC, SBBC, and the participating cities used a variety of media and tactics to reach a broad cross-section of the public.



The first and second round of public workshops for the South Bay Bicycle Master Plan were well attended.

1.5.2 Public Workshops

The seven participating cities each held two public workshops throughout the planning process for the South Bay Bicycle Master Plan. The first round of workshops were conducted as “open house” style at which attendees had the opportunity to view maps displaying the existing bicycling conditions in the region and provide feedback on what they would like to see implemented in the future. The first round of workshops were very well attended and had a considerable impact on the selection of corridors for improvements and on the content of the proposed programs.

The second round of public workshops took place in June through July of 2011. These workshops were also very well attended and workshop attendees provided input on a draft of the South Bay Bicycle Master Plan as well as draft maps of proposed improvements.

1.6 Plan Organization

For the most part, the South Bay Bicycle Master Plan is organized by participating city. This makes it easier for local stakeholders – such as city staff, decision makers, and residents – to find the material that is relevant to them. There are a few region-wide topics that are not organized by city, such as the goals, objectives, and policy actions framework established in **Chapter 2**.

The plan is broken into the following chapters:

- **Chapter 2: Goals, Objectives, and Policy Actions** summarizes existing regional plans and policies that relate to the bicycle planning efforts in the South Bay, as well as region-wide goals, objectives, and policy actions for the seven participating cities
- **Chapter 3: El Segundo** presents the existing bicycling conditions that influenced recommendations in this Plan, as well as proposed policies and bicycle facilities in the City of El Segundo
- **Chapter 4: Gardena** presents the existing bicycling conditions that influenced recommendations in this Plan, as well as proposed policies and bicycle facilities in the City of Gardena
- **Chapter 5: Hermosa Beach** presents the existing bicycling conditions that influenced recommendations in this Plan, as well as proposed policies and bicycle facilities in the City of Hermosa Beach

Los Angeles County Bicycle Coalition and South Bay Bicycle Coalition
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- **Chapter 6: Lawndale** presents the existing bicycling conditions that influenced recommendations in this Plan, as well as proposed policies and bicycle facilities in the City of Lawndale
- **Chapter 7: Manhattan Beach** presents the existing bicycling conditions that influenced recommendations in this Plan, as well as proposed policies and bicycle facilities in the City of Manhattan Beach
- **Chapter 8: Redondo Beach** presents the existing bicycling conditions that influenced recommendations in this Plan, as well as proposed policies and bicycle facilities in the City of Redondo Beach
- **Chapter 9: Torrance** presents the existing bicycling conditions that influenced recommendations in this Plan, as well as proposed policies and bicycle facilities in the City of Torrance
- **Chapter 10: Recommended Programs** discusses proposed education, encouragement, and enforcement programs, as well as public awareness campaigns to increase bicycling in the participating cities; it also presents methods for monitoring and evaluating the success of the Plan
- **Chapter 11: Wayfinding and Signage Plan** presents the region-wide signage plan to make South Bay bikeways and key destinations easier to navigate to by bicycle
- **Chapter 12: Funding** discusses potential funding sources to help the participating cities to implement their proposed bicycle networks



Chapter 11: Wayfinding and Signage Plan presents the region-wide signage plan to make South Bay bikeways and key destinations easier to navigate to by bicycle.

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