San Gabriel Valley Regional Bicycle Master Plan

November 2014

PREPARED BY:
Alta Planning + Design

PREPARED FOR:
Cities of Baldwin Park, El Monte, Monterey Park, San Gabriel, and South El Monte

San Gabriel Valley Regional Bicycle Master Plan

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ACKNOWLEDGMENTS

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1 Introduction

The San Gabriel Valley Regional Bicycle Master Plan is intended to guide the development and maintenance of a comprehensive bicycle network and set of programs within the cities of Baldwin Park, El Monte, Monterey Park, San Gabriel, and South El Monte for the next 20 years. This chapter presents the reasons for creating the San Gabriel Valley Regional Bicycle Master Plan, how the communities have been involved in the planning process, and the framework for the ensuing chapters.

1.1 Setting

The San Gabriel Valley region is located in the east-central portion of Los Angeles County and includes cities along and between the Interstate 10 (I-10), Interstate 210 (I-210), and State Route 60 (SR-60) freeways. This bicycle master plan focuses specifically on five cities within the San Gabriel Valley region that have agreed to participate in this planning effort. Together, the cities of Baldwin Park, El Monte, Monterey Park, San Gabriel, and South El Monte comprise approximately 31 square miles of land area and have a combined population of over 300,000. The five participating cities vary in size, population, socioeconomic factors, climate, and in existing levels of bicycle infrastructure and bicycle usage. **Figure 1-1** displays the San Gabriel Valley Regional Bicycle Master Plan partner cities, and **Table 1-1** shows the population statistics for each city as compared to the project area as a whole.

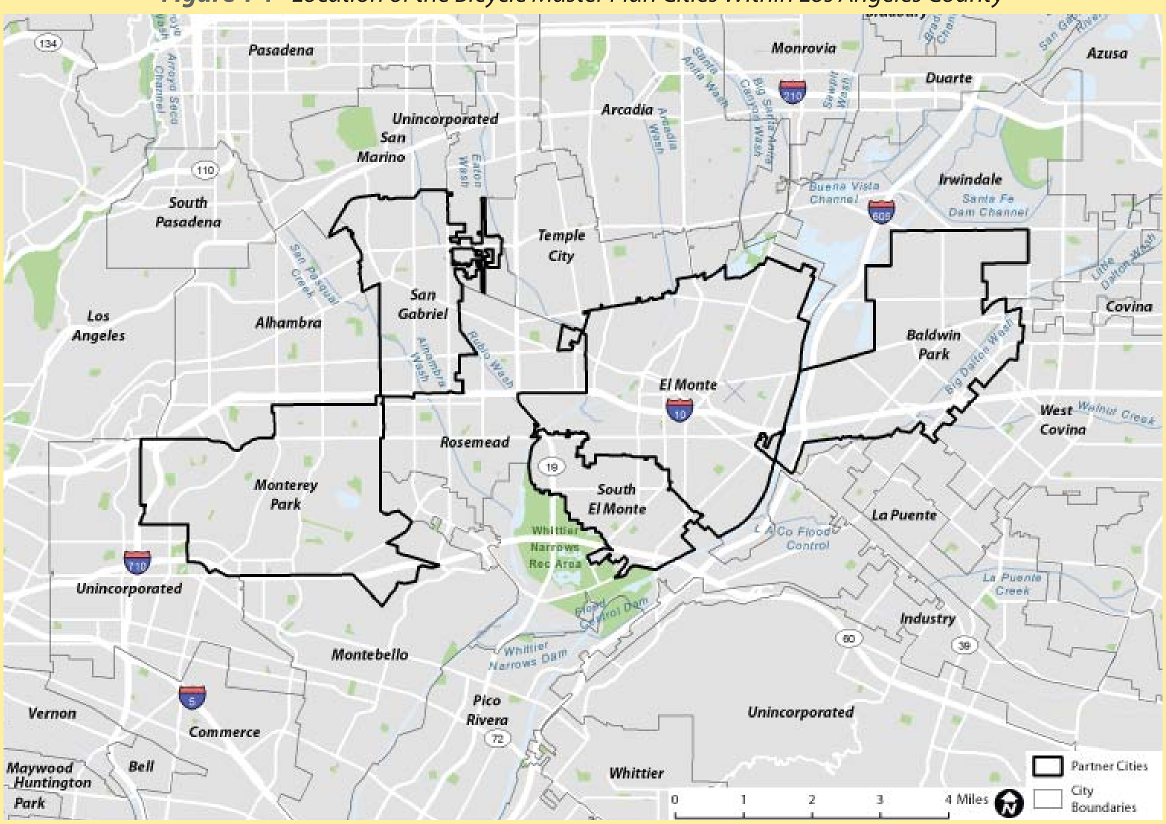
Table 1-1 Population of the Bicycle Master Plan Cities

Location	Population	Percent Project Area Population
Baldwin Park	75,390	24%
El Monte	113,475	37%
Monterey Park	60,269	20%
San Gabriel	39,718	13%
South El Monte	20,116	6.5%
TOTAL	**308,968**	**100%**

Source: U.S. Census 2010

The San Gabriel Valley currently faces several barriers to bicycling. This region is an area dominated by the automobile. Many streets carry high volumes of personal

Figure 1-1 Location of the Bicycle Master Plan Cities Within Los Angeles County



and commercial vehicles and industrial freight truck traffic traveling at high speeds, creating challenging road conditions for people bicycling. Roads with fewer motorized vehicles are often residential streets that do not connect or end in cul-de-sacs, forcing people bicycling to travel far out of their way to reach their destinations. There is also a lack of regional bicycle connectivity between San Gabriel Valley cities, with many bicycle facilities dropping at city boundaries, such as the bicycle lanes on Ramona Boulevard in Baldwin Park that end once the street enters El Monte.

1.2 Purpose of the Bicycle Master Plan

The San Gabriel Valley Regional Bicycle Master Plan provides a broad vision, as well as strategies and actions, to improve conditions for bicycling throughout the region as well as in each partner city. As a means of bettering the bicycling environment, this Plan provides direction for expanding the existing bikeway network, closing key gaps within the project cities, and connecting to bicycle facilities in adjacent cities and unincorporated Los Angeles County communities. In addition to providing recommendations for bikeways and support facilities, the Plan offers recommendations for education, encouragement, enforcement, and evaluation programs.

1.3 Bicycle Facility Types

The San Gabriel Valley Regional Bicycle Master Plan recommends three broad categories of bicycle facilities. These facility types – Class I, II, and III – are defined by the State of California in the California Streets and Highways Code Section 890.4. **Figure 1-2 and Figure 1-3** illustrate recommended cross-sections for the first three types of bicycle facilities, which are discussed in the following sections.

Figure 1-2 *Recommended Standards For Bicycle Facilities (Shared-Use Path And Bike Lane)*

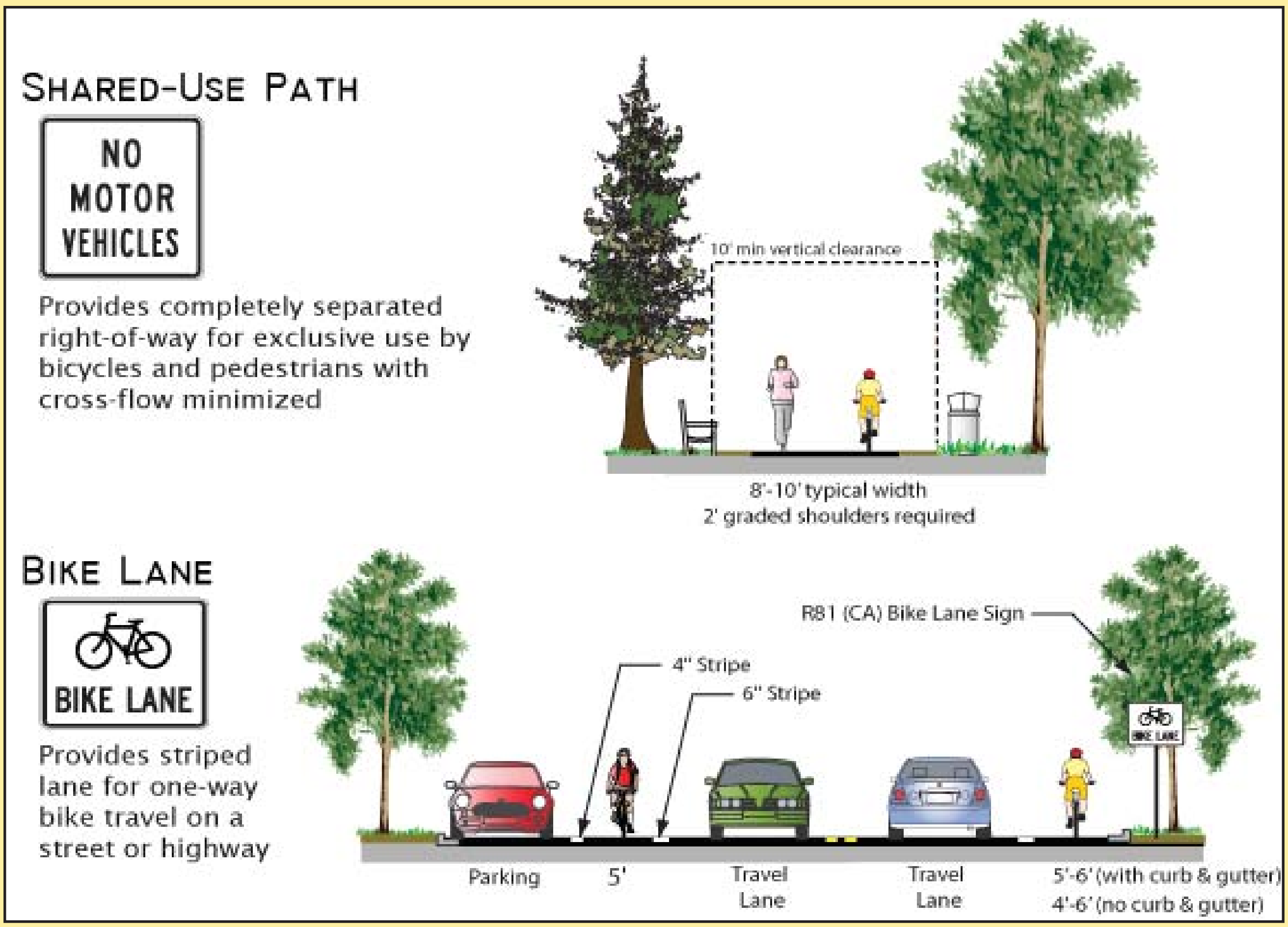
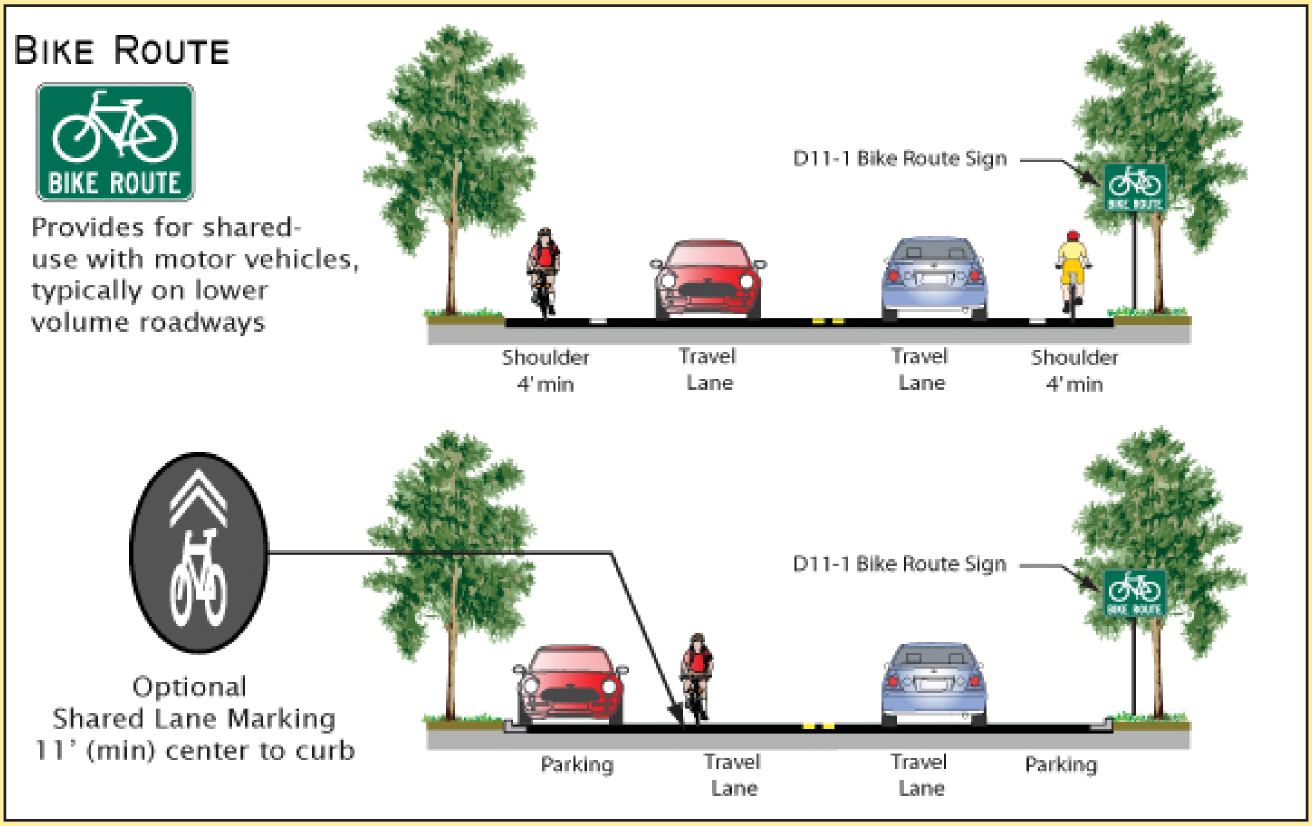


Figure 1-3 *Recommended Standards For Bicycle Facilities (Bike Route)*



A fourth category, "bicycle boulevards", has emerged recently as a distinct facility type. Although bicycle boulevards are not yet codified by the State of California, they have been implemented with success in cities such as Berkeley and Long Beach. A fifth category of bicycle facilities, protected bike lanes or "cycle tracks", has recently been growing in popularity in North American cities after decades of success throughout Europe and elsewhere. Protected bike lanes are expected to become standardized facilities in California in 2014 or soon after. A complete set of Bicycle Facility Design Guidelines based on the current state of the practice is presented in **Appendix A**.

1.3.1 Class I Bike Paths

Class I Bike Paths are paved right-of-ways for exclusive use by people bicycling, walking, and using other 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 people who do not feel comfortable riding a bicycle alongside 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 people commuting by bicycle to safely get to and from work, they are generally most popular with recreational cyclists, such as those riding on the San Gabriel and Rio Hondo river paths.

1.3.2 Class II Bike Lanes

Class II Bike Lanes are striped and signed on-street travel lanes exclusively for bicycles. Standard bicycle lanes are most popular with experienced bicycle commuters. However, Class II Bike Lanes can be enhanced to include additional provisions, such as painted buffers or physical barriers, to separate people bicycling from automobile traffic. These types of provisions may better attract more people of all ages and abilities to bicycle for transportation because on-street bike lanes often provide the most direct connections to destinations.

1.3.3 Class III Bike Routes

Class III Bike Routes share the right-of-way between vehicles and people on bicycles 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 bicycle riders 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, people bicycling 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 people bicycling

1.4 Benefits of Bicycling

Bicycling is a low-cost and healthy transportation option that provides economic and livability benefits to communities. When residents and visitors bicycle for a trip, it alleviates congestion, minimizes greenhouse gas emissions, and helps extend and improve the quality of people's lives. Below is a brief overview of the benefits of greater investments in bicycling.

1.4.1 Environmental Benefits

Due to emissions from "cold starts" (i.e., when a car hasn't been driven in a few hours and the engine is cool), a one-mile automobile trip emits up to 70 percent as much pollution as a 10-mile excursion. This means that when people decide to bicycle or walk even just for very short trips, they are still significantly reducing their environmental footprint.[1] Decreasing greenhouse gas emissions helps the region meet state legislated targets set by Assembly Bill 32 and Senate Bill 375. From reducing local levels of harmful pollutants that cause asthma and other respiratory illnesses to addressing global climate change, higher rates of bicycling provide tangible, significant air quality benefits.

Bicycling also does not pollute water as driving an automobile does. Cars leak oil, petroleum products and other toxins onto road surfaces that eventually make their way to storm drains, creeks, and large bodies of water. This "non-point source" pollution is a major threat to urban aquatic habitats, contaminates drinking water, and can cause major illness. Some toxins and metals accumulate in sea life and cause medical problems to people when eaten. Others cause explosive growth of algae, which depletes water of oxygen, killing fish and aquatic life.[2] Every bicycle trip is one less opportunity for these toxins to enter the environment, which on a large scale can make the difference in the health of local water ways and aquatic systems.

1.4.2 Economic Benefits to Cities

Multiple studies have shown that bikeable neighborhoods are more livable and attractive, helping increase home values and retain a more talented workforce that result in higher property tax revenues and business competitiveness.[3] Similarly, bike lanes can improve retail business directly by drawing customers and indirectly by supporting the regional economy. Patrons who bike to local stores have been found to spend more money when visiting local businesses than patrons who drive.[4]

1. Bay Area Air Quality Management District. (2007). Source Inventory of Greenhouse Gas Emissions.
2. City and County of Honolulu Department of Environmental Services

The League of American Bicyclists reports that bicycling makes up $133 billion of the U.S. economy, funding 1.1 million jobs.[5] The League also estimates bicycle-related trips generate another $47 billion in tourism activity. Many communities have enjoyed a high return on their investment in bicycling. For example, the Outer Banks of North Carolina spent $6.7 million to improve local bicycle facilities, and reaped a reported benefit of $60 million of annual economic activity associated with bicycling.

1.4.3 Benefits to Households and Individuals

Biking is not just a form of travel; it is an important form of exercise. Many public health experts associate the rising and widespread incidence of obesity with automobile-dominant development patterns and lifestyles that limit such incidental and daily forms of physical activity achieved through bicycling.[6] This association is perhaps most apparent, and acute, with respect to children and school travel. After decades of declining rates of walking and biking – from roughly half of all non-high school students in 1968 to just 14 percent in 2009 – obesity among youth has become an epidemic.[7] In California, one in three kids age 9-17 are now at risk of becoming or are already overweight.[8]

For children, the Center for Disease Control and Prevention (CDC) recommends 60 minutes of daily aerobic exercise. The CDC recommends 75 to 150 minutes of vigorous exercise, in combination with muscle strengthening exercises, for adults on a weekly basis. For many adults and children, walking or biking to work or school is a viable – if not the only – option for achieving these recommended exercise regimens.

Bicycle infrastructure also provides transportation choices to those who cannot or do not drive, including people with disabilities, youth, seniors, and people with limited incomes. Families that can replace some of their driving trips with bicycling trips spend a lower proportion of their income on transportation,[9] freeing additional income for local goods and services. For others who do not live within walking distance of their employment site, or who work a distance from transit routes, bicycling may provide the only affordable and reliable means of commuting.

1.5 Public Outreach

Due to the unique partnership between the cities of Baldwin Park, El Monte, Monterey Park, San Gabriel, and South El Monte, as well as Day One/BikeSGV, community outreach was extensive. During fall 2013 and winter 2014, the project team conducted a series of outreach activities to engage the participating communities in identifying initial challenges, opportunities, and ideas for improving the cycling experience in the San Gabriel Valley. The following provides a list of community engagement activities that were conducted during the initial input gathering phase of the project:

- Community Outreach Booths
    - October 5, 2013: South El Monte's Mayor Ride, City Hall, South El Monte
    - October 19, 2013: Think Together Sports Tournament, Olive Middle School, Baldwin Park
    - October 19, 2013: Children's Day Parade & Harvest Festival, Arceo Park, El Monte
    - October 19, 2013: Harmony Festival Car Show & Artisans' Faire, Barnes Park, Monterey Park
    - October 27, 2013: BikeSGV's Halloween Bike Train, Santa Fe Dam, Baldwin Park
    - November 1, 2013: Carnival, Morgan Park, Baldwin Park
    - November 2, 2013: South El Monte Mayor's Ride, City Hall, South El Monte
    - November 16, 2013: 5K Turkey Trot, Vincent Lugo Park, San Gabriel
    - November 21, 2013: Farm Cuisine Restaurant Grand Opening, Monterey Park
    - November 23, 2013: Teen Center 10-Year Anniversary, Hilda Solis Park, Baldwin Park
    - November 24, 2013: BikeSGV's Bike Train, Peck Road Park, El Monte
    - December 6, 2013: SGV Service Center Open House, South El Monte

3. Cortright, Joe for CEOs for Cities. (2009). Walking the Walk: How Walkability Raises Home Values in US Cities.
4. The Clean Air Partnership. (2009). Bike Lanes, On-Street Parking and Business: A Study of Bloor Street in Toronto's Annex Neighborhood.
5. Flusche, Darren for the League of American Bicyclists. (2009). The Economic Benefits of Bicycle Infrastructure Investments.
6. October 27, 1999 issue of the JAMA
7. United States Department of Transportation, National Household Travel Survey
8. The California Endowment. (No Date). Fighting California's Childhood Obesity Epidemic. http://www.calendow.org/article.aspx?id=348
9. Center for Neighborhood Technology. (2005). Driven to Spend: Pumping Dollars out of Our Households and Communities.

- December 29, 2013: BikeSGV's Bike Train, Legg Lake, South El Monte
- January 23, 2014: Urban Greening Town Hall Meeting, El Monte
- January 25, 2014: Chinese New Year, Monterey Park
- January 26, 2014: BikeSGV's Bike Train, Santa Fe Dam, Baldwin Park

- Jurisdictional Meetings
    - December 3, 2013: Monterey Park Bruggemeyer Library
    - December 4, 2013: South El Monte Senior Center
    - December 5, 2013: San Gabriel Public Library
    - December 11, 2013: Baldwin Park Arts & Recreation Center
    - December 17, 2013: El Monte Senior Center
- Information Kiosks in Each City
- Youth Workshops:
    - Mark Keppel High School's Promoting Youth Advocacy Club (4 dates between October 2013 and January 2014)
- Online and Hard-Copy Survey
    - Survey was open from October 1, 2013 through January 31, 2014
- Website with Mapping Tool, Polls & Suggestion Form

1.5.1 Community Outreach Booths

Public outreach was conducted at several community events through a "pop-up booth" staffed by BikeSGV volunteers and members of the project team. The project team created large-print maps showing the Emerald Necklace trail network, existing and planned bikeways in each of the five project cities, and bikeways throughout the larger San Gabriel Valley area. Members of the public were asked to review the maps and provide input on challenges and opportunities for bicycling in the respective city and throughout the region. Hard copies of the Bikeways Survey were available for booth visitors to complete on-site. Those who stopped by the booth were also provided with materials such as bike maps, stickers, pamphlets, and information about BikeSGV's monthly Bike Train group rides and bicycle advocacy in the San Gabriel Valley. Finally, visitors were invited to sign-up to receive future updates about the project. The events usually included a large number of children and families.

Image 1- *Bike Plan Volunteer Speaking With an Interested Community Member*

More detailed lists of comments provided at these outreach events can be found in **Appendix B.**

1.5.2 Jurisdictional Meetings – Round 1

In December 2013, the project team facilitated five (5) public Jurisdictional Meetings (one in each participating city) to present an overview of the plan process and gather input from the individual communities. All of the five individual meetings took place from 6:30pm – 8:00pm at centrally located public facilities. Detailed descriptions of each workshop and the public input received can be found in **Appendix B**.

Image 2- *Flyer for the Regional Bicycle Master Plan*

The meetings followed an Open House format, with various stations throughout the room. Staff and volunteers from BikeSGV joined Alta Planning + Design staff to answer questions and prompt community members to provide their own ideas for how to create a more bike-friendly San Gabriel Valley. In addition to the Sign-In Table, six stations were provided to provide information and to collect ideas:

1. Bicycle Master Plan Presentation
2. Mapping
3. Bicycle Facility Types

4. Education, Encouragement & Evaluation – What's Working? What Can We Do Better?
5. Survey Station
6. Kids' Activity Station

Station 1: Bicycle Master Plan Presentation

A brief, continuous running PowerPoint presentation provided background information about the Regional Bicycle Master Plan project. The presentation provided an explanation of the project and a tentative schedule to provide overview information and guidance on how to stay involved.

Station 2: Mapping

Using stickers and maps of the project cities, participants at this station identified current cycling destinations, places that they would like to bicycle to, and locations for possible improvements. Post-It notes and flip charts were used to record additional notes or destinations. Destinations noted by stakeholders for bicycle connectivity include East L.A. College in Monterey Park, the El Monte Transit Center, grocery stores, community centers, Whittier Narrows Recreation Area, river bicycle paths, and other parks and recreation facilities.

Image 3- *Bike Plan Community Meeting in Monterey Park*

On a different set of maps, participants were asked to identify challenge locations, such as physical barriers or complex intersections. Participants frequently noted issues related to freeways bifurcating the community and freeway interchanges causing high-stress crossings, high-speed arterials such as Atlantic Boulevard and Garvey Avenue, and intersections difficult to navigate via bicycle. Participants requested improvements near schools to slow traffic and better accommodate bicycle and pedestrian travel.

Station 3: Bicycle Facility Types

An education station was provided with four boards showing different types of bicycle facilities: one board illustrated standard bicycle facilities commonly used today (Class I paths, regular bike lanes, sharrows, etc.), another offered images of more non-standard bikeway facilities (e.g., cycle tracks, colored bike lanes, etc.), a third board showed bicycle parking options, and the last board highlighted common types of bicycle pavement markings and wayfinding signage. Participants were asked to show which facility types they would like to see used in their communities, and several individuals provided ideas for additional treatments or ways to improve those shown on the boards. In addition, participants were asked to discuss where these various facilities might be installed in the future.

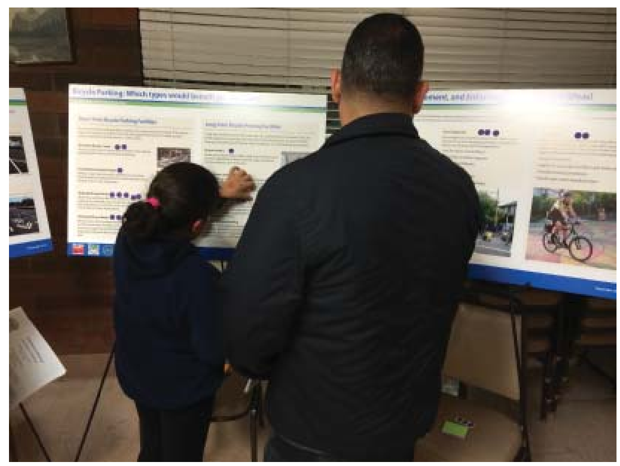


Image 4- *Community Members Voting for Their Preferred Bicycle Facilities*

Table 1-2 and Table 1-3 show the total sticker vote counts among all five project cities for preferred Bikeway Types; Bicycle Parking Facilities; and Signage, Markings, and Wayfinding. Cycle Tracks received the most votes for preferred Bikeway Type, and Bike Stations were the most popular Bicycle Parking Facilities among participants.

Table 1-2 Bikeway Types

Standard Bikeway Types	Number of Dots	"Innovative" Bikeway Types	Number of Dots
Off-Street Bike Path	6	Cycle Tracks	17
On-Street Bike Lanes	12	Buffered Bike Lanes	5
Signed Shared Roadway	4	Enhanced Colored Bike Lanes	7
Bicycle Boulevard	3	Colored Sharrow Lane ("Super Sharrows")	0

Table 1-3 Bicycle Parking Facilities

Short Term Bicycle Parking Facilities	Number of Dots	Long Term Bicycle Parking Facilities	Number of Dots
On-Street Bicycle Corral	6	Bicycle Lockers	4
Curb Extension Bicycle Racks	5	Bicycle Rooms and Compounds	5
Sidewalk Bicycle Racks	8	Bike Stations	9
Sheltered Bicycle Racks	7	Automated Bicycle Parking	0

Table 1-4 Signage, Markings & Wayfinding

Category	Number of Dots
Facility Signage and Pavement Markings	15
Wayfinding Signage	6

Station 4: Education, Encouragement & Evaluation

A station was established for participants to discuss various non-infrastructure components typically included within a bicycle master plan. Education events include youth bicycle rodeos and adult bicycle skills courses to teach people how to safely and confidently ride bikes, encouragement programs to get more individuals riding, and enforcement activities that aim to reduce bicycle/motor vehicle conflicts and other sources of potential injury. Participants were asked to share if any of these non-infrastructure programs were currently in place in their communities. In addition, visitors showed which types they would like to see implemented in their communities by "voting" with dot stickers (shown in **Table 1-5**).

Across all five cities, Encouragement Programs received the most votes, with Education Programs close behind.

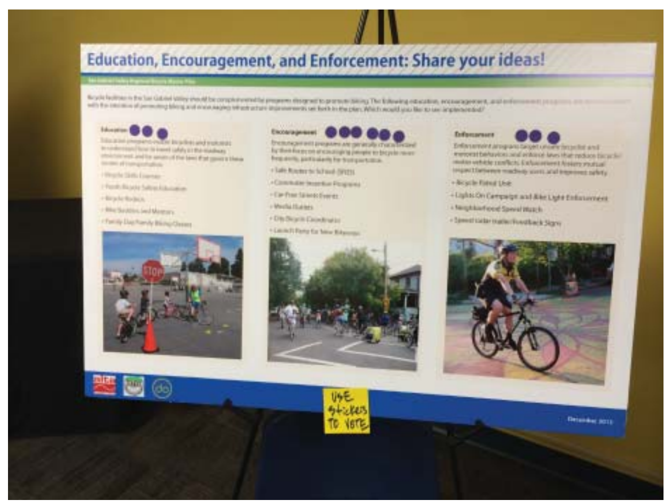


Image 5- *One of Several Boards on Display at the Bike Plan Community Meetings*

Table 1-5 Preferred Non-Infrastructure Programs

Category	Number of Dots
Education	11
Encouragement	13
Enforcement	8

Station 5: Survey Station

Hard copies of a survey were available for participants to complete. Small gifts (e.g., bike lights, safety straps, water bottles, etc.) were provided to participants that completed the surveys.

Station 6: Kids' Activity Station

At each Meeting, kids were given the opportunity to create drawings about biking and bike safety. This table was popular at all five Jurisdictional Meetings and provided an opportunity for families to visit the workshop and participate. Images for coloring by children were related to bicycling and provided simple safety guidance.

Image 6- *Survey Station*

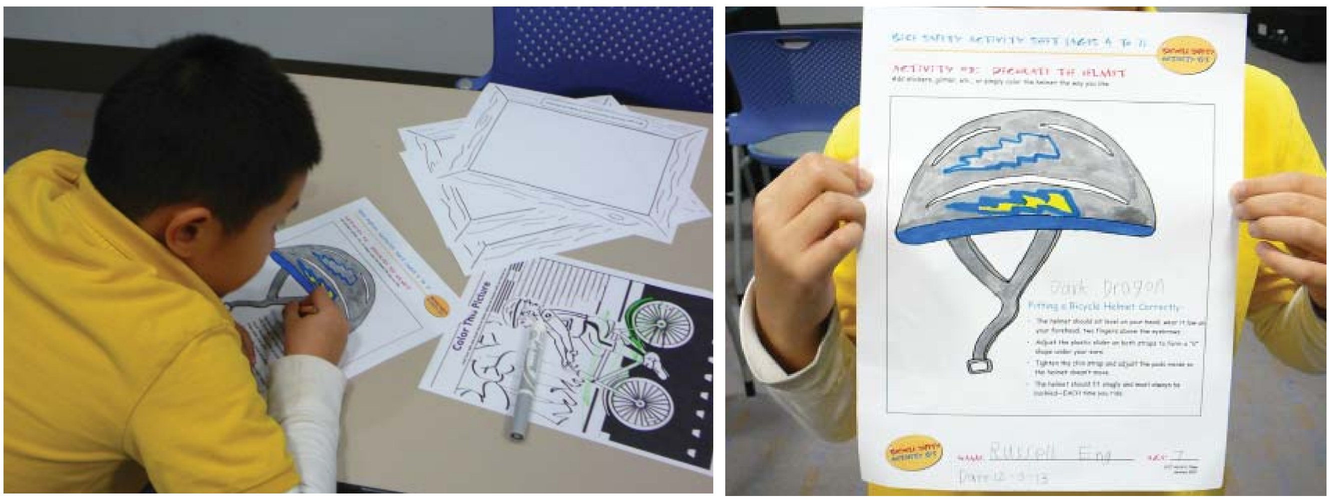


Image 7- *Kids' Activity Station at the Bike Plan Community Meetings*

1.5.3 Information Kiosks

An information kiosk was created for each city. The kiosks were strategically placed in areas of high foot traffic with high visibility such as city hall, community centers, libraries, schools, day care facilities, senior centers, etc. Each month, the kiosks were placed in different locations within each city.

1.5.4 Mark Keppel High School's Promoting Youth Advocacy Club

In partnership with Mark Keppel High School, Asian Americans Advancing Justice, and the Asian Pacific Islander Obesity Prevention Alliance, a group of teenage community leaders volunteered to participate in an extracurricular club known as PYA (Promoting Youth Advocacy) which met weekly on campus and on the first Saturday of each month from 12pm-3pm. The Saturday

Image 8- *Mark Keppel High School Students Volunteering for the Bike Plan* class was used to educate youth about various health and environmental inequities in the San Gabriel Valley while actively engaging them in the Regional Bike Master Plan development process to address those inequities. Dates and topics for the Saturday classes are as follows:

- October 5, 2013: General Introduction to Healthy Eating, Active Living and Existing Conditions in the San Gabriel Valley
- November 2, 2013: Bike Master Plan Overview
    - Basics of bicycle routes, infrastructure, programs, and policies
    - Walking Street Audits, Part I
- December 7, 2013
    - Exploring the Transformative Nature of Open Streets events
    - Fix-a-Flat & Patch-a-Tube
- January 11, 2014: Walking Street Audit, Part II

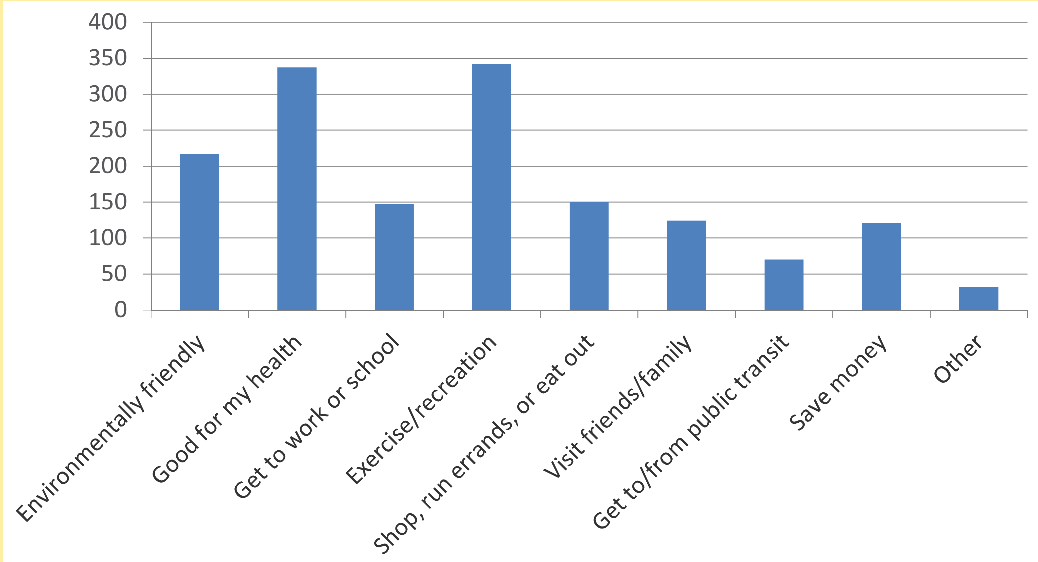
Image 9- *Mark Keppel Students Conducting a Walking Street Audit*

1.5.5 Bicycling Survey

Digital and hard copy surveys were provided to community members to gather input for the creation of the Regional Bicycle Master Plan. Between October 1, 2013 and January 31, 2014, 487 responses were received. The complete survey form and detailed survey results are located in **Appendix C**.

Of the 487 respondents, the majority of them were between 18 and 45 years old, nearly a third were over 46 years old, and 18 percent were under 18 years old. Sixty percent of survey respondents identified as male. Only fewer than 5 percent of respondents do not work or go to school. Nearly half (46%) of respondents have a commute to work or school that is under five miles, which is typically considered to be within easy bicycling range for most people, and half of those respondents live less than two miles from their work/school destination. Of those who commute to/from work, most drive alone (57.6%), although approximately 70 percent of respondents claim to be comfortable riding in at least some traffic. Over 40 percent of respondents commute to work/school by bicycle at least one day per week, while 64 percent ride a bike for recreation or exercise at least once each week. As shown in **Figure 1-4**, the main reasons that people bicycle are for Health and Exercise/Recreation. The next most popular reason to bicycle is because it is good for the environment.

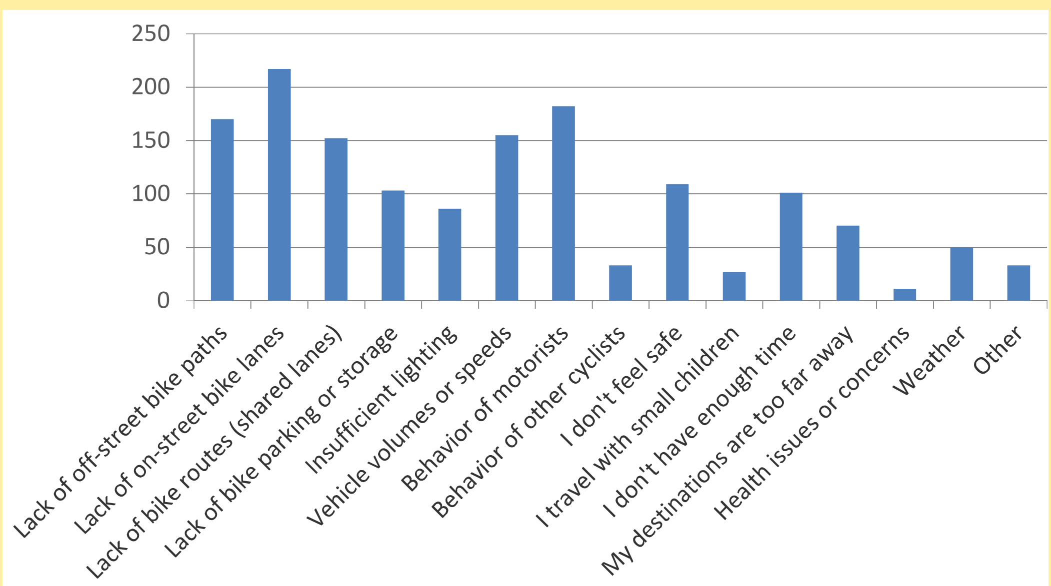
***Figure 1-4** Reasons for Bicycling*



Additional reasons entered for "Other" include avoiding parking costs, not wanting to drive/own a car, socializing, and for fun.

When asked what prevents survey respondents from bicycling more often, if not at all, respondents indicated that the top three reasons are a lack of designated bikeways, the behavior of motorists, and vehicle volumes and/or speeds. **Figure 1-5** displays the results of this question.

***Figure 1-5** Barriers to Bicycling*



Additional reasons given in the “Other” category include the risk of bicycle theft, their job requires them to use a motor vehicle, concerns about personal safety during nighttime, or lack of bicycle ownership.

The most important considerations that respondents make when making a decision to ride a bicycle are the presence of designated on-street bikeways, a network of routes between cities, behavior of motorists, traffic volumes/speeds, and the condition of the bikeway/roadway (e.g., pavement quality).

Programs that respondents are the most interested in are riding skills and safety education for children and adults, public awareness campaigns, bicycle maps and guides, bicycle information websites or smart phone applications, and special bicycle events/promotions such as Open Streets or Bike Month.

When asked to list places in the San Gabriel Valley respondents would like to see new bicycle facilities, some common themes were evident. Among the locations suggested by respondents were major arterials (especially Valley Boulevard, Rosemead Boulevard, and San Gabriel Boulevard), “Main Streets” through downtown districts, areas around bus and rail transit hubs (e.g., Gold Line stations & the El Monte Bus Station), and in and around the City of Pasadena.

When asked to provide additional comments, several respondents requested that more bicycle and motorist education be provided in the San Gabriel Valley. Many others specifically asked for physically separated “cycle tracks,” reflecting an interest in maximizing separation from vehicular traffic.

1.5.6 Website with Mapping Tool, Polls & Suggestion Form

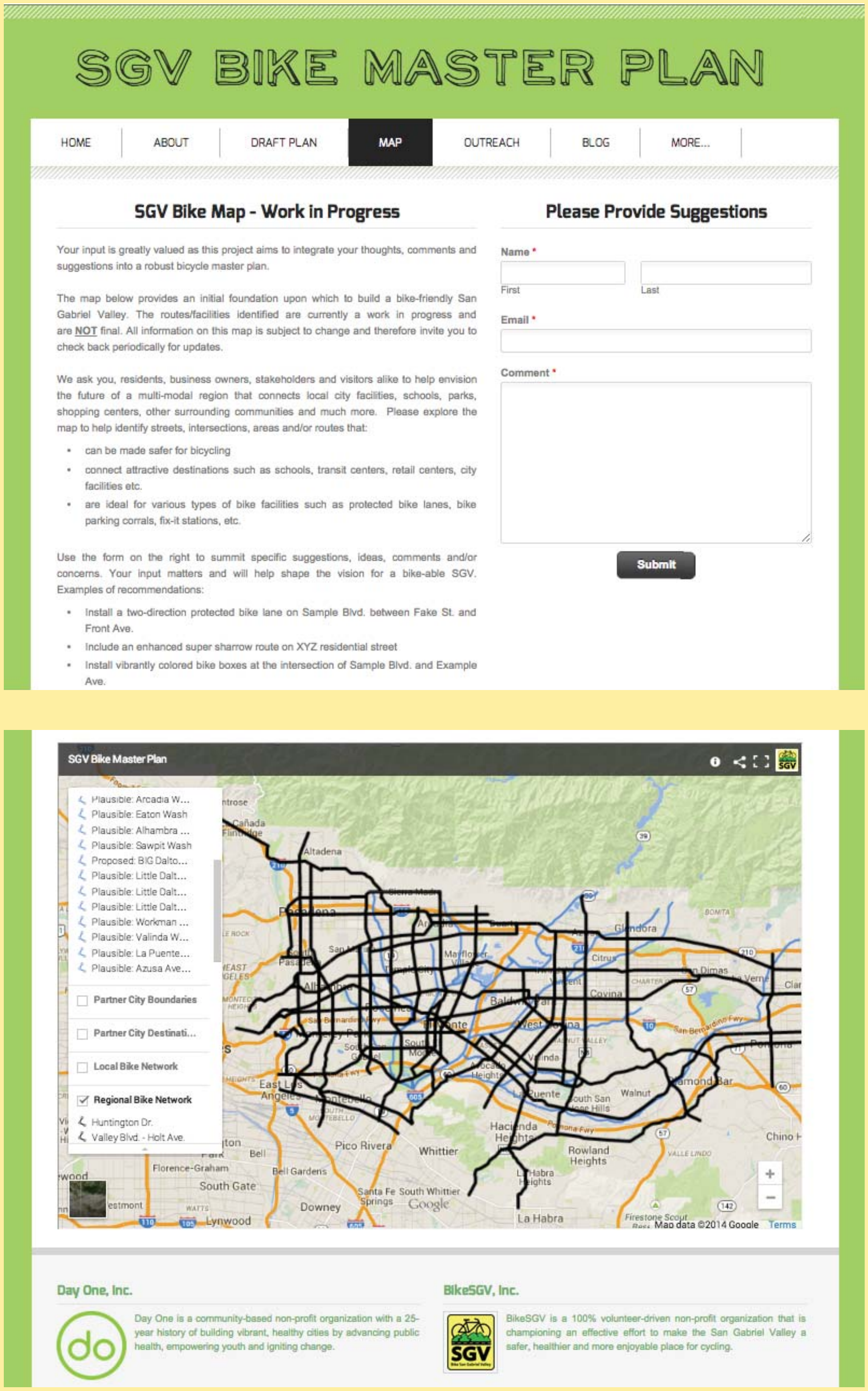
The project team established an online website (www.dobikeplan.com) to provide information to the community and solicit input about the Bicycle Master Plan. Visitors to the website can sign-up for project updates, complete the project survey, and participate in monthly online polls about topics related to bicycling in

***Figure 1-6** Bike Plan Website*

the San Gabriel Valley. A key focus of the website, though, is the suggested bikeways map that allows website visitors to respond to a set of initial routes proposed by the project team and/or make their own suggestions for bikeways in the project cities. The images below are taken from the website.

Poll results and suggestions submitted through the website can be found in **Appendix D**.

***Figure 1-7** Mapping Tool*



1.6 Plan Organization

The San Gabriel Valley Regional Bicycle Master Plan is organized into the following chapters:

- Chapter 2: Vision, Goals, Objectives, and Policies summarizes existing regional plans and policies that relate to the bicycle planning efforts in the San Gabriel Valley and proposes concrete goals, objectives, and policy actions for the project cities.
- Chapter 3: Baldwin Park presents the existing bicycling conditions that influenced recommendations in this Plan, as well as proposed policies and bicycle facilities in the City of Baldwin Park.
- Chapter 4: El Monte presents the existing bicycling conditions that influenced recommendations in this Plan, as well as proposed policies and bicycle facilities in the City of El Monte.
- Chapter 5: Monterey Park presents the existing bicycling conditions that influenced recommendations in this Plan, as well as proposed policies and bicycle facilities in the City of Monterey Park.
- Chapter 6: San Gabriel presents the existing bicycling conditions that influenced recommendations in this Plan, as well as proposed policies and bicycle facilities in the City of San Gabriel.
- Chapter 7: South El Monte presents the existing bicycling conditions that influenced recommendations in this Plan, as well as proposed policies and bicycle facilities in the City of South El Monte.
- Chapter 8: 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 9: Funding discusses potential funding sources to help the participating cities to implement their proposed bicycle networks.

2 Vision, Goals, Objectives, and Policies,

The vision of the San Gabriel Valley Bicycle Master Plan is to create a bicycle-oriented San Gabriel Valley region in which bicycling is a safe, convenient, attractive, and viable transportation option for people young and old at all levels of bicycling abilities in the cities of Baldwin Park, El Monte, Monterey Park, San Gabriel, South El Monte, and beyond. This chapter outlines the goals, objectives, and policies that support this vision and will serve as guidelines in the development of a bicycle-friendly San Gabriel Valley. These policies provide the framework and accountability for plan implementation by each city. The development of this chapter occurred in the context of the goals', objectives', and policy actions' relationship with regional existing plans and policies as mandated by state law, such as the California Vehicle Code, AB 32 (Global Warming Solutions Act), SB 375 (Sustainable Communities and Climate Protection Act), and SB 99 (Active Transportation Program). The relationship to existing City-specific plans and policies is located in each City's chapter.

Image 10- *The vision of the San Gabriel Valley Bicycle Master Plan is to create a bicycle-oriented San Gabriel Valley region in which bicycling is a safe, convenient, attractive, and viable transportation option for people at all levels of bicycling abilities.*

2.1 San Gabriel Valley Goals, Objectives, and Policy Actions

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. Goals, objectives, and policies guide the way public improvements are made, where resources are allocated, how programs are operated, and how each city's priorities are determined. 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, community events and surveys, city staff and leaders, 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 each city. In the case that a particular group or individual is identified, each 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 San Gabriel Valley Bicycle Master Plan. Each policy has an implementation time frame assigned to it ranging from immediate (2014), to the first 0-5 years (2014-2019), or ongoing throughout the next 10 years starting in 2014 (2014-2024). These time frames will help guide the work plans for each city to ensure implementation of their respective bicycle master plan.

Goal 1: Create a Bicycle-Friendly San Gabriel Valley Create a bicycle-friendly environment throughout the San Gabriel Valley region for all types of bicycle riders and all trip purposes through engineering/infrastructure solutions and integration of bicycling and public mass transit as a means of improving regional health, increased road safety, reduced carbon emissions, and an overall increase in bicycle 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 San Gabriel Valley.
Policy Actions	1.1.1 Develop a 20-year implementation strategy for the San Gabriel Valley Bicycle Master Plan that will begin to implement the policies and facilities herein. Schedule: 2014 Responsible: Each city's Departments of Planning, Community Development and/or Public Works
	1.1.2 Develop an extensive bikeway network through the use of standard and appropriate innovative treatments as provided in the most current edition of the California Manual on Uniform Traffic Control Devices (MUTCD), the National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide, and other such guidelines and standards, with available funding. Schedule: 2014-2024 Responsible: Each city's Department of Public Works
	1.1.3 Plan and install bicycle facilities adjacent to schools, with high schools having the highest priority (based on higher potential ridership), then middle schools, and finally elementary schools. Pursue Safe Routes to School funding to implement bicycle infrastructure. Involve local schools, parent-teacher groups, and advocates throughout the Safe Routes to School planning efforts and pursuit of grants. Schedule: 2014-2024 Responsible: Each city's Department of Public Works
	1.1.4 Establish Bicycle Boulevards 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). Staff review will determine appropriate streets for Bicycle Boulevard treatments. Schedule: 2014–2024 Responsible: Each city's Department of Public Works
	1.1.5 Implement policies and facilities proposed in the San Gabriel Valley Bicycle Master Plan whenever planning new bicycle facilities or Capital Improvement Projects that may be related to bicycle improvements. Schedule: 2014-2024 Responsible: Each city's Department of Public Works
	1.1.6 Incorporate the proposed policies, facilities and programs from the San Gabriel Valley Bicycle Master Plan in whole or by reference into the City's Circulation Element upon future General Plan updates. Schedule: 0-5 years Responsible: Each city's Department of Planning or Community Development
	1.1.7 Coordinate with adjoining jurisdictions, including the County of Los Angeles, on bicycle planning and implementation activities on east-west and north-south regional corridors to link the region to neighboring communities. Schedule: 2014-2024 Responsible: Each city's Department of Public Works

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: 2014-2024 Responsible: Each city's Department of Public Works
	1.2.2 Develop and adopt Complete Streets policies that generally align with the policy elements defined by the National Complete Streets Coalition (see **Appendix E** for policy language from the California Complete Streets Act of 2008 and complete streets policies from the National Complete Streets Coalition), and require all capital improvements to include Complete Streets improvements in the project design and budget. Schedule: 0-5 years Responsible: Each city's Department of Planning or Community Development
	1.2.3 Prioritize opportunities that improve walkability and bikeability by utilizing Complete Streets standards for all Capital Improvement Projects. Schedule: 2014-2024 Responsible: Each city's Department of Public Works
	1.2.4 Remove on-street motor vehicle parking to accommodate striped bike lanes, to the extent feasible. Schedule: 2014-2024 Responsible: Each city's Department of Public Works
	1.2.5 Plan and install enhanced bikeways, including buffered bicycle lanes and/or physically separated, protected bicycle lanes or "cycle tracks" as recommended in the NACTO Urban Bikeway Design Guide, where feasible, to increase the comfort and safety for people bicycling. Schedule: 2014-2024 Responsible: Each city's Department of Public Works
	1.2.6 Ensure that all existing and new on-street bicycle routes, bicycle lanes, and off-street bicycle paths are appropriately signed, marked, and/or traffic-calmed. Schedule: 0-5 years Responsible: Each city's Department of Public Works
	1.2.7 Develop unique and consistent wayfinding signage for city-based routes, and utilize regional route signage that directs bicycle riders to desirable city destinations (e.g., schools, parks, shopping centers, transit hubs, etc.) and region-wide bicycle routes. Signage shall adhere to the guidelines herein. Schedule: 2014-2024 Responsible: Each city's Department of Public Works
	1.2.8 Provide facilities and enhancements, such as traffic calming treatments, streetscape improvements, wayfinding signage, bicycle parking and support amenities (e.g., repair stations, water fountains, information kiosks, etc.) along city bikeways that increase bicycle utility and convenience for all people bicycling. Schedule: 2014-2024 Responsible: Each city's Department of Public Works

	1.2.9 Plan and install shared lane markings ("sharrows") and/or "Bicycles May Use Full Lane" signage on appropriate bicycle routes, in accordance with the most current edition of the California MUTCD, where bicycle lane implementation is demonstrated to be infeasible. Schedule: 0-5 years Responsible: Each city's Department of Public Works
	1.2.10 If a proposed Class II bike lane facility is determined to be unfeasible, consider upgrading a parallel Class III bike route into a Class II bike lane facility. Schedule: 2014-2024 Responsible: Each city's Department of Public Works
	1.2.11 Coordinate bicycle facility improvements or upgrades with the City's resurfacing schedule. Schedule: 2014-2024 Responsible: Each city's Department of Public Works
	1.2.12 Implement 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: 2014-2024 Responsible: Each city's Department of Public Works
	1.2.13 Adopt an updated streets and highways manual that includes comprehensive Complete Streets standards and cross sections. Schedule: 0-5 years Responsible: Each city's Departments of Public Works, Planning, and/or Community Development
	1.2.14 Begin to utilize new signage, markings and facility designs as new and innovative treatments become adopted standards at the Federal and State levels. Schedule: 2014-2024 Responsible: Each city's Department of Public Works
	1.2.15 Consider instituting a pilot program that will test new facility types aimed at improving bicycle safety and convenience before they are adopted standards. Schedule: 2014-2024 Responsible: Each city's Department of Public Works
	1.2.16 Install high-quality bicyclist- and pedestrian-oriented LED lighting along all existing and proposed bikeways, especially along Class I shared-use paths. Schedule: 2014-2024 Responsible: Each city's Department of Public Works
	1.2.17 Install emergency phone towers with special emphasis on areas not heavily populated (e.g., along shared-use paths, access points to river bike paths, bike parking corrals) with LED lighting to illuminate the area for people bicycling and pedestrians. The LED lights should be powered by solar panels to reduce maintenance and electrical costs. Where feasible, attach surveillance cameras to each phone tower to provide law enforcement agencies with real-time footage of the location to help prevent/address any criminal activity. Schedule: 2014-2024 Responsible: Each city's Department of Public Works
	1.2.18 Install and regularly maintain bicycle repair stations and water fountains along off-street shared-use paths. Schedule: 2014-2024 Responsible: Each city's Department of Public Works

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: 2014-2024 Responsible: Each city's Department of Public Works
	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: 2014-2024 Responsible: Each city's Department of Public Works
	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, bike corrals, in-station bike storage, and staffed or automated bicycle parking facilities – at transit stops, stations, and terminals. Schedule: 5-10 years Responsible: Each city's Department of Public Works
	1.3.4 Coordinate with transit agencies to install regional, on-demand bike lockers that are accessible using a fare payment card that allows users to access a variety of transit modes administered by multiple agencies. Schedule: 5-10 years Responsible: Each city's Department of Public Works
	1.3.5 Work with transit agencies to generate bicycle-friendly development activity and support facilities, such as bicycle rental, bike share, and do-it-yourself repair stations around transit stations. Schedule: 5-10 years Responsible: Each city's Departments of Public Works, Planning, and/or Community Development
	1.3.6 Provide current and relevant information to the public regarding bike parking 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 Responsible: Each city's Department of Public Works
	1.3.7 Continue working with Metro and other transit providers to provide up-to-date guidelines regarding bicycle accessibility on transit and widely distribute and publicize these guidelines. Schedule: 0-5 years Responsible: Each city's Department of Public Works
	1.3.8 Work with transit operators to develop, implement, maintain, expand, and enforce improved intermodal bicycle access. Schedule: 0-5 years Responsible: Each city's Department of Public Works

	1.3.9 Work with Metro and other transit providers to allow bicycle riders with disabled bicycles (due to mechanical failure or collision) to bring them on transit vehicles, interior space permitting and at the vehicle operator's discretion, when the vehicle either does not have bicycle racks or have racks that are full. Schedule: 0-5 years Responsible: Each city's Department of Public Works
	1.3.10 Coordinate with taxi cab operators to add bicycle racks onto all taxi cabs permitted by each city. Expand the range of bicycle mobility by seamlessly incorporating bicycle travel with the use of taxis. Schedule: 0-5 years Responsible: Each city's Department of Public Works or the agency responsible for overseeing taxi franchises
Objective 1.4	*Provide Convenient and Consistent Bicycle Parking Facilities and Support Amenities* Encourage the use of bicycles for everyday transportation by ensuring the provision of convenient and secure bicycle parking and support facilities region-wide and promoting facilities to the public.
Policy Actions	1.4.1 Adopt a bicycle parking ordinance or modify existing sections of the municipal code to require bicycle parking with all new developments (including multi-family housing, commercial, industrial, and institutional uses) or when the size and/or use of existing buildings is significantly altered. Create a way for developers to swap out required automobile parking for bicycle parking if developments are located near high quality bus stops or rail/bus transit stations. Cities with existing bike parking ordinances or Municipal Code sections exempted. Schedule: 0-5 years Responsible: Each city's Department of Planning or Community Development
	1.4.2 Establish bicycle parking standards for City-owned bicycle parking facilities that address the location, design, capacity, and support amenities that should be provided by all City bicycle parking facilities. (Refer to Appendices G and H for recommended bicycle parking standards.) Schedule: 0-5 years Responsible: Each city's Department of Public Works
	1.4.3 Install and support high-quality bicycle parking facilities, including bike corrals, within the public right-of-way and on public property, especially in high demand locations, such as downtown districts, commercial centers, entertainment centers, employment centers, schools, colleges and parks. Schedule: 5-10 years Responsible: Each city's Department of Public Works
	1.4.4 Install 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: 2014-2024 Responsible: Each city's Department of Public Works
	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. Upgrade green building standards to require the development of showers and lockers for buildings with over 10 tenant-occupants. Schedule: 2014-2024 Responsible: Each city's Departments of Planning and/or Community Development

	1.4.6 Amend the Municipal Code to decrease the number of required automobile parking spaces in commercial buildings where Class-I bicycle parking is provided, as feasible and appropriate. Schedule: 0-5 years Responsible: Each city's Departments of Planning and/or Community Development
	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 Responsible: Each city's Departments of Planning and/or Community Development
	1.4.8 Work with Metro, Foothill Transit, local transit agencies and adjacent property owners to provide bicycle parking in proximity to bus stops and other transit facilities. Schedule: 2014-2024 Responsible: Each city's Department of Public Works
	1.4.9 Provide current and relevant information to the public regarding bike parking opportunities throughout the city through a variety of formats. Schedule: 0-5 years Responsible: Each city's Department of Public Works
	1.4.10 Consider a bike sharing program with distribution stations located in major employment and other activity centers throughout the region. Schedule: 0-5 years Responsible: Each city's Department of Public Works
	1.4.11 Adopt a City Ordinance to relinquish all unclaimed bicycles that have been seized as evidence, abandoned on public furniture (e.g., benches, hand rails, parking racks, lights posts, etc.), or found and not claimed to a local or regional bicycle cooperative. The bicycle cooperative shall refurbish, repair, recycle, and repurpose unclaimed bicycles to benefit local cities, residents, and organizations. Schedule: 0-5 years Responsible: Each city's Departments of Public Works, Planning, and/or law enforcement agency
Goal 2: Create a Safer Bicycling Environment in the San Gabriel Valley Create a safer bicycling environment throughout the San Gabriel Valley region for all types of bicycle riders and all trip purposes through addressing the non-infrastructure "E's" (Equity, Education, Encouragement, Enforcement, Evaluation) as a means of improving regional health, increased road safety, reduced carbon emissions and an overall increase in bike ridership.	
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 Responsible: Each city's Department of Parks and Recreation and law enforcement agency
	2.1.2 Provide multi-lingual bicycle safety information in languages that are widely used throughout the San Gabriel Valley Master Plan cities. Schedule: 0-5 years Responsible: Each city's Communications Department and law enforcement agency

	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: 2014-2024 Responsible: Each city's law enforcement agency
	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, public safety officers, and parks and recreation staff. Schedule: 2014-2024 Responsible: Each city's Department of Public Works and City Manager
	2.1.5 Support programs and public service announcements that educate motorists, bicycle riders, and the general public about bicycle operation, bicycle riders' rights and responsibilities, and safe road-sharing behavior via the city's website, local newspapers, and other such publications. Schedule: 2014-2024 Responsible: Each city's Communications Department and law enforcement agency
	2.1.6 Provide increased bicycle safety education to law enforcement staff that focuses on safe cycling, relevant traffic laws, and safe sharing of the roadway. Schedule: 2014-2024 Responsible: Each city's law enforcement agency
	2.1.7 Work with transit agencies to develop a comprehensive ongoing public service announcements promoting bicycling as a healthier, more sustainable mode of transportation. Schedule: 0-5 years Responsible: Each city's Departments of Public Works and Communications
Objective 2.2	*Enforcement for Improved Bicycling Safety* Increase enforcement activities that enhance the safety of people bicycling on bike paths and roadways
Policy Actions	2.2.1 As appropriate and feasible, increase enforcement of unsafe bicycle rider and motorist behaviors and laws that reduce bicycle/motor vehicle collisions and conflicts, and bike lane obstruction. Schedule: 2014-2024 Responsible: Each city's law enforcement agency
	2.2.2 Explore opportunities to increase motorists' awareness of the possibility of the presence of bicycle riders, especially at locations with a high incidence of bicycle-related collisions. Schedule: 2014-2024 Responsible: Each city's law enforcement agency
	2.2.3 To the extent feasible, consider utilizing bicycle-mounted patrol officers to promote bicycling awareness, prominence, and law enforcement accessibility. Schedule: 2014-2024 Responsible: Each city's law enforcement agency
	2.2.4 Develop or promote existing mechanisms for reporting behaviors that endanger bicycle riders. Schedule: 2014-2024 Responsible: Each city's law enforcement agency

	2.2.5 Coordinate with the Los Angeles County Sheriff's Department to increase the frequency of patrols on off-street shared-use paths within the County's jurisdiction, especially underneath bridge overcrossings. Schedule: 2014-2024 Responsible: Each city's law enforcement agency
Goal 3: Encourage Bicycling as Part of the San Gabriel Valley's Culture Create a strong bicycle-friendly culture throughout the San Gabriel Valley region as a way to increase bicycle ridership.	
Objective 3.1	*Partner with Local Bicycle 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 bicycle advocacy groups to secure funding for, publicize, and provide updated bike maps, safety tips, bike events (e.g., Bike to Work Day/Month), safety classes, commuting advice, bike valet services (e.g., at farmers' markets, concerts in the park, etc.), and other related activities aimed to encourage and increase bicycle ridership. Schedule: 0-5 years Responsible: Each city's Departments of Public Works, Parks and Recreation, and Communications
	3.1.2 Provide information to local bike groups, such as BikeSGV and the Los Angeles County Bicycle Coalition, to assist in promoting bicycling at public events, such as Bike to Work Day/Month and various city-sponsored events. Schedule: 0-5 years Responsible: Each city's Departments of Public Works and Communications
	3.1.3 Upon meeting eligibility requirements, apply for designation of "Bicycle Friendly Community" through the League of American Bicyclists. Schedule: 0-5 years Responsible: Each city's Department of Public Works
	3.1.4 Partner with local bicycle advocacy groups to maintain a technologically advanced, regionally based, multiplatform online information portal such as a website, smart phone application, and social network combination. The portal shall house the bike network map, disseminate and gather bicycle-related information, offer tips and suggestions, and provide a means to report and provide feedback related to the bicycle network. Schedule: 0-5 years Responsible: Each city's Department of Public Works, Community Relations, and/or Information Technology
Objective 3.2	*Host Open Street Events* Foster support for bicycling and walking by hosting regular Open Street events to build community and local business support for bicycling and infrastructure projects.
Policy Actions	3.2.1 Coordinate with neighboring jurisdictions to plan routes and seek grant funding for Open Street events from Metro. Schedule: 0-5 years Responsible: Each city's Departments of Public Works and Planning
	3.2.2 Work with local bike advocacy groups, business chambers, and community-based organizations to help plan routes and educate stakeholders about the benefits of Open Street events. Schedule: 0-5 years Responsible: Each city's Departments of Public Works and Planning

Objective 3.3	Encourage employees to ride bicycles as part of their regular commute
Policy Actions	3.3.1 Pending availability of funds, expand bicycle promotion and incentive programs for city employees to serve as a model program for other San Gabriel Valley employers. Schedule: 0-5 years Responsible: City Manager
	3.3.2 Work with local bicycle advocacy organizations to provide free education to city employees on how to commute by bicycle. Schedule: 0-5 years Responsible: City Manager
Goal 4: Thorough Evaluation of Bicycling-Enhancement Efforts in the San Gabriel Valley Measure the impact of infrastructure improvements, education, encouragement, and enforcement activities on the rates of bicycling and injuries.	
Objective 4.1	Conduct regular bicycle and pedestrian counts and surveys
Policy Actions	4.1.1 Work with local advocacy groups and community-based organizations to conduct annual or biennial citywide bicycle and pedestrian counts to track rates of cycling and walking over time. Schedule 2014-2024 Responsible: Each city's Department of Public Works
	4.1.2 Conduct before and after bicycle and pedestrian counts with the implementation of new infrastructure projects. Schedule: 2014-2024 Responsible: Each city's Department of Public Works
	4.1.3 Acquire and install temporary and permanent, where feasible, automated bicycle and pedestrian counters with the implementation of bike lanes, paths, and new pedestrian enhancements. Schedule: 2014-2024 Responsible: Each city's Department of Public Works
	4.1.4 Administer yearly or biennial general community bike surveys to understand the public's knowledge of the rules of the road, fears, and behaviors to inform the development and implementation of education and encouragement programs as well as infrastructure improvements. Schedule: 2014-2024 Responsible: Each city's Departments of Public Works and Communications

2.2 Relevant Regional Existing Plans and Policies

The San Gabriel Valley Regional 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 San Gabriel Valley Regional Bicycle Master Plan and existing plans in neighboring communities. Existing plans and policies in the five project cities themselves are discussed within their respective chapters (i.e., Chapters 3-7).

The surrounding communities vary with respect to their current bike plan status:

- Bicycle Master Plan adopted: Cities of Pasadena, Rosemead, South Pasadena, Temple City, Whittier, Los Angeles, and County of Los Angeles
- Bicycle Master Plan in progress: City of San Marino
- No Bicycle Master Plan: Cities of Alhambra, Arcadia, Irwindale, La Puente, Montebello, Monrovia, Pico Rivera, West Covina

2.2.1 San Gabriel Valley

Envisioning the Mid-Valley Transportation Corridor Plan (2013)

The Envisioning the Mid-Valley Transportation Corridor Plan identifies a range of improvements to the Ramona Boulevard/Badillo Street Corridor – such as land use changes, streetscape upgrades, and transit connections – through the cities of Baldwin Park, El Monte, Covina, and West Covina. The main purposes of the plan are to promote transit use and encourage transit-supportive development. To achieve these goals, the Plan calls for the study cities to provide and improve bicycle and pedestrian connections to transit.

The Plan specifically calls for bicycle network gap closures along the Ramona Boulevard/West Badillo Street corridor:

- El Monte Station to Durfee Avenue
- North Orange Avenue to Azusa Boulevard
- Grand Avenue to Covina City Limits

The Plan noted that the segment from El Monte Station to Durfee Avenue may be too narrow to implement an in-street Class II bicycle lane while still providing bus service. In this segment, the Plan team recommends a Class III bike route be implemented. The other two segments, however, have sufficient curb-to-curb width to accommodate bicycle lanes, and **Figure 2-1** illustrates what a bike lane might look like near a future enhanced bus stop. In addition, the Plan calls for the provision of bicycle parking throughout the corridor and recommends that the City of El Monte coordinate with Metro and other agencies to evaluate the suitability of a bike share facility at the El Monte Station.

Figure 2-1 *Before and After Photo Simulation on Ramona Boulevard*

2.2.2 Metro

Metro Complete Streets Policy (2014)

In October 2014, the Metro Board of Directors adopted the agency's Complete Streets Policy that will require all future transportation improvements that Metro undertakes or funds to include the provision/consideration of active transportation elements. The Complete Streets guidelines establish active transportation improvements as integral elements of the countywide transportation system. The Policy will serve as a tool to help guide Metro to better coordinate within the various functions and departments of the agency and between partner organizations that have influence or jurisdiction over the public realm. It also identifies opportunities and actions where Metro can support local Complete Streets implementation.

As part of the Policy's Implementation Strategy, Metro will:

- design and evaluate projects using the latest design standards and innovative design options, and they will encourage partner agencies and fund recipients to also follow the latest design guidelines;
- work with partner agencies and local jurisdictions to incorporate Complete Streets infrastructure into all transportation projects in a manner that expands the active transportation network and closes gaps/removes barriers;
- plan, design, and maintain transportation facilities to be consistent with local bicycle, pedestrian, transit, multimodal, goods movement, and other relevant plans; and
- develop additional performance metrics and track progress toward achieving sustainability policies and priorities, while also requiring Call for Projects grant recipients to collect and analyze active transportation performance measures before and after project implementation.

More information on Metro's Complete Streets Policy can be found at http://www.metro.net/projects/countywide-planning/complete-streets/

Metro First Last Mile Strategic Plan & Planning Guidelines (2014)

Metro's First Last Mile Strategic Plan, adopted by the Metro Board in April 2014, seeks to better coordinate infrastructure investments in rail station and bus stop areas to extend the reach of transit services, with the ultimate goal of increasing ridership. The Plan utilizes the concept of "the Pathway" to improve station access and extend access coverage to Metro Rail and BRT stations. The Pathway will be located along key access routes selected to shorten trip length and seamlessly connect transit riders with intermodal facilities, such as bus stops, bike hubs, parking lots, or regional bikeways. **Figure 2-2** illustrates a proposed Pathway network in North Hollywood.

Metro is currently supporting Pilot station areas in Arcadia, Duarte, Los Angeles, and Santa Monica. Relevant stations in this bicycle master plan area that will be subject to the planning guidelines include the El Monte Bus Station, existing Metro Gold and Silver Transit Line stations, and future Metro Gold Line stations that will be included in the planned Eastside Transit Corridor Phase 2.

Download the First Last Mile Strategic Plan at: http://media.metro.net/board/Items/2014/04_april/20140424rbmitem7.pdf

Metro Eastside Transit Corridor Phase 2 Build Alternatives (2013)

In the spring of 2010, Metro began preparing the Draft Environmental Impact Statement/Environmental Impact Report (Draft EIS/EIR) for the Eastside Transit Corridor Phase 2 project, shown in **Figure 2-3**). This study evaluates the two build alternatives, State Route 60 Light Rail Transit (LRT) and Washington Boulevard LRT, along with the required No Build and Transportation System Management (TSM) alternatives. The Draft EIS/EIR is scheduled to be released in early 2014. The goal of the proposed study is to improve mobility in the corridor by connecting to communities farther east of Los Angeles. Communities in the project area include Commerce, Montebello, Monterey Park, Pico Rivera, Rosemead, Santa Fe Springs, South El Monte, Whittier and the unincorporated portions of Los Angeles County.

For more information on the project: http://www.metro.net/projects/eastside_phase2/

***Figure 2-2** Proposed "Pathway" Network Map at North Hollywood Station*

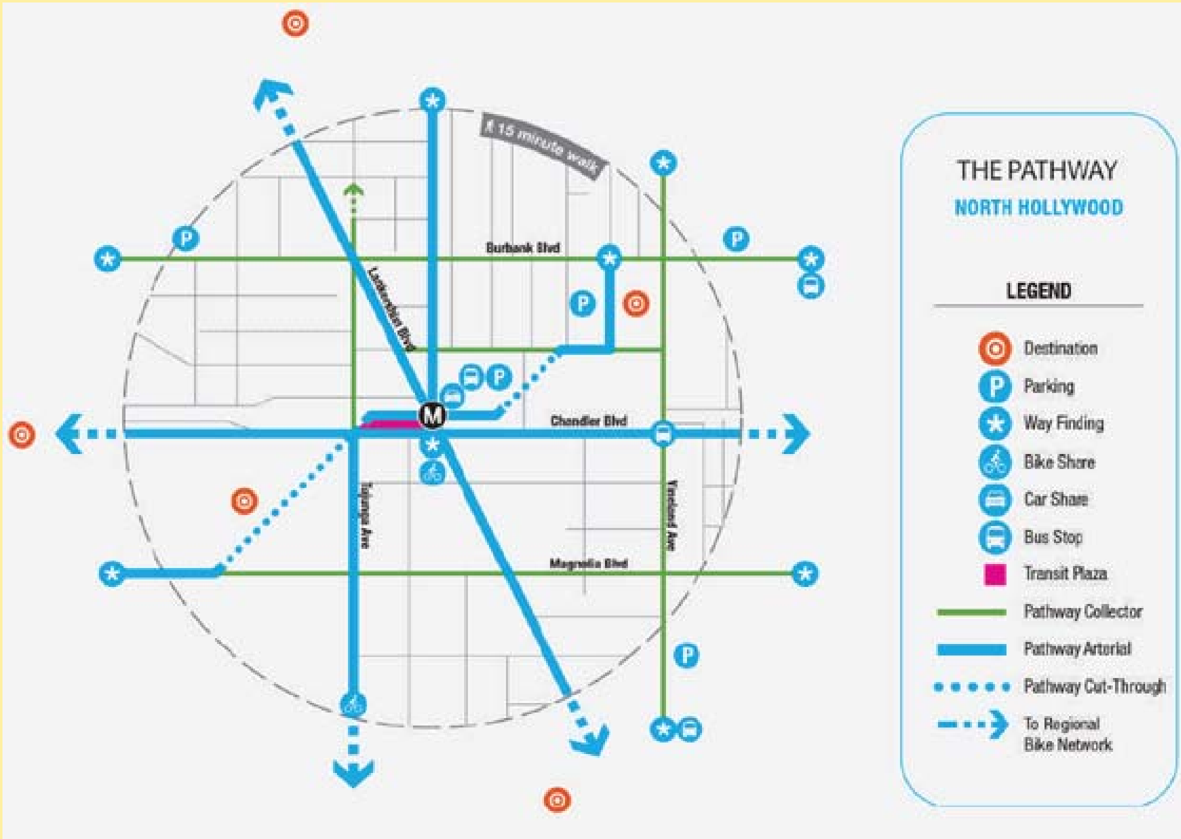


***Figure 2-3** Eastside Transit Corridor Phase 2 Build Alternatives*

Metro Countywide Sustainability Planning Policy & Implementation Plan (2012)

The Sustainability Plan lays out several Principles and Priorities that will help the agency "bring greater clarity, meaning, and consistency to its approach for implementing the 'sustainability' commitments currently reflected in its principal values, business goals, and sustainability mission and vision." Some of the principles and priorities that are relevant to the communities involved in the San Gabriel Valley Regional Bicycle Master Plan are:

- Prosperity. Reduce transportation costs for residents and provide the mobility necessary to increase economic competitiveness.
- Green Modes. Promote clean mobility options to reduce criteria pollutants, greenhouse gas emissions, and dependence on foreign oil.
- Healthy Neighborhoods. Improve public health through traffic safety, reduced exposure to pollutants, and design and infrastructure for active transportation.
- Community Development. Design and build transportation facilities that promote infill development, build community identity, and support social and economic activity.
- Context Sensitivity. Build upon the unique strengths of Los Angeles County's communities through strategies that match local and regional context and support investment in existing communities.

Metro's increased focus on sustainable communities and on improved accessibility suggests that the agency's direct or indirect sponsorship of localized strategies may be needed to advance regional goals. By adopting the above principles, Metro is committing itself to supporting initiatives aimed at intermodal connectivity, green modes, and healthy neighborhoods. These priorities require implementation and attention to detail at the local level. Desired outcomes include a higher number of trips made by active transportation and growth in transit trips that benefit from more attractive and welcoming pedestrian and bicycle infrastructure.

The Countywide Sustainability Planning Policy & Implementation Plan can be downloaded from: http://www.metro.net/projects/countywide-planning/

Metro Long Range Transportation Plan (2009)

Metro's Long Range Transportation Plan (LRTP) lays out the agency's commitment to increasing the share of trips in the County made by bicycle and on foot.

The LRTP states, "Bicycle and pedestrian programs are critical components of a successful transit system, as transit riders should be able to access buses and trains without having to drive a vehicle to and from transit stations. The sustainability of our transportation system depends upon the interface between modes." The San Gabriel Valley Regional Bicycle Master Plan would serve Metro's goal of connecting people to transit without them having to drive to stations or stops.

The LRTP estimates Metro's Call for Projects to include \$12.5 million/year for Strategic Plan bicycle projects and \$10.0 million/year for Strategic Plan pedestrian projects.

Find and download the entire LRTP at: http://www.metro.net/projects/reports/

Metro Bicycle Transportation Strategic Plan (2006)

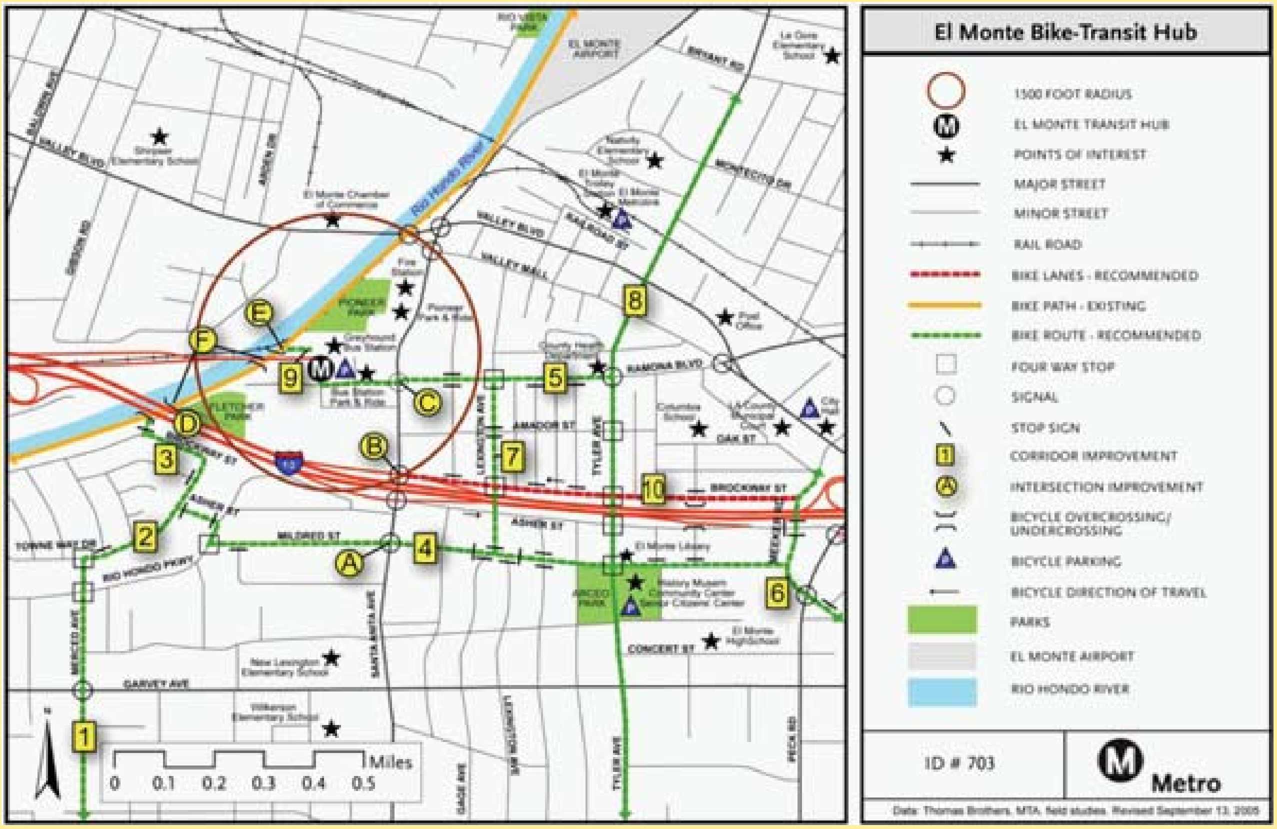
The goal of Metro's Bicycle Transportation Strategic Plan (BTSP) is to integrate bicycle use in transportation projects. The document demonstrates "the significance of bicycle use with transit as a viable mode to improve mobility options in the region." By promoting the bicycle as a viable transportation mode, the BTSP offers a vision of a Los Angeles region with improved overall mobility, air quality, and access to opportunities and resources.

The El Monte Bike Transit Hub was selected as a location that is in proximity to major activity centers and destinations which include parks, the El Monte Airport, Downtown El Monte, and three elementary schools, illustrated in **Figure 2-4**. The BTSP includes considerations for Class III facilities at the following locations:

- Merced Ave: from Towne Way Drive south
- Towne Way Drive: from Merced Avenue to Brockway Street
- Brockway Street: west from Towne Way Drive connecting to Rio Hondo River Path
- Mildred Street: west from Meeker Road, north on Rio Hondo Parkway, west on Asher Avenue
- Ramona Boulevard: between Tyler Avenue and the transit center
- Meeker Road: at Mildred Street, extending north and south
- Lexington Avenue: between Mildred Street and Ramona Boulevard
- Tyler Avenue: between Garvey Avenue and Valley Boulevard extending in both directions as appropriate.

The BTSP recommends that Class II bike lanes be added to Brockway Street between Meeker Road and Santa Anita Avenue. Additional suggestions include providing

***Figure 2-4** El Monte Bike-Transit Hub Recommendations*



more access to the Rio Hondo River Path and providing bicycle-sensitive loop detectors and bicycle detection markings on roadway pavement can improve the overall connectivity and quality of bicycle use.

For more information on Metro's bicycle-related policies, visit: http://www.metro.net/bikes/

San Gabriel Valley Sub-Region Mobility Matrix (in progress)

Metro and the San Gabriel Valley Council of Governments are coordinating to develop a Mobility Matrix for the San Gabriel Valley sub-region that will evaluate the long-term needs of pedestrians, bicycle riders, transit users and motorists. The Mobility Matrix would assess long-term local infrastructure needs and help build a consensus among local government officials on key projects essential to the region.

2.2.3 County of Los Angeles

Emerald Necklace Feasibility Study & Implementation Plan – Phase I (2013)

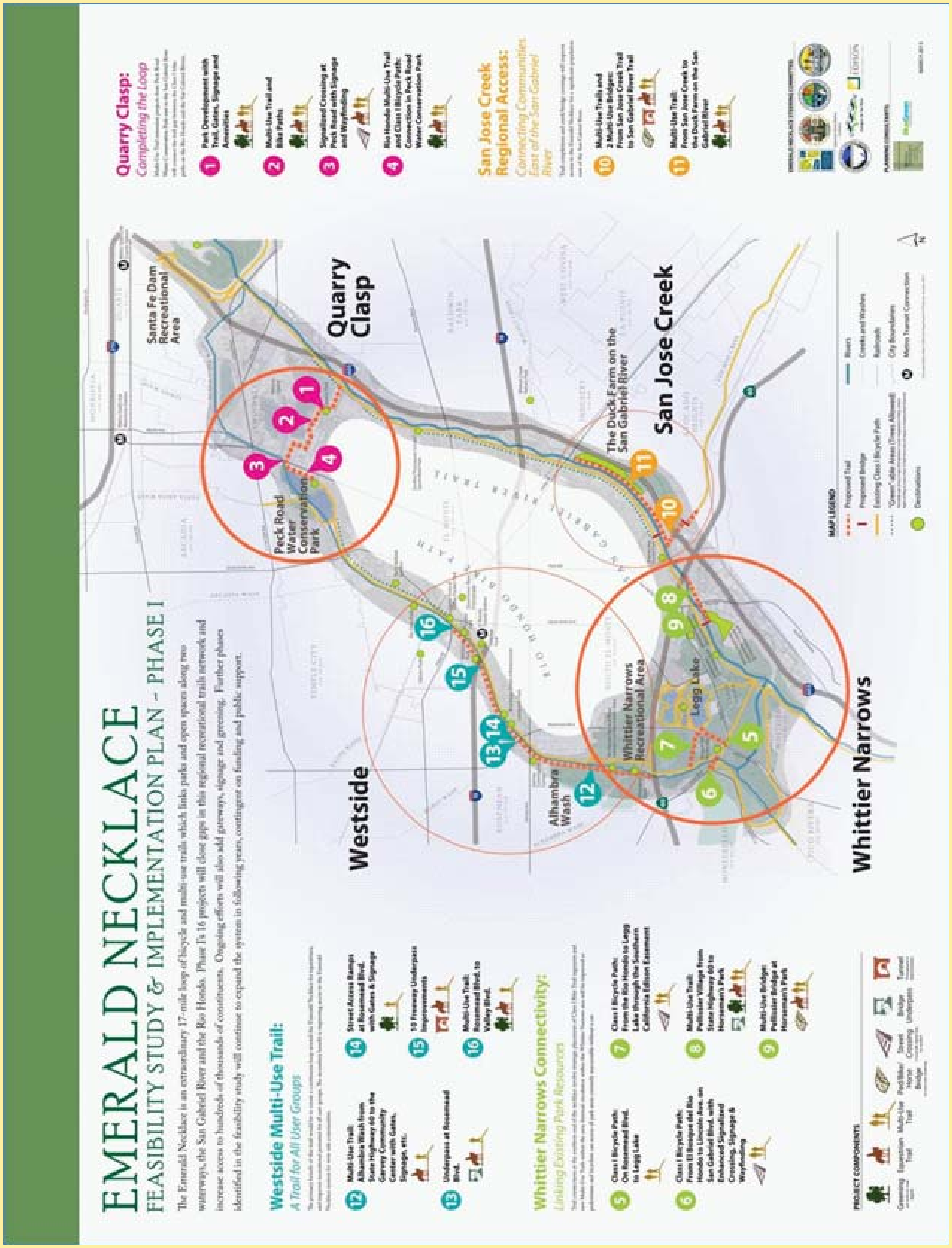
In 2012, the Watershed Conservation Authority completed a feasibility study that evaluated the existing elements of the Emerald Necklace and identified feasible projects that support the Emerald Necklace Vision. The Emerald Necklace Steering Committee then developed a set of goals that were used to prioritize a total of 44 potential projects. The goals include:

1. Completion of a trail loop through a "Clasp" at the northern portion of the loop;
2. Connecting Whittier Narrows to the trail loop;
3. Providing access to the Emerald Necklace for surrounding communities; and
4. Providing access points, missing multi-use/ equestrian trail elements, and other park elements.

Figure 2-5 shows the components of the top Emerald Necklace priority projects, and they are further summarized below.

More information on all of the projects can be found at: http://watershedconservationauthority.org/plans/EmNeck.html

Figure 2-5 Emerald Necklace Implementation Plan - Phase I



The Quarry Clasp

The Quarry Clasp Multi-Use Trail and Bike Paths

The purpose of the Quarry Clasp Multi-Use Trail and Bike Paths project is to connect a multi-purpose trail and a combination of Class I and II facilities from Peck Road to the existing Class I bicycle path on the San Gabriel River. The project site runs along the northern and eastern edges of the Foothill Transit Center, the southern edge of the Hanson Quarry, and along Clarke Street in the cities of El Monte, Temple City, Irwindale, and Arcadia. Potential development may begin after mining restoration commences in 2030. It is also dependent on private land owner agreements with Los Angeles County agencies and City of Arcadia approvals for street modifications.

Rio Hondo Multi-Use Trail and Class I Bicycle Path Connection in Peck Road Water Conservation Park

This segment is intended to connect Peck Road Water Conservation Park to the Hanson Quarry as part of the Emerald Necklace recreational system. The project will consist of a granite soft surface multi-use trail and a Class I bicycle facility that will extend north of Peck Road Water Conservation Park. Alignments will be routed from north of the parking lot and along the eastern park boundary to an existing traffic signal on Peck Road.

The multi-use path will be approximately 2,500 feet long and 10 feet wide with 4 inches of decomposed granite over a compacted base. Approximately 2,000 lineal feet of double rail fence will be constructed to separate the trail from Los Angeles County Flood Control activities.

The proposed Class I facility will follow Caltrans Highway Design Manual (HDM) and American Association of State Highway and Transportation Officials (AASHTO) guidelines. The path will be approximately 2,500 feet long, 12 feet wide, and striped to accommodate two-way bicycle travel. Easements will need to be obtained from the U.S. Army Corps of Engineers and Caltrans.

Whittier Narrows Connectivity

Class I Bicycle Path on Rosemead Boulevard to Legg Lake

This project is planned to improve recreational use from the southern portion of El Bosque del Rio Hondo to Legg Lake and from the east end of Siphon Road to Legg Lake. The project site is located between the Rio Hondo and San Gabriel River, San Gabriel Boulevard and Durfee Avenue to the south, and Legg Lake to the northeast. A Class I bicycle facility is recommended east of Rosemead Boulevard to the San Gabriel Boulevard/Durfee Avenue intersection and ending at the southwest corner of Legg Lake. The facility is planned for the wide shoulder of Rosemead Boulevard and designed according to Caltrans HDM standards and AASHTO Guidelines. The asphalted bike path will be approximately 1,900 feet long and 12 feet wide to accommodate two-way bicycle travel.

Class I Bicycle path from El Bosque del Rio Hondo to Lincoln Avenue on San Gabriel Boulevard

The focus of this Class I path project is to connect the northern and southern portions of the Rio Hondo Class I bicycle path along San Gabriel Boulevard. The project site is located north of San Gabriel Boulevard and to the west of Rosemead Boulevard. The median and shoulder lanes will be reduced to allow an expansion of the north sidewalk. The path will be designed to standards in the Caltrans HDM, AASHTO Guidelines, and the Manual on Uniform Traffic Control Devices (MUTCD).

Recreational users on the bike path traveling west from the San Gabriel River on the Siphon Road spur of the San Gabriel River Trail arrive at the southeast corner of the intersection of Rosemead Boulevard (State Highway 19) and Durfee Avenue. To reach the northwest corner of the intersection and the continuation of the trail, people bicycling dismount at this point and cross Rosemead Boulevard and Durfee Avenue with the traffic signal. West of Rosemead Boulevard, Durfee Avenue becomes San Gabriel Boulevard, and people bicycling travel on a short stretch of Class I bicycle path adjacent to the roadway before turning north following the Rio Hondo. Currently, there is a gap in the trail from the San Gabriel Boulevard Bridge to Lincoln Avenue where the Class I bicycle path resumes to the south. In this gap people bicycling use the shoulder of the road until they reach the light at Lincoln Avenue.

Recreational users travelling north on the Rio Hondo trail use the abandoned roadbed of old San Gabriel Boulevard to reach the signalized crossing at Lincoln Avenue. Traveling east from Lincoln Avenue to the intersection of San Gabriel and Rosemead Boulevard poses another challenge to people bicycling. Existing signage directs people bicycling onto the shoulder of San Gabriel Boulevard, but the shoulder ends abruptly before the Rosemead Boulevard intersection to make room for a vehicular right turn lane, creating an unsafe condition for people bicycling. Bicycle riders must now double back on the north side trail to continue north along the Rio Hondo Bike Path.

Easements will need to be obtained from the U.S. Army Corps of Engineers, Caltrans, the Los Angeles County Flood Control District, and the Los Angeles Department of Water and Power.

Class I Bicycle Path from Rio Hondo to Legg Lake through the Southern California Edison Easement

The purpose of the project is to connect the west side of the Emerald Necklace to the Whittier Narrows Recreation

Area. The project site is located between the Rio Hondo and San Gabriel River, south of SR-60, and west of Legg Lake. There will be a half-mile long Class I facility within a Southern California Edison transmission line corridor to connect the Rio Hondo Bike Path directly to the Whittier Narrows Recreation Area at Legg Lake. The 12-foot wide asphalt bike path will be designed to Caltrans HDM standards and ASSHTO Guidelines. A mid-block signalized pedestrian crossing on Rosemead Boulevard with center median modifications for planting and irrigation will be another component of this project. Easements will need to be obtained from the U.S. Army Corps of Engineers, Southern California Edison, and Caltrans.

Pellissier Village Multi-Use Trail from State Route 60 to Horseman's Park

The purpose of this project is to develop a pedestrian path and develop multi-use trail improvements with a storm water management/water quality component. The project site will be located along the eastern bank of San Gabriel River in the southern portion of the Emerald Necklace. The site is bisected by Peck Road, bounded by SR-60 to the north, and bounded by I-605 to the south. There will be a 5-foot wide and 1,950 foot-long path from the south side of SR-60 to the Peck Road Bridge. The same design will be constructed on the south side of Peck Road Bridge and extend to Horseman's Park and multi-use bridge across the San Gabriel River. This segment will be 440 feet long. ADA-compliant concrete and metal ramps will be constructed on both the north and south sides of the Peck Road Bridge. Easements will need to be obtained from the U.S. Army Corps of Engineers, the Los Angeles County Flood Control District, and the City of Los Angeles Department of Water and Power.

Pellissier Bridge at Horseman's Park

The Pellissier Multi-Use Bridge will be located on the San Gabriel River south of the Peck Road Bridge and north of the Zone 1 Diversion Structure at Lario Creek. The project site is southeast of the Emerald Necklace and along the San Gabriel River. The bridge will be 575 feet in length. Easements will need to be obtained from the U.S. Army Corps of Engineers, the Los Angeles County Flood Control District, and Southern California Edison.

San Jose Creek Regional Access

Multi-Use Trail and Bridge Connections from the San Jose Creek Trail to San Gabriel River Trail

The focus of this project is to close the half-mile gap between the San Gabriel River Trail and the San Jose Creek Trail with a Class I bicycle facility. The project site is north of SR-60 in the vicinity of I-605 and Workman Mill Road along San Jose Creek. The project includes four components:

- An 800-foot long extension of the Class I San Jose Creek bicycle path
- A 250-foot long multi-use recreational bridge that will span San Jose Creek
- A Class I facility extension adjacent to an equestrian trail from San Jose Creek Bridge to San Gabriel River Multi-Use Bridge
- A 600-foot long multi-use bridge that will span the San Gabriel River

Easements will need to be obtained from U.S. Army Corps of Engineers, the Los Angeles County Flood Control District, Southern California Edison, and the Watershed Conservation Authority.

Multi-Use Trail from San Jose Creek to the Duck Farm on the San Gabriel River

The focus of this project is to connect the existing and proposed Emerald Necklace trails to the Duck Farm on the San Gabriel River. The project site is north of SR-60 and San Jose Creek; to the east are I-605 and Workman Mill Road, and to the north is Valley Boulevard.

Easements will need to be obtained from the U.S. Army Corps of Engineers, Caltrans, the Los Angeles County Control Flood Control District, the Los Angeles Department of Water and Power, Southern California Edison, and the Watershed Conservation Authority.

Westside Multi-Use Trail

Alhambra Wash from State Route 60 to the Garvey Community Center

The purpose of this project is to improve connection between SR-60 and Garvey Community Center through the Los Angeles County Parks and Recreation riding and hiking easement. Right-of-way widths vary from 12'-30' along the Rio Hondo levee. Permission will need to be obtained from Caltrans, the City of Rosemead, the Los Angeles County Flood Control District, and the Army Corps of Engineers.

Rosemead Boulevard Access Ramp

The purpose of this project is to provide access to the Westside Multi-use Trail from Rosemead Boulevard. The project site is located on the western side of the Rio Hondo, and south of I-10. The project will construct an ADA accessible ramp along the north sidewalk of Rosemead Boulevard down to the Rio Hondo Channel. Construction will be adjacent to Caltrans right-of-way. Permission will need to be obtained from Caltrans, the City of El Monte, and the Los Angeles County Flood Control District.

Rosemead Boulevard Underpass

The Rosemead Boulevard Underpass project has two components:

- Re-contour the backside of the levee through the underpass at Rosemead Boulevard to provide a wider trail passage to meet Los Angeles County Trails Manual standards.
- Construct a ramp on the back side of the levee for trail access to the underpass.

The project site is located adjacent to the western levee of the Rio Hondo, south of Rosemead Boulevard, and north of the Rubio Wash. To complete this project, permission must be obtained from Caltrans, the City of South El Monte, the Los Angeles County Flood Control District, and the Army Corps of Engineers.

Multi-Use Trail from Rosemead Boulevard to Valley Boulevard

This project will construct a continuous trail on the west side of the Rio Hondo from Rosemead Boulevard to Valley Boulevard. Approximately 7,000 lineal feet of trail will be constructed or upgraded in the easement. Permission must be obtained from Caltrans, the Los Angeles County Flood Control District, Metrolink/Los Angeles County Transportation Commission, and the Army Corps of Engineers. Additionally, approval must be obtained from the City of El Monte.

Interstate 10 Freeway Underpass Improvements

The I-10 Freeway Underpass Improvements will connect a new multi-use trail in the hiking and riding easement to the maintenance roadway, allowing recreational trail user access through the underpass tunnel. The tunnel has potential to flood and is under the jurisdiction of the Los Angeles County Flood Control District. Permission must be obtained from the Los Angeles County Flood Control District and the Army Corps of Engineers. This project must be approved by the City of El Monte.

County of Los Angeles Bicycle Master Plan (2012)

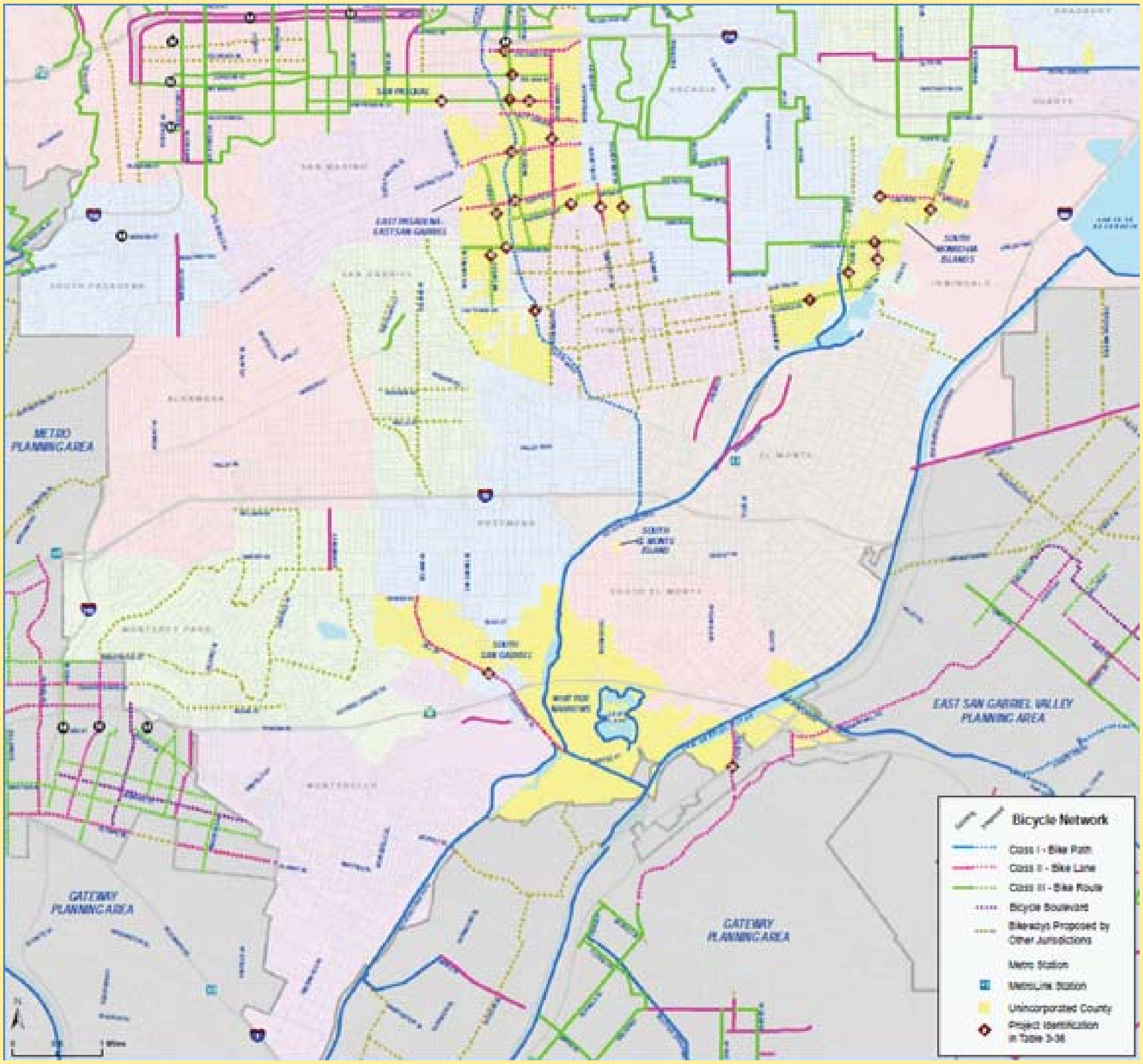
The County of Los Angeles Bicycle Master Plan (BMP) proposes to build on the existing 144 miles of bikeways throughout the unincorporated portions of the County, and install approximately 831 miles of new bikeways in the next 20 years. Proposed bikeways in the West San Gabriel Valley Planning Area are shown in **Figure 2-6**. The following relevant goals and policies are included in the County BMP:

- Goal 1: Expanded, improved, and interconnected system of county bikeways and bikeway support facilities to provide a viable transportation alternative for all levels of bicycling abilities, particularly for trips of less than five miles.
    - IA. 1.6.1: Identify where bicycle parking facilities are needed, and identify the appropriate type.
- Goal 2: Increased safety of roadways for all users.
    - IA.2.2.1: Identify opportunities to remove travel lanes from roads where there is excess capacity in order to provide bicycle facilities.
    - Policy 2.3: Support traffic enforcement activities that increase the safety of people bicycling.
    - IA 2.5.1: Implement improvements that encourage safe bicycle travel to and from school.
- Goal 3: Develop education programs that promote safe bicycling.
    - Policy 3.1: Provide bicycle education for all road users, children and adults.
    - 3.1.1: Offer bicycle skills trainings, bicycle safety classes, and bicycle repair workshops.
- Goal 4: Encouragement Programs.
    - Policy 4.1: Support organized rides or cycling events, including those that may include periodic street closures in the unincorporated areas.
    - Policy 4.2: Encourage non-automobile commuting.
- Goal 5: Community supported bicycle network.
- Goal 6: Funded bikeway plan.
    - Policy 6.1: Identify and secure funding to implement this Bicycle Master Plan.

More information on the County's Bike Plan can be found at:

http://dpw.lacounty.gov/pdd/bike/masterplan.cfm

***Figure 2-6** West San Gabriel Valley Planning Area Proposed Bicycle Facilities*



Whittier Narrows Dam Basin Recreation Area Master Development Plan Input (2010)

The Whittier Narrows Dam Basin Recreation Area Master Development Plan Input focuses on restoring the landscape and water quality, reconnecting recreational trails, reconnecting the two rivers, and recreating public use of the existing land use. The Basin is located between the Rio Hondo and San Gabriel River. The site is bounded by the cities of South El Monte, Rosemead, Pico Rivera, Montebello, Whittier, and Industry.

Input reflected that users would like trail separation with a clear trail hierarchy with mapped routes. Additional striping, pavement markings, or signage could improve navigation, especially in times of stress or danger.

The plan discusses implementation of "green streets", which also includes bicycle and pedestrian amenities, can provide safe connections as well as provide improved storm water management. The following is a "green streets" recommendation specific to Rush Street:

- Develop a prototype "Green Street" to demonstrate and illustrate the concept. Rush Street extension from Rosemead Boulevard to the Rio Hondo would be a manageable project for which a grant might be obtained. Measure R Transportation Funds may also be available.

The plan discusses a strong potential for conversion of the following roadways to "green streets"; Rosemead Boulevard, Durfee Avenue, San Gabriel Boulevard and

Santa Anita Avenue. These roadways are zoned for light industrial uses and have low vehicular traffic volumes. Providing bicycle facilities on these streets can encourage users to walk or bike safely to the Basin.

The plan discusses the following:

- Area C, a designated recreation area, currently includes 3B Sporting Clays, an archery range, and a sporting dog area. However, there is a recommendation to convert part of this location to a mountain bike course or a similar activity.
- El Bosque del Rio Hondo provides a year-round trail that provides access to bike paths and equestrian trails, as well as other amenities.

For more information, visit: http://watershedconservationauthority.org/plans/whittier_narrows.html

San Gabriel River Corridor Master Plan (2006)

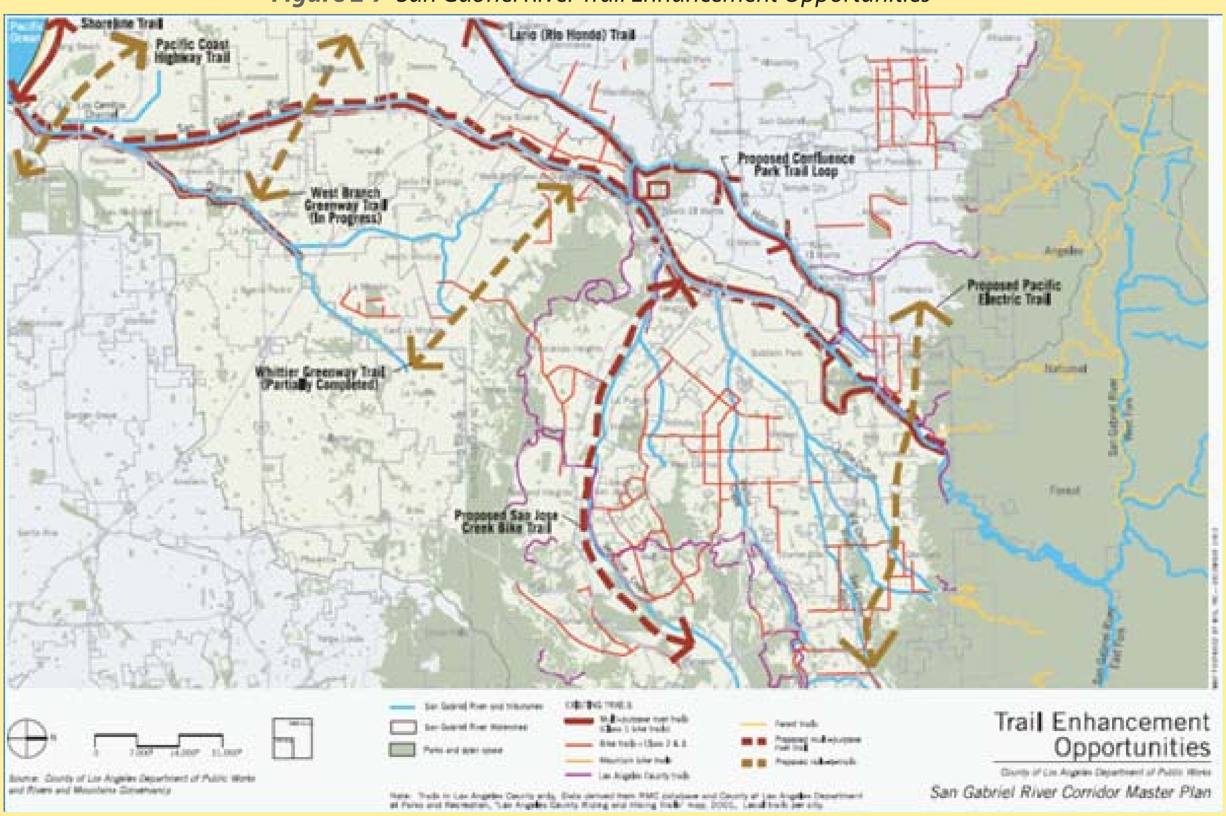
The San Gabriel River Corridor Master Plan seeks to identify priorities as well as guide and coordinate enhancement projects to preserve and improve the San Gabriel River. The 39-mile Class I San Gabriel River Bike Trail runs parallel to the San Gabriel River and connects to various hiking trails. **Figure 2-7** demonstrates that there is potential for the bike trail to serve as the central spine for the regional trail network. All trails and structures that will be constructed must be ADA compliant. The Recreation Element and Economic Development Element seek to improve accessibility and connectivity for all recreational trail users. Various projects have been proposed that intersect or connect with the San Gabriel River Bike Trail:

- Ramona Boulevard Gateway will provide a key entry point to the San Gabriel River Bike Trail and the City of El Monte.
- Baldwin Park project will upgrade the trail to connect Barnes Park, the San Gabriel River Bike Trail, and neighborhood schools.
- The City of El Monte would like to improve Durfee School Recreation along the San Gabriel River and provide access to the San Gabriel River Bike Trail.

As part of the San Gabriel River Corridor Master Plan, the Los Angeles County Flood Control District also adopted the Los Angeles River Master Plan's Landscape Guidelines (2004). This document provides guidelines for bicycle paths, parking facilities, and wayfinding signage, among other bicycle-related components.

For more information: http://dpw.lacounty.gov/wmd/watershed/sg/

Figure 2-7 San Gabriel River Trail Enhancement Opportunities



Rio Hondo Water Management Plan (2004)

Among several goals, the Rio Hondo Water Management Plan aims to improve recreational opportunities within the watershed by enhancing the numerous bicycle trails. Recommended enhancements include improved signage, multi-lingual maps, and an integrated system of amenities to increase comfort and safety. The Management Plan also recommends increased access to trails, including safe urban trail linkages along surface streets or utility corridors. In particular, the Management Plan includes recommendations to improve the Rio Hondo Bicycle Path entrance at Peck Park.

The Plan can be downloaded at: http://www.arroyoseco.org/Rio_Hondo_Water_Management_Plan.pdf

2.2.4 Southern California Association of Governments (SCAG)

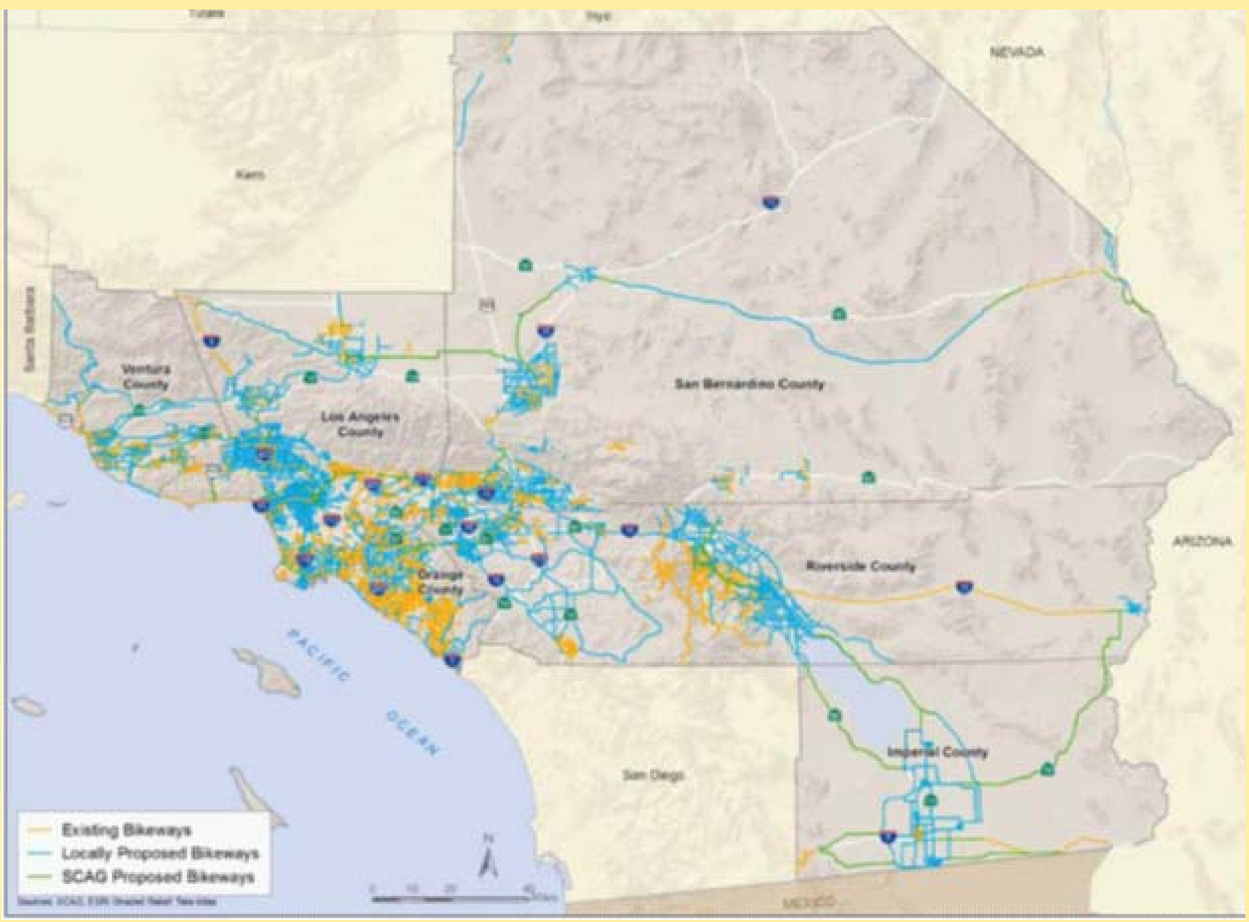
SCAG Regional Transportation Plan/Sustainable Communities Strategy (2012)

The Regional Transportation Plan (RTP) has the primary goal of increasing mobility for the region's residents and visitors. The Sustainable Communities Strategy (SCS), part of the RTP, demonstrates the region's ability to attain and exceed the greenhouse gas (GHG) emission-reduction targets set forth by the ARB. The 2012–2035 RTP/SCS includes a strong commitment to reduce emissions from transportation sources to comply with SB 375, improve public health, and meet the National Ambient Air Quality Standards as set forth by the federal Clean Air Act. Its emphasis on transit and active transportation will allow residents to lead a healthier, more active lifestyle.

The RTP/SCS contains a host of improvements to the region's multimodal transportation system, including increasing bikeways from 4,315 miles to 10,122 miles, bringing a significant amount of sidewalks into compliance with the Americans with Disabilities Act (ADA), safety improvements, and various other strategies. **Figure 2-8** shows proposed bikeways in the SCAG planning region.

The following are policies and goals related to preparation of the San Gabriel Valley Regional Bicycle Master Plan:

Figure 2-8 SCAG Regional Bikeway Network



- Policy 4: Transportation demand management (TDM) and non-motorized transportation will be focus areas, subject to Policy 1
- Goal: Encourage land use and growth patterns that facilitate transit and non-motorized transportation

The entire RTP/SCS can be found at: http://rtpscs.scag.ca.gov/Pages/default.aspx

2.2.5 State of California

Caltrans' Endorsement of NACTO Design Guidelines (2014)

In early 2014 Caltrans endorsed both the NACTO Urban Bikeway Design Guide and the NACTO Urban Street Design Guide. This endorsement signals a commitment by the agency to integrate a multimodal and flexible approach to transportation planning and design throughout the State. All cities in California may use the new guidelines on any streets within their jurisdiction. In addition, Caltrans is evaluating the guidelines to potentially inform future updates to the Highway Design Manual, which is the standard for designing facilities that are part of the State's highway system.

SB 99/AB 101 – California Active Transportation Program (2013)

On September 26, 2013, the Governor of California signed legislation creating the Active Transportation Program (ATP). The ATP essentially consolidates several previously separate active transportation funding sources, including the State's Bicycle Transportation Account, Safe Routes to School program, and Transportation Alternatives Program (minus Recreational Trails Program funds). The first grant cycle was open in Spring 2014, and it is expected that the next cycle will be open in Spring 2015.

Background:

The goals of the Active Transportation Program are to:

- Increase the proportion of biking and walking trips;
- Increase safety for non-motorized users;
- Increase mobility for non-motorized users;
- Advance the efforts of regional agencies to achieve greenhouse gas reduction goals;
- Enhance public health, including the reduction of childhood obesity through the use of projects eligible for Safe Routes to Schools Program funding;
- Ensure disadvantaged communities fully share in program benefits (25% of program); and
- Provide a broad spectrum of projects to benefit many types of active transportation users.

The Active Transportation Program is funded from various federal and State funds appropriated in the annual Budget Act. These are:

- 100% of the federal Transportation Alternative Program funds, except for federal Recreation Trail Program funds appropriated to the Department of Parks and Recreation;
- $21 million of federal Highway Safety Improvement Program funds or other federal funds; and
- State Highway Account funds.

In addition to furthering the goals of this program, all Active Transportation Program projects must meet eligibility requirements specific to the Active Transportation Program's funding sources.

Matching Requirements

No match from project sponsors is required for the Active Transportation Program funds awarded in the statewide competitive, small urban, or rural programs. The match required for federal funding may be met through the use of toll credits, through State Highway Account Funds in the Active Transportation Program, or through the use of other non-federal funds committed to the project. Large metropolitan planning organizations (MPOs), in administering a competitive selection process, may require a funding match for projects selected through their competitive process. While the statewide competitive program does not require matching funds, applicants from within a large MPO should be aware that the requirements in these two competitions may differ.

For more information on the Active Transportation Program: http://www.dot.ca.gov/hq/LocalPrograms/atp/index.html

AB 1371 - Three Feet for Safety Act (2013)

Signed by the Governor in September 2013, the Three Feet for Safety Act requires drivers who pass bicycle riders from behind to provide at least 3 feet of clearance. However, if traffic or roadway conditions prevent motorists from giving bicycle riders 3 feet of clearance, drivers must "slow to a speed that is reasonable and prudent" and wait to pass the bicycle rider only when doing so does not endanger the bicycle rider.

The Act makes a violation of these provisions an infraction punishable by a $35 fine. The Act also requires the imposition of a $220 fine on a driver if a collision occurs between a motor vehicle and a bicycle rider causing bodily harm to the bicycle rider, and the driver is found to be in violation of the Act's provisions.

The law took effect throughout the State on September 16, 2014.

For complete text of the bill: http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140AB1371

AB 417 – Bicycle Transportation Plans Exempted from CEQA (2013)

In 2013, California State legislators passed Assembly Bill No. 417, an exemption for bicycle transportation plans from CEQA requirements. This key legislation alleviates the legal and financial burden associated with preparing Environmental Impact Reviews (EIRs) for bicycle transportation projects. It also reduces individuals' ability to hinder the development of bicycle facilities through the courts. Generally speaking, AB 417 helps to streamline the process of designing and implementing bicycle transportation projects.

California Green Code (2011)

The California Green Code includes bicycle parking requirements and standards for new development. The California Green Code bicycle-related requirements are presented in **Table 2-1**.

Table 2-1 California Green Code Bicycle Parking Requirements

Category	Description
Bicycle Parking and Changing Rooms	Comply with sections 5.106.4.1 and 5.106.4.2; or meet local ordinance or the University of California Policy on Sustainable Practices, whichever is stricter.
Short-Term Bicycle Parking	If the project is expected to generate visitor traffic, provide permanently anchored bicycle racks within 100 feet of the visitors' entrance, readily visible to passers-by, for 5 percent of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack.
Long-Term Bicycle Parking	For buildings with over 10 tenant-occupants, provide secure bicycle parking for 5 percent of motorized vehicle parking capacity, with a minimum of one space. Acceptable parking facilities shall be convenient from the street and may include: • Covered, lockable enclosures with permanently anchored racks for bicycles • Lockable bicycle rooms with permanently anchored racks • Lockable, permanently anchored bicycle lockers

AB 1358 – California Complete Streets Act of 2008

The 2008 California Complete Streets Act requires that municipalities, "upon any substantive revision of the circulation element of the general plan, modify the circulation element to plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways, defined to include motorists, pedestrians, people bicycling, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation, in a manner that is suitable to the rural, suburban, or urban context of the general plan."

For more information: opr.ca.gov/docs/Update_GP_Guidelines_Complete_Streets.pdf

Caltrans Deputy Directive DD-64-R1 – Complete Streets-Integrating the Transportation System (2008)

Following passage of the State's Complete Streets Act, Caltrans adopted its own Complete Streets policy, which requires Caltrans to provide "for the needs of travelers of all ages and abilities in all planning, programming, design, construction, operations, and maintenance activities and products on the State Highway System." The Caltrans policy is supported by Federal law requiring safe accommodation for all users and State law that Caltrans provide an integrated multi-modal system. It also helps local governments meet their requirement under State law (AB 1358) to include Complete Streets in their General Plans.

State and federal laws require the Department and local agencies to promote and facilitate increased bicycling and walking. The California Vehicle Code (CVC) (Sections 21200-21212) and the Streets and Highways Code (Sections 890-894.2) identify the rights of people bicycling and walking and establish legislative intent that people of all ages using all types of mobility devices are able to travel on roads. People bicycling and walking and other non-motorized travelers are permitted on all State facilities, unless expressly prohibited (CVC, section 21960). Therefore, the Department and local agencies have the duty to provide for the safety and mobility needs of all who have legal access to the transportation system.

Department manuals and guidance outline statutory requirements, planning policy, and project delivery procedures to facilitate multimodal travel, which includes connectivity to public transit for people bicycling and walking. In many instances, roads designed to Department standards provide basic access for bicycling and walking. This directive does not supersede existing laws. To ensure successful implementation of "complete streets," manuals, guidance, and training will be updated and developed.

More information can be found at: http://www.dot.ca.gov/hq/tpp/offices/ocp/complete_streets.html

SB 375 – Sustainable Communities and Climate Protection Act of 2008

The Sustainable Communities and Climate Protection Act (SB 375) supports the State of California's climate action goals to reduce GHG emissions through coordinated transportation and land use planning with the goal of fostering more sustainable communities.

Under SB 375, the California Air Resources Board (ARB) sets regional targets for GHG emissions reductions from passenger vehicle use. In 2010, ARB established these targets for 2020 and 2035 for each region covered by one of the State's MPOs; the Southern California Association of Governments (SCAG) is the MPO covering the San Gabriel Valley. SCAG has prepared a sustainable communities strategy (SCS) to guide regional efforts to meet GHG emission reduction targets. Encouragement of non-motorized transportation modes is one tactic to lower transportation-related emissions.

SB 375 also establishes incentives to encourage local governments and developers to implement the SCS. For instance, developers can get relief from certain environmental review requirements under the California Environmental Quality Act (CEQA) if their new residential and mixed-use projects are consistent with a region's SCS that meets the targets (see Cal. Public Resources Code §§ 21155, 21155.1, 21155.2, 21159.28.).

For more information, visit: http://www.arb.ca.gov/cc/sb375/sb375.htm

AB 32 – Global Warming Solutions Act of 2006

In 2006, the California Legislature passed and the Governor signed the Global Warming Solutions Act, which sets the 2020 greenhouse gas emissions reduction goal into state law. It also directed the California Air Resources Board (CARB) to develop action plans for meeting those GHG reduction targets. SB 375, adopted in 2008 to require coordination of transportation and land use planning, is one of the tools supporting CARB's goals.

More information on AB 32, including a timeline for implementation, is available on CARB's website:

http://www.arb.ca.gov/cc/ab32/ab32.htm

3 Baldwin park

This chapter presents Baldwin Park's portion of the San Gabriel Valley Regional Bicycle Master Plan. The chapter is organized into the following sections:

- Existing Conditions
- Needs Analysis
- Recommended Bicycle Facilities & Programs
- Project Costs
- Project Implementation
- Active Transportation Program (ATP) Compliance

3.1 Existing Conditions

Baldwin Park is located in the central part of the San Gabriel Valley. There are approximately 75,650 residents with 11,110 people per square mile and a total area of 6.89 square miles. Baldwin Park is bordered by Interstate 605 (I-605) on the western boundary and the Interstate 10 (I-10) freeway along the southern boundary. The Baldwin Park Transit Center and adjacent Cruz Baca Transit Center Metrolink station are key transportation destinations serving local buses and Metrolink trains, respectively. Bicycle riders and others are drawn to the Santa Fe Dam for recreational activity. Baldwin Park is in the process of developing a Non-Motorized Active Transportation Plan for the Downtown District, a Safe Routes to School Strategic Plan, and a sustainability element that will be incorporated into the General Plan.

The purpose of this chapter is to explore existing bicycling conditions in Baldwin Park. With a bicycling mode share of 1.0 percent (for all trips), Baldwin Park has somewhat higher bicycle use than neighboring communities, and the same rate as the City of Los Angeles and State of

Image 11- *Baldwin Park City Hall*

Image 12- *Gateway at Cruz Baca Transit Center*

California (1.0 percent, respectively). An estimated 5,194 bicycle trips are made daily in Baldwin Park.

3.1.1 Land Use

Figure 3 1 presents Baldwin Park's land use map. Single family residential homes account for approximately fifty-five percent (55%) of the city's land area while six percent (6%) is occupied by multi-family residential buildings. Parks, open space, and recreational facilities account for less than one percent (0.7%) of land. Commercial, mixed-use, and office designations account for a total of approximately ten percent (10%) of the City's land, while industrial uses make up nine percent (9%). This land use pattern makes Baldwin Park a place where people can both live and work.

3.1.2 Relevant Plans and Policies

This section discusses various City of Baldwin Park plans and policies and their relevance to this Plan.

Low Impact Development Standards (2014)

The Low Impact Development Standards amend the City of Baldwin Park Municipal Code to comply with storm sewer standards set by the California Regional Water Quality Control Board (RWQCB). The Standards require that major development and transportation projects apply site grading and infiltration techniques in order to:

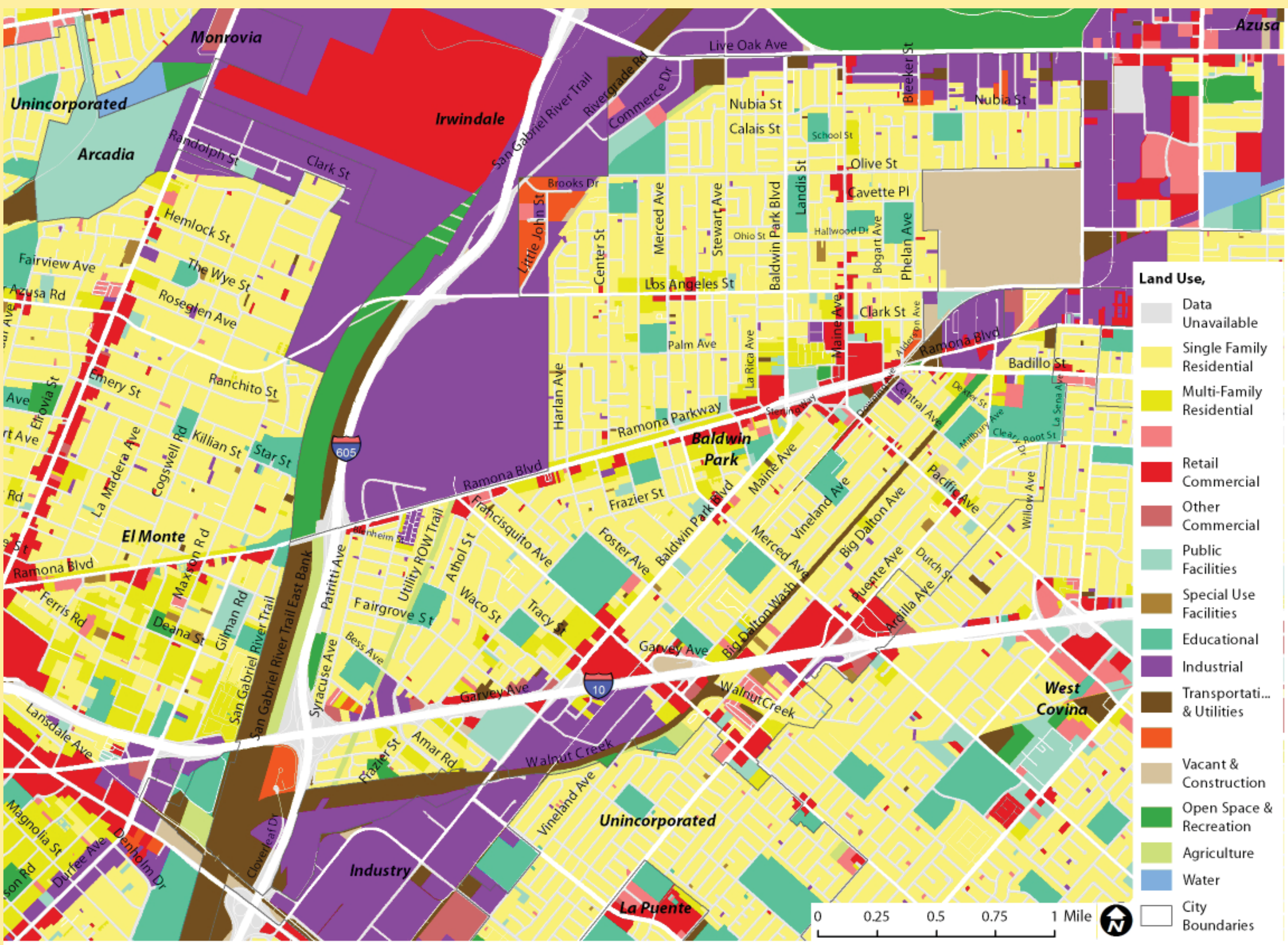
- Reduce the amounts of pollutants in stormwater and urban runoff.
- Develop specifications for low cost treatment systems that are easy for the developer to install.
- Encourage the installation of treatment systems that are easy to maintain, minimizing the need for City enforcement.

Image 13- *Morgan Park*

Model Design Manual (2014)

Baldwin Park is expected to adopt Los Angeles County's Model Design Manual (in full or in part) during 2014. The Model Design Manual features a "complete streets" approach to roadway design, focusing on the safe and comfortable accommodation of pedestrians, bicycle riders and transit users, in addition to motorists and freight vehicles. Fundamental to the Model Design Manual's approach is the idea that creating vibrant, attractive and safe streets can lead to increased economic development. By adopting the Model Design Manual, Baldwin Park would continue its tradition of pursing street re-design as an economic development and placemaking strategy for both the historic city center and surrounding neighborhoods.

Figure 3-1 *Baldwin Park Land Use Map*



Ramona-Maine Central District Non-Motorized Active Transportation Plan – Draft (2013)

The Ramona-Maine Central District Non-Motorized Active Transportation Plan presents an ambitious vision for the historic central business district of Baldwin Park. The Plan links active transportation with neighborhood renewal, acknowledging that complete streets with high levels of walkability and bikeability are key to the long-term revitalization of the Ramona-Maine Central District. Plan goals include:

- Improve safety for non-motorized travelers
- Connect all modes of transportation
- Increase the City's economic vitality
- Create a Downtown destination
- Encourage walking and biking with transit use

Olive Street Improvement Plan (2012)

The City of Baldwin Park Olive Street Improvement Plan strives to improve Olive Street to make the community more livable, healthier, and more sustainable. Olive Street has two schools, residential neighborhoods and links to the primary commercial streets of Maine Avenue and Baldwin Park Boulevard. From the west side, Olive Street begins at Center Street and ends at Azusa Canyon Road. From the west it starts off with four lanes and on-street parking and ends with two through lanes and a turn lane. The curb to curb width varies from 64 feet to 40 feet.

A public workshop was conducted where attendees were able to give input for the redesign of Olive Street. The concept of a road diet with two lanes, a center turn lane and bike lanes was favored during the public workshop.

Baldwin Park Complete Streets Policy (2011)

The City of Baldwin Park approved its Complete Streets Policy on July 20, 2011. The objective of the Complete Streets Policy is to establish guiding principles and practices so transportation improvements are planned, designed, constructed, operated and maintained to encourage walking, bicycling, and transit use while promoting safe operations for all users. The City of Baldwin Park seeks to create a safe and efficient transportation system that promotes the health and mobility of all Baldwin Park citizens and visitors by providing multimodal access to all destinations throughout the city.

For more information: www.smartgrowthamerica.org/documents/cs/policy/cs-ca-baldwinpark-policy.pdf

Baldwin Park Civic Center Transit-Oriented Development Technical Assistance Panel (2011)

In 2011, the Urban Land Institute's Los Angeles chapter convened a technical assistance panel (TAP) to provide pro-bono planning assistance to the City of Baldwin Park with regard to Transit-Oriented Development (TOD) in its downtown core. The Panel envisioned revitalizing Baldwin Park's Civic Center area by creating a main street environment and improved pedestrian linkages to important destinations. Strategies recommended in the TAP report include:

- Leverage existing assets and improve linkages.
- Implement site improvements and support development opportunities.
- Develop of future housing at the site.

The 11-acre site is adjacent to the Cruz Baca Transit Center Metrolink Station, and is served by Metrolink's San Bernardino line and buses operated by Foothill Transit and the Los Angeles County Metropolitan Transportation Authority (Metro).

There is a two phase process to implement the improvements for the Central Business District and Civic Center Area, as shown in **Figure 3-2**.

1. Phase 1 (years 0-3) - Create a framework by updating the zoning ordinance to induce a mixed-use zone, an Environmental Impact Report (EIR), a site-specific plan, and create a Business Improvement District
2. Phase 2 (years 3+) - Involves the development and implementation of the TAP's vision.

- Creation of mixed-use project at the corner of Maine and Ramona
- Development of the Metrolink Station parking lot with housing
- Expansion of commercial uses in front of the Verizon building
- Expansion of the parking structure and demolition of storage facility

For more information: la.uli.org/wp-content/uploads/2011/12/TAP-Report-Baldwin-Park-Baldwin-Park-Civic-Center-Plaza-2011.pdf

Plan to Improve Corridors and Neighborhood Connections in Baldwin Park (2010)

The Plan to Improve Corridors and Neighborhood Connection (Corridors Plan) in Baldwin Park describes the process and results of a Design Fair in Baldwin Park. The plan focuses on four corridors within the City; Baldwin Park Boulevard, Ramona Boulevard, Pacific Avenue, and Maine Avenue, all of which accommodate high volumes of vehicular traffic. The City of Baldwin Park and community partners seek to make improvements along these corridors to achieve Complete Streets objectives.

The Corridors Plan included the following observations:

- The focus corridors had 357 collisions in 2007.
- A 5-feet wide bike lane exists in Baldwin Park on Ramona Boulevard.
- Bicycle riders generally ride on the sidewalk or face oncoming traffic.
- Bicycle riders also face potential hazards from on-street parking and opening car doors.

The Corridors Plan includes the following general recommendations related to bicycle travel and support:

- Use proper striping and symbols for Class II bike lanes and incorporate colored pavement.
- Install bike racks at key destinations; use racks that support frame of bicycle at two spots.
- Offer public rides and/or bike safety instruction when a new bike lane opens.
- Work with school district to host “bicycle rodeos” to introduce children to bicycle safety skills.
- Use shared lane markings (“sharrows”) on Class III bikeways; educate the public on how to use them.

Figure 3-2 *Baldwin Park TOD Concept Plan*

Baldwin Park Elementary Schools Traffic Safety Study (2008)

The Elementary Schools Traffic Safety Study analyzed vehicle traffic counts and speed profile data around 12 different elementary schools. Background studies identified adjacent streets and the existing conditions of each school. Driving behavior, including travel speeds and parking patterns, were monitored. Specific recommendations were given for each location.

For more information: baldwinpark.granicus.com/MetaViewer.php?view_id=10&clip_id=950&meta_id=102273

City of Baldwin Park 2020 General Plan (2002)

In addition to Goals and Policies calling for through traffic restrictions in residential neighborhoods and pedestrian enhancements in the City's downtown district, the 2002 General Plan recommended a network of bikeways to meet local bicycling needs and to connect to regional cycling routes (e.g., the San Gabriel River Bike Path). These proposed routes are shown in **Figure 3-3** and include proposed Class II bike lanes on Merced Avenue north of Ramona Boulevard and Baldwin Park Boulevard north of Ramona Boulevard.

3.1.3 Engineering

Existing Bicycle Facilities

This report refers to standard bikeway definitions identified by Caltrans in Chapter 1000 of the Highway Design Manual (Caltrans HDM). Additional concepts for bikeways have been promoted and implemented throughout the United States; however, they have not been adopted for use in the Caltrans HDM. Bicycle facility types are discussed in Section 1.3

Table 3-1 summarizes the classification and mileage of the existing network.

Table 3-1 Existing Bicycle Network

Facility Type	Mileage
Class I (Bike Path)	1.3
Class II (Bike Lanes)	3.2
Class III (Bike Route)	0.0
Total Mileage	4.5

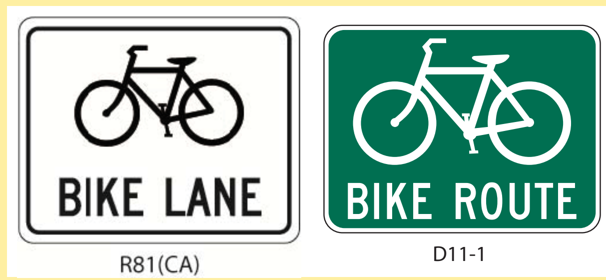
As shown in **Table 3-1**,, a total of 4.5 miles of bikeways are currently provided in the City of Baldwin Park, consisting of the following facilities:

- San Gabriel River Trail (maintained by Los Angeles County);
- Ramona Boulevard; and
- Badillo Street.

Signage

The California Manual on Uniform Traffic Control Devices (CA MUTCD) and the CA HDM outline the requirements for bikeway signage. The Bike Lane Sign (R81) is required at the beginning of each designated bike lane and at each major decision point. The Bike Route Sign (D11-1) is required on Class III facilities. Shared-use paths require additional standardized signs to help manage different user groups. The City has installed CA MUTCD standard signs along the appropriate bikeways.

***Figure 3-3** Caltrans Bikeway Signs*



Bicycle Parking

Bicycle storage can range from a simple and convenient bicycle rack to storage in a bicycle locker or cage that protects against weather, vandalism and theft. The City does not currently have an inventory of existing bicycle parking locations. Short-term bicycle racks can be found at some major destinations, including the Civic Center and parks throughout the city. Many bicycle riders resort to securing their bike to street fixtures such as trees, lights, telephone poles, and parking meters when sufficient parking facilities are not provided.

End-of-Trip Facilities

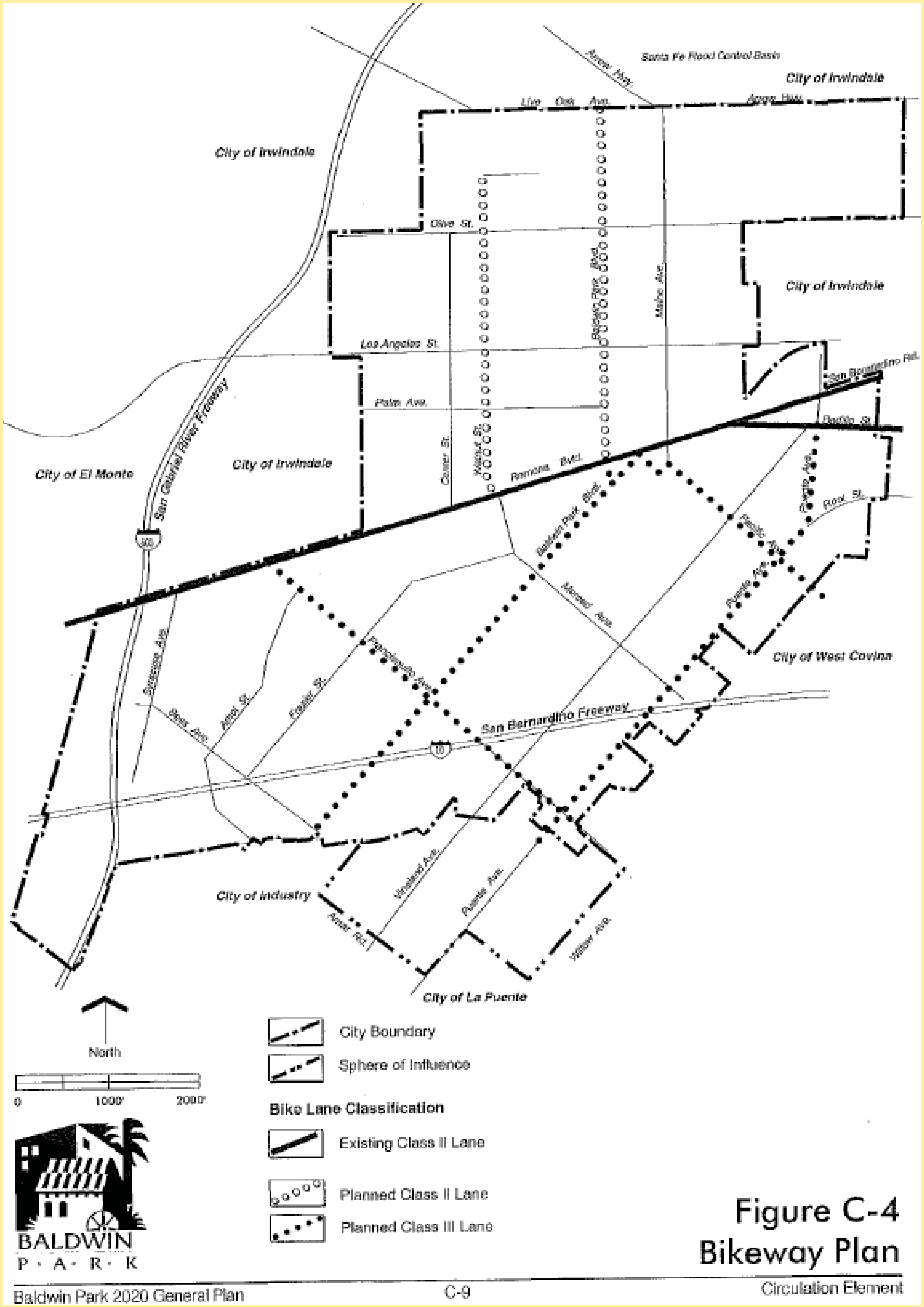
The presence and quality of trip-end facilities (e.g. showers, lockers, and changing facilities) can greatly influence a person's decision to complete a trip via bicycle. These facilities enable bicycle riders to change into work attire (especially after riding in wet or hot conditions). The City currently does not have an inventory of existing end-of-trip facilities.

Bicycle Signal Detection

Bicycle detection at actuated traffic signals permits bicycle riders to trigger a green light, even when no motor vehicle is present. California Assembly Bill 1581 requires all new and replacement actuated traffic signals[1]

1 *Actuated traffic signals stay red until the signal detects a car or bicycle rider that is waiting for the light to turn green.*

Figure 3-4 *Baldwin Park Bikeways Map from 2002 General Plan*



to detect bicycle riders and to provide sufficient time for a bicycle rider to clear an intersection from a standing start. Caltrans Policy Directive 09-06 clarifies the requirements and permits any type of detection technology. The most common technologies are in-pavement loop detectors and video detection. More recently, microwave detection has been used to detect and differentiate between bicycle riders and motor vehicles.

The City complies with the Caltrans Policy Directive by installing detector loops designed to detect bicycles during pavement rehabilitation and traffic signal upgrade projects. Traffic signal timing is reviewed and updated as necessary through traffic signal corridor timing projects.

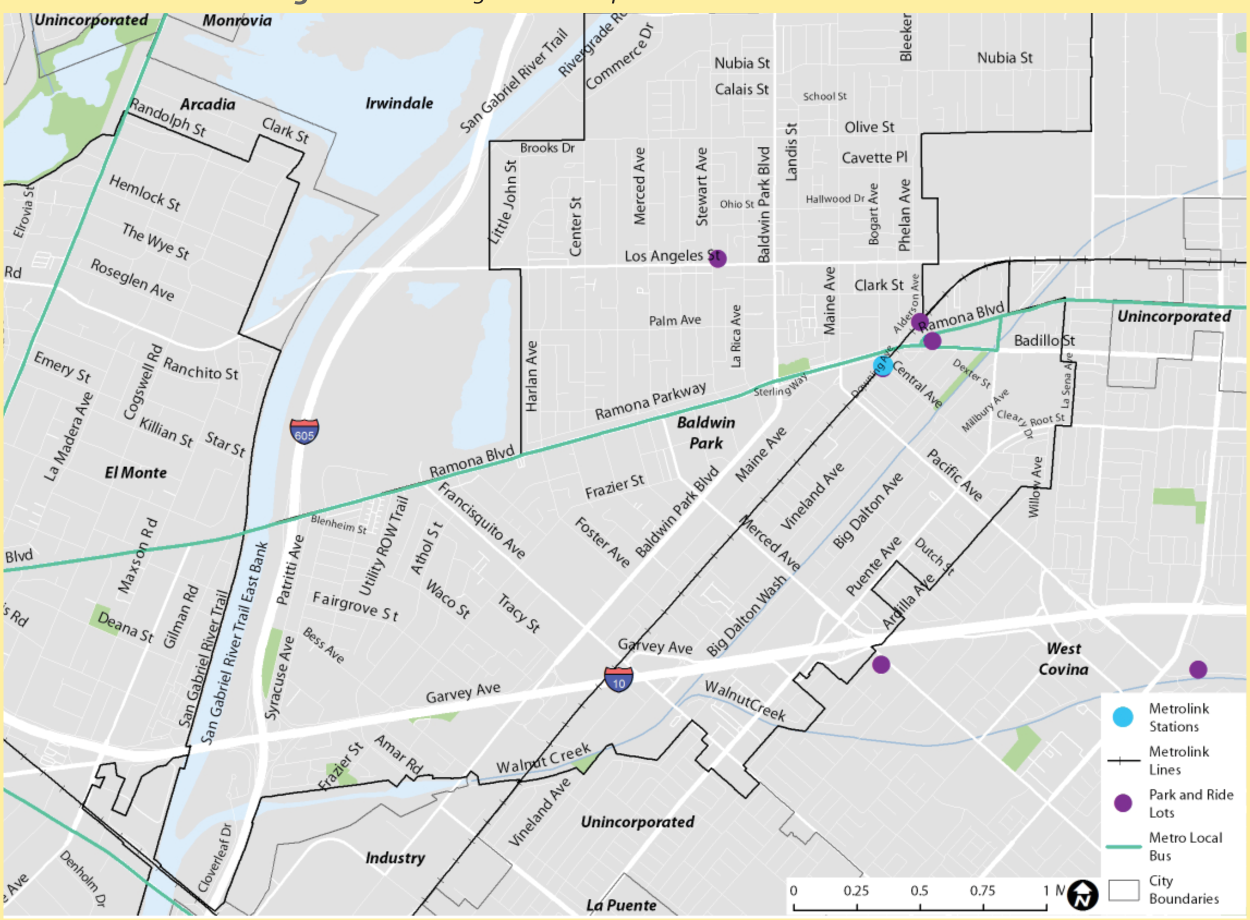
Multi-Modal Connections

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. **Figure 3-5** shows the existing Metro and Metrolink transit lines that serve the City of Baldwin Park and SCAG-identified Park-and-Ride lots within the City[2].

The Southern California Regional Rail Authority operates Metrolink commuter rail in the San Gabriel Valley. Baldwin Park is served by the San Bernardino line with a downtown park-and-ride station located near the Ramona Boulevard/Bogart Avenue intersection. All Metrolink trains allow bicycles on-board at all times, with each train car able to hold three bikes. In addition, several trains on the San Bernardino line contain a special “Bike Car” that is designed to hold 18 bicycles on the lower level; published Metrolink schedules show which trains contain the special bike cars.

The Los Angeles County Metropolitan Transportation Authority (Metro) operates local bus line 190 through the City of Baldwin Park along Ramona Boulevard, connecting residents to the El Monte Bus Station and Cal Poly Pomona. Metro buses are equipped with front-end racks that can carry two bicycles, which are available on a first-come, first-served basis.

***Figure 3-5** Existing Public Transportation Facilities in Baldwin Park*



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2 GIS mapping data were only available for Metro and Metrolink facilities.

Foothill Transit operates several bus lines that serve Baldwin Park, and all buses are equipped with racks that can carry two bicycles. Line 178 connects to El Monte Station and the Puente Hills Mall. Line 272 connects Baldwin Park to Duarte and the City of Hope Medical Center on one end and to The Plaza at West Covina on the other. Line 274 links the Baldwin Park Metrolink Station to Rio Hondo College and the City of Whittier. Line 486 passes through the southwestern corner of the City on its way between El Monte Station and Cal Poly Pomona, with stops in La Puente, Walnut, and at Mt. San Antonio College. Line 488 connects Baldwin Park to El Monte Station and the cities of Glendora, Covina, and West Covina. Line 492 serves Arrow Highway along the City's far northern boundary with Irwindale.

Baldwin Park Transit operates the Teal and Pumpkin lines that circulate around the City, seven days a week but for limited hours. Baldwin Park Transit buses do not accommodate bicycles.

Maintenance

Street maintenance programs aid in the quality and longevity of bicycle facilities. The City of Baldwin Park currently has a Street Maintenance program that provides staff with guidelines to inspect, schedule, and repair City streets, alleys, and bike trails. The program provides maintenance of signs, pavement markings, curb markings, street name signs, and roadway striping. In addition to as-needed repairs, the program annually repaints school pavement legends and inspects school regulatory and warning signs. Street sweeping occurs twice a month.

The Capital Improvement Program (CIP) serves to develop and construct major public improvements and address significant maintenance items. The CIP prioritizes and allocates funding for large scale projects including roadway resurfacing, repair projects, and improvements within the city.

3.1.4 Existing/Previous Education, Encouragement, and Enforcement Strategies

Bicycle education programs and enforcement of bicycle-related policies help to make riding safer for all bicycle riders. The City does not currently have education campaigns related to bicycling within the City.

Baldwin Park police officers enforce all bicycle-related rules in the California Vehicle Code and issue citations when they observe violations.

3.1.5 3.1.5 Past and Future Bicycle-Related Expenditures

No new bicycle facilities have been implemented within the City within the past three years. The City has obtained funding for and programmed the following bicycle- and pedestrian-related projects:

- The City of Baldwin Park is planning improvements on Maine Avenue from Los Angeles Street to Arrow Highway based on the City of Baldwin Park Manual for Living Street Design. The City received two Safe Routes to School grants that are intended to be used as funding anchors for the costs of design and construction. Proposed improvements include continental crosswalks, curb extensions, flashing beacons at crosswalks, and widened sidewalks.
- The City has secured $235,000 in State grant funds from Caltrans for conducting transportation studies and planning within the City's jurisdiction. The City of Baldwin Park has agreed to implement a Safe Routes to School Plan. Services performed by the City of Baldwin Park using the Caltrans funds must be in accordance with all applicable State and Agency laws, ordinances, regulations, and Caltrans published manuals, policies, and procedures.
- The Local Government Commission (LGC), in partnership with the City of Baldwin Park, has recently selected a consultant to prepare a community-based and comprehensive Safe Routes to School plan for 17 elementary and middle schools within Baldwin Park. Funding for the project is provided through a Caltrans Environmental Justice: Context Sensitive Planning Grant. The California Center for Public Health Advocacy (CCPHA) will be the lead partner conducting outreach to the community. Barriers to walking and bicycling to schools shall be identified. Approximately 7 to 13 percent of students at most elementary schools walk or ride a bicycle to school. The plan will focus on blending functionality and aesthetics in accommodating all transportation modes including pedestrians, bicycle riders, public transit vehicles, and automobiles.

3.2 Needs Analysis

This section describes the needs of bicycle riders in Baldwin Park. This section provides estimates and forecasts of bicycle travel to determine the estimated bicycling demand in the city. In addition, this section analyzes recent bicycle collision data to identify areas that would benefit from bicycle facility improvements. Public outreach efforts related to the preparation of this Plan are discussed in Chapter 1 and Appendices B, C, and D of this Plan.

3.2.1 Bicycle Demand Estimates and Forecasts

The model uses the U.S. Census Bureau's American Communities Survey (ACS) journey-to-work data and applies a market segment approach to estimate the number of bicycling or walking trips. Elementary school and college students usually have a different bicycle/walking mode split than work commuters.

In addition, national transportation surveys, in particular the National Household Travel Survey (NHTS, 2009), have shown that commute trips are only a fraction of the total trips an individual takes on a given day. The model uses the NHTS findings to estimate the number of non-work, non-school trips taken by commuters to determine the number of walking or bicycling trips that occur in a day. This information can be projected out using standard trip lengths by mode and trip purpose to estimate the number of driving miles reduced by non-motorized modes.

Model Data

The foundation of this analysis is the ACS 2008-2012 five-year estimate for Baldwin Park. Model variables from the ACS include: total population, employed population, school enrollment (grades K-12 and college students), and travel-to-work mode split.

The 2009 NHTS provides a substantial national dataset of travel characteristics, particularly for trip characteristics of bicycling and walking trips. Data used from this survey include:

- Student mode split, grades K-12
- Trip distance by mode by trip purpose
- Ratio of walking/bicycling work trips to utilitarian trips
- Ratio of work trips to social/recreational trips
- Average trip length by trip purpose and mode

Several of these variables provide a way to estimate the number of walking and bicycling trips made for other reasons than work trips, such as shopping and running errands. NHTS 2009 data indicates that for every bicycle work trip, there are slightly more than two utilitarian bicycle trips made. Although these trips cannot be directly attached to a certain group of people (not all of the utilitarian bicycling trips are made by people who bicycle to work), these multipliers allow a high percentage of the community's walking and bicycling activity to be captured in an annual estimate.

The Safe Routes to School Baseline Data Report (2010) was used to determine the percent of students who walk or bicycle by the parents' estimate of distance as well as the frequency of carpooling for trip replacement.

As with any modeling projection, the accuracy of the result is dependent on the accuracy of the input data and other assumptions. Effort was made to collect the best data possible for input to the model, but in many cases national data was used where local data points were unavailable. Examples of information that could improve the accuracy of this exercise include the detailed results of local Safe Routes to Schools parent and student surveys, a regional household travel survey, and a student travel survey of college students.

Existing Walking and Bicycling Trips

Table 3-2 below presents commute to work data estimates for Baldwin Park, as well as nearby cities and comparison geographies, as reported in the 2008-2012 American Community Survey 5-year estimates. This information for Baldwin Park is one of several inputs of the demand model.

Table 3-2 *Existing Mode Split Comparison with Neighboring Cities*

Jurisdiction	Walk	Bike	Transit	Carpool	Drive Alone
Baldwin Park	1.8%	1.0%	4.7%	15.9%	72.1%
Rosemead	1.3%	0.8%	4.3%	12.2%	76.2%
South Pasadena	1.2%	0.8%	5.1%	9.2%	78.4%
Temple City	0.8%	0.4%	3.4%	12.8%	77.5%
City of Los Angeles	3.7%	1.0%	11.1%	10.3%	67.0%
County of Los Angeles	2.9%	0.8%	7.1%	10.9%	72.2%
California	2.8%	1.0%	5.1%	11.5%	73.0%
United States	2.8%	0.6%	5.0%	10.0%	76.1%
Source: 2008-2012 American Community Survey 5-Year Estimates					

Table 3-3 shows the estimated current number of daily bicycling and walking trips. Based on the model assumptions, the majority of trips are non-work utilitarian trips, which include medical/dental services, shopping/errands, family personal business, obligations, transport someone, meals, and other trips.

Table 3-3 Current Weekday Bicycling and Walking Trips

	Bicycling	Walking	Source
Bicycling/walking commute trips	615	1,107	Employed population from ACS multiplied by mode split from ACS, doubled for round-trips
Walk- or bike-to-transit trips	29	838	Number of transit commuters from ACS multiplied by transit mode split from TCRP Report 153, doubled for round-trips
K-12 bicycle/walking trips	432	5,763	School children population from ACS multiplied by mode split from SRTS Baseline Data Report (2010), doubled for round-trips
College bicycle/walking trips	195	795	Employed population from ACS multiplied by mode split from NHTS 2009, doubled for round-trips
Daily bicycle/walking utilitarian trips	991	4,786	Bicycle/walking commute trips (above) multiplied by mode-specific utilitarian trip multiplier from NHTS 2009
Daily social/recreational trips	2,932	4,331	Bicycle/walking commute trips (above) multiplied by mode-specific social/recreational trip multiplier from NHTS 2009
Current daily bicycling and walking trips	5,194	17,620	
Annual Extrapolation			
Annual commute trips	161,644	488,195	Bicycle/walking and walk- or bike-to-transit trips multiplied by annual work days
Annual K-12 trips	77,760	1,037,340	K-12 bicycle/walking trips multiplied by annual K-12 school days
Annual college trips	29,250	119,250	College bicycle/walking trips multiplied by annual college class days
Annual utilitarian trips	260,426	2,110,687	Annual commute trips multiplied by mode-specific utilitarian trip multiplier

As shown in **Table 3-3**, current commute, school, college and utilitarian trips via bicycle is estimated at approximately 5,200 trips daily, and approximately 260,000 bicycle trips are estimated to occur annually.

Trip Replacement

To estimate the total distance residents travel to work or school by walking and bicycling, the model isolates different walking and bicycling user groups and applies trip distance information for walking or bicycling trips by mode based on NHTS 2009. **Table 3-4** shows the trip replacement factors.

Yearly factors are calculated by assuming that work and school/college trips occur five days per week, while utilitarian trips occur seven days per week. However, work and utilitarian trips occur year-round, while school and college trips are only three-quarters of the year, due to summer vacation.

Table 3-4 Current Bicycling and Walking Trip Replacement (Annual)

	Bicycling	Walking	Source
Vehicle commute trips replaced	130,703	397,963	Redistribution of bikers/walkers using existing mode split if that mode were not available
K-12 vehicle trips replaced	33,124	504,895	SR2S Baseline Data Report, 2010
College vehicle trips replaced	23,838	102,555	NHTS 2009
Utilitarian vehicle trips replaced	210,577	1,720,575	Redistribution of bikers/walkers using existing mode split if that mode were not available
Vehicle Miles Traveled			
Commute VMT replaced	462,689	266,636	NHTS 2009 average bicycle trip distance for "Work" trips
K-12 VMT replaced	25,438	179,299	SRTS 2010, percent of students who walk or bicycle by parent's estimate of distance
College VMT replaced	35,281	57,431	NHTS 2009 average trip distance for "School/Daycare/ Religious" trips
Utilitarian VMT replaced	398,693	1,147,050	Derived from NHTS 2009
Total VMT reduced	922,100	1,650,415	
Per capita VMT reduced	12.2	21.8	

Current Benefits

To the extent that bicycling and walking trips replace single-occupancy vehicle trips, they reduce emissions and have tangible economic impacts by reducing traffic congestion, crashes, and maintenance costs. In addition, the reduced need to own and operate a vehicle saves families money. These benefits are shown in **Table 3-5**.

Table 3-5 Annual Benefits of Current Bicycling and Walking Trips

Measure	Bicycling	Walking	Total
Yearly vehicle miles reduced	922,100	1,650,415	2,572,516
Air Quality Benefits			
Reduced Hydrocarbons (pounds/year)	2,765	4,948	7,713
Reduced Particulate Matter (pounds/year)	21	37	57
Reduced Nitrous Oxides (pounds/year)	1,931	3,457	5,388
Reduced Carbon Monoxide (pounds/year)	25,208	45,118	70,326
Reduced Carbon Dioxide (pounds/year)	750,134	1,342,622	2,092,756

As shown in **Table 3-5**, current bicycle trip benefits include the reduction of over 900,000 vehicle miles annually and a reduction of carbon dioxide emissions by over 750,000 pounds annually.

Potential Future Walking and Bicycling Trips

Estimating future benefits requires additional assumptions regarding Baldwin Park's future population and anticipated commuting patterns in 2035. Future population predictions as determined by the SCAG 2012 RTP Growth Forecast (for 2035) were used in this model. **Table 3-6** shows the projected future demographics used in the future analysis.

Table 3-6 Projected Future Demographics

Demographic	Value	Source
Population	82,200	SCAG 2012 RTP Growth Forecast (for 2035)
Employed population	33,417	Same percentage as current model estimate
School population, K-12	23,453	Same percentage as current model estimate
College student population	6,336	Same percentage as current model estimate

Forecast bicycling mode share was increased to address the higher use potentially generated by the addition of recommended bikeway facilities to the existing system.

The analysis predicts that the bicycle mode split will increase to 2% by 2035, due in part to bicycle network implementation and education/encouragement programs. The results of the future bicycling trips model, assuming an increase to 2.0% bicycle mode share, are shown in **Table 3-7**.

Table 3-7 Estimated Future (2035) Weekday Bicycling and Walking Trips

Trip Type	Bicycling	Walking	Discussion
Bicycle/walking commute trips	1,337	1,203	Employed population multiplied by mode split, doubled for round-trip
Walk- or bike-to-transit trips	31	911	Number of transit commuters multiplied by transit mode split from TCRP Report 153, doubled for round-trip
K-12 bicycle/walking trips	469	6,262	School children population multiplied by mode split, doubled for round-trip
College bicycle/walking trips	212	864	Employed population multiplied by mode split, doubled for round-trip
Daily bicycle/walking utilitarian trips	2,154	5,201	Bicycle/walking commute trips multiplied by mode-specific utilitarian trip multiplier
Daily social/recreational trips	6,375	4,706	Bicycle/walking commute trips multiplied by mode-specific social/recreational trip multiplier
Total future daily bicycling and walking trips	**10,578**	**19,147**	

As shown in **Table 3-7**, assuming bicycle mode split increases to 2%, forecast year 2035 commute, school, college and utilitarian trips via bicycle are estimated to grow to approximately 10,600 trips daily.

Future Benefits

The trip replacement factors remain the same as in the model of current trips. **Table 3-8** shows the air quality benefits of the future projected walking and bicycling trips.

Table 3-8 Annual Benefits of Future Bicycling and Walking Trips

Measure	Bicycling	Walking	Total
Yearly vehicle miles reduced	1,896,000	1,794,000	3,690,000
Air Quality Benefits[1]			
Reduced Hydrocarbons (pounds/year)	5,684	5,378	11,062
Reduced Particulate Matter (pounds/year)	42	40	82
Reduced Nitrous Oxides (pounds/year)	3,970	3,757	7,727
Reduced Carbon Monoxide (pounds/year)	51,824	49,037	100,861
Reduced Carbon Dioxide (pounds/year)	1,542,196	1,459,233	3,001,429

As shown in **Table 3-8**, assuming bicycle mode split increases to 2%, forecast year 2035 benefits include the reduction of almost 2 million vehicle trips annually and the reduction of carbon dioxide emissions by over 1.5 million pounds annually.

3.2.2 Bicycle Counts

A knowledge of current bicycling levels in the City of Baldwin Park helps to identify areas of particular need while also serving as a baseline from which to evaluate the impact of bicycling infrastructure and program improvements called for in this Plan. To assess current bicycling levels at different sites throughout the City, the project team conducted bicycle counts using two separate methodologies: manual counts with volunteers and automated counts using electronic tube counters.

Methodology

The methodology for the manual 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 existing levels of both utilitarian and recreational bicycling trips. The NBPD also provides guidance on how to select count locations.

Volunteers conducted bicycle counts at six locations in Baldwin Park on Saturday, June 7, 2014 from 11:00 a.m. to 1:00 p.m. and at six locations on Tuesday, June 10, 2014 both from 7:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 6:00 p.m. These dates are meant to capture volumes of bicycle riders on a typical weekday and weekend day. The manual bike count locations were selected by staff members from the City of Baldwin Park, Day One, and Alta Planning + Design. This snapshot of locations is intended to capture a diverse bicycling population using the roads and streets that span the spectrum of "bike-friendliness."

In addition to manual counts, automated 24-hour bicycle counts were conducted using Eco-Counters that were procured by the Los Angeles County Department of Public Health and distributed to each of the five Regional Bike Plan partner cities for various time periods. In Baldwin Park, the automated counters were installed at six locations between May 15th and July 28th, 2014. The project team experienced several issues with the automated counters that negatively affected the accuracy of the bicycle count data, such as maintenance problems and data reporting flaws. Therefore, the project team recommends that the automated count data be dismissed in favor of the manual count results. However, the automated counting technology should be refined and considered for use in future bicycle data collection efforts.

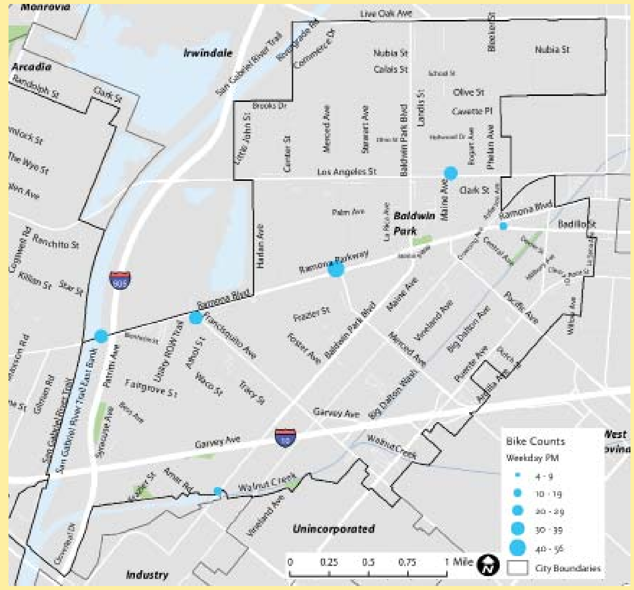
Results

Manual bicycle count locations and results for the City of Baldwin Park are displayed in **Figure 3-6, Figure 3-7, and Figure 3-8** as well as in **Appendix F**. During the Tuesday morning manual counts, the Baldwin Park segment that experienced the highest volume of bicycle riders was Ramona Boulevard between the San Gabriel River Trail and the I-605 freeway, with 42 total bicycle riders passing during the two hour count period. In the afternoon of that same Tuesday, the count location of Merced Avenue between Ramona Parkway and Ramona Boulevard saw the highest volume of bicycle riders – 41 bicycle riders from 4:00 p.m. to 6:00 p.m. On Saturday, the most bicycle riders were again counted along Ramona Boulevard between the San Gabriel River Trail and the I-605 freeway, with 74 riders passing by during the count period.

Across all of the count locations and observation periods, approximately 93 percent of bicycle riders counted were male. Approximately 91 percent of those observed were not wearing bicycle helmets, and 62 percent were riding on the sidewalks. Riding on the sidewalk can be an indicator of a lack of safe bicycling facilities and/or proper education, as bicycle riders that are uncomfortable riding with traffic may choose to instead travel along the sidewalk.

Figure 3-6 *Weekday Morning Bicycle Count Results in Baldwin Park*

Figure 3-7 *Weekday Afternoon Bicycle Count Results in Baldwin Park*



3.2.3 Bicycle-Related Collision Analysis

Safety is a major concern for current and potential bicycle riders, and can influence the decision whether or not to bicycle. Potential bicycle riders that do not have experience riding, especially in traffic, typically will not ride if they perceive the roadway as dangerous. People who do not ride often express frustration when drivers do not see them or do not understand that bicycle riders are afforded the same rights as vehicles. Similarly, many bicycle riders do not know or follow the "rules of the road." Uninformed or unlawful roadway users can contribute to collisions.

This section reviews bicycle-related collisions from January 2007 to December 2011, as reported by the Statewide Integrated Traffic Records System (SWITRS). **Table 3-9** presents the number of bicycle-related collisions in Baldwin Park from 2007-2011. **Figure 3-9** maps bicycle-related collisions over the study period with larger dots representing locations with multiple collisions.

Figure 3-8 *Weekend Bicycle Count Results in Baldwin Park*

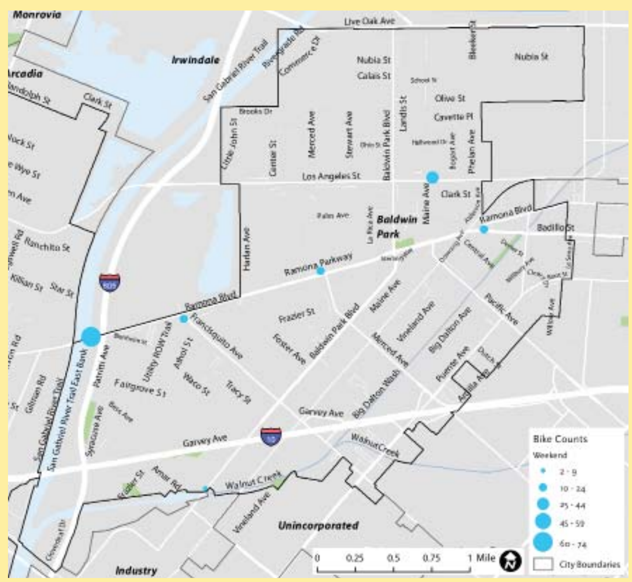


***Figure 3-9** Bicycle-Related Collisions in Baldwin Park, 2007-2011*

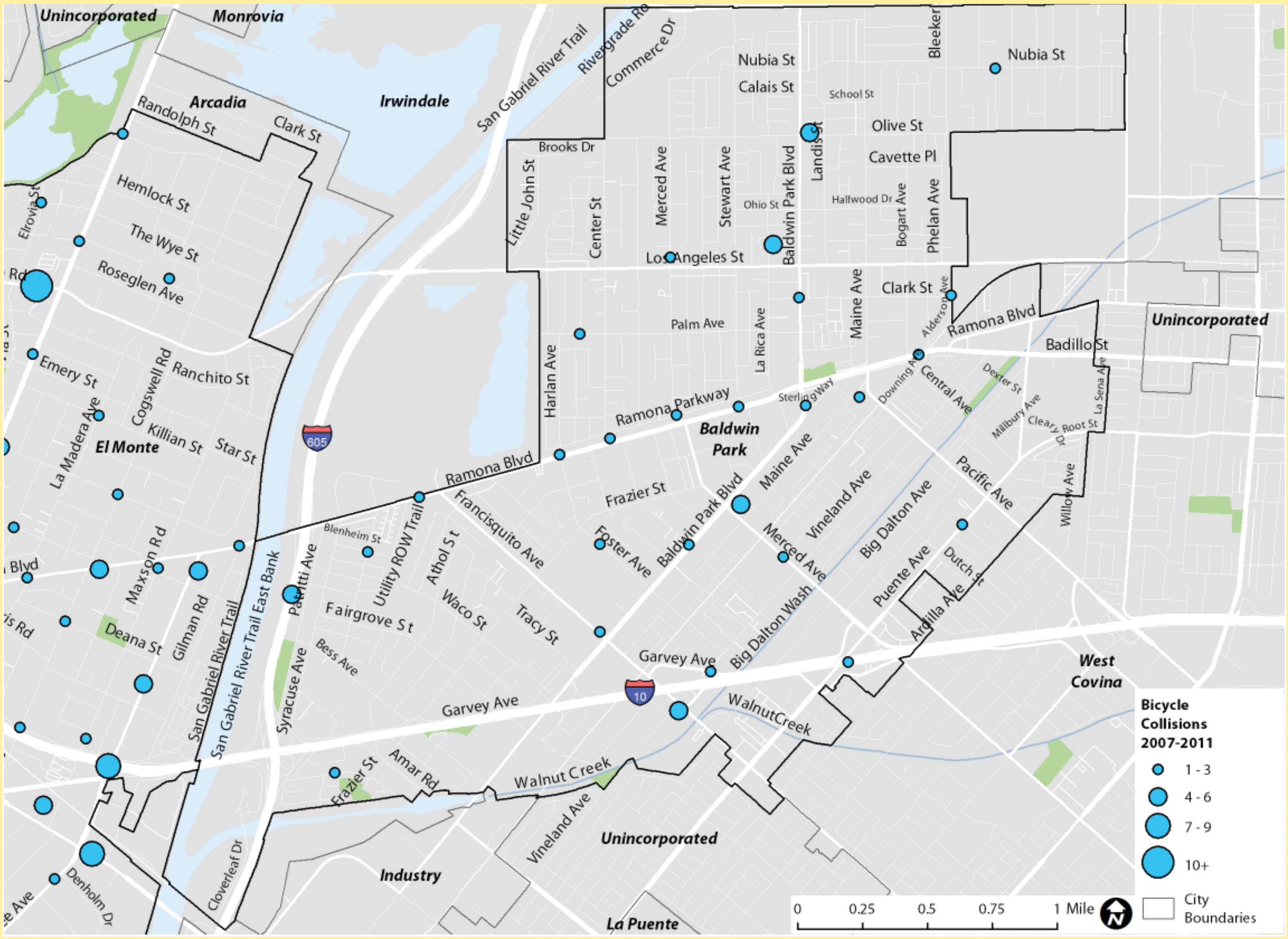


***Table 3-9** Bicycle-Related Collisions by Year*

Year	Number of Collisions
2007	11
2008	7
2009	8
2010	8
2011	17
Total	51

***Table 3-10** Highest Bicycle-Related Collision Roadways*

Roadway	Number of Collisions
Ramona Boulevard	9
Baldwin Park Boulevard	6
Francisquito Avenue	5
Merced Avenue	4
Ramona Parkway	3

Table 3-10 displays the top 5 roadways with the most bicycle-related collisions based on data from 2007-2011. The combined corridor of Ramona Boulevard and Ramona Parkway experienced a total of 12 bicycle-related collisions during the period 2007-2011.

Table 3-11 shows the percent of bicycle-related collisions based on the day of the week.

Table 3-11 Bicycle-Related Collisions by Day of the Week

Day of the Week	Percent of Collisions
Monday	18%
Tuesday	16%
Wednesday	20%
Thursday	6%
Friday	20%
Saturday	10%
Sunday	12%

As shown in **Table 3-11**, the highest percentage of bicycle-related collisions occurred on Wednesdays and Fridays, and the second highest on Mondays.

3.3 Recommended Bicycle Facilities and Programs

The proposed bikeway network, when completed, will include just over 60 miles of bicycle facilities to increase connectivity within Baldwin Park and to the surrounding communities. The proposed bikeway network has been developed to create a comprehensive, safe, and logical network.

Recommendations for bikeways within the City are subject to a variety of factors that affect the schedule and final implementation:

- Recommendations have been developed based on technical review and public input, however, the recommendations are conceptual and further feasibility review may be needed to address physical, community, and financial constraints.
- While a prioritized list is provided in the Implementation section (Section 3.5), projects may be implemented sooner based on coordination with other City projects or funding opportunities.
- Funding for the bikeway recommendations is discussed further in the Implementation section, and suggestions are provided to the City to seek funding sources to minimize the effect on the City General Fund for implementation.
- The City may develop further criteria and standards for use of enhanced bicycle treatments such as sharrows, green conflict zone striping, bike lane buffers, bicycle boulevard elements, etc. The City will explore the possibility of providing enhanced Class II or Class III facilities anywhere Class II or III facilities are proposed.

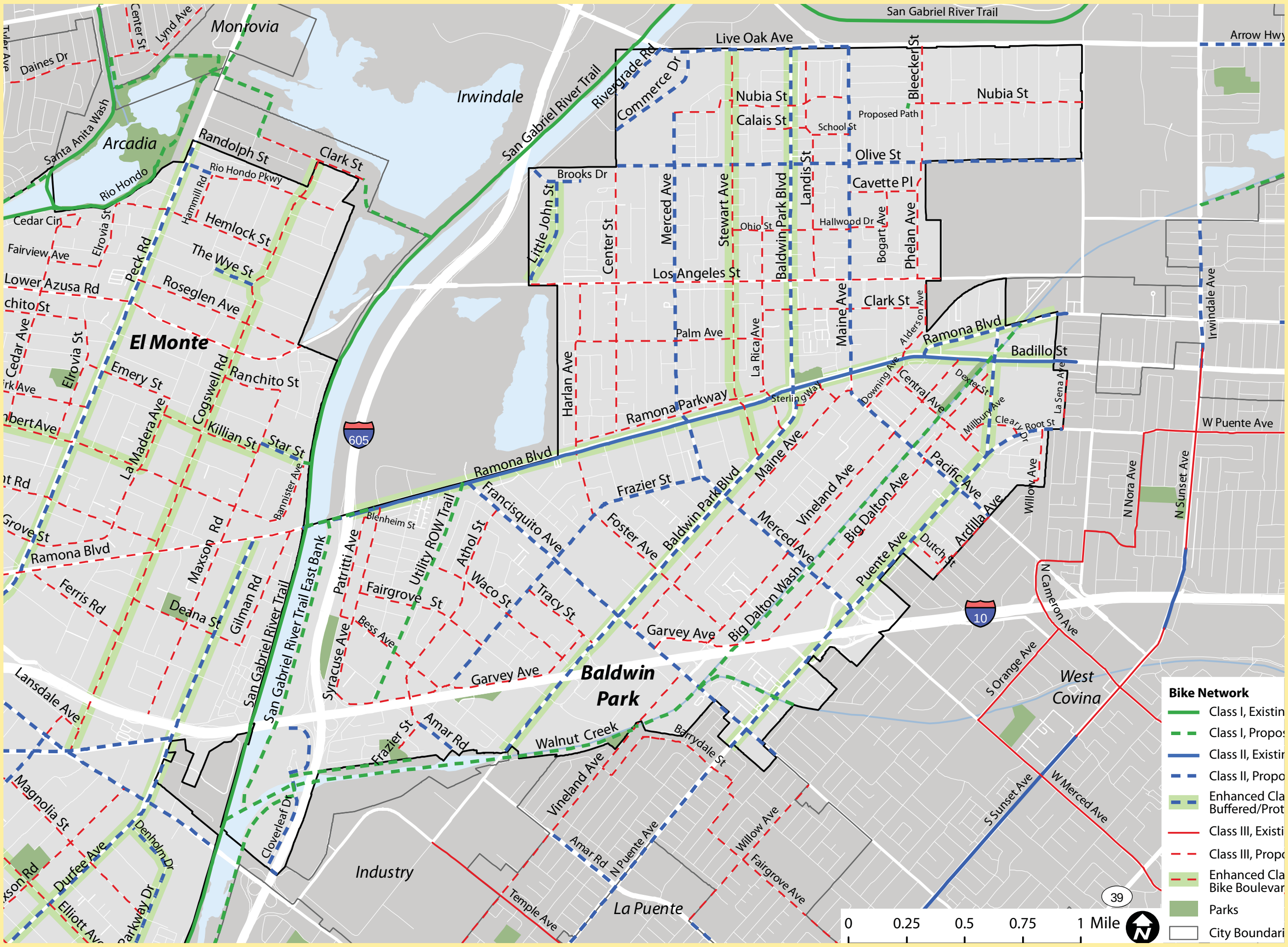
Table 3-12 summarizes the bikeway recommendations and total mileage by category. **Figure 3-10** shows the recommended bikeway network, including potential enhanced Class II and Class III facilities.

Table 3-12 Recommended Bikeway Network

Facility Type	Existing Bikeways (Miles)	Proposed Bikeways (Miles)	Total Bikeways (Miles)
Class I Shared-Use Path	1.3	7.1	8.4
Class II Bike Lane	3.2	20.2	23.4
Class III Bike Route	0.0	28.8	28.8
Total	**4.5**	**56.1**	**60.6**
Note: Enhanced bikeways removed from this table to avoid double-counting mileages.			

As shown in **Table 3-12**, when accounting for existing and proposed bikeways, bikeways identified in this Plan total 60.6 miles.

***Figure 3-10** Baldwin Park Recommended Bikeway Network*



3.3.1 Class I Shared-Use Paths

Class I off-street shared-use paths are often desired by casual bicycle riders, as well as bicycle riders concerned about interacting with vehicular traffic. A network of off-street shared-use paths provides greater opportunities for connectivity to destinations throughout the community, so recommendations have been developed to improve the network within the City given notable property and right-of-way constraints. Some of the recommendations provided for shared-use paths require coordination with other agencies such as the County of Los Angeles, Caltrans, and Southern California Edison.

Where there is not sufficient space or right-of-way for a Class I bicycle facility, buffered or physically protected Class II bike lanes can provide bicycle riders with a more comfortable level of separation from motor vehicle traffic and parked vehicles. The subsequent section discusses Class II bikeways recommendations.

Table 3-13 identifies the proposed Class I shared-use paths for the City of Baldwin Park bikeways network.

Table 3-13 Proposed Class I Shared-Use Paths

Roadway	From	To	Length (Miles)
Big Dalton Wash	Ramona Boulevard	Walnut Creek	2.1
Downing Trail Link	Downing Avenue Northern Terminus	Nubia Street	0.1
San Gabriel River Trail (East Bank)	Walnut Creek Trail	Ramona Boulevard	1.3
Utility Right-of-Way Trail	Ramona Boulevard	Garvey Avenue	1.0
Walnut Creek	San Gabriel River Trail West Bank	City Limit (East of Puente Avenue)	2.6
		Total Proposed Class I Shared-Use Paths	**7.1**

As shown in **Table 3-13,** a total of 7.1 miles of Class I shared-use paths are recommended in this Plan.

3.3.2 Class II Bike Lanes

Many commuters and recreational bicycle riders may prefer bike lanes due to their more direct routing. This report recommends the city improve locations where existing Class II bike lanes may have limited functionality due to potential "dooring" issues adjacent to parked cars, or locations where gutter pans and drainage grates effectively narrow the width of the bike lane. In some locations where wide Class II bike lanes are currently provided, modification of striping to provide a buffer between on-street parking and/or vehicular traffic is recommended. At other locations with minimal crossings, protected bike lanes may be recommended. The use of buffered or protected bike lanes will be considered on a case-by-case basis through the design of the facility.

Table 3-14 identifies the proposed Class II bike lanes for the City of Baldwin Park bikeways network. **Figure 3-11** illustrates how Ramona Boulevard (between Merced Avenue and Stewart Avenue) might look with physically separated Class II bike lanes installed in place of the existing painted Class II bike lanes. **Figure 3-12** shows the existing and alternative street cross-sections for this segment of Ramona Boulevard.

Table 3-14 Proposed Class II Bike Lanes

Roadway	From	To	Length (Miles)
Ramona Boulevard (Enhance Existing)	Baldwin Park Boulevard	Downing Avenue	0.5
Baldwin Park Boulevard	Live Oak Avenue	Walnut Creek	3.6
Maine Avenue	Arrow Highway	Ramona Boulevard	1.4
Pacific Avenue	Maine Avenue	Ardilla Avenue	0.8
Ramona Boulevard (Enhance Existing)	I-605 Northbound Ramps	Baldwin Park Boulevard	2.0
Ramona Boulevard (Enhance Existing)	Downing Avenue	Badillo Street	0.1
Puente Avenue	Ramona Boulevard	West of Francisquito Avenue	2.2
Ramona Boulevard	Badillo Street	City Limit (East of Puente Avenue)	0.6
Badillo Street (Enhance Existing)	Ramona Boulevard	City Limit (East of Willow Avenue)	0.6
Francisquito Avenue	Ramona Boulevard	City Limit (South of Siesta Avenue)	1.8
Ramona Boulevard	San Gabriel River Bike Path (West Bank)	I-605 Northbound Ramps	0.2
Merced Avenue	Nubia Street	Puente Avenue	2.4
Commerce Drive	Live Oak Avenue	West City Limit	0.5
Live Oak Avenue	Rivergrade Road	Arrow Highway	0.8
Olive Street	Center Street	Azusa Canyon Road	2.0
Little John Street	Brooks Drive	Los Angeles Street	0.5
Rivergrade Road	Live Oak Avenue	City Limit (North of Commerce Drive)	0.3
Brooks Drive	Rivergrade Road	East Terminus	0.2
Cloverleaf Drive	City Limit (South of I-10 Freeway)	City Limit (East of I-605 Freeway)	0.8
Root Street	Puente Avenue/Central Avenue	La Sena Avenue	0.4
Frazier Street	Garvey Avenue	Merced Avenue	1.5
Amar Road	Frazier Street	Roadway Terminus (at Walnut Creek)	0.2
		Total Proposed Class II Bike Lanes	**23.4**
Note: Class II enhancements are included in the table above.			

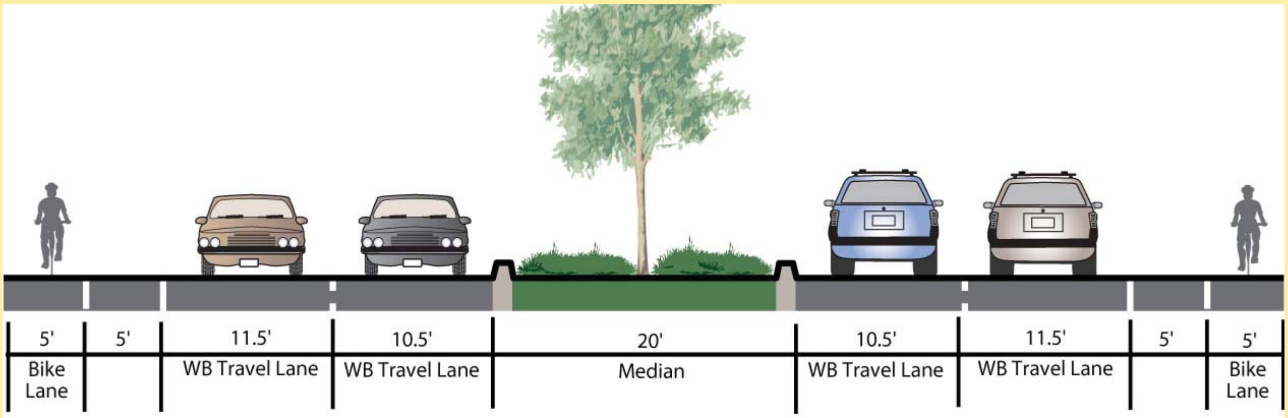
As shown in **Table 3-14,** a total of 23.4 miles of Class II bike lanes are recommended in this Plan, of which 20.2 miles are new bikeways and 3.2 miles are existing bikeways recommended for enhancement.

***Figure 3-11** Before/After Depiction of Potential One-Way Cycle Tracks on Ramona Boulevard*

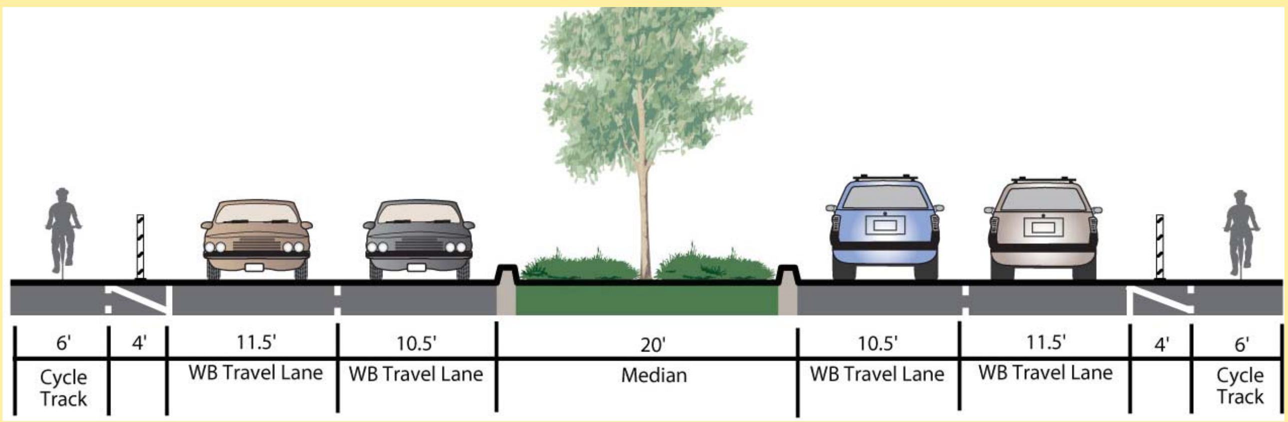
Existing

Proposed

Figure 3-12 *Existing & Alternative Street Cross-Sections for Ramona Boulevard*



Existing Street Cross-Section



Alternative Cross Section: One-Way Cycle Tracks

3.3.3 Class III Bike Routes

Any street that is legal for bicycles is inherently a shared roadway in which bicycle riders and drivers share a lane of traffic, and a car cannot necessarily pass a bicycle rider in the same lane. To improve motorists' awareness of the presence of bicycle riders and to indicate good routes for bicycle riders, cities often post signs indicating that the road is a "Class III Bike Route," as well as painting shared roadway markings in the travel lane. Class III bike routes are often identified at locations where the available street width is not wide enough to accommodate an on-street bike lane (Class II facility).

Potential enhancements requested during community engagement activities include the use of shared lane markings (sharrows) and use of the "Bikes May Use Full Lane" signage (MUTCD R4-11) as seen in Image 14.

Another treatment for consideration is designation of bicycle boulevards for improved connectivity and wayfinding by bicycle riders that seek lower stress routes to travel. Bicycle boulevards are generally defined as low-volume, low-speed streets that have been optimized for bicycle travel using treatments such as traffic calming and traffic reduction, signage and pavement markings, and intersection crossing treatments. Class III bike routes will be considered for upgrading to bicycle boulevards on a case-by-case basis by City staff.

Image 14- *Sign R4-11 "Bikes May Use Full Lane"*

Table 3-15 identifies the proposed Class III bike routes for the City of Baldwin Park bikeways network.

Table 3-15 Proposed Class III Bike Routes

Roadway	From	To	Length (Miles)
Maine Avenue	Ramona Boulevard	Francisquito Avenue	1.5
La Rica Avenue	Benbow Street	Baldwin Park Boulevard	0.9
Downing Avenue	Alderson Avenue	Pacific Avenue	0.3
Foster Avenue	Ramona Boulevard	Vineland Avenue	1.0
Los Angeles Street	Little John Street	North Park Avenue	1.8
Ramona Parkway	Harlan Avenue	La Rica Avenue	0.8
Stewart Avenue	Arrow Highway	Baldwin Park Boulevard	1.7
Vineland Avenue	Francisquito Avenue	City Limit (North of Rath Street)	0.3
Alderson Avenue	Los Angeles Street	Downing Avenue	0.3
Center Street	Olive Street	Ramona Parkway	1.1
Central Avenue	Downing Avenue	Puente Avenue	0.5
Harlan Avenue	Los Angeles Street	Ramona Boulevard	0.7
Syracuse Avenue	Ramona Boulevard	Garvey Avenue	0.8
Big Dalton Avenue	Puente Avenue	Garvey Avenue	1.5
Clark Street	La Rica Avenue	Alderson Avenue	0.7
Landis Avenue	Joanbridge Street	Los Angeles Street	1.0
Palm Avenue	Stewart Avenue	La Rica Avenue	0.8
Bleecker Street	Arrow Highway	Olive Street	0.5
Nubia Street	300′ West of Bleecker Street	Azusa Canyon Road	0.8
Phelan Avenue	Olive Street	Los Angeles Street	0.5
Athol Street	Francisquito Avenue	Frazier Street	1.1
Dexter Street	Big Dalton Avenue	Puente Avenue	0.1
Garvey Avenue	Francisquito Avenue	Big Dalton Avenue	0.5
La Sena Avenue	Grovecenter Street	Puente Avenue	0.2
Sterling Way	Pacific Avenue	Baldwin Park Boulevard	0.2
Vineland Avenue	Badillo Street	Garvey Avenue	1.6
Cleary Drive	Puente Avenue	Root Street	0.1
Millbury Avenue	Central Avenue	Puente Avenue	0.1
Patritti Avenue	Blenheim Street	Bess Avenue	0.4
Bess Avenue	Patritti Avenue	Garvey Avenue	0.5
Fairgrove Street	Syracuse Avenue	Frazier Street	0.6
Frazier Street	Amar Road	Walnut Creek Nature Park	0.2
Nubia Street	Merced Avenue	Maine Avenue	0.8
Blenheim Street	Patritti Avenue	Syracuse Avenue	0.1
Ohio Street	Stewart Avenue	Maine Avenue	0.5
Waco Street	Utility Right-of-Way (West of San Gabriel River Parkway)	Garvey Avenue	0.7
Willow Avenue	Root Street	City Limit (South of Howellhurst Drive)	0.3
Pacific Avenue	Sterling Way	Maine Avenue	0.1

Table 3-15 Proposed Class III Bike Routes (continued)

Roadway	From	To	Length (Miles)
Garvey Avenue	Syracuse Avenue	Tracy Street	1.1
Ardilla Avenue	Pacific Avenue	Channing Street	0.2
Ardilla Avenue	Channing Street	Dutch Street	0.1
Ardilla Avenue	Dutch Street	Macdevitt Street	0.1
Calais Street	La Rica Avenue	Landis Avenue	0.2
Dutch Street	Puente Avenue	Ardilla Avenue	0.2
School Street	Landis Avenue	Maine Avenue	0.2
Bogart Avenue	Cavette Place	Hallwood Drive	0.2
Cavette Place	Maine Avenue	Phelan Avenue	0.3
Hallwood Drive	Maine Avenue	Bogart Avenue	0.2
Tracy Street	Frazier Street	Baldwin Park Boulevard	0.4
Total Proposed Class III Bike Routes			**28.8**

As shown in **Table 3-15**, a total of 28.8 miles of Class III bike routes are recommended.

3.3.4 End-of-Trip Bicycle Facilities

Support facilities and connections to other modes of transportation are essential components of a bicycle system because they enhance safety and convenience for bicycle riders at the end of every trip. With nearly all utilitarian and many recreational bike trips, bicycle riders 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.

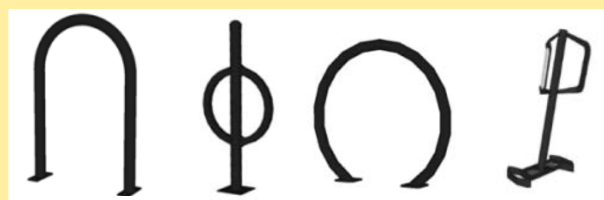
Bicycle parking can be categorized into short-term and long-term parking. Bicycle racks are the preferred device for short-term bike parking. These racks serve people who leave their bicycles for relatively short periods of time, typically for shopping or errands, eating or recreation. Bicycle racks provide a high level of convenience and moderate level of security. Long-term bike parking includes bike lockers and bike rooms and serves people who intend to leave their bicycles for longer periods of time and are typically found in multifamily residential buildings and commercial buildings. These facilities provide a high level of security but are less convenient than bicycle racks.

Recommended bicycle parking standards are presented in **Appendix G**. In addition, **Appendix H** presents a comprehensive bicycle parking study for Baldwin Park and the other four regional bike plan partner cities.

Short-Term Bicycle Parking

This Plan recommends the City adopt the short-term bicycle rack types shown in **Figure 3-13** as the standard short-term parking.

Figure 3-13 *Types of Bicycle Racks*



U-Rack | *Post and Loop* | *Horseshoe* | *Lightning Bolt™ or Varsity Rack™*

This Plan also recommends implementation of adequate short-term bicycle parking in the form of bicycle racks at major trip attractors, including commercial and civic activity centers and transit hubs. The City should prioritize the installation of bicycle parking throughout the city, with particular attention directed at the following locations:

- Baldwin Park Library
- Baldwin Park Civic Center & Transit Center
- Commercial/Office areas
- Baldwin Park Teen Center & Skate Park
- Julia McNeill Senior Center
- Maine Avenue Shopping District
- Ramona Boulevard Shopping District
- Kaiser Permanente Hospital

- Kindred Hospital
- Parks
- Post Offices
- Schools

Although the number of racks is determined by the space available, it is recommended that short-term bicycle parking capacity to accommodate eight bicycles is provided at each of the civic uses identified above, and short-term bicycle parking for commercial and office areas be determined based on intensity of development. The adequacy of short-term bicycle parking requires regular review to determine if additional capacity is needed.

Long-Term Bicycle Parking

Locations where visitors are expected to park their bicycles for longer than 2 hours should provide more secure, long-term bicycle parking options, such as bicycle lockers.

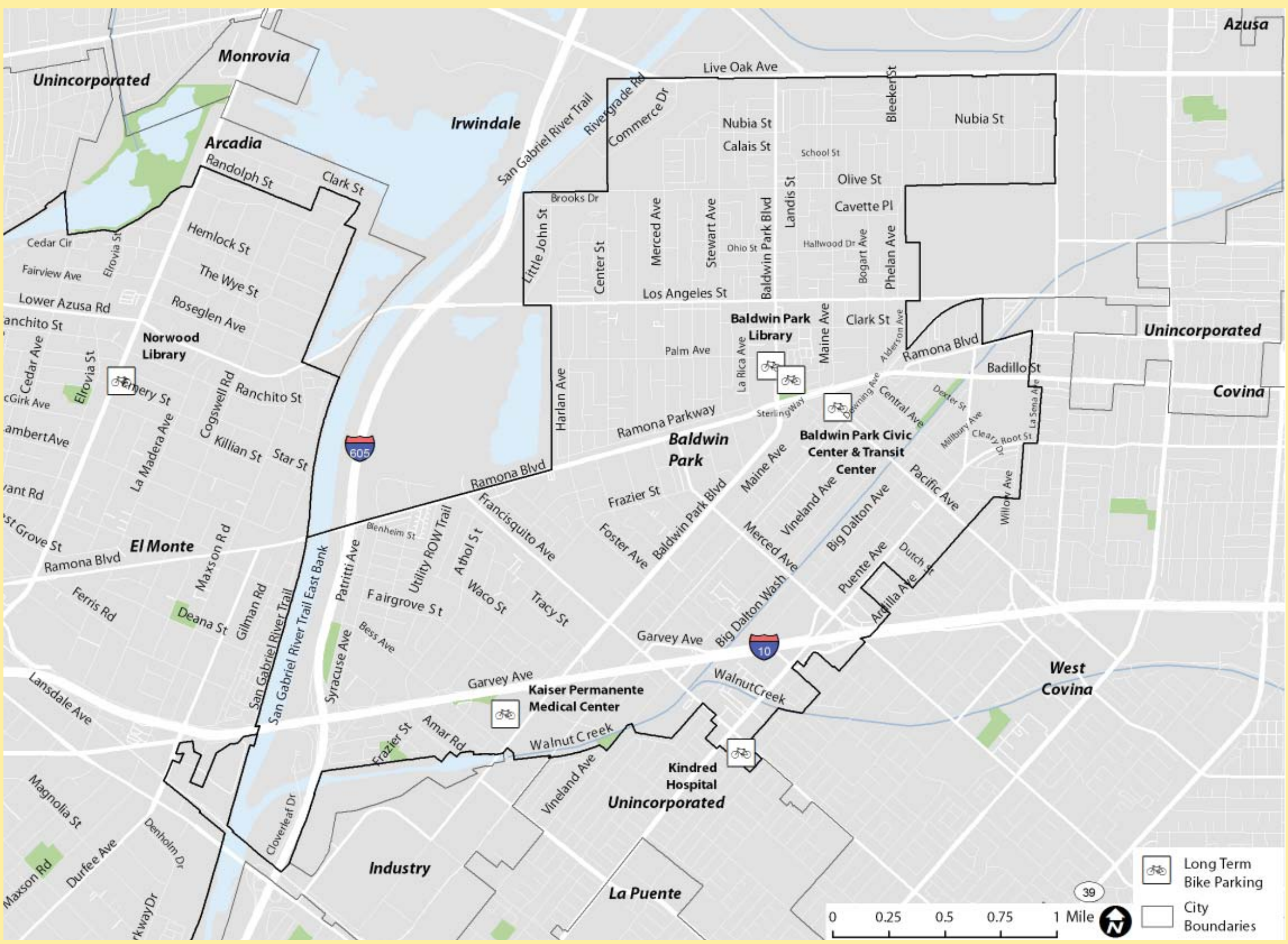
City staff may coordinate with public and private sector development opportunities to determine which projects and facilities should incorporate secure bicycle parking areas into their design. Secure bicycle parking areas that provide services, such as bicycle rentals and repair may be considered. The following are locations where long-term bicycle parking is recommended, and these are shown in **Figure 3-14**.

- Baldwin Park Library
- Baldwin Park Civic Center & Transit Center
- Julia McNeill Senior Center
- Kaiser Permanente Hospital
- Kindred Hospital

Municipal Code Bicycle Parking

This Plan recommends the City amend its Municipal Code to include requirements on types of short-term and long-term bicycle parking facility designs. Bicycle rack designs should include racks 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 higher degree of security and support for the bicycle.

***Figure 3-14** Baldwin Park Recommended Long-Term Bicycle Parking Facilities*



This will more accurately address the bicycle demand at a given development. Additionally, space to maneuver the bicycle away from fixed objects and buildings is required to accommodate short-term bicycle parking needs.

Key design aspects related to long-term bicycle parking includes:

- 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 storage facilities encourage commuters to travel by bicycle because they have a place to change and prepare before work or school. This Plan recommends the City Municipal Code be revised as needed to require all new mid-size and large employers, offices, and businesses to supply changing and storage facilities, such as by providing showers and locker space within the buildings or arranging agreements with nearby recreation centers to allow commuters to use their facilities.

As noted in the Recommended Programs section, the installation of bicycle maintenance hubs or stations at key high-traffic locations can accommodate bicycle riders for a variety of needs (such as minor repairs, inflating tires, filling water bottles, providing wayfinding information, and promotion of local businesses).

3.3.5 Recommended Programs

Improvements to and continued support of education, enforcement and evaluation programs have been proven to increase the number of bicycle trips and bicycling safety. These programs can ensure that more community members know about new and improved facilities, learn the skills they need to integrate bicycling into their activities, and receive positive reinforcement about integrating bicycling into their daily lives. In essence, the new and enhanced programs market the idea of bicycling to the community and encourage a shift to bicycling as a transportation option. This Plan supports the continuation and enhancement of the City's education, encouragement, and enforcement programs that are currently in place. The following additional programs are each designed to promote bicycling in the City, increase safety for those traveling by bicycle, and raise awareness of the benefits of bicycling. **Table 3-16** provides a summary of the recommended programs.

Further details on recommended programs are included in **Chapter 8**.

Table 3-16 Recommended Programs

Education	Bicycle Safety and Share the Road Campaigns	Metro, SGVCOG, City	City; Grants	Near-Term
	Bicycle Resource Website	City	City	Near-Term
	Adult Bicycling Skills Classes	Bicycle Clubs, City, Metro	City; Grants	Near-Term
	Youth Bicycle Safety Education Classes	Bicycle Clubs, City	City; Grants	Near-Term
	Youth Bicycle Safety Clinics & Bicycle Campus	City, Safe Routes to School National Partnership	City; Grants	Middle-Term
	Senior Bicycle Education Classes	Bicycle Clubs, City	City; Grants	Middle-Term
Encouragement	Bike Valet at City Events	Special Event Promoter, City	City	Near-Term
	Youth and Family-Oriented Bicycle Rides	Advocacy Groups, City	Private	Near-Term
	"Be Seen" Bike Light Campaign	City	City; Grants	Near-Term
	Bike Festivals & Family Bike Fest/Family Biking Day	City, Advocacy Groups	City; Sponsorships	Near-Term

Table 3-16 Recommended Programs (continued)

Education	Bicycle Safety and Share the Road Campaigns	Metro, SGVCOG, City	City; Grants	Near-Term
	Launch Party for New Bicycle Facilities	City	City	Near-Term
	Bicycle Friendly Community Designation	City	N/A	Near-Term
	Tourism Integration	City	City	Near-Term
	Commuter Incentive Programs	Metro, SGVCOG, City	City; Grants	Middle-Term
	Safe Routes to School Program	City, Advocacy Groups	Grants	Near-Term
	Bicycle Friendly Business Districts	Business Improvement District/ Association, City	City; Contributions from Business Associations	Middle-Term
	Bicycle Hubs	City	City; Grants	Middle-Term
	Media Outlets	City	In-Kind Contributions; Grants	Middle-Term
	Individualized Marketing Campaigns	Metro, SGVCOG, City	Grants	Middle-Term
	Mobility Coordinator	City	City; Grants	Long-Term
	Ride with the City	City	City	Near-Term
	Open Streets/Ciclovía Events	City	City; Grants	Long-Term
	Bicycle Sharing	Metro, SGVCOG, City	Grants; Sponsorships	Long-Term
Enforcement	Speed Radar Trailer/ Feedback Signs	City	Grants	Near-Term
	Bicycle Patrol Units	City	City	Near-Term
	Undercover Officer Enforcement	City	City	Near-Term
	Bicycle Theft Abatement Program	City	Grants	Middle-Term
Evaluation	Bicycle Counts and Survey Program	City	City; Grants	Near-Term
	Mapping Bikeway Investments	City	City	Near-Term
	Bicycle Report Card	City	City	Middle-Term
	Complete Streets Policy	City	City; Grants	Middle-Term
	Bicycle Parking Policy and Enforcement	City	City; Grants	Middle-Term
	Bike Counters/Bicycle Barometers	City	Grants	Middle-Term

**Near-term = 0-3 years, Middle-Term = 3-6 years, Long-Term = 6+ years.*

3.4 Project Costs

3.4.1 Implementation Costs

The following planning-level costs are typically utilized to estimate capital expenditures required for implementation of bikeways by classification:

- Class I Shared-Use Path: $1,000,000 per mile;
- Class II Bike Lane: $50,000 per mile; and
- Class III Bike Route: $20,000 per mile.

The planning level cost estimates do not include potential right-of-way acquisition, extensive grading, landscaping, or potential utility impacts. Cost estimate refinements still may occur based on further engineering review and are intended to provide an estimate for budgeting purposes. **Table 3-17** summarizes the total cost of implementation for the bikeways recommendations.

Table 3-17 Recommended Bikeway Network Cost Estimate

Facility Type	Proposed Bikeways (Miles)	Unit Cost ($/Mile)	Total Cost ($)
Class I Shared-Use Path	7.1	$1,000,000	$7,100,000
Class II Bike Lane	23.4	$50,000	$1,170,000
Class III Bike Route	28.8	$20,000	$576,000
Total	**59.3**	**--**	**$8,846,000**

As shown in **Table 3-17**, the total cost estimate for recommended bicycle infrastructure projects is $8.8 million, of which just over $7 million are attributed to Class I shared-use paths and bridges.

3.4.2 Maintenance Costs

Bicycle facilities require regular maintenance and repair. On-street bicycle facilities are maintained as part of the normal roadway maintenance program and extra emphasis should be placed on keeping bike lanes and roadway shoulders clear of debris and keeping vegetation overgrowth from blocking visibility. The cost of maintaining Class I facilities may be shared among various agencies or departments. The typical maintenance costs for the existing and proposed bikeway network are shown in **Table 3-18**, and the cost for maintaining the built out network is provided.

Table 3-18 Annual Bikeways Network Maintenance Cost Estimates

Facility Type	Total Length (Miles)	Unit Cost ($/Mile)	Annual Cost ($)	Typical Maintenance Items
Class I	7.1	$15,000	$106,500	Lighting and removal of debris and vegetation overgrowth
Class II	23.4	$5,000	$117,000	Repainting lane stripes and stencils, sign replacement as needed
Class III	28.8	$5,000	$144,000	Sign replacement as needed
Total	**59.2**	**--**	**$367,500**	

As shown in **Table 3-18**, the annual cost for maintaining bikeways network assuming implementation of all paths, bike lanes, and bike routes is approximately $367,500. It should be noted this cost will be realized over time as implementation of the network is completed, and actual costs will be lower until the entire network is constructed.

3.5 Project Implementation

This chapter provides a strategy for implementing the capital project recommendations in this Plan. This implementation strategy and sequence is guided by a criteria-based ranking consistent with the goals of this Plan as well as the goals of other City, region, and State plans and policies.

A lengthy list of recommendations has been provided in this Plan, and ranking allows staff to prioritize the projects to advance to implementation. A variety of variables will influence the implementation including the availability of funding, engineering analysis, and support from community stakeholders and representatives.

Many signing and striping projects can be completed by the City Department of Public Works and are exempt from CEQA requirements. Such projects can be implemented using City or grant funds with approval by the City Management and/or City Council, if required due to the visibility or importance of the project. More complex projects with greater associated impacts typically include the following steps to advance to implementation:

1. Preparation of a Feasibility Study involving a conceptual design (with consideration of possible alternatives and environmental issues) and cost estimate for individual projects as needed.
2. Secure funding and any applicable environmental approvals.
3. Completion of final plans, specifications and estimates, advertising for bids, receipt of bids and award of contract(s).
4. Approval of the project by the City Council.
5. Construction of Project.

3.5.1 Prioritization Criteria

The intent of ranking projects is to create a prioritized list of bicycle projects for implementation. As projects are implemented, lower ranked projects move up the list. The project list and individual projects outlined in this Plan are flexible concepts that serve as a guideline. The ranked project list, and perhaps the overall system and segments themselves, may change over time as a result of changing bicycling patterns, land use patterns, implementation constraints and opportunities and the development of other transportation system facilities.

Projects may be implemented out of scoring order as opportunities arise. Opportunities may include grant availability, new development projects, capital improvement projects, or roadway repaving. The City can review the project list and project ranking at regular intervals to ensure it reflects the most current priorities, needs, and opportunities for implementing the bicycle network in a logical and efficient manner.

Each ranking criterion contains information about a facility and its ability to address an existing or future need in the San Gabriel Valley. The resulting project ranking determines each project's relative importance in funding and scheduled construction.

The following criteria are used to evaluate each proposed bicycle facility, its ability to address demand and deficiencies in the existing bicycle network and its ease of implementation. The criteria are organized into "utility" and "implementation" prioritization factors.

Utility Prioritization Factors

Utility criteria include conditions of bicycle facilities that enhance the bicycle network. Each criterion is discussed below.

Bicycle-Related Collisions

Bicycle facilities have the ability to increase safety by reducing potential conflicts between bicycle riders and motorists, which often result in collisions. Proposed facilities that are located on roadways with past bicycle-automobile collisions are important to the partner cities.

Public Input

The Project Team solicited public input through a series of booths at local events, jurisdiction-wide workshops, community street audits, a web-based feedback portal, monthly polls and an opinion survey. Facilities that community members identified as desirable for future bicycle facilities are of priority to the network because they address the needs of the public.

Gap Closure

Gaps in the bicycle network come in a variety of forms, ranging from a "missing link" on a roadway to larger geographic areas without bicycle facilities. Gaps in the bikeway network discourage bicycle use because they limit access to key destinations and land uses. Facilities that fill a gap in the existing and proposed bicycle network are of high priority.

Connectivity to Existing Facilities

Proposed bikeways that connect to existing bicycle facilities in the partner cities and to adjacent jurisdictions' bikeways increase the convenience of bicycle travel. Proposed facilities that fit this criterion are of high importance to the cities.

Connectivity to Regional Facilities

Linkage to existing and future regional bikeways in the San Gabriel Valley will enhance future connectivity between the partner cities and surrounding communities. For the purposes of this evaluation, linkage to the following facility types would be identified as regional connections:

- Existing/Planned off-street trails along waterways, utility corridors, etc.
- Existing/Planned on-street bikeways that continuously span across two or more jurisdictions

Connectivity to Activity Centers

Improved linkage to key employment, recreational, commercial and civic destinations within the community can increase bicycling activity and reduce in-town vehicular travel for short-distance trips. These activity centers generate many trips which could be made by bicycle if the proper facilities were available. The following activity centers will be reviewed for improved access related to the recommended bikeway improvements:

- Major Employment & Commercial Areas
- Civic Centers
- Public Libraries
- Community Centers
- K-12 Public Schools
- East Los Angeles College
- Major Cultural Destinations, such as museums and interpretive centers
- Hospitals & Medical Centers
- Parks & Recreation Centers
- Commercial/retail business centers (shopping malls, downtown districts, retail complexes, etc.)

Connectivity to Multi-Modal Transportation Centers

Bicycle facilities that link to modes of public transportation increase the geographical distance bicycle riders are able to travel. Proposed bicycle facilities that connect to transit stops and centers improve bicycle riders' mobility and are therefore key pieces of the bicycle network. Priority ranking will be given to bikeways that connect to the following major transportation centers:

- Baldwin Park Metrolink Station
- El Monte Bus Station
- El Monte Metrolink Station
- East Los Angeles College Transit Center
- Proposed future Metro Gold Line stations

Implementation Prioritization Factors

Implementation criteria address the ease of implementing each proposed project. Each criterion is discussed below.

Permitting

Projects that can be implemented solely by the participating cities have higher readiness factors, whereas those that require permitting and approvals from other agencies governing roadways and land within the individual cities will score lower. Examples include collaboration with adjacent jurisdictions, approval by Caltrans, or permitting by the Los Angeles County Department of Public Works for projects utilizing local washes, creeks, storm channels, etc.

Project Cost

Projects that are less expensive do not require as much funding as other projects and are therefore easier to implement. Projects that cost less are of higher priority to the partner cities.

Parking Displacement

Installing safe, easily accessible and attractive bicycle facilities occasionally requires the displacement of on-street vehicular parking. Therefore, projects that do not require parking displacement are of increased importance.

3.5.2 Project Ranking

Table 3-19 shows how the criteria are weighted for project prioritization and ranking.

Table 3-19 Ranking Criteria and Weighting

Criteria	Score	Multiplier	Total	Description
Utility Prioritization Factors				
Bicycle-Related Collisions	2	3	6	Provides a bicycle facility on a roadway that experienced 3 or more bicycle-related collisions between 2007-2011
	1	3	3	Provides a bicycle facility on a roadway that experienced 1-2 bicycle-related collisions between 2007-2011
	0	3	0	Provides a bicycle facility on a roadway that did not experience any bicycle-related collisions between 2007-2011
Public Input	2	3	6	Roadway was identified by the public as desirable for a future facility multiple times
	1	3	3	Roadway was identified by the public as desirable for a future facility once

Table 3-19 Ranking Criteria and Weighting (continued)

Criteria	Score	Multiplier	Total	Description
	0	3	0	Roadway was not identified by the public as desirable for a future facility
Gap Closure	2	3	6	Fills a network gap between two or more existing facilities
	1	3	3	Fills a network gap between an existing facility and a proposed facility
	0	3	0	Does not directly or indirectly fill a network gap
Connectivity: Existing	2	2	4	Provides direct access to an existing bicycle facility
	1	2	2	Provides secondary connectivity to an existing bicycle facility
	0	2	0	Does not directly or indirectly provide access to an existing bicycle facility
Connectivity: Regional	2	2	4	Provides direct access to a regional existing/proposed bicycle facility
	1	2	2	Provides secondary connectivity to a regional existing/ proposed bicycle facility
	0	2	0	Does not directly or indirectly provide access to a regional existing/proposed bicycle facility
Connectivity: Activity Centers	2	2	4	Provides access to more than 3 activity centers
	1	2	2	Provides access to 1-3 activity centers
	0	2	0	Does not provide access to an activity center
Connectivity: Multi-Modal	2	1	2	Provides direct access to a major Transportation Center
	1	1	1	Provides secondary connectivity to a major Transportation Center
	0	1	0	Does not directly or indirectly provide access to a major Transportation Center
Implementation Prioritization Factors				
Permitting	2	1	2	Does not require permitting from agency (other than the respective city)
	1	1	1	Requires permitting or approval from 1 agency
	0	1	0	Requires permitting or approval from 2 or more agencies
Project Cost	2	1	2	Will cost less than $40,000 to implement
	1	1	1	Will cost between $40,001 and $200,000 to implement
	0	1	0	Will cost over $200,000 to implement
Parking Displacement	2	1	2	Does not require any parking removal
	1	1	1	Requires removal of some on-street parking stalls
	0	1	0	Requires removal of all on-street parking stalls

Each recommended project was evaluated based on the ranking criteria and scored to develop the prioritization tables. As shown in **Table 3-19,** the maximum potential score for a recommended project is 34 points.

Within the City of Baldwin Park, a total of 76 bicycle facility projects were identified and grouped into the following three tiers by each projects prioritization score:

- Tier 1 (34-21 points): Tier 1 projects have the highest potential for addressing the City's goals for bicycle transportation and are intended for near-term project implementation. The highest score received by a project was 27 points. A total of 19 projects are listed in Tier 1 and are shown in **Table 3-20**.
- Tier 2 (20-14 points): Tier 2 projects are intended for mid-term implementation. A total of 21 projects are listed in Tier 2 and are shown in **Table 3-21**.
- Tier 3 (13-0 points): Tier 3 projects are not currently ready for implementation but are included as long-term potential bicycle-specific projects. A total of 36 projects are listed in Tier 3 and are shown in **Table 3-22**.

All of the projects are recommended for implementation over the next twenty (20) years. However, due to the unpredictability of funding sources, economic conditions, and community support, some projects, especially those that require right-of-way purchase or coordination with multiple jurisdictions, may not be completed within the next twenty years.

***Table 3--20** Tier 1 Projects (Score of 34-21)*

Facility Type	Location	Start	End	Bicycle-Related Collisions	Public Input	Gap Closure	Connectivity: Existing	Connectivity: Regional	Connectivity: Activity Centers	Connectivity: Multi-Modal	Permitting	Project Cost	Parking Displacement	Total Score (34 max)
III	Ramona Boulevard (Enhance Existing)	Baldwin Park Boulevard	Downing Avenue	6	0	6	4	2	2	1	2	2	2	27
II	Baldwin Park Boulevard	Live Oak Avenue	Walnut Creek	3	6	3	4	2	1	2	2	2	2	27
II	Big Dalton Wash	Ramona Boulevard	Walnut Creek	6	3	6	4	2	2	0	2	1	0	26
I	Maine Avenue	Arrow Highway	Ramona Boulevard	6	6	3	4	2	1	1	1	0	2	26
II	Pacific Avenue	Maine Avenue	Ardilla Avenue	3	6	6	4	1	0	1	2	1	0	24
II	Ramona Boulevard (Enhance Existing)	Baldwin Park Boulevard	Downing Avenue	3	6	3	4	2	1	1	2	2	0	24
II	Ramona Boulevard (Enhance Existing)	I-605 Northbound Ramps	Baldwin Park Boulevard	3	6	3	4	2	1	1	1	1	2	24
II	Ramona Boulevard (Enhance Existing)	Downing Avenue	Badillo Street	0	6	3	4	2	1	2	2	2	2	24
II	Puente Avenue	Ramona Boulevard	West of Francisquito Avenue	3	6	3	4	2	2	0	2	1	0	23
II	Ramona Boulevard	Badillo Street	City Limit (East of Puente Avenue)	0	6	3	4	2	1	2	2	2	1	23

Table 3--20 Tier 1 Projects (Score of 34-21) (continued)

Facility Type	Location	Start	End	Bicycle-Related Collisions	Public Input	Gap Closure	Connectivity: Existing	Connectivity: Regional	Connectivity: Activity Centers	Connectivity: Multi-Modal	Permitting	Project Cost	Parking Displacement	Total Score (34 max)
II	Badillo Street (Enhance Existing)	Ramona Boulevard	City Limit (East of Willow Avenue)	0	6	3	4	2	1	0	2	2	2	22
I	Downing Trail Link	Downing Avenue Northern Terminus	Nubia Street	3	6	3	2	2	1	1	1	1	2	22
II	Francisquito Avenue	Ramona Boulevard	City Limit (South of Siesta Avenue)	6	3	3	4	2	1	0	2	1	0	22
III	La Rica Avenue	Benbow Street	Baldwin Park Boulevard	6	0	3	4	2	1	0	2	2	2	22
II	Ramona Boulevard	San Gabriel River Bike Path (West Bank)	I-605 Northbound Ramps	0	6	3	4	2	1	1	1	2	2	22
I	San Gabriel River Trail (East Bank)	Walnut Creek Trail	Ramona Boulevard	6	6	3	0	2	2	0	1	0	2	22
III	Downing Avenue	Alderson Avenue	Pacific Avenue	3	0	3	4	2	1	2	2	2	2	21
I	Utility Right-of-Way Trail	Ramona Boulevard	Garvey Avenue	6	6	3	0	2	1	0	1	0	2	21
I	Walnut Creek	San Gabriel River Trail West Bank	City Limit (East of Puente Avenue)	6	6	3	0	2	1	0	1	0	2	21

Table 3--21 Tier 1 Projects (Score of 20-14)

Facility Type	Location	Start	End	Bicycle-Related Collisions	Public Input	Gap Closure	Connectivity: Existing	Connectivity: Regional	Connectivity: Activity Centers	Connectivity: Multi-Modal	Permitting	Project Cost	Parking Displacement	Total Score (34 max)
II	Merced Avenue	Nubia Street	Puente Avenue	6	0	3	4	2	2	0	2	1	0	20
III	Foster Avenue	Ramona Boulevard	Vineland Avenue	3	0	3	4	2	1	0	2	2	2	19
III	Los Angeles Street	Little John Street	N. Park Avenue	6	0	3	0	2	1	0	2	2	2	18
III	Ramona Parkway	Harlan Avenue	La Rica Avenue	6	0	3	2	1	0	0	2	2	2	18
III	Stewart Avenue	Arrow Highway	Baldwin Park Boulevard	0	0	6	4	2	0	0	2	2	2	18
III	Vineland Avenue	Francisquito Avenue	City Limit (North of Rath Street)	3	0	3	4	1	1	0	2	2	2	18
III	Alderson Avenue	Los Angeles Street	Downing Avenue	3	0	6	0	2	0	0	2	2	2	17
III	Center Street	Olive Street	Ramona Parkway	3	0	6	0	1	1	0	2	2	2	17
III	Central Avenue	Downing Avenue	Puente Avenue	0	0	3	2	2	1	2	2	2	2	16
III	Harlan Avenue	Los Angeles Street	Ramona Boulevard	3	0	3	2	2	0	0	2	2	2	16
III	Syracuse Avenue	Ramona Boulevard	Garvey Avenue	0	0	3	4	2	1	0	2	2	2	16
III	Big Dalton Avenue	Puente Avenue	Garvey Avenue	0	0	3	2	2	2	0	2	2	2	15
III	Clark Street	La Rica Avenue	Alderson Avenue	3	0	3	2	1	0	0	2	2	2	15
III	Landis Avenue	Joanbridge Street	Los Angeles Street	3	0	3	0	1	2	0	2	2	2	15
III	Palm Avenue	Stewart Avenue	La Rica Avenue	3	0	3	0	1	1	1	2	2	2	15
III	Bleecker Street	Arrow Highway	Olive Street	0	0	6	0	2	0	0	2	2	2	14
II	Commerce Drive	Live Oak Avenue	West City Limit	0	0	6	0	2	0	0	2	2	2	14
II	Live Oak Avenue	Rivergrade Road	Arrow Highway	0	3	3	0	2	0	0	2	2	2	14
III	Nubia Street	Bleecker Street	Azusa Canyon Road	3	0	3	0	1	1	0	2	2	2	14
II	Olive Street	Center Street	Azusa Canyon Road	6	0	3	0	0	2	0	2	1	0	14
III	Phelan Avenue	Olive Street	Los Angeles Street	0	0	6	0	1	1	0	2	2	2	14

Table 3--22 Tier 1 Projects (Score of 20-14)

Facility Type	Location	Start	End	Bicycle-Related Collisions	Public Input	Gap Closure	Connectivity: Existing	Connectivity: Regional	Connectivity: Activity Centers	Connectivity: Multi-Modal	Permitting	Project Cost	Parking Displacement	Total Score (34 max)
III	Athol Street	Francisquito Avenue	Frazier Street	0	0	3	2	1	1	0	2	2	2	13
III	Dexter Street	Big Dalton Avenue	Puente Avenue	0	0	3	0	2	2	0	2	2	2	13
III	Garvey Avenue	Francisquito Avenue	Big Dalton Avenue	3	0	3	0	1	0	0	2	2	2	13
III	La Sena Avenue	Grovecenter Street	Puente Avenue	0	0	3	2	1	1	0	2	2	2	13
III	Sterling Way	Pacific Avenue	Baldwin Park Boulevard	3	0	3	0	1	0	0	2	2	2	13
III	Vineland Avenue	Badillo Street	Garvey Avenue	0	0	3	0	2	2	0	2	2	2	13
III	Cleary Drive	Puente Avenue	Root Street	0	0	3	0	2	1	0	2	2	2	12
III	Millbury Avenue	Central Avenue	Puente Avenue	0	0	3	0	2	1	0	2	2	2	12
III	Patritti Avenue	Blenheim Street	Bess Avenue	0	0	3	2	1	0	0	2	2	2	12
III	Bess Avenue	Patritti Avenue	Garvey Avenue	0	0	3	0	1	1	0	2	2	2	11
III	Fairgrove Street	Syracuse Avenue	Frazier Street	0	0	3	0	1	1	0	2	2	2	11
III	Frazier Street	Amar Road	Walnut Creek Nature Park	0	0	3	0	1	1	0	2	2	2	11
II	Little John Street	Brooks Drive	Los Angeles Street	0	0	3	0	2	0	0	2	2	2	11
III	Nubia Street	Merced Avenue	Maine Avenue	0	0	3	0	1	1	0	2	2	2	11
II	Rivergrade Road	Live Oak Avenue	City Limit (North of Commerce Drive)	0	0	3	0	2	0	0	2	2	2	11
III	Blenheim Street	Patritti Avenue	Syracuse Avenue	0	0	3	0	1	0	0	2	2	2	10
III	Ohio Street	Stewart Avenue	Maine Avenue	3	0	0	0	0	1	0	2	2	2	10
III	Pacific Avenue	Sterling Way	Maine Avenue	0	0	3	0	1	0	0	2	2	2	10
III	Waco Street	Utility Right-of-Way (West of San Gabriel River Parkway)	Garvey Avenue	0	0	3	0	0	1	0	2	2	2	10
III	Willow Avenue	Root Street	South of Howellhurst Drive	0	0	3	0	1	0	0	2	2	2	10
II	Brooks Drive	Rivergrade Road	East Terminus	0	0	3	0	0	0	0	2	2	2	9
II	Cloverleaf Drive	City Limit (South of I-10 Freeway)	City Limit (East of I-605 Freeway)	0	0	3	0	0	0	0	2	2	2	9
III	Garvey Avenue	Syracuse Avenue	Tracy Street	0	0	3	0	0	0	0	2	2	2	9

Table 3--22 Tier 1 Projects (Score of 20-14) (continued)

Facility Type	Location	Start	End	Bicycle-Related Collisions	Public Input	Gap Closure	Connectivity: Existing	Connectivity: Regional	Connectivity: Activity Centers	Connectivity: Multi-Modal	Permitting	Project Cost	Parking Displacement	Total Score (34 max)
II	Root Street	Puente Avenue/ Central Avenue	La Sena Avenue	0	0	3	0	2	0	0	2	2	0	9
III	Ardilla Avenue	Pacific Avenue	Channing Street	0	0	0	0	2	0	0	2	2	2	8
III	Ardilla Avenue	Channing Street	Dutch Street	0	0	0	0	2	0	0	2	2	2	8
III	Ardilla Avenue	Dutch Street	Macdevitt Street	0	0	0	0	2	0	0	2	2	2	8
III	Calais Street	La Rica Avenue	Landis Avenue	0	0	0	0	1	1	0	2	2	2	8
III	Dutch Street	Puente Avenue	Ardilla Avenue	0	0	0	0	2	0	0	2	2	2	8
II	Frazier Street	Garvey Avenue	Merced Avenue	0	0	3	0	0	2	0	2	1	0	8
III	School Street	Landis Avenue	Maine Avenue	0	0	0	0	1	1	0	2	2	2	8
II	Amar Road	Frazier Street	Roadway Terminus (at Walnut Creek)	0	0	0	0	1	0	0	2	2	2	7
III	Bogart Avenue	Cavette Place	Hallwood Drive	0	0	0	0	0	1	0	2	2	2	7
III	Cavette Place	Maine Avenue	Phelan Avenue	0	0	0	0	0	1	0	2	2	2	7
III	Hallwood Drive	Maine Avenue	Bogart Avenue	0	0	0	0	0	1	0	2	2	2	7
III	Tracy Street	Frazier Street	Baldwin Park Boulevard	0	0	0	0	0	0	0	2	2	2	6

3.5.3 Implementation Strategies

The Bicycle Master Plan provides the long-term vision for the development of a citywide bicycle network that can be used by all residents for all types of trips. The following strategies, action items and measures of effectiveness are provided to guide the City toward the vision identified in the Plan.

Strategy 1: Strategically Pursue Infrastructure Projects

City staff can strategically pursue funding and implementation of infrastructure projects recommended in this Plan. Ideally, City staff will pursue capital improvements funding or grant funding for high-priority bicycle improvements first. If grant requirements or construction in conjunction with another roadway project make construction of a lower priority project possible, then the City might advance that project regardless of priority.

Action Item: On an annual basis the City can publish a public report documenting the status and ongoing actions for all bicycle infrastructure projects. This report may be combined with the prioritization review discussed below. The first update is recommended to occur in Fall 2015.

Strategy 2: Review Capital Improvement Program (CIP) Concurrence

The opportunity to implement projects concurrent with the CIP can reduce the burden of implementing bicycle facility projects, and improve the schedule for use regardless of priority ranking for each project.

Action Item: Annually evaluate the CIP for opportunities to implement recommended bicycle facility projects included within this Plan.

Strategy 3: General Plan Incorporation

Key policies, strategies and recommendations included in this Bicycle Master Plan can be incorporated into the General Plan Circulation Element during the next update. At the least, the Circulation Element update can incorporate the recommended bikeways network, add revisions to the roadway cross-sections showing dimensions for on-street bike lanes, and incorporate policies for public and private realm accommodation of bicycling activities. Additionally, roadways with excess vehicular capacity can be reviewed to modify travel lanes and provided on-street or protected bike lanes. The City can also develop engineering standards for NACTO-type bicycle treatments for ongoing use.

Action Item: Update the General Plan Circulation Element and incorporate key items from the Bicycle Master Plan.

Strategy 4: Review City Representative

Current work on bicycle facility projects at the City has been implemented by planning and engineering staff within multiple City Departments. The City may review the designated bikeways representative to determine if other staff within the City have availability or are suited to help secure funding or programmatic recommendations provided within this Plan.

Action Item: Designate a single point person at the City to focus on implementation of bikeway infrastructure and non-infrastructure projects.

Strategy 5: Regularly Revisit Project Prioritization

Projects have been prioritized based on safety, public input, transportation benefit, connectivity benefit, cost, and feasibility. It is recommended that the prioritized list be reviewed every fiscal year, with new projects added, completed projects removed, and the priorities revised as conditions change.

Action Item: Annual review and update of the bicycle master plan's recommended facilities list and programs schedule. Updates to the list can be shared with the public. The first update is recommended in Fall 2015.

Strategy 6: Update the Bicycle Master Plan

While this Plan is intended to guide bikeways planning in the City for the next 20 years, updates may be needed to address changes in priority and evaluation efforts. State funding has typically required updates to bicycle master plans every five years to establish funding opportunity for active transportation projects. Often, cities provide a compliance update within five years and a comprehensive update every ten years.

Action Item: Provide compliance update to the Bicycle Master Plan in five years, and a more comprehensive full update in ten years. Other elements of the Plan shall be reviewed and updated as needed.

Strategy 7: Collaborate with Caltrans

Caltrans manages and operates various freeways adjacent the city with interchange ramps and bridges that often are higher-stress locations for bicycle riders. This Plan includes bicycle facility recommendations that require regular coordination and collaboration with Caltrans.

Action Item: Collaborate with Caltrans to implement bicycle facility improvements on Caltrans-managed facilities, including innovative and conventional treatments using examples of similar facilities within the City, County, and State as precedents.

Strategy 8: Establish Measures of Effectiveness

Measures of effectiveness (MOEs, also known as targets or indicators) are used as a quantitative way to measure the City's progress toward implementing the Bicycle Master Plan. Well-crafted MOEs track progress toward meeting an agreed-upon goal within an established timeframe. **Table 3-23** describes several MOEs recommended for use by the City to track key achievements.

As new baseline information is discovered as conditions change, and as the City implements the Bicycle Master Plan, the MOEs should be reevaluated, revised and updated.

An example evaluation or MOEs ("indicators") report is produced by the City of Santa Monica which evaluates sustainability indicators as well as non-motorized program measures. The Santa Monica Sustainable City Report Card is provided online at the following location

http://www.smgov.net/Departments/OSE/categories/sustainability.aspx

3.5.4 Potential Funding Sources

Potential funding sources for implementation of recommended bicycle facility infrastructure projects and programs has been identified for further consideration. The funding sources listed are typically competitive in nature, so the City will evaluate the applicability of potential projects and likely scoring before developing a grant application. Additionally, the City will determine the availability of staff to prepare grant applications and to administer the grant. Preparation of grant applications can often be a time-intensive effort, and receipt of funding is not guaranteed due to increasing competition for active transportation projects. Resource demands should be considered by the City given the potential benefit of each grant opportunity.

Table 3-23 Recommended Measures of Effectiveness

Measure	Benchmark	Target
Bicycle journey to work mode share	1.0% bicycle mode split per Census	Increase bicycle mode split to 2.0% by 2035.
Bicycle Facility Improvements Implementation	Approximately 4.5 miles of bikeways	Increase bikeways network by implementing bicycle facility recommendations.
Bicycle counts	Bike counts included in this Plan	Annually collect bike counts at baseline locations to document ridership volumes.
Bicycle rider trends/behaviors	Bike counts included in this Plan	Increase bicycling by women 10% per year up to 50% of total bicycling population, focus efforts to reduce wrong way bicycling where reported as cause in bike incidents.
Public attitudes about bicycling	Bike survey provides indication of challenging locations and current perspectives	Increase in positive attitudes about bicycling within community.
Bicycle boulevard demonstration project	Not applicable	Develop demonstration bicycle boulevard on selected corridor and evaluate for success in usage and connectivity.
Bicycle Friendly Community Designation	Not currently designated by the League of American Bicyclists	Secure League of American Bicyclists Bronze Award by 2016 and Silver Award by 2021.
Grant funding	Baseline to be established	Attain an annual average funding of $200,000 or more for infrastructure and non-infrastructure projects.

We recommend the City identify potential projects that would fit well with the following funding sources and initiate/continue discussions with key agencies and stakeholders; funding sources are identified with the date of the next anticipated call listed in parentheses:

- Caltrans Active Transportation Program (Late 2014 or Early 2015)
- Metro Call for Projects (2015)
- Metro ExpressLanes Net Toll Revenues (Date Unknown)
- SCAG Sustainability Program (Future date subject to SCAG Regional Council action)
- Land and Water Conservation Fund (2015)

Preliminary consideration of applicability and discussion with stakeholders can help verify that a potential opportunity is well-suited for the grant source, and can help position the City to document a history of collaboration and provide a venue to secure letters of support for incorporation into the grant application. Refer to Chapter 9 for a listing of additional funding sources that may be considered for funding bicycle facility improvements and programs.

3.6 Active Transportation Program (ATP) Compliance

The Active Transportation Program (ATP) is an annual statewide discretionary grant program that funds bicycle and pedestrian projects through the California Department of Transportation (Caltrans). Available as grants to local jurisdictions, the ATP emphasizes projects and programs that enhance bicycling for transportation purposes. In order for the City to qualify for ATP funding in future cycles, the Bicycle Master Plan must contain specific elements. **Appendix I** displays the requisite ATP components and their location within this Plan.

4 El Monte

This chapter presents El Monte's portion of the San Gabriel Valley Regional Bicycle Master Plan. The chapter is organized into the following sections:

- Existing Conditions
- Needs Analysis
- Recommended Bicycle Facilities & Programs
- Project Costs
- Project Implementation
- Active Transportation Program (ATP) Compliance

4.1 Existing Conditions

El Monte is located in the central part of the San Gabriel Valley. The third largest incorporated city in the San Gabriel Valley, El Monte has approximately 114,000 residents in a total area of 9.65 square miles. The resulting population density is 11,816 people per square mile. El Monte is bordered by the San Gabriel River and Interstate 605 (I-605) to the west, Temple City to the north, Rosemead to the west, and South El Monte to the south. The Interstate 10 (I-10) freeway bisects the city from west to east. The El Monte Bus Station (serving 22,000 passengers daily) and nearby El Monte Metrolink station are key transportation destinations. Both the Rio Hondo and San Gabriel River Bike Paths, along with Peck Road Park and Arceo Park, draw large numbers of bicycle riders and others.

The purpose of this chapter is to explore existing bicycling conditions in El Monte. With a bicycle commute mode share just above one percent (1.1%), El Monte has somewhat higher bicycle use than neighboring

Image 15- *Bike Parking at El Monte Bus Station*

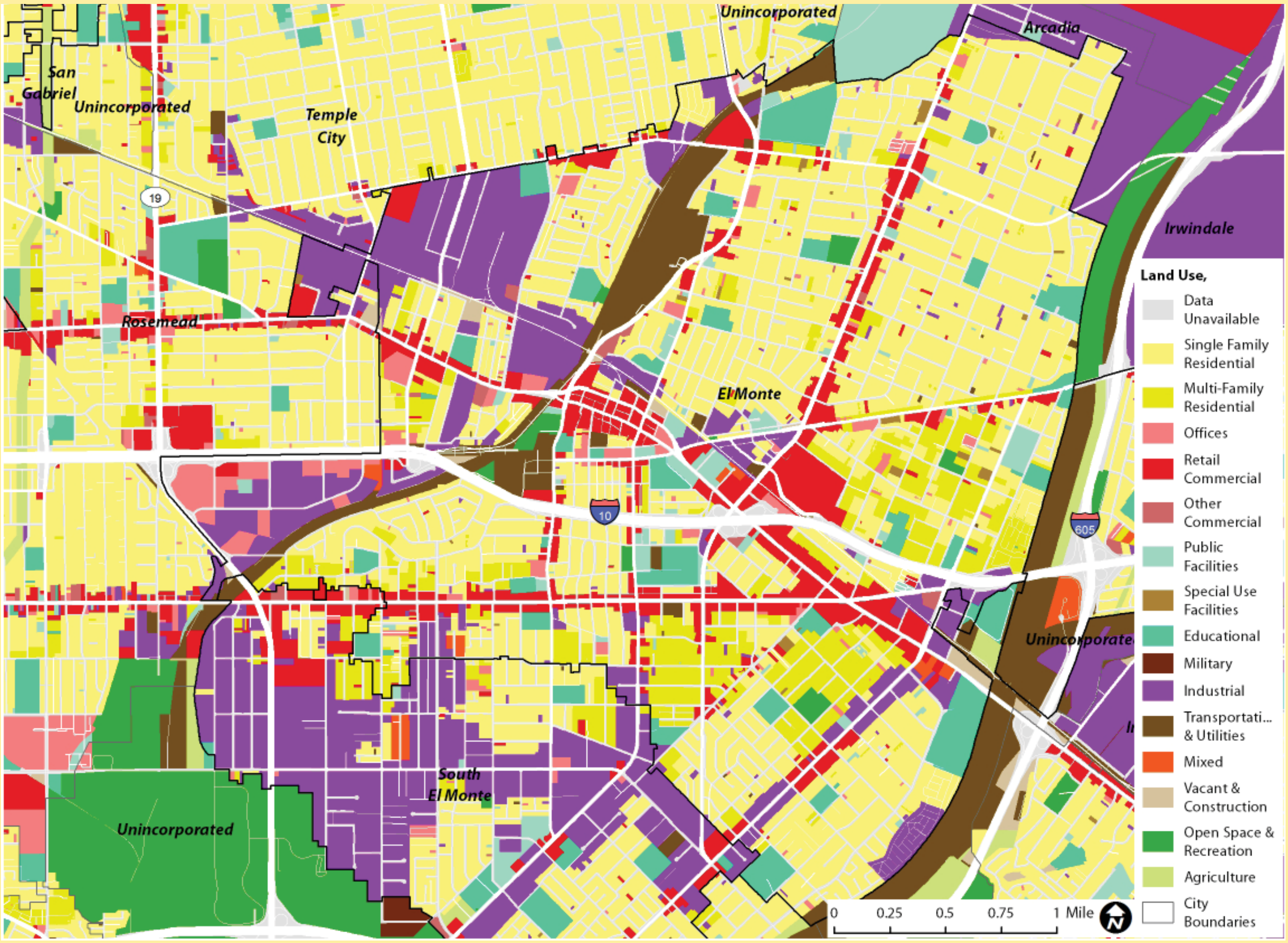
Image 16- *Valley Mall Shopping District*

communities, and nearly the same rate as the City of Los Angeles and State of California (1.0 percent each). An estimated 8,248 bicycle trips are made daily in El Monte.

4.1.1 Land Use

Figure 4-1 presents El Monte's land use map. Residential uses dominate the City, with single family homes accounting for forty-five percent (45%) of land area and multi-family residential buildings occupying eleven percent (11%). Commercial, mixed-use, and office designations account for a total of approximately fourteen percent (14%) of the city's land, while industrial uses also make up fourteen percent (14%). Commercial uses are focused along Garvey Avenue, Peck Road, Ramona Boulevard, Santa Anita Avenue, and Valley Boulevard. Parks, open space, and recreational facilities account for less than one percent (0.9%) of land. This land use pattern makes El Monte a place where people can both live and work.

Figure 4-1 El Monte Land Use Map



4.1.2 Relevant Plans and Policies

This section discusses various City of El Monte plans and policies and their relevance to this Plan.

Vision El Monte General Plan Update (2011)

An updated General Plan was adopted by the El Monte City Council in June 2011, and it includes a Health and Wellness Element (discussed below). As of 2011, El Monte has no bicycle routes or lanes. The City ranks among the top third of cities in Los Angeles County with the highest bicycle injury and fatality rates per 10,000 residents. From 2003-2007 there were 319 motor vehicle collisions involving bicycle riders; 317 of these collisions resulted in bicycle rider injuries and 2 in bicycle rider fatalities. Four of the elements within the General Plan include policies related to bicycle infrastructure and improvements that aim, in part, to reverse the safety trends cited above.

Parks and Recreation Element:

- PR-5.1 Bicycle Paths. Create a bicycle path network that is consistent with the Circulation Element, and Emerald Necklace Vision, and supports the MTA (Metro) bicycle hub concept.
- PR-5.5 Public Awareness. Raise public awareness of the health benefits of walking and bicycling, the safe use of the streets and sidewalks, and the availability of trails, bicycle routes, and greenways.

Community Design Element:

- CD-9.5 Streetscapes. El Monte would like to provide bicycle lanes equipped with large enough right of way to provide a safety buffer for bicycle riders.

Land Use Element:

- LU-6.10 Green Infrastructure. Green the riverbanks along the San Gabriel River through the implementation of Emerald Necklace projects, including linear parks, bicycle trails, and walking paths, and improve green infrastructure within Flair Park.

- LU-7.8 River Frontage. Green the riverbanks along the Rio Hondo River through the implementation of Emerald Necklace projects, including linear parks, bicycle trails, and walking paths to frame the edge of the Northwest Planning District, and improve adjacent residential neighborhoods.
- LU-9.5 Bicycle Lanes/Walkways. Create a Class 2 bicycle lane along Durfee Road, from the south City limits to Ramona Boulevard to provide an exclusive or semi-exclusive use of bicycles; also line the street with complete sidewalks to encourage pedestrian activity.

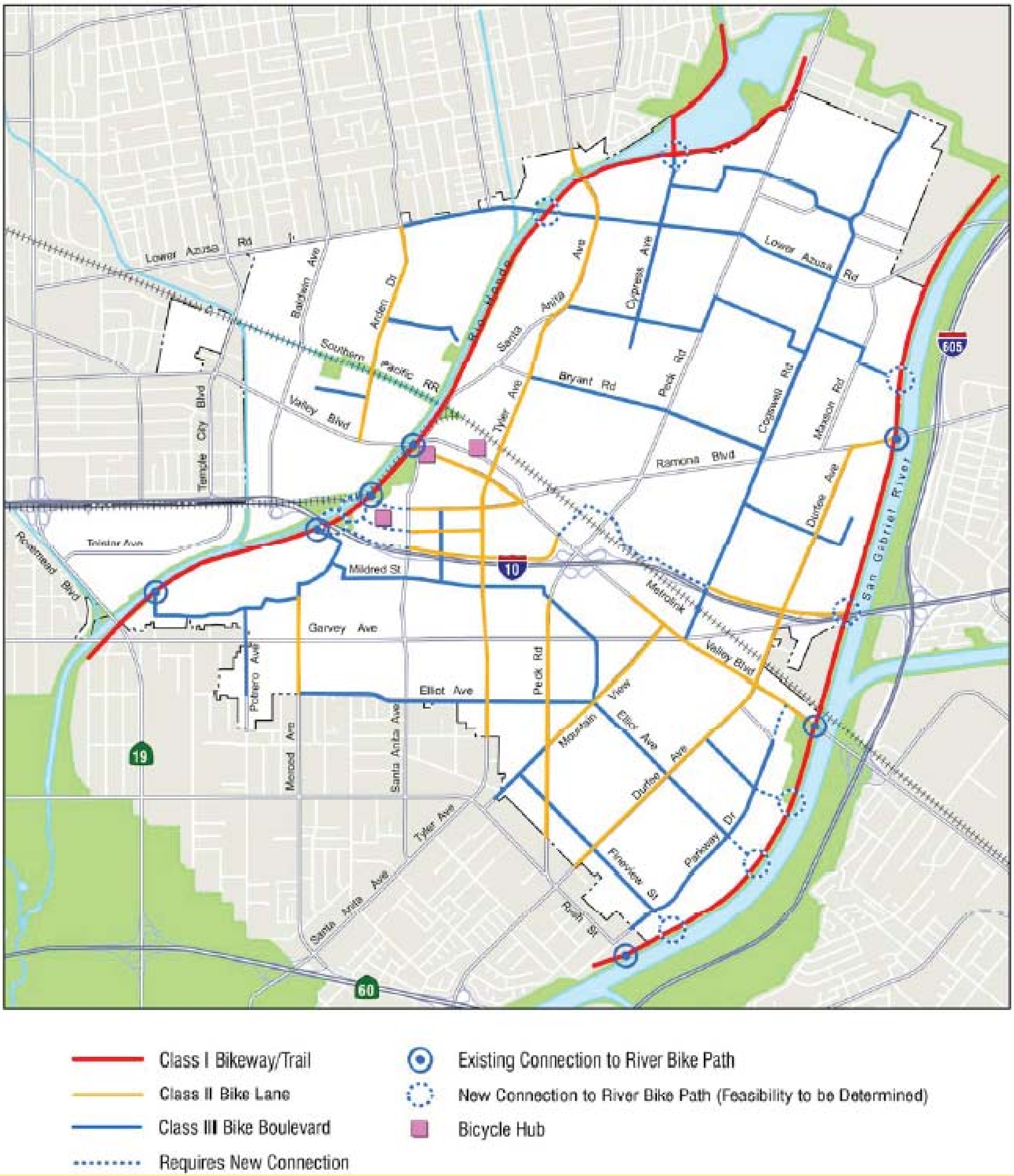
Circulation Element:

- The Circulation Element identifies key city roadways for bicycle facilities, shown in **Figure 4-2** and **Figure 4-3.**

Figure 4-2 *Summary of Functions of Key City Roadways, Including Bike Facilities*

Street	Roadway Type	Function			
		Auto	Truck	Transit	Bicycle
Lower Azusa Rd (entire length)	Secondary Arterial		Yes	Secondary	Bike Route (see map)
Bryant Rd Santa Anita to Cogswell	Collector Street		No	No	Bike Route
Valley Blvd (entire length)	Major Arterial	Principal	Yes	Primary	Bike Route (see map)
Ramona Blvd (entire length)	Secondary Arterial		Yes	Primary	Bike Route (see map)
Mildred St (entire length)	Collector Street		No	No	Bike Route
Garvey Ave (entire length)	Major Arterial	Principal	Yes	Primary (see map)	No
Mountain View Rd Peck to Valley	Collector Street		No	No	Bike Lane
Rosemead Blvd (entire length)	Major Arterial	Principal	Yes	Primary	No
Baldwin Ave (entire length)	Major Arterial	Principal	Yes	Secondary	No
Arden Dr (entire length)	Secondary Arterial		No	Secondary	Bike Lane
Santa Anita Ave (entire length)	Major Arterial	Principal	Yes	Primary	Bike Route (see map)
Tyler Ave (entire length)	Secondary Arterial		No	Primary	Bike Lane
Peck Rd (entire length)	Major Arterial	Principal	Yes	Secondary	Bike Route (see map)
Cogswell Rd (entire length)	Collector Street		No	Secondary	Bike Route
Durfee Rd South of Valley North of Valley	Secondary Arterial Collector Street		No No	Secondary No	Bike Lane Bike Lane
Potrero Ave South of Valley	Collector Street		No	No	Bike Route (see map)
Merced Ave (entire length)	Collector Street		No	No	Bike Lane
Central Ave South of Valley	Collector Street		No	No	No

Figure 4-3 *Proposed Bicycle Network from El Monte General Plan (2011)*



- Two "green" corridors (i.e., bicycle and pedestrian corridors) are proposed that will create a backbone for bicycle and pedestrian circulation in El Monte:
  - Corridor parallel to I-10 that connects Rio Hondo Channel to the San Gabriel River
  - North-south corridor along Tyler Avenue
- The General Plan proposes that a feasibility study be conducted in Study Area #2 pursuant to the "Plan to Improve Traffic Safety and Circulation in El Monte"
  - Study Area #2 is bounded by Santa Anita Avenue, Valley Boulevard, Tyler Avenue and Ramona Boulevard.
- C-4.4 Regional Transit Stations. Support the efficient operation of the El Monte Transit Station and the Metrolink Station, and focus bus transit routes, the bicycle network, and pedestrian corridors to these facilities to maximize potential for transit ridership.
- C-6.2 Require new development to provide amenities for transit, bicycle riders, and pedestrians and to provide connections to the bicycle and pedestrian networks where appropriate.

El Monte Community Health and Wellness Element - Implementation Plan (2011)

The El Monte Community Health and Wellness Element's Implementation Plan has 77 implementation actions to improve health in El Monte. They have established 14 goals to address important health topics. Of these goals, several address healthy and active transportation:

- Healthy Transportation System:
  - Goal HW-4: A transportation system that supports safe, healthy, and active lifestyles, by providing multimodal connectivity between parks, schools, neighborhoods, and downtown.
    - Standardize monitoring tools to study the number of people walking, biking, and taking public transportation.
    - Create and adopt a New Streets Manual.
    - Publish a study on locations in the City with the highest bicycle- and pedestrian-related collision rates.
    - Inventory all existing rail crossings and improve crossing safety for pedestrians and bicycle riders at risky intersections.
    - Driver education about laws relating to pedestrians and bicycle riders.
    - Create and adopt a revised Level of Service Ordinance.
    - Expand programs related to Car Sharing.
    - Review and revise the zoning code to encourage developers to unbundle parking costs based on density/mixed-use areas.
  - Goal HW-5: A high quality pedestrian network created so residents can safely walk to their destinations.
    - Create a Citywide Pedestrian Mobility Plan.
    - Identify and address sidewalk deficiencies.
    - Implement wayfinding signage and walking map.
  - Goal HW-6: A bicycle and shared-use trail network that facilitates cycling for both recreation and transportation.
    - Continue to partner with local bicycle shops to provide free or low cost cycling training.
    - Install bike racks and bike corrals.
    - Establish standards for bike parking.
    - Create and implement a Citywide Bicycle Mobility Plan that meets the requirements of Caltrans' Bicycle Transportation Account.
  - Goal HW-08: "Living" and "Complete" streets are developed throughout the City.
    - Promote ciclovías, or car-free streets, on selected days.
    - Encourage business and neighborhood associations to apply for street closure permits for block parties.
    - Develop and implement a Complete Streets ordinance.
    - Work with the Department of Public Works to implement "green streets".
    - Incorporate public plazas.
- Parks, Trails and Public Facilities
  - Goal HW-9: Parks, trails, open spaces, and community facilities distributed throughout

El Monte support active, healthy recreation and activities.

- Create perimeter paths around parks with appropriate space and surfaces for all types of users.

- Air Quality
  - Goal HW-12: Land use patterns reduce driving, enhance air quality, and improve respiratory health.

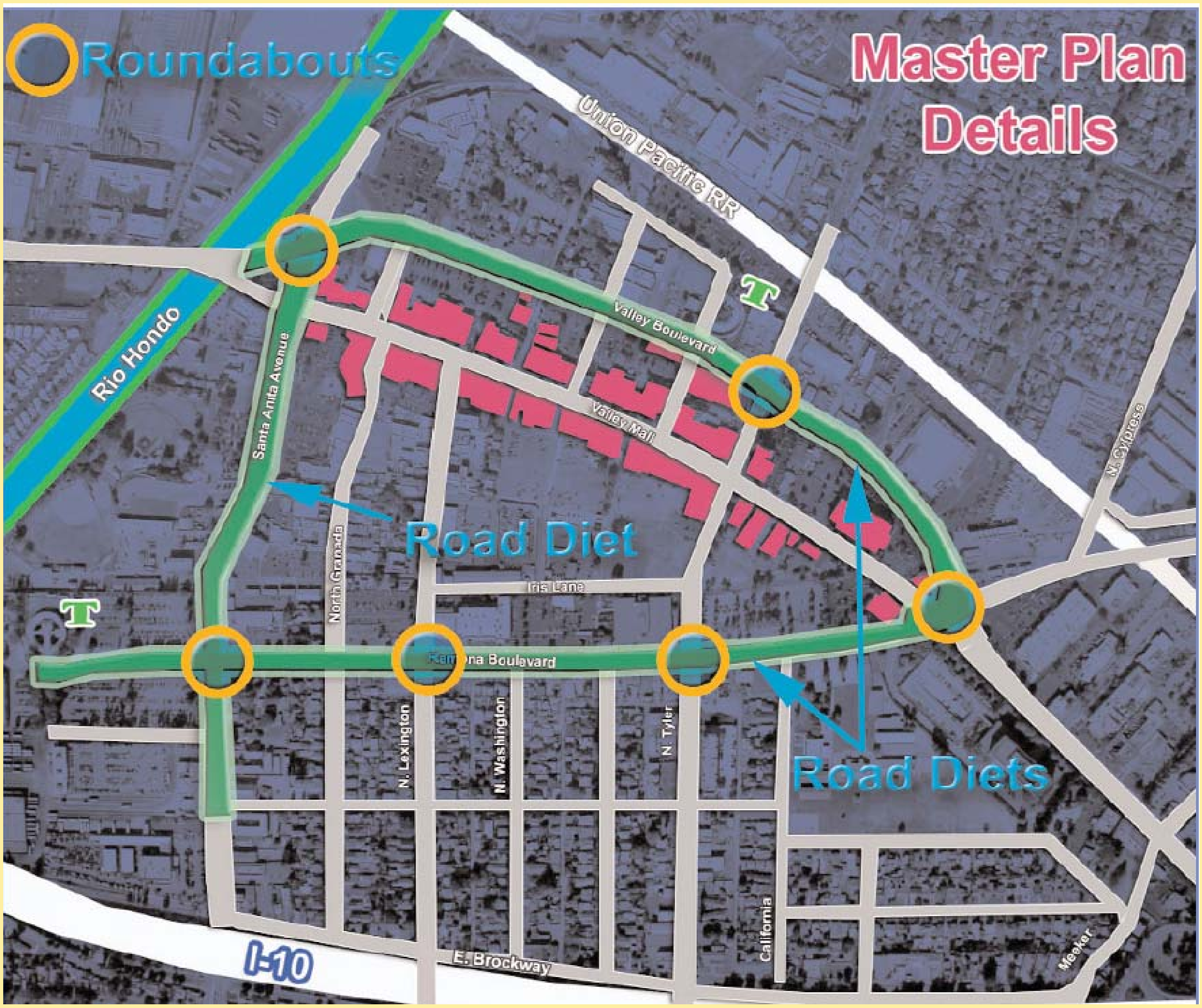
For more information on the City's Health & Wellness Initiative: http://www.ci.el-monte.ca.us/Government/ParksandRecreation/CommunitySeniorSrvs/HealthWellness.aspx

Plan to Improve Traffic Safety and Circulation in El Monte (2007)

This 2007 Plan offers recommendations to create a more livable, prosperous downtown area in the City of El Monte. General recommendations consist of improved pedestrian crossings, bikeways on all streets where adequate width is available, road diets on suitable streets, roundabouts to slow vehicle traffic, enhanced pedestrian-scale lighting, and improved railroad crossings.

Road diets, coupled with added bicycle lanes, are recommended for Santa Anita Avenue, Ramona Boulevard, and Valley Boulevard. These streets, along with the locations of proposed roundabouts, are shown in **Figure 4-4**. The Plan also recommends Safe Routes to School Programs for the city's several schools.

Figure 4-4 Map of Recommendations from Plan to Improve Traffic Safety and Circulation



4.1.3 Engineering

Existing Bicycle Facilities

This report refers to standard bikeway definitions identified by Caltrans in Chapter 1000 of the Highway Design Manual (Caltrans HDM). Additional concepts for bikeways have been promoted and implemented throughout the United States; however, they have not been adopted for use in the Caltrans HDM. Bicycle facility types are discussed in Section 1.3.

Table 4-1 summarizes the classification and mileage of the existing network.

Table 4-1 Existing Bicycle Network Mileage

Facility Type	Mileage
Class I (Bike Path)	4.0
Class II (Bike Lanes)	0.0
Class III (Bike Route)	0.0
Total Mileage	4.0

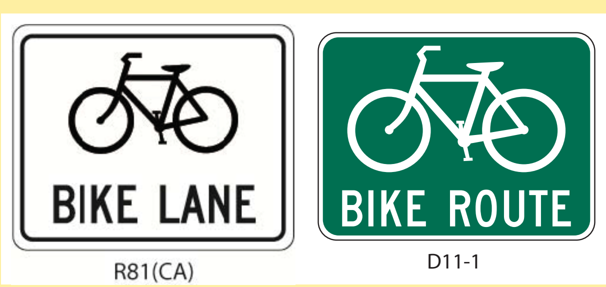
As shown in **Table 4-1**, a total of 4.0 miles of bikeways are currently provided in the City of El Monte, consisting of the following facilities:

- San Gabriel River Bike Path (maintained by Los Angeles County); and
- Rio Hondo Bike Path (maintained by Los Angeles County).

Signage

The California Manual on Uniform Traffic Control Devices (CA MUTCD) and the CA HDM outline the requirements for bikeway signage. The Bike Lane Sign (R81) is required at the beginning of each designated bike lane and at each major decision point. The Bike Route Sign (D11-1) is required on Class III facilities. Shared-use paths require additional standardized signs to help manage different user groups. Upon implementation of bikeways, the City will install CA MUTCD standard signs as appropriate.

***Figure 4-5** Caltrans Bikeway Signs*



Bicycle Parking

Bicycle storage can range from a simple and convenient bicycle rack to storage in a bicycle locker or cage that protects against weather, vandalism and theft. The City does not currently have an inventory of existing bicycle parking locations. Short-term bicycle racks can be found at some major destinations, including City Hall, the Metro-run El Monte Station (Ryan – I pulled this name from website), the Metrolink-run El Monte Station, and parks throughout the city. Many bicycle riders resort to securing their bike to street fixtures such as trees, lights, telephone poles, and parking meters when sufficient parking facilities are not provided.

End-of-Trip Facilities

The presence and quality of trip-end facilities (e.g. showers, lockers, and changing facilities) can greatly influence a person's decision to complete a trip via bicycle. These facilities enable bicycle riders to change into work attire (especially after riding in wet or hot conditions). The City currently does not have an inventory of existing end-of-trip facilities.

Bicycle Signal Detection

Bicycle detection at actuated traffic signals permits bicycle riders to trigger a green light, even when no motor vehicle is present. California Assembly Bill 1581 requires all new and replacement actuated traffic signals to detect bicycle riders and to provide sufficient time for a bicycle rider to clear an intersection from a standing start. Caltrans Policy Directive 09-06 clarifies the requirements and permits any type of detection technology. The most common technologies are in-pavement loop detectors and video detection. More recently, microwave detection has been used to detect and differentiate between bicycle riders and motor vehicles.

The City complies with the Caltrans Policy Directive by installing detector loops designed to detect bicycles during pavement rehabilitation and traffic signal upgrade projects. Traffic signal timing is reviewed and updated as necessary through traffic signal corridor timing projects.

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 automobile travel. **Figure 4-5** shows the existing Metro and Metrolink transit lines that serve the City of El Monte and SCAG-identified Park-and-Ride lots within the City.

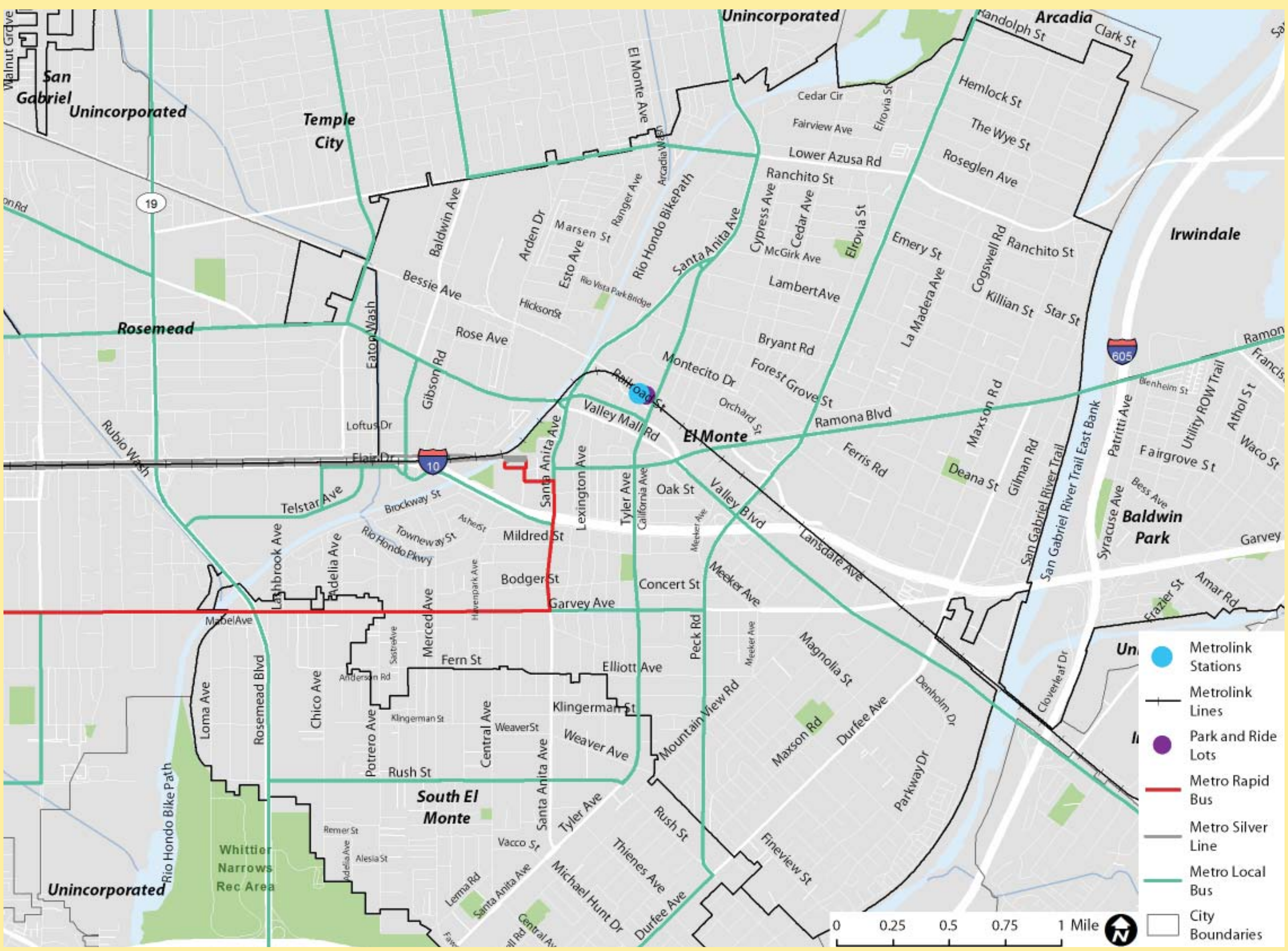
The Southern California Regional Rail Authority operates Metrolink commuter rail in the San Gabriel Valley. El Monte is served by the San Bernardino line with a downtown park-and-ride station located just northwest of the Valley Boulevard/Tyler Avenue intersection. All Metrolink trains allow bicycles on-board at all times, with each train car able to hold three bikes. In addition, several trains on the San Bernardino line contain a special "Bike Car" that is designed to hold 18 bicycles on the lower level; published Metrolink schedules show which trains contain the special bike cars. Additionally, the City operates a weekday Commuter Shuttle that allows free transfers with a valid Metrolink ticket or pass.

El Monte is also well served by the El Monte Bus Station, which facilitates regional and local bus travel for 22,000 passengers daily. A high number of bus lines in the San Gabriel Valley either terminate at or pass through the El Monte Station. The Los Angeles County Metropolitan Transportation Authority (Metro) operates several bus lines from the El Monte Bus Station and many others that travel through the City, including the Silver Line that travels to Downtown Los Angeles via the El Monte Busway along the I-10 freeway. Metro buses are equipped with front-end racks that can carry two bicycles.

Foothill Transit operates several bus lines that serve El Monte, and all buses are equipped with racks that can carry two bicycles. Line 178 connects El Monte Station to the Puente Hills Mall. Line 486 passes through the southwestern corner of the City on its way between El Monte Station and Cal Poly Pomona, with stops in La Puente, Walnut, and at Mt. San Antonio College. Line 488 connects El Monte Station and the cities of Baldwin Park, Covina, West Covina, and Glendora. Line 492 serves Santa Anita Avenue and connects with several cities on the way to the Montclair Transit Center. Other Foothill Transit lines connect El Monte to Downtown Los Angeles, including Lines 481 and the Silver Streak.

El Monte Transit operates five local lines that provide residents with transportation services to most major shopping areas, recreation facilities, and most schools within the City. El Monte Transit buses operate Monday through Saturday. Baldwin Park Transit buses do not accommodate bicycles.

Figure 4-6 *Existing Public Transportation Facilities in El Monte*



El Monte Station is connected to the Rio Hondo Bike Path by a newly constructed entrance and signed route through the station's parking lot. In addition, Metro is currently constructing a "Bike Hub" at the El Monte Station to provide high-quality storage and a variety of services to bicycle commuters.

Maintenance

Street maintenance programs aid in the quality and longevity of bicycle facilities. The City of El Monte currently has a Street Maintenance program that provides staff with guidelines to inspect, schedule, and repair City streets, alleys, and bike trails. The program provides maintenance of signs, pavement markings, curb markings, street name signs, and roadway striping. In addition to as-needed repairs, the program annually repaints school pavement legends and inspects school regulatory and warning signs. Street sweeping occurs on over 300 curb-miles on a weekly basis.

The Capital Improvement Program (CIP) serves to develop and construct major public improvements and address significant maintenance items. The CIP prioritizes and allocates funding for large scale projects including roadway resurfacing, repair projects, and improvements within the city.

4.1.4 Existing/Previous Education, Encouragement, and Enforcement Strategies

Bicycle education programs and enforcement of bicycle-related policies help to make riding safer for all bicycle riders. The City does not currently have education campaigns related to bicycling within the City.

El Monte police officers enforce all bicycle-related rules in the California Vehicle Code and issue citations when they observe violations.

4.1.5 Past and Future Bicycle-Related Expenditures

No new bicycle facilities have been implemented within the City within the past three years. The City has obtained funding for the following bicycle- and pedestrian-related projects:

El Monte Regional Bicycle Commuter Access Improvements - Metro Call for Projects (2013)

In 2013, the City of El Monte received funding from Metro to implement a variety of improvements to enhance bicycling and walking connections between the El Monte Transit Center and regional employment centers. The improvements are as follows:

- 200-foot bicycle/pedestrian bridge across the Rio Hondo approximately 300 feet southwest of the San Bernardino (I-10) Freeway
- Class II bike lanes on Tyler Avenue from Garvey Avenue to Klingerman Street (0.47 miles)
- Class II bike lanes on Merced Avenue from Garvey Avenue to Towneway Drive (0.27 miles)
- Class III bike route on Ramona Avenue from Tyler Avenue to Valley Boulevard (0.20 miles)
- Class III bike route on Valley Boulevard from Peck Road to Santa Anita Avenue (0.93 miles)
- Class III bike route on Towneway Drive from Merced Avenue to Brockway Street (0.32 miles)
- Class III bike route on Brockway Street from Towneway Drive to Fletcher Park entrance/Rio Hondo bike access ramp (0.11 miles)
- 20 wayfinding signs along the Class II and Class III bike facilities
- Lighting for the new pedestrian/bicycle bridge, bridge access points, and the Rio Hondo bike path under the I-10 overpass

Ramona Boulevard and Tyler Avenue Bike Lanes (2013)

On Thursday, October 9, 2013, the City of El Monte approved Class-II bikeways on Ramona Boulevard and Tyler Avenue. The bike lane installation project will include striping, stenciling, way-finding signage, loop detectors, bike rack installations, and the development of a multi-lingual bicycle education program. These are the first bike lanes planned in the City. The new bike lanes will link to the Community Center, Transit Center, Senior Center, Arceo Park, El Monte High School, the Metro Transit Center, Aquatic Center, and neighboring cities. Preliminary designs for the Tyler Avenue bike lanes were developed in the summer of 2014.

4.2 Needs Analysis

This section describes the needs of bicycle riders in El Monte. This section provides estimates and forecasts of bicycle travel to determine the estimated bicycling demand in the city. In addition, this section analyzes recent bicycle collision data to identify areas that would benefit from bicycle facility improvements. Public outreach efforts related to the preparation of this Plan are discussed in Chapter 1 and Appendices B, C, and D of this Plan.

4.2.1 Bicycle Demand Estimates and Forecasts

The model uses the U.S. Census Bureau's American Communities Survey (ACS) journey-to-work data and applies a market segment approach to estimate the number of bicycling or walking trips. Elementary school and college students usually have a different bicycle/walking mode split than work commuters.

In addition, national transportation surveys, in particular the National Household Travel Survey (NHTS, 2009), have shown that commute trips are only a fraction of the total trips an individual takes on a given day. The model uses the NHTS findings to estimate the number of non-work, non-school trips taken by commuters to determine the number of walking or bicycling trips that occur in a day. This information can be projected out using standard trip lengths by mode and trip purpose to estimate the number of driving miles reduced by non-motorized modes.

Model Data

The foundation of this analysis is the ACS 2008-2012 five-year estimate for El Monte. Model variables from the ACS include: total population, employed population, school enrollment (grades K-12 and college students), and travel-to-work mode split.

The 2009 NHTS provides a substantial national dataset of travel characteristics, particularly for trip characteristics of bicycling and walking trips. Data used from this survey include:

- Student mode split, grades K-12
- Trip distance by mode by trip purpose
- Ratio of walking/bicycling work trips to utilitarian trips
- Ratio of work trips to social/recreational trips
- Average trip length by trip purpose and mode

Several of these variables provide a way to estimate the number of walking and bicycling trips made for other reasons than work trips, such as shopping and running errands. NHTS 2009 data indicates that for every bicycle work trip, there are slightly more than two utilitarian bicycle trips made. Although these trips cannot be directly attached to a certain group of people (not all of the utilitarian bicycling trips are made by people who bicycle to work), these multipliers allow a high percentage of the community's walking and bicycling activity to be captured in an annual estimate.

The Safe Routes to School Baseline Data Report (2010) was used to determine the percent of students who walk or bicycle by the parents' estimate of distance as well as the frequency of carpooling for trip replacement.

As with any modeling projection, the accuracy of the result is dependent on the accuracy of the input data and other assumptions. Effort was made to collect the best data possible for input to the model, but in many cases national data was used where local data points were unavailable. Examples of information that could improve the accuracy of this exercise include the detailed results of local Safe Routes to Schools parent and student surveys, a regional household travel survey, and a student travel survey of college students.

Existing Walking and Bicycling Trips

Table 4-2 below presents commute to work data estimates for El Monte, as well as nearby cities and comparison geographies, as reported in the 2008-2012 American Community Survey 5-year estimates. This information for El Monte is one of several inputs of the demand model.

Table 4-2 Existing Mode Split Comparison with Neighboring Cities

Jurisdiction	Walk	Bike	Transit	Carpool	Drive Alone
El Monte	3.0%	1.1%	6.7%	13.5%	70.6%
Rosemead	1.3%	0.8%	4.3%	12.2%	76.2%
South Pasadena	1.2%	0.8%	5.1%	9.2%	78.4%
Temple City	0.8%	0.4%	3.4%	12.8%	77.5%
City of Los Angeles	3.7%	1.0%	11.1%	10.3%	67.0%
County of Los Angeles	2.9%	0.8%	7.1%	10.9%	72.2%
California	2.8%	1.0%	5.1%	11.5%	73.0%
United States	2.8%	0.6%	5.0%	10.0%	76.1%
Source: 2008-2012 American Community Survey 5-year Estimates					

Table 4-3 shows the estimated current number of daily bicycling and walking trips. Based on the model assumptions, the majority of trips are non-work utilitarian trips, which include medical/dental services, shopping/errands, family personal business, obligations, transport someone, meals, and other trips.

***Table 4-3** Current Weekday Bicycling and Walking Trips*

	Bicycling	Walking	Source
Bicycling/walking commute trips	1,020	2,781	Employed population from ACS multiplied by mode split from ACS, doubled for round-trips
Walk- or bike-to-transit trips	62	1,801	Number of transit commuters from ACS multiplied by transit mode split from TCRP Report 153, doubled for round-trips
K-12 bicycle/walking trips	411	5,493	School children population from ACS multiplied by mode split from SRTS Baseline Data Report (2010), doubled for round-trips
College bicycle/walking trips	249	1,014	Employed population from ACS multiplied by mode split from NHTS 2009, doubled for round-trips
Daily bicycle/walking utilitarian trips	1,643	12,024	Bicycle/walking commute trips (above) multiplied by mode-specific utilitarian trip multiplier from NHTS 2009
Daily social/recreational trips	4,863	10,880	Bicycle/walking commute trips (above) multiplied by mode-specific social/recreational trip multiplier from NHTS 2009
Current daily bicycling and walking trips	8,248	33,992	
Annual Extrapolation			
Annual commute trips	271,582	1,150,082	Bicycle/walking and walk- or bike-to-transit trips multiplied by annual work days
Annual K-12 trips	73,980	988,740	K-12 bicycle/walking trips multiplied by annual K-12 school days
Annual college trips	37,350	152,100	College bicycle/walking trips multiplied by annual college class days
Annual utilitarian trips	437,549	4,972,323	Annual commute trips multiplied by mode-specific utilitarian trip multiplier

As shown in **Table 4-3**, current commute, school, college and utilitarian trips via bicycle is estimated at approximately 8,250 trips daily, and approximately 437,500 bicycle trips are estimated to occur annually.

Trip Replacement

Trip Replacement as part of this Plan specifically refers to the number of trips that are completed via bicycling or walking that would otherwise be achieved by utilizing a motorized mode such as driving/riding in an automobile or traveling on public transportation. To estimate the total distance residents travel to work or school by walking and bicycling, the model isolates different walking and bicycling user groups and applies trip distance information for walking or bicycling trips by mode based on NHTS 2009. **Table 4-4** shows the trip replacement factors.

Yearly factors are calculated by assuming that work and school/college trips occur five days per week, while utilitarian trips occur seven days per week. However, work and utilitarian trips occur year-round, while school and college trips are only three-quarters of the year, due to summer vacation.

Table 4-4 Current Bicycling and Walking Trip Replacement (Annual)

	Bicycling	Walking	Source
Vehicle commute trips replaced	212,405	917,101	Redistribution of bikers/walkers using existing mode split if that mode were not available
K-12 vehicle trips replaced	31,513	481,240	SR2S Baseline Data Report, 2010
College vehicle trips replaced	30,440	130,806	NHTS 2009
Utilitarian vehicle trips replaced	342,208	3,965,043	Redistribution of bikers/walkers using existing mode split if that mode were not available
Vehicle Miles Traveled			
Commute VMT replaced	751,914	614,458	NHTS 2009 average bicycle trip distance for "Work" trips
K-12 VMT replaced	24,201	170,899	SRTS 2010, percent of students who walk or bicycle by parent's estimate of distance
College VMT replaced	45,051	73,251	NHTS 2009 average trip distance for "School/Daycare/Religious" trips
Utilitarian VMT replaced	647,914	2,643,362	Derived from NHTS 2009
Total VMT reduced	1,469,081	3,501,970	
Per capita VMT reduced	13	31	

Current Benefits

To the extent that bicycling and walking trips replace single-occupancy vehicle trips, they reduce emissions and have tangible economic impacts by reducing traffic congestion, crashes, and maintenance costs. In addition, the reduced need to own and operate a vehicle saves families money. These benefits are shown in **Table 4-5**.

Table 4-5 Annual Benefits of Current Bicycling and Walking Trips

Measure	Bicycling	Walking	Total
Yearly vehicle miles reduced	1,469,081	3,501,970	4,971,051
Air Quality Benefits			
Reduced Hydrocarbons (pounds/year)	4,405	10,500	14,905
Reduced Particulate Matter (pounds/year)	33	78	111
Reduced Nitrous Oxides (pounds/year)	3,077	7,334	10,411
Reduced Carbon Monoxide (pounds/year)	40,161	95,734	135,895
Reduced Carbon Dioxide (pounds/year)	1,195,106	2,848,873	4,043,979

As shown in **Table 4-5**, current bicycle trip benefits include the reduction of over 1,469,000 vehicle miles annually and a reduction of carbon dioxide emissions by nearly 1.2 million pounds annually.

Potential Future Walking and Bicycling Trips

Estimating future benefits requires additional assumptions regarding El Monte's future population and anticipated commuting patterns in 2035. Future population predictions as determined by the SCAG 2012 RTP Growth Forecast (for 2035) were used in this model. **Table 4-6** shows the projected future demographics used in the future analysis.

Table 4-6 Projected Future Demographics

Demographic	Value	Source
Population	140,100	SCAG 2012 RTP Growth Forecast
Employed population	56,951	Same percentage as current model estimate
School population, K-12	25,276	Same percentage as current model estimate
College student population	9,135	Same percentage as current model estimate

Forecast bicycling mode share was increased to address the higher use potentially generated by the addition of recommended bikeway facilities to the existing system.

The analysis predicts that the bicycle mode split will increase to 2.2% by 2035, due in part to bicycle network implementation and education/encouragement programs. The results of the future bicycling trips model, assuming an increase to 2.2% bicycle mode share, are shown in **Table 4-7.**

Table 4-7 Estimated Future (2035) Weekday Bicycling and Walking Trips

Trip Type	Bicycling	Walking	Discussion
Bicycle/walking commute trips	2,506	3,417	Employed population multiplied by mode split, doubled for round-trip
Walk- or bike-to-transit trips	76	2,213	Number of transit commuters multiplied by transit mode split from TCRP Report 153, doubled for round-trip
K-12 bicycle/walking trips	506	6,749	School children population multiplied by mode split, doubled for round-trip
College bicycle/walking trips	306	1,246	Employed population multiplied by mode split, doubled for round-trip
Daily bicycle/walking utilitarian trips	4,037	14,773	Bicycle/walking commute trips multiplied by mode-specific utilitarian trip multiplier
Daily social/recreational trips	11,949	13,368	Bicycle/walking commute trips multiplied by mode-specific social/recreational trip multiplier
Total future daily bicycling and walking trips	**19,380**	**41,766**	

As shown in **Table 4-7**, assuming bicycle mode split increases to 2.2%, forecast year 2035 commute, school, college and utilitarian trips via bicycle are estimated to grow to approximately 19,400 trips daily.

Future Benefits

The trip replacement factors remain the same as in the model of current trips. **Table 4-8** shows the air quality benefits of the future projected walking and bicycling trips.

Table 4-8 Annual Benefits of Future Bicycling and Walking Trips

Measure	Bicycling	Walking	Total
Yearly vehicle miles reduced	3,426,000	4,303,000	7,729,000
Air Quality Benefits[1]			
Reduced Hydrocarbons (pounds/year)	10,271	12,901	23,172
Reduced Particulate Matter (pounds/year)	76	96	172
Reduced Nitrous Oxides (pounds/year)	7,175	9,012	16,187
Reduced Carbon Monoxide (pounds/year)	93,647	117,631	211,278
Reduced Carbon Dioxide (pounds/year)	2,786,746	3,500,465	6,287,211

As shown in **Table 4-8**, assuming bicycle mode split increases to 2.2%, forecast year 2035 benefits include the reduction of over 3.4 million vehicle trips annually and the reduction of carbon dioxide emissions by close to 2.8 million pounds annually.

4.2.2 Bicycle Counts

A knowledge of current bicycling levels in the City of El Monte helps to identify areas of particular need while also serving as a baseline from which to evaluate the impact of bicycling infrastructure and program improvements called for in this Plan. To assess current bicycling levels at different sites throughout the City, the project team conducted bicycle counts using two separate methodologies: manual counts with volunteers and automated counts using electronic tube counters.

Methodology

The methodology for the manual 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 existing levels of both utilitarian and recreational bicycling trips. The NBPD also provides guidance on how to select count locations.

Volunteers conducted bicycle counts at eight locations in El Monte on Thursday, December 19, 2013 from 7:00 a.m. to 9:00 a.m., at five locations that same day from 4:00 p.m. to 6:00 p.m., and at six locations on Saturday, December 21, 2013 from 11:00 a.m. to 1:00 p.m. These dates are meant to capture volumes of bicycle riders on a typical weekday and weekend day. The manual bike count locations were selected by staff members from the City of El Monte, Day One, and Alta Planning + Design. This snapshot of locations is intended to capture a diverse bicycling population using the roads and streets that span the spectrum of “bike-friendliness.”

¬In addition to manual counts, automated 24-hour bicycle counts were conducted using Eco-Counters that were procured by the Los Angeles County Department of Public Health and distributed to each of the five Regional Bike Plan partner cities for various time periods. In El Monte, the automated counters were installed at ten locations between March 4, 2014 and April 1, 2014. The project team experienced several issues with the automated counters that negatively affected the accuracy of the bicycle count data, such as maintenance problems and data reporting flaws. Therefore, the project team recommends that the automated count data be dismissed in favor of the manual count results. However, the automated counting technology should be refined and considered for use in future bicycle data collection efforts.

Results

Manual bicycle count locations and results for the City of El Monte are displayed in are displayed in **Figure 4-7, Figure 4-8, and Figure 4-9** as well as in **Appendix F**. During the Thursday morning manual counts, the El Monte location that experienced the highest volume of bicycle riders was Tyler Avenue between Ramona Boulevard and Amador Street with 44 total bicycle riders passing during the two hour count period. In the afternoon of that same Thursday, the count location of Garvey Avenue between Nevada Avenue and Tyler Avenue saw the highest volume of bicycle riders – 29 bicycle riders from 4:00 p.m. to 6:00 p.m. On Saturday, the most bicycle riders were again counted along Garvey Avenue between Nevada Avenue and Tyler Avenue, with 59 riders passing by during the count period.

In the City as a whole, 92 percent of the 519 total bicycle riders counted were male. Eighty-seven percent of those observed were not wearing bicycle helmets, and 61 percent were riding on the sidewalks. Riding on the sidewalk can be an indicator of a lack of safe bicycling facilities and/or proper education, as bicycle riders that

***Figure 4-7** Weekday Morning Bicycle Count Results in El Monte*

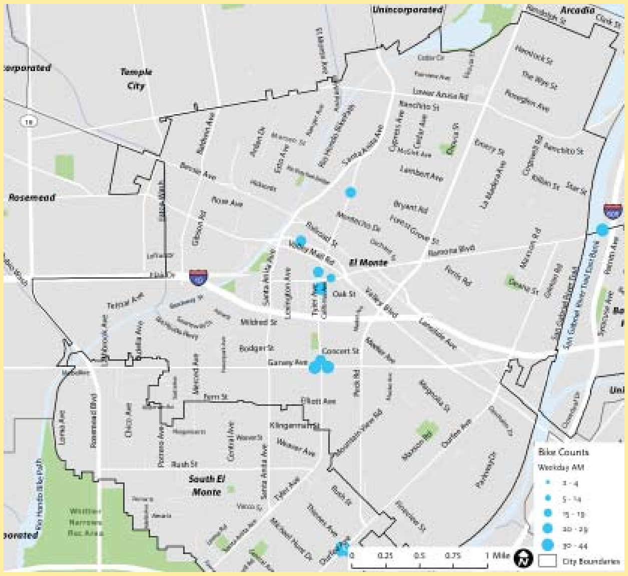


***Figure 4-8** Weekday Afternoon Bicycle Count Results in El Monte*

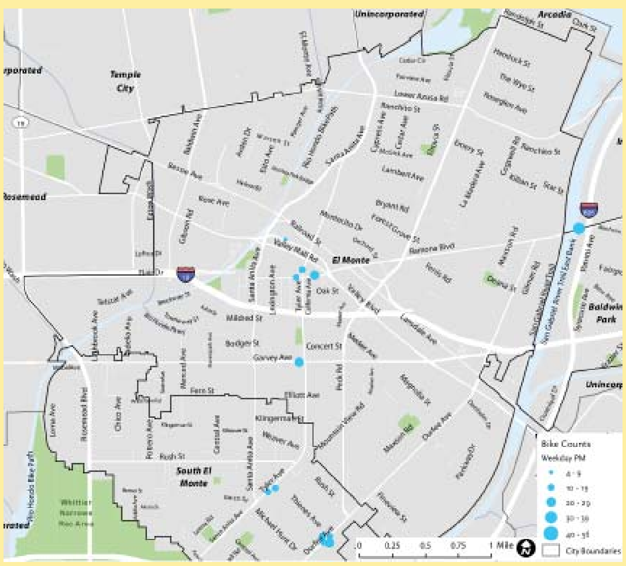
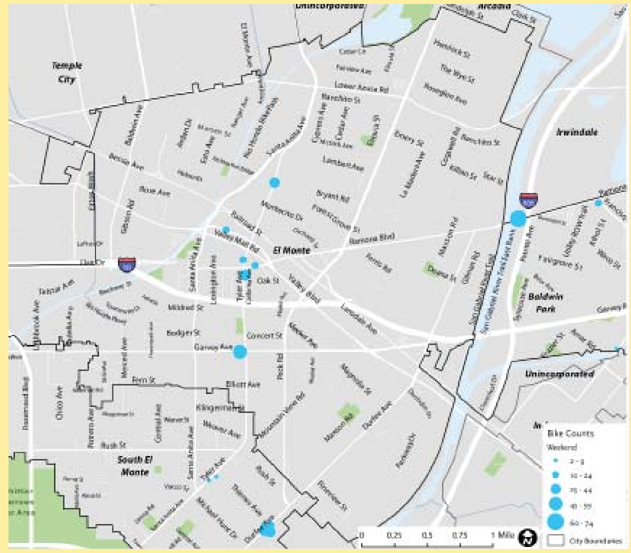


***Figure 4-9** Weekend Bicycle Count Results in El Monte*



are uncomfortable riding with traffic may choose to instead travel along the sidewalk.

4.2.3 Bicycle-Related Collision Analysis

Safety is a major concern for current and potential bicycle riders, and can influence the decision whether or not to bicycle. Potential bicycle riders that do not have experience riding, especially in traffic, typically will not ride if they perceive the roadway as dangerous. People who do not ride often express frustration when drivers do not see them or do not understand that bicycle riders are afforded the same rights as vehicles. Similarly, many bicycle riders do not know or follow the "rules of the road." Uninformed or unlawful roadway users can contribute to collisions.

This section reviews bicycle-related collisions from January 2007 to December 2011, as reported by the Statewide Integrated Traffic Records System (SWITRS). **Table 4-9** presents the number of bicycle-related collisions in El Monte from 2007-2011. **Figure 4-10** maps bicycle-related collisions over the study period with larger dots representing locations with multiple collisions.

Table 4-9 Bicycle-Related Collisions by Year

Year	Number of Collisions
2007	46
2008	54
2009	39
2010	67
2011	62
Total	268

Table 4-10 displays the top 11 roadways with the most bicycle-related collisions based on data from 2007-2011. The top 5 roadways for bicycle-related collisions accounted for over half (53%) of all bicycle-related collisions during the period 2007-2011.

Table 4-10 Highest Bicycle-Related Collision Roadways

Roadway	Number of Collisions
Valley Boulevard	38
Peck Road	32
Garvey Avenue	28
Durfee Avenue	25
Ramona Boulevard	20
Santa Anita Avenue	19
Lower Azusa Road	10
Tyler Avenue	9
Meeker Avenue	5
Merced Avenue	5
Mountain View Rd	5

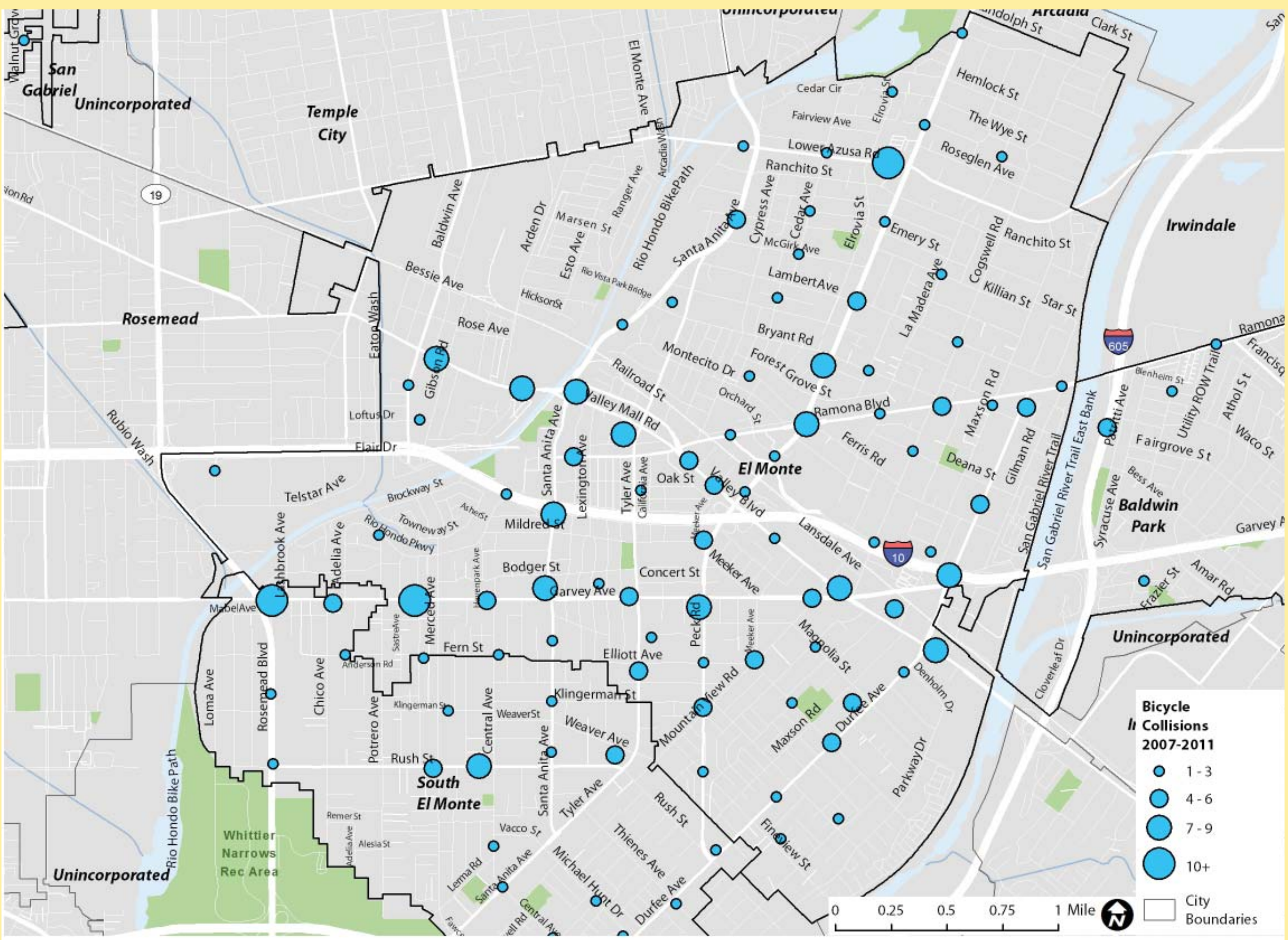
Table 4-11 shows the percent of bicycle-related collisions based on the day of the week.

Table 4-11 Bicycle-Related Collisions by Day of the Week

Day of the Week	Percent of Collisions
Monday	16%
Tuesday	14%
Wednesday	19%
Thursday	16%
Friday	14%
Saturday	10%
Sunday	11%

As shown in **Table 4-11**, the highest percentage of bicycle-related collisions (19%) occurred on Wednesdays, and the second highest percentage (16%) occurred on Mondays and Thursdays.

Figure 4-10 Bicycle-Related Collisions in El Monte, 2007-2011



4.3 Recommended Bicycle Facilities and Programs

The proposed bikeway network, when completed, will include nearly 80 miles of bicycle facilities to increase connectivity within El Monte and to the surrounding communities. The proposed bikeway network has been developed to create a comprehensive, safe, and logical network.

Recommendations for bikeways within the City are subject to a variety of factors that affect the schedule and final implementation:

- Recommendations have been developed based on technical review and public input, however, the recommendations are conceptual and further feasibility review may be needed to address physical, community, and financial constraints.
- While a prioritized list is provided in the Implementation section (Section 4.5), projects may be implemented sooner based on coordination with other City projects or funding opportunities.
- Funding for the bikeway recommendations is discussed further in the Implementation section, and suggestions are provided to the City to seek funding sources to minimize the effect on the City General Fund for implementation.
- The City may develop further criteria and standards for use of enhanced bicycle treatments such as sharrows, green conflict zone striping, bike lane buffers, bicycle boulevard elements, etc. The City will explore the possibility of providing enhanced Class II or Class III facilities anywhere Class II or III facilities are proposed.

Table 4-12 summarizes the bikeway recommendations and total mileage by category. **Figure 4-11** shows the recommended bikeway network, including potential enhanced Class II and Class III facilities.

Table 4-12 Recommended Bikeway Network

Facility Type	Existing Bikeways (Miles)	Proposed Bikeways (Miles)	Total Bikeways (Miles)
Class I Shared-Use Path	4.0	6.5	10.5
Class II Bike Lane	0.0	25.0	25.0
Class III Bike Route	0.0	43.1	43.1
Total	**4.0**	**74.6**	**78.6**
Note: Enhanced bikeways removed from this table to avoid double-counting mileages.			

As shown in **Table 4-12**, when accounting for existing and proposed bikeways, bikeways identified in this Plan total 78.6 miles.

Figure 4-11 El Monte Recommended Bikeway Network

4.3.1 Class I Shared-Use Paths

Class I off-street shared-use paths are often desired by casual bicycle riders, as well as bicycle riders concerned about interacting with vehicular traffic. A network of off-street shared-use paths provides greater opportunities for connectivity to destinations throughout the community, so recommendations have been developed to improve the network within the City given notable property and right-of-way constraints. Some of the recommendations provided for shared-use paths require coordination with other agencies such as the County of Los Angeles, Caltrans, and Southern California Edison.

Where there is not sufficient space or right-of-way for a Class I bicycle facility, buffered or physically protected Class II bike lanes can provide bicycle riders with a more comfortable level of separation from motor vehicle traffic and parked vehicles. The subsequent section discusses Class II bikeways recommendations.

Table 4-13 identifies the proposed Class I shared-use paths for the City of El Monte bikeways network.

Table 4-13 Proposed Class I Shared-Use Paths

Roadway Alignment	From	To	Length (Miles)
Arcadia Wash	City Limit (North of Lower Azusa Road)	Rio Hondo Bike Path	0.2
Eaton Wash	Temple City Boulevard	Rio Hondo Bike Path	1.2
El Monte Avenue Class I Path	Ranger Avenue	Rio Hondo Bike Path West Bank	0.1
Metrolink Right-of-Way Path	Rio Hondo Bike Path	Durfee Avenue	2.0
Rio Hondo Bike Path West Bank	City Limit (Existing Rio Hondo Bike Path)	Rio Vista Park	1.5
Rio Hondo Bike Path West Bank	Railroad Right-of-Way	Rosemead Boulevard	1.9
Rio Vista Park Bridge	Rio Hondo Bike Path East Bank	Rio Hondo Bike Path West Bank	0.1
Rubio Wash	North City Limit	South City Limit	1.4
Star Street Extension to San Gabriel River Trail	Star Street (Eastern Terminus)	San Gabriel River Trail	0.1
		Total Proposed Class I Shared-Use Paths	**8.5**

As shown in **Table 4-13** a total of 8.5 miles of Class I shared-use paths are recommended in this Plan.

4.3.2 Class II Bike Lanes

Many commuters and recreational bicycle riders may prefer bike lanes due to their more direct routing. This report recommends the city go beyond simply striping standard Class II bike lanes due to their limited functionality as a result of potential "dooring" issues adjacent to parked cars or the presence of gutter pans and drainage grates that effectively narrow the width of the bike lane. In some locations where wide Class II bike lanes might be provided, modification of striping to provide a buffer between on-street parking and/or vehicular traffic is recommended. At other locations with minimal crossings, protected bike lanes may be recommended. The use of buffered or protected bike lanes will be considered on a case-by-case basis through the design of the facility.

Table 4-14 identifies the proposed Class II bike lanes for the City of El Monte bikeways network.

Table 4-14 Proposed Class II Bike Lanes

Roadway	From	To	Length (Miles)
Arden Drive	Lower Azusa Road	Valley Boulevard	1.1
Baldwin Avenue	Lower Azusa Road	Flair Drive	1.4
Denholm Drive	Durfee Avenue	Parkway Drive	0.2
Durfee Avenue	Ramona Boulevard	Barringer Street	2.5
El Monte Avenue	Fairhall Street	Ranger Avenue	0.2
Flair Drive	Telstar Avenue	Baldwin Avenue	0.2
Garvey Avenue	City Limit (East of Potrero Avenue)	Durfee Avenue	2.5
Lower Azusa Road	City Limit (150 feet West of Agnes Avenue)	City Limit (60 feet West of Agnes Avenue)	<0.1
Meeker Avenue	Peck Road	Garvey Avenue	0.3
Merced Avenue	Towneway Drive	Fern Street	0.5
Mountain View Road	Valley Boulevard	Peck Road	0.8
Mountain View Road	Peck Road	City Limit (South of Weaver Avenue)	0.3

Table 4-14 Proposed Class II Bike Lanes (continued)

Roadway	From	To	Length (Miles)
Parkway Drive	Denholm Drive	South of Fineview Street (City Limit)	1.1
Peck Road	Randolph Street	Ramona Boulevard	2.0
Peck Road	Ramona Boulevard	I-10 Freeway	0.5
Peck Road	I-10 Freeway	City Limit (South of Weaver Street)	1.3
Ramona Boulevard	Santa Anita Avenue	Tyler Avenue	0.4
Rio Hondo Parkway (Contraflow)	Peck Road	Hammill Road	0.1
Rosemead Boulevard	I-10 Freeway	Rio Hondo River	0.7
Santa Anita Avenue	Grand Avenue	Lower Azusa Road	0.4
Santa Anita Avenue	Lower Azusa Road	Valley Boulevard	1.4
Santa Anita Avenue	Garvey Avenue	Fern Street/Elliott Avenue Intersection	0.3
Star Street	Maxson Road	Bannister Avenue	0.2
Telstar Avenue	Rosemead Boulevard	Flair Drive	0.9
The Wye Street	Buffington Road	Cogswell Road	0.2
Tyler Avenue	Santa Anita Avenue	Valley Boulevard	0.8
Tyler Avenue	Valley Boulevard	Klingerman Street	1.3
Valley Boulevard	Eaton Wash	San Gabriel River	3.3
		Total Proposed Class II Bike Lanes	**25.0**

As shown in **Table 4-14**, a total of 25.0 miles of Class II bike lanes are recommended in this Plan.

4.3.3 Class III Bike Routes

Any street that is legal for bicycles is inherently a shared roadway in which bicycle riders and drivers share a lane of traffic, and a car cannot necessarily pass a bicycle rider in the same lane. To improve motorists' awareness of the presence of bicycle riders and to indicate good routes for bicycle riders, cities often post signs indicating that the road is a "Class III Bike Route," as well as painting shared roadway markings in the travel lane. Class III bike routes are often identified at locations where the available street width is not wide enough to accommodate an on-street bike lane (Class II facility).

Potential enhancements requested during community engagement activities include the use of shared lane markings (sharrows) and use of the "Bikes May Use Full Lane" signage (MUTCD R4-11) as seen in Image 17.

Another treatment for consideration is designation of bicycle boulevards for improved connectivity and wayfinding by bicycle riders that seek lower stress routes to travel. Bicycle boulevards are generally defined as low-volume, low-speed streets that have been optimized for bicycle travel using treatments such as traffic calming and traffic reduction, signage and pavement markings, and intersection crossing treatments. Class III bike routes will be considered for upgrading to bicycle boulevards on a case-by-case basis by City staff.

***Image 17-** Sign R4-11 "Bikes May Use Full Lane"*

Table 4-15 identifies the proposed Class III bike routes for the City of El Monte bikeways network.

Table 4-15 Proposed Class III Bike Routes

Roadway	From	To	Length (Miles)
Adelia Avenue	Rio Hondo Parkway	City Limit (South of Cortada Street)	0.3
Anderson Road	Potrero Avenue	Sastre Avenue	0.1
Arden Way	Lower Azusa Road	Arden Drive	0.2
Asher Street	Towneway Drive	Rio Hondo Parkway	0.1
Bannister Avenue	Star Street	Lambert Avenue	0.3
Bessie Avenue	Rowland Avenue	Gibson Road	0.3
Bodger Street	Merced Avenue	Tyler Avenue	0.9
Brockway Street	Lashbook Avenue	Towneway Drive	1.0
Bryant Road	Santa Anita Avenue	Cogswell Road	1.4
California Avenue	Ramona Boulevard	Brockway Street	0.3
Cedar Avenue	Cedar Circle	Lambert Avenue	0.9
Cedar Cir	Cedar Avenue	Cedar Avenue	0.3
Center Avenue	Railroad Street	Valley Mall	0.1
Central Avenue	Bodger Street	Fern Street	0.3
Clark Street	Cogswell Road	Durfee Avenue	0.2
Cogswell Road	Clark Street	Garvey Avenue	2.8
Concert Street	Tyler Avenue	Peck Road	0.3
Cypress Avenue	Ranchito Street	Orchard Street	1.0
Deana Street	Cogswell Road	Gilman Road	0.5
Elliott Avenue	Santa Anita Avenue	Parkway Drive	1.6
Elrovia Avenue	Hemlock Street	Fairview Avenue	0.3
Elrovia Avenue	Ranchito Street	Lambert Avenue	0.5
Emery Street	Elrovia Avenue	La Madera Avenue	0.4
Emery Street	Tyler Avenue	Cypress Avenue	0.3
Esto Avenue	Hickson Street	Marsen Street	0.4
Fairview Avenue	Cedar Avenue	Elrovia Avenue	0.2
Fern Street	Sastre Avenue	East of Sastre Avenue	0.1
Ferris Road	Ramona Boulevard	Cogswell Road	0.5
Fineview Street	Mountain View Road	Parkway Drive	0.9
Forest Grove Street	Cypress Avenue	Bryant Road	0.8
Gibson Road	Loftus Drive	Rose Avenue	0.4
Gilman Road	Ramona Boulevard	Deana Street	0.5
Hammill Road	Rio Hondo Parkway	Hemlock Street	0.2
Havenpark Avenue	Rio Hondo Parkway	Bodger Street	0.2
Hemlock Street	Elrovia Avenue	Cogswell Road	0.7
Hickson Street	Arden Drive	Esto Avenue	0.2
Killian Street	La Madera Avenue	Maxson Road	0.4

Table 4-15 Proposed Class III Bike Routes (continued)

Roadway	From	To	Length (Miles)
Klingerman Street	City Limit (East of Tyler Avenue)	Parkway Drive	1.2
La Madera Avenue	Emery Street	Bryant Road	0.6
Lambert Avenue	Tyler Avenue	Bannister Avenue	1.7
Lansdale Avenue	Mountain View Road	Cogswell Road	0.1
Lashbrook Avenue	Brockway Street	City Limit (Between Cortada Street and Garvey Avenue)	0.1
Lee Lane	Ramona Boulevard	Peck Road	0.2
Lexington Avenue	Valley Mall	Elliott Avenue	1.2
Loftus Drive	Baldwin Avenue	Gibson Road	0.1
Lower Azusa Road	Arden Drive	Durfee Avenue	2.4
Magnolia Street	Peck Road	Parkway Drive	1.2
Marsen Street	Esto Avenue	Ranger Avenue	0.1
Maxson Road	Valley Boulevard	Fineview Street	1.1
Maxson Road	Ranchito Street	Exline Street	1.5
McGirk Avenue	Santa Anita Avenue	Peck Road	0.6
Meeker Avenue	Valley Boulevard	Peck Road	0.3
Meeker Avenue	Garvey Avenue	Mountain View Road	0.3
Mildred Street	Rio Hondo Parkway	Meeker Avenue	1.0
Montecito Drive	Tyler Avenue	Cypress Avenue	0.3
Mountain View Road	Lansdale Avenue	Valley Boulevard	0.1
Oak Street	California Avenue	Meeker Avenue	0.3
Orchard Street	Cypress Avenue	Ramona Boulevard	0.2
Potrero Avenue	City Limit (South of Garvey Avenue)	City Limit (Near Kale Street)	0.4
Potrero Avenue	Rio Hondo Parkway	City Limit (North of Garvey Avenue)	0.2
Railroad Street	Monterey Avenue	Tyler Avenue	0.2
Ramona Boulevard	Tyler Avenue	San Gabriel River	2.0
Ranchito Street	Santa Anita Avenue	Elrovia Avenue	0.5
Ranchito Street	Cogswell Road	Maxson Road	0.2
Ranger Avenue	El Monte Avenue	Rio Vista Park	0.5
Rio Hondo Parkway	Adelia Avenue	Asher Street	0.7
Rio Hondo Parkway	Hammill Road	Cogswell Road	0.4
Rose Avenue	Gibson Road	Arden Drive	0.3
Roseglen Street	Peck Road	Lower Azusa Road	0.8
Santa Anita Avenue	Valley Boulevard	I-10 Freeway	0.6
Santa Anita Avenue	I-10 Freeway	Garvey Avenue	0.4
Sastre Avenue	Fern Street	Anderson Road	0.1
Towneway Drive	Brockway Street	Brockway Street	0.6
Tyler Avenue	Emery Street	Santa Anita Avenue	0.2
Valley Mall	Santa Anita Avenue	Ramona Boulevard	0.5
Total Proposed Class III Bike Routes			**43.1**

As shown in **Table 4-15,** a total of 43.1 miles of Class III bike routes are recommended in this Plan.

4.3.4 End-of-Trip Bicycle Facilities

Support facilities and connections to other modes of transportation are essential components of a bicycle system because they enhance safety and convenience for bicycle riders at the end of every trip. With nearly all utilitarian and many recreational bike trips, bicycle riders 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.

Bicycle parking can be categorized into short-term and long-term parking. Bicycle racks are the preferred device for short-term bike parking. These racks serve people who wish to leave their bicycles for relatively short periods of time, typically for shopping or errands, eating or recreation. Bicycle racks provide a high level of convenience and moderate level of security. Long-term bicycle parking includes bike lockers and bike rooms and serves people who intend to leave their bicycles for longer periods of time. Long-term bicycle parking facilities are typically found in multifamily residential buildings and commercial buildings. These facilities provide a high level of security but are less convenient than bicycle racks.

Recommended bicycle parking standards are presented in **Appendix G**. In addition, **Appendix H** presents a comprehensive bicycle parking study for El Monte and the other four regional bike plan partner cities.

Short-Term Bicycle Parking

This Plan recommends the City adopt one or more of the short-term bicycle rack types shown in **Figure 4-12** as the standard for short-term parking.

***Figure 4-12** Types of Bicycle Racks*

This Plan also recommends implementation of adequate short-term bicycle parking in the form of bicycle racks within the public right-of-way at major trip attractors, including commercial and civic activity centers and transit hubs. The City should prioritize the installation of bicycle parking throughout the city, with particular attention directed at the following locations:

- El Monte Library (Currently Closed for Refurbishment)
- Norwood Library
- Metro-Operated El Monte Station
- Metrolink-Operated El Monte Station
- El Monte City Hall
- Jack Crippen Senior Citizen Center
- El Monte Community Center
- Valley Mall Shopping District
- El Monte Center Shopping District
- El Monte Auto Dealerships District
- El Monte Government & Business District
- City Parks
- El Monte Post Office
- Schools

Although the number of racks is determined by the space available, it is recommended that short-term bicycle parking capacity to accommodate eight bicycles is provided at each of the civic uses identified above, and short-term bicycle parking both within the public right-of-way and on private property for commercial and office areas be determined based on intensity of development. The adequacy of short-term bicycle parking requires regular review to determine if additional capacity is needed.

In order to decrease the risk of bicycle theft and/or vandalism to property, this Plan recommends that short-term bike racks be installed in areas with moderate to heavy pedestrian and vehicular traffic. Additionally, bike racks should be painted in a bright color, such as yellow, to increase visibility and reduce the risk of pedestrian injuries.

Long-Term Bicycle Parking

Locations where visitors are expected to park their bicycles for longer than 2 hours should provide more secure, long-term bicycle parking options, such as bicycle lockers.

City staff may coordinate with public and private sector development opportunities to determine which projects and facilities should incorporate secure bicycle parking areas into their design. Secure bicycle parking areas that provide services, such as bicycle rentals and repair may be considered. The following are locations where long-term bicycle parking is recommended, and these are shown in **Figure 4-13**.

- El Monte Library (Currently Closed for Refurbishment)
- Norwood Library
- Metro-Operated El Monte Station
- Metrolink-Operated El Monte Station
- El Monte City Hall
- Jack Crippen Senior Citizen Center
- El Monte Community Center

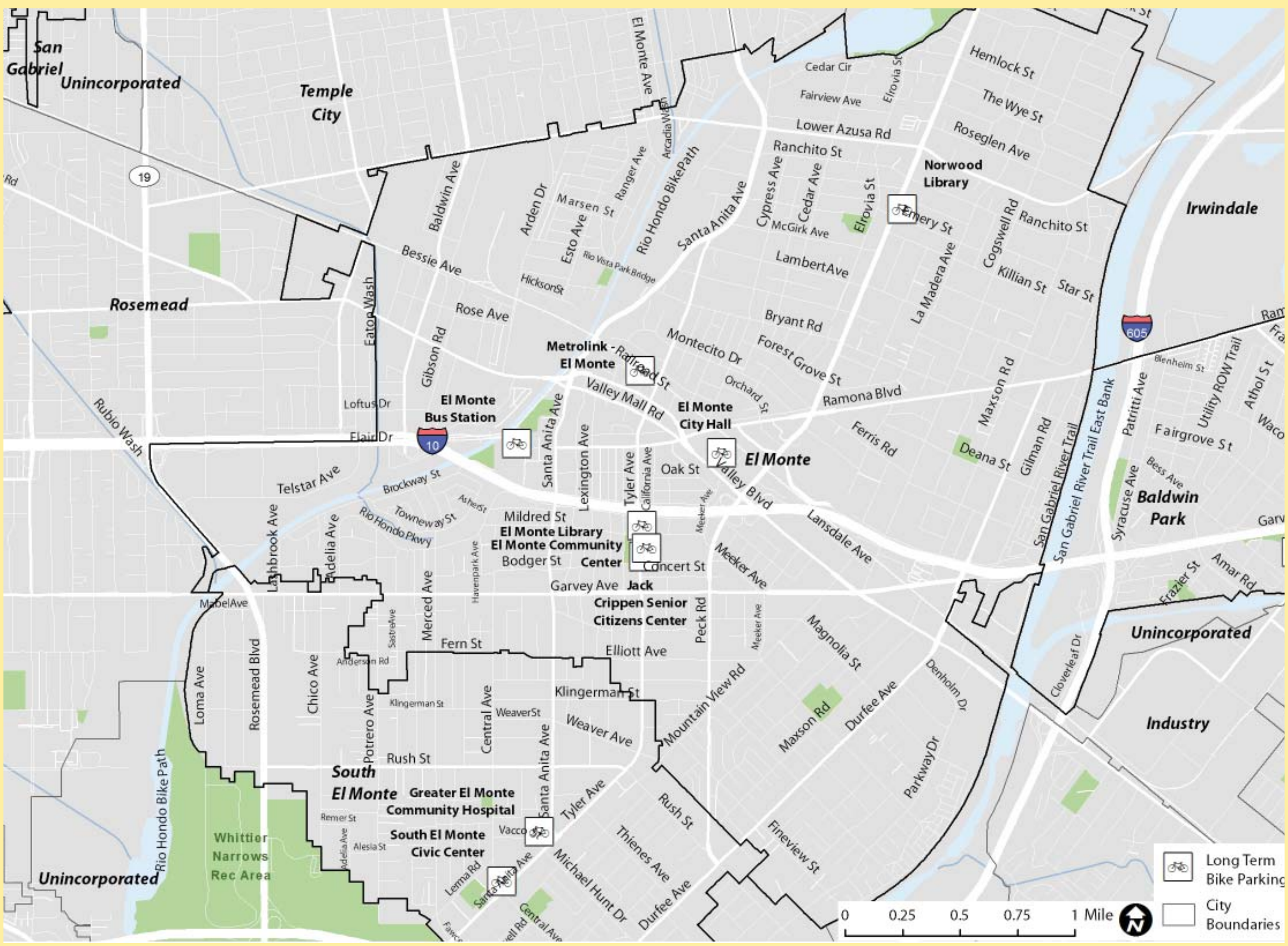
Municipal Code Bicycle Parking

This plan recommends the City amend its Municipal Code to include requirements on types of short-term and long-term bicycle parking facility designs. Bicycle rack designs should include racks 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 higher degree of security and support for the bicycle. This will more accurately address the bicycle demand at a given development. Additionally, space to maneuver the bicycle away from fixed objects and buildings is required to accommodate short-term bicycle parking needs.

Key design aspects related to long-term bicycle parking includes:

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

Figure 4-13 *El Monte Recommended Long-Term Bicycle Parking Facilities*



When people commute by bicycle, they often sweat or become dirty from weather or road conditions. Providing changing and storage facilities encourage commuters to travel by bicycle because they have a place to change and prepare before work or school. This Plan recommends the City Municipal Code be revised as needed to require all new mid-size and large employers, offices, and businesses to supply changing and storage facilities, such as by providing showers and locker space within the buildings or arranging agreements with nearby recreation centers to allow commuters to use their facilities.

As noted in the Recommended Programs section, the installation of bicycle maintenance hubs or stations at key high-traffic locations can accommodate bicycle riders for a variety of needs (such as minor repairs, inflating tires, filling water bottles, providing wayfinding information, and promotion of local businesses).

4.3.5 Recommended Programs

Improvements to and continued support of education, enforcement and evaluation programs have been proven to increase the number of bicycle trips and bicycling safety. These programs can ensure that more community members know about new and improved facilities, learn the skills they need to integrate bicycling into their activities, and receive positive reinforcement about integrating bicycling into their daily lives. In essence, the new and enhanced programs market the idea of bicycling to the community and encourage a shift to bicycling as a transportation option. This Plan supports the continuation and enhancement of the City's education, encouragement, and enforcement programs that are currently in place. The following additional programs are each designed to promote bicycling in the City, increase safety for those traveling by bicycle, and raise awareness of the benefits of bicycling. **Table 4-16** provides a summary of the recommended programs.

Further details on recommended programs are included in **Chapter 8**.

Table 4-16 Recommended Programs

Category	Program	Responsible Party	Funding Source	Schedule*
Education	Bicycle Safety and Share the Road Campaigns	Metro, SGVCOG, City	City; Grants	Near-Term
	Bicycle Resource Website	City	City	Near-Term
	Adult Bicycling Skills Classes	Bicycle Clubs, City, Metro	City; Grants	Near-Term
	Youth Bicycle Safety Education Classes	Bicycle Clubs, City	City; Grants	Near-Term
	Youth Bicycle Safety Clinics & Bicycle Campus	City, Safe Routes to School National Partnership	City; Grants	Middle-Term
	Senior Bicycle Education Classes	Bicycle Clubs, City	City; Grants	Middle-Term
Encouragement	Bike Valet at City Events	Special Event Promoter, City	City	Near-Term
	Youth and Family-Oriented Bicycle Rides	Advocacy Groups, City	Private	Near-Term
	"Be Seen" Bike Light Campaign	City	City; Grants	Near-Term
	Bike Festivals & Family Bike Fest/Family Biking Day	City, Advocacy Groups	City; Sponsorships	Near-Term
	Launch Party for New Bicycle Facilities	City	City	Near-Term
	Bicycle Friendly Community Designation	City	N/A	Near-Term
	Tourism Integration	City	City	Near-Term

Table 4-16 Recommended Programs (continued)

Category	Program	Responsible Party	Funding Source	Schedule*
	Commuter Incentive Programs	Metro, SGVCOG, City	City; Grants	Middle-Term
	Safe Routes to School Program	City, Advocacy Groups	Grants	Near-Term
	Bicycle Friendly Business Districts	Business Improvement District/ Association, City	City; Contributions from Business Associations	Middle-Term
	Bicycle Hubs	City	City; Grants	Middle-Term
	Media Outlets	City	In-Kind Contributions; Grants	Middle-Term
	Individualized Marketing Campaigns	Metro, SGVCOG, City	Grants	Middle-Term
	Mobility Coordinator	City	City; Grants	Long-Term
	Ride with the City	City	City	Near-Term
	Open Streets/Ciclovía Events	City	City; Grants	Long-Term
	Bicycle Sharing	Metro, SGVCOG, City	Grants; Sponsorships	Long-Term
Enforcement	Speed Radar Trailer/ Feedback Signs	City	Grants	Near-Term
	Bicycle Patrol Units	City	City	Near-Term
	Undercover Officer Enforcement	City	City	Near-Term
	Bicycle Theft Abatement Program	City	Grants	Middle-Term
Evaluation	Bicycle Counts and Survey Program	City	City; Grants	Near-Term
	Mapping Bikeway Investments	City	City	Near-Term
	Bicycle Report Card	City	City	Middle-Term
	Complete Streets Policy	City	City; Grants	Middle-Term
	Bicycle Parking Policy and Enforcement	City	City; Grants	Middle-Term
	Bike Counters/Bicycle Barometers	City	Grants	Middle-Term

**Near-term = 0-3 years, Middle-Term = 3-6 years, Long-Term = 6+ years.*

4.4 Project Costs

4.4.1 Implementation Costs

The following planning-level costs are typically utilized to estimate capital expenditures required for implementation of bikeways by classification:

- Class I Shared-Use Path: $1,000,000 per mile;
- Class II Bike Lane: $50,000 per mile; and
- Class III Bike Route: $20,000 per mile.

The planning level cost estimates do not include potential right-of-way acquisition, extensive grading, landscaping, or potential utility impacts. Cost estimate refinements still may occur based on further engineering review and are intended to provide an estimate for budgeting purposes. **Table 4-17** summarizes the total cost of implementation for the bikeways recommendations.

Table 4-17 Recommended Bikeway Network Cost Estimate

Facility Type	Proposed Bikeways (Miles)	Unit Cost ($/Mile)	Total Cost ($)
Class I Shared-Use Path	8.5	$1,000,000	$8,500,000
Class II Bike Lane	25.0	$50,000	$1,25,000
Class III Bike Route	43.1	$20,000	$862,000
Total	76.6	--	$10,612,000

As shown in **Table 4-17**, the total cost estimate for recommended bicycle infrastructure projects is $10.6 million, of which $8.5 million is attributed to Class I shared-use paths and bridges.

4.4.2 Maintenance Costs

Bicycle facilities require regular maintenance and repair. On-street bicycle facilities are maintained as part of the normal roadway maintenance program and extra emphasis should be placed on keeping bike lanes and roadway shoulders clear of debris and keeping vegetation overgrowth from blocking visibility. The cost of maintaining Class I facilities may be shared among various agencies or departments. The typical maintenance costs for the existing and proposed bikeway network are shown in **Table 4-18**, and the cost for maintaining the built out network is provided (accounting for existing bikeways within the City).

Table 4-18 Annual Bikeways Network Maintenance Cost Estimates

Facility Type	Total Length (Miles)	Unit Cost ($/Mile)	Annual Cost ($)	Typical Maintenance Items
Class I Shared-Use Path	12.5	$15,000	$187,500	Lighting and removal of debris and vegetation overgrowth
Class II Bike Lane	25.0	$5,000	$125,000	Repainting lane stripes and stencils, sign replacement as needed
Class III Bike Route	43.1	$5,000	$215,500	Sign replacement as needed
Total	80.6	--	$498,000	

As shown in **Table 4-18**, the annual cost for maintaining the bikeways network assuming implementation of all paths, bike lanes, and bike routes is approximately $528,000. It should be noted this cost will be realized over time as implementation of the network is completed, and actual costs will be lower until the entire network is constructed. Additionally, costs for maintenance of the LA County off-street shared-use paths are not the responsibility of the City of El Monte.

4.5 Project Implementation

This chapter provides a strategy for implementing the capital project recommendations in this Plan. This implementation strategy and sequence is guided by a criteria-based ranking consistent with the goals of this Plan as well as the goals of other City, region, and State plans and policies.

A lengthy list of recommendations has been provided in this Plan, and ranking allows staff to prioritize the projects to advance to implementation. A variety of variables will influence the implementation including the availability of funding, engineering analysis, and support from community stakeholders and representatives.

Many signing and striping projects can be completed by the City Department of Public Works and are exempt from California Environmental Quality Act (CEQA) requirements. Such projects can be implemented using City or grant funds with approval by the City Management and/or City Council, if required due to the visibility or importance of the project. More complex projects with greater associated impacts typically include the following steps to advance to implementation:

1. Preparation of a Feasibility Study involving a conceptual design (with consideration of possible alternatives and environmental issues) and cost estimate for individual projects as needed.
2. Secure funding and any applicable environmental approvals.

3. Completion of final plans, specifications and estimates, advertising for bids, receipt of bids and award of contract(s).
4. Approval of the project by the City Council.
5. Construction of Project.

4.5.1 Prioritization Criteria

The intent of ranking projects is to create a prioritized list of bicycle projects for implementation. As projects are implemented, lower ranked projects move up the list. The project list and individual projects outlined in this Plan are flexible concepts that serve as a guideline. The ranked project list, and perhaps the overall system and segments themselves, may change over time as a result of changing bicycling patterns, land use patterns, implementation constraints and opportunities and the development of other transportation system facilities.

Projects may be implemented out of scoring order as opportunities arise. Opportunities may include grant availability, new development projects, capital improvement projects, or roadway repaving. The City can review the project list and project ranking at regular intervals to ensure it reflects the most current priorities, needs, and opportunities for implementing the bicycle network in a logical and efficient manner.

Each ranking criterion contains information about a facility and its ability to address an existing or future need in the San Gabriel Valley. The resulting project ranking determines each project's relative importance in funding and scheduled construction.

The following criteria are used to evaluate each proposed bicycle facility, its ability to address demand and deficiencies in the existing bicycle network and its ease of implementation. The criteria are organized into "utility" and "implementation" prioritization factors.

Utility Prioritization Factors

Utility criteria include conditions of bicycle facilities that enhance the bicycle network. Each criterion is discussed below.

Bicycle-Related Collisions

Bicycle facilities have the ability to increase safety by reducing potential conflicts between bicycle riders and motorists, which often result in collisions. Proposed facilities that are located on roadways with past bicycle-automobile collisions are important to the partner cities.

Public Input

The Project Team solicited public input through a series of booths at local events, jurisdiction-wide workshops, community street audits, a web-based feedback portal, monthly polls and an opinion survey. Facilities that community members identified as desirable for future bicycle facilities are of priority to the network because they address the needs of the public.

Gap Closure

Gaps in the bicycle network come in a variety of forms, ranging from a "missing link" on a roadway to larger geographic areas without bicycle facilities. Gaps in the bikeway network discourage bicycle use because they limit access to key destinations and land uses. Facilities that fill a gap in the existing and proposed bicycle network are of high priority.

Connectivity to Existing Facilities

Proposed bikeways that connect to existing bicycle facilities in the partner cities and to adjacent jurisdictions' bikeways increase the convenience of bicycle travel. Proposed facilities that fit this criterion are of high importance to the cities.

Connectivity to Regional Facilities

Linkage to existing and future regional bikeways in the San Gabriel Valley will enhance future connectivity between the partner cities and surrounding communities. For the purposes of this evaluation, linkage to the following facility types would be identified as regional connections:

- Existing/Planned off-street trails along waterways, utility corridors, etc.
- Existing/Planned on-street bikeways that continuously span across two or more jurisdictions

Connectivity to Activity Centers

Improved linkage to key employment, recreational, commercial and civic destinations within the community can increase bicycling activity and reduce in-town vehicular travel for short-distance trips. These activity centers generate many trips which could be made by bicycle if the proper facilities were available. The following activity centers will be reviewed for improved access related to the recommended bikeway improvements:

- Major Employment & Commercial Areas
- Civic Centers
- Public Libraries
- Community Centers
- K-12 Public Schools
- East Los Angeles College
- Major Cultural Destinations, such as museums and interpretive centers
- Hospitals & Medical Centers

- Parks & Recreation Centers
- Commercial/retail business centers (shopping malls, downtown districts, retail complexes, etc.)

Connectivity to Multi-Modal Transportation Centers

Bicycle facilities that link to modes of public transportation increase the geographical distance bicycle riders are able to travel. Proposed bicycle facilities that connect to transit stops and centers improve bicycle riders' mobility and are therefore key pieces of the bicycle network. Priority ranking will be given to bikeways that connect to the following major transportation centers:

- Baldwin Park Metrolink Station
- El Monte Bus Station
- El Monte Metrolink Station
- East Los Angeles College Transit Center
- Proposed future Metro Gold Line stations

Implementation Prioritization Factors

Implementation criteria address the ease of implementing each proposed project. Each criterion is discussed below.

Permitting

Projects that can be implemented solely by the participating cities have higher readiness factors, whereas those that require permitting and approvals from other agencies governing roadways and land within the individual cities will score lower. Examples include collaboration with adjacent jurisdictions, approval by Caltrans, or permitting by the Los Angeles County Department of Public Works for projects utilizing local washes, creeks, storm channels, etc.

Project Cost

Projects that are less expensive do not require as much funding as other projects and are therefore easier to implement. Projects that cost less are of higher priority to the partner cities.

Parking Displacement

Installing safe, easily accessible and attractive bicycle facilities occasionally requires the displacement of on-street vehicular parking. Therefore, projects that do not require parking displacement are of increased importance.

4.5.2 Project Ranking

Table 4-19 shows how the criteria are weighted for project prioritization and ranking.

Each recommended project was evaluated based on the ranking criteria and scored to develop the prioritization tables. As shown in **Table 4-19**, the maximum potential score for a recommended project is 34 points.

Table 4-19 Ranking Criteria and Weighting

Criteria	Score	Multiplier	Total	Description
Utility Prioritization Factors				
Bicycle-Related Collisions	2	3	6	Provides a bicycle facility on a roadway that experienced 3 or more bicycle-related collisions between 2007-2011
	1	3	3	Provides a bicycle facility on a roadway that experienced 1-2 bicycle-related collisions between 2007-2011
	0	3	0	Provides a bicycle facility on a roadway that did not experience any bicycle-related collisions between 2007-2011
Public Input	2	3	6	Roadway was identified by the public as desirable for a future facility multiple times
	1	3	3	Roadway was identified by the public as desirable for a future facility once
	0	3	0	Roadway was not identified by the public as desirable for a future facility
Gap Closure	2	3	6	Fills a network gap between two or more existing facilities
	1	3	3	Fills a network gap between an existing facility and a proposed facility
	0	3	0	Does not directly or indirectly fill a network gap
Connectivity: Existing	2	2	4	Provides direct access to an existing bicycle facility

Table 4-19 Ranking Criteria and Weighting (continued)

Criteria	Score	Multiplier	Total	Description
	1	2	2	Provides secondary connectivity to an existing bicycle facility
	0	2	0	Does not directly or indirectly access an existing bicycle facility
Connectivity: Regional	2	2	4	Provides direct access to a regional existing/proposed bicycle facility
	1	2	2	Provides secondary connectivity to a regional existing/ proposed bicycle facility
	0	2	0	Does not directly or indirectly access a regional existing/ proposed bicycle facility
Connectivity: Activity Centers	2	2	4	Provides access to more than 3 activity centers
	1	2	2	Provides access to 1-3 activity centers
	0	2	0	Does not provide access to an activity center
Connectivity: Multi-Modal	2	1	2	Provides direct access to a major Transportation Center
	1	1	1	Provides secondary connectivity to a major Transportation Center
	0	1	0	Does not directly or indirectly access to a major Transportation Center
Implementation Prioritization Factors				
Permitting	2	1	2	Does not require permitting from agency (other than the respective city)
	1	1	1	Requires permitting or approval from 1 agency
	0	1	0	Requires permitting or approval from 2 or more agencies
Project Cost	2	1	2	Will cost less than $40,000 to implement
	1	1	1	Will cost between $40,001 and $200,000 to implement
	0	1	0	Will cost over $200,000 to implement
Parking Displacement	2	1	2	Does not require any parking removal
	1	1	1	Requires removal of some on-street parking stalls
	0	1	0	Requires removal of all on-street parking stalls

Within the City of El Monte, a total of 112 bicycle facility projects were identified and grouped into the following three tiers by each projects prioritization score:

- Tier 1 (34-20 points): Tier 1 projects have the highest potential for addressing the City's goals for bicycle transportation and are intended for near-term project implementation. The highest score received by a project was 31 points. A total of 28 projects are listed in Tier 1 and are shown in **Table 4-20**.
- Tier 2 (19-15 points): Tier 2 projects are intended for mid-term implementation. A total of 29 projects are listed in Tier 2 and are shown in **Table 4-21**.
- Tier 3 (14-0 points): Tier 3 projects are not currently ready for implementation but are included as long-term potential bicycle-specific projects. A total of 55 projects are listed in Tier 3 and are shown in **Table 4-22**.

All of the projects are recommended for implementation over the next twenty (20) years. However, due to the unpredictability of funding sources, economic conditions, and community support, some projects, especially those that require right-of-way purchase or coordination with multiple jurisdictions, may not be completed within the next twenty years.

Table 4-20 Tier 1 Projects (Score of 34-20)

Facility Type	Location	Start	End	Bicycle-Related Collisions	Public Input	Gap Closure	Connectivity: Existing	Connectivity: Regional	Connectivity: Activity Centers	Connectivity: Multi-Modal	Permitting	Project Cost	Parking Displacement	Total Score (34 max)
I	Metrolink Right-of-Way Path	Rio Hondo Bike Path	Durfee Avenue	6	6	3	4	4	2	2	2	0	2	31
II	Valley Boulevard	Eaton Wash	San Gabriel River	6	6	6	4	2	2	2	2	1	0	31
II	Santa Anita Avenue	Lower Azusa Road	Valley Boulevard	3	6	6	4	2	1	1	2	1	2	28
II	Ramona Boulevard	Santa Anita Avenue	Tyler Avenue	6	6	6	0	2	1	2	2	2	0	27
III	Ramona Boulevard	Tyler Avenue	San Gabriel River	6	0	6	4	2	1	1	2	2	2	26
II	Tyler Avenue	Valley Boulevard	Klingerman Street	6	6	6	0	2	2	1	2	1	0	26
II	Peck Road	I-10 Freeway	City Limit (South of Weaver Street)	6	6	6	2	2	1	0	1	1	0	25
II	Santa Anita Avenue	Garvey Avenue	Fern Street/Elliott Avenue Intersection	6	6	6	0	2	1	0	2	2	0	25
I	Eaton Wash	Temple City Boulevard	Rio Hondo Bike Path	6	6	3	4	2	0	0	1	0	2	24
II	Garvey Avenue	City Limit (East of Potrero Avenue)	Durfee Avenue	6	6	6	0	2	1	0	2	1	0	24
II	Peck Road	Randolph Street	Ramona Boulevard	6	6	6	0	2	1	0	2	1	0	24
I	Rio Vista Park Bridge	Rio Hondo Bike Path East Bank	Rio Hondo Bike Path Bank	3	6	3	4	2	1	1	1	1	2	24
III	Santa Anita Avenue	Valley Boulevard	I-10 Freeway	6	0	6	2	2	1	2	1	2	2	24
II	Tyler Avenue	Santa Anita Avenue	Valley Boulevard	3	6	6	0	2	1	2	2	2	0	24
III	Lower Azusa Road	Arden Drive	Durfee Avenue	6	0	6	4	2	0	0	2	1	2	23
III	Cedar Avenue	Cedar Circle	Lambert Avenue	6	0	3	4	2	1	0	2	2	2	22
II	Santa Anita Avenue	Grand Avenue	Lower Azusa Road	0	6	6	4	2	0	0	2	2	0	22

Table 4-20 Tier 1 Projects (Score of 34-20) (continued)

Facility Type	Location	Start	End	Bicycle-Related Collisions	Public Input	Gap Closure	Connectivity: Existing	Connectivity: Regional	Connectivity: Activity Centers	Connectivity: Multi-Modal	Permitting	Project Cost	Parking Displacement	Total Score (34 max)
II	Rio Hondo Parkway (Contraflow)	Peck Road	Hammill Road	3	3	3	4	2	1	0	2	2	1	21
I	El Monte Avenue Class I Path	Ranger Avenue	Rio Hondo Bike Path West Bank	0	6	3	4	2	1	1	1	1	1	20
II	Baldwin Avenue	Lower Azusa Road	Flair Drive	6	6	3	0	2	0	0	2	1	0	20
III	Gilman Road	Ramona Boulevard	Deana Street	6	0	3	2	2	1	0	2	2	2	20
III	Lambert Avenue	Tyler Avenue	Bannister Avenue	6	0	6	0	2	0	0	2	2	2	20
III	Mildred Street	Rio Hondo Parkway	Meeker Avenue	6	0	3	0	2	2	1	2	2	2	20
II	Peck Road	Ramona Boulevard	I-10 Freeway	3	6	6	0	2	0	0	1	2	0	20
I	Rio Hondo Bike Path West Bank	City Limit (Existing Rio Hondo Bike Path)	Rio Vista Park	0	6	3	4	2	1	1	1	0	2	20
I	Rubio Wash	North City Limit	South City Limit	6	6	3	0	2	0	0	1	0	2	20
III	Santa Anita Avenue	I-10 Freeway	Garvey Avenue	6	0	6	0	2	0	1	1	2	2	20

Table 4-21 Tier 2 Projects (Score of 19-15)

Facility Type	Location	Start	End	Bicycle-Related Collisions	Public Input	Gap Closure	Connectivity: Existing	Connectivity: Regional	Connectivity: Activity Centers	Connectivity: Multi-Modal	Permitting	Project Cost	Parking Displacement	Total Score (34 max)
I	Arcadia Wash	City Limit (North of Lower Azusa Road)	Rio Hondo Bike Path	0	6	3	4	2	0	0	1	1	2	19
III	Bryant Road	Santa Anita Avenue	Cogswell Road	6	0	6	0	2	1	0	2	2	0	19
II	Durfee Avenue	Ramona Boulevard	Barringer Street	6	3	3	0	2	2	0	2	1	0	19
III	Lexington Avenue	Valley Mall	Elliott Avenue	6	0	3	0	2	1	1	2	2	2	19
II	Mountain View Road	Valley Boulevard	Peck Road	6	3	3	0	2	1	0	2	2	0	19

Table 4-21 Tier 2 Projects (Score of 19-15) (continued)

Facility Type	Location	Start	End	Bicycle-Related Collisions	Public Input	Gap Closure	Connectivity: Existing	Connectivity: Regional	Connectivity: Activity Centers	Connectivity: Multi-Modal	Permitting	Project Cost	Parking Displacement	Total Score (34 max)
I	Star Street Extension to San Gabriel River Trail	Star Street (Eastern Terminus)	San Gabriel River Trail	0	6	3	4	1	1	0	1	1	2	19
I	Rio Hondo Bike Path West Bank	Railroad Right-of-Way	Rosemead Boulevard	0	6	3	2	2	1	1	1	0	2	18
II	Rosemead Boulevard	I-10 Freeway	Rio Hondo River	0	6	3	4	2	0	0	1	2	0	18
III	Center Avenue	Railroad Street	Valley Mall	3	0	3	0	2	1	2	2	2	2	17
III	Cogswell Road	Clark Street	Garvey Avenue	6	0	3	0	2	1	0	2	1	2	17
III	Deana Street	Cogswell Road	Gilman Road	6	0	3	0	1	1	0	2	2	2	17
II	Flair Drive	Telstar Avenue	Baldwin Avenue	0	6	3	0	2	0	0	2	2	2	17
III	Gibson Road	Loftus Drive	Rose Avenue	6	0	3	0	2	0	0	2	2	2	17
III	Loftus Drive	Baldwin Avenue	Gibson Road	6	0	3	0	2	0	0	2	2	2	17
II	Merced Avenue	Towneway Drive	Fern Street	6	0	3	0	2	0	0	2	2	2	17
II	Mountain View Road	Peck Road	City Limit (South of Weaver Avenue	3	3	3	0	2	1	0	2	2	1	17
III	Mountain View Road	Lansdale Avenue	Valley Boulevard	6	0	3	0	2	0	0	2	2	1	16
II	Arden Drive	Lower Azusa Road	Valley Boulevard	3	3	3	0	2	0	0	2	1	1	15
III	Denholm Drive	Durfee Avenue	Parkway Drive	3	3	0	0	2	1	0	2	2	2	15
III	Elrovia Avenue	Hemlock Street	Fairview Avenue	3	0	3	2	1	0	0	2	2	2	15
III	Emery Street	Tyler Avenue	Cypress Avenue	6	0	0	0	2	1	0	2	2	2	15
III	Fineview Street	Mountain View Road	Parkway Drive	3	0	3	0	2	1	0	2	2	2	15
III	Hemlock Street	Elrovia Avenue	Cogswell Road	0	0	3	4	2	0	0	2	2	2	15
III	Magnolia Street	Peck Road	Parkway Drive	6	0	3	0	2	0	0	2	2	0	15
III	Maxson Road	Ranchito Street	Exline Street	6	0	0	0	2	1	0	2	2	2	15
III	Maxson Road	Valley Boulevard	Fineview Street	3	0	3	0	2	1	0	2	2	2	15
III	McGirk Avenue	Santa Anita Avenue	Peck Road	3	0	3	0	2	1	0	2	2	2	15
III	Parkway Drive	Denholm Drive	City Limit (South of Fineview Street)	0	3	3	2	1	1	0	2	1	2	15

Table 4-22 Tier 3 Projects (Score of 14 or less)

Facility Type	Location	Start	End	Bicycle-Related Collisions	Public Input	Gap Closure	Connectivity: Existing	Connectivity: Regional	Connectivity: Activity Centers	Connectivity: Multi-Modal	Permitting	Project Cost	Parking Displacement	Total Score (34 max)
III	Elliott Avenue	Santa Anita Avenue	Parkway Drive	6	0	0	0	2	1	0	2	2	1	14
III	Meeker Avenue	Garvey Avenue	Mountain View Road	6	0	0	0	2	0	0	2	2	2	14
III	Bannister Avenue	Star Street	Lambert Avenue	0	0	0	4	2	1	0	2	2	2	13
III	Bodger Street	Merced Avenue	Tyler Avenue	3	0	0	0	2	2	0	2	2	2	13
III	Central Avenue	Bodger Street	Fern Street	0	0	3	0	2	1	1	2	2	2	13
III	Killian Street	La Madera Avenue	Maxson Road	3	0	3	0	1	0	0	2	2	2	13
III	Lansdale Avenue	Mountain View Road	Cogswell Road	3	0	3	0	1	0	0	2	2	2	13
III	Oak Street	California Avenue	Meeker Avenue	3	0	0	0	2	1	1	2	2	2	13
III	Rio Hondo Parkway	Adelia Avenue	Asher Street	3	0	3	0	1	0	0	2	2	2	13
III	Roseglen Street	Peck Road	Lower Azusa Road	0	0	3	2	2	0	0	2	2	2	13
II	Telstar Avenue	Rosemead Boulevard	Flair Drive	0	6	3	0	1	0	0	2	1	0	13
III	Brockway Street	Lashbook Avenue	Towneway Drive	0	0	3	2	1	0	0	2	2	2	12
III	Potrero Avenue	City Limit (South of Garvey Avenue)	City Limit (Near Kale Street)	0	0	3	0	2	1	0	2	2	2	12
III	Rio Hondo Parkway	Hammill Road	Cogswell Road	0	3	0	2	1	0	0	2	2	2	12
III	Towneway Drive	Brockway Street	Brockway Street	0	0	3	2	1	0	0	2	2	2	12
III	Adelia Avenue	Rio Hondo Parkway	City Limit (South of Cortada Street)	0	0	3	0	2	0	0	2	2	2	11
III	Cypress Avenue	Ranchito Street	Orchard Street	0	0	3	0	1	1	0	2	2	2	11
II	El Monte Avenue	Fairhall Street	Ranger Avenue	0	0	3	0	2	0	0	2	2	2	11
III	Elrovia Avenue	Ranchito Street	Lambert Avenue	0	0	3	0	1	1	0	2	2	2	11
III	Emery Street	Elrovia Avenue	La Madera Avenue	3	0	0	0	2	0	0	2	2	2	11
III	Lashbrook Avenue	Brockway Street	City Limit (Between Cortada Street and Garvey Avenue)	0	0	3	0	2	0	0	2	2	2	11
III	Lee Lane	Ramona Boulevard	Peck Road	3	0	0	0	2	0	0	2	2	2	11
III	Montecito Drive	Tyler Avenue	Cypress Avenue	0	0	3	0	2	0	0	2	2	2	11

Table 4-22 *Tier 3 Projects (Score of 14 or less) (continued)*

Facility Type	Location	Start	End	Bicycle-Related Collisions	Public Input	Gap Closure	Connectivity: Existing	Connectivity: Regional	Connectivity: Activity Centers	Connectivity: Multi-Modal	Permitting	Project Cost	Parking Displacement	Total Score (34 max)
III	Potrero Avenue	Rio Hondo Parkway	City Limit (North of Garvey Avenue)	0	0	3	0	2	0	0	2	2	2	11
III	Railroad Street	Monterey Avenue	Tyler Avenue	0	0	3	0	2	0	0	2	2	2	11
III	Ranchito Street	Santa Anita Avenue	Elrovia Avenue	0	0	3	0	2	0	0	2	2	2	11
III	Ranger Avenue	El Monte Avenue	Rio Vista Park	0	0	3	0	1	1	0	2	2	2	11
III	Rose Avenue	Gibson Road	Arden Drive	0	0	3	0	1	1	0	2	2	2	11
II	Star Street	Maxson Road	Bannister Avenue	0	0	3	2	1	1	0	2	2	0	11
III	California Avenue	Ramona Boulevard	Brockway Street	0	0	0	0	2	1	1	2	2	2	10
III	Esto Avenue	Hickson Street	Marsen Street	0	0	3	0	0	1	0	2	2	2	10
III	Fairview Avenue	Cedar Avenue	Elrovia Avenue	0	0	3	0	1	0	0	2	2	2	10
III	Havenpark Avenue	Rio Hondo Parkway	Bodger Street	0	0	3	0	1	0	0	2	2	2	10
III	Hickson Street	Arden Drive	Esto Avenue	0	0	3	0	1	0	0	2	2	2	10
III	La Madera Avenue	Emery Street	Bryant Road	3	0	0	0	1	0	0	2	2	2	10
II	Lower Azusa Road	150 feet West of Agnes Avenue	60 feet West of Agnes Avenue	0	0	3	0	2	1	0	1	2	1	10
II	Meeker Avenue	Peck Road	Garvey Avenue	3	0	0	0	2	1	0	2	2	0	10
III	Ranchito Street	Cogswell Road	Maxson Road	0	0	3	0	1	0	0	2	2	2	10
III	Asher Street	Towneway Drive	Rio Hondo Parkway	0	0	3	0	0	0	0	2	2	2	9
III	Concert Street	Tyler Avenue	Peck Road	0	0	0	0	2	1	0	2	2	2	9
III	Marsen Street	Esto Avenue	Ranger Avenue	0	0	3	0	0	0	0	2	2	2	9
III	Tyler Avenue	Emery Street	Santa Anita Avenue	0	0	0	0	2	1	0	2	2	2	9
	Arden Way	Lower Azusa Road	Arden Drive	0	0	0	0	1	1	0	2	2	2	8
III	Bessie Avenue	Rowland Avenue	Gibson Road	0	0	0	0	2	0	0	2	2	2	8
III	Clark Street	Cogswell Road	Durfee Avenue	0	0	0	0	2	0	0	2	2	2	8
III	Fern Street	Sastre Avenue	East of Sastre Avenue	0	0	0	0	2	0	0	2	2	2	8
III	Ferris Road	Ramona Boulevard	Cogswell Road	0	0	0	0	2	0	0	2	2	2	8

Table 4-20 Tier 1 Projects (Score of 34-20) (continued)

Facility Type	Location	Start	End	Bicycle-Related Collisions	Public Input	Gap Closure	Connectivity: Existing	Connectivity: Regional	Connectivity: Activity Centers	Connectivity: Multi-Modal	Permitting	Project Cost	Parking Displacement	Total Score (34 max)
III	Forest Grove Street	Cypress Avenue	Bryant Road	0	0	0	0	2	0	0	2	2	2	8
III	Klingerman Street	City Limit (East of Tyler Avenue)	Parkway Drive	0	0	0	0	2	1	0	2	2	1	8
III	Orchard Street	Cypress Avenue	Ramona Boulevard	0	0	0	0	2	0	0	2	2	2	8
II	The Wye Street	Buffington Road	Cogswell Road	0	0	0	0	1	1	0	2	2	2	8
III	Anderson Road	Potrero Avenue	Sastre Avenue	0	0	0	0	1	0	0	2	2	2	7
III	Cedar Circle	Cedar Avenue	Cedar Avenue	0	0	0	0	1	0	0	2	2	2	7
III	Hammill Road	Rio Hondo Parkway	Hemlock Street	0	0	0	0	1	0	0	2	2	2	7
III	Sastre Avenue	Fern Street	Anderson Road	0	0	0	0	1	0	0	2	2	2	7

4.5.3 Implementation Strategies

The Bicycle Master Plan provides the long-term vision for the development of a citywide bicycle network that can be used by all residents for all types of trips. The following strategies, action items and measures of effectiveness are provided to guide the City toward the vision identified in the Plan.

Strategy 1: Strategically Pursue Infrastructure Projects

City staff can strategically pursue funding and implementation of infrastructure projects recommended in this Plan. Ideally, City staff will pursue capital improvements funding or grant funding for high-priority bicycle improvements first. If grant requirements or construction in conjunction with another roadway project make construction of a lower priority project possible, then the City might advance that project regardless of priority.

Action Item: On an annual basis the City can publish a public report documenting the status and ongoing actions for all bicycle infrastructure projects. This report may be combined with the prioritization review discussed below. The first update is recommended to occur in Fall 2015.

Strategy 2: Review Capital Improvement Program (CIP) Concurrence

The opportunity to implement projects concurrent with the CIP can reduce the burden of implementing bicycle facility projects, and improve the schedule for use regardless of priority ranking for each project.

Action Item: Annually evaluate the CIP for opportunities to implement recommended bicycle facility projects included within this Plan.

Strategy 3: General Plan Incorporation

Key policies, strategies and recommendations included in this Bicycle Master Plan can be incorporated into the General Plan Circulation Element during the next update. At the least, the Circulation Element update can incorporate the recommended bikeways network, add revisions to the roadway cross-sections showing dimensions for on-street bike lanes, and incorporate policies for public and private realm accommodation of bicycling activities. Additionally, roadways with excess vehicular capacity can be reviewed to modify travel lanes and provided on-street or protected bike lanes. The City can also develop engineering standards for NACTO-type bicycle treatments for ongoing use.

Action Item: Update the General Plan Circulation Element and incorporate key items from the Bicycle Master Plan.

Strategy 4: Review City Representative

Current work on bicycle facility projects at the City has been implemented by planning and engineering staff within multiple City Departments. The City may review the designated bikeways representative to determine if other staff within the City have availability or are suited to help secure funding or programmatic recommendations provided within this Plan.

Action Item: Designate a single point person at the City to focus on implementation of bikeway infrastructure and non-infrastructure projects.

Strategy 5: Regularly Revisit Project Prioritization

Projects have been prioritized based on safety, public input, transportation benefit, connectivity benefit, cost, and feasibility. It is recommended that the prioritized list be reviewed every fiscal year, with new projects added, completed projects removed, and the priorities revised as conditions change.

Action Item: Annual review and update of the bicycle master plan's recommended facilities list and programs schedule. Updates to the list can be shared with the public. The first update is recommended in Fall 2015.

Strategy 6: Update the Bicycle Master Plan

While this Plan is intended to guide bikeways planning in the City for the next 20 years, updates may be needed to address changes in priority and evaluation efforts. State funding has typically required updates to bicycle master plans every five years to establish funding opportunity for active transportation projects. Often, cities provide a compliance update within five years and a comprehensive update every ten years.

Action Item: Provide compliance update to the Bicycle Master Plan in five years, and a more comprehensive full update in ten years. Other elements of the Plan shall be reviewed and updated as needed.

Strategy 7: Collaborate with Caltrans

Caltrans manages and operates various freeways adjacent to the City with interchange ramps and bridges that often are higher-stress locations for bicycle riders. Additionally, Caltrans manages Rosemead Boulevard (State Route 19) along the western edge of the City. This Plan includes bicycle facility recommendations that require regular coordination and collaboration with Caltrans.

Action Item: Collaborate with Caltrans to implement bicycle facility improvements on Caltrans-managed facilities, including innovative and conventional treatments using examples of similar facilities within the City, County, and State as precedents.

Strategy 8: Establish Measures of Effectiveness

Measures of effectiveness (MOEs, also known as targets or indicators) are used as a quantitative way to measure the City's progress toward implementing the Bicycle Master Plan. Well-crafted MOEs track progress toward meeting an agreed-upon goal within an established timeframe. **Table 4-23** describes several MOEs recommended for use by the City to track key achievements.

Table 4-23 Recommended Measures of Effectiveness

Measure	Benchmark	Target
Bicycle journey to work mode share	1.1% bicycle mode split per Census	Increase bicycle mode split to 2.2% by 2035.
Bicycle Facility Improvements Implementation	Approximately 4.6 miles of bikeways	Increase bikeways network by implementing bicycle facility recommendations.
Bicycle counts	Bike counts included in this Plan	Annually collect bike counts at baseline locations to document ridership volumes.
Bicycle rider trends/behaviors	Bike counts included in this Plan	Increase bicycling by women 10% per year up to 50% of total bicycling population, focus efforts to reduce wrong way bicycling where reported as cause in bike incidents.
Public attitudes about bicycling	Bike survey provides indication of challenging locations and current perspectives	Increase in positive attitudes about bicycling within community.
Bicycle boulevard demonstration project	Not applicable	Develop demonstration bicycle boulevard on selected corridor and evaluate for success in usage and connectivity.

Table 4-23 Recommended Measures of Effectiveness (continued)

Measure	Benchmark	Target
Bicycle Friendly Community Designation	Not currently designated by the League of American Bicyclists	Secure League of American Bicyclists Bronze Award by 2016 and Silver Award by 2021.
Grant funding	Baseline to be established	Attain an annual average funding of $200,000 or more for infrastructure and non-infrastructure projects.

As new baseline information is discovered as conditions change, and as the City implements the Bicycle Master Plan, the MOEs should be reevaluated, revised and updated.

An example evaluation or MOEs ("indicators") report is produced by the City of Santa Monica which evaluates sustainability indicators as well as non-motorized program measures. The Santa Monica Sustainable City Report Card is provided online at the following location

http://www.smgov.net/Departments/OSE/categories/sustainability.aspx

4.5.4 Potential Funding Sources

Potential funding sources for implementation of recommended bicycle facility infrastructure projects and programs has been identified for further consideration. The funding sources listed are typically competitive in nature, so the City will evaluate the applicability of potential projects and likely scoring before developing a grant application. Additionally, the City will determine the availability of staff to prepare grant applications and to administer the grant. Preparation of grant applications can often be a time-intensive effort, and receipt of funding is not guaranteed due to increasing competition for active transportation projects. Resource demands should be considered by the City given the potential benefit of each grant opportunity.

We recommend the City identify potential projects that would fit well with the following funding sources and initiate/continue discussions with key agencies and stakeholders; funding sources are identified with the date of the next anticipated call listed in parentheses:

- Caltrans Active Transportation Program (Late 2014 or Early 2015)
- Metro Call for Projects (2015)
- Metro ExpressLanes Net Toll Revenues (Date Unknown)
- SCAG Sustainability Program (Future date subject to SCAG Regional Council action)
- Land and Water Conservation Fund (2015)

Preliminary consideration of applicability and discussion with stakeholders can help verify that a potential opportunity is well-suited for the grant source, and can help position the City to document a history of collaboration and provide a venue to secure letters of support for incorporation into the grant application. Refer to Chapter 9 for a listing of additional funding sources that may be considered for funding bicycle facility improvements and programs.

4.6 Active Transportation Program (ATP) Compliance

The Active Transportation Program (ATP) is an annual statewide discretionary grant program that funds bicycle and pedestrian projects through the California Department of Transportation (Caltrans). Available as grants to local jurisdictions, the ATP emphasizes projects and programs that enhance bicycling for transportation purposes. In order for the City to qualify for ATP funding in future cycles, the Bicycle Master Plan must contain specific elements. **Appendix I** displays the requisite ATP components and their location within this Plan.

5 Monterey Park

This chapter presents Monterey Park's portion of the San Gabriel Valley Regional Bicycle Master Plan. The chapter is organized into the following sections:

- Existing Conditions
- Needs Analysis
- Recommended Bicycle Facilities & Programs
- Project Costs
- Project Implementation
- Active Transportation Program (ATP) Compliance

5.1 Existing Conditions

The City of Monterey Park is located in the southwestern part of the San Gabriel Valley. There are approximately 60,600 residents with 7,870 people per square mile and a total area of 7.7 square miles. Monterey Park is bordered by unincorporated East Los Angeles to the west, Alhambra and the I-10 freeway to the north, Rosemead to the east, and Montebello to the south. Bicycle riders and others are particularly drawn to East Los Angeles College for educational and cultural activities and to shopping, dining, and entertainment destinations in northern and southern Monterey Park.

The purpose of this chapter is to explore existing bicycling conditions in Monterey Park. With a bicycling mode share of 0.4 percent (for commute trips), Monterey Park has somewhat lower bicycle use than most neighboring communities, as well as the State of California (1.0 percent). An estimated 1,887 bicycle trips are made daily in Monterey Park.

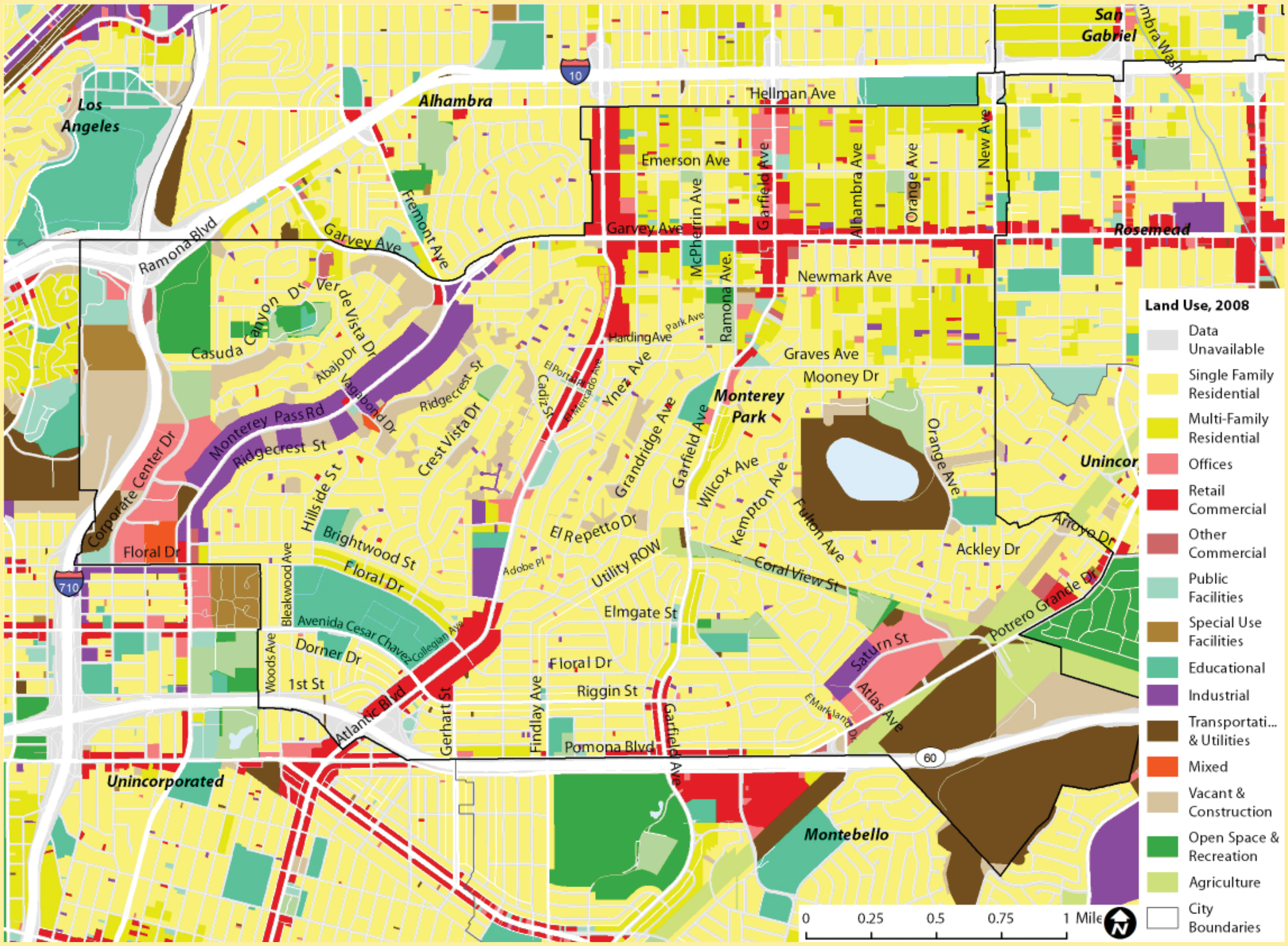
Image 18- *East L.A. College Transit Center*

5.1.1 Land Use

Figure 5-1 presents Monterey Park's land use map. Single family residential homes account for approximately forty-seven percent (47%) of the City's land area while ten percent (10%) is occupied by multi-family residential buildings. Parks, open space, and recreational facilities account for three percent (3%) of land. Commercial, mixed-use, and office designations account for a total of approximately ten percent (10%) of the City's land, while industrial uses make up four percent (4%). Commercial uses are focused along Atlantic Boulevard, Garvey Avenue, and Garfield Avenue. The remaining 26% of land in the City is zoned for a variety of uses, including Agriculture (2%), Educational (4%), Public Facilities (1.2%), Special Use Facilities (0.7%), and Transportation & Utilities (10%). Ten percent (10%) of the land is vacant or in some phase of construction.

Image 19- *Residential Street in Monterey Park*

Figure 5-1 *Land-Use Map of Monterey Park*



5.1.2 Relevant Plans and Policies

This section discusses various City of Monterey Park plans and policies and their relevance to this Plan.

South Garfield Transit Village Specific Plan (In Progress)

In anticipation of the proposed Metro Gold Line Eastside Transit Corridor Phase 2 station at Garfield Avenue and Via Campo, the City of Monterey Park is currently engaging in an update to the South Garfield Specific Plan in order to encourage and facilitate transit-oriented development along the South Garfield corridor as well as the perpendicular commercial corridor along Pomona Boulevard. The current Specific Plan permits a combination of uses that primarily encourage automobile use with minimal consideration of active transportation modes.

The Transit Village Specific Plan will also study pedestrian and bicycle use of Garfield Avenue, Pomona Boulevard, and surrounding streets in an effort similar to the Downtown Mixed-Use and Pedestrian Linkages Plan (see below in this section). This study will outline existing conditions and current street use, and recommend improvements needed in order to engage pedestrians and encourage public and active transportation use. The study will also identify linkages to important destinations throughout the City, including East Los Angeles College. **Figure 5-2** below shows the current lack of bicycle facilities in the area surrounding the South Garfield Commercial District (indicated by the blue star in the center)

Figure 5-2 *Bicycle Facilities in the Vicinity of the South Garfield Commercial District*

Healthy Community Element of the General Plan (2013)

The City's Healthy Community Element aims to create conditions that make it easier for people to make healthier choices. This element addresses some respiratory health issues that relate to poor air quality and transportation. The City of Monterey Park strives to provide safe bicycling and walking access to parks. The City also plans to provide convenient transit access to health care services on North Garfield Avenue and along Atlantic Boulevard.

For more information: http://www.montereypark.ca.gov/DocumentCenter/View/590

Sustainable Community Element of the General Plan (2013)

The Sustainable Community Element focuses on the environmental aspects of sustainability relating to land use and transportation. It identifies Monterey Park as having limited facilities for bicycling and, in some areas, deficient sidewalks for pedestrians. The City supports development of mixed-use areas along transit corridors to encourage people to walk, bike, or use public transit. The following policies are provided specific to bicycle travel within the City:

- Policy 5.6 Multipurpose Trails: Seek opportunities to provide off-street multipurpose trails for biking and walking that increase connectivity throughout the City while providing an attractive environment for walking and bicycling separated from the roadway.
- Policy 6.1 Public Bicycle Parking: Ensure adequate bicycle parking is available at City facilities and bus stops.
- Policy 6.2 Bicycle Parking in Development Projects: Require the provision of bicycle parking for new buildings and expansion projects as specified in the California Green Building Standards Code (CALGreen).
- Policy 6.3 End-of-Trip Facilities at Businesses: Encourage businesses to provide bike parking and other end-of-trip facilities that promote bicycling.

- Policy 7.2 Safe Driver Behavior: Promote safe driver behavior around bicycle riders and pedestrians, including knowing when to yield, looking for other people in the roadway, driving at appropriate speeds, and passing at a safe distance.
- Policy 7.3 Bicyclist and Pedestrian Education: Encourage and promote the education of community members, including children, as safe and alert bicycle riders and pedestrians.

For more information: http://www.montereypark.ca.gov/DocumentCenter/View/589

Climate Action Plan (2012)

The City of Monterey Park recently prepared and adopted a Climate Action Plan to reduce greenhouse gas emissions citywide. The Plan recommends a variety of strategies including the creation and adoption of a Master Bike Plan. The City also looks to expand their pedestrian network and increase bicycle parking and other end-of-trip facilities. Taken together, these actions have the potential to reduce Vehicle Miles Traveled (VMT) in the City by 2.5% by the year 2020. The City will prioritize locations for Americans with Disabilities Act (ADA) improvements, including installing curb ramps, closing sidewalks gaps, and removing sidewalk obstructions.

For more information: http://www.montereypark.ca.gov/documentcenter/view/581

Downtown Mixed-Use and Pedestrian Linkages Plan (2004)

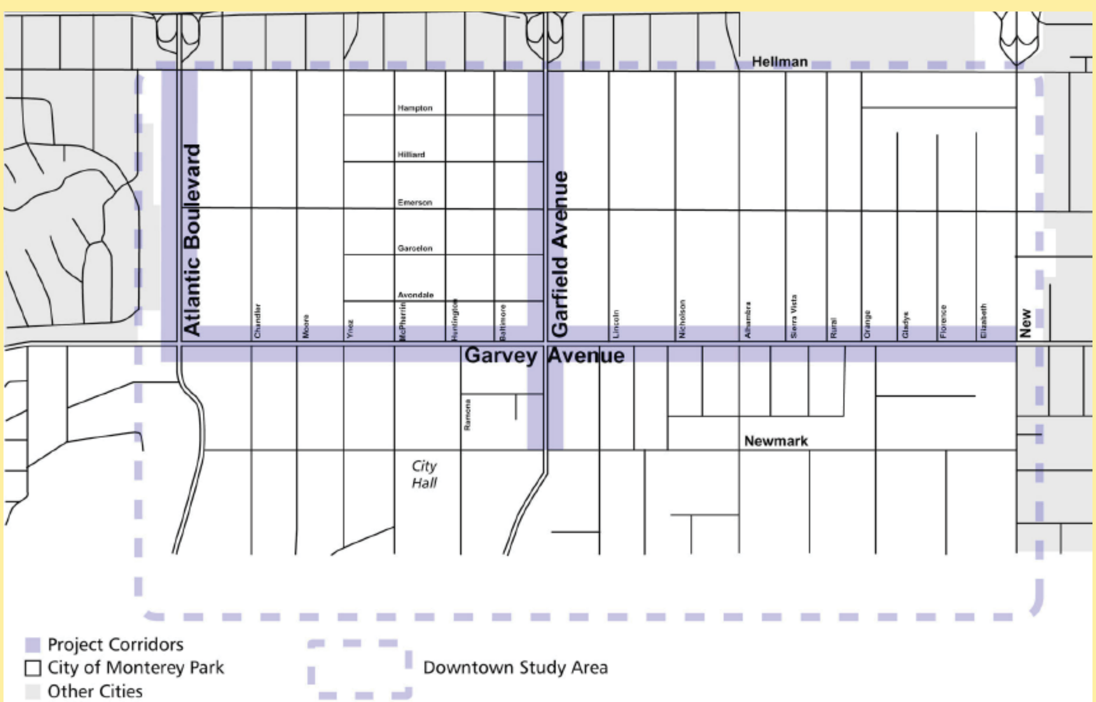
The Downtown Monterey Park Mixed-Use and Pedestrian Linkages Plan provides guidance for the growth of the Downtown area, as shown in **Figure 5-3**. The Plan focuses on three primary Downtown streets: Garvey Avenue (Atlantic Boulevard to New Avenue), Atlantic Boulevard (Hellman Avenue to Garvey Avenue), and Garfield Avenue (Hellman Avenue to Newmark Avenue).

This Plan discusses how transportation infrastructure and the developing community can be interconnected. Recommendations are provided for both public and private realm. The Plan noted that bicycle travel within the downtown study area is generally minimal, except near Garfield Hospital and at the McPherrin Avenue/Garvey Avenue intersection. The Plan included the following recommendations:

- Bicycle parking along major streets to provide bicycle riders with improved access to destinations along downtown's corridors.
- Traffic calming on Class III bicycle routes.
- Installation of Class II bicycle lanes along McPherrin Avenue.

For more information: http://www.montereypark.ca.gov/524/Pedestrian-Linkages-Plan

Figure 5-3 *Map of Downtown Monterey Park with Project Area highlighted in Blue*



5.1.3 Engineering

Existing Bicycle Facilities

This report refers to standard bikeway definitions identified by Caltrans in Chapter 1000 of the Highway Design Manual (Caltrans HDM). Additional concepts for bikeways have been promoted and implemented throughout the United States; however, they have not been adopted for use in the Caltrans HDM. Bicycle facility types are discussed in Section 1.3.

Table 5-1 summarizes the classification and mileage of the existing network.

Table 5-1 Existing Bicycle Network

Facility Type	Mileage
Class I (Bike Path)	0.0
Class II (Bike Lanes)	0.7
Class III (Bike Route)	0.0
Total Mileage	0.7

As shown in **Table 5-1**, a total of 0.7 miles of bikeways are currently provided in the City of Monterey Park, consisting of the following facilities:

- On-street Class II bike lanes on Alhambra Avenue (between Hellman Avenue and Newmark Avenue)

Signage

The California Manual on Uniform Traffic Control Devices (CA MUTCD) and the CA HDM outline the requirements for bikeway signage. The Bike Lane Sign (R81) is required at the beginning of each designated bike lane and at each major decision point. The Bike Route Sign (D11-1) is required on Class III facilities. Shared-use paths require additional standardized signs to help manage different user groups. The City has installed CA MUTCD standard signs along the appropriate bikeways.

Figure 5-4 *Caltrans Bikeway Signs*

Bicycle Parking

Bicycle storage can range from a simple and convenient bicycle rack to storage in a bicycle locker or cage that protects against weather, vandalism and theft. The City currently has an inventory of existing short-term bicycle parking locations at several locations along Garvey Avenue and Garfield Avenue. Short-term bicycle racks can be found at some major destinations, including City Hall and parks throughout the city. Many bicycle riders resort to securing their bike to street fixtures such as trees, lights, telephone poles, and parking meters when sufficient parking facilities are not provided.

End-of-Trip Facilities

The presence and quality of trip-end facilities (e.g. showers, lockers, and changing facilities) can greatly influence a person's decision to complete a trip via bicycle. These facilities enable bicycle riders to change into work attire (especially after riding in wet or hot conditions). The City currently does not have an inventory of existing end-of-trip facilities.

Bicycle Signal Detection

Bicycle detection at actuated traffic signals permits bicycle riders to trigger a green light, even when no motor vehicle is present. California Assembly Bill 1581 requires all new and replacement actuated traffic signals to detect bicycle riders and to provide sufficient time for a bicycle rider to clear an intersection from a standing start. Caltrans Policy Directive 09-06 clarifies the requirements and permits any type of detection technology. The most common technologies are in-pavement loop detectors and video detection. More recently, microwave detection has been used to detect and differentiate between bicycle riders and motor vehicles.

The City complies with the Caltrans Policy Directive by installing detector loops designed to detect bicycles during pavement rehabilitation and traffic signal upgrade projects. Traffic signal timing is reviewed and updated as necessary through traffic signal corridor timing projects.

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. **Figure 5-5** shows the existing Metro and Metrolink transit lines that serve the City of Monterey Park. The nearest Metrolink station is the Cal State L.A. station immediately to the northwest of Monterey Park in the City of Los Angeles, and the nearest light rail station is at the Atlantic Boulevard/ Pomona Boulevard intersection a block south of the City's southern border.

The Los Angeles County Metropolitan Transportation Authority (Metro) operates the following bus lines in the City of Monterey Park (All Metro buses can carry two bicycles):

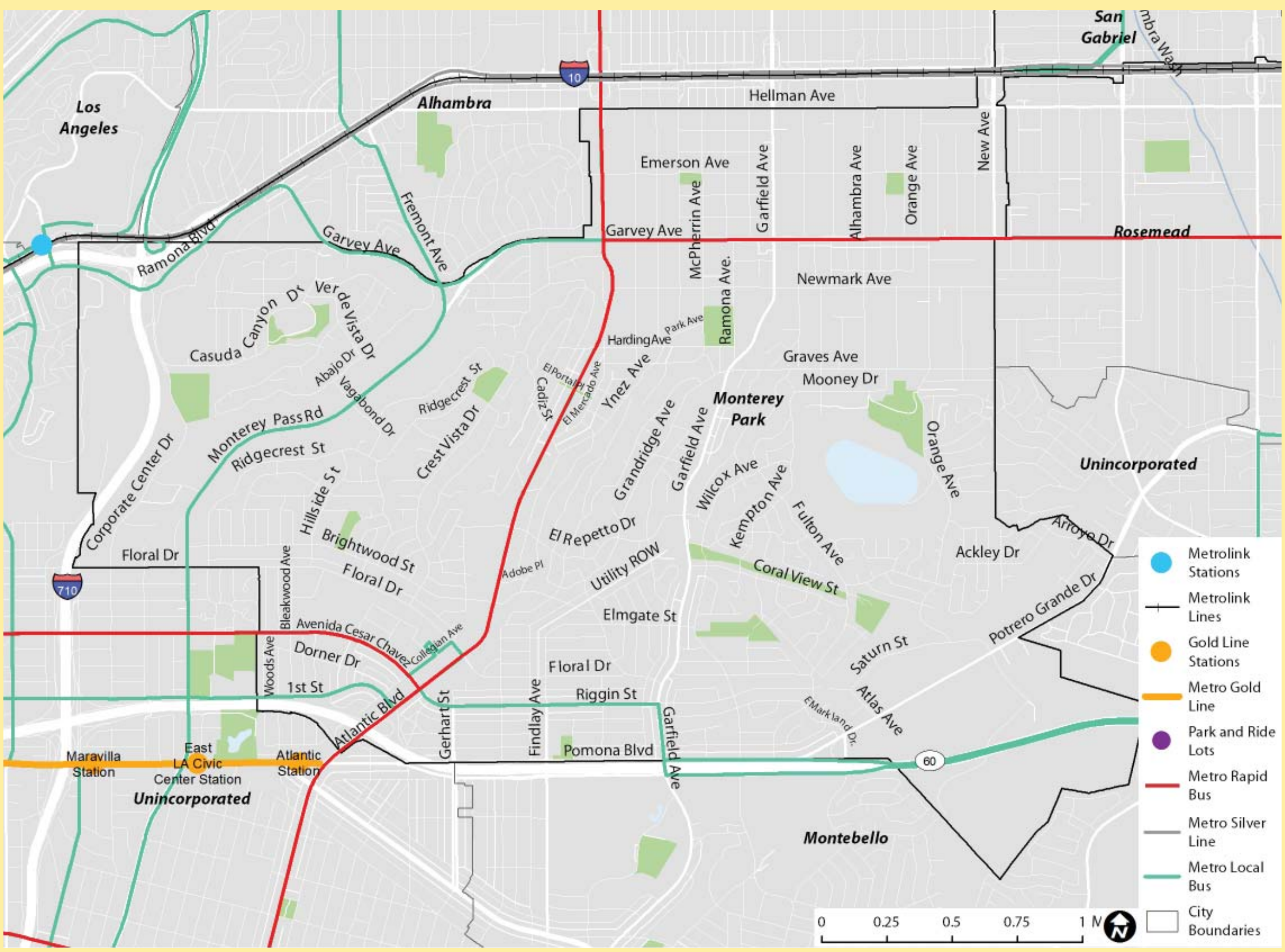
- 68 – Along Avenida Cesar Chavez and Riggin Street between Downtown Los Angeles and the Shops at Montebello
- 70 – Along Garvey Avenue, between Downtown Los Angeles and El Monte Bus Station
- 258 – Along Monterey Pass Road between Alhambra and Paramount
- 260 – Along Atlantic Boulevard between Pasadena and the Artesia Blue Line Station
- 762 – Rapid service along Atlantic Boulevard between Pasadena and the Artesia Blue Line Station
- 770 – Rapid service along Avenida Cesar Chavez, Atlantic Boulevard, and Garvey Avenue between Downtown Los Angeles and El Monte Bus Station

In the City of Monterey Park, Montebello Bus Lines operates Line 10 along Atlantic Boulevard between East Los Angeles College and Whittier and Line 30 along Garfield Avenue between Alhambra and South Gate. Montebello Bus Lines' buses are equipped with racks that can carry two bicycles.

The City of Monterey Park also provides a local-circulator bus system – Spirit Bus – which complements regional bus service and accommodates local trips to all of the City's key destinations as well as the Cal State Los Angeles Metrolink station. Most routes operate Monday through Saturday. Spirit buses purchased after 2012 are equipped with bicycle racks.

In November 2013, the City of Monterey Park opened a new transit center at East Los Angeles College. The new center provides students with improved access to buses, making travel to campus easier and safer since bus boardings no longer need to occur in mixed traffic. In addition, transit information kiosks will display schedules and other information for the various bus lines that serve

Figure 5-5 *Existing Public Transportation Facilities in Monterey Park*



the immediate area – including Metro, Montebello Bus Lines and the City of Monterey Park Spirit – as well as the Metro Gold Line a few blocks away at the Pomona Boulevard/Atlantic Boulevard intersection in East Los Angeles.

Maintenance

Street maintenance programs aid in the quality and longevity of bicycle facilities. The City of Monterey Park currently has a Street Maintenance program that provides staff with guidelines to inspect, schedule, and repair City streets, alleys, and bike trails. The program provides maintenance of signs, pavement markings, curb markings, street name signs, and roadway striping. In addition to as-needed repairs, the program annually repaints school pavement legends and inspects school regulatory and warning signs. Street sweeping occurs on residential streets (once per week), city boulevards (four times per week) and parking lots (one to two times per week).

The Capital Improvement Program (CIP) serves to develop and construct major public improvements and address significant maintenance items. The CIP prioritizes and allocates funding for large scale projects including roadway resurfacing, repair projects, and improvements within the city.

5.1.4 Existing/Previous Education, Encouragement, and Enforcement Strategies

Bicycle education programs and enforcement of bicycle-related policies help to make riding safer for all bicycle riders. The City does not currently have education campaigns related to bicycling within the City.

Monterey Park police officers enforce all bicycle-related rules in the California Vehicle Code and issue citations when they observe violations.

5.1.5 Past and Future Bicycle-Related Expenditures

No new bicycle facilities have been implemented within the City within the past three years.

5.2 Needs Analysis

This section describes the needs of bicycle riders in Monterey Park. This section provides estimates and forecasts of bicycle travel to determine the estimated bicycling demand in the city. In addition, this section analyzes recent bicycle collision data to identify areas that would benefit from bicycle facility improvements. Public outreach efforts related to the preparation of this Plan is discussed in Chapter 1 of this Plan.

5.2.1 Bicycle Demand Estimates and Forecasts

The model uses the U.S. Census Bureau's American Communities Survey (ACS) journey-to-work data and applies a market segment approach to estimate the number of bicycling or walking trips. Elementary school and college students usually have a different bicycle/walking mode split than work commuters.

In addition, national transportation surveys, in particular the National Household Travel Survey (NHTS, 2009), have shown that commute trips are only a fraction of the total trips an individual takes on a given day. The model uses the NHTS findings to estimate the number of non-work, non-school trips taken by commuters to determine the number of walking or bicycling trips that occur in a day. This information can be projected out using standard trip lengths by mode and trip purpose to estimate the number of driving miles reduced by non-motorized modes.

Model Data

The foundation of this analysis is the ACS 2008-2012 five-year estimate for Monterey Park. Model variables from the ACS include: total population, employed population, school enrollment (grades K-12 and college students), and travel-to-work mode split.

The 2009 NHTS provides a substantial national dataset of travel characteristics, particularly for trip characteristics of bicycling and walking trips. Data used from this survey include:

- Student mode split, grades K-12
- Trip distance by mode by trip purpose
- Ratio of walking/bicycling work trips to utilitarian trips
- Ratio of work trips to social/recreational trips
- Average trip length by trip purpose and mode

Several of these variables provide a way to estimate the number of walking and bicycling trips made for other reasons than work trips, such as shopping and running errands. NHTS 2009 data indicates that for every bicycle work trip, there are slightly more than two utilitarian bicycle trips made. Although these trips cannot be directly attached to a certain group of people (not all of the utilitarian bicycling trips are made by people who bicycle to work), these multipliers allow a high percentage of the community's walking and bicycling activity to be captured in an annual estimate.

The Safe Routes to School Baseline Data Report (2010) was used to determine the percent of students who walk or bicycle by the parents' estimate of distance as well as the frequency of carpooling for trip replacement.

As with any modeling projection, the accuracy of the result is dependent on the accuracy of the input data and other assumptions. Effort was made to collect the best data possible for input to the model, but in many cases national data was used where local data points were unavailable. Examples of information that could improve the accuracy of this exercise include the detailed results of local Safe Routes to Schools parent and student surveys, a regional household travel survey, and a student travel survey of college students.

Existing Walking and Bicycling Trips

Table 5-2 below presents commute to work data estimates for Monterey Park, as well as nearby cities and comparison geographies, as reported in the 2008-2012 American Community Survey 5-year estimates. This information for Monterey Park is one of several inputs of the demand model.

Table 5-2 Existing Mode Split Comparison with Neighboring Cities

Jurisdiction	Walk	Bike	Transit	Carpool	Drive Alone
Monterey Park	1.9%	0.4%	3.8%	11.6%	75.8%
Rosemead	1.3%	0.8%	4.3%	12.2%	76.2%
South Pasadena	1.2%	0.8%	5.1%	9.2%	78.4%
Temple City	0.8%	0.4%	3.4%	12.8%	77.5%
City of Los Angeles	3.7%	1.0%	11.1%	10.3%	67.0%
County of Los Angeles	2.9%	0.8%	7.1%	10.9%	72.2%
California	2.8%	1.0%	5.1%	11.5%	73.0%
United States	2.8%	0.6%	5.0%	10.0%	76.1%
Source: 2008-2012 American Community Survey 5-year Estimates					

Table 5-3 shows the estimated current number of daily bicycling and walking trips. Based on the model assumptions, the majority of trips are non-work utilitarian trips, which include medical/dental services, shopping/errands, family personal business, obligations, transport someone, meals, and other trips.

Table 5-3 Current Weekday Bicycling and Walking Trips

	Bicycling	Walking	Source
Bicycling/walking commute trips	205	976	Employed population from ACS multiplied by mode split from ACS, doubled for round-trips
Walk- or bike-to-transit trips	20	566	Number of transit commuters from ACS multiplied by transit mode split from TCRP Report 153, doubled for round-trips
K-12 bicycle/walking trips	153	2,040	School children population from ACS multiplied by mode split from SRTS Baseline Data Report (2010), doubled for round-trips
College bicycle/walking trips	202	823	Employed population from ACS multiplied by mode split from NHTS 2009, doubled for round-trips
Daily bicycle/walking utilitarian trips	330	4,220	Bicycle/walking commute trips (above) multiplied by mode-specific utilitarian trip multiplier from NHTS 2009
Daily social/recreational trips	977	3,818	Bicycle/walking commute trips (above) multiplied by mode-specific social/recreational trip multiplier from NHTS 2009

Table 5-3 Current Weekday Bicycling and Walking Trips (continued)

	Bicycling	Walking	Source
Current daily bicycling and walking trips	**1,887**	**12,443**	
Annual Extrapolation			
Annual commute trips	56,475	387,042	Bicycle/walking and walk- or bike-to-transit trips multiplied by annual work days
Annual K-12 trips	27,540	367,200	K-12 bicycle/walking trips multiplied by annual K-12 school days
Annual college trips	30,300	123,450	College bicycle/walking trips multiplied by annual college class days
Annual utilitarian trips	90,988	1,673,357	Annual commute trips multiplied by mode-specific utilitarian trip multiplier

As shown in **Table 5-3**, current commute, school, college and utilitarian trips via bicycle are estimated at approximately 1,890 trips daily, and approximately 91,000 bicycle trips are estimated to occur annually.

Trip Replacement

To estimate the total distance residents travel to work or school by walking and bicycling, the model isolates different walking and bicycling user groups and applies trip distance information for walking or bicycling trips by mode based on NHTS 2009.

Table 5-4 shows the trip replacement factors.

Yearly factors are calculated by assuming that work and school/college trips occur five days per week, while utilitarian trips occur seven days per week. However, work and utilitarian trips occur year-round, while school and college trips are only three-quarters of the year, due to summer vacation.

Table 5-4 Current Bicycling and Walking Trip Replacement (Annual)

	Bicycling	Walking	Source
Vehicle commute trips replaced	46,269	321,943	Redistribution of bikers/walkers using existing mode split if that mode were not available
K-12 vehicle trips replaced	11,731	178,724	SR2S Baseline Data Report, 2010
College vehicle trips replaced	24,694	106,167	NHTS 2009
Utilitarian vehicle trips replaced	74,544	1,391,906	Redistribution of bikers/walkers using existing mode split if that mode were not available
Vehicle Miles Traveled			
Commute VMT replaced	163,791	215,702	NHTS 2009 average bicycle trip distance for “Work” trips
K-12 VMT replaced	9,009	63,469	SRTS 2010, percent of students who walk or bicycle by parent’s estimate of distance
College VMT replaced	36,547	59,453	NHTS 2009 average trip distance for “School/Daycare/ Religious” trips
Utilitarian VMT replaced	141,137	927,937	Derived from NHTS 2009
Total VMT reduced	350,484	1,266,561	
Per capita VMT reduced	6	21	

Current Benefits

To the extent that bicycling and walking trips replace single-occupancy vehicle trips, they reduce emissions and have tangible economic impacts by reducing traffic congestion, crashes, and maintenance costs. In addition, the reduced need to own and operate a vehicle saves families money. These benefits are shown in **Table 5-5**.

Table 5-5 Annual Benefits of Current Bicycling and Walking Trips

Measure	Bicycling	Walking	Total
Yearly vehicle miles reduced	350,484	1,266,561	1,617,046
Air Quality Benefits[1]			
Reduced Hydrocarbons (pounds/year)	1,051	3,798	4,848
Reduced Particulate Matter (pounds/year)	8	28	36
Reduced Nitrous Oxides (pounds/year)	734	2,653	3,387
Reduced Carbon Monoxide (pounds/year)	9,581	34,624	44,206
Reduced Carbon Dioxide (pounds/year)	285,121	1,030,355	1,315,476

As shown in **Table 5-5**, current bicycle trip benefits include the reduction of over 350,000 vehicle miles annually and a reduction of carbon dioxide emissions by over 285,000 pounds annually.

Potential Future Walking and Bicycling Trips

Estimating future benefits requires additional assumptions regarding Monterey Park's future population and anticipated commuting patterns in 2035. Future population predictions as determined by the SCAG 2012 RTP Growth Forecast (for 2035) were used in this model. **Table 5-6** shows the projected future demographics used in the future analysis.

Table 5-6 Projected Future Demographics

Demographic	Value	Source
Population	77,700	SCAG 2012 RTP Growth Forecast (for 2035)
Employed population	33,031	Same percentage as current model estimate
School population, K-12	9,827	Same percentage as current model estimate
College student population	7,757	Same percentage as current model estimate

Forecast bicycling mode share was increased to address the higher use potentially generated by the addition of recommended bikeway facilities to the existing system.

The analysis predicts that the bicycle mode split will increase to 0.8% by 2035, due in part to bicycle network implementation and education/encouragement programs. The results of the future bicycling trips model, assuming an increase to 0.8% bicycle mode share, are shown in **Table 5 7.**

Table 5-7 Estimated Future (2035) Weekday Bicycling and Walking Trips

Trip Type	Bicycling	Walking	Discussion
Bicycle/walking commute trips	528	1,255	Employed population multiplied by mode split, doubled for round-trip
Walk- or bike-to-transit trips	25	728	Number of transit commuters multiplied by transit mode split from TCRP Report 153, doubled for round-trip
K-12 bicycle/walking trips	197	2,624	School children population multiplied by mode split, doubled for round-trip
College bicycle/walking trips	260	1,058	Employed population multiplied by mode split, doubled for round-trip
Daily bicycle/walking utilitarian trips	851	5,426	Bicycle/walking commute trips multiplied by mode-specific utilitarian trip multiplier
Daily social/recreational trips	2,517	4,910	Bicycle/walking commute trips multiplied by mode-specific social/recreational trip multiplier
Total future daily bicycling and walking trips	**4,378**	**16,001**	

As shown in **Table 5-7**, assuming bicycle mode split increases to 0.8%, forecast year 2035 commute, school, college and utilitarian trips via bicycle are estimated to grow to approximately 4,400 trips daily.

The trip replacement factors remain the same as in the model of current trips. **Table 5-8** shows the air quality benefits of the future projected walking and bicycling trips.

Future Benefits

Table 5-8 Annual Benefits of Future Bicycling and Walking Trips

Measure	Bicycling	Walking	Total
Yearly vehicle miles reduced	808,000	1,629,000	2,437,000
Air Quality Benefits[1]			
Reduced Hydrocarbons (pounds/year)	2,423	4,884	7,306
Reduced Particulate Matter (pounds/year)	18	36	54
Reduced Nitrous Oxides (pounds/year)	1,692	3,411	5,104
Reduced Carbon Monoxide (pounds/year)	22,091	44,526	66,617
Reduced Carbon Dioxide (pounds/year)	657,383	1,325,021	1,982,403

As shown in **Table 5-8**, assuming bicycle mode split increases to 0.8%, forecast year 2035 benefits include the reduction of over 800,000 vehicle trips annually and the reduction of carbon dioxide emissions by over 657,000 pounds annually.

5.2.2 Bicycle Counts

A knowledge of current bicycling levels in the City of Monterey Park helps to identify areas of particular need while also serving as a baseline from which to evaluate the impact of bicycling infrastructure and program improvements called for in this Plan. To assess current bicycling levels at different sites throughout the City, the project team conducted bicycle counts using two separate methodologies: manual counts with volunteers and automated counts using electronic tube counters.

Methodology

The methodology for the manual 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 existing levels of both utilitarian and recreational bicycling trips. The NBPD also provides guidance on how to select count locations.

Volunteers conducted bicycle counts at eight locations in Monterey Park on the following Saturdays from 11:00 a.m. to 1:00 p.m.: May 3, June 14, and June 21, 2014. Weekday morning bicycle counts took place from 7:00 a.m. to 9:00 a.m. at nine locations on various mid-week days between May 6 and June 17, 2014. Weekday evening counts took place from 4:00 p.m. to 6:00 p.m. at eight locations on several days between May 8 and June 17, 2014. These dates are meant to capture volumes of bicycle riders on a typical weekday and weekend day. The manual bike count locations were selected by staff members from the City of Monterey Park, Day One, and Alta Planning + Design. This snapshot of locations is intended to capture a diverse bicycling population using the roads and streets that span the spectrum of "bike-friendliness."

In addition to manual counts, automated 24-hour bicycle counts were conducted using Eco-Counters that were procured by the Los Angeles County Department of Public Health and distributed to each of the five Regional Bike Plan partner cities for various time periods. In Monterey Park, the automated bicycle counters were installed at eight locations between April 24 and May 13, 2014. The project team experienced several issues with the automated counters that negatively affected the accuracy of the bicycle count data, such as maintenance problems and data reporting flaws. Therefore, the project team recommends that the automated count data be dismissed in favor of the manual count results. However, the automated counting technology should be refined and considered for use in future bicycle data collection efforts.

Results

Manual bicycle count locations and results for the City of Monterey Park are displayed in **Figure 5-6**, **Figure 5-7**, and **Figure 5-8**, as well as in **Appendix F**. During the weekday morning manual counts, the Monterey Park location that experienced the highest volume of bicycle riders was Avenida Cesar Chavez between Schoolside Avenue and Collegian Avenue, with 31 total bicycle riders passing during the two hour count period. For the weekday afternoon count periods, the count location of East Garvey Avenue between Rural Drive and Sefton Avenue saw the highest volume of bicycle riders – 27 bicycle riders from 4:00 p.m. to 6:00 p.m. On weekends, the most bicycle riders were again counted along East Garvey Avenue between Rural Drive and Sefton Avenue, with 20 riders passing by during the count period.

Figure 5-6 *Weekday Morning Bike Count Results in Monterey Park*

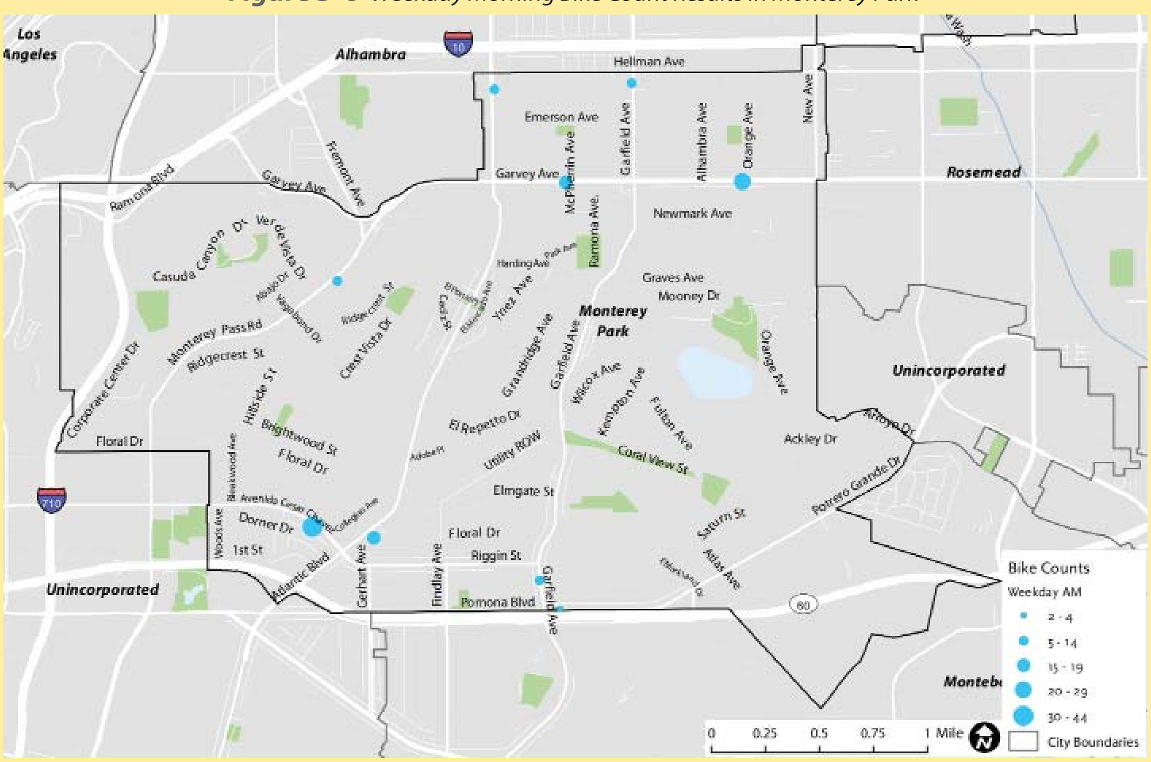


***Figure 5-7** Weekday Morning Bike Count Results in Monterey Park*

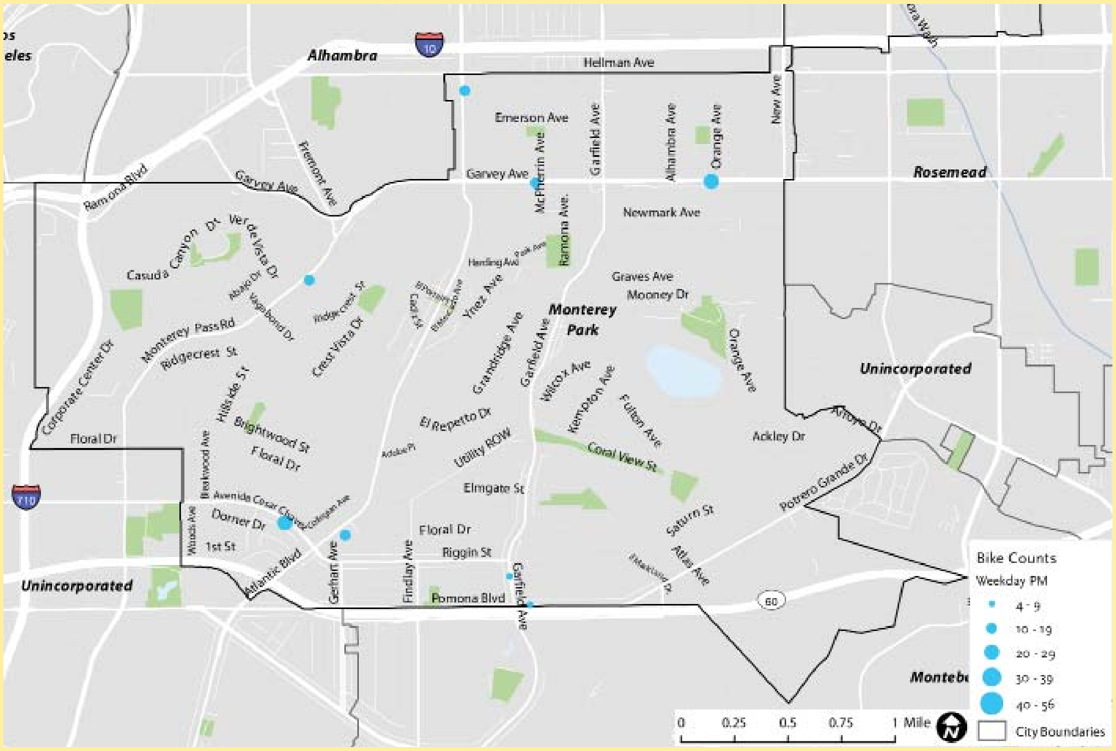
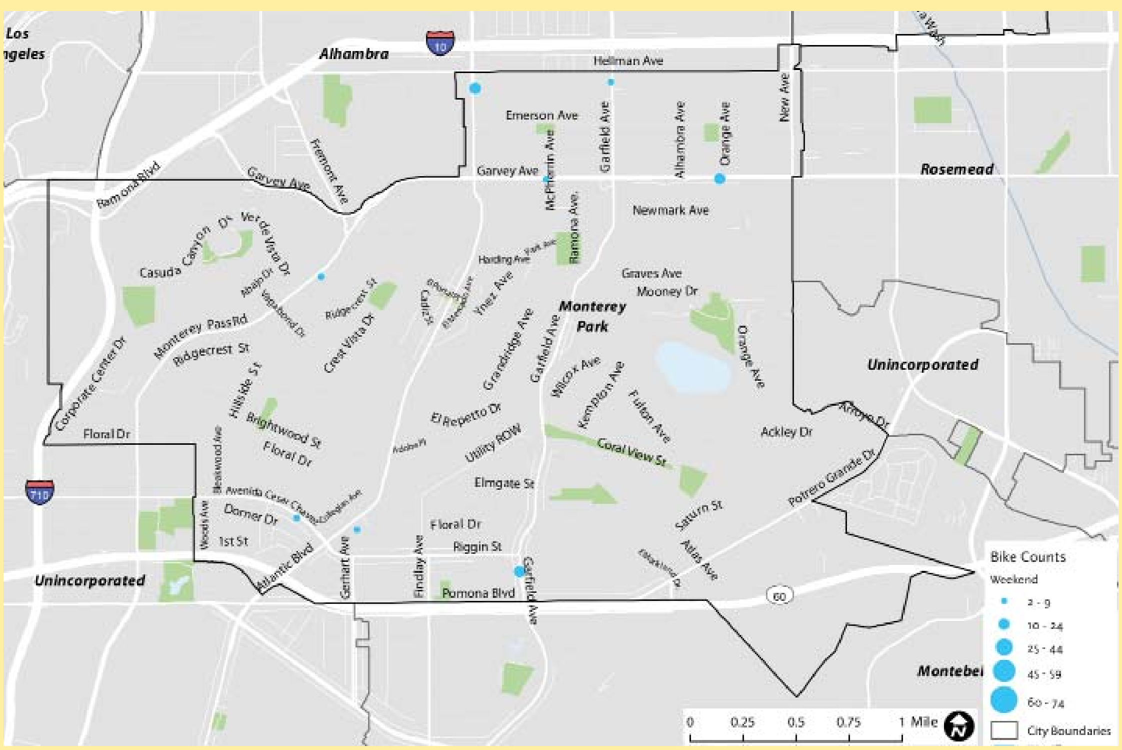


***Figure 5-8** Weekend Bike Count Results in Monterey Park*



In the City as a whole, approximately 87 percent of bicycle riders counted were male. Approximately 77 percent of those observed were not wearing bicycle helmets, and 53 percent were riding on the sidewalks. Riding on the sidewalk can be an indicator of a lack of safe bicycling facilities and/or proper education, as bicycle riders that are uncomfortable riding with traffic may choose to instead travel along the sidewalk.

5.2.3 Bicycle-Related Collision Analysis

Safety is a major concern for current and potential bicycle riders, and can influence the decision whether or not to bicycle. Potential bicycle riders that do not have experience riding, especially in traffic, typically will not ride if they perceive the roadway as dangerous. People who do not ride often express frustration when drivers do not see them or do not understand that bicycle riders are afforded the same rights as vehicles. Similarly, many bicycle riders do not know or follow the "rules of the road." Uninformed or unlawful roadway users can contribute to collisions.

This section reviews bicycle-related collisions from January 2007 to December 2011, as reported by the Statewide Integrated Traffic Records System (SWITRS). **Table 5-9** presents the number of bicycle-related collisions in Monterey Park from 2007-2011. **Figure 5-9** maps bicycle-related collisions over the study period with larger dots representing locations with multiple collisions.

Table 5-9 Bicycle-Related Collisions by Year

Year	Number of Collisions
2007	5
2008	7
2009	10
2010	18
2011	24
Total	64

***Figure 5-9** Bicycle-Related Collisions in Monterey Park, 2007-2011*

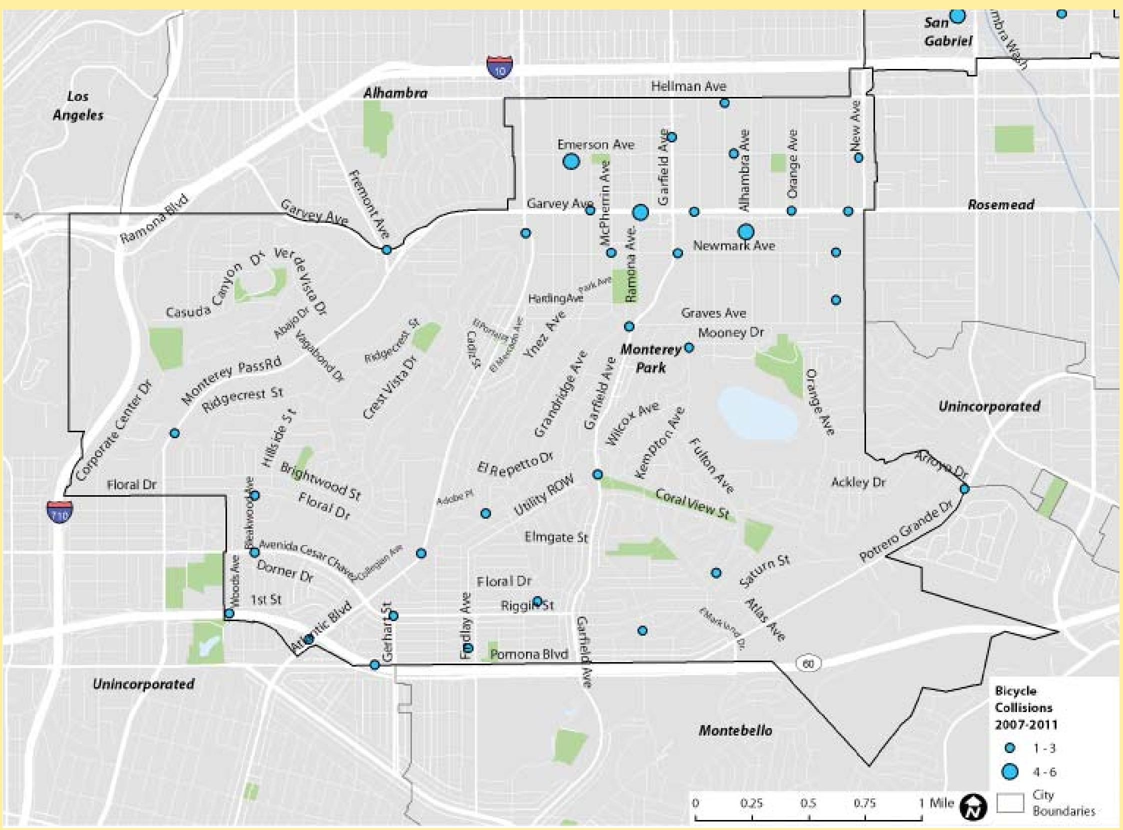


Table 5-10 displays the top eight roadways with the most bicycle-related collisions based on data from 2007-2011. The eight roadways in **Table 5-10** accounted for nearly sixty percent (58%) of all bicycle-related collisions during the period 2007-2011. The top roadway –Garvey Avenue – was host to one-fifth (20%) of all bicycle-related collisions in the City during this period.

Table 5-10 Highest Bicycle-Related Collision Roadways

Roadway	Number of Collisions
Garvey Avenue	13
Emerson Avenue	5
Atlantic Boulevard	4
Alhambra Avenue	3
Garfield Avenue	3
Monterey Pass Road	3
Newmark Avenue	3
Riggin Street	3

Table 5-11 shows the percent of bicycle-related collisions based on the day of the week.

Table 5-11 Bicycle-Related Collisions by Day of the Week

Day of the Week	Percent of Collisions
Monday	14%
Tuesday	13%
Wednesday	23%
Thursday	19%
Friday	11%
Saturday	14%
Sunday	6%

As shown in **Table 5-11**, the highest percentage of bicycle-related collisions (23%) occurred on Wednesdays, with the second highest percentage (19%) on Thursdays.

5.3 Recommended Bikeways

The proposed bikeway network, when completed, will include over 50 miles of bicycle facilities to increase connectivity within Monterey Park and to the surrounding communities. The proposed bikeway network has been developed to create a comprehensive, safe, and logical network.

Recommendations for bikeways within the City are subject to a variety of factors that affect the schedule and final implementation:

- Recommendations have been developed based on technical review and public input, however, the recommendations are conceptual and further feasibility review may be needed to address physical, community, and financial constraints.
- While a prioritized list is provided in the Implementation section (Section 5.5), projects may be implemented sooner based on coordination with other City projects or funding opportunities.
- Funding for the bikeway recommendations is discussed further in the Implementation section, and suggestions are provided to the City to seek funding sources to minimize the effect on the City General Fund for implementation.
- The City may develop further criteria and standards for use of enhanced bicycle treatments such as sharrows, green conflict zone striping, bike lane buffers, bicycle boulevard elements, etc. The City will explore the possibility of providing enhanced Class II or Class III facilities anywhere Class II or III facilities are proposed.

Table 5-12 summarizes the bikeway recommendations and total mileage by category. **Figure 5-10** shows the recommended bikeway network, including potential enhanced Class II and Class III facilities.

Table 5-12 Recommended Bikeway Network

Facility Type	Existing Bikeways (Miles)	Proposed Bikeways (Miles)	Total Bikeways (Miles)
Class I Shared-Use Path	0.0	0.7	0.7
Class II Bike Lane	0.7	17.3	18.0
Class III Bike Route	0.0	34.7	34.7
Total	0.7	52.7	53.4

As shown in **Table 5-12**, when accounting for existing and proposed bikeways, bikeways identified in this Plan total 53.4 miles.

Figure 5-10 *Monterey Park Recommended Bikeway Network*

5.3.1 Class I Shared-Use Paths

Class I off-street shared-use paths are often desired by casual bicycle riders, as well as bicycle riders concerned about interacting with vehicular traffic. A network of off-street shared-use paths provides greater opportunities for connectivity to destinations throughout the community, so recommendations have been developed to improve the network within the City given notable property and right-of-way constraints. The recommendation provided for a shared-use path may require coordination with other agencies such as the County of Los Angeles and Southern California Edison.

Where there is not sufficient space or right-of-way for a Class I bicycle facility, buffered or physically protected Class II bike lanes can provide bicycle riders with a more comfortable level of separation from motor vehicle traffic and parked vehicles. The subsequent section discusses Class II bikeway recommendations.

Table 5-13 identifies the proposed Class I shared-use path for the City of Monterey Park bikeways network.

Table 5-13 *Proposed Class I Shared-Use Path*

Roadway	From	To	Length (Miles)
Utility Right-of-Way	Isabella Avenue	Floral Drive	0.7
		Total Proposed Class I Shared-Use Path	**0.7**

As shown in **Table 5-13**, a 0.7 mile Class I shared-use path is recommended in this Plan along a utility corridor right-of-way between Hendricks Avenue and Findlay Avenue.

5.3.2 Class II Bike Lanes

Many commuters and recreational bicycle riders may prefer bike lanes due to their more direct routing. This report recommends the city improve locations where existing Class II bike lanes may have limited functionality due to potential "dooring" issues adjacent to parked cars, or locations where gutter pans and drainage grates effectively narrow the width of the bike lane. In some locations where wide Class II bike lanes are currently provided, modification of striping to provide a buffer between on-street parking and/or vehicular traffic is recommended. At other locations with minimal crossings, protected bike lanes may be recommended. The use of buffered or protected bike lanes will be considered on a case-by-case basis through the design of the facility.

Figure 5-11 illustrates how Pomona Boulevard (between Garfield Avenue and Wilcox Avenue) might look with a paint-buffered Class II bike lane installed in place of an existing motor vehicle travel lane. **Figure 5-12** illustrates the existing and alternative street cross-sections for this segment of Pomona Boulevard.

***Figure 5-11** Before/After Depiction of Potential Buffered Bike Lane on Pomona Boulevard*

(Existing)

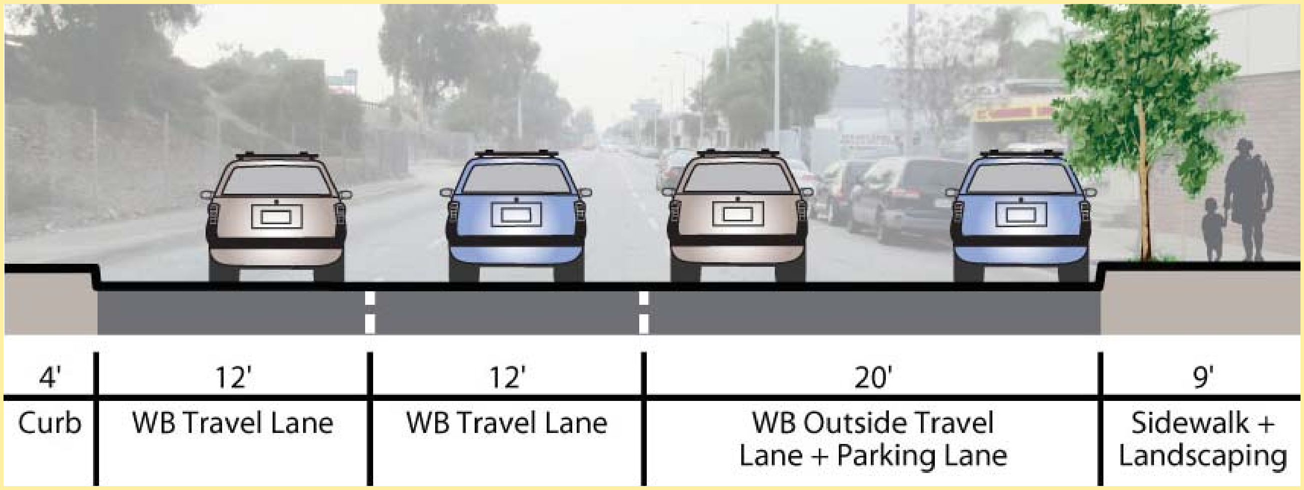
(Proposed)

***Figure 5-12** Before/After Depiction of Potential Two-Way Cycle Track on Pomona Boulevard*

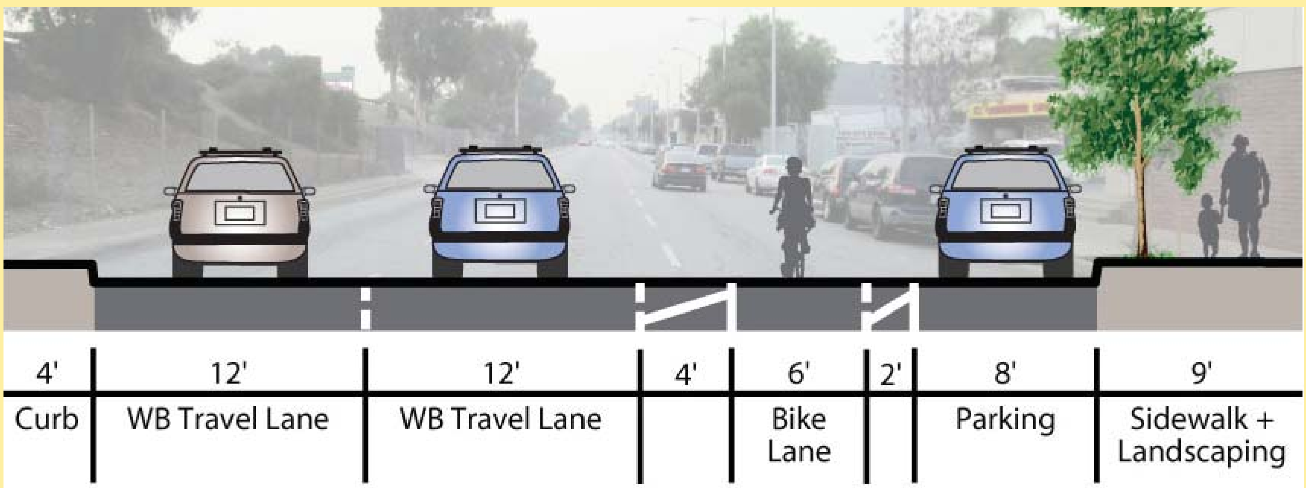
Existing

Proposed

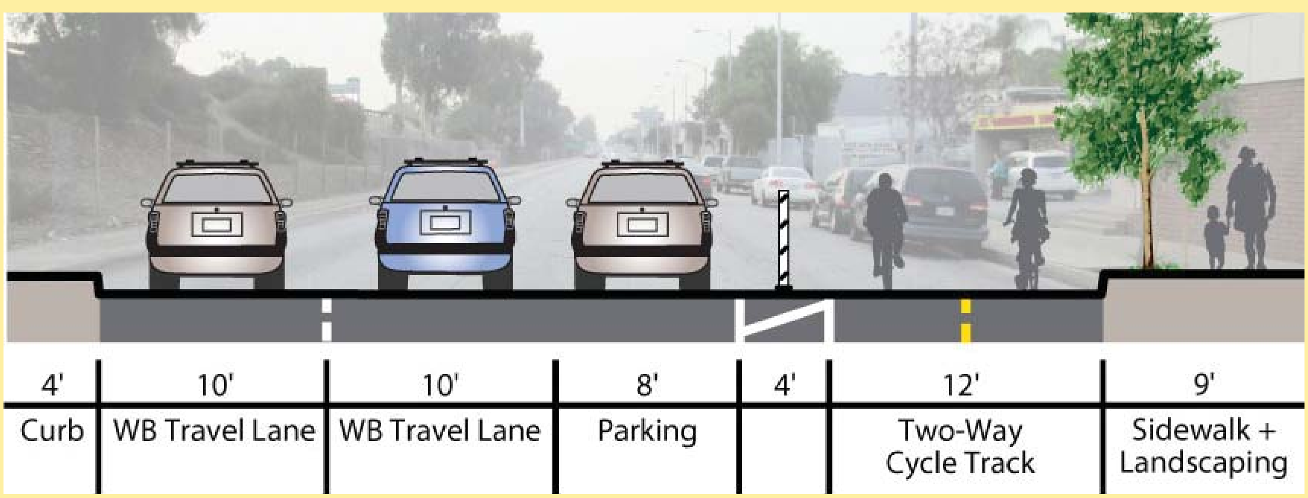
Figure 5-12 Existing & Alternative Street Cross-Sections for Pomona Boulevard



Existing Street Cross-Section



Alternative 1: Buffered Bike Lane



Alternative 2: Two-Way Cycle Track

Table 5-14 identifies the proposed Class II bike lanes for the City of Monterey Park bikeways network.

Table 5-14 Proposed Class II Bike Lanes

Roadway	From	To	Length (Miles)
1st Street	Vancouver Avenue	Collegian Avenue	0.5
Alhambra Avenue	Newmark Avenue	Graves Avenue	0.3
Atlas Avenue	Saturn Street	Potrero Grande Drive	0.1
Avenida Cesar Chavez	Vancouver Avenue	Atlantic Boulevard	0.7
Casuda Canyon Drive	Corporate Center Drive	Garvey Avenue	0.9
Corporate Center Drive	Ramona Boulevard	Floral Drive	1.2
Floral Drive	Ford Boulevard	Monterey Pass Road	0.4
Floral Drive	Vancouver Avenue	Collegian Avenue	0.8
Fremont Avenue	Garvey Avenue	Monterey Pass Road	0.1
Garfield Avenue	Graves Avenue	Riggin Street	1.3
Garvey Avenue	Casuda Canyon Drive	Atlantic Boulevard	1.2
Gerhart Street	Riggin Street	Pomona Boulevard	0.2
Monterey Pass Road	Garvey Avenue	Floral Drive	1.5
Monterey Pass Road	Garvey Avenue	Fremont Avenue	0.4
New Avenue	I-10 Freeway	Garvey Avenue	0.6
New Avenue	Garvey Avenue	Graves Avenue	0.5
Orange Avenue	Graves Avenue	Saturn Street	1.2
Pomona Boulevard	Sadler Avenue	Westbound SR-60 Off-Ramp	1.5
Potrero Grande Drive	Westbound SR-60 Off-Ramp	Arroyo Drive	1.5
Ramona Avenue	Garvey Avenue	Garfield Avenue	0.5
Ramona Boulevard	City Limit (West of Ameron Way)	City Limit (North of Luminarias Way)	0.6
Riggin Street	Atlantic Boulevard	Ferdinand Avenue	0.7
Saturn Street	Atlas Avenue	Potrero Grande Drive	0.6
		Total Proposed Class II Bike Lanes	**17.3**

As shown in **Table 5-14**, a total of 17.3 miles of Class II bike lanes are recommended in this Plan.

5.3.3 Class III Bike Routes

Any street that is legal for bicycles is inherently a shared roadway in which bicycle riders and drivers share a lane of traffic, and a car cannot necessarily pass a bicycle rider in the same lane. To improve motorists' awareness of the presence of bicycle riders and to indicate good routes for bicycle riders, cities often post signs indicating that the road is a "Class III Bike Route," as well as painting shared roadway markings in the travel lane. Class III bike routes are often identified at locations where the available street width is not wide enough to accommodate an on-street bike lane (Class II facility).

Potential enhancements requested during community engagement activities include the use of shared lane markings (sharrows) and use of the "Bikes May Use Full Lane" signage (MUTCD R4-11) as seen in Image 20.

Another treatment for consideration is designation of bicycle boulevards for improved connectivity and wayfinding by bicycle riders that seek lower stress routes to travel. Bicycle boulevards are generally defined as low-volume, low-speed streets that have been optimized for bicycle travel using treatments such as traffic calming and traffic reduction, signage and pavement markings, and intersection crossing treatments. Class III bike routes will be considered for upgrading to bicycle boulevards on a case-by-case basis by City staff.

R4-11

Image 20- *Sign R4-11 "Bikes May Use Full Lane"*

Table 5-15 identifies the proposed Class III bike routes for the City of Monterey Park bikeways network.

Table 5-15 *Proposed Class III Bike Routes*

Roadway	From	To	Length (Miles)
Abajo Drive	Verde Vista Drive	Vagabond Drive	0.1
Ackley Street	Fulton Avenue	Arroyo Drive	0.9
Adobe Place	Atlantic Boulevard	Ynez Avenue	0.1
Arroyo Drive	Ackley Street	Potrero Grande Drive	0.3
Atlantic Boulevard	Hellman Avenue	Eastbound SR-60 Off-Ramp	2.8
Bleakwood Avenue	Floral Drive	Dorner Street	0.3
Brightwood Street	Monterey Pass Road	Grandridge Avenue	1.6
Cadiz Street	Crest Vista Drive	Ynez Avenue	0.5
Collegian Avenue	Floral Drive	1st Street	0.3
Coral View Street	South Garfield Avenue	Fulton Avenue	0.6
Crest Vista Drive	Cadiz Street	Floral Drive	1.1
Dorner Drive	Woods Avenue	Bleakwood Avenue	0.1
East Markland Drive	Fulton Avenue	Potrero Grande Drive	0.2
El Mercado Avenue	Atlantic Boulevard	Cadiz Street	0.5
El Portal Place	De La Fuente Street	El Mercado Avenue	0.3
El Repetto Drive	Atlantic Boulevard	Wilcox Avenue	0.9
Elmgate Street	Almora Street	Wilcox Avenue	0.6
Emerson Avenue	Atlantic Boulevard	City Limit (East of New Avenue)	1.6
Findlay Avenue	Almora Street	Pomona Boulevard	0.5
Floral Drive	I-710 Freeway	Ford Boulevard	0.1
Floral Drive	Monterey Pass Road	Vancouver Avenue	0.3
Floral Drive	Collegian Avenue	Garfield Avenue	0.9

Table 5-15 Proposed Class III Bike Routes (continued)

Roadway	From	To	Length (Miles)
Fulton Avenue	Wilcox Avenue	Pomona Boulevard	1.3
Garfield Avenue	Riggin Street	Pomona Boulevard	0.2
Garfield Avenue	Hellman Avenue	Graves Avenue	1.1
Garvey Avenue	Atlantic Boulevard	Dequine Avenue	1.6
Gerhart Street	Hammel Street	Riggin Street	0.1
Grandridge Avenue	Garfield Avenue	Floral Drive	1.4
Graves Avenue	South Garfield Avenue	New Avenue	1.0
Harding Avenue	Atlantic Boulevard	Ramona Avenue	0.5
Hellman Avenue	Hathaway Avenue	New Avenue	1.6
Hillside Street	Ridgecrest Street	Floral Drive	0.5
Kempton Avenue	South Lincoln Avenue	Coral View Drive	0.8
McPherrin Avenue	Hellman Avenue	Harding Avenue	0.9
Mooney Drive	Kempton Avenue	Sefton Avenue	0.3
Newmark Avenue	Atlantic Boulevard	New Avenue	1.5
Orange Avenue	Hellman Avenue	Graves Avenue	1.0
Ridgecrest Street	Crest Vista Drive	Floral Drive	1.6
Riggin Street	Ferdinand Avenue	Fulton Avenue	0.8
South Lincoln Avenue	Graves Avenue	Kempton Avenue	0.1
Sefton Avenue	Graves Avenue	Mooney Drive	0.1
Vagabond Drive	Abajo Drive	Ridgecrest Street	0.4
Verde Vista Drive	Casuda Canyon Drive	Abajo Drive	0.4
Wilcox Avenue	Kempton Avenue	Pomona Boulevard	1.4
Woods Avenue	Dorner Drive	City Limit (South of SR-60)	0.2
Ynez Avenue/Park Avenue	McPherrin Avenue	Atlantic Boulevard	1.3
		Total Proposed Class III Bike Routes	**34.7**

As shown in **Table 5-15**, a total of 34.7 miles of Class III bike routes are recommended.

5.3.4 End-of-Trip Bicycle Facilities

Support facilities and connections to other modes of transportation are essential components of a bicycle system because they enhance safety and convenience for bicycle riders at the end of every trip. With nearly all utilitarian and many recreational bike trips, bicycle riders 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.

Bicycle parking can be categorized into short-term and long-term parking. Bicycle racks are the preferred device for short-term bike parking. These racks serve people who leave their bicycles for relatively short periods of time, typically for shopping or errands, eating or recreation. Bicycle racks provide a high level of convenience and moderate level of security. Long-term bike parking includes bike lockers and bike rooms and serves people who intend to leave their bicycles for longer periods of time and are typically found in multifamily residential buildings and commercial buildings. These facilities provide a high level of security but are less convenient than bicycle racks.

Recommended bicycle parking standards are presented in **Appendix G**. In addition, **Appendix H** presents a comprehensive bicycle parking study for Monterey Park and the other four regional bike plan partner cities.

Short-Term Bicycle Parking

This Plan recommends the City adopt the short-term bicycle rack types shown in **Figure 5-13** as the standard short-term parking.

***Figure 5-13** Types of Bicycle Racks*

U-Rack *Post and Loop* *Horseshoe* *Lightning Bolt™ or Varsity Rack™*

This Plan also recommends implementation of adequate short-term bicycle parking in the form of bicycle racks at major trip attractors, including commercial and civic activity centers and transit hubs. The City should prioritize the installation of bicycle parking throughout the City, with particular attention directed at the following locations:

- Monterey Park Library
- Monterey Park Civic Center
- Langley Senior Center
- Monterey Park Historical Museum
- East Los Angeles Community College (Campus & Transit Center)
- Garvey Avenue Commercial District
- South Garfield Commercial District
- City Parks
- Monterey Park Hospital
- Monterey Park Post Office
- Schools
- Atlas Employment Center
- Future Gold Line Station

Although the number of racks is determined by the space available, it is recommended that short-term bicycle parking capacity to accommodate eight bicycles is provided at each of the civic uses identified above, and short-term bicycle parking for commercial and office areas be determined based on intensity of development. The adequacy of short-term bicycle parking requires regular review to determine if additional capacity is needed.

Long-Term Bicycle Parking

Locations where visitors are expected to park their bicycles for longer than 2 hours should provide more secure, long-term bicycle parking options, such as bicycle lockers.

City staff may coordinate with public and private sector development opportunities to determine which projects and facilities should incorporate secure bicycle parking areas into their design. Secure bicycle parking areas that provide services, such as bicycle rentals and repair may be considered. The following are locations where long-term bicycle parking is recommended, and these are shown in **Figure 5-14**.

- Monterey Park Civic Center
- East Los Angeles Community College (Campus & Transit Center)
- Monterey Park Hospital
- Atlas Employment Center
- Future Gold Line Station
- Municipal Code Bicycle Parking

This Plan recommends the City amend its Municipal Code to include requirements on types of short-term and long-term bicycle parking facility designs. Bicycle rack designs should include racks 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 higher degree of security and support for the bicycle. This will more accurately address the bicycle demand at a given development. Additionally, space to maneuver the bicycle away from fixed objects and buildings is required to accommodate short-term bicycle parking needs.

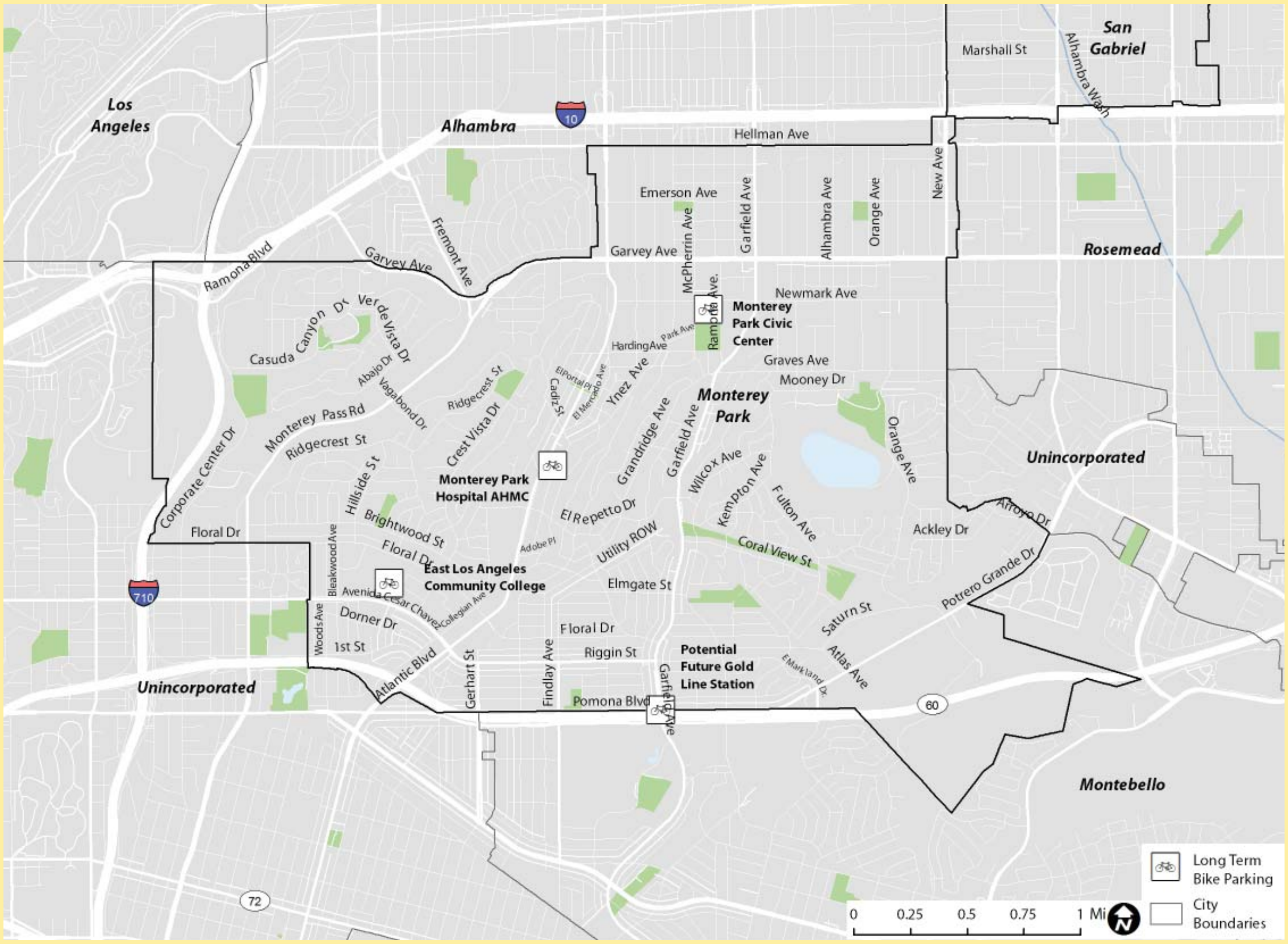
Key design aspects related to long-term bicycle parking includes:

- 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 storage facilities encourage commuters to travel by bicycle because they have a place to change and prepare before work or school. This Plan recommends the City Municipal Code be revised as needed to require all new mid-size and large employers, offices, and businesses to supply changing and storage facilities, such as by providing showers and locker space within the buildings or arranging agreements with nearby recreation centers to allow commuters to use their facilities.

As noted in the Recommended Programs section, the installation of bicycle maintenance hubs or stations at key high-traffic locations can accommodate bicycle riders for a variety of needs (such as minor repairs, inflating tires, filling water bottles, providing wayfinding information, and promotion of local businesses).

Figure 5-14 *Monterey Park Recommended Long-Term Bicycle Parking Facilities*



5.3.5 Recommended Programs

Improvements to and continued support of education, enforcement and evaluation programs have been proven to increase the number of bicycle trips and bicycling safety. These programs can ensure that more community members know about new and improved facilities, learn the skills they need to integrate bicycling into their activities, and receive positive reinforcement about integrating bicycling into their daily lives. In essence, the new and enhanced programs market the idea of bicycling to the community and encourage a shift to bicycling as a transportation option. This Plan supports the continuation and enhancement of the City's education, encouragement, and enforcement programs that are currently in place. The following additional programs are each designed to promote bicycling in the City, increase safety for those traveling by bicycle, and raise awareness of the benefits of bicycling. **Table 5-16** provides a summary of the recommended programs.

Further details on recommended programs are included in **Chapter 8**.

Table 5-16 Recommended Programs

Category	Program	Responsible Party	Funding Source	Schedule*
Education	Bicycle Safety and Share the Road Campaigns	Metro, SGVCOG, City	City; Grants	Near-Term
	Bicycle Resource Website	City	City	Near-Term
	Adult Bicycling Skills Classes	Bicycle Clubs, City, Metro	City; Grants	Near-Term
	Youth Bicycle Safety Education Classes	Bicycle Clubs, City	City; Grants	Near-Term
	Youth Bicycle Safety Clinics & Bicycle Campus	City, Safe Routes to School National Partnership	City; Grants	Middle-Term
	Senior Bicycle Education Classes	Bicycle Clubs, City	City; Grants	Middle-Term
Encouragement	Bike Valet at City Events	Special Event Promoter, City	City	Near-Term
	Youth and Family-Oriented Bicycle Rides	Advocacy Groups, City	Private	Near-Term
	"Be Seen" Bike Light Campaign	City	City; Grants	Near-Term
	Bike Festivals & Family Bike Fest/Family Biking Day	City, Advocacy Groups	City; Sponsorships	Near-Term
	Launch Party for New Bicycle Facilities	City	City	Near-Term
	Bicycle Friendly Community Designation	City	N/A	Near-Term
	Tourism Integration	City	City	Near-Term
	Commuter Incentive Programs	Metro, SGVCOG, City	City; Grants	Middle-Term
	Safe Routes to School Program	City, Advocacy Groups	Grants	Near-Term
	Bicycle Friendly Business Districts	Business Improvement District/ Association, City	City; Contributions from Business Associations	Middle-Term
	Bicycle Hubs	City	City; Grants	Middle-Term
	Media Outlets	City	In-Kind Contributions; Grants	Middle-Term
	Individualized Marketing Campaigns	Metro, SGVCOG, City	Grants	Middle-Term
	Mobility Coordinator	City	City; Grants	Long-Term
	Ride with the City	City	City	Near-Term
	Open Streets/Ciclovía Events	City	City; Grants	Long-Term
	Bicycle Sharing	Metro, SGVCOG, City	Grants; Sponsorships	Long-Term
Enforcement	Speed Radar Trailer/ Feedback Signs	City	Grants	Near-Term

Table 5-16 Recommended Programs (continued)

Category	Program	Responsible Party	Funding Source	Schedule*
	Bicycle Patrol Units	City	City	Near-Term
	Undercover Officer Enforcement	City	City	Near-Term
	Bicycle Theft Abatement Program	City	Grants	Middle-Term
Evaluation	Bicycle Counts and Survey Program	City	City; Grants	Near-Term
	Mapping Bikeway Investments	City	City	Near-Term
	Bicycle Report Card	City	City	Middle-Term
	Complete Streets Policy	City	City; Grants	Middle-Term
	Bicycle Parking Policy and Enforcement	City	City; Grants	Middle-Term
	Bike Counters/Bicycle Barometers	City	Grants	Middle-Term
*Near-term = 0-3 years, Middle-Term = 3-6 years, Long-Term = 6+ years.				

5.4 Project Costs

5.4.1 Implementation Costs

The following planning-level costs are typically utilized to estimate capital expenditures required for implementation of bikeways by classification:

- Class I Shared-Use Path: $1,000,000 per mile;
- Class II Bike Lane: $50,000 per mile; and
- Class III Bike Route: $20,000 per mile.

The planning level cost estimates do not include potential right-of-way acquisition, extensive grading, landscaping, or potential utility impacts. Cost estimate refinements still may occur based on further engineering review and are intended to provide an estimate for budgeting purposes.

Table 5-17 summarizes the total cost of implementation for the bikeways recommendations.

Table 5-17 Recommended Bikeway Network Cost Estimate

Facility Type	Proposed Bikeways (Miles)	Unit Cost ($/Mile)	Total Cost ($)
Class I Shared-Use Path	0.7	$1,000,000	$700,000
Class II Bike Lane	17.3	$50,000	$865,000
Class III Bike Route	34.7	$20,000	$694,000
Total	52.7	--	$2,259,000

As shown in **Table 5-17**, the total cost estimate for recommended bicycle infrastructure projects is $2,259,000, of which almost $865,000 is attributed to Class II bike lanes.

5.4.2 Maintenance Costs

Bicycle facilities require regular maintenance and repair. On-street bicycle facilities are maintained as part of the normal roadway maintenance program and extra emphasis should be placed on keeping bike lanes and roadway shoulders clear of debris and keeping vegetation overgrowth from blocking visibility. The cost of maintaining Class I facilities may be shared among various agencies or departments. The typical maintenance costs for the existing and proposed bikeway network are shown in **Table 5-18**, and the cost for maintaining the built out network is provided (accounting for existing bikeways within the City).

Table 5-18 Annual Bikeways Network Maintenance Cost Estimates

Facility Type	Total Length (Miles)	Unit Cost ($/Mile)	Annual Cost ($)	Typical Maintenance Items
Class I Shared-Use Path	0.7	$15,000	$10,500	Lighting and removal of debris and vegetation overgrowth
Class II Bike Lane	18.0	$5,000	$90,000	Repainting lane stripes and stencils, sign replacement as needed
Class III Bike Route	34.7	$5,000	$173,500	Sign replacement as needed
Total	**53.4**	**--**	**$274,000**	

As shown in **Table 5-18**, the annual cost for maintaining bikeways network assuming implementation of all paths, bike lanes, and bike routes is approximately $274,000. It should be noted this cost will be realized over time as implementation of the network is completed, and actual costs will be lower until the entire network is constructed.

5.5 Project Implementation

This chapter provides a strategy for implementing the capital project recommendations in this Plan. This implementation strategy and sequence is guided by a criteria-based ranking consistent with the goals of this Plan as well as the goals of other City, region, and State plans and policies.

A lengthy list of recommendations has been provided in this Plan, and ranking allows staff to prioritize the projects to advance to implementation. A variety of variables will influence the implementation including the availability of funding, engineering analysis, and support from community stakeholders and representatives.

Many signing and striping projects can be completed by the City Department of Public Works and are exempt from CEQA requirements. Such projects can be implemented using City or grant funds with approval by the City Management and/or City Council, if required due to the visibility or importance of the project. More complex projects with greater associated impacts typically include the following steps to advance to implementation:

1. Preparation of a Feasibility Study involving a conceptual design (with consideration of possible alternatives and environmental issues) and cost estimate for individual projects as needed.
2. Secure funding and any applicable environmental approvals.
3. Completion of final plans, specifications and estimates, advertising for bids, receipt of bids and award of contract(s).
4. Approval of the project by the City Council.
5. Construction of Project.

5.5.1 Prioritization Criteria

The intent of ranking projects is to create a prioritized list of bicycle projects for implementation. As projects are implemented, lower ranked projects move up the list. The project list and individual projects outlined in this Plan are flexible concepts that serve as a guideline. The ranked project list, and perhaps the overall system and segments themselves, may change over time as a result of changing bicycling patterns, land use patterns, implementation constraints and opportunities and the development of other transportation system facilities.

Projects may be implemented out of scoring order as opportunities arise. Opportunities may include grant availability, new development projects, capital improvement projects, or roadway repaving. The City can review the project list and project ranking at regular intervals to ensure it reflects the most current priorities, needs, and opportunities for implementing the bicycle network in a logical and efficient manner.

Each ranking criterion contains information about a facility and its ability to address an existing or future need in the San Gabriel Valley. The resulting project ranking determines each project's relative importance in funding and scheduled construction.

The following criteria are used to evaluate each proposed bicycle facility, its ability to address demand and deficiencies in the existing bicycle network and its ease of implementation. The criteria are organized into "utility" and "implementation" prioritization factors.

Utility Prioritization Factors

Utility criteria include conditions of bicycle facilities that enhance the bicycle network. Each criterion is discussed below.

Bicycle-Related Collisions

Bicycle facilities have the ability to increase safety by reducing potential conflicts between bicycle riders and motorists, which often result in collisions. Proposed facilities that are located on roadways with past bicycle-automobile collisions are important to the partner cities.

Public Input

The Project Team solicited public input through a series of booths at local events, jurisdiction-wide workshops, community street audits, a web-based feedback portal, monthly polls and an opinion survey. Facilities that community members identified as desirable for future bicycle facilities are of priority to the network because they address the needs of the public.

Gap Closure

Gaps in the bicycle network come in a variety of forms, ranging from a "missing link" on a roadway to larger geographic areas without bicycle facilities. Gaps in the bikeway network discourage bicycle use because they limit access to key destinations and land uses. Facilities that fill a gap in the existing and proposed bicycle network are of high priority.

Connectivity to Existing Facilities

Proposed bikeways that connect to existing bicycle facilities in the partner cities and to adjacent jurisdictions' bikeways increase the convenience of bicycle travel. Proposed facilities that fit this criterion are of high importance to the cities.

Connectivity to Regional Facilities

Linkage to existing and future regional bikeways in the San Gabriel Valley will enhance future connectivity between the partner cities and surrounding communities. For the purposes of this evaluation, linkage to the following facility types would be identified as regional connections:

- Existing/Planned off-street trails along waterways, utility corridors, etc.
- Existing/Planned on-street bikeways that continuously span across two or more jurisdictions

Connectivity to Activity Centers

Improved linkage to key employment, recreational, commercial and civic destinations within the community can increase bicycling activity and reduce in-town vehicular travel for short-distance trips. These activity centers generate many trips which could be made by bicycle if the proper facilities were available. The following activity centers will be reviewed for improved access related to the recommended bikeway improvements:

- Major Employment & Commercial Areas
- Civic Centers
- Public Libraries
- Community Centers
- K-12 Public Schools
- East Los Angeles College
- Major Cultural Destinations, such as museums and interpretive centers
- Hospitals & Medical Centers
- Parks & Recreation Centers
- Commercial/retail business centers (shopping malls, downtown districts, retail complexes, etc.)

Connectivity to Multi-Modal Transportation Centers

Bicycle facilities that link to modes of public transportation increase the geographical distance bicycle riders are able to travel. Proposed bicycle facilities that connect to transit stops and centers improve bicycle riders' mobility and are therefore key pieces of the bicycle network. Priority ranking will be given to bikeways that connect to the following major transportation centers:

- Baldwin Park Metrolink Station
- El Monte Bus Station
- El Monte Metrolink Station
- East Los Angeles College Transit Center
- Proposed future Metro Gold Line stations

Implementation Prioritization Factors

Implementation criteria address the ease of implementing each proposed project. Each criterion is discussed below.

Permitting

Projects that can be implemented solely by the participating cities have higher readiness factors, whereas those that require permitting and approvals from other agencies governing roadways and land within the individual cities will score lower. Examples include collaboration with adjacent jurisdictions, approval by Caltrans, or permitting by the Los Angeles County Department of Public Works for projects utilizing local washes, creeks, storm channels, etc.

Project Cost

Projects that are less expensive do not require as much funding as other projects and are therefore easier to implement. Projects that cost less are of higher priority to the partner cities.

Parking Displacement

Installing safe, easily accessible and attractive bicycle facilities occasionally requires the displacement of on-street vehicular parking. Therefore, projects that do not require parking displacement are of increased importance.

5.5.2 Project Ranking

Table 5-19 shows how the criteria are weighted for project prioritization and ranking.

Table 5-19 Ranking Criteria and Weighting

Criteria	Score	Multiplier	Total	Description
Utility Prioritization Factors				
Bicycle-Related Collisions	2	3	6	Provides a bicycle facility on a roadway that experienced 3 or more bicycle-related collisions between 2007-2011
	1	3	3	Provides a bicycle facility on a roadway that experienced 1-2 bicycle-related collisions between 2007-2011
	0	3	0	Provides a bicycle facility on a roadway that did not experience any bicycle-related collisions between 2007-2011
Public Input	2	3	6	Roadway was identified by the public as desirable for a future facility multiple times
	1	3	3	Roadway was identified by the public as desirable for a future facility once
	0	3	0	Roadway was not identified by the public as desirable for a future facility
Gap Closure	2	3	6	Fills a network gap between two or more existing facilities
	1	3	3	Fills a network gap between an existing facility and a proposed facility
	0	3	0	Does not directly or indirectly fill a network gap
Connectivity: Existing	2	2	4	Provides direct access to an existing bicycle facility
	1	2	2	Provides secondary connectivity to an existing bicycle facility
	0	2	0	Does not directly or indirectly provide access to an existing bicycle facility
Connectivity: Regional	2	2	4	Provides direct access to a regional existing/proposed bicycle facility
	1	2	2	Provides secondary connectivity to a regional existing/ proposed bicycle facility
	0	2	0	Does not directly or indirectly provide access to a regional existing/proposed bicycle facility
Connectivity: Activity Centers	2	2	4	Provides access to more than 3 activity centers
	1	2	2	Provides access to 1-3 activity centers
	0	2	0	Does not provide access to an activity center
Connectivity: Multi-Modal	2	1	2	Provides direct access to a major Transportation Center
	1	1	1	Provides secondary connectivity to a major Transportation Center
	0	1	0	Does not directly or indirectly provide access to a major Transportation Center
Implementation Prioritization Factors				
Permitting	2	1	2	Does not require permitting from agency (other than the respective city)

Table 5-19 Ranking Criteria and Weighting (continued)

Criteria	Score	Multiplier	Total	Description
	1	1	1	Requires permitting or approval from 1 agency
	0	1	0	Requires permitting or approval from 2 or more agencies
Project Cost	2	1	2	Will cost less than $40,000 to implement
	1	1	1	Will cost between $40,001 and $200,000 to implement
	0	1	0	Will cost over $200,000 to implement
Parking Displacement	2	1	2	Does not require any parking removal
	1	1	1	Requires removal of some on-street parking stalls
	0	1	0	Requires removal of all on-street parking stalls

Each recommended project was evaluated based on the ranking criteria and scored to develop the prioritization tables. As shown in **Table 5-19**, the maximum potential score for a recommended project is 34 points.

Within the City of Monterey Park, a total of 71 bicycle facility projects were identified and grouped into the following three tiers by each projects prioritization score:

- Tier 1 (34-17 points): Tier 1 projects have the highest potential for addressing the City's goals for bicycle transportation and are intended for near-term project implementation. The highest score received by a project was 24 points. A total of 18 projects are listed in Tier 1 and are shown in **Table 5-20**.
- Tier 2 (16-13 points): Tier 2 projects are intended for mid-term implementation. A total of 18 projects are listed in Tier 2 and are shown in **Table 5-21**.
- Tier 3 (12-0 points): Tier 3 projects are not currently ready for implementation but are included as long-term potential bicycle-specific projects. A total of 35 projects are listed in Tier 3 and are shown in **Table 5-22**.

All of the projects are recommended for implementation over the next twenty (20) years. However, due to the unpredictability of funding sources, economic conditions, and community support, some projects, especially those that require right-of-way purchase or coordination with multiple jurisdictions, may not be completed within the next twenty years.

Table 5-20 Tier 1 Projects (Score of 34-17)

Facility Type	Location	Start	End	Bicycle-Related Collisions	Public Input	Gap Closure	Connectivity: Existing	Connectivity: Regional	Connectivity: Activity Centers	Connectivity: Multi-Modal	Permitting	Project Cost	Parking Displacement	Total Score (34 max)
III	Garvey Avenue	Atlantic Boulevard	Dequine Avenue	6	0	6	4	2	1	0	2	2	1	24
III	Garfield Avenue	Riggin Street	Pomona Boulevard	3	6	3	0	2	1	2	2	2	2	23
II	Alhambra Avenue	Newmark Avenue	Graves Avenue	3	3	3	4	2	1	0	2	2	2	22
III	Emerson Avenue	Atlantic Boulevard	City Limit (East of New Avenue)	6	0	3	4	2	1	0	2	2	2	22
III	Garfield Avenue	Hellman Avenue	Graves Avenue	3	6	3	0	2	1	1	2	2	2	22
III	Garfield Avenue	Hellman Avenue	Graves Avenue	3	6	3	0	2	1	1	2	2	2	22
III	Newmark Avenue	Atlantic Boulevard	New Avenue	6	0	3	4	2	1	0	2	2	2	22
II	Floral Drive	Ford Boulevard	Monterey Pass Road	6	6	0	0	2	0	0	2	2	2	20
II	Garvey Avenue	Casuda Canyon Drive	Atlantic Boulevard	3	6	6	0	2	0	0	2	1	0	20
II	Garfield Avenue	Graves Avenue	Riggin Street	3	6	3	0	2	1	1	2	1	0	19
III	Hellman Avenue	Hathaway Avenue	New Avenue	3	0	3	4	2	1	0	2	2	2	19
II	Floral Drive	Vancouver Avenue	Collegian Avenue	3	6	0	0	2	1	0	2	2	2	18
II	Ramona Avenue	Garvey Avenue	Garfield Avenue	3	6	0	0	2	1	0	2	2	2	18
III	Floral Drive	I-710 Freeway	Ford Boulevard	3	6	0	0	2	0	0	2	2	2	17
III	Floral Drive	Monterey Pass Road	Vancouver Avenue	3	6	0	0	2	0	0	2	2	2	17
III	Floral Drive	Collegian Avenue	Garfield Avenue	3	6	0	0	2	0	0	2	2	2	17
II	Monterey Pass Road	Garvey Avenue	Floral Drive	6	6	0	0	2	0	0	2	1	0	17
III	Riggin Street	Ferdinand Avenue	Fulton Avenue	3	6	0	0	2	0	0	2	2	2	17

Table 5-21 Tier 1 Projects (Score of 16-13)

Facility Type	Location	Start	End	Bicycle-Related Collisions	Public Input	Gap Closure	Connectivity: Existing	Connectivity: Regional	Connectivity: Activity Centers	Connectivity: Multi-Modal	Permitting	Project Cost	Parking Displacement	Total Score (34 max)
II	Avenida Cesar Chavez	Vancouver Avenue	Atlantic Boulevard	3	6	0	0	2	1	0	2	2	0	16
III	Graves Avenue	South Garfield Avenue	New Avenue	3	0	3	2	2	0	0	2	2	2	16
II	Pomona Boulevard	Sadler Avenue	Westbound SR-60 Off-Ramp	6	3	0	0	2	1	2	1	1	0	16
II	Riggin Street	Atlantic Boulevard	Ferdinand Avenue	3	6	0	0	2	1	0	2	2	0	16
I	Utility Right-of-Way	Isabella Avenue	Floral Drive	6	6	0	0	1	0	0	1	0	2	16
II	Gerhart Street	Riggin Street	Pomona Boulevard	6	0	0	0	2	0	1	2	2	2	15
III	Grandridge Avenue	Garfield Avenue	Floral Drive	6	0	0	0	2	1	0	2	2	2	15
III	McPherrin Avenue	Hellman Avenue	Harding Avenue	6	0	0	0	2	1	0	2	2	2	15
II	New Avenue	I-10 Freeway	Garvey Avenue	6	3	0	0	2	1	0	1	2	0	15
III	Orange Avenue	Hellman Avenue	Graves Avenue	3	0	3	0	2	1	0	2	2	2	15
II	1st Street	Vancouver Avenue	Collegian Avenue	3	3	0	0	1	1	0	2	2	2	14
III	Atlantic Boulevard	Hellman Avenue	Eastbound SR-60 Off-Ramp	6	0	0	0	2	1	1	1	1	2	14
II	New Avenue	Garvey Avenue	Graves Avenue	3	3	0	0	2	0	0	2	2	2	14
II	Orange Avenue	Graves Avenue	Saturn Street	0	3	3	0	2	1	0	2	1	2	14
II	Potrero Grande Drive	Westbound SR-60 Off-Ramp	Arroyo Drive	0	6	0	0	2	0	1	2	1	2	14
III	Bleakwood Avenue	Floral Drive	Dorner Street	6	0	0	0	1	0	0	2	2	2	13
III	Findlay Avenue	Almora Street	Pomona Boulevard	3	0	0	0	2	1	1	2	2	2	13
III	Wilcox Avenue	Kempton Avenue	Pomona Boulevard	3	0	0	0	2	1	1	2	2	2	13

Table 5-22 Tier 3 Projects (Score of 12 or less)

Facility Type	Location	Start	End	Bicycle-Related Collisions	Public Input	Gap Closure	Connectivity: Existing	Connectivity: Regional	Connectivity: Activity Centers	Connectivity: Multi-Modal	Permitting	Project Cost	Parking Displacement	Total Score (34 max)
II	Fremont Avenue	Garvey Avenue	Monterey Pass Road	0	6	0	0	2	0	0	2	2	0	12
II	Monterey Pass Road	Garvey Avenue	Fremont Avenue	0	6	0	0	2	0	0	2	2	0	12
II	Ramona Boulevard	City Limit (West of Ameron Way)	City Limit (North of Luminarias Way)	0	6	0	0	2	0	0	2	2	0	12
III	Arroyo Drive	Ackley Street	Potrero Grande Drive	3	0	0	0	2	0	0	2	2	2	11
II	Casuda Canyon Drive	Corporate Center Drive	Garvey Avenue	0	3	0	0	2	1	0	2	1	2	11
III	Fulton Avenue	Wilcox Avenue	Pomona Boulevard	3	0	0	0	2	0	0	2	2	2	11
III	Gerhart Street	Hammel Street	Riggin Street	3	0	0	0	1	0	0	2	2	2	10
III	Kempton Avenue	South Lincoln Avenue	Coral View Drive	3	0	0	0	1	0	0	2	2	2	10
III	Brightwood Street	Monterey Pass Road	Grandridge Avenue	0	0	0	0	2	1	0	2	2	2	9
III	Coral View Street	South Garfield Avenue	Fulton Avenue	0	0	0	0	2	1	0	2	2	2	9
III	East Markland Drive	Fulton Avenue	Potrero Grande Drive	0	0	0	0	2	0	1	2	2	2	9
III	El Portal Place	De La Fuente Street	El Mercado Avenue	0	0	0	0	2	1	0	2	2	2	9
III	Elmgate Street	Almora Street	Wilcox Avenue	0	0	0	0	2	1	0	2	2	2	9
III	Harding Avenue	Atlantic Boulevard	Ramona Avenue	0	0	0	0	2	1	0	2	2	2	9
II	Saturn Street	Atlas Avenue	Potrero Grande Drive	0	0	0	0	2	1	0	2	2	2	9
III	Woods Avenue	Dorner Drive	City Limit (South of SR-60)	3	0	0	0	0	0	0	2	2	2	9
III	Adobe Place	Atlantic Boulevard	Ynez Avenue	0	0	0	0	2	0	0	2	2	2	8
II	Atlas Avenue	Saturn Street	Potrero Grande Drive	0	0	0	0	2	0	0	2	2	2	8
III	Cadiz Street	Crest Vista Drive	Ynez Avenue	0	0	0	0	2	0	0	2	2	2	8
II	Corporate Center Drive	Ramona Boulevard	Floral Drive	0	0	0	0	2	1	0	2	1	2	8
III	Crest Vista Drive	Cadiz Street	Floral Drive	0	0	0	0	1	1	0	2	2	2	8
III	Dorner Drive	Woods Avenue	Bleakwood Avenue	0	0	0	0	1	1	0	2	2	2	8

Table 5-22 Tier 3 Projects (Score of 12 or less) (continued)

Facility Type	Location	Start	End	Bicycle-Related Collisions	Public Input	Gap Closure	Connectivity: Existing	Connectivity: Regional	Connectivity: Activity Centers	Connectivity: Multi-Modal	Permitting	Project Cost	Parking Displacement	Total Score (34 max)
III	El Mercado Avenue	Atlantic Boulevard	Cadiz Street	0	0	0	0	2	0	0	2	2	2	8
III	El Repetto Drive	Atlantic Boulevard	Wilcox Avenue	0	0	0	0	2	0	0	2	2	2	8
III	Hillside Street	Ridgecrest Street	Floral Drive	0	0	0	0	1	1	0	2	2	2	8
III	Ridgecrest Street	Crest Vista Drive	Floral Drive	0	0	0	0	1	1	0	2	2	2	8
III	Vagabond Drive	Abajo Drive	Ridgecrest Street	0	0	0	0	2	0	0	2	2	2	8
III	Verde Vista Drive	Casuda Canyon Drive	Abajo Drive	0	0	0	0	1	1	0	2	2	2	8
III	Ynez Avenue/ Park Avenue	McPherrin Avenue	Atlantic Boulevard	0	0	0	0	1	1	0	2	2	2	8
III	Abajo Drive	Verde Vista Drive	Vagabond Drive	0	0	0	0	1	0	0	2	2	2	7
III	Ackley Street	Fulton Avenue	Arroyo Drive	0	0	0	0	1	0	0	2	2	2	7
III	Collegian Avenue	Floral Drive	1st Street	0	0	0	0	1	0	0	2	2	2	7
III	Mooney Drive	Kempton Avenue	Sefton Avenue	0	0	0	0	0	1	0	2	2	2	7
III	South Lincoln Avenue	Graves Avenue	Kempton Avenue	0	0	0	0	1	0	0	2	2	2	7
III	Sefton Avenue	Graves Avenue	Mooney Drive	0	0	0	0	0	0	0	2	2	2	6

5.5.3 Implementation Strategies

The Bicycle Master Plan provides the long-term vision for the development of a citywide bicycle network that can be used by all residents for all types of trips. The following strategies, action items and measures of effectiveness are provided to guide the City toward the vision identified in the Plan.

Strategy 1: Strategically Pursue Infrastructure Projects

City staff can strategically pursue funding and implementation of infrastructure projects recommended in this Plan. Ideally, City staff will pursue capital improvements funding or grant funding for high-priority bicycle improvements first. If grant requirements or construction in conjunction with another roadway project make construction of a lower priority project possible, then the City might advance that project regardless of priority.

Action Item: On an annual basis the City can publish a public report documenting the status and ongoing actions for all bicycle infrastructure projects. This report may be combined with the prioritization review discussed below. The first update is recommended to occur in Fall 2015.

Strategy 2: Review Capital Improvement Program (CIP) Concurrence

The opportunity to implement projects concurrent with the CIP can reduce the burden of implementing bicycle facility projects, and improve the schedule for use regardless of priority ranking for each project.

Action Item: Annually evaluate the CIP for opportunities to implement recommended bicycle facility projects included within this Plan.

Strategy 3: General Plan Incorporation

Key policies, strategies and recommendations included in this Bicycle Master Plan can be incorporated into the General Plan Circulation Element during the next update. At the least, the Circulation Element update can incorporate the recommended bikeways network, add revisions to the roadway cross-sections showing dimensions for on-street bike lanes, and incorporate policies for public and private realm accommodation of bicycling activities. Additionally, roadways with excess vehicular capacity can be reviewed to modify travel lanes and provided on-street or protected bike lanes. The City can also develop engineering standards for NACTO-type bicycle treatments for ongoing use.

Action Item: Update the General Plan Circulation Element and incorporate key items from the Bicycle Master Plan.

Strategy 4: Review City Representative

Current work on bicycle facility projects at the City has been implemented by planning and engineering staff within multiple City Departments. The City may review the designated bikeways representative to determine if other staff within the City have availability or are suited to help secure funding or programmatic recommendations provided within this Plan.

Action Item: Designate a single point person at the City to focus on implementation of bikeway infrastructure and non-infrastructure projects.

Strategy 5: Regularly Revisit Project Prioritization

Projects have been prioritized based on safety, public input, transportation benefit, connectivity benefit, cost, and feasibility. It is recommended that the prioritized list be reviewed every fiscal year, with new projects added, completed projects removed, and the priorities revised as conditions change.

Action Item: Annual review and update of the bicycle master plan's recommended facilities list and programs schedule. Updates to the list can be shared with the public. The first update is recommended in Fall 2015.

Strategy 6: Update the Bicycle Master Plan

While this Plan is intended to guide bikeways planning in the City for the next 20 years, updates may be needed to address changes in priority and evaluation efforts. State funding has typically required updates to bicycle master plans every five years to establish funding opportunity for active transportation projects. Often, cities provide a compliance update within five years and a comprehensive update every ten years.

Action Item: Provide compliance update to the Bicycle Master Plan in five years, and a more comprehensive full update in ten years. Other elements of the Plan shall be reviewed and updated as needed.

Strategy 7: Collaborate with Caltrans

Caltrans manages and operates various freeways adjacent the city with interchange ramps and bridges that often are higher-stress locations for bicycle riders. This Plan includes bicycle facility recommendations that require regular coordination and collaboration with Caltrans.

Action Item: Collaborate with Caltrans to implement bicycle facility improvements on Caltrans-managed facilities, including innovative and conventional treatments using examples of similar facilities within the City, County, and State as precedents.

Strategy 8: Establish Measures of Effectiveness

Measures of effectiveness (MOEs, also known as targets or indicators) are used as a quantitative way to measure the City's progress toward implementing the Bicycle Master Plan. Well-crafted MOEs track progress toward meeting an agreed-upon goal within an established timeframe. **Table 5-23** describes several MOEs recommended for use by the City to track key achievements.

As new baseline information is discovered as conditions change, and as the City implements the Bicycle Master Plan, the MOEs should be reevaluated, revised and updated.

An example evaluation or MOEs ("indicators") report is produced by the City of Santa Monica which evaluates sustainability indicators as well as non-motorized program measures. The Santa Monica Sustainable City Report Card is provided online at the following location

http://www.smgov.net/Departments/OSE/categories/sustainability.aspx

Table 5-23 Recommended Measures of Effectiveness

Measure	Benchmark	Target
Bicycle journey to work mode share	0.4% bicycle mode split per Census	Increase bicycle mode split to 0.8% by 2035.
Bicycle Facility Improvements Implementation	Approximately 1 mile of bikeways	Increase bikeways network by implementing bicycle facility recommendations.
Bicycle counts	Bike counts included in this Plan	Annually collect bike counts at baseline locations to document ridership volumes.
Bicyclist trends/behaviors	Bike counts included in this Plan	Increase bicycling by women 10% per year up to 50% of total bicycling population, focus efforts to reduce wrong way bicycling where reported as cause in bike incidents.
Public attitudes about bicycling	Bike survey provides indication of challenging locations and current perspectives	Increase in positive attitudes about bicycling within community.
Bicycle boulevard demonstration project	Not applicable	Develop demonstration bicycle boulevard on selected corridor and evaluate for success in usage and connectivity.
Bicycle Friendly Community Designation	Not currently designated by the League of American Bicyclists	Secure League of American Bicyclists Bronze Award by 2016 and Silver Award by 2021.
Grant funding	Baseline to be established	Attain an annual average funding of $200,000 or more for infrastructure and non-infrastructure projects.

5.5.4 Potential Funding Sources

Potential funding sources for implementation of recommended bicycle facility infrastructure projects and programs has been identified for further consideration. The funding sources listed are typically competitive in nature, so the City will evaluate the applicability of potential projects and likely scoring before developing a grant application. Additionally, the City will determine the availability of staff to prepare grant applications and to administer the grant. Preparation of grant applications can often be a time-intensive effort, and receipt of funding is not guaranteed due to increasing competition for active transportation projects. Resource demands should be considered by the City given the potential benefit of each grant opportunity.

We recommend the City identify potential projects that would fit well with the following funding sources and initiate continue discussions with key agencies and stakeholders; funding sources are identified with the date of the next anticipated call listed in parentheses:

- Caltrans Active Transportation Program (Late 2014 or Early 2015)
- Metro Call for Projects (2015)
- Metro ExpressLanes Net Toll Revenues (Date Unknown)
- SCAG Sustainability Program (Future date subject to SCAG Regional Council action)
- Land and Water Conservation Fund (2015)

Preliminary consideration of applicability and discussion with stakeholders can help verify that a potential opportunity is well-suited for the grant source, and can help position the City to document a history of collaboration and provide a venue to secure letters of support for incorporation into the grant application. Refer to **Chapter 9** for a listing of additional funding sources that may be considered for funding bicycle facility improvements and programs.

5.6 Active Transportation Program (ATP) Compliance

The Active Transportation Program (ATP) is an annual statewide discretionary grant program that funds bicycle and pedestrian projects through the California Department of Transportation (Caltrans). Available as grants to local jurisdictions, the ATP emphasizes projects and programs that enhance bicycling for transportation purposes. In order for the City to qualify for ATP funding in future cycles, the Bicycle Master Plan must contain specific elements. **Appendix I** displays the requisite ATP components and their location within this Plan.

6 San Gabriel

This chapter presents the City of San Gabriel's portion of the San Gabriel Valley Regional Bicycle Master Plan. The chapter is organized into the following sections:

- Existing Conditions
- Needs Analysis
- Recommended Bikeways
- Project Costs
- Project Implementation
- Active Transportation Program (ATP) Compliance

6.1 Existing Conditions

The City of San Gabriel is located in the western part of the San Gabriel Valley. There are approximately 39,700 residents with 9,580 people per square mile and a total area of 4.15 square miles. San Gabriel is bordered by Alhambra to the west, San Marino to the north, Rosemead, Temple City and Rosemead to the east, and the Interstate 10 (I-10) freeway along the southern boundary. Bicyclists and others are drawn to the Mission District for cultural activities and various commercial and recreational destinations throughout the City.

Image 21- *San Gabriel Grapevine Arbor*

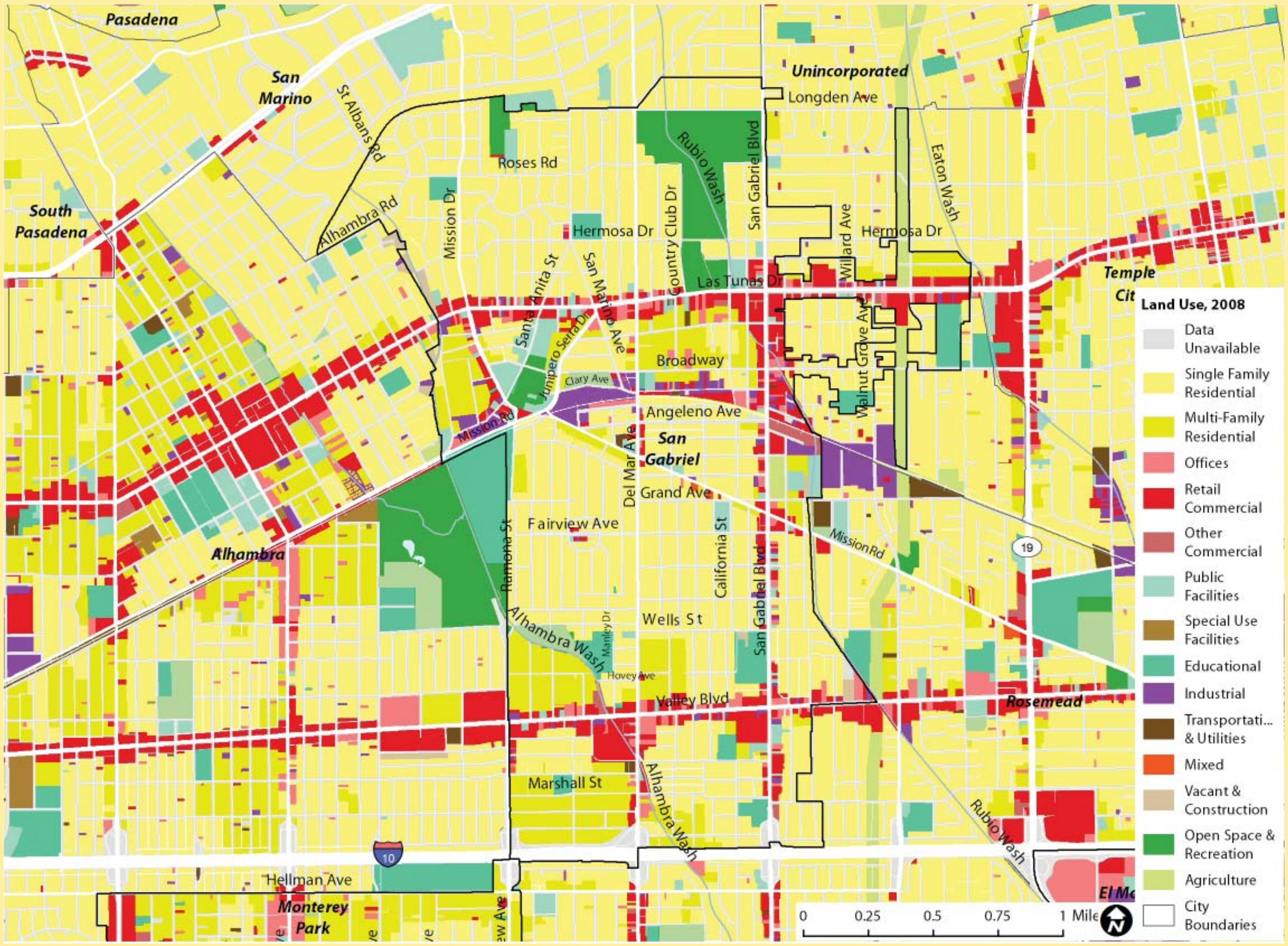
Image 22- *San Gabriel Mission Playhouse*

The purpose of this section is to explore existing bicycling conditions in San Gabriel. With a bicycle mode share of 0.9 percent (for commute trips), San Gabriel has somewhat higher bicycle use than neighboring communities and a slightly lower rate than the City of Los Angeles and State of California (both at 1.0 percent). An estimated 2,669 bicycle trips are made daily in San Gabriel.

6.1.1 Land Use

Figure 6-1 presents San Gabriel's land use map. Residential land uses dominate the City, with single family homes accounting for fifty-four percent (54%) of land area and multi-family residential buildings occupying fourteen percent (14%). Commercial, mixed-use, and office designations account for a total of approximately twelve percent (12%) of the city's land, while industrial uses make up twelve percent (12%). Commercial uses are focused along Las Tunas Drive, Valley Boulevard, and San Gabriel Boulevard. Parks, open space, and recreational facilities account for nearly seven percent (7%) of land. This land use pattern makes San Gabriel a place where people can both live and work.

***Figure 6-1** San Gabriel Land Use Map*



6.1.2 Relevant Plans and Policies

This section discusses various City of San Gabriel plans and policies and their relevance to this Plan.

"Greening the Code" – Draft Code Amendments (2013)

The City of San Gabriel "Greening the Code" was funded through a grant from the Southern California Association of Governments (SCAG). It evaluates best practices and proposes zoning provisions to promote environmentally sustainable development.

It proposes that amendments should be made to the zoning code detailing the number of parking spaces required, as well as location and design standards for both short- and long-term bike parking. Shared-use paths will also be established as part of any new developments that are situated along flood control channels. The following code refinements are included in the document specific to bicycle travel and accommodation:

153.162 Special Conditions for Specific Land Uses

- Community gardens
  - Individual structures including bike racks may not exceed 120 square feet in size or 12 feet in height. Combined area of all structures shall not exceed 15 percent of the garden area.

153.180 Areas to be Landscaped

- Flood Control Channels
  - Greening the Code will require a 15-foot landscaped buffer planted with drought tolerant plants, including a 12-foot wide service road and bicycle path, along the outer edge of flood channel easements for all new developments.

153.220 Number of Parking Spaces Required

- Parking Reduction

- Motorcycle or bicycle parking may substitute for up to five percent of required automobile parking. Bicycle parking spaces shall comply with Section 153.229

153.229 Bicycle Parking

- The new Code contains bicycle parking requirements for all new development and any changes in use, expansion of a use, or expansion of floor area which create an increase of 10 percent or more in the number of required parking spaces.
- Both short- and long-term bicycle parking facilities may be required, depending on the specific characteristics of the project. The Code provides guidance on the number of bicycle parking spaces required, location, security, size and accessibility.

For more information: http://www.sangabrielcity.com/index.aspx?nid=777

San Gabriel Parks and Recreation Master Plan (2009)

In 2009, the City of San Gabriel worked with students from the University of Southern California School of Public Policy on a parks master plan. Though the plan was not adopted by the City Council, it was reviewed by the Planning and Parks & Recreation Commissions. The City will use these documents as the basis for a master plan that will be formally adopted by the Council. Both the background report and the master plan provide valuable information about improving and expanding the City's parks and recreational systems and establishing a bicycle network to provide additional connectivity.

San Gabriel Parks and Recreation Master Plan – Background Report

The San Gabriel Parks and Recreation Master Plan Background Report provides an assessment of demographic composition, an inventory of existing parks and recreation facilities and programs, and highlights of improvements to existing conditions. The background report provides an inventory of current bikeways and trip-end facilities within the City of San Gabriel:

Existing Bikeway:

- Junipero Serra Drive is the only existing bicycle facility in the City. It is a Class III bicycle route with several D11-1 "Bicycle Route" signs. It is a fairly wide street that ranges from 48' to 64'. The roadway is narrower at the 4-way stop on Broadway. The curvilinear nature of the road and on-street parallel parking pose hazards to bicyclists.
- *Bicycle racks exist at the following locations:*
- Bank of America (Las Tunas Drive and Del Mar Avenue)
- 546 South Mission Road
- Los Angeles County Public Library, San Gabriel Branch at Del Mar Avenue and Angeleno Avenue
- Vincent Lugo Park
- Smith Park
- Plaza Park
- All schools

The background report notes that existing bicycle parking facilities are not adequate for San Gabriel's needs, and it identifies the following locations for consideration of new bikeways:

- Santa Anita Avenue Street (Broadway to Hermosa Drive): Class III
- Del Mar Avenue (Hermosa Drive to I-10 Freeway): Class II
- Fairview Avenue (Ramona Street to San Gabriel Boulevard): Class II
- Wells Street (Ramona Street to San Gabriel Boulevard): Class III
- San Marino Avenue could be a potential Class III due to low Average Daily Traffic volumes that range between 2,000 and 9,000, depending on the street segment.

The background report also identifies trail opportunities to help improve connectivity for bicyclists as well as other modes of active transportation:

- The Alhambra Wash along Vincent Lugo Park has opportunity for development due to no slope, a City-owned portion of the easement, and no impediment by adjacent structures. If the easement terminated at Hovey Avenue, improved connections would be made to McKinley Elementary School, Ramona Street, and Del Mar Avenue. The following constraints were identified related to a potential trail along the Alhambra Wash:
  - Fluctuating easement widths
  - Acquiring property to expand easement
- A Segregated Shared-Use Path along the Union Pacific Railroad Corridor would connect the eastern and western portions of the City. Access would be available to Mission District, Plaza Park, and Grapevine Park. The following constraints were identified related to a potential trail adjacent to the Union Pacific Railroad Corridor:

- Cost of construction
- Negotiation with Union Pacific to dedicate or sell a portion of the right-of-way
- Health and safety hazards relating to rail pollution, noise, and debris ricochet

San Gabriel Parks and Recreation Master Plan – Final Report

The San Gabriel Parks and Recreation Master Plan is a guide to improving and expanding the City's parks and recreational system. It seeks to increase neighborhood access and connectivity to parks and recreation by improving walkability, enhancing transit service, and establishing a bicycle network. For example, the plan has identified the Edison Utility Corridor as a major opportunity to create a trail. The Parks and Recreation Master Plan includes the following policies, recommendations and phasing related to bicycle travel and accommodation within the City:

- Policy 1.6.1: Construct a network of bicycle facilities comprised of collector streets, neighborhood streets, and trails that provide connections to secondary arterial anchors; the collector and neighborhood streets will act as access points to parks, recreational facilities, and schools.
- Policy 1.6.2: Install bicycle parking throughout the City to ensure the safety of personal property.
- Policy 1.6.3: Increase the visibility of bicyclists on streets.
- Policy 1.6.4: Create a bike sharing program for city employees.
- Policy 1.6.5: Initiate a relationship with surrounding cities to develop a regional bicycle and pedestrian trail system.

Recommendations for Future Programming

- Create a student bicycle parking design competition.
- Create a program to provide bike parking to local businesses.
- Provide 3 'pilot' bicycles for a bike sharing program to assess need for expansion.
- Identify trail opportunities along the Washes and the Alameda Corridor East.

Phasing

- Phase 1 (2010 -2015): implementation of one (1) bikeway
- Phase 2 (2015 -2020): implementation of three (3) more bikeways
- Phase 3 (2025-2030): completion of the City's bikeway network

Valley Vision: Valley Boulevard Neighborhoods Sustainability Plan (2006)

The Valley Boulevard Neighborhoods Sustainability Plan (VBNSP) focuses on reducing dependence on fossil fuels, chemicals, and activities that harm life-sustaining ecosystems, and on meeting the hierarchy of present and future human needs fairly and efficiently. It is applicable to neighborhoods adjacent to Valley Boulevard. The study area, shown in **Figure 6-2** is bounded by the Valley Boulevard commercial corridor, the City of Alhambra on the west, the City of Rosemead on the east, the north-south arterials of New Avenue, Del Mar Avenue, and San Gabriel Boulevard, and it includes the residential neighborhoods south of Valley Boulevard to the I-10 Freeway and north of Valley Boulevard to Alhambra Wash.

The plan also recommends designing open space, trails and landscaped areas to capture storm water runoff and allow it to percolate into the groundwater basin, to the extent feasible. The VBNSP includes the following bicycle improvement recommendations:

- Greenway/trail along Alhambra Wash to connect neighborhoods.
- Marked bicycle routes in residential areas that connect to commercial and community areas.
- Develop enhanced bicycle-oriented signage.
- Bicycle parking requirements for multi-family, commercial, and mixed-use projects.

For more information: http://www.sangabrielcity.com/index.aspx?NID=406

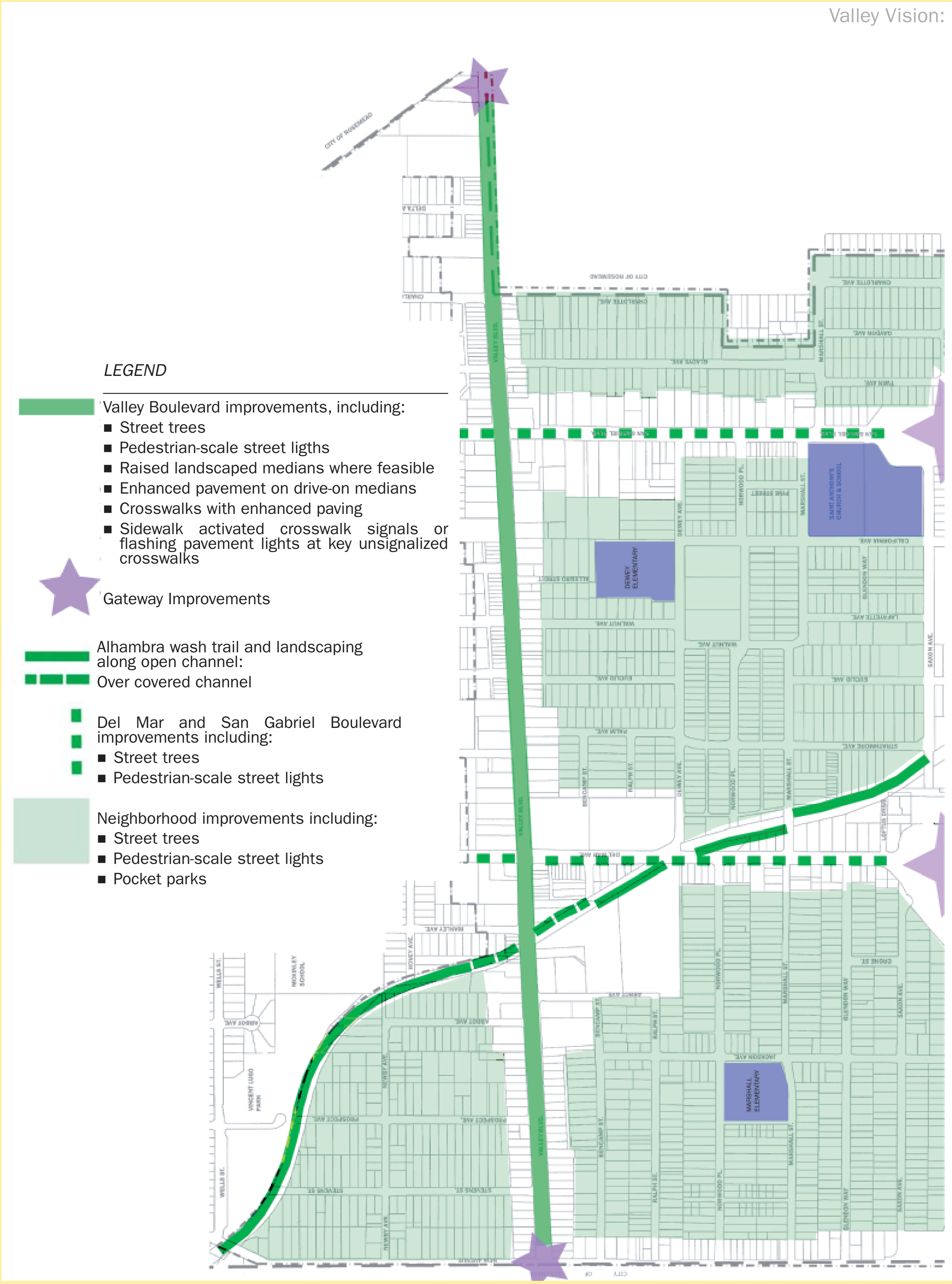
City of San Gabriel General Plan (2004)

The City of San Gabriel General Plan was updated in 2004 and addresses quality of life for San Gabriel residents, with a goal of becoming a more "green" and sustainable community. The City does not currently have either a Bicycle or Pedestrian Master Plan. Three of the General Plan's chapters include policies related to bicycle infrastructure and improvements:

Mobility

- Target 3.5.1: Expand the citywide bikeway system.
- Target 3.5.3: Promote the development of a regional bikeway system through cooperation with the State, County, and neighboring communities.

***Figure 6-2** Valley Boulevard Neighborhoods Streetscape/Landscape Conceptual Plan*



Open Space

- Target 7.3.1: Establish a trail system along existing storm drain easements to access existing regional bike trails.
- Target 7.3.2: Develop new bicycle and pedestrian trails in commercial and residential neighborhoods, parks, or rail corridors that create "walkable" close-knit neighborhoods that will reduce air pollution and energy consumption.

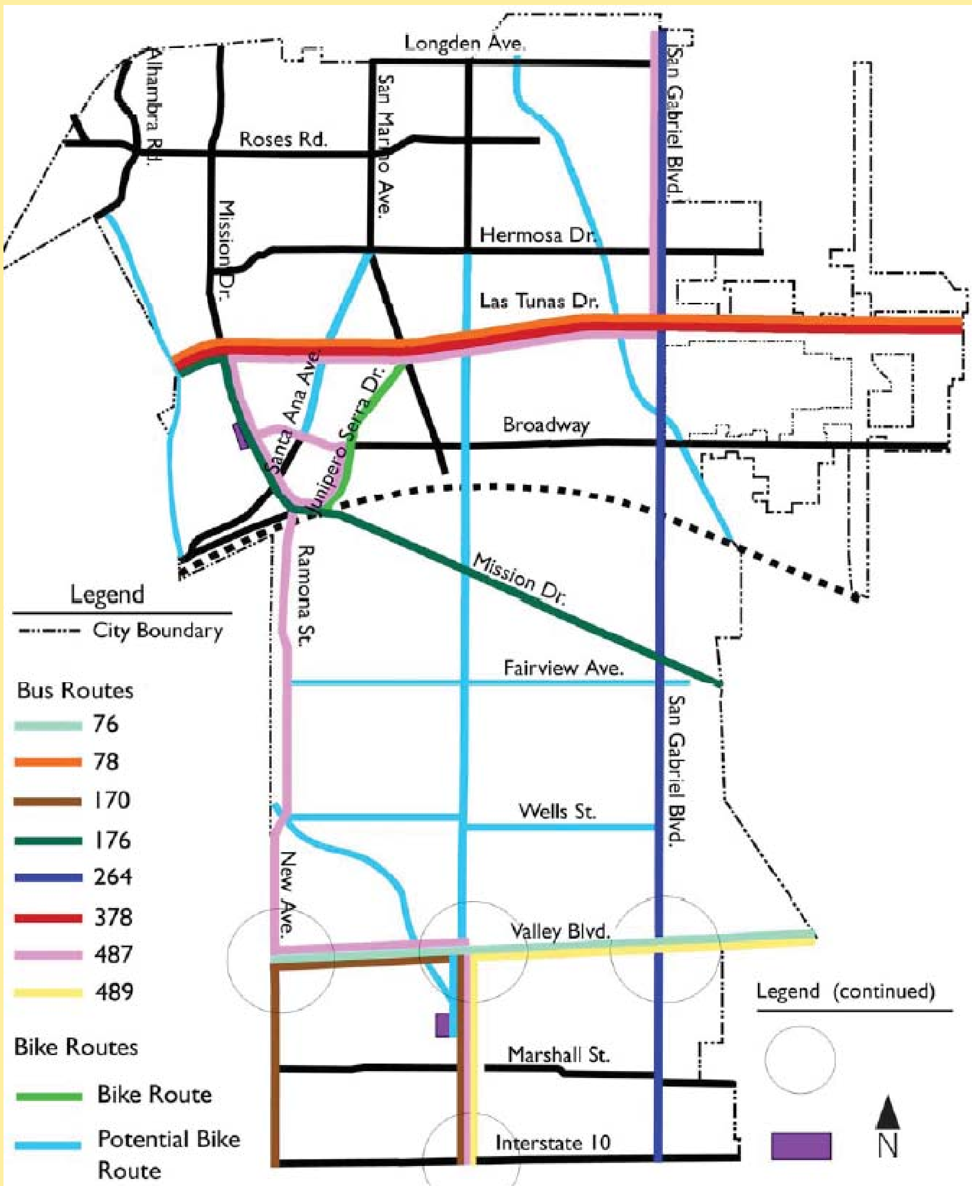
Environmental Resources

- Require bicycle parking racks for commercial developments over 2,000 square feet and residential developments over four units.

The 2004 General Plan identified "potential bike routes", shown in **Figure 6-3**, along Santa Anita Street, Fairview Avenue, Wells Street, Del Mar Avenue, Alhambra Wash, and Rubio Wash.

For more information on the General Plan: http://www.sangabrielcity.com/index.aspx?NID=404

Figure 6-3 *San Gabriel Bikeways & Transit Map from 2004 General Plan*



6.1.3 Engineering

Existing Bicycle Facilities

This report refers to standard bikeway definitions identified by Caltrans in Chapter 1000 of the Highway Design Manual (Caltrans HDM). Additional concepts for bikeways have been promoted and implemented throughout the United States; however, they have not been adopted for use in the Caltrans HDM. Bicycle facility types are discussed in Section 1.3. There are no existing bikeways in the City of San Gabriel.

Table 6-1 summarizes the classification and mileage of the existing network.

Table 6-1 Existing Bicycle Network

Facility Type	Mileage
Class I (Bike Path)	0.0
Class II (Bike Lanes)	0.0
Class III (Bike Route)	0.4
Total Mileage	0.4

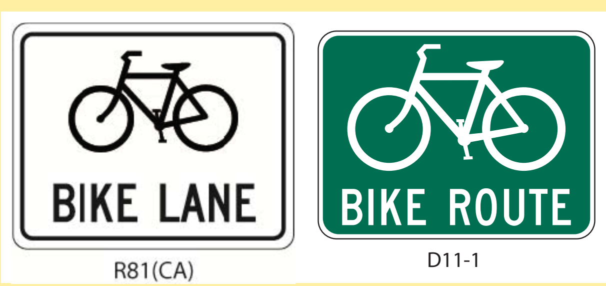
As shown in **Table 6-1**, a total of 0.4 miles of bikeways are currently provided in the City of San Gabriel, consisting of the following facility:

- Class III bicycle route along Junipero Serra Drive

Signage

The California Manual on Uniform Traffic Control Devices (CA MUTCD) and the CA HDM outline the requirements for bikeway signage. The Bike Lane Sign (R81) is required at the beginning of each designated bike lane and at each major decision point. The Bike Route Sign (D11-1) is required on Class III facilities. Shared-use paths require additional standardized signs to help manage different user groups. Upon implementation of bikeways, the City will install CA MUTCD standard signs as appropriate.

***Figure 6-4** Caltrans Bikeway Signs*



Bicycle Parking

Bicycle storage can range from a simple and convenient bicycle rack to storage in a bicycle locker or cage that protects against weather, vandalism and theft. The City does not currently have an inventory of existing bicycle parking locations. Short-term bicycle racks can be found at some major destinations, including City Hall and parks throughout the city. Many bicyclists resort to securing their bike to street fixtures such as trees, lights, telephone poles, and parking meters when sufficient parking facilities are not provided.

End-of-Trip Facilities

The presence and quality of trip-end facilities (e.g., showers, lockers, and changing facilities) can greatly influence a person's decision to complete a trip via bicycle. These facilities enable cyclists to change into work attire (especially after riding in wet or hot conditions). The City currently does not have an inventory of existing end-of-trip facilities.

Bicycle Signal Detection

Bicycle detection at actuated traffic signals permits bicyclists to trigger a green light, even when no motor vehicle is present. California Assembly Bill 1581 requires all new and replacement actuated traffic signals[1] to detect bicyclists and to provide sufficient time for a bicyclist to clear an intersection from a standing start. Caltrans Policy Directive 09-06 clarifies the requirements and permits any type of detection technology. The most common technologies are in-pavement loop detectors and video detection. More recently, microwave detection has been used to detect and differentiate between bicyclists and motor vehicles.

The City complies with the Caltrans Policy Directive by installing detector loops designed to detect bicycles during pavement rehabilitation and traffic signal upgrade projects. Traffic signal timing is reviewed and updated as necessary through traffic signal corridor timing projects.

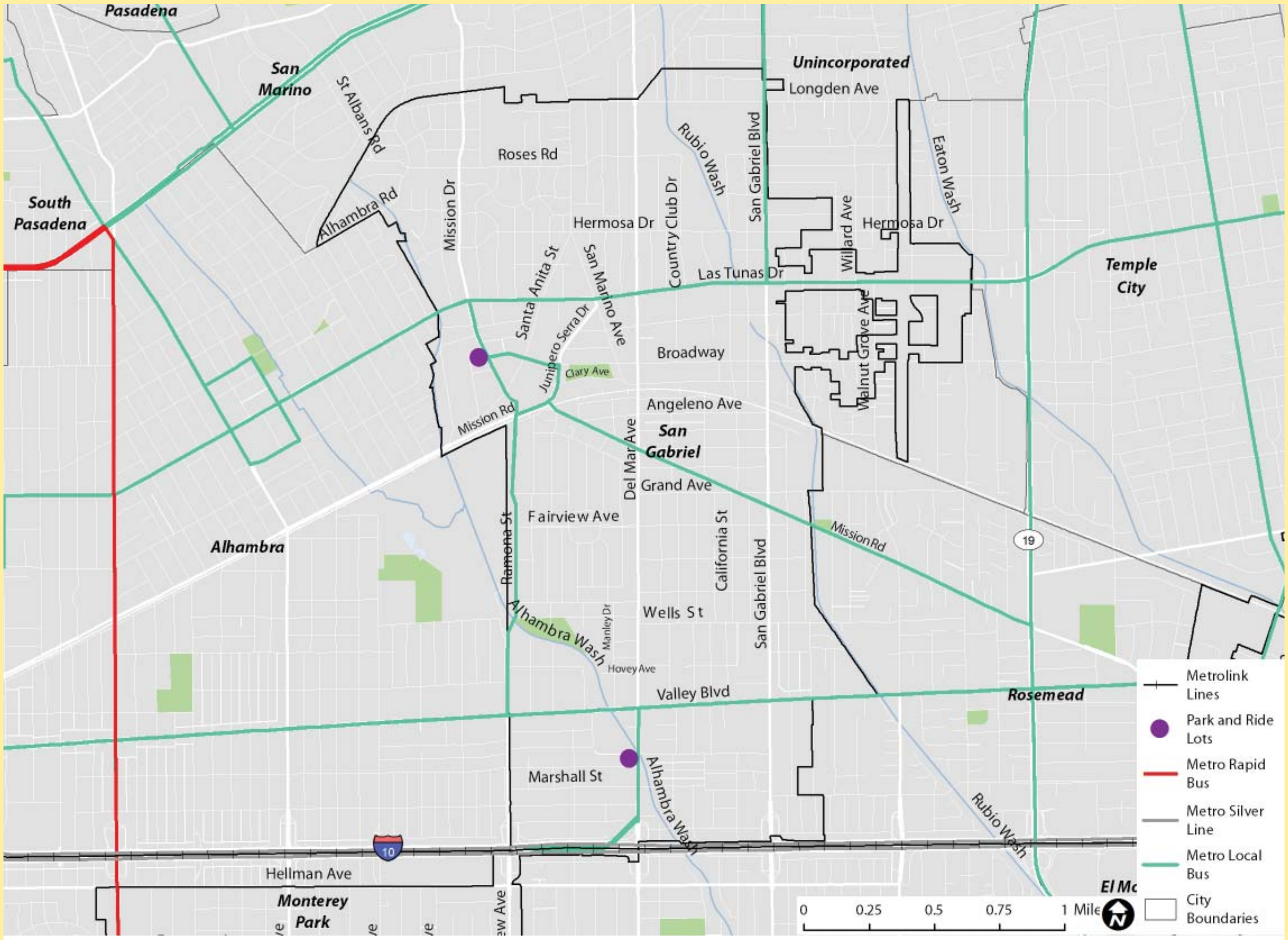
Multi-Modal Connections

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. **Figure 6-5** shows the existing Metro and Metrolink transit lines that serve the City of San Gabriel and SCAG-identified Park-and-Ride lots within the City. [2]

1 Actuated traffic signals stay red until the signal detects a car or bicyclist that is waiting for the light to turn green.

2 GIS mapping data were only available for Metro and Metrolink facilities.

***Figure 6-5** Existing Public Transportation Facilities in San Gabriel*



The Los Angeles County Metropolitan Transportation Authority (Metro) operates local bus lines 76 and 78 through the City of San Gabriel along Valley Boulevard and Las Tunas Boulevard, respectively, connecting residents to Downtown Los Angeles and the El Monte Bus Station (line 76). In addition, Metro Express line 487 connects San Gabriel to Downtown Los Angeles and eastern Pasadena. All Metro buses are equipped with front-end racks that can carry two bicycles, which are available on a first-come, first-served basis. Finally, Montebello Bus Lines' #20 line connects San Gabriel to the Cities of Montebello and Commerce via San Gabriel Boulevard.

Maintenance

Street maintenance programs aid in the quality and longevity of bicycle facilities. The City of San Gabriel currently has a Street Maintenance program that provides staff with guidelines to inspect, schedule, and repair City streets, alleys, and bike trails. The program provides maintenance of signs, pavement markings, curb markings, street name signs, and roadway striping. In addition to as-needed repairs, the program annually repaints school pavement legends and inspects school regulatory and warning signs. Street sweeping occurs once every two weeks.

The Capital Improvement Program (CIP) serves to develop and construct major public improvements and address significant maintenance items. The CIP prioritizes and allocates funding for large scale projects including roadway resurfacing, repair projects, and improvements within the city.

6.1.4 Existing/Previous Education, Encouragement, and Enforcement Strategies

Bicycle education programs and enforcement of bicycle-related policies help to make riding safer for all bicyclists. The City does not currently have education campaigns related to bicycling within the City.

San Gabriel police officers enforce all bicycle-related rules in the California Vehicle Code and issue citations when they observe violations.

6.1.5 Past and Future Bicycle-Related Expenditures

No new bicycle facilities have been planned or implemented within the City within the past three years.

6.2 Needs Analysis

This section describes the needs of bicyclists in San Gabriel. This section provides estimates and forecasts of bicycle travel to determine the estimated bicycling demand in the city. In addition, this section analyzes recent bicycle collision data to identify areas that would benefit from bicycle facility improvements. Public outreach efforts related to the preparation of this Plan are discussed in Chapter 1 and Appendices B, C, and D of this Plan.

6.2.1 Bicycle Demand Estimates and Forecasts

The model uses the U.S. Census Bureau's American Communities Survey (ACS) journey-to-work data and applies a market segment approach to estimate the number of bicycling or walking trips. Elementary school and college students usually have a different bicycle/walking mode split than work commuters.

In addition, national transportation surveys, in particular the National Household Travel Survey (NHTS, 2009), have shown that commute trips are only a fraction of the total trips an individual takes on a given day. The model uses the NHTS findings to estimate the number of non-work, non-school trips taken by commuters to determine the number of walking or bicycling trips that occur in a day. This information can be projected out using standard trip lengths by mode and trip purpose to estimate the number of driving miles reduced by non-motorized modes.

Model Data

The foundation of this analysis is the ACS 2008-2012 five-year estimate for San Gabriel. Model variables from the ACS include: total population, employed population, school enrollment (grades K-12 and college students), and travel-to-work mode split.

The 2009 NHTS provides a substantial national dataset of travel characteristics, particularly for trip characteristics of bicycling and walking trips. Data used from this survey include:

- Student mode split, grades K-12
- Trip distance by mode by trip purpose
- Ratio of walking/bicycling work trips to utilitarian trips
- Ratio of work trips to social/recreational trips
- Average trip length by trip purpose and mode

Several of these variables provide a way to estimate the number of walking and bicycling trips made for other reasons than work trips, such as shopping and running errands. NHTS 2009 data indicates that for every bicycle work trip, there are slightly more than two utilitarian bicycle trips made. Although these trips cannot be directly attached to a certain group of people (not all of the utilitarian bicycling trips are made by people who bicycle to work), these multipliers allow a high percentage of the community's walking and bicycling activity to be captured in an annual estimate.

The Safe Routes to School Baseline Data Report (2010) was used to determine the percent of students who walk or bicycle by the parents' estimate of distance as well as the frequency of carpooling for trip replacement.

As with any modeling projection, the accuracy of the result is dependent on the accuracy of the input data and other assumptions. Effort was made to collect the best data possible for input to the model, but in many cases national data was used where local data points were unavailable. Examples of information that could improve the accuracy of this exercise include the detailed results of local Safe Routes to Schools parent and student surveys, a regional household travel survey, and a student travel survey of college students.

Existing Walking and Bicycling Trips

Table 6-2 below presents commute to work data estimates for San Gabriel, as well as nearby cities and comparison geographies, as reported in the 2008-2012 American Community Survey 5-year estimates. This information for San Gabriel is one of several inputs of the demand model.

Table 6-2 Existing Mode Split Comparison with Neighboring Cities

	Walk	Bike	Transit	Carpool	Drive Alone
San Gabriel	3.8%	0.9%	3.5%	11.5%	76.2%
Rosemead	1.3%	0.8%	4.3%	12.2%	76.2%
South Pasadena	1.2%	0.8%	5.1%	9.2%	78.4%
Temple City	0.8%	0.4%	3.4%	12.8%	77.5%
City of Los Angeles	3.7%	1.0%	11.1%	10.3%	67.0%
County of Los Angeles	2.9%	0.8%	7.1%	10.9%	72.2%
California	2.8%	1.0%	5.1%	11.5%	73.0%
United States	2.8%	0.6%	5.0%	10.0%	76.1%
Source: 2008-2012 American Community Survey 5-year Estimates					

Table 6-3 shows the estimated current number of daily bicycling and walking trips. Based on the model assumptions, the majority of trips are non-work utilitarian trips, which include medical/dental services, shopping/errands, family personal business, obligations, transport someone, meals, and other trips.

Table 6-3 Current Weekday Bicycling and Walking Trips

	Bicycling	Walking	Source
Bicycle/walking commute trips	329	1,391	Employed population from ACS multiplied by mode split from ACS, doubled for round-trips
Walk- or bike-to-transit trips	13	372	Number of transit commuters from ACS multiplied by transit mode split from TCRP Report 153, doubled for round-trips
K-12 bicycle/walking trips	110	1,463	School children population from ACS multiplied by mode split from SRTS Baseline Data Report (2010), doubled for round-trips
College bicycle/walking trips	118	479	Employed population from ACS multiplied by mode split from NHTS 2009, doubled for round-trips
Daily bicycle/walking utilitarian trips	530	6,014	Bicycle/walking commute trips (above) multiplied by mode-specific utilitarian trip multiplier from NHTS 2009
Daily social/recreational trips	1,569	5,442	Bicycle/walking commute trips (above) multiplied by mode-specific social/recreational trip multiplier from NHTS 2009
Current daily bicycling and walking trips	**2,669**	**15,161**	
Annual Extrapolation			
Annual commute trips	85,842	442,513	Bicycle/walking and walk- or bike-to-transit trips multiplied by annual work days
Annual K-12 trips	19,800	263,340	K-12 bicycle/walking trips multiplied by annual K-12 school days
Annual college trips	17,700	71,850	College bicycle/walking trips multiplied by annual college class days
Annual utilitarian trips	138,301	1,913,183	Annual commute trips multiplied by mode-specific utilitarian trip multiplier

As shown in **Table 6 -3**, current commute, school, college and utilitarian trips via bicycle are estimated at approximately 2,700 trips daily, and approximately 138,000 bicycle trips are estimated to occur annually.

Trip Replacement

Trip Replacement as part of this Plan specifically refers to the number of trips that are completed via bicycling or walking that would otherwise be achieved by utilizing a motorized mode such as driving/riding in an automobile or traveling on public transportation. To estimate the total distance residents travel to work or school by walking and bicycling, the model isolates different walking and bicycling user groups and applies trip distance information for walking or bicycling trips by mode based on NHTS 2009. **Table 6-4** shows the trip replacement factors.

Yearly factors are calculated by assuming that work and school/college trips occur five days per week, while utilitarian trips occur seven days per week. However, work and utilitarian trips occur year-round, while school and college trips are only three-quarters of the year, due to summer vacation.

Table 6-4 Current Bicycling and Walking Trip Replacement (Annual)

	Bicycling	Walking	Source
Vehicle commute trips replaced	70,986	376,964	Redistribution of bikers/walkers using existing mode split if that mode were not available
K-12 vehicle trips replaced	8,434	128,173	SR2S Baseline Data Report, 2010
College vehicle trips replaced	14,425	61,791	NHTS 2009
Utilitarian vehicle trips replaced	114,367	1,629,786	Redistribution of bikers/walkers using existing mode split if that mode were not available
Vehicle Miles Traveled			
Commute VMT replaced	251,292	252,566	NHTS 2009 average bicycle trip distance for "Work" trips
K-12 VMT replaced	6,477	45,517	SRTS 2010, percent of students who walk or bicycle by parent's estimate of distance
College VMT replaced	21,349	34,603	NHTS 2009 average trip distance for "School/Daycare/ Religious" trips
Utilitarian VMT replaced	216,535	1,086,524	Derived from NHTS 2009
Total VMT reduced	495,653	1,419,210	
Per capita VMT reduced	12	36	

Current Benefits

To the extent that bicycling and walking trips replace single-occupancy vehicle trips, they reduce emissions and have tangible economic impacts by reducing traffic congestion, crashes, and maintenance costs. In addition, the reduced need to own and operate a vehicle saves families money. These benefits are shown in **Table 6-5**.

Table 6-5 Annual Benefits of Current Bicycling and Walking Trips

Measure	Bicycling	Walking	Total
Yearly vehicle miles reduced	495,653	1,419,210	1,914,863
Air Quality Benefits[1]			
Reduced Hydrocarbons (pounds/year)	1,486	4,255	5,741
Reduced Particulate Matter (pounds/year)	11	32	43
Reduced Nitrous Oxides (pounds/year)	1,038	2,972	4,010
Reduced Carbon Monoxide (pounds/year)	13,550	38,797	52,347
Reduced Carbon Dioxide (pounds/year)	403,217	1,154,535	1,557,752

As shown in **Table 6-5**, current bicycle trip benefits include the reduction of over 495,000 vehicle miles annually and a reduction of carbon dioxide emissions by over 403,000 pounds annually.

Potential Future Walking and Bicycling Trips

Estimating future benefits requires additional assumptions regarding San Gabriel's future population and anticipated commuting patterns in 2035. Future population predictions as determined by the SCAG 2012 RTP Growth Forecast (for 2035) were used in this model. **Table 6-6** shows the projected future demographics used in the future analysis.

Table 6-6 Projected Future Demographics (Year 2035)

Demographic	Value	Source
Population	46,100	SCAG 2012 RTP Growth Forecast
Employed population	21,193	Same percentage as current model estimate
School population, K-12	6,344	Same percentage as current model estimate
College student population	4,069	Same percentage as current model estimate

Forecast bicycling mode share was increased to address the higher use potentially generated by the addition of recommended bikeway facilities to the existing system.

The analysis predicts that the bicycle mode split will double to 1.8% by 2035, due in part to bicycle network implementation and education/encouragement programs. The results of the future bicycling trips model, assuming an increase to 1.8% bicycle mode share, are shown in **Table 6-7**.

1 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 6-7 Estimated Future (2035) Weekday Bicycling and Walking Trips

Trip Type	Bicycling	Walking	Discussion
Bicycle/walking commute trips	763	1,611	Employed population multiplied by mode split, doubled for round-trip
Walk- or bike-to-transit trips	15	430	Number of transit commuters multiplied by transit mode split from TCRP Report 153, doubled for round-trip
K-12 bicycle/walking trips	127	1,694	School children population multiplied by mode split, doubled for round-trip
College bicycle/walking trips	136	555	Employed population multiplied by mode split, doubled for round-trip
Daily bicycle/walking utilitarian trips	1,229	6,965	Bicycle/walking commute trips multiplied by mode-specific utilitarian trip multiplier
Daily social/recreational trips	3,638	6,303	Bicycle/walking commute trips multiplied by mode-specific social/recreational trip multiplier
Total future daily bicycling and walking trips	**5,908**	**17,558**	

As shown in **Table 6-7**, assuming bicycle mode split increases to 1.8%, forecast year 2035 commute, school, college and utilitarian trips via bicycle are estimated to grow to approximately 5,900 trips daily.

Future Benefits

The trip replacement factors remain the same as in the model of current trips. **Table 6-8** shows the air quality benefits of the future projected walking and bicycling trips.

Table 6-8 Annual Benefits of Future Bicycling and Walking Trips

Measure	Bicycling	Walking	Total
Yearly vehicle miles reduced	1,096,000	1,643,000	2,739,000
Air Quality Benefits[1]			
Reduced Hydrocarbons (pounds/year)	3,287	4,926	8,213
Reduced Particulate Matter (pounds/year)	24	37	61
Reduced Nitrous Oxides (pounds/year)	2,296	3,441	5,737
Reduced Carbon Monoxide (pounds/year)	29,970	44,916	74,887
Reduced Carbon Dioxide (pounds/year)	891,864	1,336,624	2,228,488

As shown in **Table 6-8**, assuming bicycle mode split increases to 1.8%, forecast year 2035 benefits include the reduction of almost 1.1 million vehicle trips annually and the reduction of carbon dioxide emissions by nearly 900,000 pounds annually.

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

6.2.2 Bicycle Counts

A knowledge of current bicycling levels in the City of San Gabriel helps to identify areas of particular need while also serving as a baseline from which to evaluate the impact of bicycling infrastructure and program improvements called for in this Plan. To assess current bicycling levels at different sites throughout the City, the project team conducted bicycle counts using two separate methodologies: manual counts with volunteers and automated counts using electronic tube counters.

Methodology

The methodology for the manual 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 existing levels of both utilitarian and recreational bicycling trips. The NBPD also provides guidance on how to select count locations.

Volunteers conducted bicycle counts at five locations in San Gabriel on Saturday, June 7, 2014 from 11:00 a.m. to 1:00 p.m. and at six locations on Tuesday, June 10, 2014 both from 7:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 6:00 p.m. These dates are meant to capture volumes of bicycle riders on a typical weekday and weekend day. The manual bike count locations were selected by staff members from the City of San Gabriel, Day One, and Alta

***Figure 6-6** Weekday Morning Bicycle Count Results in San Gabriel*

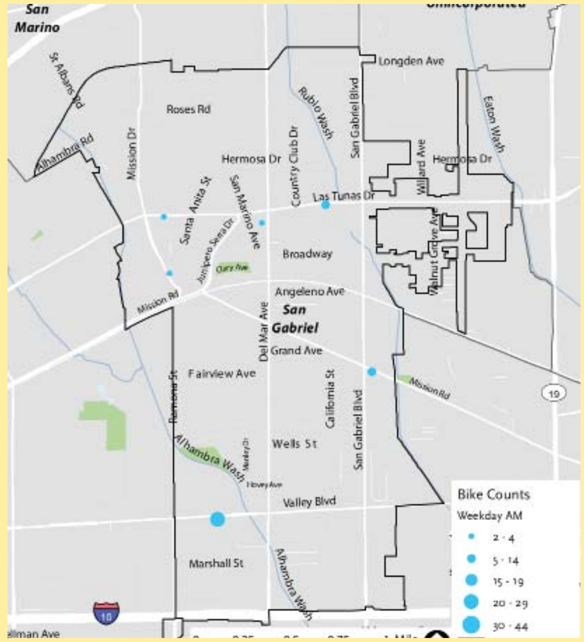


***Figure 6-7** Weekday Afternoon Bicycle Count Results in San Gabriel*

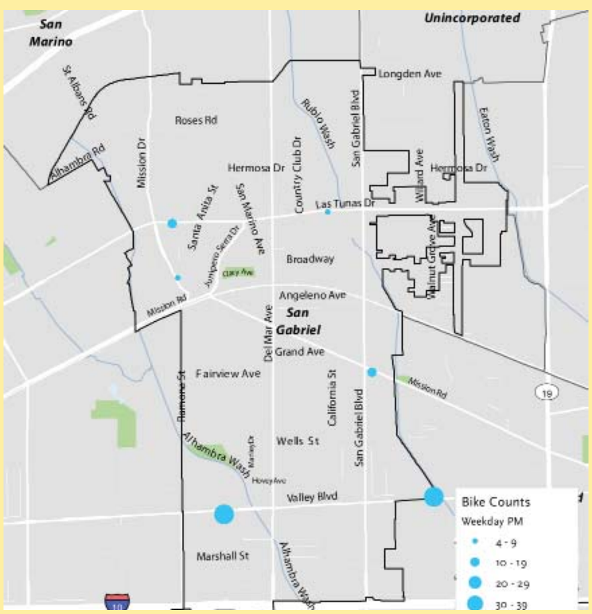
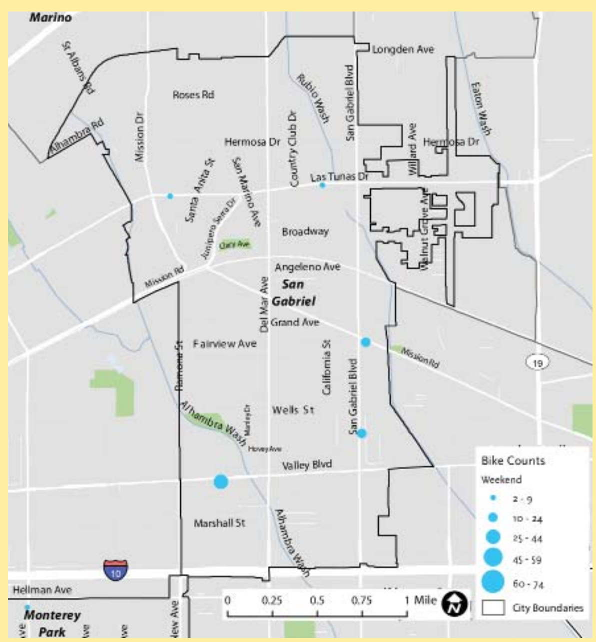


***Figure 6-8** Weekend Bicycle Count Results in San Gabriel*



Planning + Design. This snapshot of locations is intended to capture a diverse bicycling population using the roads and streets that span the spectrum of "bike-friendliness."

In addition to manual counts, automated 24-hour bicycle counts were conducted using Eco-Counters that were procured by the Los Angeles County Department of Public Health and distributed to each of the five Regional Bike Plan partner cities for various time periods. In San Gabriel, the automated counters were installed at eight locations between April 7, 2014 and April 22, 2014. The project team experienced several issues with the automated counters that negatively affected the accuracy of the bicycle count data, such as maintenance problems and data reporting flaws. Therefore, the project team recommends that the automated count data be dismissed in favor of the manual count results. However, the automated counting technology should be refined and considered for use in future bicycle data collection efforts.

Results

Manual bicycle count locations and results for the City of San Gabriel are displayed in **Appendix F**. During the Tuesday morning manual counts, the San Gabriel location that experienced the highest volume of bicyclists was West Valley Boulevard between Prospect Avenue and Abbot Avenue with 26 total bicycle riders passing during the two hour count period. In the afternoon of that same Tuesday, the count location of East Valley Boulevard between Walnut Grove Avenue and South Delta Street saw the highest volume of bicycle riders – 56 bicycle riders from 4:00 p.m. to 6:00 p.m. On Saturday, the most bicycle riders were again counted along West Valley Boulevard between Prospect Avenue and Abbot Avenue, with 31 riders passing by during the count period.

In the City as a whole, approximately 82 percent of bicycle riders counted were male. Approximately 84 percent of those observed were not wearing bicycle helmets, and 65 percent were riding on the sidewalks. Riding on the sidewalk can be an indicator of a lack of safe bicycling facilities and/or proper education, as bicyclists that are uncomfortable riding with traffic may choose to instead travel along the sidewalk.

6.2.3 Bicycle Collision Analysis

Safety is a major concern for current and potential bicyclists, and can influence the decision whether or not to bicycle. Potential bicyclists that do not have experience riding, especially in traffic, typically will not ride if they perceive the roadway as dangerous. People who do not ride often express frustration when drivers do not see them or do not understand that bicyclists are afforded the same rights as vehicles. Similarly, many bicyclists do not know or follow the "rules of the road." Uninformed or unlawful roadway users can contribute to collisions.

This section reviews bicycle-related collisions from January 2007 to December 2011, as reported by the Statewide Integrated Traffic Records System (SWITRS). **Table 6-9** presents the number of bicycle-related collisions in San Gabriel from 2007-2011. **Figure 6-9** maps bicycle-related collisions over the study period with larger dots representing locations with multiple collisions.

Table 6-9 Bicycle-Related Collisions by Year

Year	Number of Collisions
2007	7
2008	20
2009	19
2010	17
2011	16
Total	**79**

Figure 6-9 Bicycle-Related Collisions in San Gabriel, 2007-2011

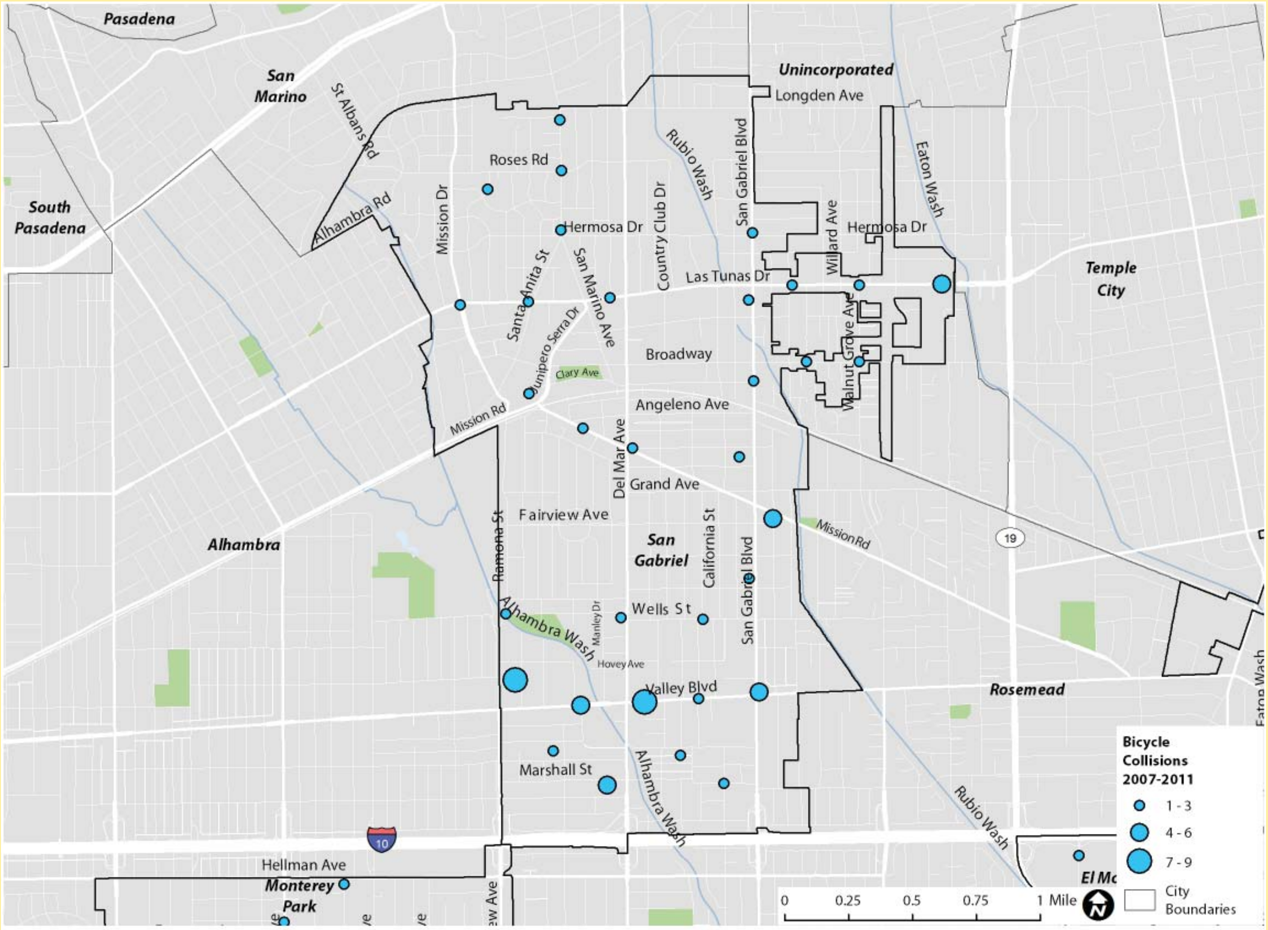


Table 6-10 displays the top 5 roadways with the most bicycle-related collisions based on data from 2007-2011. Valley Boulevard and San Gabriel Boulevard together accounted for over 40% of all bicycle-related collisions in San Gabriel during the period 2007-2011.

Table 6-10 Highest Bicycle-Related Collision Roadways

Roadway	Number of Collisions
Valley Boulevard	17
San Gabriel Boulevard	15
Las Tunas Drive	11
Del Mar Avenue	4
Mission Road	4

Table 6-11 shows the percent of bicycle-related collisions based on the day of the week.

Table 6-11 Bicycle-Related Collisions by Day of the Week

Day of the Week	Percent of Collisions
Monday	14%
Tuesday	19%
Wednesday	14%
Thursday	20%
Friday	13%
Saturday	14%
Sunday	6%

As shown in **Table 6-11,** the highest percentage of bicycle-related collisions (20%) occurred on Thursdays, with the second highest percentage (19%) on Tuesdays.

6.2.4 Bicycle Thefts

The San Gabriel Police Department recorded 15 cases of bicycle theft in the City during the 2013 calendar year. **Table 6-12** describes the location, date, time, and estimated bicycle value for each reported theft.

Two-thirds of the reported bicycle thefts occurred at a residential location, while only one-fifth of the thefts occurred on a public street/sidewalk. About one-fourth (4 of 15) of the thefts occurred in March and another one-fourth occurred in April. Nearly half (47%) of the bicycle thefts took place between 12:00pm and 8:00pm, while one-third (33%) occurred between 8:00pm and 4:00am. Six of the stolen bicycles were valued at over $400, with another six of the fifteen valued at between $200 and $400.

Table 6-12 Bicycle Thefts in the City of San Gabriel (2013)

Location (by Block)	Location Type	Date	Time	Estimated Value of Stolen Bicycle
200 Broadway	Street/Sidewalk	02/17/2013	18:36	$200 - $400
200 Sunset Avenue	Residence	02/26/2013	17:05	$50 - $199
100 W. Norwood Place	Street/Sidewalk	03/02/2013	10:15	Over $400
200 Sunset Avenue	Residence	03/03/2013	01:37	Over $400
300 Sunset Avenue	Residence	03/03/2013	04:00	$200 - $400
200 Pine Street	Residence	03/23/2013	17:30	Over $400
600 Broadway	Residence	04/03/2013	02:00	Over $400
400 Lafayette Street	Residence	04/17/2013	20:55	$50 - $199
1500 New Avenue	Residence	04/17/2013	23:59	$200 - $400
700 Sunset Avenue	Residence	04/18/2013	20:11	$50 - $199
900 Charlotte Avenue	Residence	05/08/2013	13:22	Over $400
1500 New Avenue	Residence	07/01/2013	11:00	$200 - $400
300 Mission Drive	Commercial	07/18/2013	12:37	$200 - $400
700 Pearl Street	Street/Sidewalk	07/23/2013	16:37	$200 - $400
1300 Las Tunas Drive	Miscellaneous	10/10/2013	16:50	Over $400

6.2.5 Bicycle-Related Traffic Stops

The San Gabriel Police Department reported a total of 26 traffic stops involving bicycle riders in the City during the 2013 calendar year. **Table 6-13** lists the location, date, day of the week, and time for all of these traffic stops. The specific violations were not disclosed by the Police Department.

Half (50%) of all bicycle-related traffic stops occurred in the months of April and May, while only two bicycle-related stops occurred over the winter months (January, February, and December 2013). This likely reflects a higher number of overall bicycle riders in warmer months. Nearly forty percent of bicycle-related traffic stops in San Gabriel took place on weekend days. During the week, Thursday saw the most bicycle-related traffic stops, with six stops (23% of the total) reported.

Table 6-13 *Bicycle-Related Traffic Stops (2013)*

Location (by Block)	Date	Day of Week	Time of Day
1300 S. Gladys Avenue	01/04/2013	Friday	23:16
N. Mission Drive & Coolidge Drive	01/26/2013	Saturday	14:42
W. Valley Boulevard & New Avenue	03/13/2013	Wednesday	10:03
Del Mar Avenue & Main Street	04/03/2013	Wednesday	17:40
900 S. Del Mar Avenue	04/04/2013	Thursday	12:18
N. San Marino Avenue & Hermosa Drive	04/06/2013	Saturday	16:26
200 S. San Gabriel Boulevard	04/17/2013	Wednesday	00:17
E. Las Tunas Drive & California Street	04/21/2013	Sunday	11:09
1700 S. New Avenue	04/28/2013	Sunday	16:18
E. Live Oak Street & California Street	04/28/2013	Sunday	11:31
E. Las Tunas Drive & Gladys Avenue	05/05/2013	Sunday	02:02
400 E. Angeleno Avenue	05/10/2013	Friday	23:01
San Gabriel Boulevard & I-10 Freeway	05/11/2013	Saturday	00:37
300 E. Valley Boulevard	05/11/2013	Saturday	10:59
E. Valley Boulevard & Lafayette Street	05/23/2013	Thursday	20:35
San Gabriel Boulevard & El Monte Street	05/28/2013	Tuesday	14:54
100 W. Clary Avenue	06/12/2013	Wednesday	05:06
S. California Street & Live Oak Street	06/21/2013	Friday	23:22
Grand Avenue & E. Charlotte Avenue	07/14/2013	Sunday	21:19
100 W. Valley Boulevard	07/24/2013	Wednesday	12:49
500 E. Las Tunas Drive	08/01/2013	Thursday	15:50
E. Valley Boulevard & Alegro Square	08/15/2013	Thursday	10:53
E. Dewey Avenue & Del Mar Avenue	08/29/2013	Thursday	08:18
S. San Gabriel Boulevard & Valley Boulevard	09/21/2013	Saturday	02:45
W. Angeleno Avenue & Rosenda Street	09/30/2013	Monday	21:21
500 E. Mission Road	10/31/2013	Thursday	12:44

6.3 Recommended Bicycle Facilities and Programs

The proposed bikeway network, when completed, will include over 30 miles of bicycle facilities to increase connectivity within San Gabriel and to the surrounding communities. The proposed bikeway network has been developed to create a comprehensive, safe, and logical network.

Recommendations for bikeways within the City are subject to a variety of factors that affect the schedule and final implementation:

- Recommendations have been developed based on technical review and public input, however, the recommendations are conceptual and further feasibility review may be needed to address physical, community, and financial constraints.

- While a prioritized list is provided in the Prioritization Chapter, projects may be implemented sooner based on coordination with other City projects or funding opportunities.
- Funding for the bikeway recommendations is discussed further in the Prioritization Chapter, and suggestions are provided to the City to seek funding sources to minimize the effect on the City General Fund for implementation.
- The City may develop further criteria and standards for use of enhanced bicycle treatments such as sharrows, green conflict zone striping, bike lane buffers, bicycle boulevard elements, etc. The City will explore the possibility of providing enhanced Class II or Class III facilities anywhere Class II or III facilities are proposed.

Table 6-14 summarizes the bikeway recommendations and total mileage by category. **Figure 6-10** shows the recommended bikeway network, including potential enhanced Class III facilities.

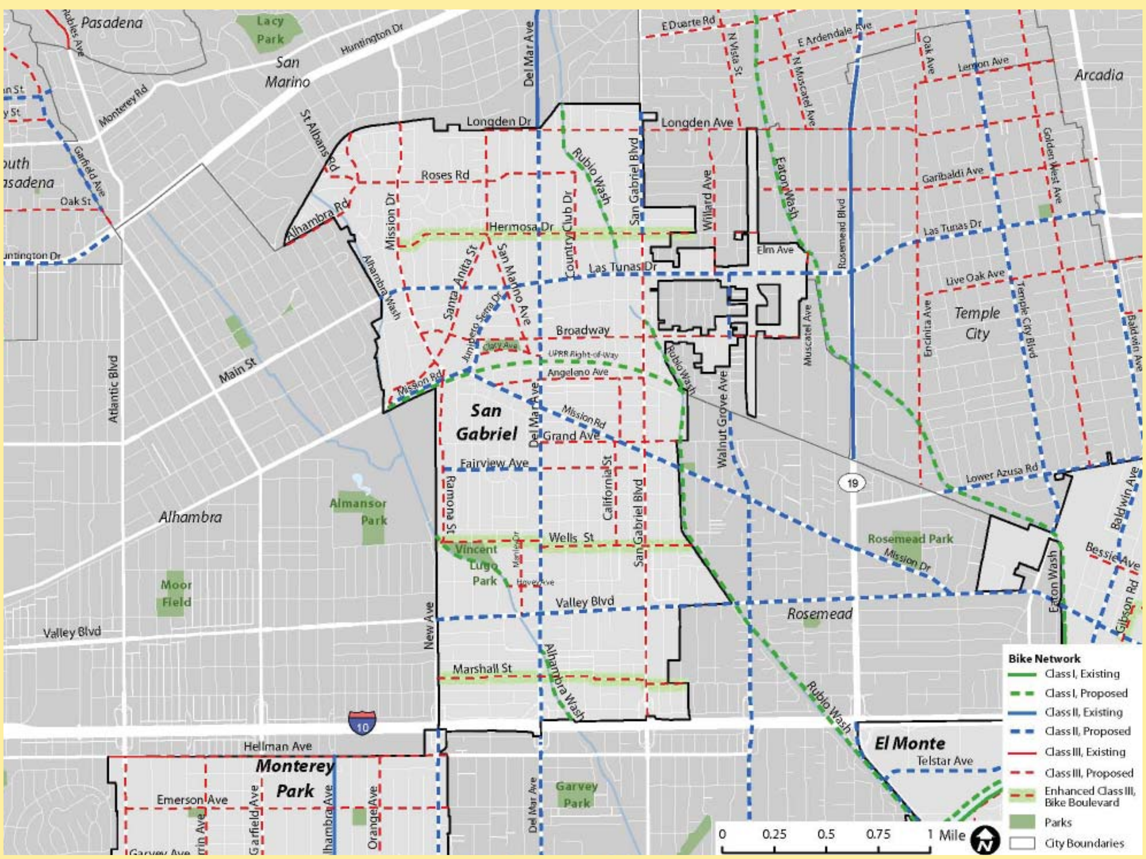
Table 6-14 Recommended Bikeway Network

Facility Type	Existing Bikeways (Miles)	Proposed Bikeways (Miles)
Class I Shared-Use Path	0.0	4.8
Class II Bike Lane	0.0	9.6*
Class III Bike Route Proposed for Upgrade to Class II*	0.4	--
Other Class III Bike Route	0.0	19.2
Total	0.4	33.6

** 0.4 miles of Class III bike route along Junipero Serra Drive proposed for upgrade to Class II bike lanes.*

As shown in **Table 6-14**, proposed bikeways identified in this Plan total 33.6 miles.

Figure 6-10 San Gabriel Recommended Bikeway Network



6.3.1 Class I Shared-Use Paths

Class I off-street shared-use paths are often desired by casual bicyclists, as well as bicyclists concerned about interacting with vehicular traffic. A network of off-street shared-use paths provides greater opportunities for connectivity to destinations throughout the community, so recommendations have been developed to improve the network within the City given notable property and right-of-way constraints. Some of the recommendations provided for shared-use paths require coordination with neighboring cities and other agencies such as the County of Los Angeles and Caltrans. The City also recently adopted new zoning code standards that will require all new developments along flood control channels to provide a bicycle and pedestrian trail.

Where there is not sufficient space or right-of-way for a Class I bicycle facility, buffered or physically protected Class II bike lanes can provide bicycle riders with a more comfortable level of separation from motor vehicle traffic and parked vehicles. The subsequent section discusses Class II bikeways recommendations.

Table 6-15 identifies the proposed Class I shared-use paths for the City of San Gabriel bikeways network.

Table 6-15 Proposed Class I Shared-Use Paths

Roadway	From	To	Length (Miles)
Alhambra Wash	City Limit (near Ramona Street/Wells Street Intersection)	Hovey Avenue	0.5
Alhambra Wash	Del Mar Avenue	I-10 Freeway	0.4
Eaton Wash	City Limit (South of Hermosa Drive)	Elm Avenue	0.1
Rubio Wash	Rose Avenue	Elm Avenue	0.8
Rubio Wash	San Gabriel Boulevard	Valley Boulevard	1.5
Union Pacific Right-of-Way	West City Limit	East City Limit	1.5
		Total Proposed Class I Shared-Use Paths	**4.8**

As shown in **Table 6-15** a total of 4.8 miles of Class I shared-use paths are recommended in this Plan.

6.3.2 Class II Bike Lanes

Many commuters and recreational bicyclists may prefer bike lanes due to their more direct routing. This report recommends the City go beyond simply striping standard Class II bike lanes due to their limited functionality as a result of potential “dooring” issues adjacent to parked cars or the presence of gutter pans and drainage grates that effectively narrow the width of the bike lane. In some locations where wide Class II bike lanes might be provided, modification of striping to provide a buffer between on-street parking and/or vehicular traffic is recommended. At other locations with minimal crossings, protected bike lanes may be recommended. The use of buffered or protected bike lanes will be considered on a case-by-case basis through the design of the facility.

Table 6-16 identifies the proposed Class II bike lanes for the City of San Gabriel bikeways network. **Figure 6-11** illustrates how Del Mar Avenue might look with Class II bike lanes installed as part of a future roadway resurfacing project.

Table 6-16 *Proposed Class II Bike Lanes*

Roadway	From	To	Length (Miles)
Del Mar Avenue	Longden Drive	I-10 Freeway	2.9
Fairview Avenue	Ramona Street	Del Mar Avenue	0.5
Junipero Serra Drive	San Marino Avenue	Mission Road	0.4
Las Tunas Drive	City Limit (East of Champion Place)	San Gabriel Boulevard	1.3
Las Tunas Drive	San Gabriel Boulevard	Muscatel Avenue	0.8
Mission Road	Santa Anita Street	City Limit (East of Charlotte Avenue)	1.5
San Gabriel Boulevard	City Limit (North of Los Olivos Drive)	Hermosa Drive	0.6
Valley Boulevard	New Avenue	Rubio Wash	1.4
Walnut Grove Avenue	Las Tunas Drive	City Limit (North of Cheyenne Drive)	0.1
Walnut Grove Avenue	City Limit (South of Cheyenne Drive)	City Limit (North of Frandsen Street)	0.1
		Total Proposed Class II Bike Lanes	**9.6**

As shown in **Table 6-16**, a total of 9.6 miles of Class II bike lanes are recommended in this Plan.

Figure 6-11 *Before/After Depiction of Proposed Class II Bike Lanes on Del Mar Avenue*

Existing

Proposed

6.3.3 Class III Bike Routes

Any street that is legal for bicycles is inherently a shared roadway in which bicyclists and drivers share a lane of traffic, and a car cannot necessarily pass a bicyclist in the same lane. To improve motorists' awareness of the presence of bicyclists and to indicate good routes for bicyclists, cities often post signs indicating that the road is a "Class III Bike Route," as well as painting shared roadway markings in the travel lane. Class III bike routes are often identified at locations where the available street width is not wide enough to accommodate an on-street bike lane (Class II facility).

R4-11

***Image 23-** Sign R4-11 "Bikes May Use Full Lane"*

Potential enhancements requested during community engagement activities include the use of shared lane markings (sharrows) and use of the "Bikes May Use Full Lane" signage (MUTCD R4-11).

Another treatment for consideration is designation of bicycle boulevards for improved connectivity and wayfinding by cyclists that seek lower stress routes to travel. Bicycle boulevards are generally defined as low-volume, low-speed streets that have been optimized for bicycle travel using treatments such as traffic calming and traffic reduction, signage and pavement markings, and intersection crossing treatments. Class III bike routes will be considered for upgrading to bicycle boulevards on a case-by-case basis by City staff.

Table 6-17 identifies the proposed Class III bike routes for the City of San Gabriel bikeways network.

***Table 6-17** Proposed Class III Bike Routes*

Roadway	From	To	Length (Miles)
Alhambra Road	Domingo Drive	City Limit (West of Valencia Street)	0.7
Angeleno Avenue	Mission Road	San Gabriel Boulevard	0.7
Broadway	City Limit (West of La Presa Avenue)	City Limit (West of Muscatel Avenue)	0.2
Broadway	Mission Drive	Burton Avenue	1.6
California Street	East Angeleno Avenue	Wells Street	0.8
Clary Avenue	Junipero Serra Drive	Del Mar Avenue	0.3
Country Club Drive	Roses Road	Las Tunas Drive	0.5
Fairview Avenue	Del Mar Avenue	San Gabriel Boulevard	0.5
Grand Avenue	Del Mar Avenue	City Limit (East of Rubio Wash)	0.7
Hermosa Drive	City Limit (West of Vista Street)	Burton Avenue	0.1
Hermosa Drive	Mission Drive	Charlotte Avenue	1.3
Hovey Avenue	Alhambra Wash	Del Mar Avenue	0.2
Longden Avenue	City Limit (East of Vista Street/Bion Avenue)	Burton Avenue	0.1
Longden Drive	San Marino Avenue	San Gabriel Boulevard	0.7
Manley Drive	Wells Street	Valley Boulevard	0.4
Marshall Street	New Avenue	City Limit (East of Charlotte Avenue)	1.2
Mission Drive	City Limit (North of Domingo Street)	Mission Road	1.3
Muscatel Avenue	Elm Avenue	City Limit (North of Las Tunas Drive)	0.1
Ramona Street	Mission Road	New Avenue	0.8
Roses Road	St. Albans Road	Country Club Drive	1.2

Table 6-17 Proposed Class III Bike Routes (continued)

Roadway	From	To	Length (Miles)
San Gabriel Boulevard[1]	Hermosa Drive	I-10 Freeway	2.3
San Marino Avenue	Longden Drive	Clary Avenue	1.1
Santa Anita Street	Hermosa Drive	Mission Drive	1.0
St. Albans Road	City Limit (North of Coolidge Drive)	Roses Road	0.1
Wells Street	Ramona Street	Del Mar Avenue	0.5
Wells Street	Del Mar Avenue	Rubio Wash	0.7
Willard Avenue	City Limit (Alley North of Las Tunas Drive)	City Limit (South of Las Tunas Drive)	0.1
Total Proposed Class III Bike Routes			19.2

As shown in **Table 6-17**, a total of 19.2 miles of Class III bike routes are recommended in this Plan.

6.3.4 End-of-Trip Bicycle Facilities

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.

Bicycle parking can be categorized into short-term and long-term parking. Bicycle racks are the preferred device for short-term bike parking. These racks serve people who wish to leave their bicycles for relatively short periods of time, typically for shopping or errands, eating or recreation. Bicycle racks provide a high level of convenience and moderate level of security. Long-term bicycle parking includes bike lockers and bike rooms and serves people who intend to leave their bicycles for longer periods of time. Long-term bicycle parking facilities are typically found in multifamily residential buildings and commercial buildings. These facilities provide a high level of security but are less convenient than bicycle racks.

Recommended bicycle parking standards are presented in **Appendix G.** In addition, **Appendix H** presents a comprehensive bicycle parking study for San Gabriel and the other four regional bike plan partner cities.

Short-Term Bicycle Parking

This Plan recommends the City adopt one or both of the short-term bicycle rack types shown in **Figure 6-12** as the standard for short-term parking.

Figure 6-12 Types of Bicycle Racks

This Plan also recommends implementation of adequate short-term bicycle parking in the form of bicycle racks within the public right-of-way at major trip attractors, including commercial and civic activity centers and transit hubs. The City should prioritize the installation of bicycle parking throughout the City, with particular attention directed at the following locations:

- San Gabriel Library
- San Gabriel City Hall
- San Gabriel Historical Museum
- San Gabriel Community Recreation Center
- San Gabriel Historic Mission District
- Mission Drive Shopping District
- San Gabriel Valley Medical Center
- City Parks

1. While San Gabriel Boulevard from Hermosa Drive to I-10 is currently recommended as a Class III bike route, the City will explore the possibility of providing Class II bike lanes along this corridor in the future, taking the potential loss of on-street parking into consideration.

- Chi Mui Post Office
- Schools

Although the number of racks is determined by the space available, it is recommended that short-term bicycle parking capacity to accommodate eight bicycles is provided at each of the civic uses identified above, and short-term bicycle parking both within the public right-of-way and on private property for commercial and office areas be determined based on intensity of development. The adequacy of short-term bicycle parking requires regular review to determine if additional capacity is needed.

In order to decrease the risk of bicycle theft and/or vandalism to property, this Plan recommends that short-term bike racks be installed in areas with moderate to heavy pedestrian and vehicular traffic. Additionally, bike racks should be painted in a bright color, such as yellow, to increase visibility and reduce the risk of pedestrian injuries.

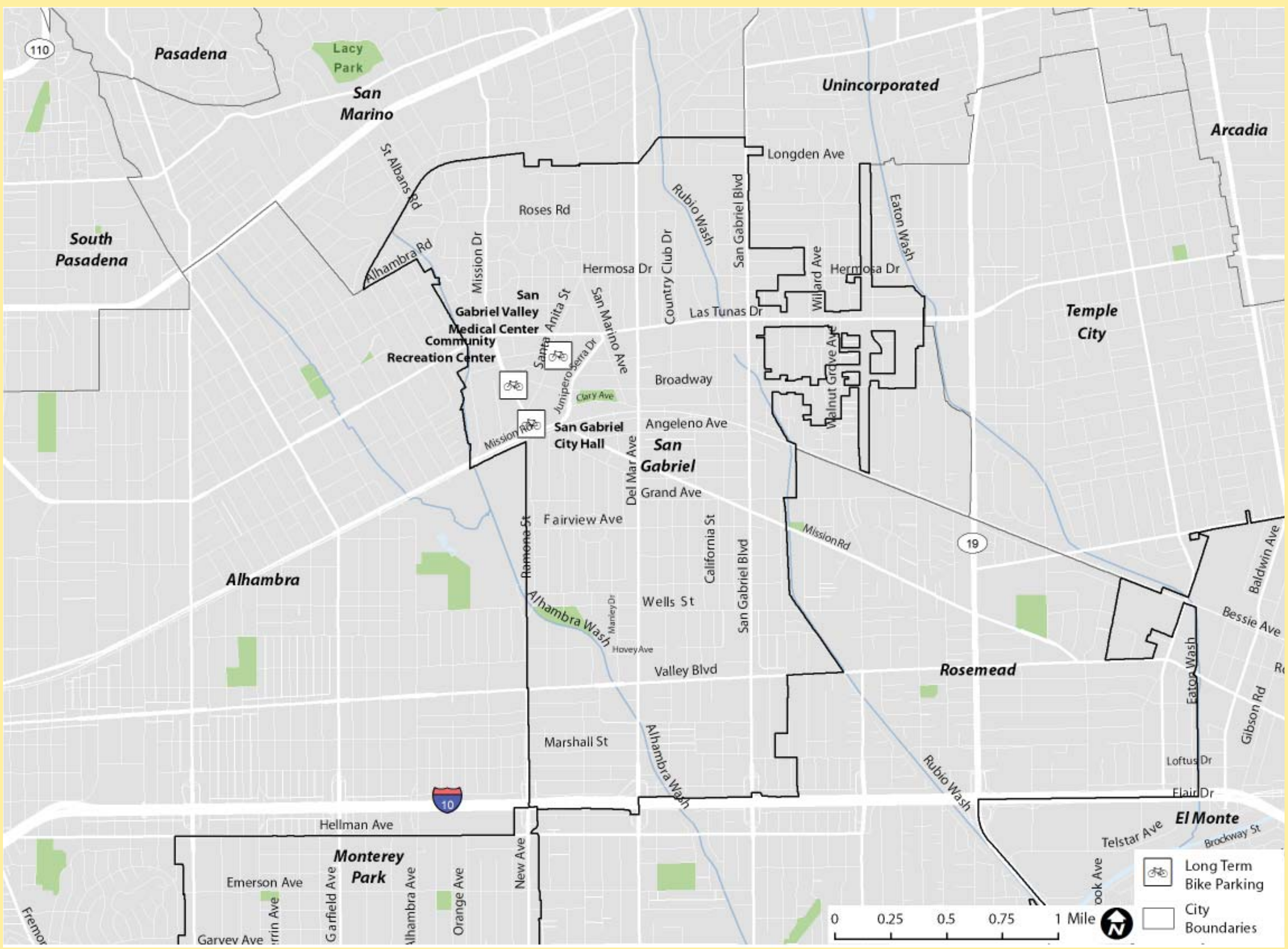
Long-Term Bicycle Parking

Locations where visitors are expected to park their bicycles for longer than 2 hours should provide more secure, long-term bicycle parking options, such as bicycle lockers.

City staff may coordinate with public and private sector development opportunities to determine which projects and facilities should incorporate secure bicycle parking areas into their design. (The City's zoning code already requires secure bicycle parking facilities for all new developments.) Secure bicycle parking areas that provide services, such as bicycle rentals and repair may be considered. The following are locations where long-term bicycle parking is recommended, and these are shown in **Figure 6-12**.

- San Gabriel City Hall
- San Gabriel Community Recreation Center
- San Gabriel Valley Medical Center

***Figure 6-12** San Gabriel Recommended Long-Term Bicycle Parking Facilities*



Municipal Code Bicycle Parking

The City's current zoning code requires all new developments to provide bicycle parking. These required bicycle parking facilities will 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 higher degree of security and support for the bicycle. This will more accurately address the bicycle demand at a given development. Additionally, space to maneuver the bicycle away from fixed objects and buildings is required to accommodate short-term bicycle parking needs.

Key design aspects related to long-term bicycle parking includes:

- 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 storage facilities encourage commuters to travel by bicycle because they have a place to change and prepare before work or school. The City's zoning code currently requires all new mid-size and large employers, offices, and businesses to supply changing and storage facilities, such as by providing showers and locker space within the buildings or arranging agreements with nearby recreation centers to allow commuters to use their facilities.

As noted in the Recommended Programs section, the installation of bicycle maintenance hubs or stations at key high-traffic locations can accommodate bicyclists for a variety of needs (such as minor repairs, inflating tires, filling water bottles, providing wayfinding information, and promotion of local businesses).

6.3.5 Recommended Programs

Improvements to and continued support of education, enforcement and evaluation programs have been proven to increase the number of bicycle trips and bicycling safety. These programs can ensure that more community members know about new and improved facilities, learn the skills they need to integrate bicycling into their activities, and receive positive reinforcement about integrating bicycling into their daily lives. In essence, the new and enhanced programs market the idea of bicycling to the community and encourage a shift to bicycling as a transportation option. This Plan supports the continuation and enhancement of the City's education, encouragement, and enforcement programs that are currently in place. The following additional programs are each designed to promote bicycling in the City, increase safety for those traveling by bicycle, and raise awareness of the benefits of bicycling. **Table 6-18** provides a summary of the recommended programs.

Further details on recommended programs are included in **Chapter 8**.

Table 6-18 Recommended Programs

Category	Program	Responsible Party	Funding Source	Schedule*
Education	Bicycle Safety and Share the Road Campaigns	Metro, SGVCOG, City	City; Grants	Near-Term
	Bicycle Resource Website	City	City	Near-Term
	Adult Bicycling Skills Classes	Bicycle Clubs, City, Metro	City; Grants	Near-Term
	Youth Bicycle Safety Education Classes	Bicycle Clubs, City	City; Grants	Near-Term
	Youth Bicycle Safety Clinics & Bicycle Campus	City, Safe Routes to School National Partnership	City; Grants	Middle-Term
	Senior Bicycle Education Classes	Bicycle Clubs, City	City; Grants	Middle-Term
Encouragement	Bike Valet at City Events	Special Event Promoter, City	City	Near-Term
	Youth and Family-Oriented Bicycle Rides	Advocacy Groups, City	Private	Near-Term
	"Be Seen" Bike Light Campaign	City	City; Grants	Near-Term

Table 6-18 Recommended Programs (continued)

Category	Program	Responsible Party	Funding Source	Schedule*
	Bike Festivals & Family Bike Fest/Family Biking Day	City, Advocacy Groups	City; Sponsorships	Near-Term
	Launch Party for New Bicycle Facilities	City	City	Near-Term
	Bicycle Friendly Community Designation	City	N/A	Near-Term
	Tourism Integration	City	City	Near-Term
	Commuter Incentive Programs	Metro, SGVCOG, City	City; Grants	Middle-Term
	Safe Routes to School Program	City, Advocacy Groups	Grants	Near-Term
	Bicycle Friendly Business Districts	Business Improvement District/ Association, City	City; Contributions from Business Associations	Middle-Term
	Bicycle Hubs	City	City; Grants	Middle-Term
	Media Outlets	City	In-Kind Contributions; Grants	Middle-Term
	Individualized Marketing Campaigns	Metro, SGVCOG, City	Grants	Middle-Term
	Mobility Coordinator	City	City; Grants	Long-Term
	Ride with the City	City	City	Near-Term
	Open Streets/Ciclovía Events	City	City; Grants	Long-Term
	Bicycle Sharing	Metro, SGVCOG, City	Grants; Sponsorships	Long-Term
Enforcement	Speed Radar Trailer/ Feedback Signs	City	Grants	Near-Term
	Bicycle Patrol Units	City	City	Near-Term
	Undercover Officer Enforcement	City	City	Near-Term
	Bicycle Theft Abatement Program	City	Grants	Middle-Term
Evaluation	Bicycle Counts and Survey Program	City	City; Grants	Near-Term
	Mapping Bikeway Investments	City	City	Near-Term
	Bicycle Report Card	City	City	Middle-Term
	Complete Streets Policy	City	City; Grants	Middle-Term
	Bicycle Parking Policy and Enforcement	City	City; Grants	Middle-Term
	Bike Counters/Bicycle Barometers	City	Grants	Middle-Term

**Near-term = 0-3 years, Middle-Term = 3-6 years, Long-Term = 6+ years.*

6.4 Project Costs

6.4.1 Implementation Costs

The following planning-level costs are typically utilized to estimate capital expenditures required for implementation of bikeways by classification:

- Class I Shared-Use Path: $1,000,000 per mile;
- Class II Bike Lane: $50,000 per mile; and
- Class III Bike Route: $20,000 per mile.

The planning level cost estimates do not include potential right-of-way acquisition, extensive grading, landscaping, or potential utility impacts. Cost estimate refinements still may occur based on further engineering review and are intended to provide an estimate for budgeting purposes. **Table 6-19** summarizes the total cost of implementation for the bikeways recommendations.

Table 6-19 Recommended Bikeway Network Cost Estimate

Facility Type	Proposed Bikeways (Miles)	Unit Cost ($/Mile)	Total Cost ($)
Class I Shared-Use Path	4.8	$1,000,000	$4,800,000
Class II Bike Lane	9.6	$50,000	$480,000
Class III Bike Route	19.2	$20,000	$384,000
Total	33.6	--	$5,664,000

As shown in **Table 6 -19**, the total cost estimate for recommended bicycle infrastructure projects is slightly less than $5.7 million, of which nearly $5 million are attributed to Class I shared-use paths and bridges. Note that much of the cost of future Class I shared-use paths will be borne by private developers that are now required to provide paths along any flood control channels on their property.

6.4.2 Maintenance Costs

Bicycle facilities require regular maintenance and repair. On-street bicycle facilities are maintained as part of the normal roadway maintenance program and extra emphasis should be placed on keeping bike lanes and roadway shoulders clear of debris and keeping vegetation overgrowth from blocking visibility. The cost of maintaining Class I facilities may be shared among various agencies or departments. The typical maintenance costs for the existing and proposed bikeway network are shown in **Table 6-20**, and the cost for maintaining the built out network is provided (accounting for existing bikeways within the City).

Table 6-20 Annual Bikeways Network Maintenance Cost Estimates

Facility Type	Unit Cost ($/Mile)	Total Length (Miles)	Annual Cost ($)	Typical Maintenance Items
Class I Shared-Use Path	$15,000	4.8	$72,000	Lighting and removal of debris and vegetation overgrowth
Class II Bike Lane	$5,000	9.6	$48,000	Repainting lane stripes and stencils, sign replacement as needed
Class III Bike Route	$5,000	19.2	$96,000	Sign replacement as needed
Total		**33.6**	**$216,000**	

As shown in **Table 6-20**, the annual cost for maintaining the bikeways network assuming implementation of all paths, bike lanes, and bike routes is approximately $216,000. It should be noted this cost will be realized over time as implementation of the network is completed, and actual costs will be lower until the entire network is constructed.

6.5 Project Implementation

This chapter provides a strategy for implementing the capital project recommendations in this Plan. This implementation strategy and sequence is guided by a criteria-based ranking consistent with the goals of this Plan as well as the goals of other City, region, and State plans and policies.

A lengthy list of recommendations has been provided in this Plan, and ranking allows staff to prioritize the projects to advance to implementation. A variety of variables will influence the implementation including the availability of funding, engineering analysis, and support from community stakeholders and representatives.

Many signing and striping projects can be completed by the City Department of Public Works and are exempt from CEQA requirements. Such projects can be implemented using City or grant funds with approval by the City Management and/or City Council, if required due to the visibility or importance of the project. More complex projects with greater associated impacts typically include the following steps to advance to implementation:

1. Preparation of a Feasibility Study involving a conceptual design (with consideration of possible alternatives and environmental issues) and cost estimate for individual projects as needed.
2. Secure funding and any applicable environmental approvals.
3. Completion of final plans, specifications and estimates, advertising for bids, receipt of bids and award of contract(s).
4. Approval of the project by the City Council.
5. Construction of Project.

6.5.1 Prioritization Criteria

The intent of ranking projects is to create a prioritized list of bicycle projects for implementation. As projects are implemented, lower ranked projects move up the list. The project list and individual projects outlined in this Plan are flexible concepts that serve as a guideline. The ranked project list, and perhaps the overall system and segments themselves, may change over time as a result of changing bicycling patterns, land use patterns, implementation constraints and opportunities and the development of other transportation system facilities.

Projects may be implemented out of scoring order as opportunities arise. Opportunities may include grant availability, new development projects, capital improvement projects, or roadway repaving. The City can review the project list and project ranking at regular intervals to ensure it reflects the most current priorities, needs, and opportunities for implementing the bicycle network in a logical and efficient manner.

Each ranking criterion contains information about a facility and its ability to address an existing or future need in the San Gabriel Valley. The resulting project ranking determines each project's relative importance in funding and scheduled construction.

The following criteria are used to evaluate each proposed bicycle facility, its ability to address demand and deficiencies in the existing bicycle network and its ease of implementation. The criteria are organized into "utility" and "implementation" prioritization factors.

Utility Prioritization Factors

Utility criteria include conditions of bicycle facilities that enhance the bicycle network. Each criterion is discussed below.

Bicycle-Related Collisions

Bicycle facilities have the ability to increase safety by reducing potential conflicts between bicyclists and motorists, which often result in collisions. Proposed facilities that are located on roadways with past bicycle-automobile collisions are important to the partner cities.

Public Input

The Project Team solicited public input through a series of booths at local events, jurisdiction-wide workshops, community street audits, a web-based feedback portal, monthly polls and an opinion survey. Facilities that community members identified as desirable for future bicycle facilities are of priority to the network because they address the needs of the public.

Gap Closure

Gaps in the bicycle network come in a variety of forms, ranging from a "missing link" on a roadway to larger geographic areas without bicycle facilities. Gaps in the bikeway network discourage bicycle use because they limit access to key destinations and land uses. Facilities that fill a gap in the existing and proposed bicycle network are of high priority.

Connectivity to Existing Facilities

Proposed bikeways that connect to existing bicycle facilities in the partner cities and to adjacent jurisdictions' bikeways increase the convenience of bicycle travel.

Proposed facilities that fit this criterion are of high importance to the cities.

Connectivity to Regional Facilities

Linkage to existing and future regional bikeways in the San Gabriel Valley will enhance future connectivity between the partner cities and surrounding communities. For the purposes of this evaluation, linkage to the following facility types would be identified as regional connections:

- Existing/Planned off-street trails along waterways, utility corridors, etc.
- Existing/Planned on-street bikeways that continuously span across two or more jurisdictions

Connectivity to Activity Centers

Improved linkage to key employment, recreational, commercial and civic destinations within the community can increase bicycling activity and reduce in-town vehicular travel for short-distance trips. These activity centers generate many trips which could be made by bicycle if the proper facilities were available. The following activity centers will be reviewed for improved access related to the recommended bikeway improvements:

- Major Employment & Commercial Areas
- Civic Centers
- Public Libraries
- Community Centers
- K-12 Public Schools
- East Los Angeles College
- Major Cultural Destinations, such as museums and interpretive centers
- Hospitals & Medical Centers
- Parks & Recreation Centers
- Commercial/retail business centers (e.g., shopping malls, downtown districts, retail complexes, etc.)

Connectivity to Multi-Modal Transportation Centers

Bicycle facilities that link to modes of public transportation increase the geographical distance bicyclists are able to travel. Proposed bicycle facilities that connect to transit stops and centers improve bicyclists' mobility and are therefore key pieces of the bicycle network. Priority ranking will be given to bikeways that connect to the following major transportation centers:

- El Monte Bus Station
- El Monte Metrolink Station
- East Los Angeles College Transit Center
- Proposed future Metro Gold Line stations

Implementation Prioritization Factors

Implementation criteria address the ease of implementing each proposed project. Each criterion is discussed below.

Permitting

Projects that can be implemented solely by the participating cities have higher readiness factors, whereas those that require permitting and approvals from other agencies governing roadways and land within the individual cities will score lower. Examples include collaboration with adjacent jurisdictions, approval by Caltrans, or permitting by the Los Angeles County Department of Public Works for projects utilizing local washes, creeks, storm channels, etc.

Project Cost

Projects that are less expensive do not require as much funding as other projects and are therefore easier to implement. Projects that cost less are of higher priority to the partner cities.

Parking Displacement

Installing safe, easily accessible and attractive bicycle facilities occasionally requires the displacement of on-street vehicular parking. Therefore, projects that do not require parking displacement are of increased importance.

6.5.2 Project Ranking

Table 6-21 shows how the criteria are weighted for project prioritization and ranking.

Table 6-21 Ranking Criteria and Weighting

Criteria	Score	Multiplier	Total	Description
Utility Prioritization Factors				
Bicycle-Related Collisions	2	3	6	Provides a bicycle facility on a roadway that experienced 3 or more bicycle-related collisions between 2007-2011
	1	3	3	Provides a bicycle facility on a roadway that experienced 1-2 bicycle-related collisions between 2007-2011
	0	3	0	Provides a bicycle facility on a roadway that did not experience any bicycle-related collisions between 2007-2011
Public Input	2	3	6	Roadway was identified by the public as desirable for a future facility multiple times
	1	3	3	Roadway was identified by the public as desirable for a future facility once
	0	3	0	Roadway was not identified by the public as desirable for a future facility
Gap Closure	2	3	6	Fills a network gap between two or more existing facilities
	1	3	3	Fills a network gap between an existing facility and a proposed facility
	0	3	0	Does not directly or indirectly fill a network gap
Connectivity: Existing	2	2	4	Provides direct access to an existing bicycle facility
	1	2	2	Provides secondary connectivity to an existing bicycle facility
	0	2	0	Does not directly or indirectly provide access to an existing bicycle facility
Connectivity: Regional	2	2	4	Provides direct access to a regional existing/proposed bicycle facility
	1	2	2	Provides secondary connectivity to a regional existing/ proposed bicycle facility
	0	2	0	Does not directly or indirectly provide access to a regional existing/proposed bicycle facility
Connectivity: Activity Centers	2	2	4	Provides access to more than 3 activity centers
	1	2	2	Provides access to 1-3 activity centers
	0	2	0	Does not provide access to an activity center
Connectivity: Multi-Modal	2	1	2	Provides direct access to a major Transportation Center
	1	1	1	Provides secondary connectivity to a major Transportation Center
	0	1	0	Does not directly or indirectly provide access to a major Transportation Center
Implementation Prioritization Factors				
Permitting	2	1	2	Does not require permitting from agency (other than the respective city)
	1	1	1	Requires permitting or approval from 1 agency

Table 6-21 Ranking Criteria and Weighting (continued)

Criteria	Score	Multiplier	Total	Description
	0	1	0	Requires permitting or approval from 2 or more agencies
Project Cost	2	1	2	Will cost less than $40,000 to implement
	1	1	1	Will cost between $40,001 and $200,000 to implement
	0	1	0	Will cost over $200,000 to implement
Parking Displacement	2	1	2	Does not require any parking removal
	1	1	1	Requires removal of some on-street parking stalls
	0	1	0	Requires removal of all on-street parking stalls

Each recommended project was evaluated based on the ranking criteria and scored to develop the prioritization tables. As shown in **Table 6-21**, the maximum potential score for a recommended project is 38 points.

Within the City of San Gabriel, a total of 43 bicycle facility projects were identified and grouped into the following three tiers by each project's prioritization score:

- Tier 1 (26-19 points): Tier 1 projects have the highest potential for addressing the City's goals for bicycle transportation and are intended for near-term project implementation. The highest score received by a project was 26 points. A total of 15 projects are listed in Tier 1 and are shown in **Table 6-22**.
- Tier 2 (18-15 points): Tier 2 projects are intended for mid-term implementation. A total of 16 projects are listed in Tier 2 and are shown in **Table 6-23**.
- Tier 3 (14-0 points): Tier 3 projects are not currently ready for implementation but are included as long-term potential bicycle-specific projects. A total of 12 projects are listed in Tier 3 and are shown in **Table 6-24**.

All of the projects are recommended for implementation over the next twenty (20) years. However, due to the unpredictability of funding sources, economic conditions, and community support, some projects, especially those that require right-of-way purchase or coordination with multiple jurisdictions, may not be completed within the next twenty years.

Table 6-22 Tier 1 Projects (Score of 26-19)

Facility Type	Location	Start	End	Bicycle-Related Collisions	Public Input	Gap Closure	Connectivity: Existing	Connectivity: Regional	Connectivity: Activity Centers	Connectivity: Multi-Modal	Permitting	Project Cost	Parking Displacement	Total Score (34 max)
III	Broadway	City Limit (West of La Presa Avenue)	City Limit (West of Muscatel Avenue)	6	6	0	0	4	4	0	2	2	2	26
III	Broadway	Mission Drive	Burton Avenue	6	6	0	0	4	4	0	2	2	2	26
II	Del Mar Avenue	Longden Drive	I-10 Freeway	6	6	0	0	4	4	0	1	1	2	24
I	Alhambra Wash	City Limit (near Ramona Street/Wells Street Intersection)	Hovey Avenue	6	6	0	0	4	4	0	1	0	2	23
II	Las Tunas Drive	City Limit (East of Champion Place)	San Gabriel Boulevard	6	6	0	0	4	4	0	2	1	0	23
II	Mission Road	Santa Anita Street	City Limit (East of Charlotte Avenue)	6	6	0	0	4	4	0	2	1	0	23
I	Rubio Wash	San Gabriel Boulevard	Valley Boulevard	6	6	0	0	4	4	0	1	0	2	23
II	Valley Boulevard	New Avenue	Rubio Wash	6	6	0	0	4	4	0	2	1	0	23
II	Las Tunas Drive	San Gabriel Boulevard	Muscatel Avenue	6	6	0	0	4	2	0	2	2	0	22
I	Alhambra Wash	Del Mar Avenue	I-10 Freeway	6	6	0	0	4	2	0	1	0	2	21
I	Eaton Wash	City Limit (South of Hermosa Drive)	Elm Avenue	6	6	0	0	4	0	0	1	1	2	20
I	Union Pacific Railroad Right-of-Way	West City Limit	East City Limit	3	6	0	0	4	4	0	1	0	2	20
II	Junipero Serra Drive	San Marino Avenue	Mission Road	3	3	0	0	4	4	0	2	2	1	19
I	Rubio Wash	Rose Avenue	Elm Avenue	6	6	0	0	4	0	0	1	0	2	19
II	San Gabriel Boulevard	City Limit (North of Los Olivos Drive)	Hermosa Drive	6	3	0	0	4	0	0	2	2	2	19

Table 6-23 Tier 2 Projects (Score of 18-15)

Facility Type	Location	Start	End	Bicycle-Related Collisions	Public Input	Gap Closure	Connectivity: Existing	Connectivity: Regional	Connectivity: Activity Centers	Connectivity: Multi-Modal	Permitting	Project Cost	Parking Displacement	Total Score (34 max)
III	Marshall Street	New Avenue	City Limit (East of Charlotte Avenue)	6	0	0	0	4	2	0	2	2	2	18
III	San Gabriel Boulevard	Hermosa Drive	I-10 Freeway	6	0	0	0	4	4	0	1	1	2	18
III	San Marino Avenue	Longden Drive	Clary Avenue	6	0	0	0	4	2	0	2	2	2	18
III	Wells Street	Del Mar Avenue	Rubio Wash	6	0	0	0	4	2	0	2	2	2	18
III	Mission Drive	City Limit (North of Domingo Street)	Mission Road	3	0	0	0	4	4	0	2	2	2	17
III	Ramona Street	Mission Road	New Avenue	3	0	0	0	4	4	0	2	2	2	17
III	Santa Anita Street	Hermosa Drive	Mission Drive	3	0	0	0	4	4	0	2	2	2	17
III	California Street	East Angeleno Avenue	Wells Street	3	0	0	0	4	2	0	2	2	2	15
III	Clary Avenue	Junipero Serra Drive	Del Mar Avenue	3	0	0	0	4	2	0	2	2	2	15
II	Fairview Avenue	Ramona Street	Del Mar Avenue	3	0	0	0	4	2	0	2	2	2	15
III	Hermosa Drive	Mission Drive	Charlotte Avenue	3	0	0	0	4	2	0	2	2	2	15
III	Muscatel Avenue	Elm Avenue	City Limit (North of Las Tunas Drive)	3	0	0	0	4	2	0	2	2	2	15
III	Roses Road	St. Albans Road	Country Club Drive	3	0	0	0	4	2	0	2	2	2	15
III	Wells Street	Ramona Street	Del Mar Avenue	3	0	0	0	4	2	0	2	2	2	15
II	Walnut Grove Avenue	City Limit (South of Cheyenne Drive)	City Limit (North of Frandsen Street)	3	0	0	0	4	2	0	2	2	2	15
II	Walnut Grove Avenue	Las Tunas Drive	City Limit (North of Cheyenne Drive)	3	0	0	0	4	2	0	2	2	2	15

Table 6-24 Tier 3 Projects (Score of 14 or less)

Facility Type	Location	Start	End	Bicycle-Related Collisions	Public Input	Gap Closure	Connectivity: Existing	Connectivity: Regional	Connectivity: Activity Centers	Connectivity: Multi-Modal	Permitting	Project Cost	Parking Displacement	Total Score (34 max)
III	Fairview Avenue	Del Mar Avenue	San Gabriel Boulevard	3	0	0	0	4	0	0	2	2	2	13
III	Angeleno Avenue	Mission Road	San Gabriel Boulevard	0	0	0	0	4	2	0	2	2	2	12
III	Grand Avenue	Del Mar Avenue	City Limit (East of Rubio Wash)	0	0	0	0	4	2	0	2	2	2	12
III	Hovey Avenue	Alhambra Wash	Del Mar Avenue	0	0	0	0	4	2	0	2	2	2	12
III	Manley Drive	Wells Street	Valley Boulevard	0	0	0	0	4	2	0	2	2	2	12
III	Country Club Drive	Roses Road	Las Tunas Drive	0	0	0	0	4	0	0	2	2	2	10
III	Hermosa Drive	City Limit (West of Vista Street)	Burton Avenue	0	0	0	0	4	0	0	2	2	2	10
III	Longden Avenue	City Limit (East of Vista Street/Bion Avenue)	Burton Avenue	0	0	0	0	4	0	0	2	2	2	10
III	Longden Drive	San Marino Avenue	San Gabriel Boulevard	0	0	0	0	4	0	0	2	2	2	10
III	Willard Avenue	City Limit (Alley North of Las Tunas Drive)	City Limit (South of Las Tunas Drive)	0	0	0	0	4	0	0	2	2	2	10
III	Alhambra Road	Domingo Drive	City Limit (West of Valencia Street)	0	0	0	0	2	0	0	2	2	2	8
III	St. Albans Road	City Limit (North of Coolidge Drive)	Roses Road	0	0	0	0	0	0	0	2	2	2	6

6.5.3 Implementation Strategies

The Bicycle Master Plan provides the long-term vision for the development of a citywide bicycle network that can be used by all residents for all types of trips. The following strategies, action items and measures of effectiveness are provided to guide the City toward the vision identified in the Plan.

Strategy 1: Strategically Pursue Infrastructure Projects

City staff can strategically pursue funding and implementation of infrastructure projects recommended in this Plan. Ideally, City staff will pursue capital improvements funding or grant funding for high-priority bicycle improvements first. If grant requirements or construction in conjunction with another roadway project make construction of a lower priority project possible, then the City might advance that project regardless of priority.

Action Item: On an annual basis the City can publish a public report documenting the status and ongoing actions for all bicycle infrastructure projects. This report may be combined with the prioritization review discussed below. The first update is recommended to occur in Fall 2015.

Strategy 2: Review Capital Improvement Program (CIP) Concurrence

The opportunity to implement projects concurrent with the CIP can reduce the burden of implementing bicycle facility projects, and improve the schedule for use regardless of priority ranking for each project.

Action Item: Annually evaluate the CIP for opportunities to implement recommended bicycle facility projects included within this Plan.

Strategy 3: General Plan Incorporation

Key policies, strategies and recommendations included in this Bicycle Master Plan can be incorporated into the General Plan Circulation Element during the next update. At the least, the Circulation Element update can incorporate the recommended bikeways network, add revisions to the roadway cross-sections showing dimensions for on-street bike lanes, and incorporate policies for public and private realm accommodation of bicycling activities. Additionally, roadways with excess vehicular capacity can be reviewed to modify travel lanes and provided on-street or protected bike lanes. The City can also develop engineering standards for NACTO-type bicycle treatments for ongoing use.

Action Item: Update the General Plan Circulation Element and incorporate key items from the Bicycle Master Plan.

Strategy 4: Review City Representative

Current work on bicycle facility projects at the City has been implemented by planning and engineering staff within multiple City Departments. The City may review the designated bikeways representative to determine if other staff within the City have availability or are suited to help secure funding or programmatic recommendations provided within this Plan.

Action Item: Designate a single point person at the City to focus on implementation of bikeway infrastructure and non-infrastructure projects.

Strategy 5: Regularly Revisit Project Prioritization

Projects have been prioritized based on safety, public input, transportation benefit, connectivity benefit, cost, and feasibility. It is recommended that the prioritized list be reviewed every fiscal year, with new projects added, completed projects removed, and the priorities revised as conditions change.

Action Item: Annual review and update of the bicycle master plan's recommended facilities list and programs schedule. Updates to the list can be shared with the public. The first update is recommended in Fall 2015.

Strategy 6: Update the Bicycle Master Plan

While this Plan is intended to guide bikeways planning in the City for the next 20 years, updates may be needed to address changes in priority and evaluation efforts. State funding has typically required updates to bicycle master plans every five years to establish funding opportunity for active transportation projects. Often, cities provide a compliance update within five years and a comprehensive update every ten years.

Action Item: Provide compliance update to the Bicycle Master Plan in five years, and a more comprehensive full update in ten years. Other elements of the Plan shall be reviewed and updated as needed.

Strategy 7: Collaborate with Caltrans

Caltrans manages and operates various freeways adjacent to the City with interchange ramps and bridges that often are higher-stress locations for bicyclists. This Plan includes bicycle facility recommendations that require regular coordination and collaboration with Caltrans.

Action Item: Collaborate with Caltrans to implement bicycle facility improvements on Caltrans-managed facilities, including innovative and conventional treatments using examples of similar facilities within the City, County, and State as precedents.

Strategy 8: Establish Measures of Effectiveness

Measures of effectiveness (MOEs, also known as targets or indicators) are used as a quantitative way to measure the City's progress toward implementing the Bicycle Master Plan. Well-crafted MOEs track progress toward meeting an agreed-upon goal within an established timeframe. **Table 6-25** describes several MOEs recommended for use by the City to track key achievements.

Table 6-25 Recommended Measures of Effectiveness

Measure	Benchmark	Target
Bicycle journey to work mode share	0.9% bicycle mode split per Census	Increase bicycle mode split to 1.8% by 2035.
Bicycle Facility Improvements Implementation	Approximately 4.6 miles of bikeways	Increase bikeways network by implementing bicycle facility recommendations.
Bicycle counts	Bike counts included in this Plan	Annually collect bike counts at baseline locations to document ridership volumes.
Bicyclist trends/behaviors	Bike counts included in this Plan	Increase bicycling by women 10% per year up to 50% of total bicycling population, focus efforts to reduce wrong way bicycling where reported as cause in bike incidents.
Public attitudes about bicycling	Bike survey provides indication of challenging locations and current perspectives	Increase in positive attitudes about bicycling within community.
Bicycle boulevard demonstration project	Not applicable	Develop demonstration bicycle boulevard on selected corridor and evaluate for success in usage and connectivity.
Bicycle Friendly Community Designation	Not currently designated by the League of American Bicyclists	Secure League of American Bicyclists Bronze Award by 2016 and Silver Award by 2021.
Grant funding	Baseline to be established	Attain an annual average funding of $200,000 or more for infrastructure and non-infrastructure projects.

As new baseline information is discovered as conditions change, and as the City implements the Bicycle Master Plan, the MOEs should be reevaluated, revised and updated.

An example evaluation or MOEs ("indicators") report is produced by the City of Santa Monica which evaluates sustainability indicators as well as non-motorized program measures. The Santa Monica Sustainable City Report Card is provided online at the following location

> *http://www.smgov.net/Departments/OSE/categories/sustainability.aspx*

6.5.4 Potential Funding Sources

Potential funding sources for implementation of recommended bicycle facility infrastructure projects and programs has been identified for further consideration. The funding sources listed are typically competitive in nature, so the City will evaluate the applicability of potential projects and likely scoring before developing a grant application. Additionally, the City will determine the availability of staff to prepare grant applications and to administer the grant. Preparation of grant applications can often be a time-intensive effort, and receipt of funding is not guaranteed due to increasing competition for active transportation projects. Resource demands should be considered by the City given the potential benefit of each grant opportunity.

We recommend the City identify potential projects that would fit well with the following funding sources and initiate/continue discussions with key agencies and stakeholders; funding sources are identified with the date of the next anticipated call listed in parentheses:

- Caltrans Active Transportation Program (Late 2014 or Early 2015)
- Metro Call for Projects (2015)
- Metro ExpressLanes Net Toll Revenues (Date Unknown)
- SCAG Sustainability Program (Future date subject to SCAG Regional Council action)
- Land and Water Conservation Fund (2015)

Preliminary consideration of applicability and discussion with stakeholders can help verify that a potential opportunity is well-suited for the grant source, and can help position the City to document a history of collaboration and provide a venue to secure letters of support for incorporation into the grant application. Refer to Chapter 9 for a listing of additional funding sources that may be considered for funding bicycle facility improvements and programs.

6.6 Active Transportation Program (ATP) Compliance

The Active Transportation Program (ATP) is an annual statewide discretionary grant program that funds bicycle and pedestrian projects through the California Department of Transportation (Caltrans). Available as grants to local jurisdictions, the ATP emphasizes projects and programs that enhance bicycling for transportation purposes. In order for the City to qualify for ATP funding in future cycles, the Bicycle Master Plan must contain specific elements. **Appendix I** displays the requisite ATP components and their location within this Plan.

7 South El Monte

This chapter presents the City of South El Monte's portion of the San Gabriel Valley Regional Bicycle Master Plan. The chapter is organized into the following sections:

- Existing Conditions
- Needs Analysis
- Recommended Bicycle Facilities & Programs
- Project Costs
- Project Implementation
- Active Transportation Program (ATP) Compliance

7.1 Existing Conditions

The City of South El Monte is located in the south central part of the San Gabriel Valley. There are approximately 20,100 residents with 7,184 people per square mile and a total area of 2.8 square miles. South El Monte is bordered by Rosemead to the west, El Monte to the north and east, and the Whittier Narrows Recreational Area along the southern boundary. Bicycle riders and others are drawn to Whittier Narrows and both the Rio Hondo and San Gabriel River bike paths for recreational activities.

Image 24- *South El Monte City Hall*

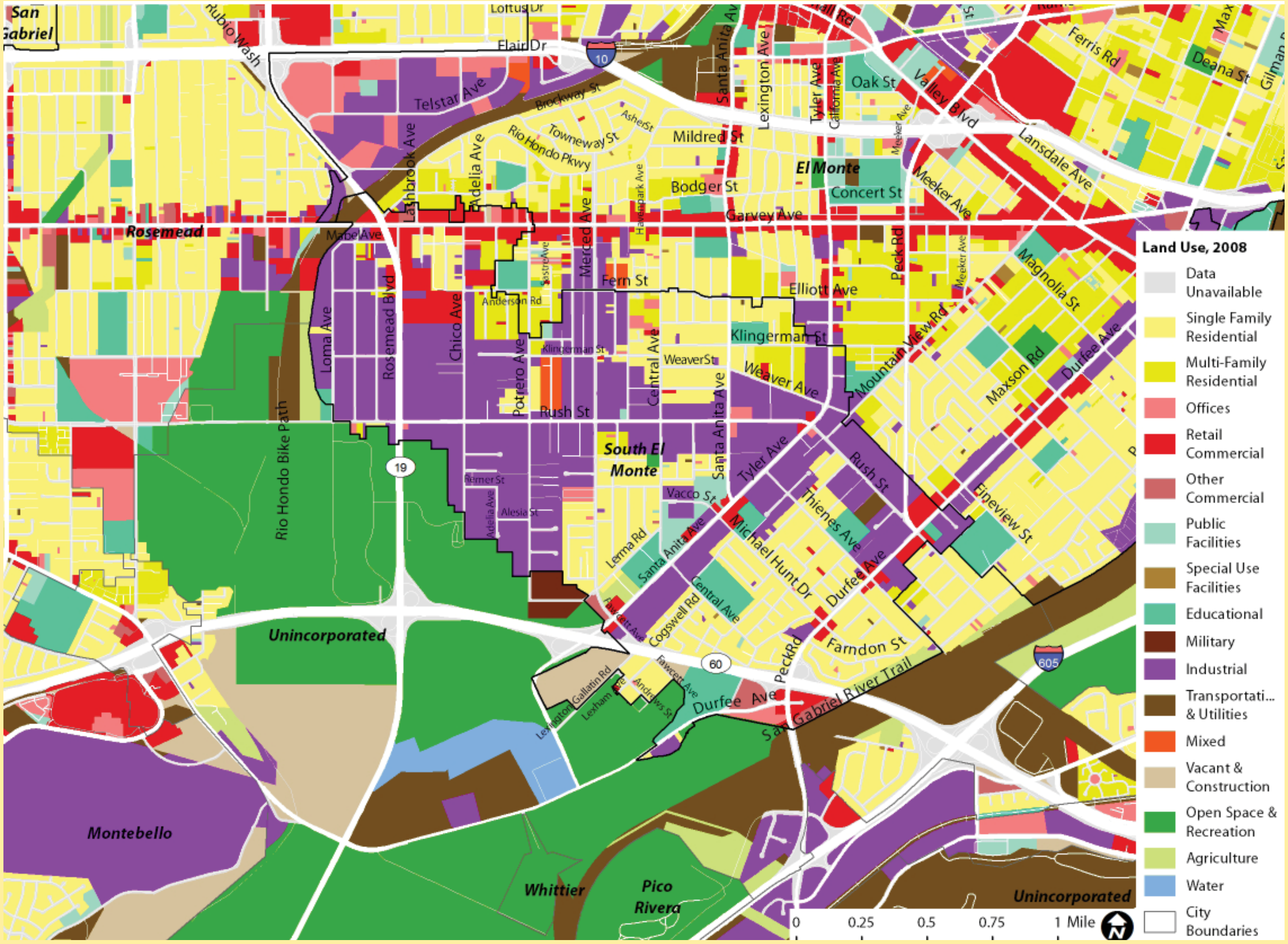
The purpose of this chapter is to explore existing bicycling conditions in South El Monte. With a bicycling mode share of 0.7 percent (for commute trips), South El Monte has somewhat lower bicycle use than most neighboring communities, as well as the State of California (1.0 percent). An estimated 984 bicycle trips are made daily in South El Monte.

Image 25- *San Gabriel River Bike Path at Thienes Avenue Gate*

7.1.1 Land Use

Figure 7-1 presents South El Monte's land use map. Industrial uses dominate the City, occupying forty-eight percent (48%) of land area. Single family homes account for twenty-seven percent (27%) of the City's land, and multi-family residential buildings occupy only four percent (4%). Parks, open space, and recreational facilities account for less than one percent (0.2%) of land. Commercial, mixed-use, and office designations account for a total of approximately ten percent (10%) of the city's land. Commercial uses are focused along Rush Street, Santa Anita Avenue, Tyler Avenue, Peck Road, and Durfee Avenue.

Figure 7-1 *South El Monte Land Use Map*



7.1.2 Relevant Plans and Policies

This section discusses various City of South El Monte plans and policies and their relevance to this Plan.

Thienes Avenue Bike Lane Striping Project – Notice to Residents/Property Owners (2013)

The Thienes Avenue Bike Lane Striping Project is an effort to promote cycling in South El Monte with a bi-directional bikeway on the northerly side of Thienes Avenue from Tyler Avenue to Durfee Avenue. **Figure 7-2** provides an overhead view, and **Figure 7-3** provides striping plans and a cross-section of the proposed project.

Figure 7-2 *Overhead View of Proposed Thienes Avenue Bike Lanes*

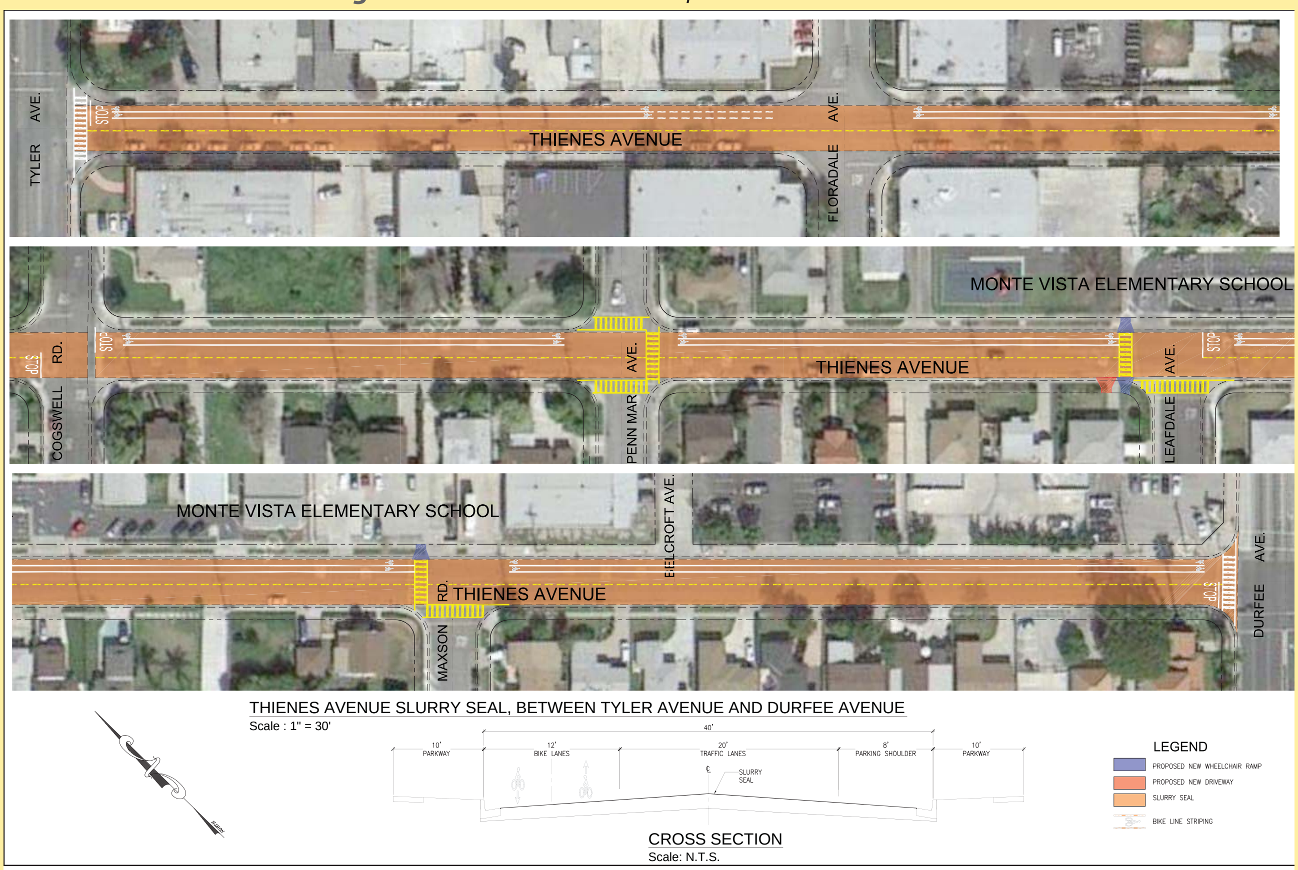
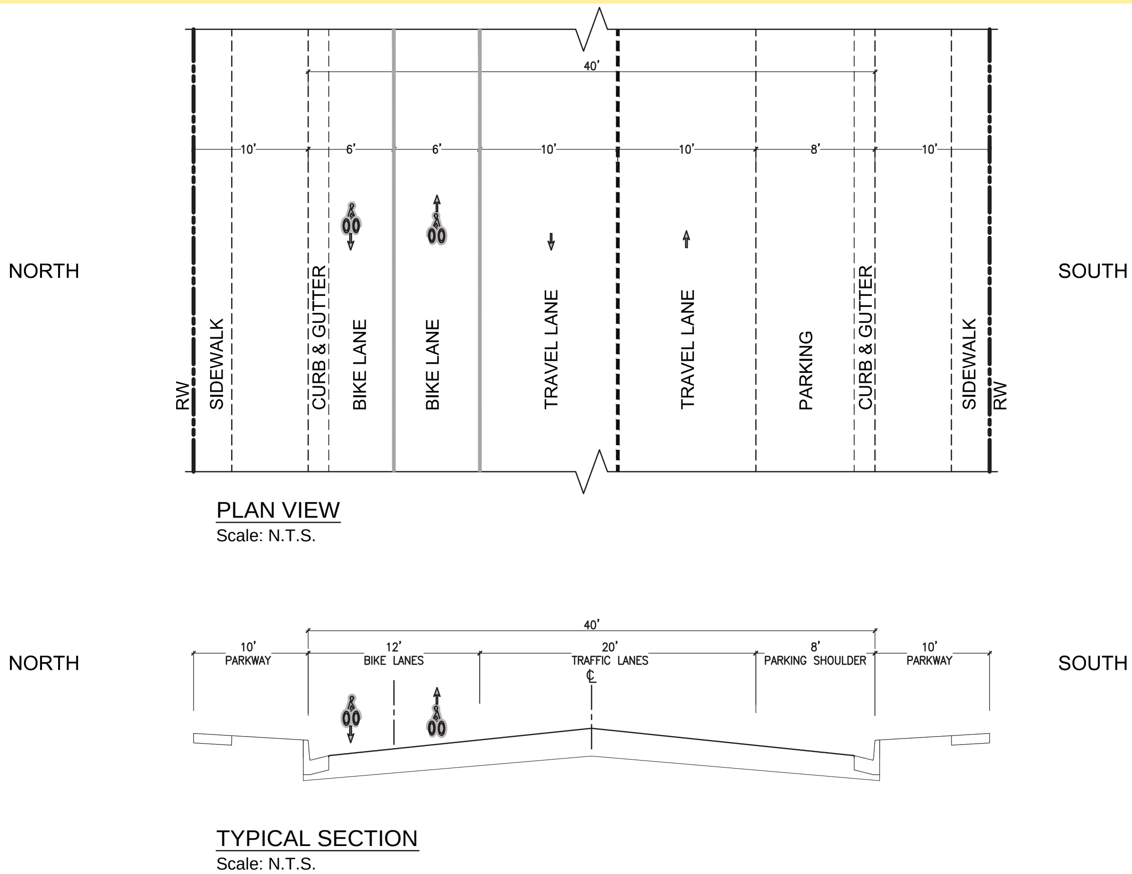


Figure 7-3 *Striping Plan and Cross Section for Proposed Thienes Avenue Bike Lanes*



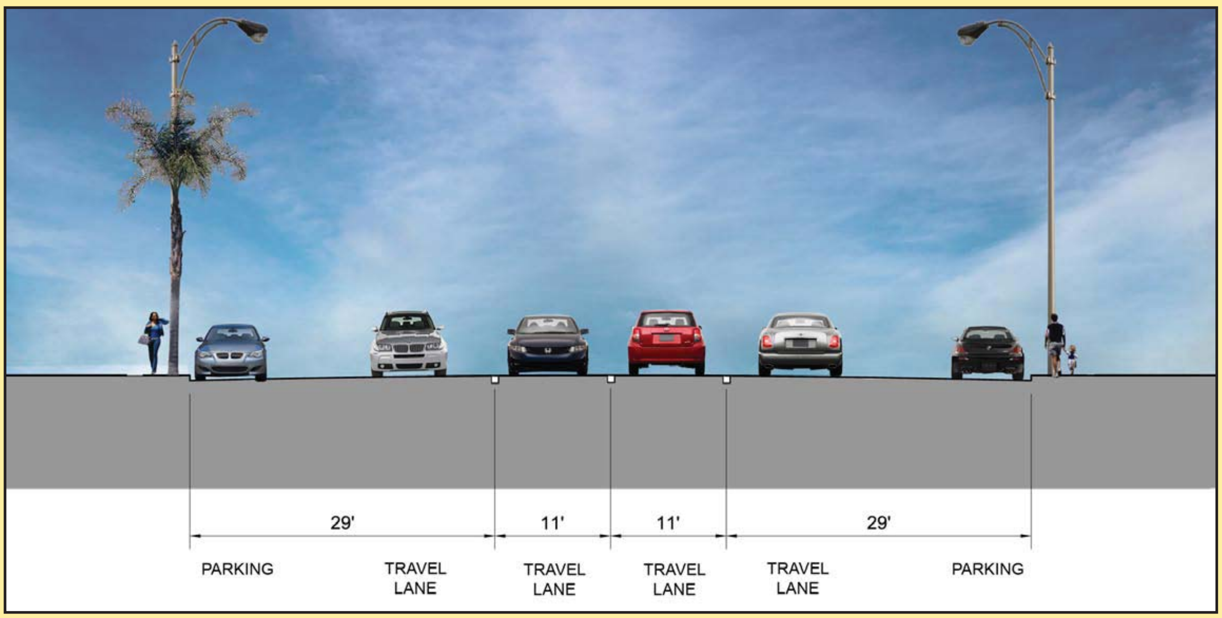
THIENES AVENUE BIKE LANE STRIPING

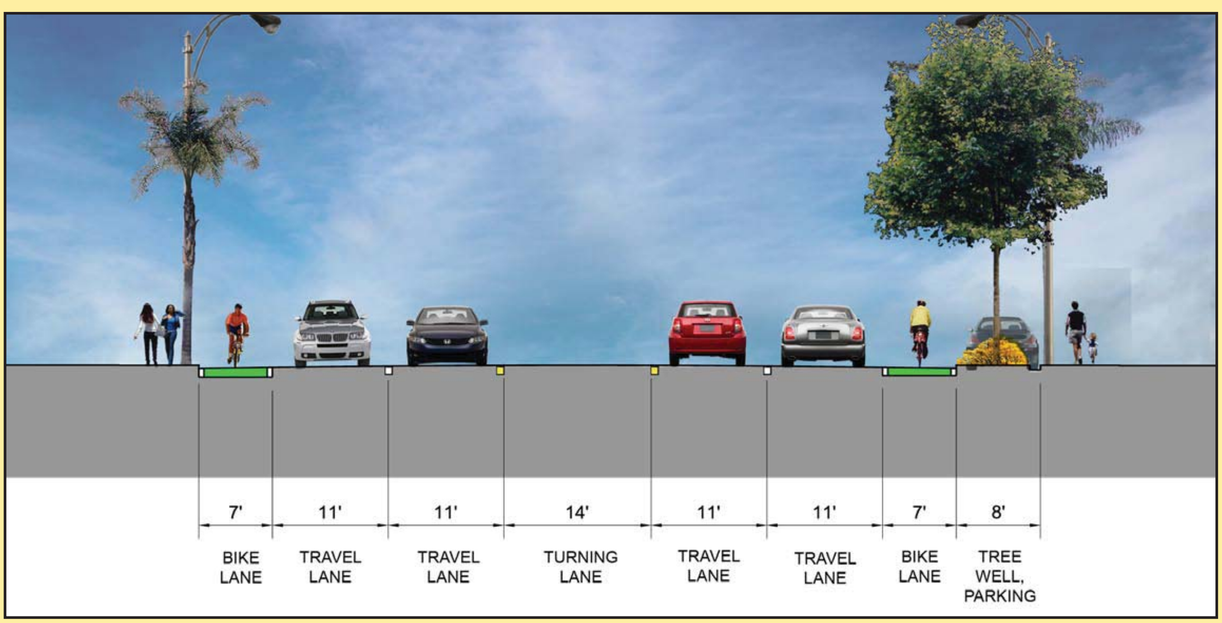
Scale: N.T.S.

Revitalizing the Durfee Avenue/Peck Road Corridor in South El Monte (2012)

Following the model of the Revitalization Plan for the Santa Anita/Tyler Avenue Corridor (see below), the City of South El Monte conducted a design charrette to focus on the Durfee Avenue/Peck Road corridor in the southern portion of the City. In addition to the primary corridor, the planning effort also focused on the adjoining portions of East Rush Street and Thienes Avenue. The resulting report details the charrette process and highlights the complete streets designs that were produced by residents and the project team. The report also presents potential funding sources for the City to consider seeking. Many of the recommendations call for a reduction in the number and/or width of general purpose travel lanes to accommodate exclusive bicycle lanes. **Figure 7-4** provides a before-and-after example of a lane reduction on Peck Road. Curb extensions and improved pedestrian crossings are also recommended throughout the report.

Figure 7-4 *Peck Road, Facing South, North of Durfee/Peck Intersection – Existing & Proposed*





Shively Middle School Preliminary School Route (2011)

As part of a Safe Routes to School (SRTS) project, a preliminary school route plan was created illustrating pedestrian improvements along Strozier Avenue and El Poche Street, shown in **Figure 7-5**.

The following is a list of some improvements recommended in the SRTS project:

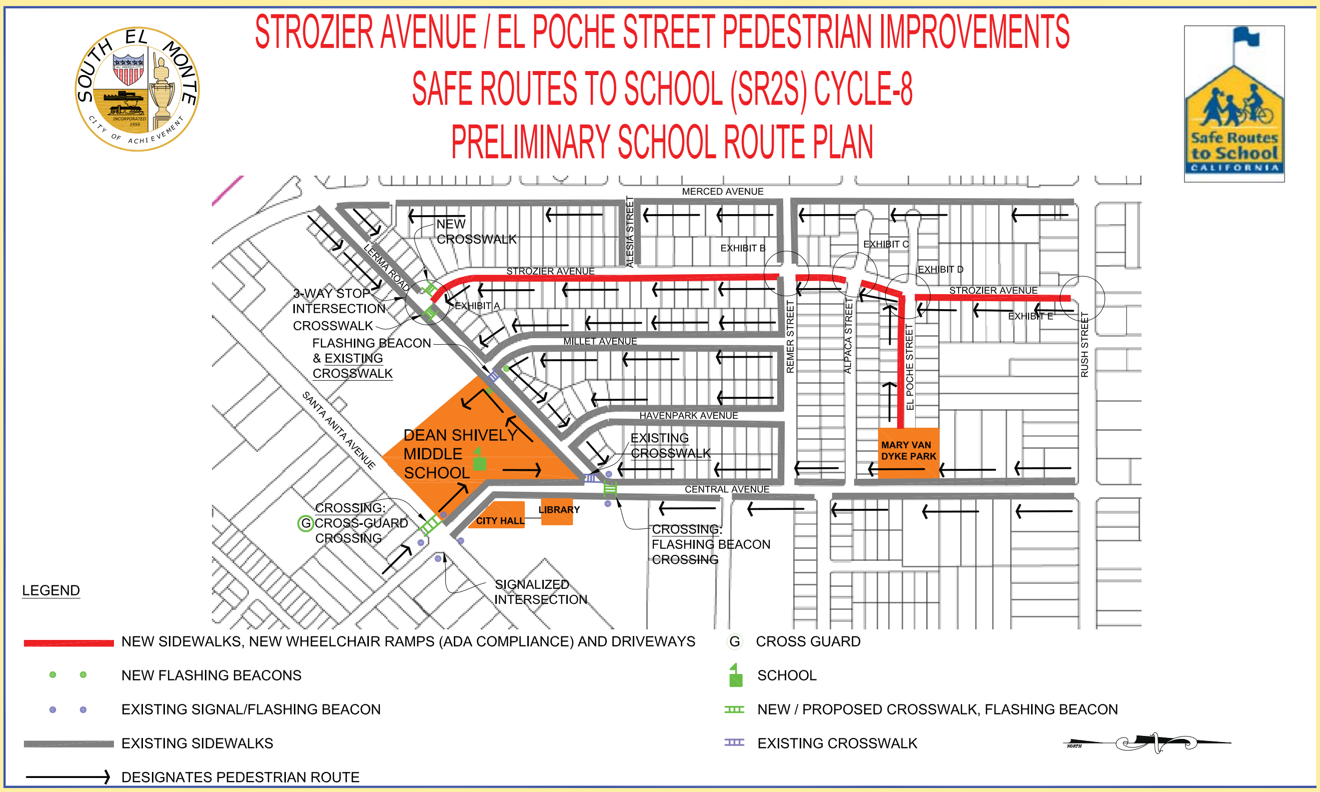
New sidewalks, new wheelchair ramps, and driveways should be implemented along:

- Strozier Avenue from Lerma Road to Rush Street
- El Poche Street from Strozier Avenue to Mary van Dyke Park

New Flashing Beacons will be implemented on:

- Lerman Road at Millet Avenue
- New/Proposed Crosswalk, Flashing Beacon at:
- Central Avenue at Lerman Road
- Santa Anita Avenue at Central Avenue
- Lerman Road at Strozier Avenue
- Strozier Avenue at Lerma Road

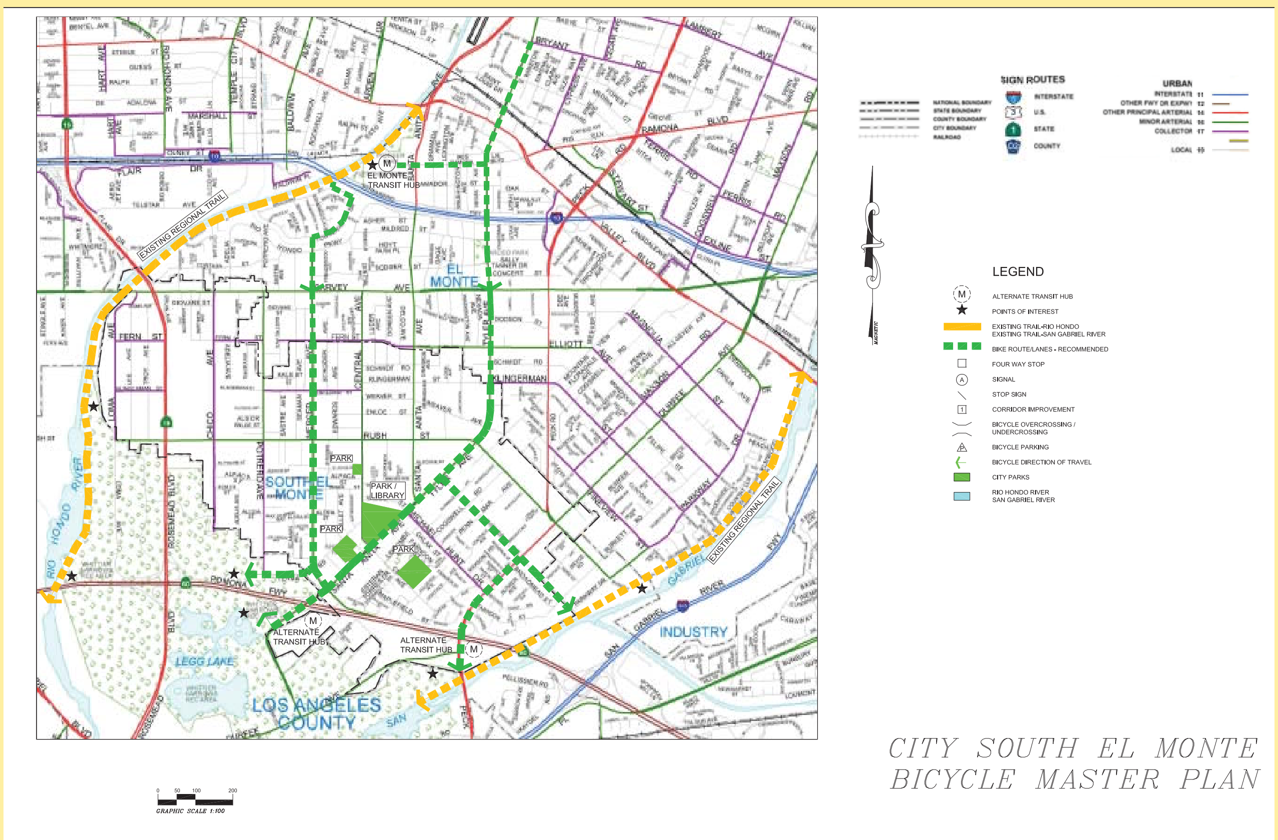
***Figure 7-5** Shively Middle School Preliminary School Route Plan*



Bicycle Master Plan, Submitted as Part of 2011 Metro Call for Projects (2011)

In 2011, the City of South El Monte submitted a proposal to receive Metro Call for Projects funds for several bicycle infrastructure projects. The application included a Bicycle Master Plan map highlighting these proposed bikeways, shown in **Figure 7-6**. The impetus for the Bicycle Master Plan and subsequent funding application is a need to create regional non-motorized transportation connections between the City of South El Monte, the El Monte Transit Center, and the Whittier Narrows Recreation Area. The three primary corridors proposed to receive bicycle facilities are Merced Avenue, Tyler Avenue/Santa Anita Avenue, and Thienes Avenue. Merced Avenue would become a Class III bicycle route, while Tyler Avenue/Santa Anita Avenue and Thienes Avenue would receive Class II bike lanes.

***Figure 7-6** South El Monte 2011 Bicycle Master Plan Map*

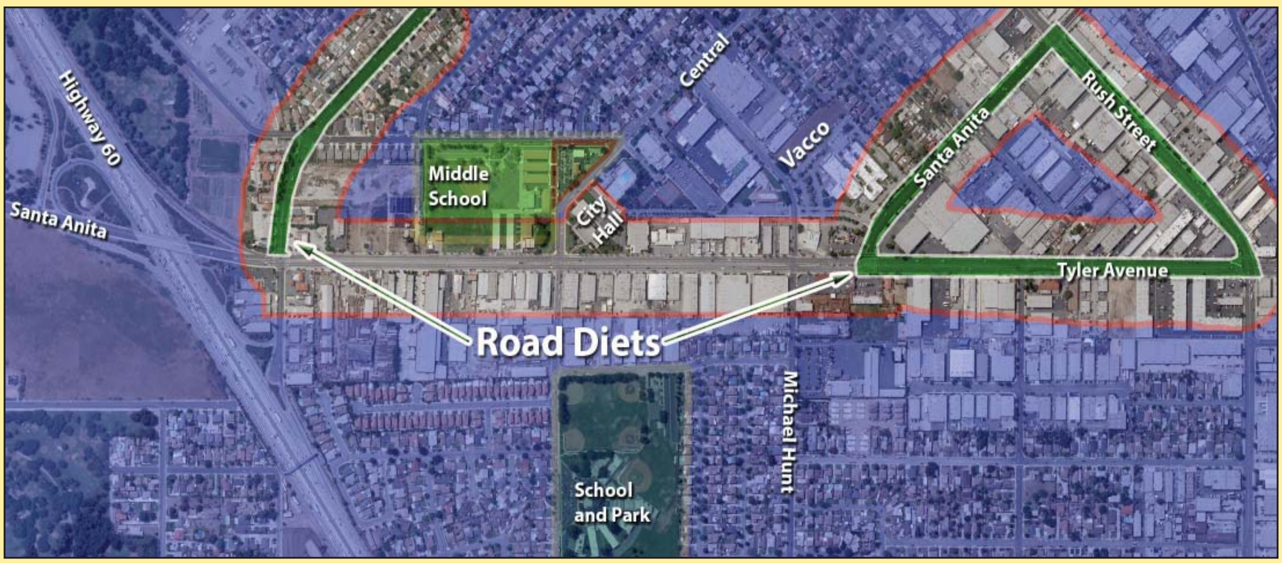


Revitalization Plan for the Santa Anita/Tyler Avenue Corridor (2010)

The Local Government Commission partnered with Caltrans and the City of South El Monte in 2010 to envision ways to revitalize a one-mile long segment of Santa Anita Avenue just to the northeast of the its intersection with the SR-60 freeway. The study also includes small portions of Tyler Avenue and Rush Street northeast of where Santa Anita Avenue turns directly north, shown in **Figure 7-7**. Focus groups and design charrettes resulted in a series of community-preferred street designs that create more space for pedestrians and bicycle riders. The report's recommendations include treatments that provide more space for bicycle riders and pedestrians, lower motor vehicle speeds, improve intersections for all users, and improving the street appearance with landscaping.

To implement the Class II bike lanes on Santa Anita Avenue and Tyler Avenue from the "Y"-shaped intersection to the northerly city boundary, "road diets" (i.e., reconfiguration of the travel lanes that reduces motor vehicle lanes to two and lowers vehicular travel speeds) will be required as recommended by the 2010 study.

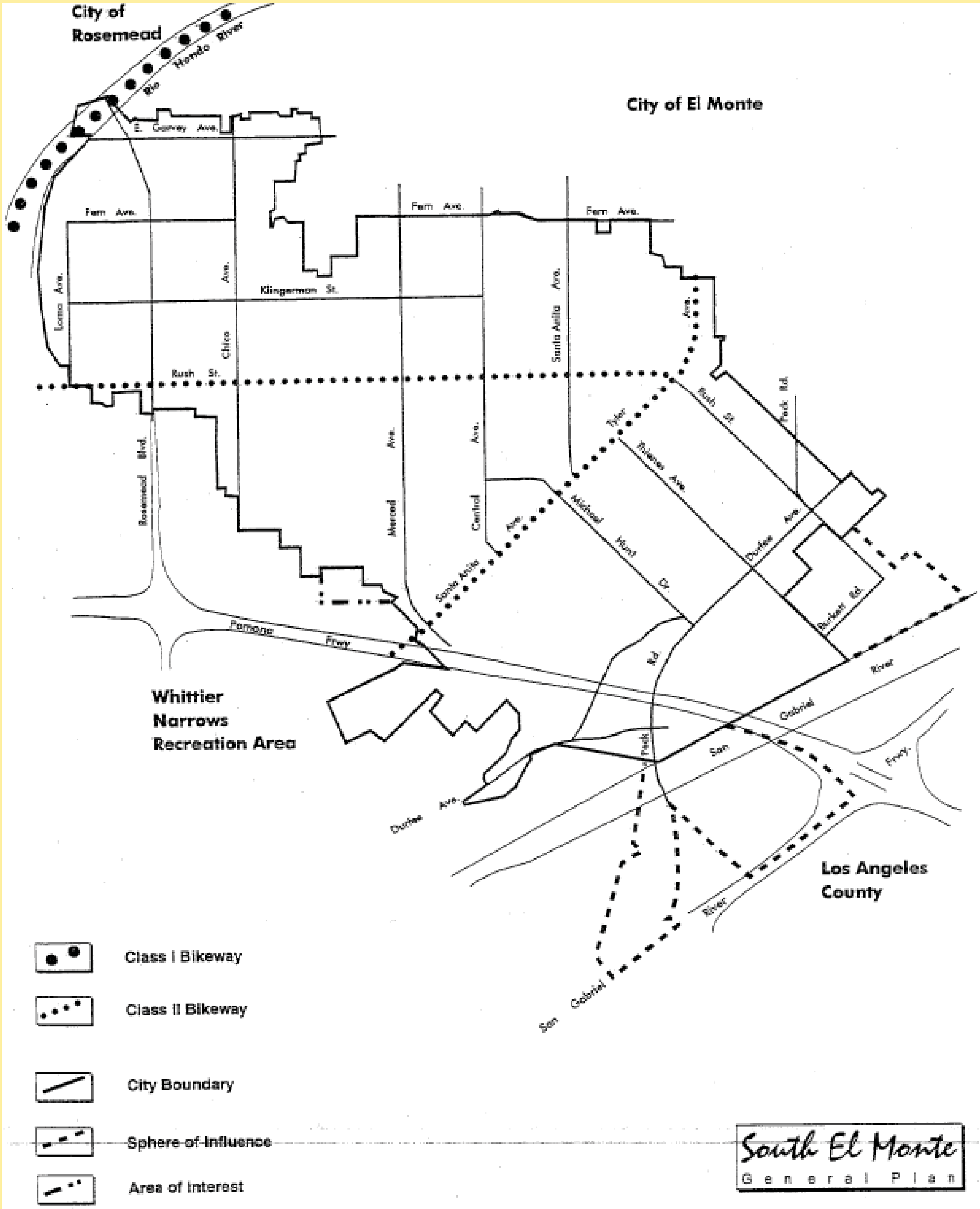
***Figure 7-7** Proposed Road Diets for the Santa Anita Avenue/Tyler Avenue Corridor*



City of South El Monte General Plan (2000)

The 2000 General Plan identified a very simple bikeway network in the City of South El Monte and stated a goal to "accommodate alternative modes of transit in land use and circulation system planning" to reduce demands on the existing roadway system. Policies 4.1 and 4.2 call for a Citywide Class II on-street bicycle network consistent with **Figure 7-8** below (consisting of Rush Street and Santa Anita Avenue/Tyler Avenue) and a local bicycle path link to the Whittier Narrows Recreation Area.

***Figure 7-8** Proposed Bikeways from 2000 South El Monte General Plan*



City Codes - Chapter 10.24 - Bicycles (1989)

Section 10.24.010 of the 1989 South El Monte City Code adopts Los Angeles County's Chapter 15.84, which establishes a bicycle registration ordinance.

7.1.3 Engineering

Existing Bicycle Facilities

Existing Bicycle Facilities

This report refers to standard bikeway definitions identified by Caltrans in Chapter 1000 of the Highway Design Manual (Caltrans HDM). Additional concepts for bikeways have been promoted and implemented throughout the United States; however, they have not been adopted for use in the Caltrans HDM. Bicycle facility types are discussed in Section 1.3.

Table 7-1 summarizes the classification and mileage of the existing network.

Table 7-1 Existing Bicycle Network

Facility Type	Mileage
Class I (Bike Path)	0.1
Class II (Bike Lanes)	0.0
Class III (Bike Route)	0.0
Total Mileage	0.1

As shown in **Table 7-1**, a total of 0.1 miles of bikeways are currently provided in the City of South El Monte, consisting of the following facilities:

- Rio Hondo Bike Path (maintained by Los Angeles County).

Signage

The California Manual on Uniform Traffic Control Devices (CA MUTCD) and the CA HDM outline the requirements for bikeway signage. The Bike Lane Sign (R81) is required at the beginning of each designated bike lane and at each major decision point. The Bike Route Sign (D11-1) is required on Class III facilities. Shared-use paths require additional standardized signs to help manage different user groups. Upon implementation of bikeways, the City will install CA MUTCD standard signs as appropriate.

Caltrans Bikeway Signs

R81(CA)

D11-1

Bicycle Parking

Bicycle storage can can range from a simple and convenient bicycle rack to storage in a bicycle locker or cage that protects against weather, vandalism and theft. The City does not currently have an inventory of existing bicycle parking locations. Short-term bicycle racks can be found at some major destinations, including City Hall and parks throughout the city. Many bicycle riders resort to securing their bike to street fixtures such as trees, lights, telephone poles, and parking meters when sufficient parking facilities are not provided.

End-of-Trip Facilities

The presence and quality of trip-end facilities (e.g. showers, lockers, and changing facilities) can greatly influence a person's decision to complete a trip via bicycle. These facilities enable bicycle riders to change into work attire (especially after riding in wet or hot conditions). The City currently does not have an inventory of existing end-of-trip facilities.

Bicycle Signal Detection

Bicycle detection at actuated traffic signals permits bicycle riders to trigger a green light, even when no motor vehicle is present. California Assembly Bill 1581 requires all new and replacement actuated traffic signals[1] to detect bicycle riders and to provide sufficient time for a bicycle rider to clear an intersection from a standing start. Caltrans Policy Directive 09-06 clarifies the requirements and permits any type of detection technology. The most common technologies are in-pavement loop detectors and video detection. More recently, microwave detection has been used to detect and differentiate between bicycle riders and motor vehicles.

The City complies with the Caltrans Policy Directive by installing detector loops designed to detect bicycles during pavement rehabilitation and traffic signal upgrade projects. Traffic signal timing is reviewed and updated as necessary through traffic signal corridor timing projects.

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. **Figure 7-9** shows the existing Metro and Metrolink transit lines that serve the City of South El Monte and SCAG-identified Park-and-Ride lots within the City.[2]

[1] *Actuated traffic signals stay red until the signal detects a car or bicycle rider that is waiting for the light to turn green.*

[2] *GIS mapping data were only available for Metro and Metrolink facilities.*

The Los Angeles County Metropolitan Transportation Authority (Metro) operates the following bus lines in the City of South El Monte:

- 70 – Along Garvey Avenue, between Downtown Los Angeles and El Monte Bus Station
- 770 – Rapid service along Garvey Avenue, between Downtown Los Angeles and El Monte Bus Station
- 176 – Along Rush Street and Tyler Avenue; connects to El Monte Bus Station, the Shops at Montebello, and Highland Park in Los Angeles
- 266 – Along Rosemead Boulevard, between East Pasadena and the Lakewood Center Mall
- 270 – Along Peck Road, between the El Monte Metrolink station and the cities of Whittier and Norwalk
- 577 – Freeway express service between El Monte Bus Station and the Long Beach VA Medical Center

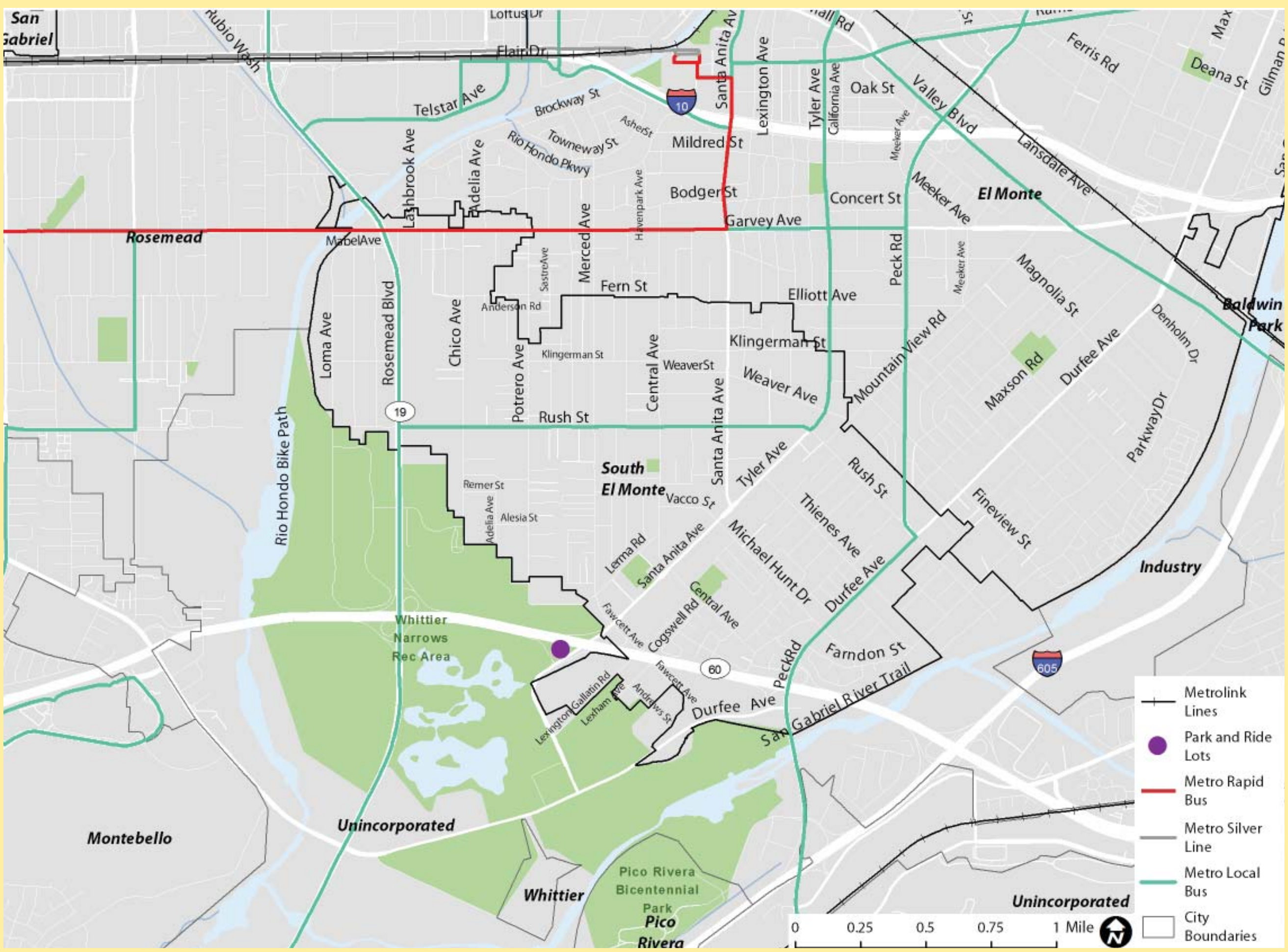
All Metro buses are equipped with front-end racks that can carry two bicycles.

Foothill Transit operates bus line 269 through South El Monte along Tyler Avenue and Santa Anita Avenue, connecting to El Monte Bus Station and the Shops at Montebello. All Foothill Transit buses are equipped with racks that can carry two bicycles.

Maintenance

Street maintenance programs aid in the quality and longevity of bicycle facilities. The City of South El Monte currently has a Street Maintenance program that provides staff with guidelines to inspect, schedule, and repair City streets, alleys, and bike trails. The program provides maintenance of signs, pavement markings, curb markings, street name signs, and roadway striping. In addition to as-needed repairs, the program annually repaints school pavement legends and inspects school regulatory and warning signs. Street sweeping occurs on a weekly basis.

***Figure 7-9** Existing Public Transportation Facilities in South El Monte*



The Capital Improvement Program (CIP) serves to develop and construct major public improvements and address significant maintenance items. The CIP prioritizes and allocates funding for large scale projects including roadway resurfacing, repair projects, and improvements within the city.

7.1.4 Existing/Previous Education, Encouragement, and Enforcement Strategies

Bicycle education programs and enforcement of bicycle-related policies help to make riding safer for all bicycle riders. The City does not currently have education campaigns related to bicycling within the City.

South El Monte police officers enforce all bicycle-related rules in the California Vehicle Code and issue citations when they observe violations.

7.1.5 Past and Future Bicycle-Related Expenditures

No new bicycle facilities have been implemented within the City during the past three years. The City has secured funding to implement future bikeway improvements as listed in **Table 7-2.**

Table 7-2 Funded Bikeway Projects

Title/Description	Facility Type
Durfee Avenue (North City Limit to Thienes Avenue)	Class II
Fawcett Avenue (Lerma Road to Santa Anita Avenue)	Class II/Cycle Track
Garvey Avenue (West City Limit to East City Limit)	Class II
Merced Avenue (North City Limit to Lerma Road)	Class II/Cycle Track
Peck Road (Thienes Avenue to South City Limit)	Class II/Cycle Track
Rush Street (West City Limit to Santa Anita Avenue)	Class II
Santa Anita Avenue (Tyler Avenue to South City Limit)	Class II
Thienes Avenue (Durfee Avenue to San Gabriel River Trail)	Class II/Cycle Track
Tyler Avenue (North City Limit to Santa Anita Avenue)	Class II

7.2 Needs Analysis

This section describes the needs of bicycle riders in South El Monte. This section provides estimates and forecasts of bicycle travel to determine the estimated bicycling demand in the city. In addition, this section analyzes recent bicycle collision data to identify areas that would benefit from bicycle facility improvements. Public outreach efforts related to the preparation of this Plan are discussed in **Chapter 1** and **Appendices B, C, and D** of this Plan.

7.2.1 Bicycle Demand Estimates and Forecasts

The model uses the U.S. Census Bureau's American Communities Survey (ACS) journey-to-work data and applies a market segment approach to estimate the number of bicycling or walking trips. Elementary school and college students usually have a different bicycle/walking mode split than work commuters.

In addition, national transportation surveys, in particular the National Household Travel Survey (NHTS, 2009), have shown that commute trips are only a fraction of the total trips an individual takes on a given day. The model uses the NHTS findings to estimate the number of non-work, non-school trips taken by commuters to determine the number of walking or bicycling trips that occur in a day. This information can be projected out using standard trip lengths by mode and trip purpose to estimate the number of driving miles reduced by non-motorized modes.

Model Data

The foundation of this analysis is the ACS 2008-2012 five-year estimate for South El Monte. Model variables from the ACS include: total population, employed population, school enrollment (grades K-12 and college students), and travel-to-work mode split.

The 2009 NHTS provides a substantial national dataset of travel characteristics, particularly for trip characteristics of bicycling and walking trips. Data used from this survey include:

- Student mode split, grades K-12
- Trip distance by mode by trip purpose
- Ratio of walking/bicycling work trips to utilitarian trips
- Ratio of work trips to social/recreational trips
- Average trip length by trip purpose and mode

Several of these variables provide a way to estimate the number of walking and bicycling trips made for other reasons than work trips, such as shopping and running errands. NHTS 2009 data indicates that for every bicycle work trip, there are slightly more than two utilitarian bicycle trips made. Although these trips cannot be directly attached to a certain group of people (not all of the utilitarian bicycling trips are made by people who bicycle to work), these multipliers allow a high percentage of the community's walking and bicycling activity to be captured in an annual estimate.

The Safe Routes to School Baseline Data Report (2010) was used to determine the percent of students who walk or bicycle by the parents' estimate of distance as well as the frequency of carpooling for trip replacement.

As with any modeling projection, the accuracy of the result is dependent on the accuracy of the input data and other assumptions. Effort was made to collect the best data possible for input to the model, but in many cases national data was used where local data points were unavailable. Examples of information that could improve the accuracy of this exercise include the detailed results of local Safe Routes to Schools parent and student surveys, a regional household travel survey, and a student travel survey of college students.

Existing Walking and Bicycling Trips

Table 7-3 below presents commute to work data estimates for South El Monte, as well as nearby cities and comparison geographies, as reported in the 2008-2012 American Community Survey 5-year estimates. This information for South El Monte is one of several inputs of the demand model.

Table 7-3 Existing Mode Split Comparison with Neighboring Cities

Jurisdiction	Walk	Bike	Transit	Carpool	Drive Alone
South El Monte	5.9%	0.7%	4.2%	12.7%	72.4%
Rosemead	1.3%	0.8%	4.3%	12.2%	76.2%
South Pasadena	1.2%	0.8%	5.1%	9.2%	78.4%
Temple City	0.8%	0.4%	3.4%	12.8%	77.5%
City of Los Angeles	3.7%	1.0%	11.1%	10.3%	67.0%
County of Los Angeles	2.9%	0.8%	7.1%	10.9%	72.2%
California	2.8%	1.0%	5.1%	11.5%	73.0%
United States	2.8%	0.6%	5.0%	10.0%	76.1%
Source: 2008-2012 American Community Survey 5-year Estimates					

Table 7-4 shows the estimated current number of daily bicycling and walking trips. Based on the model assumptions, the majority of trips are non-work utilitarian trips, which include medical/dental services, shopping/errands, family personal business, obligations, transport someone, meals, and other trips.

Table 7-4 Current Weekday Bicycling and Walking Trips

	Bicycling	Walking	Source
Bicycling/walking commute trips	116	979	Employed population from ACS multiplied by mode split from ACS, doubled for round-trips
Walk- or bike-to-transit trips	7	202	Number of transit commuters from ACS multiplied by transit mode split from TCRP Report 153, doubled for round-trips
K-12 bicycle/walking trips	85	1,138	School children population from ACS multiplied by mode split from SRTS Baseline Data Report (2010), doubled for round-trips
College bicycle/walking trips	36	145	Employed population from ACS multiplied by mode split from NHTS 2009, doubled for round-trips
Daily bicycle/walking utilitarian trips	187	4,233	Bicycle/walking commute trips (above) multiplied by mode-specific utilitarian trip multiplier from NHTS 2009
Daily social/recreational trips	553	3,830	Bicycle/walking commute trips (above) multiplied by mode-specific social/recreational trip multiplier from NHTS 2009
Current daily bicycling and walking trips	**984**	**10,527**	
Annual Extrapolation			
Annual commute trips	30,873	296,431	Bicycle/walking and walk- or bike-to-transit trips multiplied by annual work days
Annual K-12 trips	15,300	204,840	K-12 bicycle/walking trips multiplied by annual K-12 school days
Annual college trips	5,400	21,750	College bicycle/walking trips multiplied by annual college class days
Annual utilitarian trips	49,740	1,281,605	Annual commute trips multiplied by mode-specific utilitarian trip multiplier

As shown in **Table 7-4,** current commute, school, college and utilitarian trips via bicycle are estimated at approximately 980 trips daily, and approximately 31,000 bicycle trips are estimated to occur annually.

Trip Replacement

To estimate the total distance residents travel to work or school by walking and bicycling, the model isolates different walking and bicycling user groups and applies trip distance information for walking or bicycling trips by mode based on NHTS 2009. **Table 7-5** shows the trip replacement factors.

Yearly factors are calculated by assuming that work and school/college trips occur five days per week, while utilitarian trips occur seven days per week. However, work and utilitarian trips occur year-round, while school and college trips are only three-quarters of the year, due to summer vacation.

Table 7-5 Current Bicycling and Walking Trip Replacement (Annual)

	Bicycling	Walking	Source
Vehicle commute trips replaced	24,484	248,076	Redistribution of bikers/walkers using existing mode split if that mode were not available
K-12 vehicle trips replaced	6,517	99,700	SR2S Baseline Data Report, 2010
College vehicle trips replaced	4,401	18,705	NHTS 2009
Utilitarian vehicle trips replaced	39,446	1,072,544	Redistribution of bikers/walkers using existing mode split if that mode were not available
Vehicle Miles Traveled			
Commute VMT replaced	86,673	166,211	NHTS 2009 average bicycle trip distance for "Work" trips
K-12 VMT replaced	5,005	35,406	SRTS 2010, percent of students who walk or bicycle by parent's estimate of distance
College VMT replaced	6,513	10,475	NHTS 2009 average trip distance for "School/Daycare/ Religious" trips
Utilitarian VMT replaced	74,685	715,029	Derived from NHTS 2009
Total VMT reduced	172,876	927,120	
Per capita VMT reduced	9	46	

Current Benefits

To the extent that bicycling and walking trips replace single-occupancy vehicle trips, they reduce emissions and have tangible economic impacts by reducing traffic congestion, crashes, and maintenance costs. In addition, the reduced need to own and operate a vehicle saves families money. These benefits are shown in **Table 7-6**.

Table 7-6 Annual Benefits of Current Bicycling and Walking Trips

Measure	Bicycling	Walking	Total
Yearly vehicle miles reduced	172,876	927,120	1,099,997
Air Quality Benefits[1]			
Reduced Hydrocarbons (pounds/year)	518	2,780	3,298
Reduced Particulate Matter (pounds/year)	4	21	24
Reduced Nitrous Oxides (pounds/year)	362	1,942	2,304
Reduced Carbon Monoxide (pounds/year)	4,726	25,345	30,071
Reduced Carbon Dioxide (pounds/year)	140,636	754,218	894,854

As shown in **Table 7-6**, current bicycle trip benefits include the reduction of over 170,000 vehicle miles annually and a reduction of carbon dioxide emissions by over 140,000 pounds annually.

Potential Future Walking and Bicycling Trips

Estimating future benefits requires additional assumptions regarding South El Monte's future population and anticipated commuting patterns in 2035. Future population predictions as determined by the SCAG 2012 RTP Growth Forecast (for 2035) were used in this model. **Table 7-7** shows the projected future demographics used in the future analysis.

Table 7-7 Projected Future Demographics

Demographic	Value	Source
Population	21,800	SCAG 2012 RTP Growth Forecast (for 2035)
Employed population	8,945	Same percentage as current model estimate
School population, K-12	4,598	Same percentage as current model estimate
College student population	1,150	Same percentage as current model estimate

Forecast bicycling mode share was increased to address the higher use potentially generated by the addition of recommended bikeway facilities to the existing system.

The analysis predicts that the bicycle mode split will increase to 1.4% by 2035, due in part to bicycle network implementation and education/encouragement programs. The results of the future bicycling trips model, assuming an increase to 1.4% bicycle mode share, are shown in **Table 7-8**.

[1] *From EPA report 420-F-05-022 "Emission Facts: Average Annual Emissions and Fuel Consumption for Gasoline-Fueled Passenger Cars and Light Trucks." 2005.*

Table7-8 Estimated Future (2035) Weekday Bicycling and Walking Trips

Trip Type	Bicycling	Walking	Discussion
Bicycle/walking commute trips	250	1,056	Employed population multiplied by mode split, doubled for round-trip
Walk- or bike-to-transit trips	8	218	Number of transit commuters multiplied by transit mode split from TCRP Report 153, doubled for round-trip
K-12 bicycle/walking trips	92	1,228	School children population multiplied by mode split, doubled for round-trip
College bicycle/walking trips	39	157	Employed population multiplied by mode split, doubled for round-trip
Daily bicycle/walking utilitarian trips	403	4,566	Bicycle/walking commute trips multiplied by mode-specific utilitarian trip multiplier
Daily social/recreational trips	1,192	4,131	Bicycle/walking commute trips multiplied by mode-specific social/recreational trip multiplier
Total future daily bicycling and walking trips	**1,984**	**11,356**	

As shown in **Table 7-8**, assuming bicycle mode split increases to 1.4%, forecast year 2035 commute, school, college and utilitarian trips via bicycle are estimated to grow to approximately 2,000 trips daily.

Future Benefits

The trip replacement factors remain the same as in the model of current trips**. Table 7-9** shows the air quality benefits of the future projected walking and bicycling trips.

Table 7-9 Annual Benefits of Future Bicycling and Walking Trips

Measure	Bicycling	Walking	Total
Yearly vehicle miles reduced	351,000	1,000,000	1,351,000
Air Quality Benefits[1]			
Reduced Hydrocarbons (pounds/year)	1,052	2,999	4,051
Reduced Particulate Matter (pounds/year)	8	22	30
Reduced Nitrous Oxides (pounds/year)	735	2,095	2,830
Reduced Carbon Monoxide (pounds/year)	9,594	27,342	36,936
Reduced Carbon Dioxide (pounds/year)	285,485	813,654	1,099,139

As shown in **Table 7-9**, assuming bicycle mode split increases to 1.4%, forecast year 2035 benefits include the reduction of over 350,000 vehicle trips annually and the reduction of carbon dioxide emissions by over 285,000 pounds annually

7.2.2 Bicycle Counts

A knowledge of current bicycling levels in the City of South El Monte helps to identify areas of particular need while also serving as a baseline from which to evaluate the impact of bicycling infrastructure and program improvements called for in this Plan. To assess current bicycling levels at different sites throughout the City, the project team conducted bicycle counts using two separate methodologies: manual counts with volunteers and automated counts using electronic tube counters.

Methodology

The methodology for the manual 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 existing levels of both utilitarian and recreational bicycling trips. The NBPD also provides guidance on how to select count locations.

Volunteers conducted manual bicycle counts at seven locations in South El Monte on Saturday, December 14, 2013 from 11:00 a.m. to 1:00 p.m. and at six locations on Tuesday, December 17, 2013 from 7:00 a.m. to 9:00 a.m. Weekday afternoon counts took place at eight locations from 4:00 p.m. to 6:00 p.m. on either December 12, 2013, December 17, 2013, or January 21, 2014. These dates are meant to capture volumes of bicycle riders on a typical weekday and weekend day. The manual bike count locations were selected by staff members from the City of South El Monte, Day One, and Alta Planning + Design. This snapshot of locations is intended to capture a diverse bicycling population using the roads and streets that span the spectrum of "bike-friendliness."

In addition to manual counts, automated 24-hour bicycle counts were conducted using Eco-Counters that were procured by the Los Angeles County Department of Public Health and distributed to each of the five Regional Bike Plan partner cities for various time periods. In South El Monte, the automated counters were installed at ten locations between February 6th and March 9th, 2014. The project team experienced several issues with the automated counters that negatively affected the accuracy of the bicycle count data, such as maintenance problems and data reporting flaws. Therefore, the project team recommends that the automated count data be dismissed in favor of the manual count results. However, the automated counting technology should be refined and considered for use in future bicycle data collection efforts.

***Figure 7-10** Weekday Morning Bike Count Results in South El Monte*

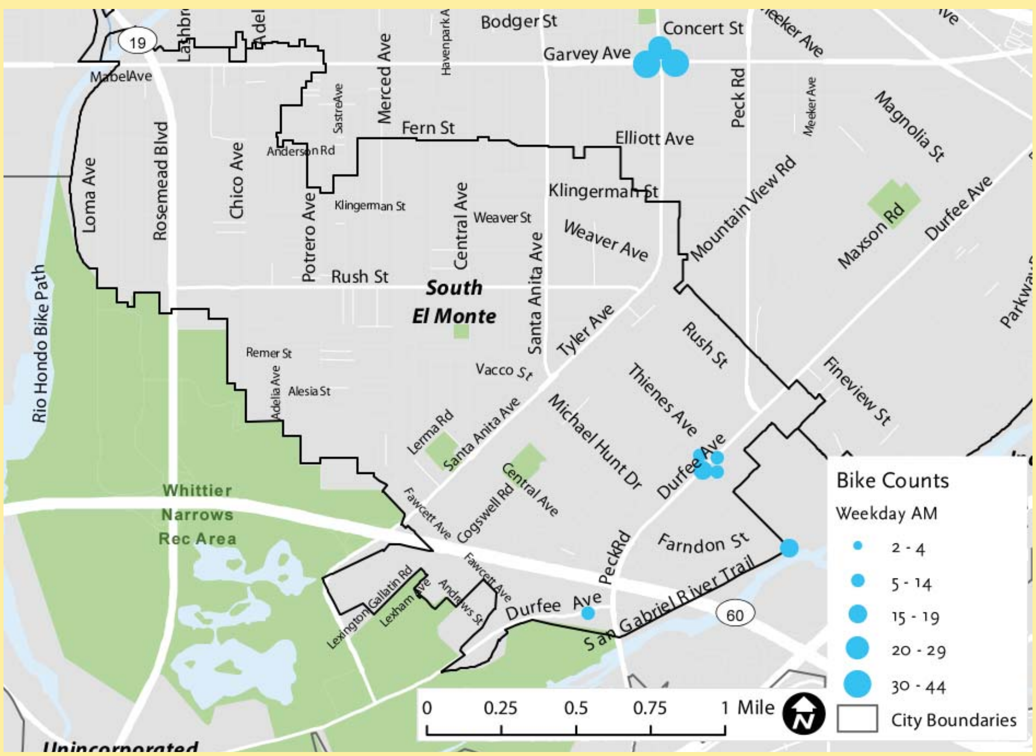


Figure 7-11 *Weekday Morning Bike Count Results in South El Monte*

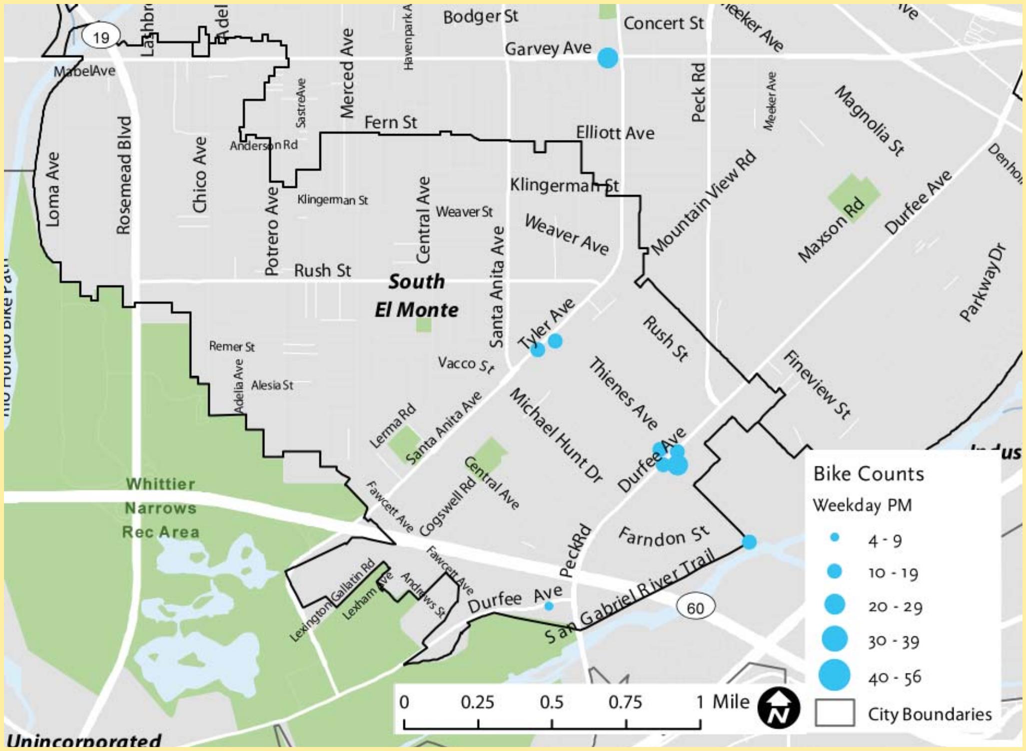
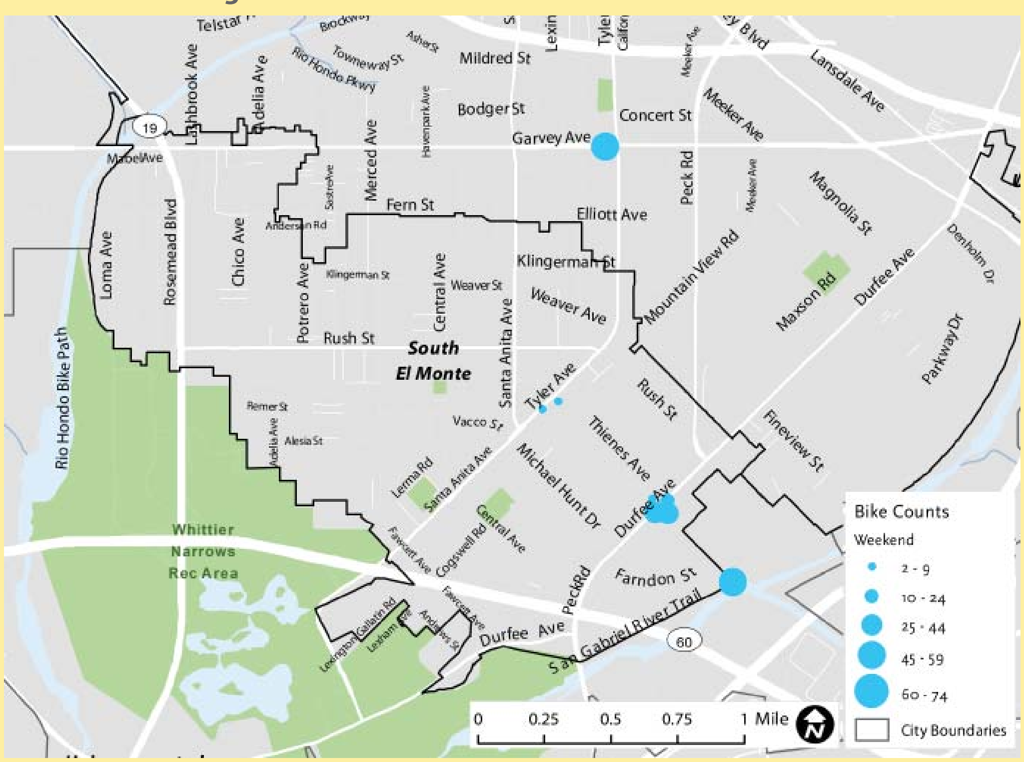


Figure 7-12 *Weekend Bike Count Results in South El Monte*



Results

Manual bicycle count locations and results for the City of South El Monte are displayed in **Figure 7-10, Figure 7-11, and Figure 7-12,** as well as in **Appendix F**. During the weekday morning manual counts, the South El Monte location that experienced the highest volume of bicycle riders was Thienes Avenue between Parkway Drive and the San Gabriel River Trail, with 17 total bicycle riders passing during the two hour count period. During the weekday afternoon counts, the location of Thienes Avenue between Durfee Avenue and Fruitvale Avenue saw the highest volume of bicycle riders – 20 bicycle riders from 4:00 p.m. to 6:00 p.m. On Saturday, the most bicycle riders were counted along Thienes Avenue between Parkway Drive and the San Gabriel River Trail, with 57 riders passing by during the count period.

In the City as a whole, approximately 94 percent of the 362 total bicycle riders counted were male. Approximately 88 percent of those observed were not wearing bicycle helmets, and 37 percent were riding on the sidewalks. Riding on the sidewalk can be an indicator of a lack of safe bicycling facilities and/or proper education, as bicycle riders that are uncomfortable riding with traffic may choose to instead travel along the sidewalk.

7.2.3 Bicycle Collision Analysis

Safety is a major concern for current and potential bicycle riders, and can influence the decision whether or not to bicycle. Potential bicycle riders that do not have experience riding, especially in traffic, typically will not ride if they perceive the roadway as dangerous. People who do not ride often express frustration when drivers do not see them or do not understand that bicycle riders are afforded the same rights as vehicles. Similarly, many bicycle riders do not know or follow the “rules of the road.” Uninformed or unlawful roadway users can contribute to collisions.

This section reviews bicycle-related collisions from January 2007 to December 2011, as reported by the Statewide Integrated Traffic Records System (SWITRS).

Table 7-10 presents the number of bicycle-related collisions in South El Monte from 2007-2011. **Figure 7-13** maps bicycle-related collisions over the study period with larger dots representing locations with multiple collisions.

Table 7-10 Bicycle-Related Collisions by Year

Year	Number of Collisions
2007	8
2008	13
2009	10
2010	17
2011	12
Total	60

Table 7-11 displays the top five roadways with the most bicycle-related collisions based on data from 2007-2011. The five roadways in **Table 7-11** accounted for two-thirds (67%) of all bicycle-related collisions during the period 2007-2011. The top two combined – Rush Street and Garvey Avenue – were host to forty percent (40%) of all bicycle-related collisions during this period

Table 7-11 Highest Bicycle-Related Collision Roadways

Roadway	Number of Collisions
Garvey Avenue	13
Emerson Avenue	11
Atlantic Boulevard	7
Alhambra Avenue	5
Garfield Avenue	4
Monterey Pass Road	3
Newmark Avenue	3
Riggin Street	3

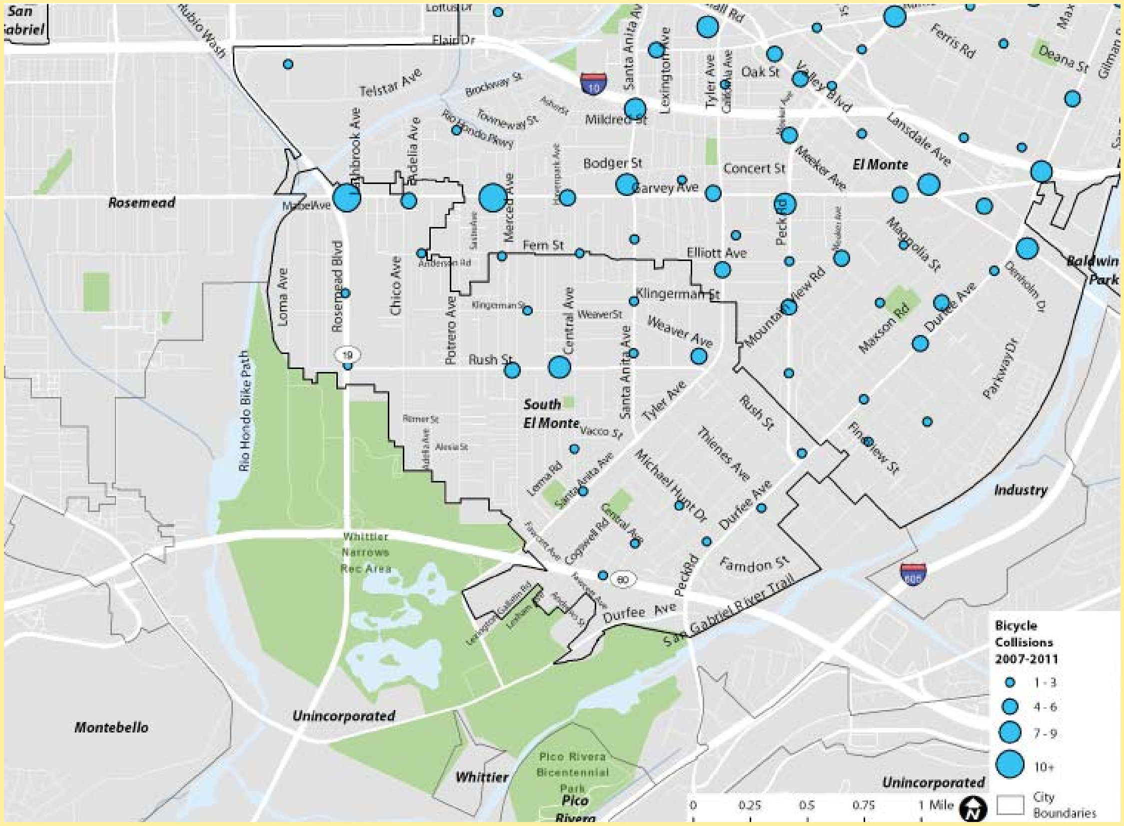
Table 7-12 shows the percent of bicycle-related collisions based on the day of the week..

Table 7-12 Bicycle-Related Collisions by Day of the Week

Day of the Week	Percent of Collisions
Monday	12%
Tuesday	27%
Wednesday	13%
Thursday	18%
Friday	17%
Saturday	7%
Sunday	7%

As shown in **Table 7-12**, the highest percentage of bicycle-related collisions (27%) occurred on Tuesdays, with the second highest percentage (18%) on Thursdays.

***Figure 7-13** Bicycle-Related Collisions in South El Monte, 2007-2011*



7.3 Recommended Bicycle Facilities and Programs

The proposed bikeway network, when completed, will include over 20 miles of bicycle facilities to increase connectivity within South El Monte and to the surrounding communities. The proposed bikeway network has been developed to create a comprehensive, safe, and logical network.

Recommendations for bikeways within the City are subject to a variety of factors that affect the schedule and final implementation:

- Recommendations have been developed based on technical review and public input, however, the recommendations are conceptual and further feasibility review may be needed to address physical, community, and financial constraints.
- While a prioritized list is provided in the Implementation section (Section 7.5), projects may be implemented sooner based on coordination with other City projects or funding opportunities.
- Funding for the bikeway recommendations is discussed further in the Implementation section, and suggestions are provided to the City to seek funding sources to minimize the effect on the City General Fund for implementation.
- The City may develop further criteria and standards for use of enhanced bicycle treatments such as sharrows, green conflict zone striping, bike lane buffers, bicycle boulevard elements, etc. The City will explore the possibility of providing enhanced Class II or Class III facilities anywhere Class II or III facilities are proposed.

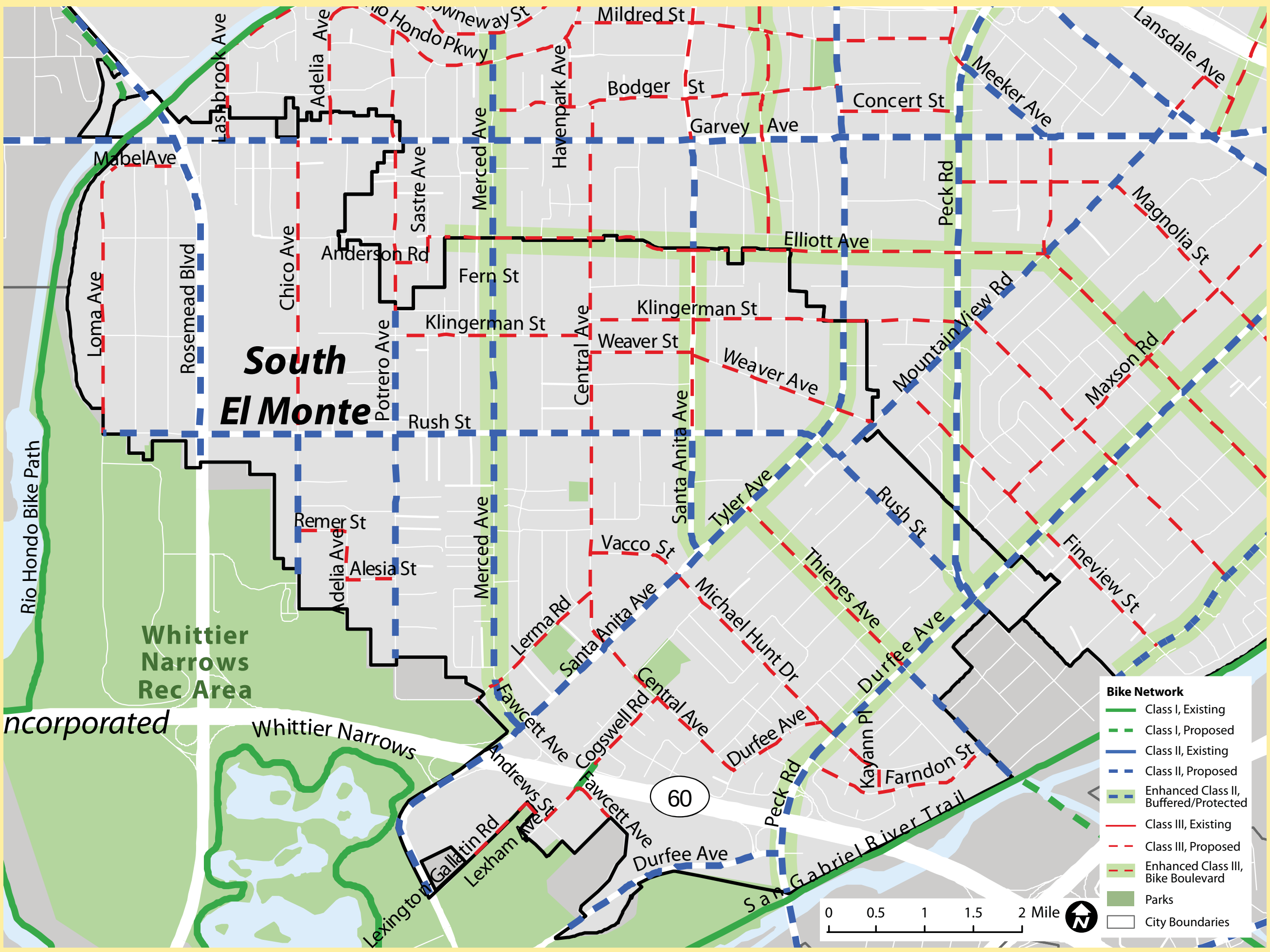
Table 7-13 summarizes the bikeway recommendations and total mileage by category. **Figure 7-14** shows the recommended bikeway network, including potential enhanced Class II and Class III facilities

Table 7-13 *Recommended Bikeway Network*

Facility Type	Existing Bikeways (Miles)	Proposed Bikeways (Miles)	Total Bikeways (Miles)
Class I Shared-Use Path	0.1	0.1	0.2
Class II Bike Lane	0.0	11.3	11.3
Class III Bike Route	0.0	10.6	10.6
Total	**0.1**	**22.0**	**22.1**

As shown in **Table 7-13**, when accounting for existing and proposed bikeways, bikeways identified in this Plan total 22.1 miles.

Figure 7-14 *South El Monte Recommended Bikeway Network*



Class I Shared-Use Paths

Class I off-street shared-use paths are often desired by casual bicycle riders, as well as bicycle riders concerned about interacting with vehicular traffic. A network of off-street shared-use paths provides greater opportunities for connectivity to destinations throughout the community, so recommendations have been developed to improve the network within the City given notable property and right-of-way constraints. The recommendation provided for a shared-use path requires coordination with other agencies such as the County of Los Angeles, Caltrans, and Southern California Edison.

Where there is not sufficient space or right-of-way for a Class I bicycle facility, buffered or physically protected Class II bike lanes can provide bicycle riders with a more comfortable level of separation from motor vehicle traffic and parked vehicles. The subsequent section discusses Class II bikeways recommendations.

Table 7-14 identifies the proposed Class I shared-use path (Rubio Wash) for the City of South El Monte bikeways network.

Table 7-14 Proposed Class I Shared-Use Path

Roadway	From	To	Length (Miles)
Rubio Wash	North City Limit	Rio Hondo Bike Path	0.1
		Total Proposed Class I Shared-Use Path	0.1

As shown in **Table 7-14**, a total of 0.1 miles of Class I shared-use paths are recommended in this Plan, where the Rubio Wash passes through the City of South El Monte.

7.3.1 Class II Bike Lanes

Many commuters and recreational bicycle riders may prefer bike lanes due to their more direct routing. This report recommends the city improve locations where existing Class II bike lanes may have limited functionality due to potential "dooring" issues adjacent to parked cars, or locations where gutter pans and drainage grates effectively narrow the width of the bike lane. In some locations where wide Class II bike lanes are currently provided, modification of striping to provide a buffer between on-street parking and/or vehicular traffic is recommended. At other locations with minimal crossings, protected bike lanes may be recommended. The use of buffered or protected bike lanes will be considered on a case-by-case basis through the design of the facility.

Table 7-15 identifies the proposed Class II bike lanes for the City of South El Monte bikeways network.

Table 7-15 Proposed Class II Bike Lanes

Roadway	From	To	Length (Miles)
Chico Avenue	Rush Street	South City Limit	0.4
Durfee Avenue	Barringer Street	Thienes Avenue	0.4
Durfee Avenue	Peck Road	Southwest City Limit	0.6
Fawcett Avenue	Lerma Road	Santa Anita Avenue	0.1
Garvey Avenue	Rio Hondo River	City Limit (East of Potrero Avenue)	0.7
Merced Avenue	Fern Street	Lerma Road	1.1
Mountain View Road	Weaver Avenue	Rush Street	0.1
Peck Road	City Limit (South of Weaver Street)	Rush Street	0.2
Peck Road	Thienes Avenue	San Gabriel River	0.7
Potrero Avenue	City Limit (Near Kale Street)	North of Lerma Road	0.9
Rosemead Boulevard	North City Limit	South of Rush Street	1.0
Rush Street	Loma Avenue	Bunker Avenue	2.5
Santa Anita Avenue	Rush Street	Tyler Avenue	0.3
Santa Anita Avenue	Tyler Avenue	Lexington-Gallatin Road	1.2
Thienes Avenue	Durfee Avenue	San Gabriel River Trail	0.4
		Total Proposed Class II Bike Lanes	**11.3**

As shown in **Table 7-15**, a total of 11.3 miles of Class II bike lanes are recommended in this Plan.

7.3.2 Class III Bike Routes

Any street that is legal for bicycles is inherently a shared roadway in which bicycle riders and drivers share a lane of traffic, and a car cannot necessarily pass a bicycle rider in the same lane. To improve motorists' awareness of the presence of bicycle riders and to indicate good routes for bicycle riders, cities often post signs indicating that the road is a "Class III Bike Route," as well as painting shared roadway markings in the travel lane. Class III bike routes are often identified at locations where the available street width is not wide enough to accommodate an on-street bike lane (Class II facility).

Potential enhancements requested during community engagement activities include the use of shared lane markings (sharrows) and use of the "Bikes May Use Full Lane" signage (MUTCD R4-11) as seen in Image 26.

Another treatment for consideration is designation of bicycle boulevards for improved connectivity and wayfinding by bicycle riders that seek lower stress routes to travel. Bicycle boulevards are generally defined as low-volume, low-speed streets that have been optimized for bicycle travel using treatments such as traffic calming and traffic reduction, signage and pavement markings, and intersection crossing treatments. Class III bike routes will be considered for upgrading to bicycle boulevards on a case-by-case basis by City staff.

Image 26- *Sign R4-11 "Bikes May Use Full Lane"*

Table 7-16 identifies the proposed Class III bike routes for the City of South El Monte bikeways network.

Table 7-16 Proposed Class III Bike Routes

Roadway	From	To	Length (Miles)
Adelia Avenue	City Limit (South of Cortada Street)	Garvey Avenue	0.1
Adelia Avenue	Remer Street	Alesia Street	0.1
Alesia Street	Adelia Avenue	Potrero Avenue	0.1
Andrews Street	Lexington-Gallatin Road	Lexham Avenue	0.1
Central Avenue	Fern Street	Durfee Avenue	1.5
Chico Avenue	Garvey Avenue	Rush Street	0.8
Cogswell Road	Central Avenue	Gomez Palacio Drive	0.2
Durfee Avenue	Central Avenue	Michael Hunt Drive	0.3
Elliott Avenue	Santa Anita Avenue	City Limit (East of Granada Avenue)	0.1
Elliott Avenue	Paulson Avenue	Continental Avenue	0.1
Farndon Street	Peck Road	Thienes Avenue	0.5
Fawcett Avenue	Lexham Avenue	Farmer Avenue	0.1
Fern Avenue	Sastre Avenue	Santa Anita Avenue	0.6
Kayann Place	Michael Hunt Drive	Farndon Street	0.1
Klingerman Street	Potrero Avenue	Central Avenue	0.5
Klingerman Street	Central Avenue	City Limit (East of Tyler Avenue)	0.7
Lashbrook Avenue	City Limit (Between Cortada Street and Garvey Avenue)	Garvey Avenue	0.1
Lerma Road	City Limit (West of Fawcett Avenue)	Central Avenue	0.4
Lexham Avenue	Fawcett Avenue	Andrews Street	0.1
Lexington-Gallatin Road	Andrews Street	Southwest City Limit	0.2
Loma Avenue	Mabel Avenue	Rush Street	0.7
Mabel Avenue	Loma Avenue	Rosemead Boulevard	0.2
Michael Hunt Drive	Santa Anita Avenue	Kayann Place	0.7
Potrero Avenue	City Limit (North of Garvey Avenue)	City Limit (South of Garvey Avenue)	0.1
Remer Street	Chico Avenue	Adelia Avenue	0.1
Santa Anita Avenue	Elliott Avenue	Rush Street	0.5
Thienes Avenue	Tyler Avenue	Durfee Avenue	0.6
Vacco Street	Central Avenue	Santa Anita Avenue	0.2
Weaver Avenue	Santa Anita Avenue	Mountain View Road	0.5
Weaver Street	Central Avenue	Santa Anita Avenue	0.3
		Total Proposed Class III Bike Routes	**10.6**

As shown in **Table 7-16**, a total of 10.6 miles of Class III bike routes are recommended in this Plan.

7.3.3 End-of-Trip Bicycle Facilities

Support facilities and connections to other modes of transportation are essential components of a bicycle system because they enhance safety and convenience for bicycle riders at the end of every trip. With nearly all utilitarian and many recreational bike trips, bicycle riders 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.

Bicycle parking can be categorized into short-term and long-term parking. Bicycle racks are the preferred device for short-term bike parking. These racks serve people who leave their bicycles for relatively short periods of time, typically for shopping or errands, eating or recreation. Bicycle racks provide a high level of convenience and moderate level of security. Long-term bike parking includes bike lockers and bike rooms and serves people who intend to leave their bicycles for longer periods of time and are typically found in multifamily residential buildings and commercial buildings. These facilities provide a high level of security but are less convenient than bicycle racks.

Recommended bicycle parking standards are presented in **Appendix G**. In addition, **Appendix H** presents a comprehensive bicycle parking study for South El Monte and the other four regional bike plan partner cities.[1]

Short-Term Bicycle Parking

This Plan recommends the City adopt the short-term bicycle rack types shown in **Figure 7-15** as the standard short-term parking.

Figure 7-15 Types of Bicycle Racks

This Plan also recommends implementation of adequate short-term bicycle parking in the form of bicycle racks at major trip attractors, including commercial and civic activity centers and transit hubs. The City should prioritize the installation of bicycle parking throughout the city, with particular attention directed at the following locations:

- South El Monte Civic Center (City Hall, Aquatics Center, and Library)
- American Military Museum
- South El Monte Senior Center & Community Center
- South El Monte Community Mini-Center
- Greater El Monte Community Hospital
- San Gabriel River Path Trailheads
- City Parks
- South El Monte Post Office
- Schools

Although the number of racks is determined by the space available, it is recommended that short-term bicycle parking capacity to accommodate eight bicycles is provided at each of the civic uses identified above, and short-term bicycle parking for commercial and office areas be determined based on intensity of development. The adequacy of short-term bicycle parking requires regular review to determine if additional capacity is needed.

Long-Term Bicycle Parking

- Locations where visitors are expected to park their bicycles for longer than 2 hours should provide more secure, long-term bicycle parking options, such as bicycle lockers.
- City staff may coordinate with public and private sector development opportunities to determine which projects and facilities should incorporate secure bicycle parking areas into their design. Secure bicycle parking areas that provide services, such as bicycle rentals and repair may be considered. The following are locations where long-term bicycle parking is recommended, and these are shown in **Figure 7-16.**
- South El Monte Civic Center (City Hall, Aquatics Center, and Library)
- Greater El Monte Community Hospital

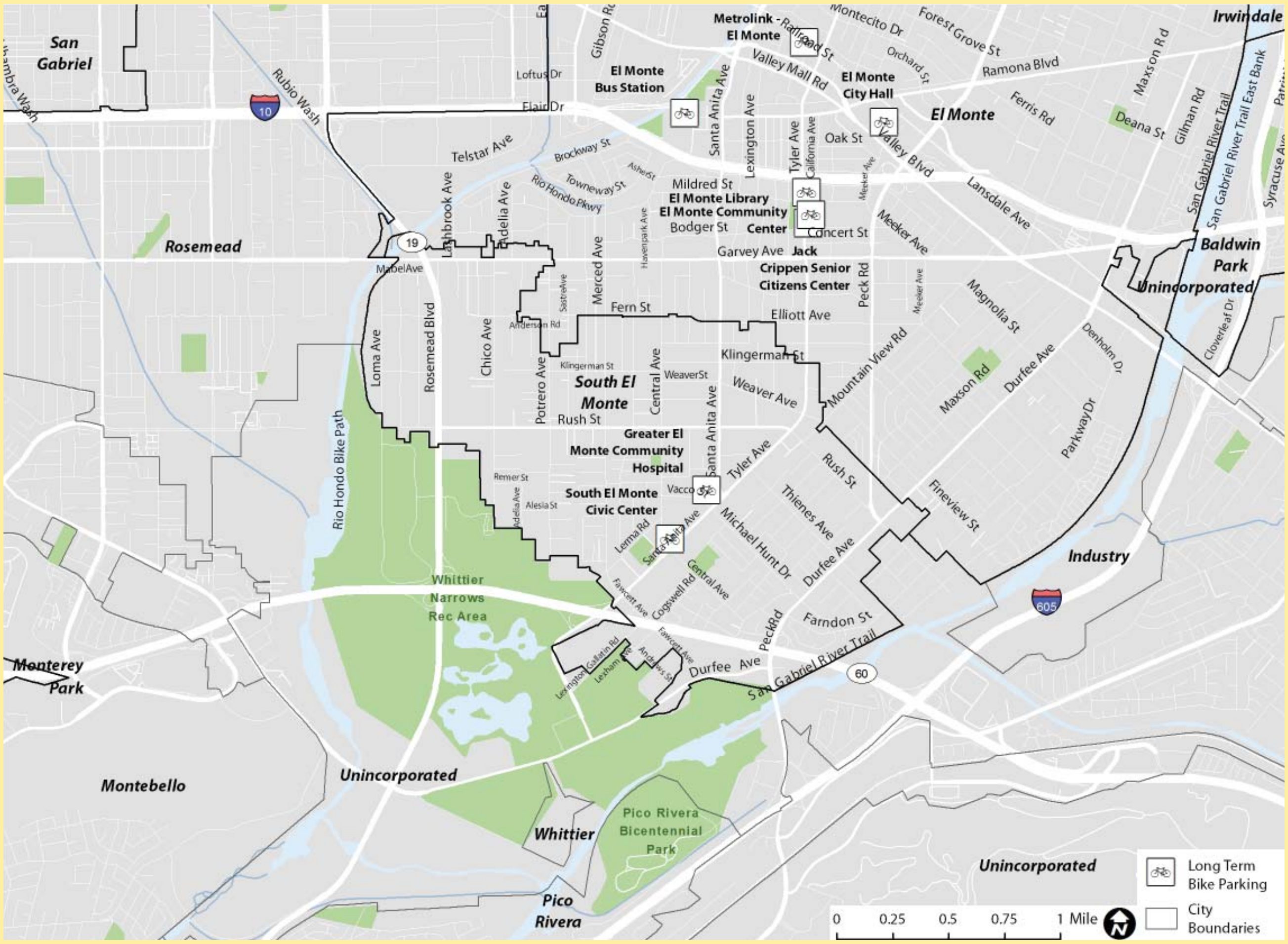
Municipal Code Bicycle Parking

This plan recommends the City amend its Municipal Code to include requirements on types of short-term and long-term bicycle parking facility designs. Bicycle rack designs should include racks that provide two points of contact with the bicycle so that it can be locked from both the

1. The Bicycle Parking Study for the partner cities was conducted by Jonathan Rodriguez, a graduate student in the Department of Community and Global Health at Claremont Graduate University.

front wheel/frame and the rear wheel. This will provide a higher degree of security and support for the bicycle. This will more accurately address the bicycle demand at a given development. Additionally, space to maneuver the bicycle away from fixed objects and buildings is required to accommodate short-term bicycle parking needs.

***Figure 7-16** South El Monte Recommended Long-Term Bicycle Parking Facilities*



Key design aspects related to long-term bicycle parking includes:

- 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 storage facilities encourage commuters to travel by bicycle because they have a place to change and prepare before work or school. This Plan recommends the City Municipal Code be revised as needed to require all new mid-size and large employers, offices, and businesses to supply changing and storage facilities, such as by providing showers and locker space within the buildings or arranging agreements with nearby recreation centers to allow commuters to use their facilities.

As noted in the Recommended Programs section, the installation of bicycle maintenance hubs or stations at key high-traffic locations can accommodate bicycle riders for a variety of needs (such as minor repairs, inflating tires, filling water bottles, providing wayfinding information, and promotion of local businesses).

*Note: Any changes to the Municipal Code will require coordination with the Planning Department, City Attorney, and City Manager's office.

7.3.4 Recommended Programs

Improvements to and continued support of education, enforcement and evaluation programs have been proven to increase the number of bicycle trips and bicycling safety. These programs can ensure that more community members know about new and improved facilities, learn the skills they need to integrate bicycling into their activities, and receive positive reinforcement about integrating bicycling into their daily lives. In essence, the new and enhanced programs market the idea of bicycling to the community and encourage a shift to bicycling as a transportation option. This Plan supports the continuation and enhancement of the City's education, encouragement, and enforcement programs that are currently in place. The following additional programs are each designed to promote bicycling in the City, increase safety for those traveling by bicycle, and raise awareness of the benefits of bicycling. Further details on recommended programs are included in Chapter 8.

Table 7-17 provides a summary of the recommended programs.

Further details on recommended programs are included in **Chapter 8**.

Table 7-17 Recommended Programs

Category	Program	Responsible Party	Funding Source	Schedule*
Education	Bicycle Safety and Share the Road Campaigns	Metro, SGVCOG, City	City; Grants	Near-Term
	Bicycle Resource Website	City	City	Near-Term
	Adult Bicycling Skills Classes	Bicycle Clubs, City, Metro	City; Grants	Near-Term
	Youth Bicycle Safety Education Classes	Bicycle Clubs, City	City; Grants	Near-Term
	Youth Bicycle Safety Clinics & Bicycle Campus	City, Safe Routes to School National Partnership	City; Grants	Middle-Term
	Senior Bicycle Education Classes	Bicycle Clubs, City	City; Grants	Middle-Term
Encouragement	Bike Valet at City Events	Special Event Promoter, City	City	Near-Term
	Youth and Family-Oriented Bicycle Rides	Advocacy Groups, City	Private	Near-Term
	"Be Seen" Bike Light Campaign	City	City; Grants	Near-Term
	Bike Festivals & Family Bike Fest/Family Biking Day	City, Advocacy Groups	City; Sponsorships	Near-Term
	Launch Party for New Bicycle Facilities	City	City	Near-Term
	Bicycle Friendly Community Designation	City	N/A	Near-Term
	Tourism Integration	City	City	Near-Term
	Commuter Incentive Programs	Metro, SGVCOG, City	City; Grants	Middle-Term
	Safe Routes to School Program	City, Advocacy Groups	Grants	Near-Term
	Bicycle Friendly Business Districts	Business Improvement District/ Association, City	City; Contributions from Business Associations	Middle-Term

Table 7-17 Recommended Programs (continued)

Category	Program	Responsible Party	Funding Source	Schedule*
	Bicycle Hubs	City	City; Grants	Middle-Term
	Media Outlets	City	In-Kind Contributions; Grants	Middle-Term
	Individualized Marketing Campaigns	Metro, SGVCOG, City	Grants	Middle-Term
	Mobility Coordinator	City	City; Grants	Long-Term
	Ride with the City	City	City	Near-Term
	Open Streets/Ciclovía Events	City	City; Grants	Long-Term
	Bicycle Sharing	Metro, SGVCOG, City	Grants; Sponsorships	Long-Term
Enforcement	Speed Radar Trailer/ Feedback Signs	City	Grants	Near-Term
	Bicycle Patrol Units	City	City	Near-Term
	Undercover Officer Enforcement	City	City	Near-Term
	Bicycle Theft Abatement Program	City	Grants	Middle-Term
Evaluation	Bicycle Counts and Survey Program	City	City; Grants	Near-Term
	Mapping Bikeway Investments	City	City	Near-Term
	Bicycle Report Card	City	City	Middle-Term
	Complete Streets Policy	City	City; Grants	Middle-Term
	Bicycle Parking Policy and Enforcement	City	City; Grants	Middle-Term
	Bike Counters/Bicycle Barometers	City	Grants	Middle-Term

**Near-term = 0-3 years, Middle-Term = 3-6 years, Long-Term = 6+ years.*

7.4 Project Costs

7.4.1 Implementation Costs

The following planning-level costs are typically utilized to estimate capital expenditures required for implementation of bikeways by classification:

- Class I Shared-Use Path: $1,000,000 per mile;
- Class II Bike Lane: $50,000 per mile; and
- Class III Bike Route: $20,000 per mile.

The planning level cost estimates do not include potential right-of-way acquisition, extensive grading, landscaping, or potential utility impacts. Cost estimate refinements still may occur based on further engineering review and are intended to provide an estimate for budgeting purposes.

Table 7-18 summarizes the total cost of implementation for the bikeways recommendations.

Table 7-18 Recommended Bikeway Network Cost Estimate

Facility Type	Proposed Bikeways (Miles)	Unit Cost ($/Mile)	Total Cost ($)
Class I Shared-Use Path	0.1	$1,000,000	$100,000
Class II Bike Lane	11.3	$50,000	$565,000
Class III Bike Route	10.6	$20,000	$212,000
Total	**22.0**	**--**	**$877,000**

As shown in **Table 7-18**, the total cost estimate for recommended bicycle infrastructure projects is $877,000, of which almost $600,000 is attributed to Class II bike lanes. The City has already secured funding for the majority of the Class II bike lanes proposed in this Plan, so the actual implementation cost borne by the City will likely be much lower.

7.4.2 Maintenance Costs

Bicycle facilities require regular maintenance and repair. On-street bicycle facilities are maintained as part of the normal roadway maintenance program and extra emphasis should be placed on keeping bike lanes and roadway shoulders clear of debris and keeping vegetation overgrowth from blocking visibility. The cost of maintaining Class I facilities may be shared among various agencies or departments. The typical maintenance costs for the existing and proposed bikeway network are shown in **Table 7-19**, and the cost for maintaining the built out network is provided (accounting for existing bikeways within the City).

Table 7-19 Annual Bikeways Network Maintenance Cost Estimates

Facility Type	Total Length (Miles)	Unit Cost ($/ Mile)	Annual Cost ($)	Typical Maintenance Items
Class I Shared-Use Path	$15,000	0.2	$3,000	Lighting and removal of debris and vegetation overgrowth
Class II Bike Lane	$5,000	11.3	$56,500	Repainting lane stripes and stencils, sign replacement as needed
Class III Bike Route	$5,000	10.6	$53,000	Sign replacement as needed
Total		**22.1**	**$112,500**	

As shown in **Table 7-19**, the annual cost for maintaining bikeways network assuming implementation of all paths, bike lanes, and bike routes is approximately $112,500. It should be noted this cost will be realized over time as implementation of the network is completed, and actual costs will be lower until the entire network is constructed. Additionally, costs for maintenance of the Los Angeles County off-street shared-use paths are not the responsibility of the City of South El Monte.

7.5 Project Implementation

This chapter provides a strategy for implementing the capital project recommendations in this Plan. This implementation strategy and sequence is guided by a criteria-based ranking consistent with the goals of this Plan as well as the goals of other City, region, and State plans and policies.

A lengthy list of recommendations has been provided in this Plan, and ranking allows staff to prioritize the projects to advance to implementation. A variety of variables will influence the implementation including the availability of funding, engineering analysis, and support from community stakeholders and representatives.

Many signing and striping projects can be completed by the City Department of Public Works and are exempt from CEQA requirements. Such projects can be implemented using City or grant funds with approval by the City Management and/or City Council, if required due to the visibility or importance of the project. More complex projects with greater associated impacts typically include the following steps to advance to implementation:

1. Preparation of a Feasibility Study involving a conceptual design (with consideration of possible alternatives and environmental issues) and cost estimate for individual projects as needed.
2. Secure funding and any applicable environmental approvals.
3. Completion of final plans, specifications and estimates, advertising for bids, receipt of bids and award of contract(s).
4. Approval of the project by the City Council.
5. Construction of Project.

7.5.1 Prioritization Criteria

The intent of ranking projects is to create a prioritized list of bicycle projects for implementation. As projects are implemented, lower ranked projects move up the list. The project list and individual projects outlined in this Plan are flexible concepts that serve as a guideline. The ranked project list, and perhaps the overall system and segments themselves, may change over time as a result of changing bicycling patterns, land use patterns, implementation constraints and opportunities and the development of other transportation system facilities.

Projects may be implemented out of scoring order as opportunities arise. Opportunities may include grant availability, new development projects, capital improvement projects, or roadway repaving. The City can review the project list and project ranking at regular intervals to ensure it reflects the most current priorities, needs, and opportunities for implementing the bicycle network in a logical and efficient manner.

Each ranking criterion contains information about a facility and its ability to address an existing or future need in the San Gabriel Valley. The resulting project ranking determines each project's relative importance in funding and scheduled construction.

The following criteria are used to evaluate each proposed bicycle facility, its ability to address demand and deficiencies in the existing bicycle network and its ease of implementation. The criteria are organized into "utility" and "implementation" prioritization factors.

Utility Prioritization Factors

Utility criteria include conditions of bicycle facilities that enhance the bicycle network. Each criterion is discussed below.

Bicycle-Related Collisions

Bicycle facilities have the ability to increase safety by reducing potential conflicts between bicycle riders and motorists, which often result in collisions. Proposed facilities that are located on roadways with past bicycle-automobile collisions are important to the partner cities.

Public Input

The Project Team solicited public input through a series of booths at local events, jurisdiction-wide workshops, community street audits, a web-based feedback portal, monthly polls and an opinion survey. Facilities that community members identified as desirable for future bicycle facilities are of priority to the network because they address the needs of the public.

Gap Closure

Gaps in the bicycle network come in a variety of forms, ranging from a "missing link" on a roadway to larger geographic areas without bicycle facilities. Gaps in the bikeway network discourage bicycle use because they limit access to key destinations and land uses. Facilities that fill a gap in the existing and proposed bicycle network are of high priority.

Connectivity to Existing Facilities

Proposed bikeways that connect to existing bicycle facilities in the partner cities and to adjacent jurisdictions' bikeways increase the convenience of bicycle travel. Proposed facilities that fit this criterion are of high importance to the cities.

Connectivity to Regional Facilities

Linkage to existing and future regional bikeways in the San Gabriel Valley will enhance future connectivity between the partner cities and surrounding communities. For the purposes of this evaluation, linkage to the following facility types would be identified as regional connections:

- Existing/Planned off-street trails along waterways, utility corridors, etc.
- Existing/Planned on-street bikeways that continuously span across two or more jurisdictions

Connectivity to Activity Centers

Improved linkage to key employment, recreational, commercial and civic destinations within the community can increase bicycling activity and reduce in-town vehicular travel for short-distance trips. These activity centers generate many trips which could be made by bicycle if the proper facilities were available. The following activity centers will be reviewed for improved access related to the recommended bikeway improvements:

- Major Employment & Commercial Areas
- Civic Centers
- Public Libraries

- Community Centers
- K-12 Public Schools
- East Los Angeles College
- Major Cultural Destinations, such as museums and interpretive centers
- Hospitals & Medical Centers
- Parks & Recreation Centers
- Commercial/retail business centers (shopping malls, downtown districts, retail complexes, etc.)

Connectivity to Multi-Modal Transportation Centers

Bicycle facilities that link to modes of public transportation increase the geographical distance bicycle riders are able to travel. Proposed bicycle facilities that connect to transit stops and centers improve bicycle riders' mobility and are therefore key pieces of the bicycle network. Priority ranking will be given to bikeways that connect to the following major transportation centers:

- Baldwin Park Metrolink Station
- El Monte Bus Station
- El Monte Metrolink Station
- East Los Angeles College Transit Center
- Proposed future Metro Gold Line stations

Implementation Prioritization Factors

Implementation criteria address the ease of implementing each proposed project. Each criterion is discussed below.

Permitting

Projects that can be implemented solely by the participating cities have higher readiness factors, whereas those that require permitting and approvals from other agencies governing roadways and land within the individual cities will score lower. Examples include collaboration with adjacent jurisdictions, approval by Caltrans, or permitting by the Los Angeles County Department of Public Works for projects utilizing local washes, creeks, storm channels, etc.

Project Cost

Projects that are less expensive do not require as much funding as other projects and are therefore easier to implement. Projects that cost less are of higher priority to the partner cities.

Parking Displacement

Installing safe, easily accessible and attractive bicycle facilities occasionally requires the displacement of on-street vehicular parking. Therefore, projects that do not require parking displacement are of increased importance.

7.5.2 Project Ranking

Table 7-20 shows how the criteria are weighted for project prioritization and ranking.

Table 7-20 Ranking Criteria and Weighting

Criteria	Score	Multiplier	Total	Description
Utility Prioritization Factors				
Bicycle-Related Collisions	2	3	6	Provides a bicycle facility on a roadway that experienced 3 or more bicycle-related collisions between 2007-2011
	1	3	3	Provides a bicycle facility on a roadway that experienced 1-2 bicycle-related collisions between 2007-2011
	0	3	0	Provides a bicycle facility on a roadway that did not experience any bicycle-related collisions between 2007-2011
Public Input	2	3	6	Roadway was identified by the public as desirable for a future facility multiple times
	1	3	3	Roadway was identified by the public as desirable for a future facility once
	0	3	0	Roadway was not identified by the public as desirable for a future facility
Gap Closure	2	3	6	Fills a network gap between two or more existing facilities

Table 7-20 Ranking Criteria and Weighting (continued)

Criteria	Score	Multiplier	Total	Description
	1	3	3	Fills a network gap between an existing facility and a proposed facility
	0	3	0	Does not directly or indirectly fill a network gap
Connectivity: Existing	2	2	4	Provides direct access to an existing bicycle facility
	1	2	2	Provides secondary connectivity to an existing bicycle facility
	0	2	0	Does not directly or indirectly provide access to an existing bicycle facility
Connectivity: Regional	2	2	4	Provides direct access to a regional existing/proposed bicycle facility
	1	2	2	Provides secondary connectivity to a regional existing/ proposed bicycle facility
	0	2	0	Does not directly or indirectly provide access to a regional existing/proposed bicycle facility
Connectivity: Activity Centers	2	2	4	Provides access to more than 3 activity centers
	1	2	2	Provides access to 1-3 activity centers
	0	2	0	Does not provide access to an activity center
Connectivity: Multi-Modal	2	1	2	Provides direct access to a major Transportation Center
	1	1	1	Provides secondary connectivity to a major Transportation Center
	0	1	0	Does not directly or indirectly provide access to a major Transportation Center
Implementation Prioritization Factors				
Permitting	2	1	2	Does not require permitting from agency (other than the respective city)
	1	1	1	Requires permitting or approval from 1 agency
	0	1	0	Requires permitting or approval from 2 or more agencies
Project Cost	2	1	2	Will cost less than $40,000 to implement
	1	1	1	Will cost between $40,001 and $200,000 to implement
	0	1	0	Will cost over $200,000 to implement
Parking Displacement	2	1	2	Does not require any parking removal
	1	1	1	Requires removal of some on-street parking stalls
	0	1	0	Requires removal of all on-street parking stalls

Each recommended project was evaluated based on the ranking criteria and scored to develop the prioritization tables. As shown in **Table 7-20**, the maximum potential score for a recommended project is 34 points.

Within the City of South El Monte, a total of 47 bicycle facility projects were identified and grouped into the following three tiers by each projects prioritization score:

- Tier 1 (34-22 points): Tier 1 projects have the highest potential for addressing the City's goals for bicycle transportation and are intended for near-term project implementation. The highest score received by a project was 27 points. A total of 12 projects are listed in Tier 1 and are shown in **Table 7-21.**
- Tier 2 (21-14 points): Tier 2 projects are intended for mid-term implementation. A total of 14 projects are listed in Tier 2 and are shown in **Table 7 -22.**
- Tier 3 (13-0 points): Tier 3 projects are not currently ready for implementation but are included as long-term potential bicycle-specific projects. A total of 21 projects are listed in Tier 3 and are shown in **Table 7-23**.

All of the projects are recommended for implementation over the next twenty (20) years. However, due to the unpredictability of funding sources, economic conditions, and community support, some projects, especially those that require right-of-way purchase or coordination with multiple jurisdictions, may not be completed within the next twenty years.

Table 7-21 *Tier 1 Projects (Score of 34-22)*

Facility Type	Location	Start	End	Bicycle-Related Collisions	Public Input	Gap Closure	Connectivity: Existing	Connectivity: Regional	Connectivity: Activity Centers	Connectivity: Multi-Modal	Permitting	Project Cost	Parking Displacement	Total Score (34 max)
II	Garvey Avenue	Rio Hondo River	City Limit (East of Potrero Avenue)	6	6	3	4	2	2	0	2	2	0	27
II	Rosemead Boulevard	North City Limit	City Limit (South of Rush Street)	6	6	6	4	2	0	0	1	1	1	27
II	Santa Anita Avenue	Tyler Avenue	Lexington-Gallatin Road	3	6	6	4	2	2	1	2	1	0	27
II	Rush Street	Loma Avenue	Bunker Avenue	6	6	6	0	2	1	0	2	1	2	26
III	Thienes Avenue	Durfee Avenue	San Gabriel River Trail	3	6	6	4	2	1	0	2	2	0	26
III	Santa Anita Avenue	Elliott Avenue	Rush Street	6	6	6	0	2	1	0	2	2	0	25
II	Santa Anita Avenue	Rush Street	Tyler Avenue	6	6	6	0	2	1	0	2	2	0	25
II	Durfee Avenue	Barringer Street	Thienes Avenue	6	6	6	0	2	0	0	2	2	0	24
II	Peck Road	Thienes Avenue	San Gabriel River	3	6	3	4	2	0	2	2	2	0	24
III	Thienes Avenue	Tyler Avenue	Durfee Avenue	3	6	6	2	2	1	0	2	2	0	24
II	Durfee Avenue	Peck Road	Southwest City Limit	0	6	6	2	2	1	2	2	2	0	23
II	Tyler Avenue	Klingerman Street	Santa Anita Avenue	3	6	6	0	2	1	0	2	2	0	22

Table 7-22 Tier 1 Projects (Score of 21-14)

Facility Type	Location	Start	End	Bicycle-Related Collisions	Public Input	Gap Closure	Connectivity: Existing	Connectivity: Regional	Connectivity: Activity Centers	Connectivity: Multi-Modal	Permitting	Project Cost	Parking Displacement	Total Score (34 max)
II	Peck Road	City Limit (South of Weaver Street)	Rush Street	3	6	6	0	2	0	0	2	2	0	21
I	Rubio Wash	North City Limit	Rio Hondo Bike Path	6	6	3	0	2	0	0	1	1	2	21
III	Central Avenue	Fern Street	Durfee Avenue	6	0	3	0	2	2	1	2	2	2	20
II	Merced Avenue	Fern Street	Lerma Road	6	3	3	0	2	0	1	2	1	0	18
II	Mountain View Road	Weaver Avenue	Rush Street	3	3	3	0	2	0	0	2	2	2	17
III	Lashbrook Avenue	City Limit (Between Cortada Street and Garvey Avenue)	Garvey Avenue	3	0	3	2	2	0	0	2	2	2	16
III	Lerma Road	City Limit (West of Fawcett Avenue)	Central Avenue	3	0	3	0	1	2	1	2	2	2	16
III	Michael Hunt Drive	Santa Anita Avenue	Kayann Place	3	0	3	0	2	0	1	2	2	2	15
III	Chico Avenue	Garvey Avenue	Rush Street	3	0	3	0	2	0	0	2	2	2	14
III	Farndon Street	Peck Road	Thienes Avenue	0	0	3	2	2	1	0	2	2	2	14
III	Fern Avenue	Sastre Avenue	Santa Anita Avenue	6	0	0	0	2	0	0	2	2	2	14
III	Klingerman Street	Potrero Avenue	Central Avenue	6	0	0	0	2	0	0	2	2	2	14
III	Mabel Avenue	Loma Avenue	Rosemead Boulevard	3	0	3	0	2	0	0	2	2	2	14

Table 7-23 Tier 3 Projects (Score of 12 or less)

Facility Type	Location	Start	End	Bicycle-Related Collisions	Public Input	Gap Closure	Connectivity: Existing	Connectivity: Regional	Connectivity: Activity Centers	Connectivity: Multi-Modal	Permitting	Project Cost	Parking Displacement	Total Score (34 max)
III	Vacco Street	Central Avenue	Santa Anita Avenue	3	0	0	0	2	2	0	2	2	2	13
III	Cogswell Road	Central Avenue	Gomez Palacio Drive	0	0	3	0	1	1	1	2	2	2	12
III	Klingerman Street	Central Avenue	City Limit (East of Tyler Avenue)	3	0	0	0	2	1	0	2	2	2	12
III	Lexington-Gallatin Road	Andrews Street	City Limit (North of Santa Anita Avenue)	0	0	3	0	2	0	1	2	2	2	12
III	Loma Avenue	Mabel Avenue	Rush Street	0	0	3	0	2	1	0	2	2	2	12
III	Weaver Avenue	Santa Anita Avenue	Mountain View Road	3	0	0	0	2	1	0	2	2	2	12
III	Durfee Avenue	Central Avenue	Michael Hunt Drive	3	0	0	0	2	0	0	2	2	2	11
II	Fawcett Avenue	Lerma Road	Santa Anita Avenue	0	0	3	0	2	1	1	2	2	0	11
III	Andrews Street	Lexington-Gallatin Road	Lexham Avenue	0	0	3	0	1	0	0	2	2	2	10
III	Fawcett Avenue	Lexham Avenue	Farmer Avenue	0	0	3	0	0	1	0	2	2	2	10
III	Lexham Avenue	Fawcett Avenue	Andrews Street	0	0	3	0	0	0	1	2	2	2	10
II	Chico Avenue	Rush Street	South City Limit	0	0	3	0	2	0	0	2	2	0	9
II	Potrero Avenue	City Limit (Near Kale Street)	North of Lerma Road	0	6	0	0	0	0	0	2	1	0	9
III	Adelia Avenue	City Limit (South of Cortada Street)	Garvey Avenue	0	0	0	0	2	0	0	2	2	2	8
III	Elliott Avenue	Santa Anita Avenue	City Limit (East of Granada Avenue)	0	0	0	0	2	0	0	2	2	2	8
III	Elliott Avenue	Paulson Avenue	Continental Avenue	0	0	0	0	2	0	0	2	2	2	8
III	Weaver Street	Central Avenue	Santa Anita Avenue	0	0	0	0	2	0	0	2	2	2	8
III	Alesia Street	Adelia Avenue	Potrero Avenue	0	0	0	0	1	0	0	2	2	2	7
III	Kayann Place	Michael Hunt Drive	Farndon Street	0	0	0	0	1	0	0	2	2	2	7
III	Remer Street	Chico Avenue	Adelia Avenue	0	0	0	0	1	0	0	2	2	2	7
III	Adelia Avenue	Remer Street	Alesia Street	0	0	0	0	0	0	0	2	2	2	6

7.5.3 Implementation Strategies

The Bicycle Master Plan provides the long-term vision for the development of a citywide bicycle network that can be used by all residents for all types of trips. The following strategies, action items and measures of effectiveness are provided to guide the City toward the vision identified in the Plan.

Strategy 1: Strategically Pursue Infrastructure Projects

City staff can strategically pursue funding and implementation of infrastructure projects recommended in this Plan. Ideally, City staff will pursue capital improvements funding or grant funding for high-priority bicycle improvements first. If grant requirements or construction in conjunction with another roadway project make construction of a lower priority project possible, then the City might advance that project regardless of priority.

Action Item: On an annual basis the City can publish a public report documenting the status and ongoing actions for all bicycle infrastructure projects. This report may be combined with the prioritization review discussed below. The first update is recommended to occur in Fall 2015.

Strategy 2: Review Capital Improvement Program (CIP) Concurrence

The opportunity to implement projects concurrent with the CIP can reduce the burden of implementing bicycle facility projects, and improve the schedule for use regardless of priority ranking for each project.

Action Item: Annually evaluate the CIP for opportunities to implement recommended bicycle facility projects included within this Plan.

Strategy 3: General Plan Incorporation

Key policies, strategies and recommendations included in this Bicycle Master Plan can be incorporated into the General Plan Circulation Element during the next update. At the least, the Circulation Element update can incorporate the recommended bikeways network, add revisions to the roadway cross-sections showing dimensions for on-street bike lanes, and incorporate policies for public and private realm accommodation of bicycling activities. Additionally, roadways with excess vehicular capacity can be reviewed to modify travel lanes and provided on-street or protected bike lanes. The City can also develop engineering standards for NACTO-type bicycle treatments for ongoing use.

Action Item: Update the General Plan Circulation Element and incorporate key items from the Bicycle Master Plan.

Strategy 4: Review City Representative

Current work on bicycle facility projects at the City has been implemented by planning and engineering staff within multiple City Departments. The City may review the designated bikeways representative to determine if other staff within the City have availability or are suited to help secure funding or programmatic recommendations provided within this Plan.

Action Item: Designate a single point person at the City to focus on implementation of bikeway infrastructure and non-infrastructure projects.

Strategy 5: Regularly Revisit Project Prioritization

Projects have been prioritized based on safety, public input, transportation benefit, connectivity benefit, cost, and feasibility. It is recommended that the prioritized list be reviewed every fiscal year, with new projects added, completed projects removed, and the priorities revised as conditions change.

Action Item: Annual review and update of the bicycle master plan's recommended facilities list and programs schedule. Updates to the list can be shared with the public. The first update is recommended in Fall 2015.

Strategy 6: Update the Bicycle Master Plan

While this Plan is intended to guide bikeways planning in the City for the next 20 years, updates may be needed to address changes in priority and evaluation efforts. State funding has typically required updates to bicycle master plans every five years to establish funding opportunity for active transportation projects. Often, cities provide a compliance update within five years and a comprehensive update every ten years.

Action Item: Provide compliance update to the Bicycle Master Plan in five years, and a more comprehensive full update in ten years. Other elements of the Plan shall be reviewed and updated as needed.

Strategy 7: Collaborate with Caltrans

Caltrans manages and operates various freeways adjacent the city with interchange ramps and bridges that often are higher-stress locations for bicycle riders. Additionally, Caltrans manages Rosemead Boulevard (State Route 19) along the western edge of the City. This Plan includes bicycle facility recommendations that require regular coordination and collaboration with Caltrans.

Action Item: Collaborate with Caltrans to implement bicycle facility improvements on Caltrans-managed facilities, including innovative and conventional treatments using examples of similar facilities within the City, County, and State as precedents.

Strategy 8: Establish Measures of Effectiveness

Measures of effectiveness (MOEs, also known as targets or indicators) are used as a quantitative way to measure the City's progress toward implementing the Bicycle Master Plan. Well-crafted MOEs track progress toward meeting an agreed-upon goal within an established timeframe. **Table 7-24** describes several MOEs recommended for use by the City to track key achievements.

Table 7-24 Recommended Measures of Effectiveness

Measure	Benchmark	Target
Bicycle journey to work mode share	0.7% bicycle mode split per Census	Increase bicycle mode split to 1.4% by 2035.
Bicycle Facility Improvements Implementation	Approximately 4.6 miles of bikeways	Increase bikeways network by implementing bicycle facility recommendations.
Bicycle counts	Bike counts included in this Plan	Annually collect bike counts at baseline locations to document ridership volumes.
Bicyclist trends/behaviors	Bike counts included in this Plan	Increase bicycling by women 10% per year up to 50% of total bicycling population, focus efforts to reduce wrong way bicycling where reported as cause in bike incidents.
Public attitudes about bicycling	Bike survey provides indication of challenging locations and current perspectives	Increase in positive attitudes about bicycling within community.
Bicycle boulevard demonstration project	Not applicable	Develop demonstration bicycle boulevard on selected corridor and evaluate for success in usage and connectivity.
Bicycle Friendly Community Designation	Not currently designated by the League of American Bicyclists	Secure League of American Bicyclists Bronze Award by 2016 and Silver Award by 2021.
Grant funding	Baseline to be established	Attain an annual average funding of $200,000 or more for infrastructure and non-infrastructure projects.

As new baseline information is discovered as conditions change, and as the City implements the Bicycle Master Plan, the MOEs should be reevaluated, revised and updated.

An example evaluation or MOEs ("indicators") report is produced by the City of Santa Monica which evaluates sustainability indicators as well as non-motorized program measures. The Santa Monica Sustainable City Report Card is provided online at the following location

http://www.smgov.net/Departments/OSE/categories/sustainability.aspx

7.5.4 Potential Funding Sources

Potential funding sources for implementation of recommended bicycle facility infrastructure projects and programs has been identified for further consideration. The funding sources listed are typically competitive in nature, so the City will evaluate the applicability of potential projects and likely scoring before developing a grant application. Additionally, the City will determine the availability of staff to prepare grant applications and to administer the grant. Preparation of grant applications can often be a time-intensive effort, and receipt of funding is not guaranteed due to increasing competition for active transportation projects. Resource demands should be considered by the City given the potential benefit of each grant opportunity.

We recommend the City identify potential projects that would fit well with the following funding sources and initiate/continue discussions with key agencies and stakeholders; funding sources are identified with the date of the next anticipated call listed in parentheses:

- Caltrans Active Transportation Program (Late 2014 or Early 2015)
- Metro Call for Projects (2015)
- Metro ExpressLanes Net Toll Revenues (Date Unknown)
- SCAG Sustainability Program (Future date subject to SCAG Regional Council action)
- Land and Water Conservation Fund (2015)

Preliminary consideration of applicability and discussion with stakeholders can help verify that a potential opportunity is well-suited for the grant source, and can help position the City to document a history of collaboration and provide a venue to secure letters of support for incorporation into the grant application. Refer to **Chapter 9** for a listing of additional funding sources that may be considered for funding bicycle facility improvements and programs.

7.6 Active Transportation Program (ATP) Compliance

The Active Transportation Program (ATP) is an annual statewide discretionary grant program that funds bicycle and pedestrian projects through the California Department of Transportation (Caltrans). Available as grants to local jurisdictions, the ATP emphasizes projects and programs that enhance bicycling for transportation purposes. In order for the City to qualify for ATP funding in future cycles, the Bicycle Master Plan must contain specific elements. **Appendix I** displays the requisite ATP components and their location within this Plan.

8 Recommended Programs

Comprehensive education, encouragement, enforcement, and evaluation programs are critical to increasing the number of bicycle trips and improving safety. Such programs ensure that more residents become aware of new and improved facilities, learn the rules of the road, build confidence to operate a bike in live traffic and receive positive reinforcement for integrating bicycling into their daily lives. In essence, the programs outlined in this chapter reinforce the idea and shift toward bicycling as a viable and sustainable transportation option. This Plan supports the continuation and enhancement of the region's education, encouragement, enforcement, and evaluation programs that are currently in place. The following programs are designed to increase the rates of bicycling in the region, increase safety for those traveling by bicycle, and raise awareness related to the multiple benefits of bicycling. **Table 8-1** provides a summary of the recommended programs.

The San Gabriel Valley is widely recognized as one of the most culturally diverse regions in California with English, Spanish and Chinese as the three primary languages. Therefore, any non-infrastructure programs implemented in the region's communities should be developed with strong consideration of the diverse language and cultural needs of the San Gabriel Valley's residents.

This list presents a comprehensive assortment of potential programs to choose from, and the partner cities are not bound to implement all of them upon adoption of this Plan. However, the Plan recommends that each partner city consider implementing as many of these as is feasible and as funds can be obtained.

Table 8-1 Recommended Programs

Category	Program	Responsible Party	Funding Source	Schedule
Education	Public Service Announcements & Awareness Campaigns	Metro; SGVCOG; City	City; Grants	Near-Term
	Bicycle Safety "Checkpoints" Campaign	Advocacy Groups; City	City; Grants	Near-Term
	Bicycle Resource Website & Smartphone Application	City	City	Near-Term
	Adult Bicycling Skills Classes	Bicycle Clubs; City; Metro	City; Grants	Near-Term
	Youth Bicycle Safety Education Classes	Bicycle Clubs; City	City; Grants	Near-Term
	Youth Bicycle Safety Clinics & Bicycle Campus	City; Safe Routes to School National Partnership	City; Grants	Middle-Term
	Senior Bicycle Education Classes	Bicycle Clubs; City	City; Grants	Middle-Term
	Bicycle Cooperative & Education Center (Bike Co-op)	Advocacy Groups; City	City; Grants	Middle-Term
	Earn/Build-a-Bike Program	Advocacy Groups; Bike Shop(s)	City; Grants	Near-Term
	Traffic Violation Diversion Class	City	City	Middle-Term
Encouragement	Bicycle Parking & Support Amenities	City; Metro	City; Metro; Grants	Near-Term
	Bike Valet &Related Services at City Events	Special Event Promoter; City	City	Near-Term
	Community Bicycle Rides	Advocacy Groups; City	Private	Near-Term
	Bicycle Rider Visibility Campaign	City	City; Grants	Near-Term
	Bike Festivals & Family Bike Fest/ Family Biking Day	City; Advocacy Groups	City; Sponsorships	Near-Term
	Open Streets Events	City; Advocacy Groups	City; Metro; Grants; Private	Middle-Term

Table 8-1 Recommended Programs (continued)

Category	Program	Responsible Party	Funding Source	Schedule
	Launch Party for New Bicycle Facilities	City	City	Near-Term
	Bicycle Friendly Community Designation	City	N/A	Near-Term
	Bicycle Friendly Business Districts	Business Improvement District/Association; City	City; Contributions from Business Associations	Middle-Term
	Tourism Integration	City	City	Near-Term
	Commuter Incentive Programs	Metro; SGVCOG; City	City; Grants	Middle-Term
	Safe Routes to School Program	City; Advocacy Groups	Grants	Near-Term
	Media Outlets	City	In-Kind Contributions; Grants	Middle-Term
	Individualized Marketing Campaigns	Metro; SGVCOG; City	Grants	Middle-Term
	Bicycle Coordinator	City	City; Grants	Long-Term
	Bicycle Sharing Program	Metro; SGVCOG; City	Grants; Sponsorships	Long-Term
	Mobile Bike Repair	Advocacy Groups; City	City; Private	Near-Term
Enforcement	Speed Radar Trailer/Feedback Signs	City	Grants	Near-Term
	Neighborhood Speed Watch	City	City	Near-Term
	Bicycle Patrol Units	City	City	Near-Term
	Officer Education Advancement	City	City	Near-Term
	Undercover Officer Enforcement	City	City	Near-Term
	Bicycle Theft Abatement Program	City	Grants	Middle-Term
Evaluation	Bicycle & Pedestrian Counts	City; Advocacy Groups	City; Grants	Near-Term
	General Community Bicycle Survey	City; Advocacy Groups	City; Grants	Near-Term
	Mapping Bikeway Investments	City	City	Near-Term
	Bicycle Report Card	City	City	Middle-Term
	Complete Streets Policy	City	City; Grants	Middle-Term
	Bicycle Parking Policy & Enforcement	City	City; Grants	Middle-Term
	Automatic Bike Counters/Bicycle Barometers	City	Grants	Middle-Term

Note: Near-term = 0-3 years, Middle-Term = 3-6 years, Long-Term = 6+ years.

8.1 Education

Education programs are designed to improve safety, increase awareness, and build confidence for bicycling on public streets. Bicycle-related collision data show that an inadequate bicycling environment is directly related to increased collisions. Therefore, in addition to infrastructure improvements, education about the rules of the road, riding etiquette and proper traffic skills reduce the frequency of bicycle-related collisions. This Plan recommends the following education programs:

8.1.1 Public Service Announcements (PSAs) and Awareness Campaigns

High profile and well-produced PSAs are not only memorable but an effective way to reach a broad audience on a wide range of issues. These awareness campaigns highlight bicycling and walking as viable forms of transportation while reinforcing the "Rules of the Road" and safety for all roadway users. Such campaigns are one important element for creating a safer bicycling and walking environment. Many jurisdictions and local agencies have launched awareness campaigns to deliver messages across multiple jurisdictions or in specific cities. Often times, local cities provide in-kind support by disseminating messages via newsletters, the city website, message boards, flyers, posters, etc. However, given the technological advances of today, a dynamic multi-media approach is necessary and effective to reach large and/or specific audiences. Effective PSA strategies incorporate new aged platforms such as online viral videos (i.e., Vimeo, YouTube), social networks (i.e., Facebook, Twitter) and blogs in combination with traditional outreach methods such as press conferences, local television and radio, and grassroots flyer distribution. Nevertheless, identifying the target audience is a critical first step in determining a strategy for a public service announcement and awareness campaign. The following are various examples of community-based awareness campaigns:

Give Me 3 – Sparked by collisions between motorists and people bicycling, this campaign raises awareness about a new California State law, the "Three Feet for Safety Act" of 2013 (California Assembly Bill 1371), which requires motor vehicles to provide at least 3 feet of clearance to safely pass a bicycle rider on the road. The bill will be operative as of September 16, 2014[1]. Other similar examples of "3 feet to pass" outreach campaigns include those by the City of Los Angeles[2], Bicycle Colorado[3], and bicycle advocates in Nevada's Lake Tahoe area.

Image 27- *Give Me 3 Poster (courtesy of thebirdwheel.com)*

Precaución: Tu Familia También Usa La Bicicleta (Precaution: Your Family Also Uses a Bicycle) –

Given that the City of Los Angeles is comprised of 48.5% Latinos (many of which speak Spanish as a primary language), the Los Angeles County Bicycle Coalition's City of Lights Program launched a language-sensitive campaign aimed at raising caution and informing motorists that families also use bicycles on public roads. The bus shelter posters, press conference, and accompanying 60-second video were created in close partnership with local Spanish-speaking day laborers in the City of Los Angeles.

Image 28- *Spanish Language PSA Poster by Aaron Kuehn*

Sonoma County Transit also launched a "You've got a friend who bikes!" campaign, which combines compelling ads with an easy-to-use website focused at people driving, bicycling, and walking. This type of campaign is particularly effective when kicked off in conjunction with other bicycling/walking events or back to school periods in the fall. The safety and awareness messages could be displayed near high-traffic corridors (e.g., on banners), printed in local publications, broadcast as radio and/or television ads, and be made available in Spanish and other languages.

Sample program: Sonoma County (CA) Transit: http://sctransit.com/bicycles/bicycle-safety/downloadable-safety-materials/

Every Lane is a Bike Lane – In many cases, both motorists and cyclists are unfamiliar with a bicycle rider's right to occupy a full travel lane to safely navigate traffic situations. As a result, Los Angeles County Metro spearheaded a campaign to inform motorists about cyclists' rights to the road. Because this campaign primarily targeted motorists, Metro opted to place this

1. http://leginfo.ca.gov/pub/13-14/bill/asm/ab_1351-1400/ab_1371_bill_20130923_chaptered.htm
2. http://ladotbikeblog.wordpress.com/2010/08/24/mayor-launches-give-me-3-campaign
3. http://bicyclecolo.org/articles/bicycle-safety-law-tips-pg1028.htm

message on bus backs, billboards, bumper stickers, and drive-time radio.

Image 29- *Every Lane is a Bike Lane Campaign (Courtesy of http://cyclingindublin.com/)*

Bicycle Safety "Checkpoints" Campaign

Unlike the negative connotation associated with vehicular checkpoints that target driving under the influence and unlicensed drivers, bicycle "checkpoints" are coordinated to offer light refreshments, distribute informational materials (i.e. Rules-of-the-Road pocket guides, maps), provide safety equipment (i.e. lights, helmets, reflectors) and other bicycle related accessories (i.e. water bottles, stickers, bells).

Image 30- *Bicycle Safety Checkpoint*

A checkpoint campaign is typically most effective when promoted in advance and executed in multiple locations on major arterials with high visibility. Within the San Gabriel Valley region, a series of checkpoints can be coordinated among a set of neighboring cities with similar demographics and characteristics to optimize cultural sensitivity and sub-region marketing and outreach efforts. Utilizing police departments and partnering with local advocacy groups helps build stronger working relationships with the bicycling community while capitalizing on passionate volunteers to conduct bike safety checkpoints.

Here in the San Gabriel Valley, Huntington Memorial Hospital partnered with Day One, a public health non-profit, to coordinate multiple "checkpoints" throughout the City of Pasadena and unincorporated portions of Altadena in the summer of 2014. By targeting corridors that are frequented by people bicycling, local youth advocates from local high schools succeeded in distributing over 200 free helmets, lights, and reflective leg straps along with education materials.

8.1.2 Bicycle Resource Website and Smartphone Application

In the age of immediate information, it is critically important to maintain a stimulating website, especially to inform and engage local residents about public projects. In many cases, websites create an administrative burden due to the constant attention necessary to remain up-to-date. Although every city has a website for city-specific information, this Plan recommends a single, comprehensive website that serves as a one-stop, online bicycle resource center. Consolidating individual city bike web pages helps avoid inconsistent messaging and conflicting maps and routes, minimizes site maintenance, allows for multiple language settings, reduces administrative overhead, and reinforces the legal operation of bicycles across jurisdictions. Ultimately, this approach makes for a streamlined, user-friendly interface. The City of Long Beach has created a prime example for a bicycling information website (www.bikelongbeach.org).

Due to the advent and growing popularity of the Smartphone, this Plan also recommends developing a Smartphone application that coincides with the in-depth website. The website's most essential information can be condensed into a convenient, easy-to-use Smartphone application. Given the innovative nature and the endless possibilities for capturing valuable raw data, a well-constructed application can track bicycling miles traveled, popular routes, travel patterns, and include interactive features that gather attitudes, perceptions, and opinions related to roadway comfort levels, areas of improvements, route alternatives, and more. The app can also be used to take pictures or video to immediately report hazardous conditions, stolen bicycles, suspicious activity, roadway improvements, and collisions. Furthermore, the app can provide intuitive bicycle route recommendations based on live data sourcing, thereby helping cyclists to avoid congested streets resulting from traffic collisions or peak hour pile ups.

This Plan recommends that cities in the San Gabriel Valley collaborate to support the development and/or improvement of a bicycle resource website and Smartphone application. At minimum, the website and app shall include:

- Ability to create a user profile to:
  - Log routes, miles, road conditions, and attitude
  - Register user owned bicycles
  - Submit comments, suggestions, and provide feedback
  - Rate routes, roads, and comfort levels
- Bicycle network maps with multiple layers such as:
  - Regional and city-level routes
  - Bikeway classifications
  - Bikeway implementation priorities & schedules
  - Desirable destinations
  - Parking facilities
  - Fix-it stations
  - Bike-related businesses (bike shops, repair cooperatives, bike friendly businesses, etc.)
- California Vehicle Code, Section 21200: Operation of a Bicycle and other city-specific ordinances
- Bicycling tips such as:
  - Carrying items using baskets and panniers
  - Properly locking a bicycle
  - Riding in the rain with help from fenders and rain gear
  - Taking bicycles on public transit vehicles
- Calendar for upcoming events such as:
  - Bike Month activities
  - Bike safety trainings and classes
  - Community rides
- Guidance on requesting new bike racks
- Tourist information (bike rental locations, where to get a hard copy bikeways map, etc.)

8.1.3 Bicycle Safety and Skills Classes

The benefits of bicycling on individual and environmental health are well-documented and plentiful, and should therefore be equally accessible for people regardless of age and ability. However, given the current uncomfortable conditions along our cities' roadways, bicycling in traffic requires a heightened level of experience, confidence, and skill to safely negotiate public streets. To help reduce collisions and improve safety, bike safety classes should be designed to empower community members to confidently ride a bike more often, especially novice and vulnerable roadway users such as seniors and children. In addition, to encourage more women to engage in bicycling, cities can offer classes for women, taught by women.

The League of American Bicyclists has developed a nationally-recognized, comprehensive curriculum that is taught by League Certified Instructors (LCI's).

The 8-hour long, Smart Cycling program instills five core principles:

1. Follow the law
2. Be predictable
3. Be conspicuous
4. Think ahead
5. Ride ready

In the summer of 2013, BikeSGV offered a shortened version of the Smart Cycling program at local city and school facilities such as community centers, libraries, and parks throughout the San Gabriel Valley. The 3-hour "Need to Know" Bicycle Safety Courses consisted of one-

Image 31- *Bicycle Commuter Workshop in San Marino* hour of in-class instruction, one-hour of parking lots drills and skills, and a one-hour guided bike ride on live streets. All participants received a complimentary helmet, set of lights, bike map, water bottle, and other bicycle related accessories. Course materials covered bicycle safety checks, fixing a flat tire, crash avoidance techniques, and traffic negotiation. As a result of this project, BikeSGV now has 15 League Certified Instructors among its members that are familiar with the local landscape and regularly teach classes throughout the region.

Bike safety classes can be offered based on the following audiences:

Novice or Entry-Level – People that are new to bicycling are considered to be novice or entry-level riders. Bicycle safety and skills classes can be tailored to provide fundamental skills and a general understanding of basic regulations related to bicycling. For example, a novice or entry-level curriculum can include rules of the road, general bike maintenance and repair, emergency maneuvers, and planning safe routes of travel.

Intermediate or Advanced – This group of people may not need rudimentary, entry-level skills but may benefit most from classes that enhance the bicycling lifestyle. For example, an intermediate or advanced class can cover commuting with panniers and baskets, grocery shopping with a bike trailer, touring coastlines, etc.

Seniors – Older adults with declining agility, vision, and mental health often lose the ability to operate motor vehicles. Although their overall mobility will be impacted, they may find solace in traveling via bicycle for short distance trips to the market or visiting family, for instance. However, as vulnerable roadway users, it is imperative that aging adults are familiar with the bicycling rules of the road and learn to navigate low-stress, residential streets. Bike safety classes can also introduce the adult tricycle as a means to carry a light load while adequately maintaining balance. Sample program: http://www.portlandoregon.gov/transportation/article/155167

Youth – Nearly all cyclists are introduced to bicycling as a child but very rarely learn the laws associated with riding a bike. Bike safety can easily be incorporated as a school-based program (i.e., physical education) or as after school clinics. School sites are most ideal due to available playgrounds, black tops, and parking lots that can be transformed into simple but practical obstacle courses. Bike safety clinics help students develop basic techniques and safety skills by using stop signs, traffic cones, and other props to simulate the roadway environment. Students receive instruction on how to maneuver, observe signs and markings, and look for oncoming traffic before proceeding through intersections. Instructors can also ensure children's helmets and bicycles are appropriately sized, well-adjusted and functioning properly. These types of education programs are usually sponsored by a joint City/School District committee that includes appointed parents, teachers, student representatives, administrators, police, bicycle coalition advocates, and city engineering department staff.

Image 32*- Youth Bicycle Skills Course at Temple City Bike Festival*

This Plan recommends offering a series of free or low-cost bicycle safety classes throughout the year that are taught by locally based League Certified Instructors and structured to prioritize seniors, youth, and novice riders. This Plan also recommends pursuing Safe Routes to School Program funding that includes annual youth bicycle safety education classes.

Sample Resources:

- *Marin County Safe Routes to School Curriculum: http://www.saferoutestoschools.org/curriculum.html*
- *Bicycle Transportation Alliance – Portland, OR: http://btaoregon.org/wp-content/uploads/2011/11/curriculum-BSE.pdf*
- *League of American Bicyclists: http://bikeleague.org/programs/education/courses.php*
- *Women on Bikes SoCal's all-female LCI trainings: http://bikeleague.org/content/first-all-female-lci-training-huge-success*

8.1.4 Bicycle Cooperative and Education Center (Bike Co-op)

For many, the cost of purchasing and maintaining a bicycle is a true barrier to bicycling, especially for youth in disadvantaged communities. A bicycle cooperative (also known as a "bike campus") is a cost-effective, community workspace designed to teach basic maintenance and repair. Local jurisdictions can utilize existing facilities and land, such as underused parks and parking lots, to create a bicycle education center. The concept of a bicycle cooperative has been incorporated into public spaces throughout the United States with examples at fairgrounds, elementary schools, and parks along river bike paths.

The most ideal way to overcome the cost barriers associated with owning a bike is to recycle used bikes. Often times, public safety and transportation agencies such as police departments, Metro, and Foothill Transit build up an inventory of used bicycles that have been seized as evidence, abandoned on public furniture, or lost and not reclaimed. Such bicycles can be gifted, repurposed and distributed at low-cost or free to qualifying families and individuals, thereby increasing the bicycle mode share in a target area. Beyond recycling bicycles, a variety of complimentary programs, services, and safety accessories are issued with each bicycle as part of ongoing education and encouragement efforts. However, the operation, growth and overall sustainability of a bike cooperative are reliant on specialized personnel such as certified mechanics, instructors, and experienced bike shop operators. Service-learning volunteers and college interns are a rich source of human capital to help balance day-to-day responsibilities and programs. The City of Los Angeles has four co-ops throughout the city, and another co-op was recently opened in Santa Ana after a concerted effort to increase funding and secure a permanent space.

This Plan recommends partnering with local public safety and code enforcement agencies, the region's bicycle coalition and other public and environmental health organizations to establish a bicycle cooperative and education center in each city and foster the development of accompanying education programs.

Sample programs include:

- *www.thebicycletree.org/*
- *http://bikerowave.org/*
- *http://bikeoven.com/*
- *http://valleybikery.com/*
- *http://www.bicyclekitchen.com/*

8.1.5 Earn/Build-a-Bike Program

Structured primarily to benefit youth, the earn/build-a-bike program allows local youth to participate in service learning opportunities (i.e., conducting bike counts, gathering surveys, operating information booths, etc.) with the end goal of earning a sustainable form of transportation. With the help of experienced professionals, youth are guided through the process of building and customizing a bicycle from used frames, parts, and accessories. Each bicycle is sized, tuned, and adjusted to suit the needs of each individual's riding style and purpose. Through the building process, youth are also required to complete a bike safety class, which includes bike maintenance and repair. Typically, this program is coupled with a bicycle cooperative and education center as described above.

Sample programs:

- *http://thebikery.weebly.com/programs.html*
- *http://www.bicyclekitchen.com/index.php?/projects/programs/*

8.1.6 Traffic Violation Diversion Classes

Recognizing that the public at large is not familiar with the governing Rules of the Road (California Vehicle Code, Section 21200: Operation of a Bicycle), local cities can offer diversion classes to first-time offenders of certain traffic violations, such as running a stoplight, riding on a sidewalk (where illegal), or riding against traffic flow. In lieu of a citation and/or fine, individuals can take a one-time, free, or low-cost class to demonstrate knowledge gained with respect to riding a bicycle on public streets. These diversion classes are a good way to educate road users about cyclists' rights and responsibilities, and they can also increase public acceptance of enforcement actions against people bicycling. This Plan recommends offering diversion classes for first-time offenders of minor traffic violations.

Sample programs:

- *Huntington Beach: http://articles.latimes.com/2011/jun/03/local/la-me-0603-bike-etiquette-20110603*
- *Tempe, Arizona: http://www.tempe.gov/city-hall/city-court/civil-and-traffic/bicycle-diversion-class*

8.2 Encouragement

Many communities across the world are investing in ways to encourage more cycling. Encouragement programs focus on increasing the frequency of bicycling by maximizing opportunities to get on a bike. Communities, business districts, colleges, transportation providers, and employers play a critical role in encouraging people to ride by offering an array of incentives, recognition, and/or services that makes bicycling a more convenient, attractive and viable transportation option. In essence, encouragement programs create a cultural construct in which the bicycling lifestyle is promoted, supported, and praised. Some efforts include bike-themed festivals, installing "way-finding" signage, community rides and challenges, BMX and mountain bike parks, public bike share, discounts at local bike friendly businesses, and much more.

8.2.1 Bicycle Parking and Support Amenities

Ensuring safe, secure, convenient, and adequate supply of bicycle parking helps make the decision to bicycle easier. The strategic placement and quality of bike parking facilities also play a major role in deterring bicycle theft, decongesting sidewalks, and minimizing nuisance parking on light and sign posts, trees, bus shelters, mailboxes, etc. Many cities are adopting ordinances that guide bike parking requirements, design, supply, locations, placement, and installation of old and new bike parking facilities. However, bike parking does not have to have a singular purpose. There has been a growing movement toward integrating additional support amenities in conjunction with bike parking facilities.

Image 33- *Mobile Bike Repair Station in Los Angeles*

When properly planned, bike-parking facilities can also serve as rest stops and maintenance stations with general information kiosks for pedestrians and people bicycling . These advanced support amenities can include: DIY (do-it-yourself) "fix-it" stations with basic tools and an air pump; water bottle refill and hydration fountains; information kiosks displaying routes, transit itineraries, and proper locking instructions; ample lighting for night time use; and an emergency call box. Bicycle maintenance stations are an inexpensive alternative to providing stand-alone bicycle repair shops.

This Plan recommends adopting a bicycle-parking ordinance that is based on the National model created by Change Lab Solutions – shown in **Appendix J** – and incorporates support amenities as described above.

Sample programs:

- *http://news.fullerton.edu/2012fa/Bike-Fixit-Stations.asp*
- *http://articles.latimes.com/2012/may/17/business/la-fi-autos-flex-fuel-20120517*
- *http://www.boston.com/yourtown/news/cambridge/2011/03/cambridge_installs_free_bike_m.html*
- *http://blogdowntown.com/2013/02/7129-new-bike-parking-ordinance-poised-to-shape*

8.2.2 Bicycle Valet and Related Services

Similar to a vehicle valet service, patrons of a bicycle valet are issued a numbered ticket that coincides with their respective bicycle, which is then subjected to the care and supervision of valet attendants in an enclosed safe zone. Cities typically offer bicycle valet as a complimentary service at mid- to large-scale events such as farmers markets, concerts in the park, community carnivals, and health festivals, to name a few examples. The bike valet can also provide a menu of additional services and products at a low-cost, such as: sizing and adjustments, full tune-ups, maintenance and repair, bike wash, shirts, caps, lights, helmets, tubes, healthy snacks, flavored water, and much more.
San Francisco passed a city ordinance that requires all major city events to provide valet bike parking. The San Francisco Bicycle Coalition now offers free bike valet at all San Francisco Giants home games.

Sample program: http://www.sfbike.org/resources/bike-parking/valet-bicycle-parking/

This Plan recommends integrating bike valet and related services into existing or new bicycle-parking ordinances.

Image 34- *Bike Valet in Pasadena for Amgen Tour*

8.2.3 Community Bicycle Rides

Many people are unwilling and uncomfortable riding alone due to a realistic fear of sharing the road with motor vehicles. Parents, especially, express concerns about their children riding within arms distance of high-speed or high-volume traffic. Beyond the recreational value of slow-paced rides with family, friends, and neighbors, community bike rides help build confidence among youth, adults, seniors, and entry level cyclists. Community rides typically target novice riders and families in an effort to expose them to live traffic situations on calm and less stressful streets. Group rides that target youth and parents are commonly known as a Kidical Mass ride, which includes a fun theme, raffles, and other incentives to boost participation.

Image 35- *Family-Oriented Community Bicycle Ride*

Routes can be predetermined to incorporate stops along the way for restroom and water breaks or simply to regroup with all ride participants. Community bike rides can also be integrated into existing city-sponsored events such as an annual 5K/10K/marathon, parades, or coordinated with a local group. Although street closures are not required, it is always recommended to have a team of experienced ride marshals or police escorts to assist with the ride, especially if the route includes major arterial roads or large intersections.

For the past several years, the City of South El Monte has coordinated a community bike ride with the Mayor on the first Saturday of every month. The ride is open to the general public but widely promoted to city residents via the city newsletter, website, digital readers, social network, flyers, etc. The ride provides a great opportunity to experience the City from a different vantage point while concurrently modeling positive bicycling etiquette and behavior. BikeSGV also hosts a community bike ride the last Sunday of every month, known as the Bike Train, which follows an 18-mile loop that traverses the Rio Hondo and San Gabriel River bike paths.

Sample programs:

- *http://www.bikelongbeach.org/event/kidical-mass-10*
- *http://www.kidicalmass.org/about/*
- *http://www.bikesgv.org/the-bike-train.html*

This plan recommends that each city work with their respective public safety department and local bicycle group to initiate an ongoing community bike ride that takes place regularly (monthly or quarterly).

8.2.4 Bicycle Rider Visibility Campaign

According to the California Vehicle Code (CVC), Section 21201: Operation of a Bicycle, bicycles ridden in darkness must be equipped with at least a white headlight and rear reflectors that are visible from 300 feet and 500 feet, respectively. However, the purchase price of lights and reflectors combined with being unfamiliar with the Rules of the Road is a barrier to the safe and legal operation of a bicycle. As a result, many jurisdictions have executed citywide visibility campaigns to distribute lights to passing cyclists in an effort to increase their visibility and help reduce nighttime collisions.

This Plan recommends that cities conduct visibility campaigns in combination with bicycle checkpoints or public service announcement campaigns. The visibility campaigns can also be reserved for fall when daylight hours are reduced.

Image 36- *The Los Angeles Bicycle Coalition's Operation Firefly Bike Light Giveaway (Credit: Jennifer Wong)*

Sample Programs:

- *Operation Firefly, Los Angeles: http://la-bike.org/OperationFirefly*
- *Light Up the Night, San Francisco: http://www.sfbike.org/?lights*
- *Get Lit Program, Portland: http://www.communitycyclingcenter.org/index.php/get-lit/*

8.2.5 Family Bike Festivals

Creating a fun, lively, and family-friendly atmosphere is an attractive way to promote bicycling, especially for youth and beginner bicycle riders. Bike festivals are also a good way to highlight local organizations, schools, businesses, and agencies that advance public health, physical activity, sustainable development and transportation, and education. Participating agencies may include the county's transportation authority, the local bicycle coalition, public safety agencies, community health non-profits, medical centers, etc. For example, the City of El Monte partnered with Mountain View High School along with organizations such as Day One, BikeSGV, Performance Bicycles, and Walk 'n Rollers to host its first ever Bicycle Festival during National Bike Month in 2014. The festival attracted nearly 200 people.

Image 37- *Santa Monica's Inaugural Family Bike Festival in 2012*

Typically, a bike festival will include a number of activities such as a group bike ride, workshops, raffles, booths, food and beverages. One way to coordinate a festival is by arranging stations with activities that progressively build upon each preceding station. This approach also provides a guiding flow chart for participants upon arrival. For example:

Station 1: Bike and helmet safety inspection

Station 2: Sizing and adjusting a bicycle

Station 3: Rules of the Road

Station 4: Stop and Go, Scan-Signal-Scan

Also, incentives can be integrated into the program to help drive meaningful participation among youth. Youth can be issued a report card and assigned a grade upon satisfactorily completing each station. Once the report card is complete with a grade of "B" or higher, youth will qualify for a grand prize raffle or earn bike related safety accessories such as lights, reflectors, and bells. Youth with lower grades are offered an opportunity to re-do the stations to earn a better grade and thereby qualify for the giveaways.

Other bike festival activities or workshops may include:

- "Freedom from Training Wheels" workshop
- Bike rodeo & obstacle course
- How to use bike wagons (carrying kids, dogs, groceries, etc.)
- Adapted bicycles available for families to try
- ABC Quick Check (Air, Brakes, Cranks/Chain/ Cassette)
- Fix-a-flat & patch-a-tube competitions
- Group ride/parade

Development of family-oriented education may be a program for implementation by local bicycle advocacy groups where volunteers are readily available and willing to improve cycling conditions within the community.

Sample programs:

- *http://downtownlongbeach.org/Latest-News-Detail/Bike-Fest-of-Long-Beach*
- *http://www01.smgov.net/bikesm/*
- *http://www.sfbike.org/?family_day*

8.2.6 Open Streets Events

Open (or "Car-free") Streets events have been around in the United States for quite some time, but did not become widely popular in Los Angeles County until the advent of CicLAvia in the City of Los Angeles in 2010. Open streets events consist of temporarily closing streets to motor-vehicles and "opening" the streets to people. With the absence of cars, people are free to explore communities in a completely different and creative way. The general public is afforded the opportunity to walk, jog, run, bike, dance, hula hoop, roller-skate, etc. Open Streets events promote health by creating a safe and attractive space for physical activity and social interaction, and are cost-effective compared to the cost of building new parks for the same purpose. Events can be weekly or one-time occasions, and are generally very popular and well attended.

Ideally, these events would provide access to civic, cultural, and/or commercial destinations. For future expansion of the program, organizers could consider lessons learned and best practices from other communities. Some recommendations include:

- Make sure that there are programmed, family-friendly activities along the route; an "open street" alone is not sufficient to draw participants (and especially not on a repeat basis).

Image 38- *CicLAvia in Los Angeles*

- These events lend themselves to innovative partnerships and public/private funding. Health care providers whose mission includes facilitating physical activity are often major sponsors. Businesses may also support the event if it brings customers to their location.
- The cost of organizing the event can be mitigated through volunteer participation, as this type of event lends itself to enthusiastic volunteer support. However, this will require a high level and quality of volunteer recruitment and management to be sustainable in the long run.
- Police costs to manage the road closure will be one of the largest costs. Work with the local police department to develop a long-term traffic closure management strategy that uses police resources where needed but also allows well-trained volunteers to participate in managing road closures.
- Consider utilizing new roadways or bicycle facility improvements.
- Sample programs include:
- CicLAvia, Los Angeles: http://www.ciclavia.org/about/
- Sunday Streets, San Francisco: http://sundaystreetssf.com/
- Summer Streets, New York City: http://www.nyc.gov/html/dot/summerstreets/html/home/home.shtml

The Open Streets Guide has further information: *http://openstreetsproject.org/blog/2012/02/21/open-streets-project-releases-best-practices-guide/*

8.2.7 New Bicycle Facility Launch Party

When a new bicycle facility is built, some residents will haphazardly become aware of the facility and use it, while others remain oblivious to the changes. Hosting a launch party allows the City to celebrate the incremental steps toward creating a more sustainable and bike friendly community while promoting public safety and sustainable transportation. This approach also attracts positive media attention by inviting local and regional elected officials to participate with ceremonial ribbon cuttings, inaugural rides, specific unveilings, etc. Moreover, this presents an opportunity to formally engage and educate local residents about the proper and improper use of such facilities.

In spring of 2014, the City of Temple City hosted the Rosemead Boulevard "GO" Festival to celebrate the grand opening of the newly revitalized Rosemead Boulevard. The Complete Streets project featured the first "cycle track" (protected bike lane) in the San Gabriel Valley, 3-feet wide bio swales, enhanced sidewalks, shortened crosswalks, new public art, LED street lighting, and over

Image 39- *Launch Party for the Rosemead Boulevard Cycle Track*

300 new trees. City staff members were on hand to answer questions, provide project details, offer tutorials, and celebrate. Similarly, the City of Vancouver partners with local community groups to host neighborhood parties when a new bikeway is constructed.

This Plan recommends that the project cities host launch parties for all high priority projects in this Plan, as well as inform the public of all new bikeways through the bicycling website and other appropriate outreach methods.

8.2.8 Bicycle Friendly Community Designation

The League of American Bicyclists (LAB) recognizes communities that improve bicycling conditions through engineering, education, encouragement, enforcement, and evaluation programs. Based on the level of improvements, cities can achieve platinum, gold, silver, or bronze level status or an honorary mention. Similar to schools that receive academic achievement awards or buildings that are LEED (Leadership in Energy and Environmental Design) certified, a bicycle friendly designation can increase property values, spur business growth, increase tourism, promote zero-emission transportation, attract young leaders, and set a path toward creating a more vibrant and healthy community.

For more info: *http://www.bikeleague.org/content/communities*

8.2.9 Bicycle Friendly Business Districts

Similar to a bike friendly community, local businesses can encourage their patrons to arrive by bicycle by offering discounts, added amenities, and overall special treatment. Jurisdictions can work with businesses to create "Bicycle Friendly Business" programs to honor businesses that support bicycling. Some programs assign a gold, silver, or bronze level designation to businesses that apply for the program based on the level of benefits they provide people bicycling. The League of American Bicyclists has a Bicycle Friendly Business program as part of its Bicycle Friendly Communities designation, which is a good model to follow. The City of Long Beach's program provides cargo bikes for businesses to make deliveries, and businesses provide shopping and dining discounts on Saturdays to customers that arrive on bicycles. This program could be implemented through local Business Improvement Districts or Business Associations.

***Image 40-** Promotion for Long Beach's Bike Saturdays Incentive Program*

Sample programs:

- *http://www.bikeleague.org/programs/bicyclefriendlyamerica/bicyclefriendlybusiness/about.php*
- *http://www.bikelongbeach.org/welcome/bike-share-program/bicycle-friendly-business-district-program*

8.2.10 Tourism Integration

To encourage visitors and tourists to consider bicycling in the region, bicycling-related resources could be incorporated into tourism information. Websites could include a calendar specific to bicycling events and group rides, locations of bicycle rental and repair shops, and a map of the region's bikeways.

For visitors who are already interested in bicycle riding, bicycle rental businesses can distribute bicycle route maps or links to mobile maps and riding guidance upon renting.

Promotion of bicycling within the region can also be implemented using a mobile phone application to promote bike rental shops, bikeways, bicycle safety, and other related topics that might appeal to visitors and residents bicycling within the community.

8.2.11 Commuter Incentive Programs

A Commuter Incentive Program offers enticing rewards to encourage people to commute to and from work via sustainable modes of transportation. Cities can partner with the local chamber of commerce to create a rewards program that jointly promotes local businesses. Using a web-based portal, participants can create a log of their method of transportation and their commute mileage. The portal can then set performance goals, create custom challenges, challenge friends and coworkers, and issue rewards based on achievements. Rewards can be in the form of gift cards, discounts, movie tickets, or even cash.

San Luis Obispo (SLO) Regional Rideshare organizes the "Commute for Cash Challenge" every October as part of "Rideshare Month" in which commuters log the miles that they commute using alternative transportation for a chance to win prizes. This program could serve as a starting point for a more permanent commuter incentive program during the rest of the year. Another example is Georgia's Commute Options, which is a joint effort between the Georgia Department of Transportation and the region's transportation management associations. The program offers a user-friendly, interactive website to track participation, issue rewards, and promote sustainable transportation. The site also features leader boards, commute calculators to track savings, clean air calculators to track carbon reductions, chat rooms, blogs, and awards.

Sample programs include:

- *Georgia Department of Transportation: http://gacommuteoptions.com/*
- *OCTA Share the Ride: http://www.octa.net/Share-the-Ride/*
- *SLO Council of Governments Regional Rideshare: http://rideshare.org/NewHome.aspx*

8.2.12 Safe Routes to School Program

Getting children to walk and bicycle to school more often is good for children's health. Moreover, it can reduce traffic congestion, reduce greenhouse gas emissions, and reduce hazards associated with high-volume traffic immediately surrounding schools. Safe Routes to School programs use a "5 E's" approach using Engineering, Education, Enforcement, Encouragement, and Evaluation strategies to improve the physical environment and encourage children to walk and bike to school. Programs are usually funded by a state or regional grant and facilitated by a coalition of city government, school district officials, administrators, teachers, parents, students, and neighbors. Unless a need is clearly defined, Safe Routes to School funding is typically reserved for elementary and middle schools.

Image 41- *Family Bike Ride for Los Angeles Metro's Safe Routes to School Program*

This Plan recommends that each city pursue grant funding to develop and implement Safe Routes to School infrastructure that improves access to schools and non-infrastructure programs to educate and encourage walking and bicycling to schools. Creation of a local coalition consisting of Parent-Teacher Associations, local residents, and other stakeholders is useful to provide continuity in Safe Routes to School efforts and ensure encouragement activities occur regularly despite the transition of parents of graduating children.

Sample program: http://www.alamedacountysr2s.org/

8.2.13 Media Outlets

Local media have a high level of interest in stories related to public welfare, community successes, and bicycle safety. There are many opportunities for local agencies to gain publicity for bicycle-related programs and safety issues. Developing and maintaining relationships with local media outlets can assist with publicizing bicycle encouragement and safety programs.

A cost-effective way for the project cities to promote bicycling as an effective and enjoyable way to travel is to use existing television public service announcements (PSAs) made available through the National Highway Traffic Safety Administration (NHTSA), Safe Kids Coalition, and the California Office of Traffic Safety (OTS). These agencies provide existing award-winning television public service announcements on the following topics:

- Bicycle education for seniors
- Bicycle education for the general public
- Bicycle education for children and their families
- Motorist education on driving next to people bicycling
- Drivers running red lights

The media is also an effective tool for promoting bicycle-related efforts through press releases and invitations to staged publicity events. Positive stories such as ribbon cuttings or community events can encourage residents to participate as well as increase awareness and support for on-going efforts.

8.2.14 Individualized Marketing Campaign

Building bicycling and walking infrastructure is essential to effecting mode shift, but it is not enough to attract large numbers of new users. The City of Portland, Oregon, was one pioneer of individualized marketing programs in the United States. For a decade now, the City has selected a residential target area ranging between 20,000 and 37,000 households, and used a combination of direct mail outreach, customized travel information packets, incentive gifts, and themed guided walks and bicycle rides to engage residents and encourage them to drive less and walk/bicycle more. The program has consistently garnered over 20% participation and has resulted in an approximately 10% reduction in drive-alone trips in the target area. More recently, similar projects in Alameda, California, St. Paul, Minnesota, and Cambridge, Massachusetts, have used similar strategies to engage residents on active transportation and single occupancy vehicle reduction.

8.2.15 Bicycle Coordinator

To take full advantage of bicycle planning efforts, and to assist with implementation of the many projects and programs recommended in this plan along with other related plans, this Plan recommends hiring a bicycle coordinator. In addition to creating a local bicycle coordinator, cities may also elect to equally contribute to a collective pot toward a sub-regional bicycle coordinator. The latter approach is more cost effective and ensures the implementation of projects and programs with surrounding and participating cities. The job duties for this staff person may include, but are not limited to:

- Reviewing development of proposals to ensure bike requirements are incorporated
- Developing and implementing educational and promotional programs
- Researching sources of funding and writing project proposals
- Conducting annual bicycling counts
- Serving as the contact for bicycling inquiries and complaints
- Coordinating with neighboring cities, the County, and other agencies to implement policies, programs, and projects

8.2.16 Bicycle Sharing Program

Bike sharing is a novel, active transportation program that allows the general public to check bikes in and out for a nominal fee from a self-serve bike share station in a service area. Bike share stations are strategically located near attractive destinations such as convention centers, transit centers, downtown business districts, city facilities, and more. Bike Share is most ideal for short-distance trips. Such programs have become increasingly popular throughout North America, with successful programs implemented in the San Francisco Bay Area, New York City, Washington, D.C., Boston, Minneapolis, and Montreal. Locally, the Orange County Transportation Authority (OCTA) and the City of Fullerton are currently demonstrating the Bike Link program with stations at Cal State Fullerton, Fullerton Community College, and in Downtown Fullerton. Los Angeles County, San Diego, and Seattle are also planning to kick start bike share programs within the very near future.

Image 42- *Bike Share Kiosk and Bicycles in San Francisco*

This Plan recommends that San Gabriel Valley cities collaborate to develop a regional Bike Share program.

Sample programs:

- *OCTA/Fullerton Bike Link: http://www.octa.net/Share-the-Ride/Bike/BikeShare/Overview/*
- *Bay Area Bike Share: https://bayareabikeshare.com/*

8.2.17 Mobile Bike Repair

A concern that often dissuades people from bicycling for transportation is having mechanical issues with their bicycle. To make it easier and more convenient for people bicycling, mobile bike repair groups provide bicycle maintenance at your location. These groups pick-up bicycles for tune-ups and deliver them to you. Services can include simple adjustments like fixing tires or more complicated work like adjusting derailleurs. This Plan recommends that project cities work with the local bicycle coalition to promote and encourage use of the mobile bike repair for residents and visitors.

Sample program: http://anywherebicyclerepair.com/

8.3 Enforcement

Enforcement programs are designed to create a law-abiding nexus between law enforcement/public safety agencies and the bicycling community. Enforcement programs also empower agencies to uphold bicycle divisions of the law while encouraging cyclists and motorists to exercise caution when sharing the road. The following recommended enforcement programs aim to educate both people bicycling and motorists about the rules and responsibilities they have on the road.

8.3.1 Speed Radar Trailer/Feedback Signs

Speed radar trailers help reduce traffic speeds and enforce speed limits in areas with speeding problems. Police set up an unmanned trailer that displays the speed of approaching motorists along with a speed limit sign. Speed trailers may be effective on busier arterial roads without bikeway facilities or near schools with reported speeding.

Speed trailers work as both an educational and enforcement tool. By itself, the unmanned trailer educates motorists about their current speed in relation to the speed limit. Speed trailers can transport easily to streets where local residents complain about speeding problems.

Image 44- *Speed Feedback Sign*

Local police departments can station officers near the trailer to issue speeding citations when speeding continues to occur. It is recommended that city staff provide the management role for this program, working with the public to determine which locations are in most need. This program can be administered randomly, cyclically, or as demand necessitates because of the speed trailers' portability.

8.3.2 Neighborhood Speed Watch

In areas where speeding problems have been identified by residents, a Neighborhood Speed Watch can be used to warn motorists that they are exceeding the speed limit. A radar unit is loaned out to a designated neighborhood representative to record speed information about vehicles. The person operating the radar unit must record information, such as make, model, and license number of offending vehicles. This information is sent to the local law enforcement agency having jurisdiction at the location of the violations, and the department then sends a letter to the registered vehicle owner, informing them that the vehicle was seen on a specific street exceeding the legal speed limit. Letters are typically sent out to those driving at least 5 mph over the speed limit. Although not a formal citation, the letter explains that local residents are concerned about safety for their families and encourages the motorist to drive within the speed limit.

8.3.3 Bicycle Patrol Units

Many police departments around the world are bolstering their Bicycle Patrol Units due to increased ability to effectively patrol small communities or neighborhoods, especially in urban areas or business districts. Bicycle Patrol Units can also be mobilized to monitor Class I bike paths such as the Rio Hondo and San Gabriel River bike paths. Bike officers undergo special training in bicycle safety and bicycle-related traffic laws and are therefore equipped to enforce laws pertaining to bicycling. Additional bicycle officers can help educate people bicycling and motorists through enforcement and also serve as excellent outreach personnel to the public at parades, street fairs, and other gatherings.

The Tucson Police Department initiated a Bicycle Rapid Response Team in 2009 to manage and control crowds at public parks, protests, concerts, parades, sporting events, etc. The officers are trained in escort, blocking, diversionary, and dispersal techniques.

8.3.4 Officer Education Advancement

Just like ordinary citizens, many police officers may not be acquainted with specific codes related to the legal operation of a bicycle. Occasionally, this unfamiliarity leads to wrongful citations and avoidable tension. As the bicycle mode share rises, it is critically important that public safety and law enforcement agencies are familiar with state and local bicycling laws. Police officers can enroll in ongoing education and trainings to learn bicycle enforcement techniques. Police officers and Junior Cadets of local Explorer programs may also become League Certified Instructors, thereby qualifying to teach bike safety and skills courses in the community. This Plan recommends that each city's law enforcement agency create a bicycle specific training seminar that reviews the laws governing use of bicycles. It is also recommended that each city's law enforcement agency employ at least 2-5 League Certified Instructors.

Image 43- *Officer Receiving Certified Bicycling Instruction*

8.3.5 Undercover Officer Enforcement

As more laws are enacted to improve the safety of bicycle riders, such as the State's new three foot passing rule, it is important to ensure that the laws are enforced to increase compliance. The City could work with the Police Department to set up "undercover" stings around high bike traffic areas to identify violations. For instance, police officers could ride on bicycles and ticket motorists that do not provide the mandated three feet of distance when passing. The Houston Police Department has recently conducted undercover rides to enforce the City's three foot passing rule. More information on the Houston program can be found by clicking the link below.

Sample program: http://www.cyclelicio.us/2014/houston-police-3-foot-passing-rule-enforcement/

8.3.6 Bicycle Theft Abatement Program

One strategy to combat bicycle theft is outfitting several bikes with hidden GPS tracking devices and locking them in areas known for high rates of theft, then tracking the bicycles if they are stolen. This might also help local law enforcement identify bicycle theft rings if a pattern emerges. Alternatively, the City could distribute GPS devices to residents on an as-available basis, such as when residents apply for a bicycle license. The City could set aside general fund resources or apply for grants to purchase GPS devices for the program. An example program exists at the University of Texas at Austin.

Sample program: http://www.khou.com/news/texas-news/UT-police-catching-campus-thieves-with-GPS-bait-bikes-207488921.html

8.4 Evaluation and Planning

In order to accurately track the progress of the San Gabriel Valley Bicycle Master Plan, it is critical that the project cities monitor, measure, and evaluate the impact of projects, policies, and programs. Data collected through these efforts can serve as a yearly baseline and would be an integral part of an annual performance report. Information such as behavior, travel patterns, and demands related to active transportation will not only inform policies and planning decisions but will also contribute to developing education, encouragement, and enforcement programs. Findings can also be used to communicate successes and challenges with elected officials, stakeholders, and local residents alike. Some effective methods to document the performance of new facilities and programs are presented below.

8.4.1 Bicycle & Pedestrian Counts

Conducting bicycle and pedestrian counts are necessary to help understand the region's and each individual city's complete transportation system. In the world of transportation, bicycling and walking fall in a relatively new category known as Active Transportation and therefore require further understanding. Bicycle counts act as methods to evaluate not only the impacts of specific bikeway improvement projects but can also measure progress toward goals such as the following:

- Increase bicycle travel for trips of three miles or less;
- Redirect bicycle traffic to specific corridors;
- Increase the proportion of people bicycling wearing helmets;
- Decrease the proportion of people bicycling riding on sidewalks;
- Increase the share of women bicycling; etc.

Image 45- *Counting Bicycle Riders along a Path*

The Southern California Association of Governments (SCAG) and the LA County Metropolitan Transportation Authority (Metro) have created a countywide Bike Count Data Clearinghouse and Manual titled Conducting Bicycle and Pedestrian Counts: A Manual for Jurisdictions in Los Angeles County and Beyond. The manual identifies two primary ways to generate bike and pedestrian data: automated counts and manual counts. Automated counts require installing sensors on the streets and sidewalks. Although very effective at counting people 24 hours a day, 7 days a week, the equipment also has its limitations. Manual counts, on the other hand, are great for determining gender, helmet use, travel direction, general age, and sidewalk riding but are much more labor intensive.

This Plan recommends partnering with the local bicycle coalition to employ the SCAG/Metro Bicycle and Pedestrian Count Methodology to conduct annual bicycle and pedestrian counts.

8.4.2 Automatic Bike Counters/Bicycle Barometers

U.S. cities are starting to install automatic bike counters (sometimes called "bicycle barometers") at key locations with high bicycle use. These counters automatically log every bicycle trip and display it on a public-facing board. One benefit of bike counters is providing highly accurate count data to the project cities – data that is collected at all times of day and all times of year. Another benefit is providing data to the general public about actual bicycle usage, which is often much higher than motorists and other residents estimate. This can help counteract the impression that bikeway investments are benefitting only a few people.

Bicycle barometers can be permanent or temporary in nature, and they can be used to provide data to interested stakeholders about bicycle traffic. The County of Los Angeles recently purchased portable bike counters for collection of data for 7-day counts rotating throughout the county to evaluate current activity. Possible locations for bike counters within the region might be at key entry points into the community or key constrained locations.

Sample programs:

- *http://portland-hawthorne-bridge.visio-tools.com/*
- *https://www.seattle.gov/transportation/bikecounter.htm*

Image 46- *Bicycle Barometer in Copenhagen, Denmark*

General Community Bicycle Survey

Administering a general community bike survey will allow each city and the region to gain a better sense for the pulse of its bicycling community. Understanding the wants vs. needs, behavior vs. intentions, or concerns vs. fears of existing and potential cyclists presents an opportunity to address such issues through informed decision making. Surveys help gather feedback, suggestions, and input along with conveying concerns, perceptions, and attitudes related to specific factors such as:

Image 47- *Volunteer Conducting a Bicycle Rider Survey*

- Current bicycling conditions (roadway design, pavement quality, traffic hazards, etc.)
- Commute/Trip information (bicycling frequency, length of trips, method of commuting, etc.)
- Preferred routes (major arterials, low-stress streets, Class-I bike paths, etc.)

This Plan recommends partnering with the local bicycle coalition, school districts, and other community stakeholders to administer a citywide, general community bike survey on a yearly basis.

8.4.3 Mapping Bikeway Investments

Often, residents and decision-makers do not have ready access to information about the construction and location of new bikeways. After completing this Plan, maps could be created as tools specifically to report on the progress of planned bikeway implementation. The map can be updated on an ongoing basis.

Sample program: http://www.bicyclela.org/maps_main.htm

8.4.4 Bicycle Report Card

Local and/or regional annual reports or 'report cards' on bicycling could be produced. Annual reports developed from count and survey efforts can help the jurisdictions measure its success toward the goals of this Plan as well as rate the overall quality or effectiveness of the ongoing efforts to increase bicycling in the region. In addition to bicycle counts, the jurisdictions could include measurements such as bicycle-related crash rates (both on- and off-road), fatality and injury rates, and school bicycling mode share. The report card can summarize recent efforts and successes in obtaining funding for additional improvements and programs.

8.4.5 Complete Streets Policy

A "complete street" is a roadway that has been designed to serve all users, including those in motor vehicles, on bicycles, on foot, or traveling by public transit. Complete Streets provide safety and mobility for the widest range of the population, including seniors, youth, and the disabled. Many communities around the United States have adopted policies that call for all roadway projects to result in complete streets.

According to the National Complete Streets Coalition *(www.completestreets.org)*, an ideal policy would include the following elements:

- Includes a vision for how and why the community wants to complete its streets
- Specifies that 'all users' include pedestrians, people bicycling, and transit passengers of all ages and abilities, as well as operators of trucks, buses, and automobiles.
- Applies to both new and retrofit projects, including design, planning, maintenance, and operations, for the entire right-of-way.
- Makes any exceptions specific and sets a clear procedure that requires high-level approval of exceptions.
- Encourages street connectivity and aims to create a comprehensive, integrated, and connected network for all modes.
- Is adoptable by all agencies to cover all roads.
- Directs the use of the latest and best design criteria and guidelines while recognizing the need for flexibility in balancing user needs.
- Directs that complete streets solutions will complement the context of the community.
- Jurisdictions could use the Complete Streets Policy Workbook (see link below) to create a locally-appropriate Complete Streets policy. The Policy itself need not be cumbersome in its language; however, the real "teeth" associated with the Policy is the subsequent development of design guidelines and development code that will meet the goals established in the policy.

Complete Streets Policy Workbook: http://www.smartgrowthamerica.org/documents/cs/resources/cs-policyworkbook.pdf

Sample Programs:

- *City of Baldwin Park Complete Streets Policy: www.smartgrowthamerica.org/documents/cs/policy/cs-ca-baldwinpark-policy.pdf*
- *City of San Clemente Complete Streets Policy: http://bit.ly/1cigoFg*

8.4.6 Bicycle Parking Policy and Enforcement

Lack of good or sufficient bicycle parking can make bicycling for transportation much more difficult. This Plan recommends adopting a bicycle parking ordinance that will include or update bicycle parking requirements in each city's development code. The ordinance must incorporate bike parking support amenities and meet or exceed the guidelines put forth by the Association of Pedestrian and Bicycle Professionals' Bicycle Parking Guidelines, 2nd Edition *(http://www.apbp.org/?page=publications)* or reflect the national model created by Change Lab Solutions, shown in **Appendix I.**

Developer bicycle parking code requirements are only effective if they are enforced. If widespread violations occur without consequence, adequate bicycle parking will not be available to building users. Therefore, code enforcement practices might also be examined and updated if needed to ensure compliance before an occupancy permit is issued.

The project cities can also adopt a policy to encourage the installation of high-capacity "Bike Corrals" that can fit several bicycles in popular commercial districts. One possible arrangement is for the project cities to install the bike corrals at the request of businesses that agree to maintain and clean the corral area. The City of Los Angeles has also received federal funds to install bike racks on sidewalks through the "Request a Rack" program when requested by stakeholders.

Sample programs:

- *San Francisco: http://www.sfbike.org/?access*
- *Los Angeles: http://ladotbikeblog.wordpress.com/bike-corrals/*
- *Los Angeles: http://www.bicyclela.org/RackRequest.htm*

9 Potential Funding Sources

Funding Source	Remarks
Federal	
Bus and Bus Facilities Program: State of Good Repair	Can be used for projects to provide access for bicycles to public transportation facilities, to provide shelters and parking facilities for bicycles in or around public transportation facilities, or to install equipment for transporting bicycles on public transportation vehicles.
Bus Livability Initiative	Can be used for bicycle and pedestrian support facilities, such as bicycle parking, bike racks on buses, pedestrian amenities, and educational materials
Federal Transit Act	Typical funded projects have included bike lockers at transit stations and bike parking near major bus stops. FTA funds can also be used for First/Last Mile bicycling and pedestrian improvements within 3 miles of a transit stop. Guideline for the use of 10% of the annual CMAQ funds starting in fiscal year 2012-2013 for bike/pedestrian projects through a competitive call to local agencies.
Land and Water Conservation Fund	Federal fund provides matching grants to state and local governments for the acquisition and development of land for outdoor recreation use. Lands acquired through program must be retained in perpetuity for public recreational use. Individual project awards are not available. Recent call deadline was February 2014.
MAP-21 – Surface Transportation Program	A wide variety of bicycle and pedestrian improvements are eligible, including on-street bicycle facilities, off-street trails, sidewalks, crosswalks, bicycle and pedestrian signals, parking, and other ancillary facilities.
MAP-21 – Highway Safety Improvement Program (HSIP)	This program provides funds for the implementation of bicycle facilities that address safety concerns, especially along corridors with high bicycle-related collision rates. Projects may include education and enforcement programs. The HSIP includes the Railroad-Highway Crossings program.
MAP-21 – Pilot Transit-Oriented Development Planning Program	Provides funding to advance planning efforts that seek to increase access to transit hubs for pedestrian and bicycle traffic.
MAP-21 – Congestion Mitigation and Air Quality Improvement Program (CMAQ)	The amount of CMAQ funds depends on the state's population share and on the degree of air pollution. Recent revisions were made to bring CMAQ in line with the new MAP-21 legislation. There is a broader emphasis on projects that are proven to reduce PM-2.5. Eligible projects include: "Constructing bicycle and pedestrian facilities (paths, bike racks, support facilities, etc.) that are not exclusively recreational and reduce vehicle trips; (and) non-construction outreach related to safe bicycle use." Studies that are part of the project development pipeline (e.g., preliminary engineering) are eligible for funding. "An assessment of the project's expected emission reduction benefits should be completed prior to project selection."
National Center for Environmental Health – Health Impact Assessment for Improved Community Design	The grant program aims to increase the capacity of public health departments to include health considerations in transportation and land use planning decisions. The grant will provide an average of $145,000 per year for 3 years to 6 awardees. The most recent Letter of Intent Deadline was March 28, 2014. It appears that the grant is available every 3 years.
New Opportunities for Bicycle and Pedestrian Infrastructure Financing Act	A proposed bill in Congress to set aside 1% of TIFIA's $1 billion for bicycle and pedestrian infrastructure projects, such as the conversion of abandoned rail corridors for trails, bicycle signals, and path lighting. For these projects, TIFIA's minimum project cost would be $2 million. Eligible costs include: planning & feasibility studies, construction, and land acquisition. The bill reserves 25% of project funding for low-income communities.

Funding Source	Remarks
Rivers, Trails, and Conservation Assistance Program	RTCA staff provides technical assistance to communities so they can conserve rivers, preserve open space, and develop trails and greenways.
Transportation Investments Generating Economic Recovery (TIGER) Program	Can be used for innovative, multimodal and multi-jurisdictional transportation projects that promise significant economic and environmental benefits to an entire metropolitan area, a region, or the nation. These include bicycle and pedestrian projects. Project minimum is $10 million.
U.S. Environmental Protection Agency – Brownfields Program	Assessment grants provide funding for a grant recipient to inventory, characterize, assess, and conduct planning and community involvement related to brownfields sites (locations that have been host to a hazardous substance, pollutant, or contaminant). Revolving Loan Fund (RLF) grants provide funding for a grant recipient to capitalize a revolving loan fund and to provide sub-grants to carry out cleanup activities at brownfield sites. Cleanup grants provide funding for a grant recipient to carry out cleanup activities at brownfield sites.
State of California	
Caltrans Active Transportation Program (ATP)	Funds construction, planning, and design of facilities for pedestrians, bicyclists, and other non-motorized forms of transportation. The next application cycle has not yet been finalized, but it is expected to open in early 2015. The ATP uses MAP-21 federal funds, so local agencies must adhere to certain federal guidelines.
Clean Water State Revolving Fund Program	The CWSRF program offers low interest financing agreements for water quality projects, which can include “implementation of nonpoint source projects or program.” Annually, the program disburses between $200 and $300 million. Stormwater management components of bicycle infrastructure projects may be eligible for this funding source. Applications are accepted on a continuous basis.
Climate Ready Grant Program	Climate Ready grants are available for projects located along the coast and coastal watersheds. Multi-use trails are eligible. $1.5 million total; $50,000 minimum grant; $200,000 maximum. Managed by California Coastal Conservancy.
Community Based Transportation Planning Grants	Eligible projects that exemplify livable community concepts including enhancing bicycle and pedestrian access. Administered by Caltrans. $3 million, each project not to exceed $300,000.
Environmental Enhancement and Mitigation Program (EEMP)	Funds may be used for land acquisition. Individual grants limited to $350,000.
Environmental Justice: Context-Sensitive Planning	Funds projects that foster sustainable economies, encourage transit-oriented and mixed use development, and expand transportation choices, including walking and biking. Projects can be design and education, as well as planning. Administered by Caltrans. $3 million, each grant not to exceed $250,000.
Habitat Conservation Fund	Provides funds to local entities to protect threatened species, to address wildlife corridors, to create trails, and to provide for nature interpretation programs which bring urban residents into park and wildlife areas. $2 million available annually. Application deadline is typically in October.
Office of Traffic Safety (OTS) Grant Program	Funds safety improvements to existing facilities, safety promotions including bicycle helmet giveaways and studies to improve traffic safety. The grant cycle typically begins with a Request for Proposals in October, which are due the following January. In 2009, OTS awarded $82 million to 203 agencies.
Petroleum Violation Escrow Account (PVEA)	Funds programs based on public transportation, computerized bus routing and ride sharing, home weatherization, energy assistance and building energy audits, highway and bridge maintenance, and reducing airport user fees.

Funding Source	Remarks
Public Access Program	Funds the protection and development of public access areas in support of wildlife-oriented uses, including helping to fund construction of ADA trails.
Recreational Trails Program	Administered in California as part of the ATP. $5.8 million guaranteed set-aside. Managed by the California Department of Parks and Recreation.
Safe Routes to School (SRTS)	In 2014, federal SRTS funds were rolled into the State's ATP to streamline grant allocation. $24 million combined in ATP for state and federal Safe Routes to School projects for the 2014 cycle. SRTS is primarily a construction program to enhance safety of pedestrian and bicycle facilities near schools. A small percentage of funds can be used for programmatic improvements. Improvements can be made to target students of all grade levels.
Sustainable Communities Planning Grant and Incentives Program	Funded by Prop 84 bond funds, this grant program funds the development and implementation of plans that lead to significant reductions in greenhouse gas emissions, such as rehabilitation of existing infrastructure and the enhancement of recreational resources. The minimum grant award is $50,000; the maximum award is $500,000, unless the application is a joint proposal, in which case the maximum award is $1 million. The 10% local match requirement is waived for a proposal that qualifies for the Environmental Justice set-aside.
Watershed Protection Program (Proposition 13)	Grants to municipalities, local agencies, or nonprofit organizations to develop local watershed management plans (maximum $200,000 per local watershed plan) and/or implement projects (maximum $5 million per project) consistent with watershed plans. Sixty percent of the funds will be allocated to projects in the Counties of Los Angeles, Orange, Riverside, San Diego, San Bernardino, and Ventura. Administered by the Division of Financial Assistance.
Regional	
Clean Air Fund (AB 434/2766 – Vehicle Registration Fee Surcharge)	Administered by SCAQMD. Local jurisdictions and transit agencies can apply. Funds can be used for projects that encourage biking, walking, and/or use of public transit. For bicycle-related projects, eligible uses include: designing, developing and/or installing bikeways or establishing new bicycle corridors; making bicycle facility enhancements/improvements by installing bicycle lockers, bus bike racks; providing assistance with bike loan programs (motorized and standard) for police officers, community members and the general public. Matching requirement: 10-15%.
Metro Call for Projects	Every other year, Metro accepts Call for Projects applications in eight modal categories. The Call is a competitive process that distributes discretionary capital transportation funds to regionally significant projects. Capital funds are programmed 5 years out and typically provided, and design and right-of-way acquisition are eligible expenses as long as they are directly related and part of construction. So, a project awarded Call for Projects funds in 2015 would not be implemented until 2020.
Metro ExpressLanes Net Toll Revenues	40% of net toll revenues will be allocated each year for "System Connectivity/Active Transportation" projects within 3 miles of the I-110 and I-10 freeway corridors where the ExpressLanes demonstration is in effect. This allocation is estimated to be $4.2-5.2 million for the period ending February 2014. Metro issued a Call for Projects to access these funds in early 2014. It is unknown if the Metro Board will be make funds available for another call.
Metro Measure R Local Return	Fifteen percent (15%) of the Measure R county sales tax is designated for use by local cities and the County of Los Angeles for transportation purposes, including bicycle-related uses such as infrastructure, signage, bike sharing, and education efforts. Guidelines for the Local Return program can be found at: http://ebb.metro.net/projects_studies/local_return/images/measure-r-Local-Return-Guidelines.pdf

Funding Source	Remarks
Metro Open Streets Program	Metro will allocate up to $2 million annually, through a competitive application process, to fund local Open Streets events in L.A. County cities. The first cycle announced in 2014 funded 12 open streets events to occur in 2015 and 2016.
Metro Transit-Oriented Development (TOD) Planning Grants	$5 million fund to spur the adoption of transit-supportive land use and other regulatory plans around station areas in order to increase access to and utilization of public transit. Eligibility is for L.A. County jurisdictions with land use authority within one-half mile of existing, planned, or proposed transit stations. The most recent cycle of applications was completed in July 2014.
SCAG Sustainability Program	• SCAG provides financial and technical assistance to member agencies for integrated land use and transportation planning. The 2013-2014 Sustainability Program emphasized: • Projects that make measurable progress toward implementation • Assistance to communities for updating General Plans • Inter-jurisdictional and multi-stakeholder partnerships • Outreach and education to the community and stakeholders on sustainable development • Past Compass Blueprint partner jurisdictions may propose work that will move their plans closer to implementation.
Southern California Edison Rule 20A Funds	Rule 20A funds are allocated by Southern California Edison by County Supervisorial District to help local governments "underground" utility lines for aesthetic purposes.
TDA Article 3 Funds	Administered by Metro. TDA Article 3 funds are allocated annually on a per capita basis to both cities and the County of Los Angeles for the planning and construction of bicycle and pedestrian facilities. Local agencies may either draw down these funds or place them on reserve. Agencies must submit a claim form to Metro by the end of the fiscal year in which they are allocated. Failure to do so may result in the lapse of these allocations. More info at: http://www.metro.net/projects/tda/
Private	
Community Action for a Renewed Environment (CARE)	EPA grant program to help community organize and take action to reduce toxic pollution in its local environment.
Health Foundations	Focus pedestrian improvements for an obesity prevention strategy. Examples include California Wellness Foundation, Kaiser, and the California Endowment.
PeopleForBikes	PeopleForBikes (formerly Bikes Belong) provides grants for up to $10,000 with a 50% match that recipients may use towards the engineering, design, and construction of bike paths, lanes, bridges, and end-of-trip facilities, as well as programs.
Rails to Trails Conservancy	Provides technical assistance for converting abandoned rail corridors to use as multi-use trails.
Surdna Foundation	The Surdna Foundation makes grants to nonprofit organizations in the areas of environment, community revitalization, effective citizenry, the arts, and the nonprofit sector.

Appendices

Appendix A: Bicycle Facility Design Guidelines

Appendix A:

Bicycle Facility Design Guidelines

for the San Gabriel Valley Regional Bicycle Master Plan

October 2014

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Contents

Introduction

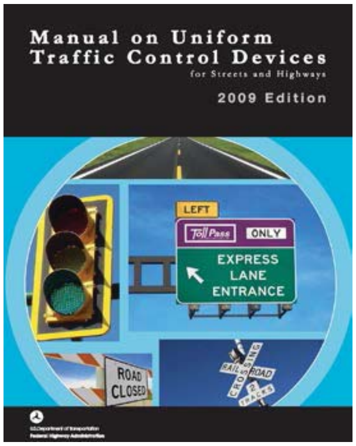
These guidelines are intended to assist the communities in the San Gabriel Valley region in the selection and design of bicycle facilities. The following sections pull together best practices by facility type from public agencies and municipalities nationwide. Within the design guidance, treatments are covered within a single sheet tabular format relaying important design information and discussion, example photos, schematics (if applicable), and existing summary guidance from current standards. Existing standards are referenced throughout and should be the first source of information when seeking to implement any of the treatments featured here.

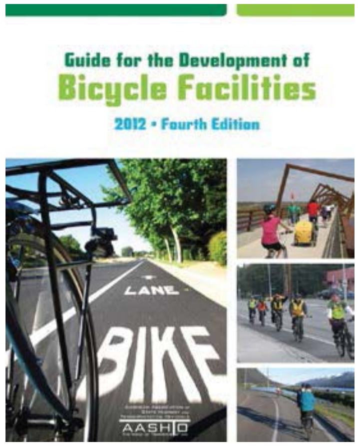
Guiding Principles

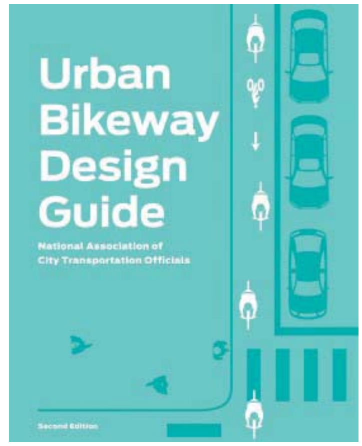
The following are guiding principles for these design guidelines:

- **The bicycling environment should be safe.** All bicycling routes should be physically safe and perceived as safe by all users. Safe means minimal conflicts with external factors, such as noise, vehicular traffic and protruding architectural elements. Safe also means routes are clear and well marked with appropriate pavement markings and directional signage.
- **The bicycle network should be accessible.** Shared-use paths, bike routes and crosswalks should permit the mobility of residents of all ages and abilities. The bicycle network should employ principles of universal design. Bicyclists have a range of skill levels, and facilities should be designed with a goal of providing for inexperienced/recreational bicyclists (especially children and seniors) to the greatest extent possible.
- **Bicycle network improvements should be economical.** Bicycle improvements should achieve the maximum benefit for their cost, including initial cost and maintenance cost, as well as a reduced reliance on more expensive modes of transportation. Where possible, improvements in the right-of-way should stimulate, reinforce and connect with adjacent private improvements.
- **The bicycle network should connect to places people want to go.** The bicycle network should provide continuous direct routes and convenient connections between destinations such as homes, schools, shopping areas, public services, recreational opportunities and transit. A complete network of on-street bicycling facilities should connect seamlessly to existing and proposed shared-use paths to complete recreational and commuting routes.
- **The bicycling environment should be clear and easy to use.** Shared-use paths and crossings should allow all people to easily find a direct route to a destination with minimal delays, regardless of whether these persons have mobility, sensory, or cognitive disability impairments. All roads are legal for the use of bicyclists (except freeways, from which bicyclists are prohibited unless a separate facility on that right of way is provided). This means that most streets are bicycle facilities and should be designed, marked and maintained accordingly.
- **The bicycling environment should be attractive and enhance community livability.** Good design should integrate with and support the development of complementary uses and should encourage preservation and construction of art, landscaping and other items that add value to communities. These components might include open spaces such as plazas, courtyards and squares, and amenities like street furniture, banners, art, plantings and special paving. These along with historical elements and cultural references, should promote a sense of place. Public activities should be encouraged and the municipal code should permit commercial activities such as dining, vending and advertising when they do not interfere with safety and accessibility.
- **Design guidelines are flexible and should be applied using professional judgment.** This document references specific national guidelines for bicycle facility design, as well as a number of design treatments not specifically covered under current guidelines. Statutory and regulatory guidance may change. For this reason, the guidance and recommendations in this document function to complement other resources considered during a design process, and in all cases sound engineering judgment should be used.

National Standards







The Federal Highway Administration's **Manual on Uniform Traffic Control Devices** (MUTCD) defines the standards used by road managers nationwide to install and maintain traffic control devices on all public streets, highways, bikeways, and private roads open to public traffic. The MUTCD is the primary source for guidance on lane striping requirements, signal warrants, and recommended signage and pavement markings.

To further clarify the MUTCD, the FHWA created a table of contemporary bicycle facilities that lists various bicycle-related signs, markings, signals, and other treatments and identifies their official status (e.g., can be implemented, currently experimental). See **Bicycle Facilities and the Manual on Uniform Traffic Control Devices.**[1]

Bikeway treatments not explicitly covered by the MUTCD are often subject to experiments, interpretations and official rulings by the FHWA. The **MUTCD Official Rulings** is a resource that allows website visitors to obtain information about these supplementary materials. Copies of various documents (such as incoming request letters, response letters from the FHWA, progress reports, and final reports) are available on this website.[2]

American Association of State Highway and Transportation Officials (AASHTO) **Guide for the Development of Bicycle Facilities**, updated in June 2012 provides guidance on dimensions, use, and layout of specific bicycle facilities. The standards and guidelines presented by AASHTO provide basic information, such as minimum sidewalk widths, bicycle lane dimensions, detailed striping requirements and recommended signage and pavement markings.

The National Association of City Transportation Officials' (NACTO) 2012 **Urban Bikeway Design Guide[3]** is the newest publication of nationally recognized bicycle-specific design standards, and offers guidance on the current state of the practice designs. The NACTO Urban Bikeway Design Guide is based on current practices in the best cycling cities in the world. The intent of the guide is to offer substantive guidance for cities seeking to improve bicycle transportation in places where competing demands for the use of the right of way present unique challenges. All of the NACTO Urban Bikeway Design Guide treatments are in use internationally and in many cities around the US.

Some of these treatments are not directly referenced in the current versions of the AASHTO Guide or the MUTCD, although many of the elements of these treatments are found within these documents. In all cases, engineering judgment is recommended to ensure that the application makes sense for the context of each treatment, given the many complexities of urban streets.

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1 *Bicycle Facilities and the Manual on Uniform Traffic Control Devices. (2011). FHWA. http://www.fhwa.dot.gov/environment/bikeped/mutcd_bike.htm*

2 *MUTCD Official Rulings. FHWA. http://mutcd.fhwa.dot.gov/orsearch.asp*

3 *http://nacto.org/cities-for-cycling/design-guide/*

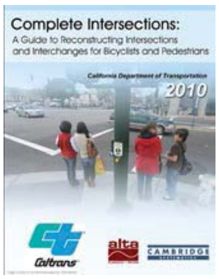
State Standards

California Manual on Uniform Traffic Control Devices (MUTCD) (2012)

The California MUTCD 2012 an amended version of the FHWA MUTCD 2009 edition modified for use in California. While standards presented in the CA MUTCD substantially conform to the FHWA MUTCD, the state of California follows local practices, laws and requirements with regards to signing, striping and other traffic control devices.

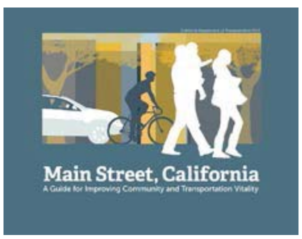
California Highway Design Manual (HDM) (2012)

This manual establishes uniform policies and procedures to carry out highway design functions for the California Department of Transportation. The 2012 edition incorporated Complete Streets focused revisions to address the Department Directive 64 R-1.



Complete Intersections: A Guide to Reconstructing Intersections and Interchanges for Bicyclists and Pedestrians (2010)

This California Department of Transportation reference guide presents information and concepts related to improving conditions for bicyclists and pedestrians at major intersections and interchanges. The guide can be used to inform minor signage and striping changes to intersections, as well as major changes and designs for new intersections.

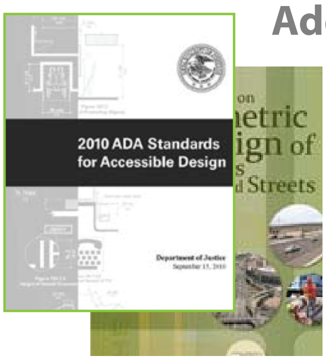


Main Street, California: A Guide for Improving Community and Transportation Vitality (2013)

This Caltrans informational guide reflects California's current manuals and policies that improve multimodal access, livability and sustainability within the transportation system. The guide recognizes the overlapping and sometimes competing needs of main streets.

Caltrans Memo: Design Flexibility in Multimodal Design. April 2014.

This April 2014 memorandum encourages flexibility in highway design. The memo stated that "Publications such as the National Association of City Transportation Officials (NACTO) "Urban Street Design Guide" and "Urban Bikeway Design Guide," ... are resources that Caltrans and local entities can reference when ma king planning and design decisions on the State highway system and local streets and roads."

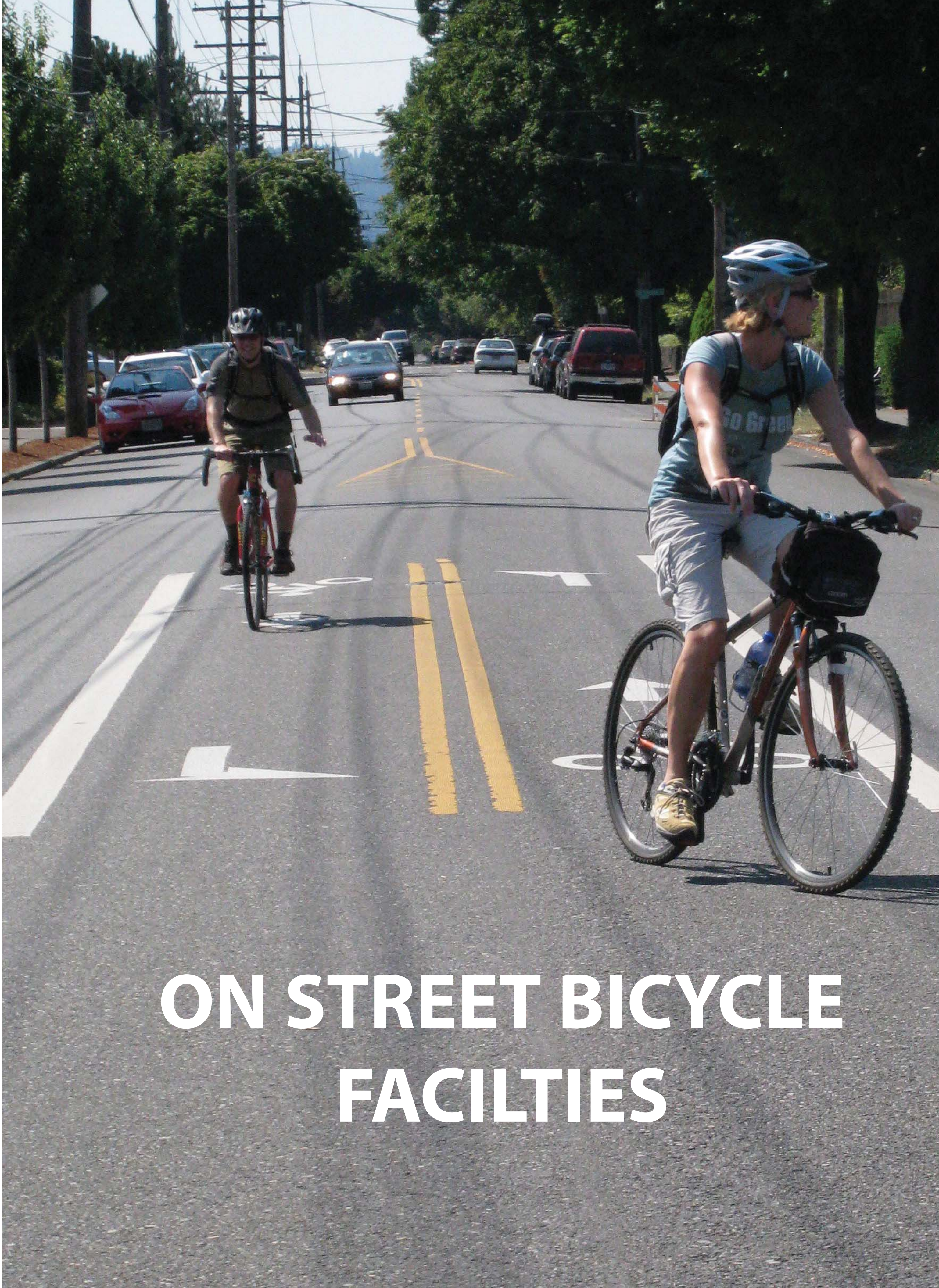


Additional US Federal Guidelines

Meeting the requirements of the Americans with Disabilities Act (ADA) is an important part of any bicycle and pedestrian facility project. The United States Access Board's proposed Public Rights-of-Way Accessibility Guidelines[4] (PROWAG) and the 2010 ADA Standards for Accessible Design[5] (2010 Standards) contain standards and guidance for the construction of accessible facilities. This includes requirements for sidewalk curb ramps, slope requirements, and pedestrian railings along stairs.

The 2011 AASHTO: A Policy on Geometric Design of Highways and Streets commonly referred to as the "Green Book," contains the current design research and practices for highway and street geometric design.

4 http://www.access-board.gov/prowac/
5 http://www.ada.gov/2010ADAstandards_index.htm



ON STREET BICYCLE FACILTIES

Design Needs of Bicyclists

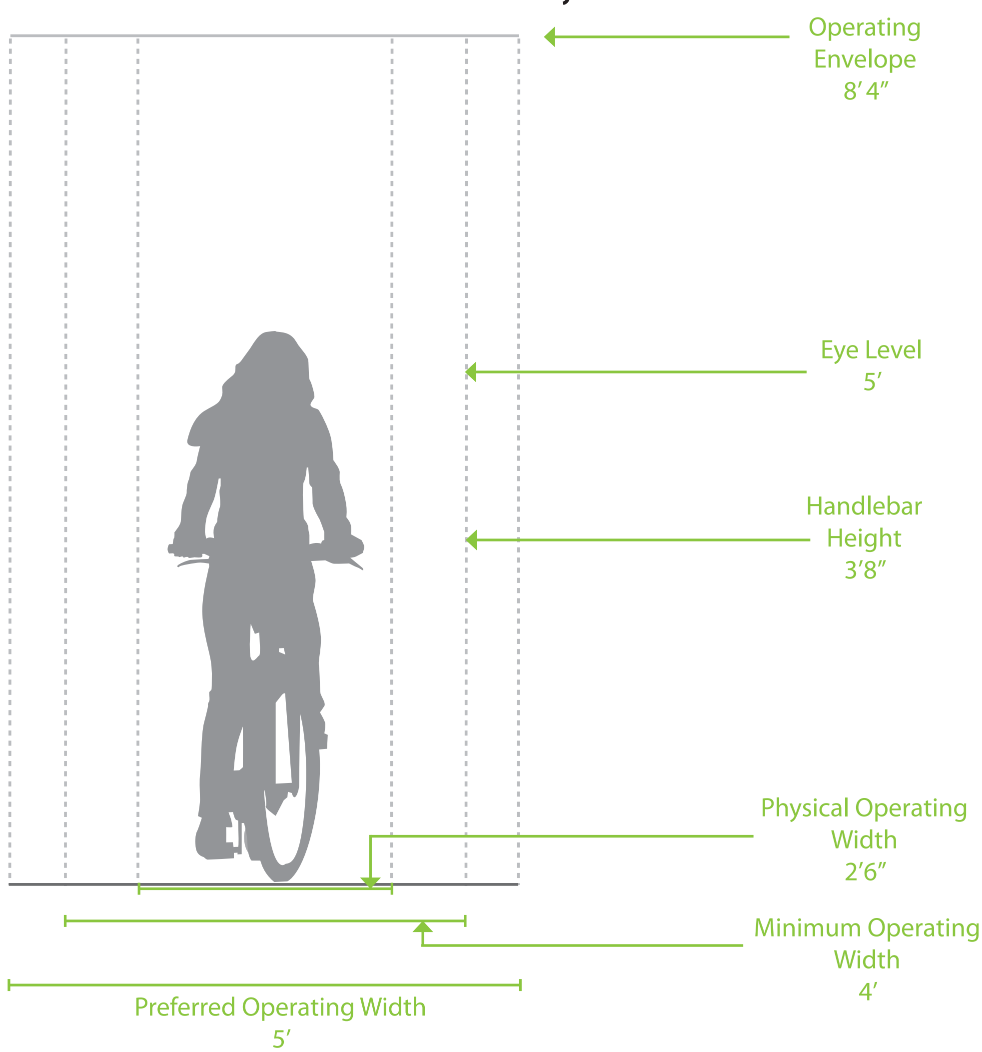
The purpose of this section is to provide the facility designer with an understanding of how bicyclists operate and how their bicycle influences that operation. Bicyclists, by nature, are much more affected by poor facility design, construction and maintenance practices than motor vehicle drivers. Bicyclists lack the protection from the elements and roadway hazards provided by an automobile's structure and safety features. By understanding the unique characteristics and needs of bicyclists, a facility designer can provide quality facilities and minimize user risk.

Bicycle as a Design Vehicle

Similar to motor vehicles, bicyclists and their bicycles exist in a variety of sizes and configurations. These variations occur in the types of vehicle (such as a conventional bicycle, a recumbent bicycle or a tricycle), and behavioral characteristics (such as the comfort level of the bicyclist). The design of a bikeway should consider reasonably expected bicycle types on the facility and utilize the appropriate dimensions.

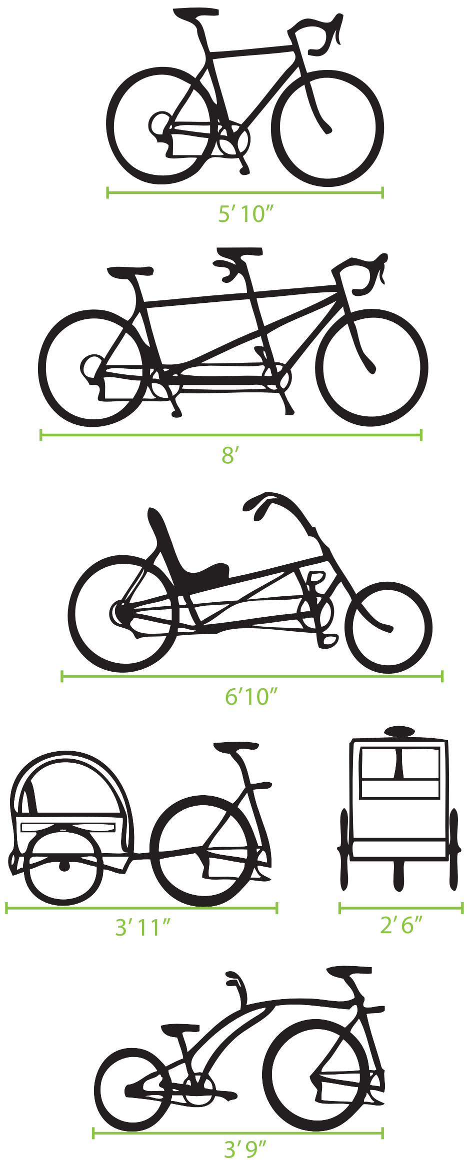
The figure below illustrates the operating space and physical dimensions of a typical adult bicyclist, which are the basis for typical facility design. Bicyclists require clear space to operate within a facility. This is why the minimum operating width is greater than the physical dimensions of the bicyclist. Bicyclists prefer five feet or more operating width, although four feet may be minimally acceptable.

Standard Bicycle Rider Dimensions



Source: AASHTO Guide for the Development of Bicycle Facilities, 4th Edition. 2012.

In addition to the design dimensions of a typical bicycle, there are many other commonly used pedal-driven cycles and accessories to consider when planning and designing bicycle facilities. The most common types include tandem bicycles, recumbent bicycles, and trailer accessories. The figure and table below summarize the typical dimensions for bicycle types.



Bicycle as Design Vehicle - Typical Dimensions

Source: AASHTO *Guide for the Development of Bicycle Facilities*, 4th Edition *AASHTO does not provide typical dimensions for tricycles.

Bicycle as Design Vehicle - Typical Dimensions

Bicycle Type	Feature	Typical Dimensions
Upright Adult Bicyclist	Physical width	2 ft 6 in
	Operating width (Minimum)	4 ft
	Operating width (Preferred)	5 ft
	Physical length	5 ft 10 in
	Physical height of handlebars	3 ft 8 in
	Operating height	8 ft 4 in
	Eye height	5 ft
	Vertical clearance to obstructions (tunnel height, lighting, etc)	10 ft
	Approximate center of gravity	2 ft 9 in - 3 ft 4 in
Recumbent Bicyclist	Physical length	8 ft
	Eye height	3 ft 10 in
Tandem Bicyclist	Physical length	8 ft
Bicyclist with child trailer	Physical length	10 ft
	Physical width	2 ft 6 in

Design Speed Expectations

The expected speed that different types of bicyclists can maintain under various conditions also influences the design of facilities such as shared-use paths. The table to the right provides typical bicyclist speeds for a variety of conditions.

Path designers should tailor the curvature and sight distance needs based on the typical speed of the fastest expected user. See data tables in the AASHTO Guide for the Development of Bicycle Facilitate and the California Highway Design Manual for detailed guidance.

Bicycle as Design Vehicle - Design Speed Expectations

Bicycle Type	Feature	Typical Speed
Upright Adult Bicyclist	Paved level surfacing	8-15 mph
	Downhill	20-30+ mph
	Uphill	5 -12 mph
Recumbent Bicyclist	Paved level surfacing	11-18 mph

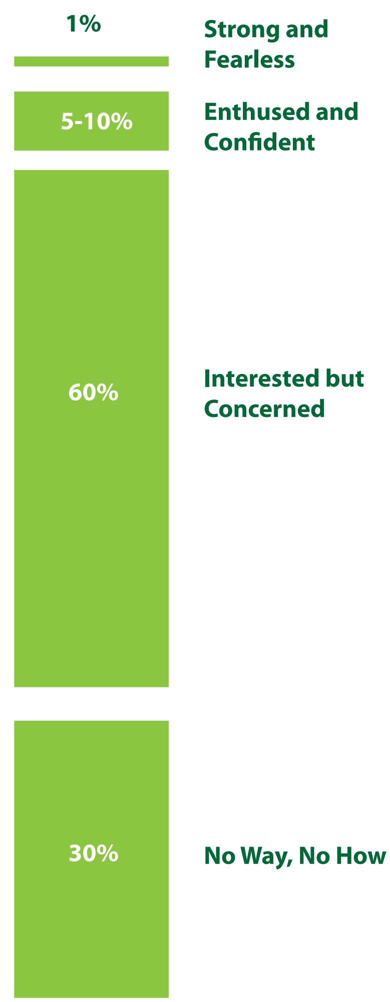
*Tandem bicycles and bicyclists with trailers have typical speeds equal to or less than upright adult bicyclists.

Types of Bicyclists

It is important to consider bicyclists of all skill levels when creating a non-motorized plan or project. Bicyclist skill level greatly influences expected speeds and behavior, both in separated bikeways and on shared roadways. Bicycle infrastructure should accommodate as many user types as possible, with decisions for separate or parallel facilities based on providing a comfortable experience for the greatest number of people.

The bicycle planning and engineering professions currently use several systems to classify the population which can assist in understanding the characteristics and infrastructure preferences of different bicyclists. The current AASHTO Guide to the Development of Bicycle Facilities encourages designers to identify their rider type based on the trip purpose (Recreational vs Transportation) and on the level of comfort and skill of the rider (Causal vs Experienced). A more detailed framework for understanding of the US population's relationship to transportation focused bicycling is illustrated in the figure below. Developed by planners in Portland, OR[1] and supported by research[2], this classification provides the following alternative categories to address varying attitudes towards bicycling in the US:

- **Strong and Fearless** (approximately 1% of population) – Characterized by bicyclists that will typically ride anywhere regardless of roadway conditions or weather. These bicyclists can ride faster than other user types, prefer direct routes and will typically choose roadway connections -- even if shared with vehicles -- over separate bicycle facilities such as shared-use paths.
- **Enthused and Confident** (5-10% of population) - This user group encompasses bicyclists who are fairly comfortable riding on all types of bikeways but usually choose low traffic streets or shared-use paths 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 such as commuters, recreationalists, racers and utilitarian bicyclists.
- **Interested but Concerned** (approximately 60% of population) – This user type comprises the bulk of the cycling population and represents bicyclists who typically only ride a bicycle on low traffic streets or shared-use paths under favorable weather conditions. These bicyclists perceive significant barriers to their increased use of cycling, specifically traffic and other safety issues. These people may become "Enthused & Confident" with encouragement, education and experience.
- **No Way, No How** (approximately 30% of population) – Persons in this category are not bicyclists, and perceive severe safety issues with riding in traffic. Some people in this group may eventually become more regular cyclists with time and education. A significant portion of these people will not ride a bicycle under any circumstances.



Typical Distribution of Bicyclist Types

1 *Roger Geller, City of Portland Bureau of Transportation. Four Types of Cyclists. http://www.portlandonline.com/transportation/index.cfm?&a=237507. 2009.*

2 Dill, J., McNeil, N. *Four Types of Cyclists? Testing a Typology to Better Understand Bicycling Behavior and Potential.* 2012.

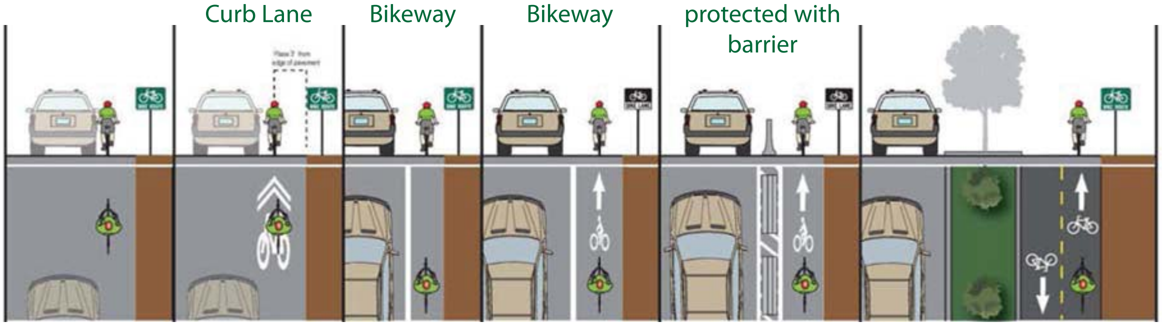
Facility Continua

The following continua illustrate the range of bicycle facilities applicable to various roadway environments, based on the roadway type and desired degree of separation. Engineering judgment, traffic studies, previous municipal planning efforts, community input and local context should be used to refine criteria when developing bicycle facility recommendations for a particular street. In some corridors, it may be desirable to construct facilities to a higher level of treatment than those recommended in relevant planning documents in order to enhance user safety and comfort. In other cases, existing and/or future motor vehicle speeds and volumes may not justify the recommended level of separation, and a less intensive treatment may be acceptable.

Least Protected → Most Protected

Arterial/Highway Bikeway Continuum (without curb and gutter)

Shared Lane | Marked Wide Curb Lane | Shoulder Bikeway | Wide Shoulder Bikeway | Cycle Track: protected with barrier | Shared-Use Path

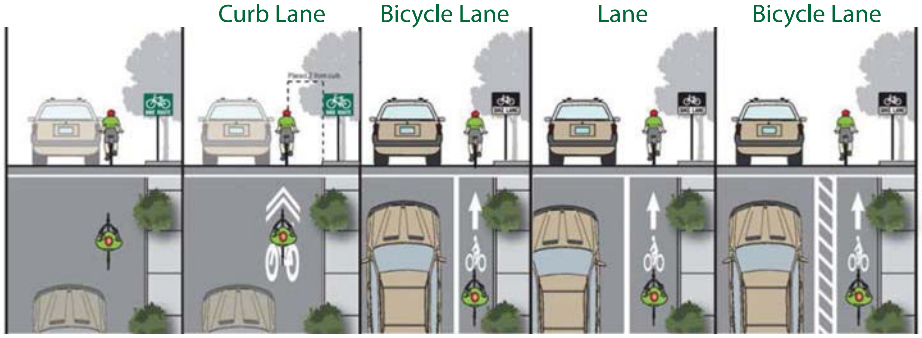


Arterial/Highway Bikeway Continuum (with curb and gutter)

Marked Wide Curb Lane | Conventional Bicycle Lane | Buffered Bicycle Lane | Cycle Track: at-grade, protected with parking | Cycle Track: protected with barrier | Cycle Track: curb separated | Shared-Use Path: curb separated

Collector Bikeway Continuum

Shared Lane | Marked Wide Curb Lane | Conventional Bicycle Lane | Wide Bicycle Lane | Buffered Bicycle Lane



Class III Shared Roadways

On shared roadways, bicyclists and motor vehicles use the same roadway space. These facilities are typically used on roads with low speeds and traffic volumes, however they can be used on higher volume roads with wide outside lanes or shoulders. A motor vehicle driver will usually have to cross over into the adjacent travel lane to pass a bicyclist, unless a wide outside lane or shoulder is provided.

Shared roadways employ a large variety of treatments from simple signage and shared lane markings to more complex treatments including directional signage, traffic diverters, chicanes, chokers, and/or other traffic calming devices to reduce vehicle speeds or volumes.

Signed Shared Roadway

Marked Shared Roadway

Signed Shared Roadway

Description

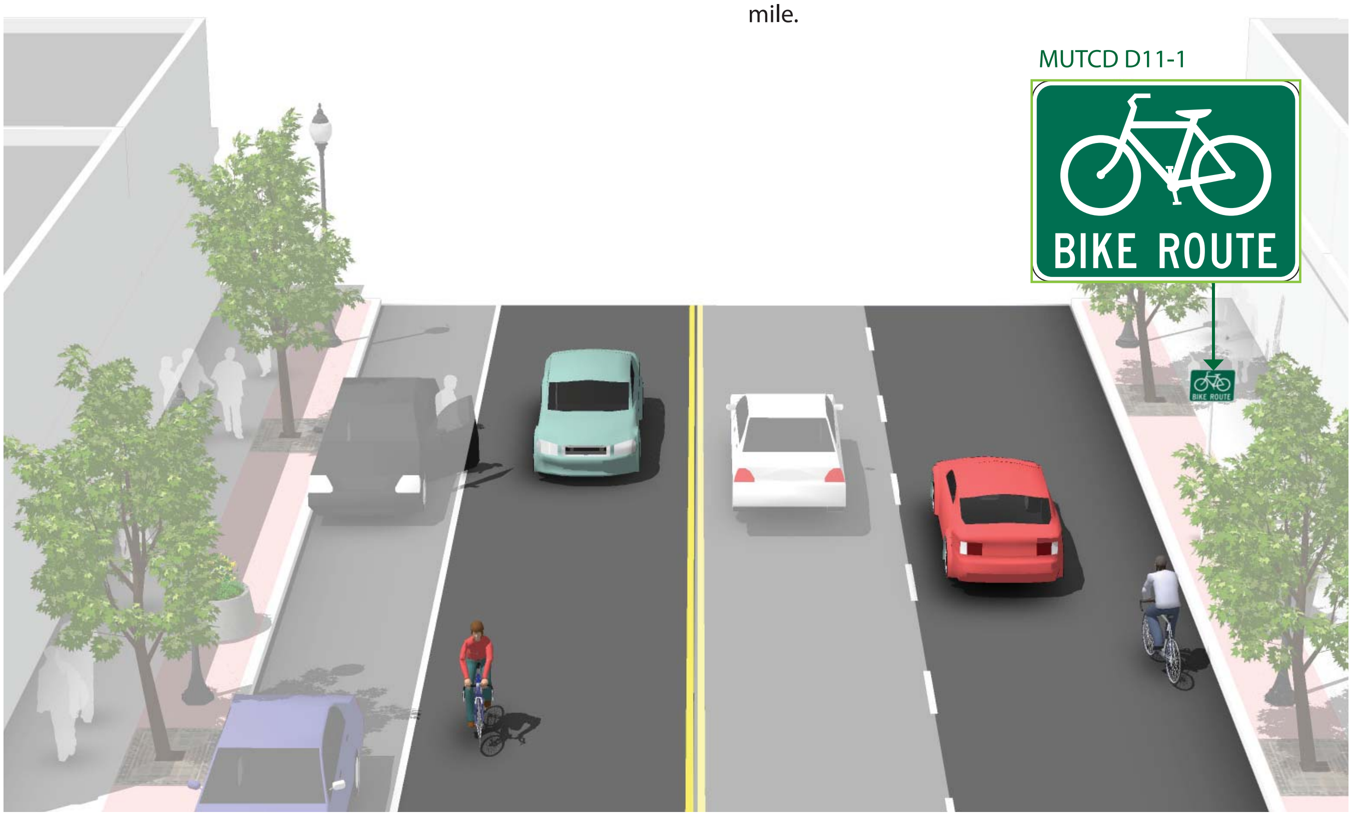
Signed shared roadways are facilities shared with motor vehicles. They are typically used on roads with low speeds and traffic volumes, however can be used on higher volume roads with wide outside lanes or shoulders. A motor vehicle driver will usually have to cross over into the adjacent travel lane to pass a bicyclist, unless a wide outside lane or shoulder is provided.

Guidance

Lane width varies depending on roadway configuration.

Bike route signage (D11-1) should be applied at intervals frequent enough to keep bicyclists informed of changes in route direction and to remind motorists of the presence of bicyclists. Commonly, this includes placement at:

- Beginning or end of Bicycle Route.
- At major changes in direction or at intersections with other bicycle routes.
- At intervals along bicycle routes not to exceed ½ mile.



Discussion

Signed shared roadways serve either to provide continuity with other bicycle facilities (usually bike lanes) or to designate preferred routes through high-demand corridors.

This configuration differs from a bicycle boulevard due to a lack of traffic calming, wayfinding, pavement markings and other enhancements designed to provide a higher level of comfort for a broad spectrum of users.

Additional References and Guidelines

AASHTO. *Guide for the Development of Bicycle Facilities*. 2012.
Caltrans. *CA-MUTCD. 2012.*
Caltrans. *California HDM*. 2012.

Materials and Maintenance

Maintenance needs for bicycle wayfinding signs are similar to other signs, and will need periodic replacement due to wear.

Marked Shared Roadway

Description

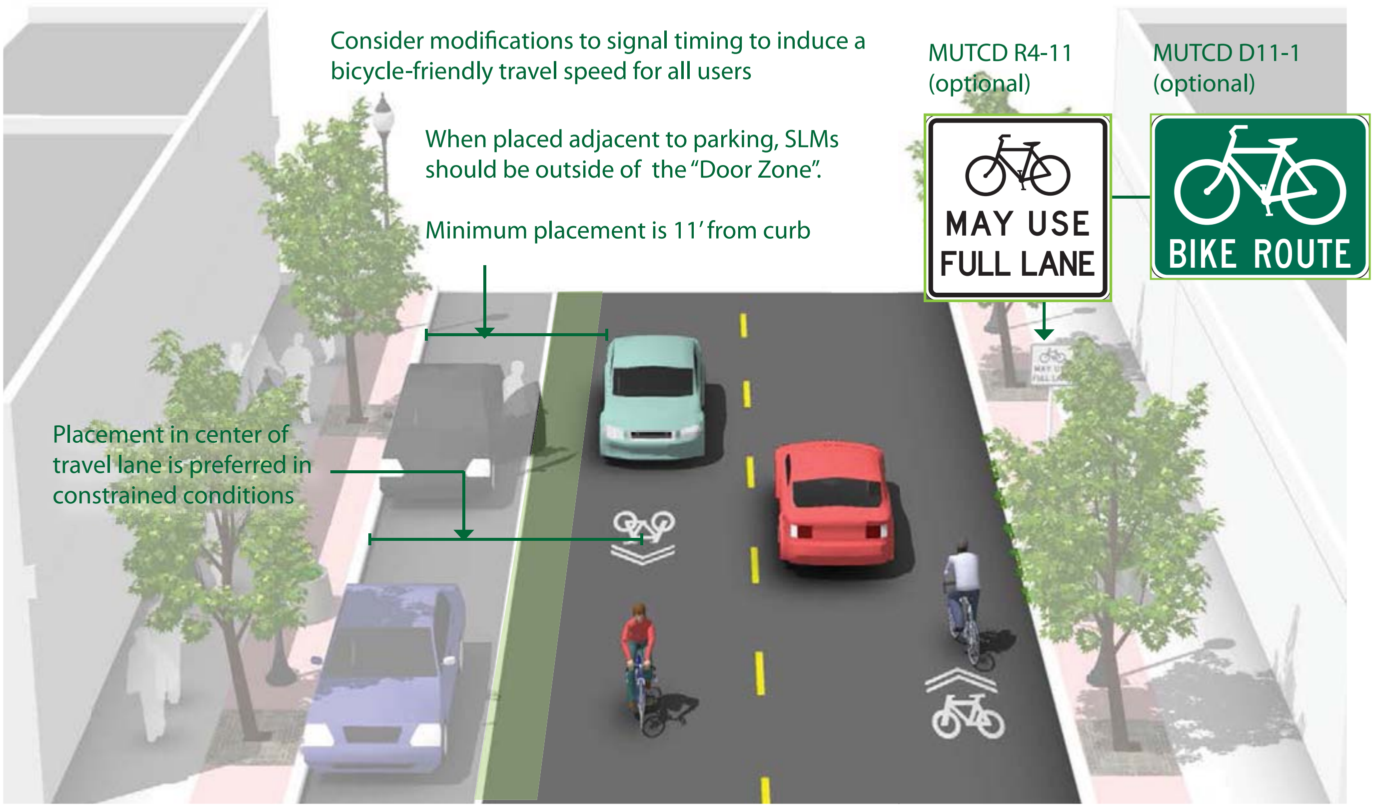
A marked shared roadway is a general purpose travel lane marked with shared lane markings (SLM) used to encourage bicycle travel and proper positioning within the lane.

In constrained conditions, the SLMs are placed in the middle of the lane. On a wide outside lane, the SLMs can be used to promote bicycle travel to the right of motor vehicles.

In all conditions, SLMs should be placed outside of the door zone of parked cars.

Guidance

- Lower than 35 mph speed limit preferred.
- In extreme circumstances, SLMs may be placed on roadways above 35 mph.
- In constrained conditions, preferred placement is in the center of the travel lane to minimize wear and promote single file travel.
- Minimum placement of SLM marking centerline is 11 feet from edge of curb where on-street parking is present, 4 feet from edge of curb with no parking.



Discussion

If collector or arterial, this should not be a substitute for dedicated bicycle facilities if space is available.

Bike Lanes should be considered on roadways with outside travel lanes wider than 15 feet, or where other lane narrowing or removal strategies may provide adequate road space. SLMs shall not be used on shoulders, in designated bike lanes, or to designate bicycle detection at signalized intersections. (MUTCD 9C.07)

Additional References and Guidelines

AASHTO. *Guide for the Development of Bicycle Facilities.* 2012.
Caltrans. *CA-MUTCD. 2012.*
NACTO. *Urban Bikeway Design Guide.* 2012.

Materials and Maintenance

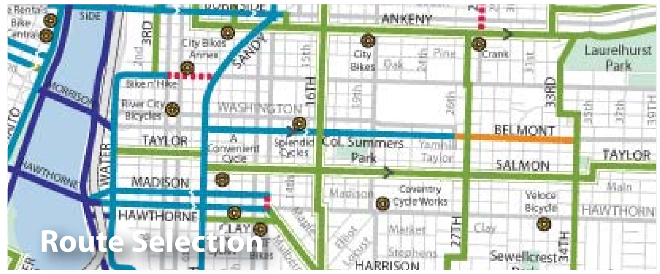
Placing SLMs between vehicle tire tracks will increase the life of the markings and minimize the long-term cost of the treatment.

Bicycle Boulevards

Bicycle boulevards are low-volume, low-speed streets modified to enhance bicyclist by using treatments such as signage, pavement markings, traffic calming and/or traffic reduction, and intersection modifications. These treatments allow through movements of bicyclists while discouraging similar through-trips by non-local motorized traffic.

Jurisdictions throughout the country use a wide variety of strategies to determine where specific treatments are applied. While no federal guidelines exist, several best practices have emerged for the development of bicycle boulevards. At a minimum, bicycle boulevards should include distinctive pavement markings and wayfinding signs. They can also use combinations of traffic calming, traffic diversion, and intersection treatments to improve the bicycling environment. The appropriate level of treatment to apply is dependent on roadway conditions, particularly motor vehicle speeds and volumes.

Traffic conditions on bicycle boulevards should be monitored to provide guidance on when and where treatments should be implemented. When motor vehicle speeds and volumes or bicyclist delay exceed the preferred limits, additional treatments should be considered for the bicycle boulevard.



Route Selection


Basic Treatments

Traffic Calming

Traffic Diversion


Intersection Treatments

Bicycle Boulevard Route Selection

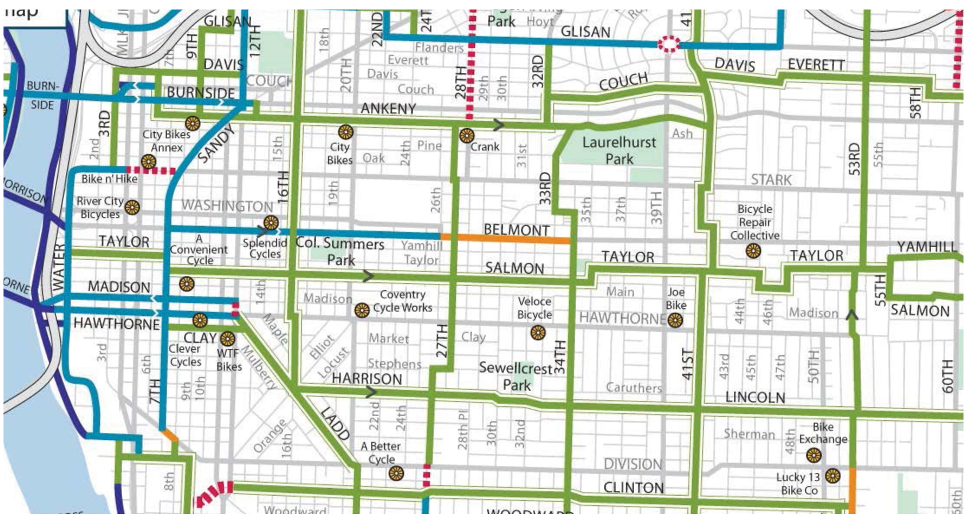
Description

Bicycle boulevards should be developed on streets that improve connectivity to key destinations and provide a direct route for bicyclists. Local streets with existing traffic calming, traffic diversions, or signalized crossings of major streets are good candidates, as they tend to be existing bicycle routes and have low motor vehicle speeds and volumes. Other streets where residents have expressed a desire for traffic calming are also good options.

Bicycle boulevards parallel to commercial streets improve access for "interested but concerned" bicyclists and complement bike lanes on major roadways.

Guidance

- Streets are signed at 25 mph or less to improve the bicycling environment and decrease the risk and severity of crashes.
- Traffic volumes are limited to 3,000 vehicles per day (ideally less than 1,500) to minimize passing events and potential conflicts with motor vehicles.
- Use of streets that parallel major streets can discourage non-local motor vehicle traffic without significantly impacting motorists.
- Use of streets where a relatively continuous route for bicyclists exists and/or where treatments can provide wayfinding and improve crossing opportunities at offset intersections.
- Use of streets where bicyclists have right-of-way at intersections or where right-of-way is possible to assign to bicyclists.



In Portland, OR, the bicycle network includes a high density of bicycle boulevards parallel to streets with bike lanes.

Discussion

Bicycle boulevards should form a continuous network of streets or off-street facilities that accommodate bicyclists who are less willing to ride on streets with motorized traffic. Most bicycle boulevards are located on residential streets, though they can also be on commercial or industrial streets. Due to the presence of trucks and commercial vehicles, as well as the need to maintain good traffic flow and retain motor vehicle parking, bicycle boulevards on commercial or industrial streets can tolderate higher automobile speeds and volumes than would be desired on neighborhood streets. Vertical traffic calming can minimize impacts to large vehicles and parking.

Additional References and Guidelines

Alta Planning + Design and IBPI. *Bicycle Boulevard Planning and Design Handbook.* 2009.
City of Berkeley. *Bicycle Boulevard Design Tools and Guidelines.* 2000.
City of Emeryville. *Bicycle Boulevard Treatments.* 2011.

Materials and Maintenance

Repaving, street sweeping and other maintenance should occur with higher frequency than on other local streets.

Bicycle Boulevard Basic Treatments

Description

Signs and pavement markings are the minimum treatments necessary to designate a street as a bicycle boulevard. Together, they visibly designate a roadway to both bicyclists and motorists. Signs, and in some cases pavement markings, provide wayfinding to help bicyclists remain on the designated route.

Guidance

Pavement Markings

Place symbols every 250-800 feet along a linear corridor, as well as after every intersection.

On narrow streets where a motor vehicle cannot pass a bicyclist within one lane of traffic, place stencils in the center of the travel lane.

A bicycle symbol can be placed on a standard road sign, along with distinctive coloration.

Signs

Some cities have developed unique logos or colors for wayfinding signs that help brand their bicycle boulevards.

Be consistent in content, design, and intent; colors reserved by the Manual on Uniform Traffic Devices (MUTCD) for regulatory and warning road signs are not recommended.

Signs can include information about intersecting bikeways and distance/time information to key destinations.

Discussion

Wayfinding signs displaying destinations, distances, and "riding time" can dispel common misperceptions about time and distance while increasing users' comfort and accessibility to the bicycle boulevard network. Bicycle boulevards frequently include offset intersections or 'jog' onto another street. Signs and pavement markings can help bicyclists remain on the route. In addition, fewer businesses or services are located along local streets, and signs inform bicyclists of the direction to key destinations, including commercial districts, transit hubs, schools and universities, and other bikeways.

Additional References and Guidelines

City of Milwaukie. *Milwaukie Bicycle Wayfinding Signage Plan*. 2009.
City of Oakland. *Design Guidelines for Bicycle Wayfinding Signage*. 2009.
NACTO. *Urban Bikeway Design Guide*. 2012.

Materials and Maintenance

Pavement markings should be repainted and signs replaced as needed. Wayfinding signs should be regularly updated with new major destinations and bikeways.

Bicycle Boulevard Vertical Traffic Calming

Description

Motor vehicle speeds affect the frequency at which automobiles pass bicyclists as well as the severity of crashes that can occur. Maintaining motor vehicle speeds closer to those of bicyclists' greatly improves bicyclists' comfort on a street. Slower vehicular speeds also improve motorists' ability to see and react to bicyclists and minimize conflicts at driveways and other turning locations.

Vertical speed control measures are composed of slight rises in the pavement, on which motorists and bicyclists must reduce speed to cross.

Guidance

- Bicycle boulevards should have a maximum posted speed of 25 mph. Use traffic calming to maintain an 85th percentile speed below 22 mph.
- Speed humps are raised areas usually placed in a series across both travel lanes. A 14' long hump reduces impacts to emergency vehicles. Speed humps can be challenging for bicyclists, gaps can be provided in the center or by the curb for bicyclists and to improve drainage. Speed humps can also be offset to accommodate emergency vehicles.
- Speed lumps or cushions have gaps to accommodate the wheel tracks of emergency vehicles.
- Speed tables are longer than speed humps and flat-topped. Raised crosswalks are speed tables that are marked and signed for a pedestrian crossing.
- For all vertical traffic calming, slopes should not exceed 1:10 or be less steep than 1:25. Tapers should be no greater than 1:6 to reduce the risk of bicyclists losing their balance. The vertical lip should be no more than a 1/4" high.

Speed Hump

Offset Speed Hump

Temporary Speed Cushion

Raised Crosswalk

Discussion

Emergency vehicle response times should be considered where vertical deflection is used. Because emergency vehicles have a wider wheel base than passenger cars, speed lumps/cushions allow them to pass unimpeded while slowing most other traffic. Alternatively, speed tables are recommended because they cannot be straddled by a truck, decreasing the risk of bottoming out. Traffic calming can also deter motorists from driving on a street. Monitor vehicle volumes on adjacent streets to determine whether traffic calming results in inappropriate volumes. Traffic calming can be implemented on a trial basis.

Additional References and Guidelines

AASHTO. *Guide for the Development of Bicycle Facilities.* 2012.
Alta Planning + Design and IBPI. *Bicycle Boulevard Planning and Design Handbook.* 2009.
BikeSafe. *Bicycle countermeasure selection system.*
Ewing, Reid. *Traffic Calming: State of the Practice.* 1999.
Ewing, Reid and Brown, Steven. *U.S. Traffic Calming Manual.* 2009.
NACTO. *Urban Street Design Guide.* 2013.

Materials and Maintenance

Traffic calming should be designed to minimize impacts to snowplows. Vegetation should be regularly trimmed to maintain visibility and attractiveness.

Bicycle Boulevard Horizontal Traffic Calming

Description

Horizontal traffic calming devices cause drivers to slow down by constricting the roadway space or by requiring careful maneuvering.

Such measures may reduce the design speed of a street, and can be used in conjunction with reduced speed limits to reinforce the expectation of lowered speeds.

Guidance

- Maintain a minimum clear width of 20 feet (or 28 feet with parking on both sides), with a constricted length of at least 20 feet in the direction of travel.
- Chicanes are a series of raised or delineated curb extensions, edge islands, or parking bays on alternating sides of a street forming an "S"-shaped curb, which reduce vehicle speeds by requiring motorists to shift laterally through narrowed travel lanes.
- Pinchponts are curb extensions placed on both sides of the street, narrowing the travel lane and encouraging all road users to slow down. When placed at intersections, pinchpoints are known as chokers or neckdowns. They reduce curb radii and further lower motor vehicle speeds.
- Traffic circles are raised or delineated islands placed at intersections that reduce vehicle speeds by narrowing turning radii and the travel lane. Traffic circles can also include a paved apron to accommodate the turning radii of larger vehicles like fire trucks or school buses.

Temporary Curb Extension

Chicane

Choker or Neckdown

Pinchpoint with Bicycle Access

Discussion

Horizontal speed control measures should not infringe on bicycle space. Where possible, provide a bicycle route outside of the element so bicyclists can avoid having to merge into traffic at a narrow pinch point. This technique can also improve drainage flow and reduce construction and maintenance costs. Traffic calming can also deter motorists from driving on a street. Monitor vehicle volumes on adjacent streets to determine whether traffic calming results in inappropriate volumes. Traffic calming can be implemented on a trial basis.

Additional References and Guidelines

AASHTO. *Guide for the Development of Bicycle Facilities.* 2012.
Alta Planning + Design and IBPI. *Bicycle Boulevard Planning and Design Handbook.* 2009.
BikeSafe. *Bicycle countermeasure selection system.*
Ewing, Reid. *Traffic Calming: State of the Practice.* 1999.
Ewing, Reid and Brown, Steven. *U.S. Traffic Calming Manual.* 2009.
NACTO. *Urban Street Design Guide.* 2013.

Materials and Maintenance

Traffic calming should be designed to minimize impacts to snowplows. Vegetation should be regularly trimmed to maintain visibility and attractiveness.

Bicycle Boulevard Traffic Diversion

Description

Motor vehicle traffic volumes affect the operation of a neighborhood greenway. Higher vehicle volumes reduce bicyclists' comfort and can result in more conflicts.

Implement volume control treatments based on the context of the neighborhood greenway, using engineering judgment. Target motor vehicle volumes range from 1,000 to 3,000 vehicles per day, above which the route should be striped as a bike lane or considered a signed shared roadway.

Guidance

- Traffic diversion treatments reduce motor vehicle volumes by completely or partially restricting through traffic on a neighborhood greenway.
- Partial closures allow full bicycle passage while restricting vehicle access to one way traffic at that point.
- Diagonal diverters require all motor vehicle traffic to turn.

Median diverters (see Major Intersection Treatments) restrict through motor vehicle movements while providing a refuge for bicyclists to cross in two stages.

- Street closures create a "T" that blocks motor vehicles from continuing on a neighborhood greenway, while bicycle travel can continue unimpeded. Full closures can accommodate emergency vehicles with the use of mountable curbs (maximum of six inches high).

Partial Closure

Diagonal Diverter


Median Diverter


Full Closure

Discussion

Neighborhood greenways on streets with volumes higher than 3,000 vehicles per day are not recommended, although a segment of a neighborhood greenway may accommodate more traffic for a short distance if necessary to complete the corridor. Providing additional separation with a bike lane, cycle track or other treatment is recommended where traffic calming or diversion cannot reduce volumes below this threshold.

Additional References and Guidelines

AASHTO. *Guide for the Development of Bicycle Facilities.* 2012.
Alta Planning + Design and IBPI. *Bicycle Boulevard Planning and Design Handbook.* 2009.
Ewing, Reid. *Traffic Calming: State of the Practice.* 1999.
Ewing, Reid and Brown, Steven. *U.S. Traffic Calming Manual.* 2009.
Oregon Department of Transportation. *Right-In Right-Out Chanelization.* 1998.

Materials and Maintenance

Depending on the diverter type, these treatments can be challenging to keep clear of snow and debris. Vegetation should be regularly trimmed to maintain visibility and attractiveness.

Bicycle Boulevard Minor Intersection Treatments

Description

Treatments at minor roadway intersections are designed to improve the visibility of a bicycle boulevard, raise awareness of motorists on the cross-street that they are likely to encounter bicyclists, and enhance safety for all road users.

Guidance

- On the bicycle boulevard, the majority of intersections with minor roadways should stop-control cross traffic to minimize bicyclist delay. This will maximize bicycling efficiency.
- If a stop sign is present on the bicycle boulevard, a second stop bar for bicyclists can be placed closer to the centerline of the cross street than the motorists' stop bar to increase the visibility of bicyclists waiting to cross the street.
- Curb extensions can be used to move bicyclists closer to the centerline to improve visibility and encourage motorists to let them cross.

Stop Signs on Cross-Street


Bicycle Forward Stop Bar


Curb Extension

Discussion

Stop signs increase bicycling time and energy expenditure, frequently leading to non-compliance by bicyclists and motorists, and/or use of other less desirable routes. Bicycle boulevards should have fewer stops or delays than other local streets. A typical bicycle trip of 30 minutes can increase to 40 minutes if there is a STOP sign at every block (*Berkeley Bicycle Boulevard Design Tools and Guidelines*). If several stop signs are turned along a corridor, speeds should be monitored and traffic-calming treatments used to reduce excessive vehicle speeds on the bicycle boulevard.

Additional References and Guidelines

City of Berkeley. *Bicycle Boulevard Design Tools and Guidelines.* 2000.
City of London Transport for London. *Advanced stop lines (ASLS) background and research studies.*
Transportation Research Board. *Improving Pedestrian Safety at Unsignalized Crossings.* NCHRP Report # 562. 2006.

Materials and Maintenance

Vegetation in traffic circles and curb extensions should be regularly trimmed to maintain visibility and attractiveness. Repaint bicycle stop bars as needed.

Bicycle Boulevard Major Intersection Treatments

Description

The quality of treatments at major street crossings can significantly affect a bicyclist's choice to use a bicycle boulevard, as opposed to another road that provides a crossing treatment.

Guidance

- Bike boxes increase bicyclist visibility to motorists and reduce the danger of right "hooks" by providing a space for bicyclists to wait at signalized intersections.
- Median islands provided at uncontrolled intersections of bicycle boulevards and major streets allow bicyclists to cross one direction of traffic at a time as gaps in traffic occur.
- Hybrid beacons, active warning beacons and bicycle signals can facilitate bicyclists crossing a busy street on which cross-traffic does not stop.
- Select treatments based on engineering judgment; see National Cooperative Highway Research Program (NCHRP) Report # 562 *Improving Pedestrian Safety at Unsignalized Crossings* (2006) for guidance on appropriate use of crossing treatments. Treatments are designed to improve visibility and encourage motorists to stop for pedestrians; with engineering judgement many of the same treatments are appropriate for use along bicycle boulevards.

Bike Box

Median Island

Hybrid Beacon

Rectangular Rapid Flash Beacon (RRFB)

Discussion

Bicycle boulevard retrofits to local streets are typically located on streets without existing signalized accommodation at crossings of collector and arterial roadways. Without treatments for bicyclists, these intersections can become major barriers along the bicycle boulevard and compromise safety.

Additional References and Guidelines

Transportation Research Board. *Improving Pedestrian Safety at Unsignalized Crossings.* NCHRP Report # 562. 2006.
Federal Highway Administration. *Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations.* FHWA-RD-04-100. 2004.
NACTO. *Urban Bikeway Design Guide.* 2012.

Materials and Maintenance

Maintain signs, markings, and other treatments and replace as needed. Monitor intersections for bicyclist delay to determine if additional treatments are warranted.

Class II Bikeways

Designated exclusively for bicycle travel, separated bikeways are segregated from vehicle travel lanes by striping, and can include pavement stencils and other treatments. Separated bikeways are most appropriate on arterial and collector streets where higher traffic volumes and speeds warrant greater separation.

Separated bikeways can increase safety and promote proper riding by:

- Defining road space for bicyclists and motorists, reducing the possibility that motorists will stray into the bicyclists' path.
- Discouraging bicyclists from riding on the sidewalk.
- Reducing the incidence of wrong way riding.
- Reminding motorists that bicyclists have a right to the road.

Bicycle Lane without Parking

Bicycle Lane and Parallel Parking

Bicycle Lane and Diagonal Parking

Buffered Bike Lane

Cycle Track

Bike Lane without On-Street Parking

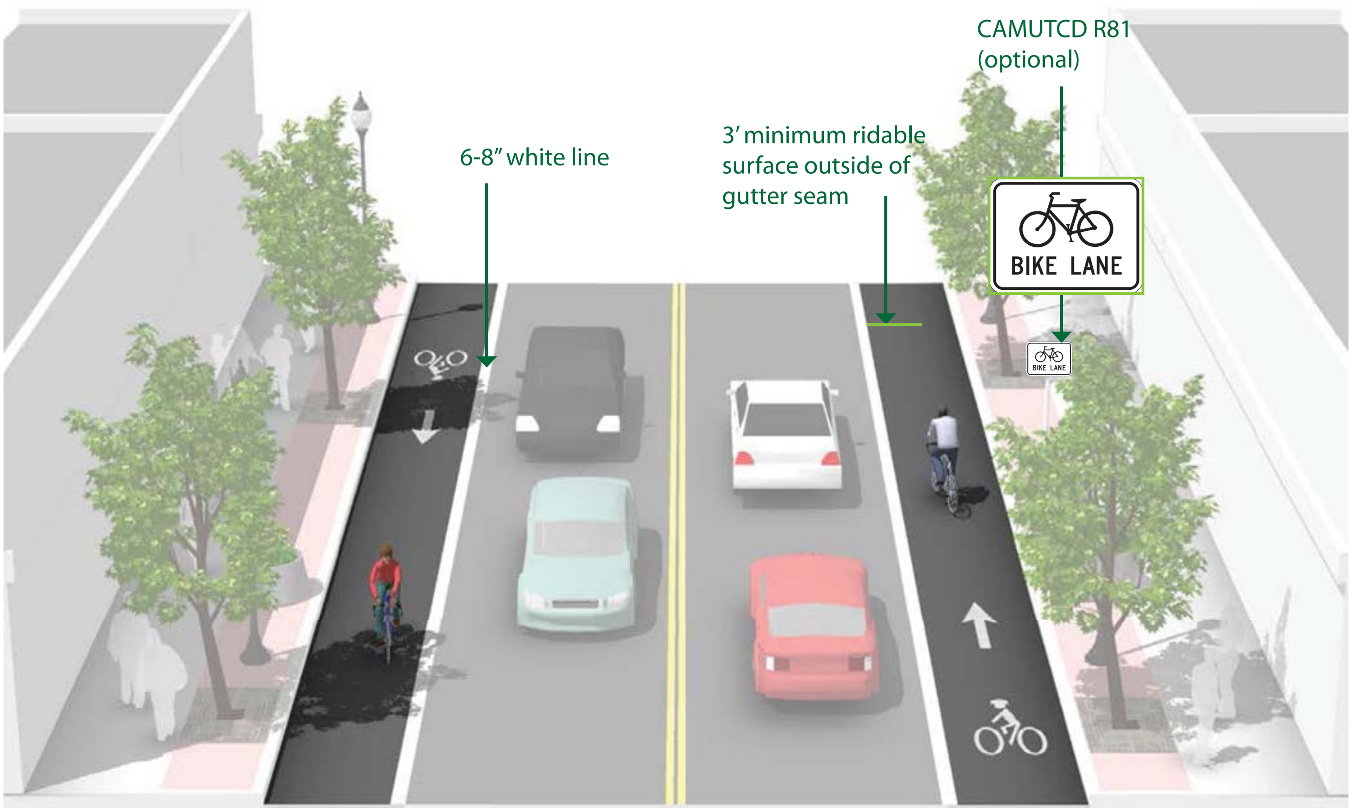
Description

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

A bike lane width of 7 feet makes it possible for bicyclists to ride side-by-side or pass each other without leaving the bike lane, thereby increasing the capacity of the lane.

Guidance

- 4 foot minimum when no curb and gutter is present.
- 5 foot minimum when adjacent to curb and gutter or 3 feet more than the gutter pan width if the gutter pan is wider than 2 feet.
- 7 foot maximum width for use adjacent to arterials with high travel speeds. Greater widths may encourage motor vehicle use of bike lane. Configure as buffered bicycle lanes when a wider facility is desired.



Discussion

Wider bicycle lanes are desirable in certain situations such as on higher speed arterials (45 mph+) where use of a wider bicycle lane would increase separation between passing vehicles and bicyclists. Appropriate signing and stenciling is important with wide bicycle lanes to ensure motorists do not mistake the lane for a vehicle lane or parking lane. Consider buffered bicycle lanes when further separation is desired.

Additional References and Guidelines

AASHTO. *Guide for the Development of Bicycle Facilities.* 2012.
Caltrans *CA-MUTCD. 2012.*
NACTO. *Urban Bikeway Design Guide.* 2012.
Caltrans. *California HDM.* 2012.

Materials and Maintenance

Paint can wear more quickly in high traffic areas. Bicycle lanes should be cleared of debris through routine street cleaning operations and on an as-needed basis.

Bike Lane Adjacent to On-Street Parallel Parking

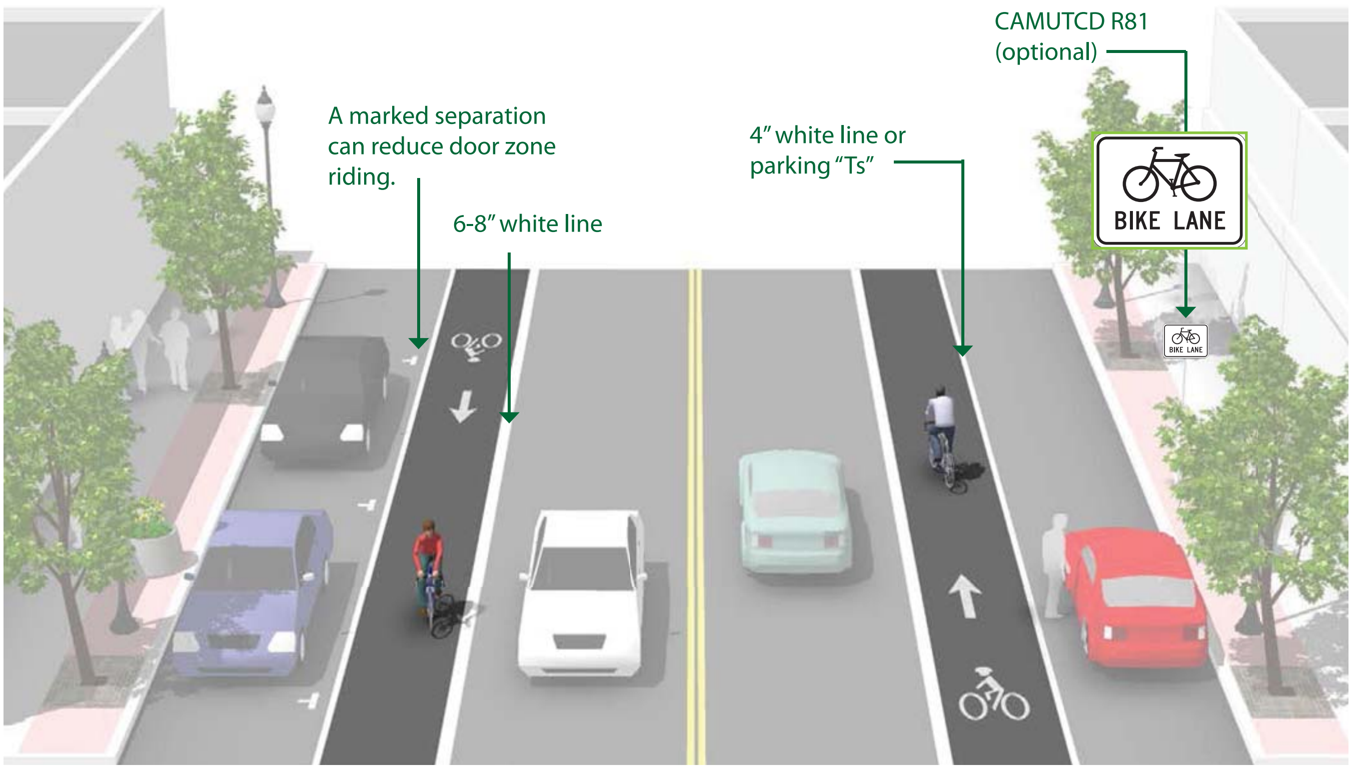
Description

Bike lanes designate an exclusive space for bicyclists through the use of pavement markings and signage. The bike lane is located adjacent to motor vehicle travel lanes and is used in the same direction as motor vehicle traffic. Bike lanes are typically on the right side of the street, between the adjacent travel lane and curb, road edge or parking lane.

Many bicyclists, particularly less experienced riders, are more comfortable riding on a busy street if it has a striped and signed bikeway than if they are expected to share a lane with vehicles.

Guidance

- 12 foot minimum from curb face to edge of bike lane.
- 14.5 foot preferred from curb face to edge of bike lane.
- 7 foot maximum for marked width of bike lane. Greater widths may encourage vehicle loading in bike lane. Configure as buffered bicycle lanes when a wider facility is desired.



Discussion

The bike lane should have sufficient width to allow bicyclists to stay out of the door zone while not encroaching into the adjacent vehicular lane.

Additional References and Guidelines

AASHTO. *Guide for the Development of Bicycle Facilities*. 2012.
Caltrans *CA-MUTCD. 2012.*
NACTO. *Urban Bikeway Design Guide*. 2012.
Caltrans. *California HDM*. 2012.

Materials and Maintenance

Paint can wear more quickly in high traffic areas. Bicycle lanes should be cleared of debris through routine street cleaning operations and on an as-needed basis.

Bike Lanes and Diagonal Parking

Description

In certain areas with high parking demand such as urban commercial areas, diagonal parking can be used to increase parking supply.

Back-in diagonal parking improves sight distances between drivers and bicyclists when compared to conventional head-in diagonal parking. Back-in parking is best paired with a dedicated bicycle lane.

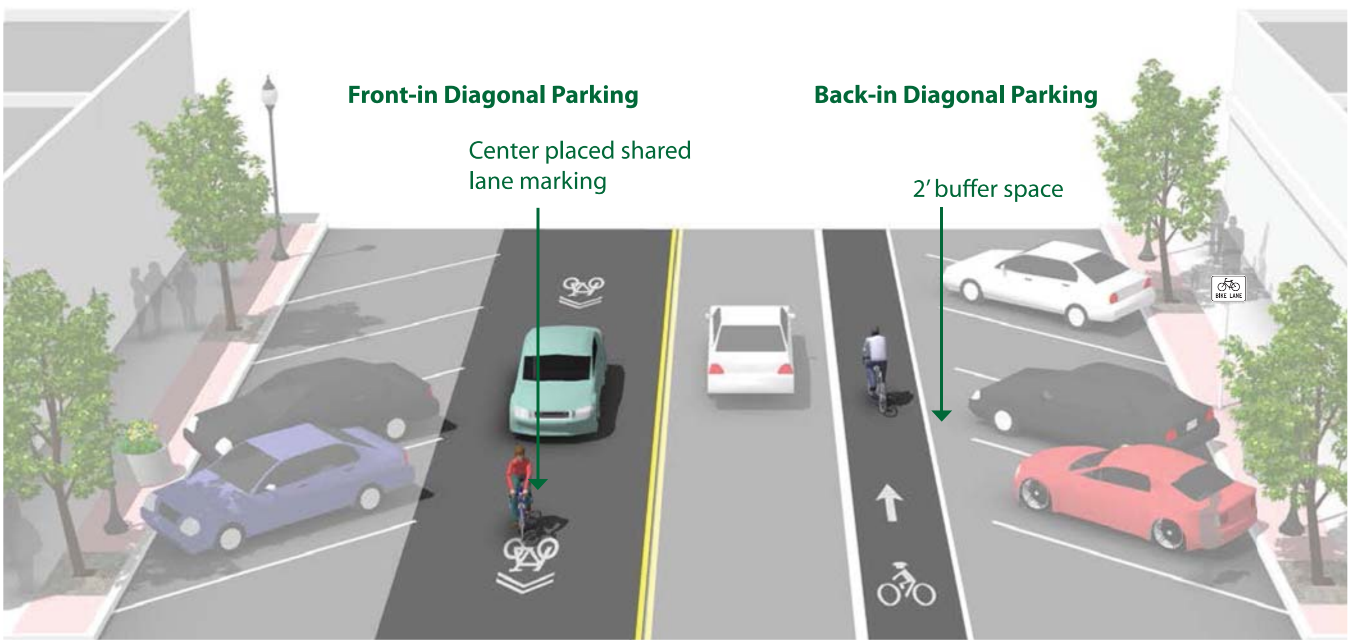
Guidance

Front-in Diagonal Parking

- Shared lane markings are the preferred facility with front-in diagonal parking

Back-in Diagonal Parking

- 5 foot minimum marked width of bike lane
- Parking bays are sufficiently long to accommodate most vehicles (so vehicles do not block bike lane)



Discussion

Conventional front-in diagonal parking is not compatible or recommended with the provision of bike lanes, as drivers backing out of conventional diagonal parking have limited visibility of approaching bicyclists. Under these conditions, shared lane markings should be used to guide bicyclists away from reversing automobiles.

Additional References and Guidelines

AASHTO. *Guide for the Development of Bicycle Facilities*. 2012.
Caltrans. *Main Street, California*. 2013.

Materials and Maintenance

Paint can wear more quickly in high traffic areas. Bicycle lanes should be cleared of debris through routine street cleaning operations and on an as-needed basis.

Buffered Bike Lane

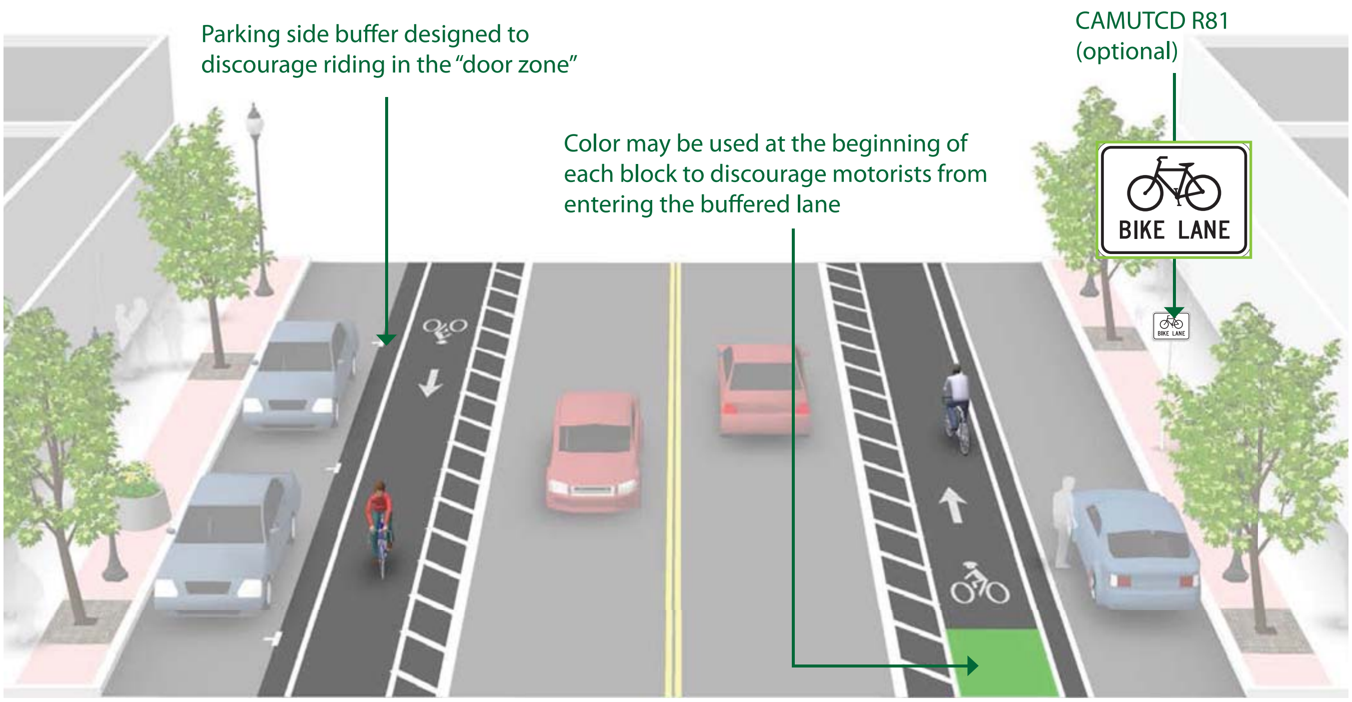
Description

Buffered bike lanes are conventional bicycle lanes paired with a designated buffer space, separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane. Buffered bike lanes follow general guidance for buffered preferential vehicle lanes as per MUTCD guidelines (section 3D-01).

Buffered bike lanes are designed to increase the space between the bike lane and the travel lane and/or parked cars. This treatment is appropriate for bike lanes on roadways with high motor vehicle traffic volumes and speed, adjacent to parking lanes, or a high volume of truck or oversized vehicle traffic.

Guidance

- The minimum bicycle travel area (not including buffer) is 5 feet wide.
- Buffers should be at least 2 feet wide. If 3 feet or wider, mark with diagonal or chevron hatching. For clarity at driveways or minor street crossings, consider a dotted line for the inside buffer boundary where cars are expected to cross.
- Buffered bike lanes can buffer the travel lane only, or parking lane only depending on available space and the objectives of the design.



Discussion

Frequency of right turns by motor vehicles at major intersections should determine whether continuous or truncated buffer striping should be used approaching the intersection. Commonly configured as a buffer between the bicycle lane and motor vehicle travel lane, a parking side buffer may also be provided to help bicyclists avoid the 'door zone' of parked cars.

Additional References and Guidelines

AASHTO. *Guide for the Development of Bicycle Facilities.* 2012.
FHWA. *Manual on Uniform Traffic Control Devices. (3D-01).* 2009.
NACTO. *Urban Bikeway Design Guide.* 2012.
Caltrans *CA-MUTCD.* 2012

Materials and Maintenance

Paint can wear more quickly in high traffic areas. Bicycle lanes should be cleared of debris through routine street cleaning operations and on an as-needed basis.

Cycle Tracks

Guidance

Cycle tracks should ideally be placed along streets with long blocks and few driveways or mid-block access points for motor vehicles.

One-Way Cycle Tracks

- 7 foot recommended minimum to allow passing. 5 foot minimum width in constrained locations.

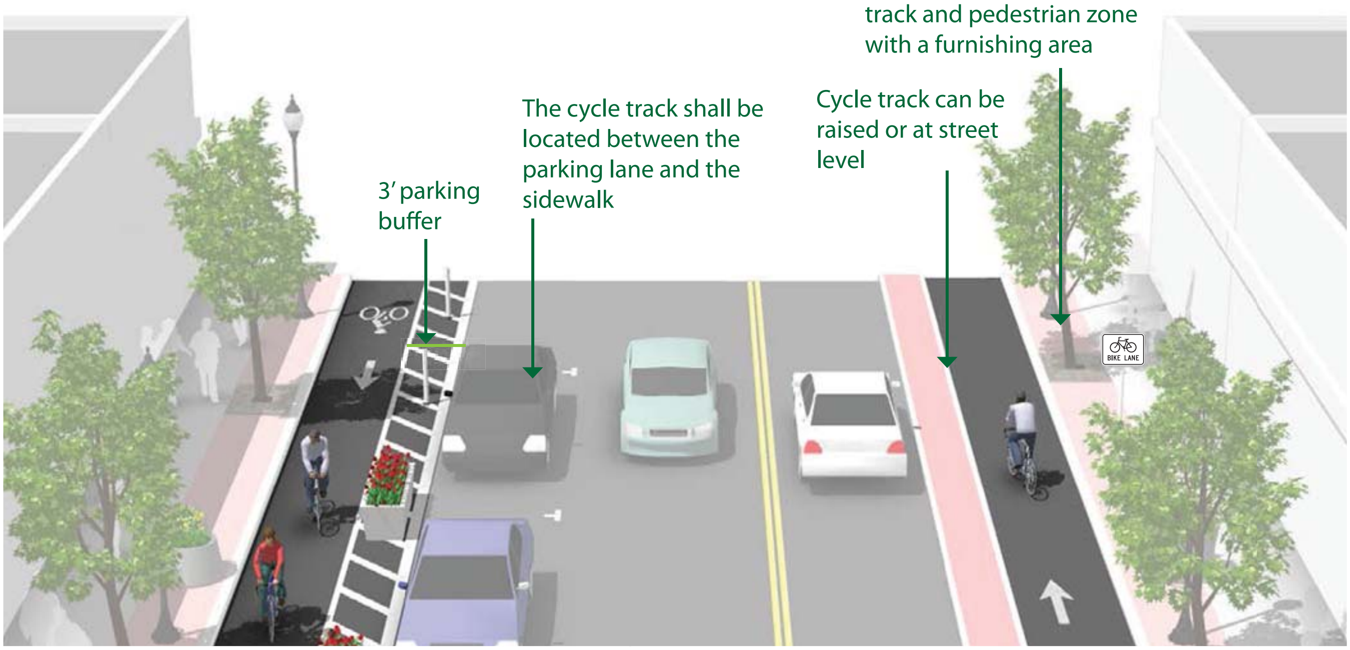
Two-Way Cycle Tracks

- Cycle tracks located on one-way streets have fewer potential conflict areas than those on two-way streets.
- 12 foot recommended minimum for two-way facility. 8 foot minimum in constrained locations

Description

A cycle track is an exclusive bike facility that combines the user experience of a separated path with the on-street infrastructure of a conventional bike lane. A cycle track is physically separated from motor traffic and distinct from the sidewalk. Cycle tracks have different forms but all share common elements—they provide space that is intended to be exclusively or primarily used by bicycles, and are separated from motor vehicle travel lanes, parking lanes, and sidewalks.

Raised cycle tracks may be at the level of the adjacent sidewalk or set at an intermediate level between the roadway and sidewalk to separate the cycle track from the pedestrian area.



Discussion

Special consideration should be given at transit stops to manage bicycle and pedestrian interactions. Driveways and minor street crossings are unique challenges to cycle track design. Parking should be prohibited within 30 feet of the intersection to improve visibility. Color, yield markings and "Yield to Bikes" signage should be used to identify the conflict area and make it clear that the cycle track has priority over entering and exiting traffic. If configured as a raised cycle track, the crossing should be raised so that the sidewalk and cycle track maintain their elevation through the crossing.

Additional References and Guidelines

NACTO. *Urban Bikeway Design Guide.* 2012.

Materials and Maintenance

Barrier separated and raised cycle tracks may require special equipment for sweeping and maintenance.

Separated Bikeways at Intersections

An intersection facilitates the interchange between bicyclists, motorists, pedestrians and other modes in order to advance traffic flow in a safe and efficient manner. Designs for intersections with bicycle facilities should reduce conflict between bicyclists and vehicles by heightening the level of visibility, denoting clear right-of-way and facilitating eye contact and awareness with other modes. Intersection treatments can improve both queuing and merging maneuvers for bicyclists, and are often coordinated with timed or specialized signals.

The configuration of a safe intersection for bicyclists may include elements such as color, signage, medians, signal detection and pavement markings. Intersection design should take into consideration existing and anticipated bicyclist, pedestrian and motorist movements. In all cases, the degree of mixing or separation between bicyclists and other modes is intended to reduce the risk of crashes and increase bicyclist comfort. The level of treatment required for bicyclists at an intersection will depend on the bicycle facility type used, whether bicycle facilities are intersecting, and the adjacent street function and land use.

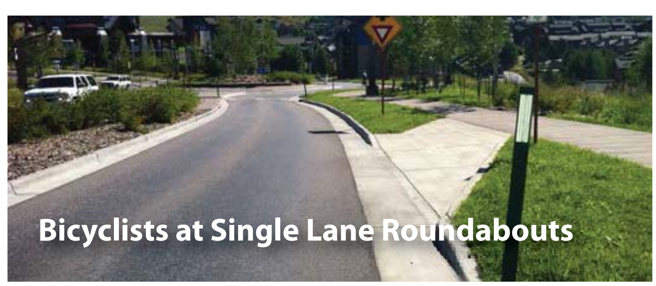

Bike Box


Colored Bike Lanes in Conflict Areas

Combined Bike Lane/Turn Lane


Two Stage Turn Boxes


Channelized Turn Lanes


Bicyclists at Single Lane Roundabouts

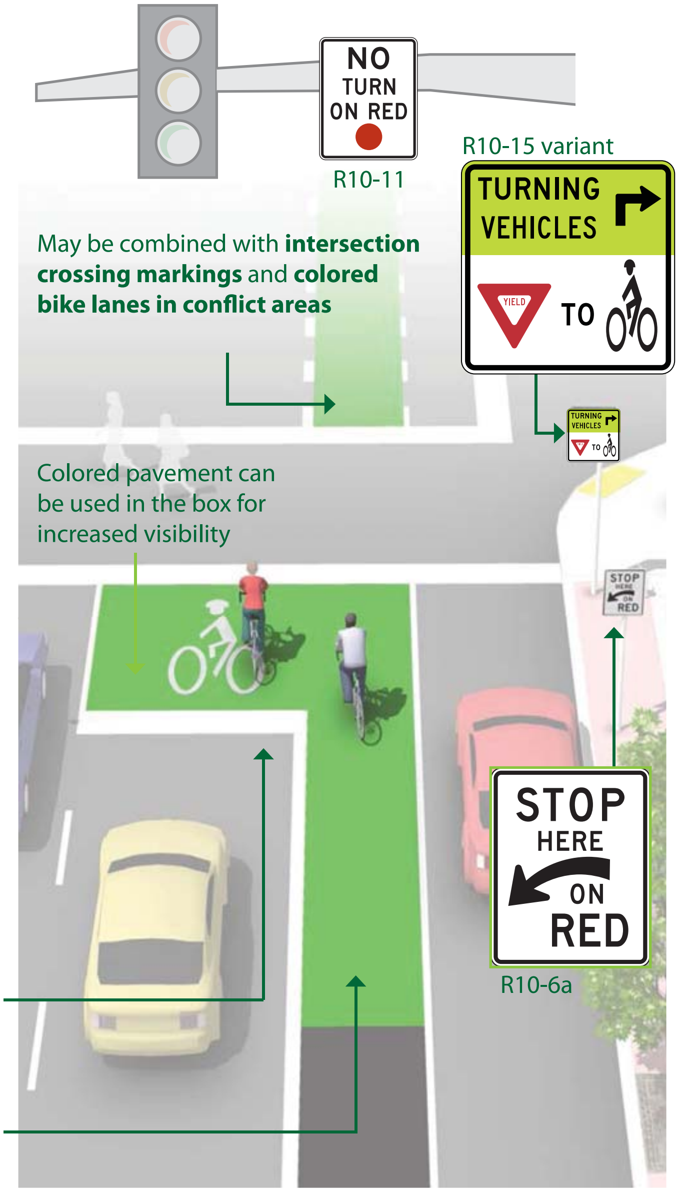
Bike Box

Description

A bike box is a designated area located at the head of a traffic lane at a signalized intersection that provides bicyclists with a safe and visible space to get in front of queuing motorized traffic during the red signal phase. Motor vehicles must queue behind the white stop line at the rear of the bike box.

Guidance

- 14' minimum depth
- A "No Turn on Red" (MUTCD R10-11) sign shall be installed overhead to prevent vehicles from entering the Bike Box.
- A "Stop Here on Red" sign should be post-mounted at the stop line to reinforce observance of the stop line.
- A "Yield to Bikes" sign should be post-mounted in advance of and in conjunction with an egress lane to reinforce that bicyclists have the right-of-way going through the intersection.
- An ingress lane should be used to provide access to the box.
- A supplemental "Wait Here" legend can be provided in advance of the stop bar to increase clarity to motorists.



Discussion

Bike boxes are considered experimental by the FHWA.
Bike boxes should be placed only at signalized intersections, and right turns on red shall be prohibited for motor vehicles.
Bike boxes should be used in locations that have a large volume of bicyclists and are best utilized in central areas where traffic is usually moving more slowly. Prohibiting right turns on red improves safety for bicyclists yet does not significantly impede motor vehicle travel.

Additional References and Guidelines

NACTO. *Urban Bikeway Design Guide.* 2012.
FHWA. Interim Approval (IA-14) has been granted. Requests to use green colored pavement need to comply with the provisions of Paragraphs 14 through 22 of Section 1A.10. 2011.

Materials and Maintenance

Because the effectiveness of markings depends entirely on their visibility, maintaining markings should be a high priority.

Colored Bike Lanes in Conflict Areas

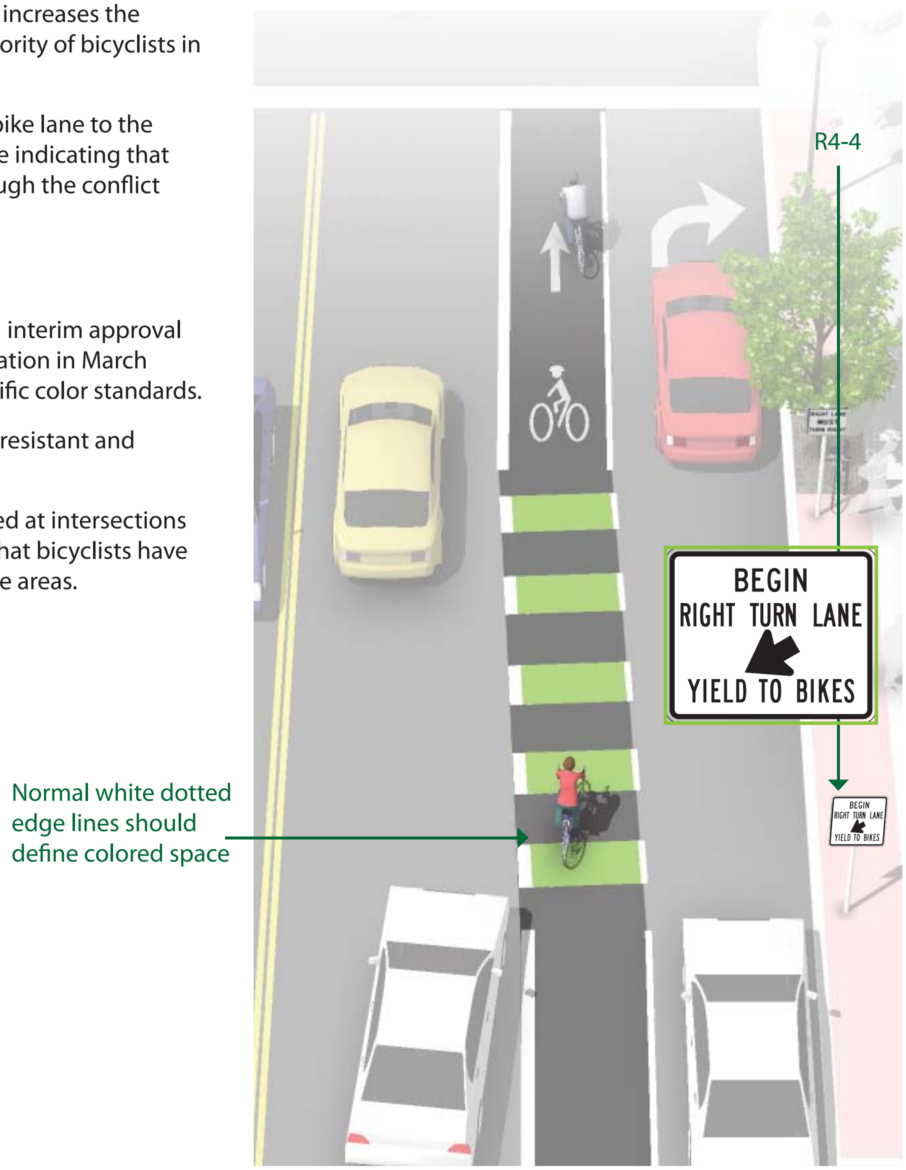
Description

Colored pavement within a bicycle lane increases the visibility of the facility and reinforces priority of bicyclists in conflict areas.

The design (right) illustrates a through bike lane to the left of a right turn only lane with signage indicating that motorists should yield to bicyclists through the conflict area.

Guidance

- Green colored pavement was given interim approval by the Federal Highways Administration in March 2011. See interim approval for specific color standards.
- The colored surface should be skid resistant and retro-reflective.
- A "Yield to Bikes" sign should be used at intersections or driveway crossings to reinforce that bicyclists have the right-of-way in colored bike lane areas.



Discussion

Evaluations performed in Portland, OR, St. Petersburg, FL and Austin, TX found that significantly more motorists yielded to bicyclists and slowed or stopped before entering the conflict area after the application of the colored pavement when compared with an uncolored treatment.

Additional References and Guidelines

FHWA. Interim Approval (IA-14) has been granted. Requests to use green colored pavement need to comply with the provisions of Paragraphs 14 through 22 of Section 1A.10. 2011.
NACTO. *Urban Bikeway Design Guide.* 2012.

Materials and Maintenance

Because the effectiveness of markings depends entirely on their visibility, maintaining markings should be a high priority.

Combined Bike Lane / Turn Lane

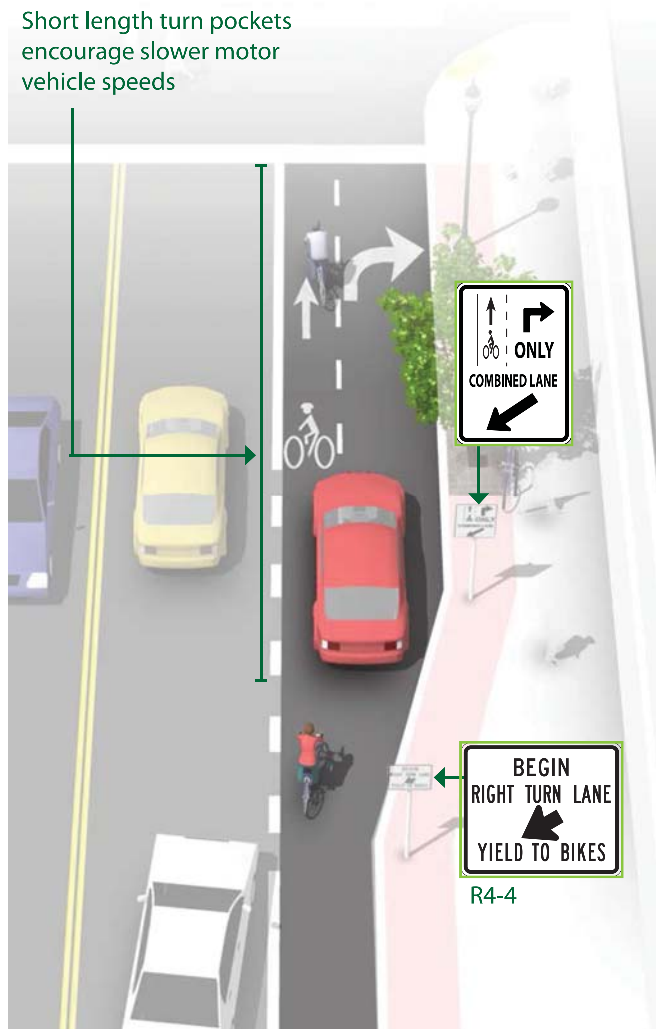
Description

The combined bike lane/turn lane places a standard-width bike lane on the left side of a dedicated right turn lane. A dotted line delineates the space for bicyclists and motorists within the shared lane. This treatment includes signage advising motorists and bicyclists of proper positioning within the lane.

This treatment is recommended at intersections lacking sufficient space to accommodate both a standard through bike lane and right turn lane.

Guidance

- Maximum shared turn lane width is 13 feet; narrower is preferable.
- Bike Lane pocket should have a minimum width of 4 feet with 5 feet preferred.
- A dotted 4 inch line and bicycle lane marking should be used to clarify bicyclist positioning within the combined lane, without excluding cars from the suggested bicycle area.
- A "Right Turn Only" sign with an "Except Bicycles" plaque may be needed to make it legal for through bicyclists to use a right turn lane.



Discussion

Case studies cited by the Pedestrian and Bicycle Information Center indicate that this treatment works best on streets with lower posted speeds (30 MPH or less) and with lower traffic volumes (10,000 ADT or less). May not be appropriate for high-speed arterials or intersections with long right turn lanes. May not be appropriate for intersections with large percentages of right-turning heavy vehicles.

Additional References and Guidelines

NACTO. *Urban Bikeway Design Guide*. 2012.

Materials and Maintenance

Locate markings out of tire tread to minimize wear. Because the effectiveness of markings depends on their visibility, maintaining markings should be a high priority.

Two-Stage Turn Box

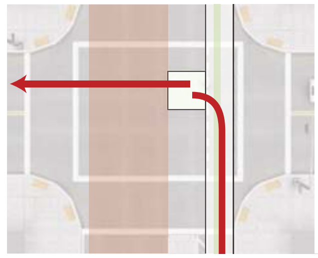
Description

Two-stage turn boxes offer bicyclists a safe way to make left turns at multi-lane signalized intersections from a right side bike lane or cycle track.

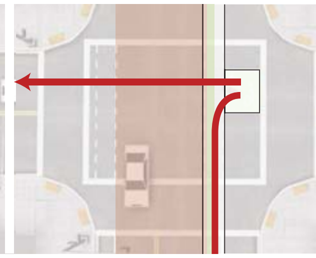
On right side bike lanes, bicyclists are often unable to merge into traffic to turn left due to high traffic volumes and speeds. On cycle tracks, bicyclists cannot merge due to physical separation.

In both cases, the provision of two-stage left turn boxes is important to allow for access and mobility on the bike network.

Cycle track turn box protected by physical buffer:

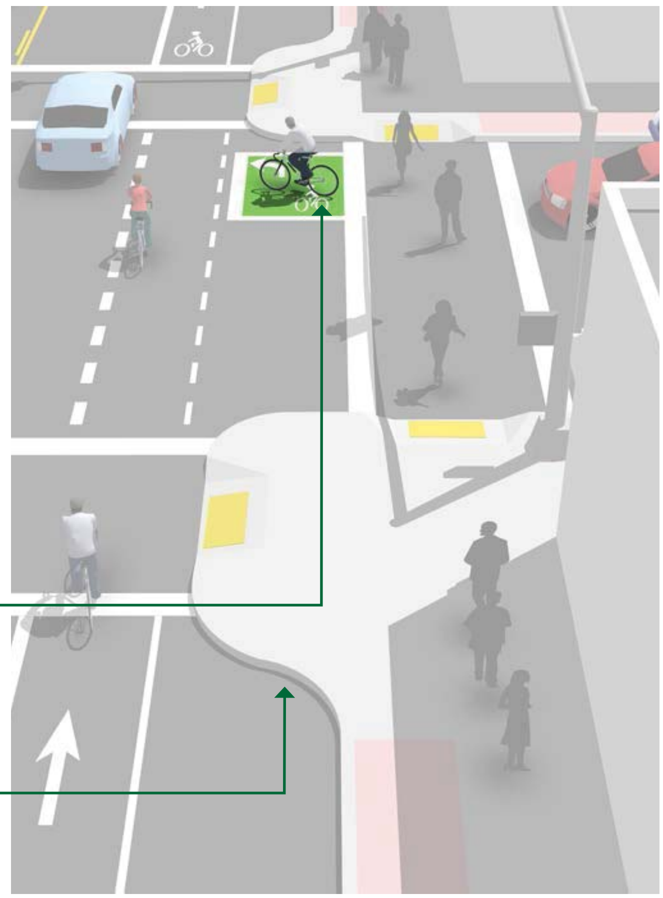


Bike lane turn box protected by parking lane:



Guidance

- The queue box shall be placed in a protected area. Typically this is within an on-street parking lane or cycle track buffer area.
- 6 Foot minimum depth of bicycle storage area. 8' feet preferred.
- Bicycle stencil and turn arrow pavement markings shall be used to indicate proper bicycle direction and positioning.
- A "No Turn on Red" (MUTCD R10-11) sign should be installed on the cross street to prevent vehicles from entering the turn box.



Consider using colored pavement inside the box to further define the bicycle space

Turns from a bicycle lane should be protected by a curb extension

Discussion

Two-Stage Turn boxes are considered experimental by FHWA, unless configured as a "jug handle" turn integrated into the sidewalk.
While two stage turns may increase bicyclist comfort in many locations, this configuration will typically result in higher average delay for turning bicyclists due to the need to receive two separate green signal indications (one for the through street, followed by one for the cross street) before proceeding.

Additional References and Guidelines

NACTO. *Urban Bikeway Design Guide*. 2012.

Materials and Maintenance

Paint can wear more quickly in high traffic areas or in winter climates.

Channelized Turn Lanes

Description

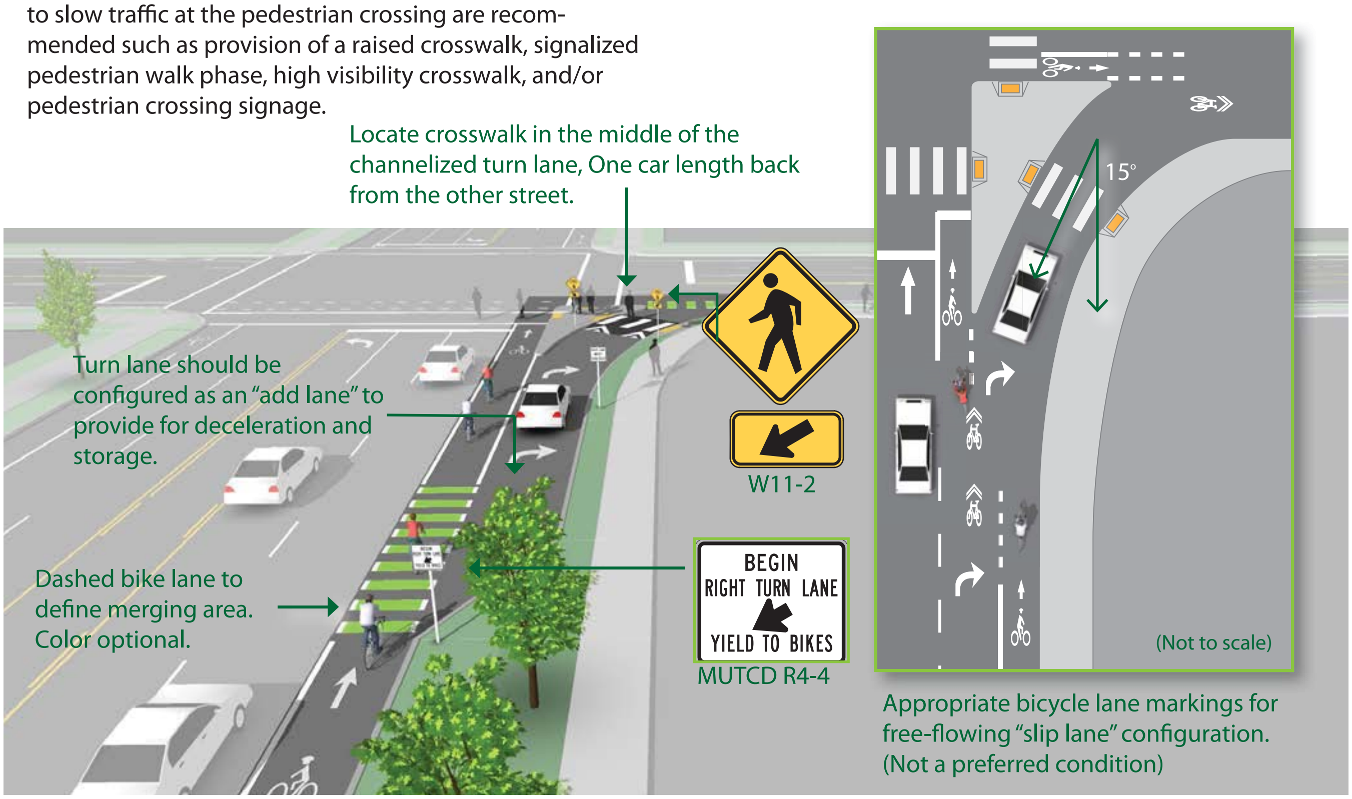
In some intersections of arterials streets, design vehicle requirements or intersection angles may result in wide turning radii at corners. Configuring the intersection as a channelized (or free-right) turn lane with a raised refuge island can improve conditions for pedestrians trying to cross the street.

Similar to a median refuge island, the raised refuge island can reduce crossing distances, allow staged crossing of the roadway, and improve visibility of pedestrians crossing the roadway.

To improve safety and comfort for pedestrians, measures to slow traffic at the pedestrian crossing are recommended such as provision of a raised crosswalk, signalized pedestrian walk phase, high visibility crosswalk, and/or pedestrian crossing signage.

Guidelines

- The preferred angle of intersection between the channelized turn lane and the roadway being joined is no more than 15 degrees to allow for simultaneous visibility of pedestrians and potential roadway gaps.
- Design with a maximum 30-35 foot turning radius.
- Signing: Pedestrian crossing sign assembly (W11-2) or Yield (R1-2) to encourage yielding. Yield to Bikes (R4-4) or similar if bike lanes are present.
- Raised crossings in the channelized turn lane may slow driver speed through the turning area.



Appropriate bicycle lane markings for free-flowing "slip lane" configuration. (Not a preferred condition)

Discussion

This design requires trucks to turn into multiple receiving lanes, and may not be appropriate on the approach to streets with one through lane.

Channelized turn lanes can be very challenging for blind pedestrians. NCHRP 674 identified the use of sound strips (a full lane rumble strip-like device) in conjunction with flashing beacons to increase yielding compliance.

Additional References and Guidelines

TRB. *NCHRP 674 Crossing Solutions at Roundabouts and Channelized Turn Lanes for Pedestrians with Vision Disabilities.* 2011.
ITE. *Designing Walkable Urban Thoroughfares.* 2010.
Caltrans. *CA-MUTCD.* 2012
Caltrans. *Complete Intersections.* 2010.

Materials and Maintenance

Signage and striping require routine maintenance.

Bicycles at Signals and Beacons

Designs for bicycles at signalized crossings should allow bicyclists to trigger signals an safely maneuver the crossing.

Warning beacons can be utilized at unsignalized intersection crossings. Push buttons, signage, and pavement markings may be used to supplement these facilities for both bicyclists and motorists.

Bicycle Detection and Actuation

Description

Push Button Actuation

User-activated button mounted on a pole facing the street.

Loop Detectors

Bicycle-activated loop detectors are installed within the roadway to allow the presence of a bicycle to trigger a change in the traffic signal. This allows the bicyclist to stay within the lane of travel without having to maneuver to the side of the road to trigger a push button.

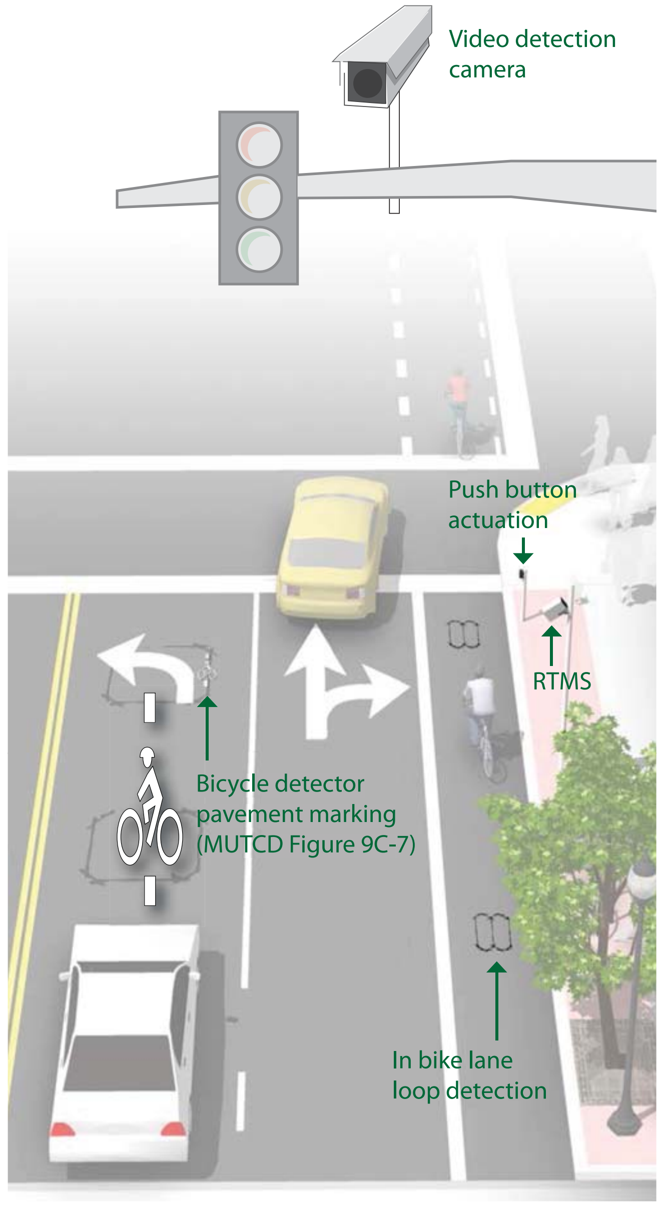
Loops that are sensitive enough to detect bicycles should be supplemented with pavement markings to instruct bicyclists how to trip them.

Video Detection Cameras

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

Remote Traffic Microwave Sensor Detection (RTMS)

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



Discussion

Proper bicycle detection should meet two primary criteria: 1) accurately detects bicyclists and 2) provides clear guidance to bicyclists on how to actuate detection (e.g., what button to push, where to stand).

Bicycle loops and other detection mechanisms can also provide bicyclists with an extended green time before the light turns yellow so that bicyclists of all abilities can reach the far side of the intersection.

Additional References and Guidelines

AASHTO. *Guide for the Development of Bicycle Facilities.* 2012.
Caltrans *CA-MUTCD. 2012.*
NACTO. *Urban Bikeway Design Guide*. 2012.
Caltrans. *Policy Directive 09-06*. 2009.
Caltrans. *Complete Intersections.* 2010.

Materials and Maintenance

Signal detection and actuation for bicyclists should be maintained with other traffic signal detection and roadway pavement markings.

Hybrid Beacons for Bike Route Crossings

Description

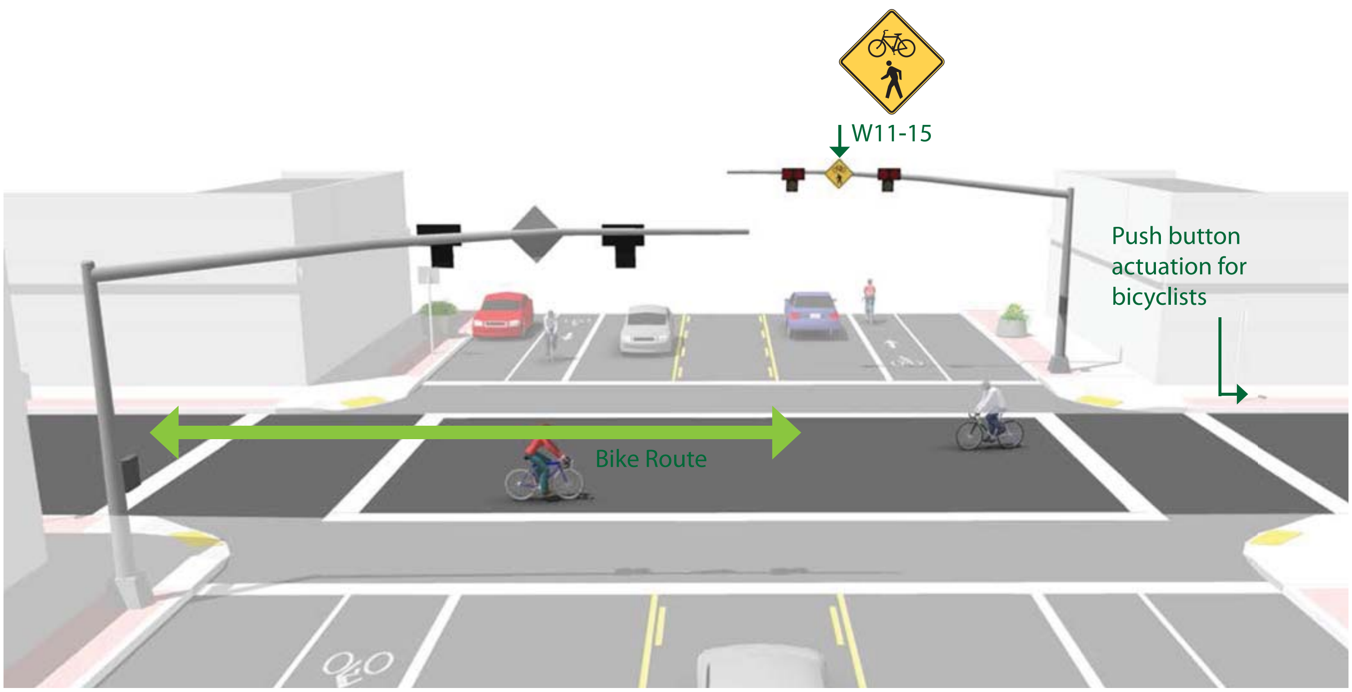
A hybrid beacon, formerly known as a High-intensity Activated CrosswalK (HAWK), consists of a signal-head with two red lenses over a single yellow lens on the major street, and pedestrian signal heads for the minor street. There are no signal indications for motor vehicles on the minor street approaches.

in addition to paths crossing roadways between traffic signals (i..e. midblock), hybrid beacons may be used at minor road / major road intersections where a normal traffic signal warrant is not met.

Guidance

Hybrid beacons may be installed without meeting traffic control signal warrants if roadway speed and volumes are excessive for comfortable user crossing.

- If installed within a signal system, signal engineers should evaluate the need for the hybrid signal to be coordinated with other signals.
- Parking and other sight obstructions should be prohibited for at least 100 feet in advance of and at least 20 feet beyond the marked crosswalk to provide adequate sight distance.



Discussion

The hybrid beacon can significantly improve the operation of a bicycle route, particularly along bicycle boulevard corridors. Because of the low traffic volumes on these facilities, intersections with major roadways are often unsignalized, creating difficult and potentially unsafe crossing conditions for bicyclists.

Each crossing, regardless of traffic speed or volume, requires additional review by a registered engineer to identify sight lines, potential impacts on traffic progression, timing with adjacent signals, capacity and safety.

Additional References and Guidelines

FHWA. *Pedestrian Hybrid Beacon Guide.* 2014.
NACTO. U*rban Bikeway Design Guide.* 2012.
Caltran*s. CA-MUTCD. 2012.*

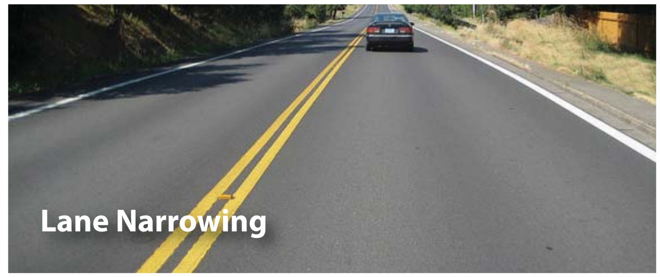
Materials and Maintenance

Hybrid beacons are subject to the same maintenance needs and requirements as standard traffic signals. Signing and striping need to be maintained to help users understand any unfamiliar traffic control.

Retrofitting Existing Streets to add Bikeways

Most major streets are characterized by conditions (e.g., high vehicle speeds and/or volumes) for which dedicated bike lanes are an appropriate facility to accommodate safe and comfortable riding. Although opportunities to add bike lanes through roadway widening may exist in some locations, many major streets have physical and other constraints that would require street retrofit measures within existing curb-to-curb widths.

Although largely intended for major streets, these measures may be appropriate for any roadway where bike lanes would be the best accommodation for bicyclists.



Lane Narrowing

Description

Lane narrowing utilizes roadway space that exceeds minimum standards to provide the needed space for bike lanes. Many roadways have existing travel lanes that are wider than those prescribed in local and national roadway design standards, or which are not marked. Most standards allow for the use of 11 foot and sometimes 10 foot wide travel lanes to create space for bike lanes.

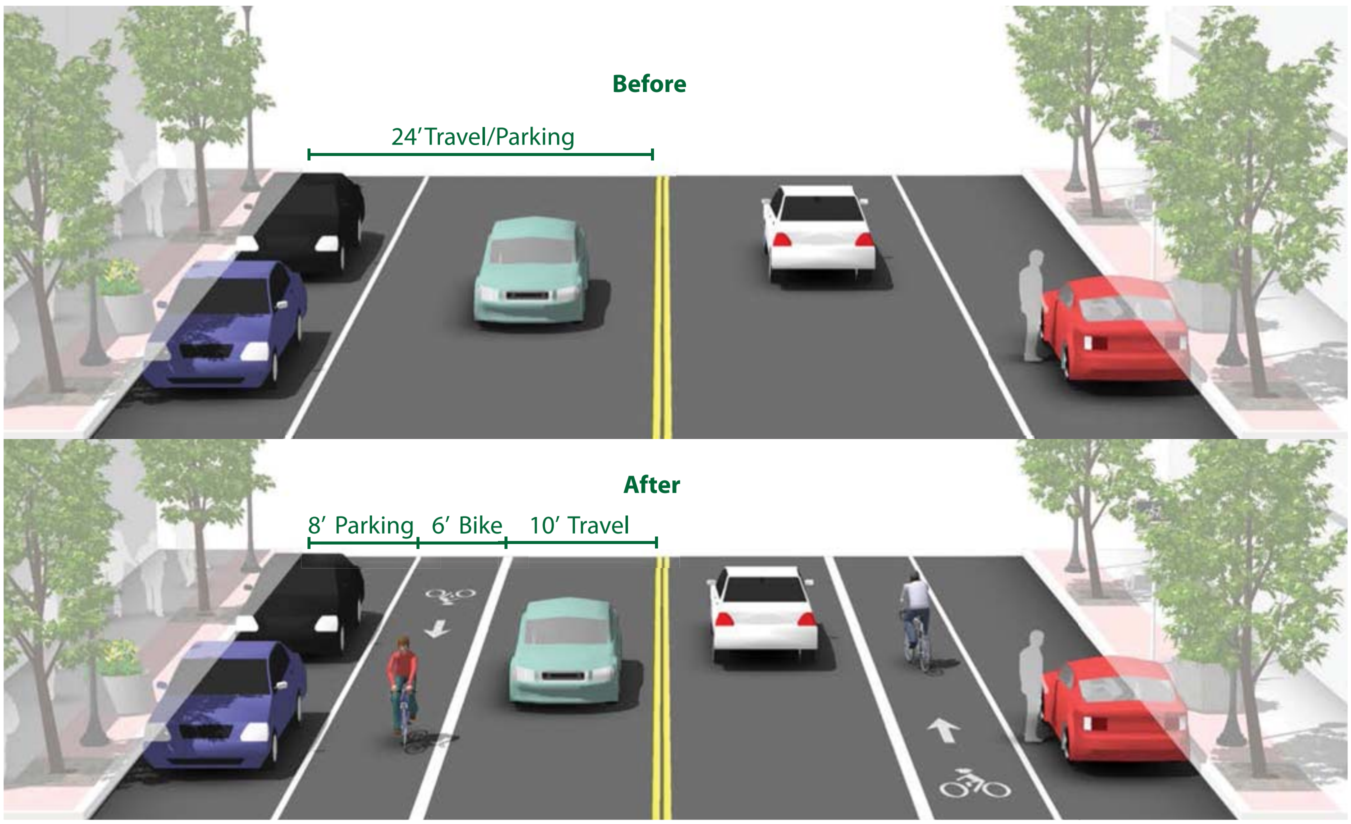
Guidance

Vehicle lane width:

- Before: 10-15 feet
- After: 10-11 feet

Bicycle lane width:

- Guidance on bicycle lanes applies to this treatment.



Discussion

Special consideration should be given to the amount of heavy vehicle traffic and horizontal curvature before the decision is made to narrow travel lanes. Center turn lanes can also be narrowed in some situations to free up pavement space for bike lanes.

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

Additional References and Guidelines

AASHTO. *Guide for the Development of Bicycle Facilities.* 2012.
AASHTO. *A Policy on Geometric Design of Highways and Streets.* 2004.
NACTO. *Urban Street Design Guide.* 2013.
Caltrans. *Main Street, California.* 2013.

Materials and Maintenance

Repair rough or uneven pavement surface. Use bicycle compatible drainage grates. Raise or lower existing grates and utility covers so they are flush with the pavement.

Lane Reconfiguration

Description

The removal of a single travel lane will generally provide sufficient space for bike lanes on both sides of a street. Streets with excess vehicle capacity provide opportunities for bike lane retrofit projects.

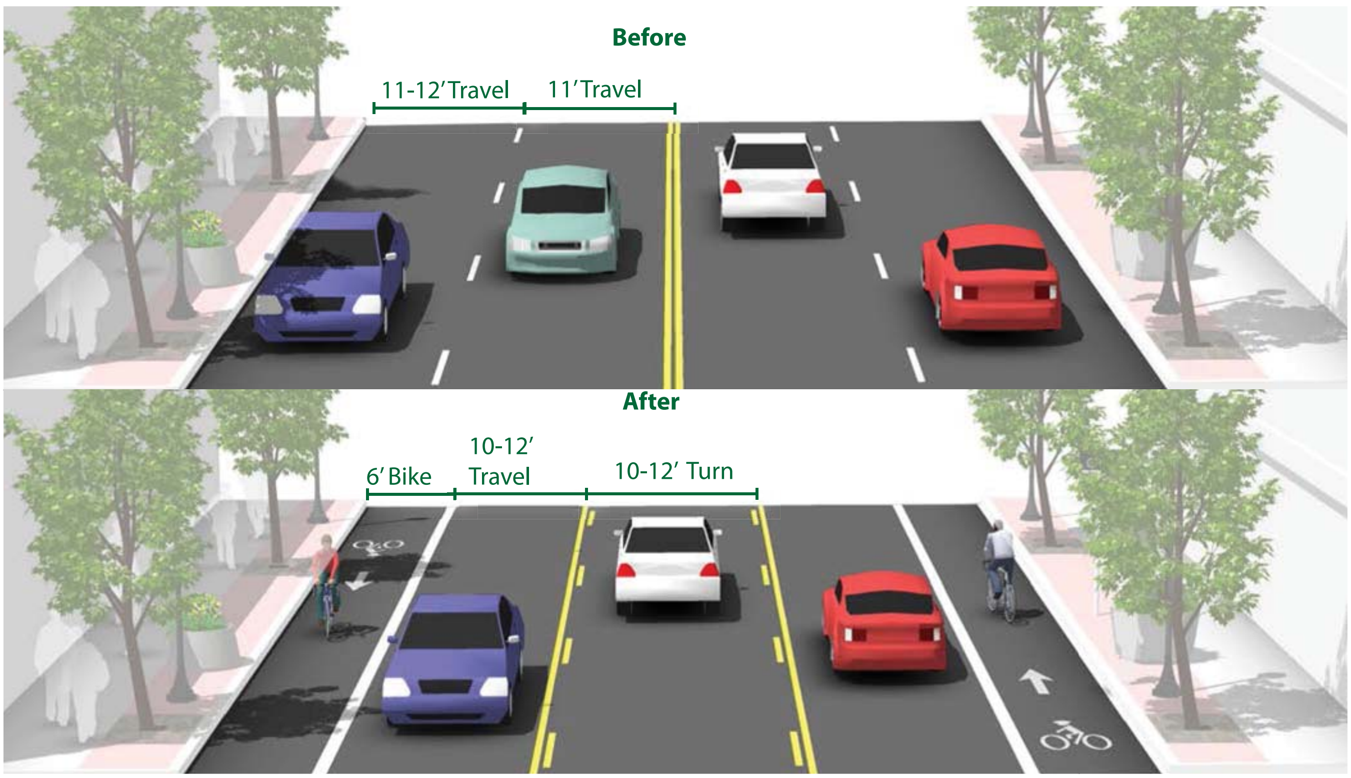
Guidance

Vehicle lane width:

- Width depends on project. No narrowing may be needed if a lane is removed.

Bicycle lane width:

- Guidance on bicycle lanes applies to this treatment.



Discussion

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

Additional References and Guidelines

AASHTO. *Guide for the Development of Bicycle Facilities.* 2012.
FHWA. *Evaluation of Lane Reduction "Road Diet" Measures on Crashes.* Publication Number: FHWA-HRT-10-053. 2010.
NACTO. *Urban Street Design Guide.* 2013.
Caltrans. *Main Street, California.* 2013.

Materials and Maintenance

Repair rough or uneven pavement surface. Use bicycle compatible drainage grates. Raise or lower existing grates and utility covers so they are flush with the pavement.

Bicycle Parking

Bicyclists expect a safe, convenient place to secure their bicycle when they reach their destination. This may be short-term parking of 2 hours or less, or long-term parking for employees, students, residents, and commuters.


Bicycle Racks


On Street Bike Corall

Bicycle Racks

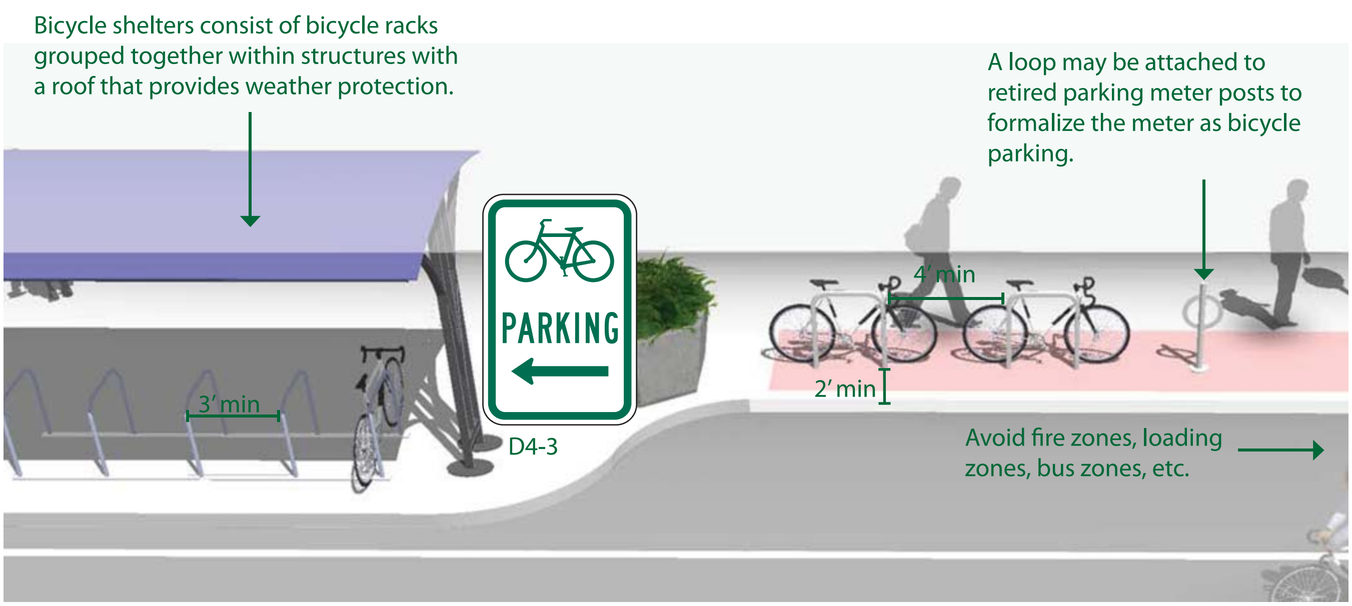
Description

Short-term bicycle parking is meant to accommodate visitors, customers, and others expected to depart within two hours. It should have an approved standard rack, appropriate location and placement, and weather protection. The Association for Pedestrian and Bicycle Professionals (APBP) recommends selecting a bicycle rack that:

- Supports the bicycle in at least two places, preventing it from falling over.
- Allows locking of the frame and one or both wheels with a U-lock.
- Is securely anchored to ground.
- Resists cutting, rusting and bending or deformation.

Guidance

- 2' minimum from the curb face to avoid 'dooring.'
- Close to destinations; 50' maximum distance from main building entrance.
- Minimum clear distance of 6' should be provided between the bicycle rack and the property line.
- Should be highly visible from adjacent bicycle routes and pedestrian traffic.
- Locate racks in areas that cyclists are most likely to travel.



Discussion

Where the placement of racks on sidewalks is not possible (due to narrow sidewalk width, sidewalk obstructions, street trees, etc.), bicycle parking can be provided in the street where on-street vehicle parking is allowed in the form of on-street bicycle corrals.

Some types of bicycle racks may meet design criteria, but are discouraged except in limited situations. This includes undulating "wave" racks, schoolyard "wheel bender" racks, and spiral racks.

Additional References and Guidelines

AASHTO. *Guide for the Development of Bicycle Facilities.* 2012.
APBP. *Bicycle Parking Guide 2nd Edition.* 2010.

Materials and Maintenance

Use of proper anchors will prevent vandalism and theft. Racks and anchors should be regularly inspected for damage. Educate snow removal crews to avoid burying racks during winter months.

On-Street Bicycle Corral

Description

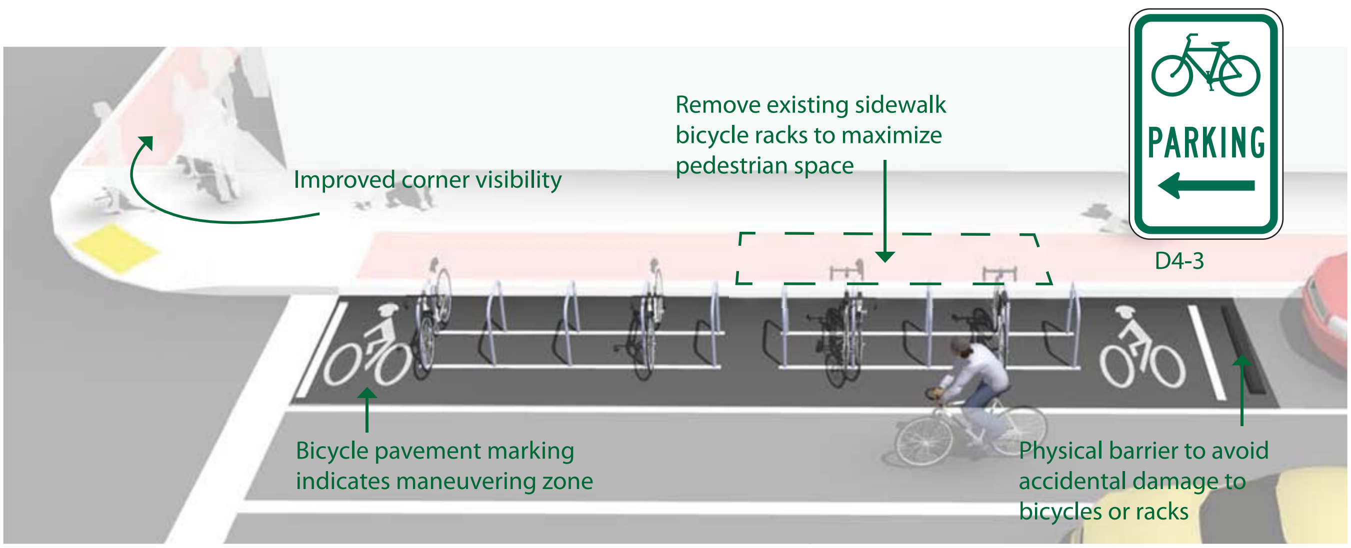
Bicycle corrals (also known as on-street bicycle parking) consist of bicycle racks grouped together in a common area within the street traditionally used for automobile parking. Bicycle corrals are reserved exclusively for bicycle parking and provide a relatively inexpensive solution to providing high-volume bicycle parking. Bicycle corrals can be implemented by converting one or two on-street motor vehicle parking spaces into on-street bicycle parking. Each motor vehicle parking space can be replaced with approximately 6-10 bicycle parking spaces.

Bicycle corrals move bicycles off the sidewalks, leaving more space for pedestrians, sidewalk café tables, etc. Because bicycle parking does not block sightlines (as large motor vehicles would do), it may be possible to locate bicycle parking in 'no-parking' zones near intersections and crosswalks.

Guidance

See the previous page for sidewalk bicycle rack placement and clear zones.

- Bicyclists should have an entrance width from the roadway of 5' – 6'.
- Can be used with parallel or angled parking.
- Parking stalls adjacent to curb extensions are good candidates for bicycle corrals since the concrete extension serves as delimitation on one side.



Discussion

In many communities, the installation of bicycle corrals is driven by requests from adjacent businesses, and is not a city-driven initiative. In such cases, the city does not remove motor vehicle parking unless it is explicitly requested. In other areas, the city provides the facility and business associations take responsibility for the maintenance of the facility. Communities can establish maintenance agreements with the requesting business. Bicycle corrals can be especially effective in areas with high bicycle parking demand or along street frontages with narrow sidewalks where parked bicycles would be detrimental to the pedestrian environment.

Additional References and Guidelines

APBP. *Bicycle Parking Guide 2nd Edition.* 2010.

Materials and Maintenance

Physical barriers may obstruct drainage and collect debris. Establish a maintenance agreement with neighboring businesses. In snowy climates the bicycle corral may need to be removed during the winter months.

Bikeway Maintenance

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

Recommended Walkway and Bikeway Maintenance Activities

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

Sweeping

Description

Bicyclists often avoid shoulders and bike lanes filled with gravel, broken glass and other debris; they will ride in the roadway to avoid these hazards, potentially causing conflicts with motorists. Debris from the roadway should not be swept onto sidewalks (pedestrians need a clean walking surface), nor should debris be swept from the sidewalk onto the roadway.

Guidance

- Establish a seasonal sweeping schedule that prioritizes roadways with major bicycle routes.
- Sweep walkways and bikeways whenever there is an accumulation of debris on the facility.
- In curbed sections, sweepers should pick up debris; on open shoulders, debris can be swept onto gravel shoulders.
- Pave gravel driveway approaches to minimize loose gravel on paved roadway shoulders.
- Perform additional sweeping in the Spring to remove debris from the Winter, and in the Fall in areas where leaves accumulate .

Gutter to Pavement Transition

Description

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

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

Guidance

- Ensure that gutter-to-pavement transitions have no more than a ¼" vertical transition.
- Examine pavement transitions during every roadway project for new construction, maintenance activities, and construction project activities that occur in streets.
- Inspect the pavement 2 to 4 months after trenching construction activities are completed to ensure that excessive settlement has not occurred.
- Provide at least 3 feet of pavement outside of the gutter seam.

Maintenance Management Plan

Description

Bikeway users need accommodation during construction and maintenance activities when bikeways may be closed or unavailable. Users must be warned of bikeway closures and given adequate detour information to bypass the closed section. Users should be warned through the use of standard signing approaching each affected section (e.g., "Bike Lane Closed," "Trail Closed"), including information on alternate routes and dates of closure. Alternate routes should provide reasonable directness, equivalent traffic characteristics, and be signed.

Guidance

- Provide fire and police departments with map of system, along with access points to gates/bollards
- Enforce speed limits and other rules of the road
- Enforce all trespassing laws for people attempting to enter adjacent private properties

Bikeway Signing

The ability to navigate through a city is informed by landmarks, natural features and other visual cues. Signs throughout the city should indicate to bicyclists:

- Direction of travel
- Location of destinations
- Travel time/distance to those destinations

These signs will increase users' comfort and accessibility to the bicycle systems.

Signage can serve both wayfinding and safety purposes including:

- Helping to familiarize users with the bicycle network
- Helping users identify the best routes to destinations
- Helping to address misperceptions about time and distance
- Helping overcome a "barrier to entry" for people who are not frequent bicyclists (e.g., "interested but concerned" bicyclists)

A community-wide bicycle wayfinding signage plan would identify:

- Sign locations
- Sign type – what information should be included and design features
- Destinations to be highlighted on each sign – key destinations for bicyclists
- Approximate distance and travel time to each destination

Bicycle wayfinding signs also visually cue motorists that they are driving along a bicycle route and should use caution. Signs are typically placed at key locations leading to and along bicycle routes, including the intersection of multiple routes. Too many road signs tend to clutter the right-of-way, and it is recommended that these signs be posted at a level most visible to bicyclists rather than per vehicle signage standards.

Wayfinding Sign Types

Description

A bicycle wayfinding system consists of comprehensive signing and/or pavement markings to guide bicyclists to their destinations along preferred bicycle routes. There are three general types of wayfinding signs:

Confirmation Signs

Indicate to bicyclists that they are on a designated bikeway. Make motorists aware of the bicycle route.

Can include destinations and distance/time. Do not include arrows.

Turn Signs

Indicate where a bikeway turns from one street onto another street. Can be used with pavement markings.

Include destinations and arrows.

Decisions Signs

Mark the junction of two or more bikeways.

Inform bicyclists of the designated bike route to access key destinations. Includes destinations and arrows and distances.

Travel times are optional but recommended.

Discussion

Section 1A.12 of the MUTCD establishes the general meaning for signage colors. Green is the color used for directional guidance and is the most common color of bicycle wayfinding signage in the US, including those in the MUTCD.

Additional References and Guidelines

AASHTO. *Guide for the Development of Bicycle Facilities.* 2012.
FHWA. *Manual on Uniform Traffic Control Devices.* 2009.
NACTO. *Urban Bikeway Design Guide.* 2012.

Materials and Maintenance

Maintenance needs for bicycle wayfinding signs are similar to other signs and will need periodic replacement due to wear.

Wayfinding Sign Placement

Confirmation Signs

Every ¼ to ½ mile on off-street facilities and every 2 to 3 blocks along on-street bicycle facilities, unless another type of sign is used (e.g., within 150 ft of a turn or decision sign). Should be placed soon after turns to confirm destination(s). Pavement markings can also act as confirmation that a bicyclist is on a preferred route.

Turn Signs

Near-side of intersections where bike routes turn (e.g., where the street ceases to be a bicycle route or does not go through). Pavement markings can also indicate the need to turn to the bicyclist.

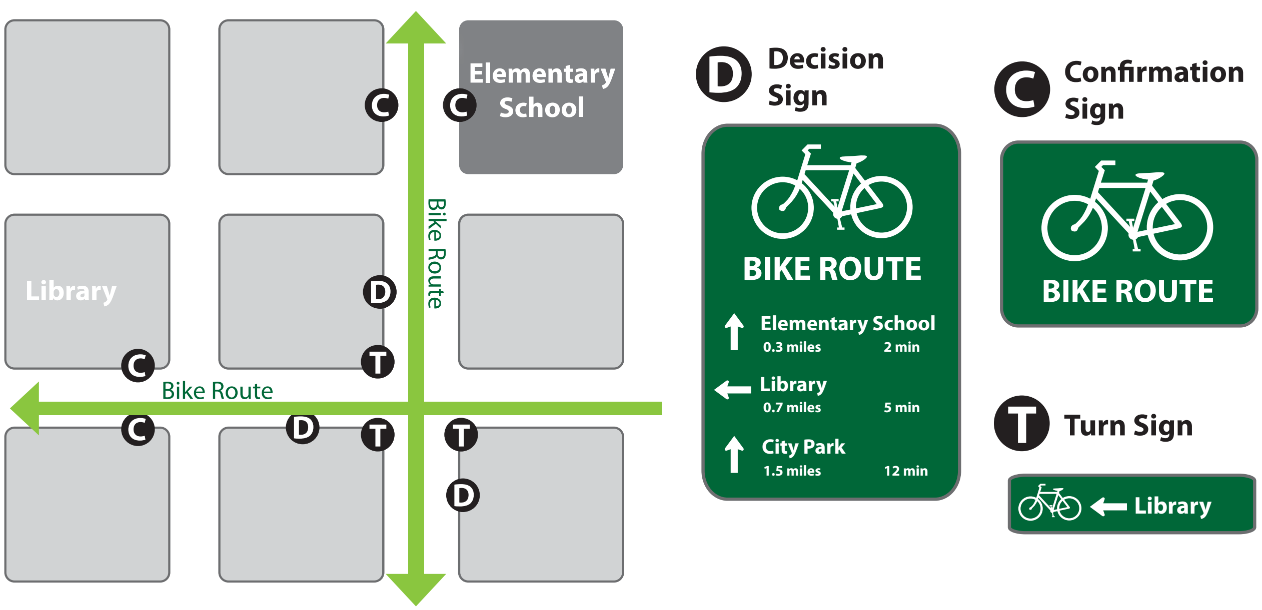
Guidance

Signs are typically placed at decision points along bicycle routes – typically at the intersection of two or more bikeways and at other key locations leading to and along bicycle routes.

Decisions Signs

Near-side of intersections in advance of a junction with another bicycle route.

Along a route to indicate a nearby destination.



Discussion

It can be useful to classify a list of destinations for inclusion on the signs based on their relative importance to users throughout the area. A particular destination's ranking in the hierarchy can be used to determine the physical distance from which the locations are signed. For example, primary destinations (such as the downtown area) may be included on signage up to 5 miles away. Secondary destinations (such as a transit station) may be included on signage up to two miles away. Tertiary destinations (such as a park) may be included on signage up to one mile away.

Additional References and Guidelines

AASHTO. *Guide for the Development of Bicycle Facilities.* 2012.
FHWA. *Manual on Uniform Traffic Control Devices.* 2009.
NACTO. *Urban Bikeway Design Guide.* 2012.

Materials and Maintenance

Maintenance needs for bicycle wayfinding signs are similar to other signs and will need periodic replacement due to wear.

OFF STREET BICYCLE FACILTIES

Class I Shared-Use Paths

A shared-use path allows for two-way, off-street bicycle use and also may be used by pedestrians, skaters, wheelchair users, joggers and other non-motorized users. These facilities are frequently found in parks, along rivers, beaches, and in greenbelts or utility corridors where there are few conflicts with motorized vehicles. Path facilities can also include amenities such as lighting, signage, and fencing (where appropriate).

Key features of shared-use paths include:

- Frequent access points from the local road network.
- Directional signs to direct users to and from the path.
- A limited number of at-grade crossings with streets or driveways.
- Terminating the path where it is easily accessible to and from the street system.
- Separate treads for pedestrians and bicyclists when heavy use is expected.

The geometric design of shared-use paths should be designed to support the speed and volume of expected user types. Bicyclist speeds can vary significantly depending on path grade. The table below lists typical bicyclists speeds.

Bicycle Design Speed Expectations

Bicycle Type	Feature	Typical Speed
Upright Adult Bicyclist	Paved level surfacing	8-15 mph
	Downhill	20-30+ mph
	Uphill	5 -12 mph
Recumbent Bicyclist	Paved level surfacing	11-18 mph

Source: AASHTO *Guide for the Development of Bicycle Facilities*, 4th Edition

General Design Practices

Description

Shared-use paths can provide a desirable facility, particularly for recreation, and users of all skill levels preferring separation from traffic. Bicycle paths should generally provide directional travel opportunities not provided by existing roadways.

Guidance

Width

- 8 feet is the minimum allowed for a two-way bicycle path and is only recommended for low traffic situations.
- 10 feet is recommended in most situations and will be adequate for moderate to heavy use.
- 12 feet is recommended for heavy use situations with high concentrations of multiple users. A separate track (5' minimum) can be provided for pedestrian use.

Lateral Clearance

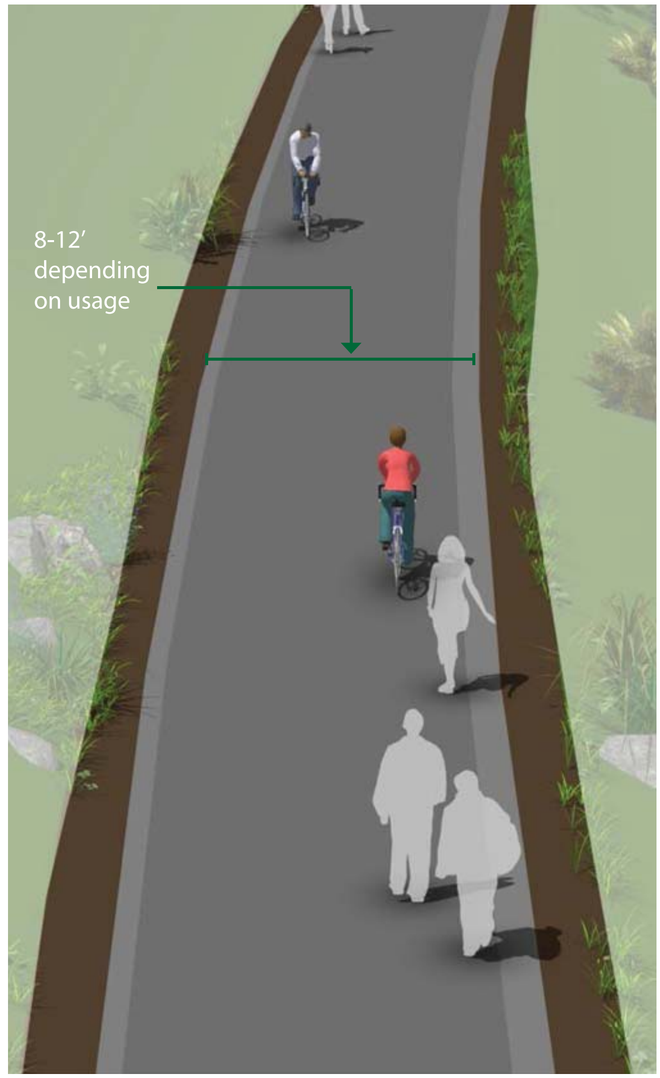
- A 2 foot or greater shoulder on both sides of the path should be provided. An additional foot of lateral clearance (total of 3') is required by the MUTCD for the installation of signage or other furnishings.
- If bollards are used at intersections and access points, they should be colored brightly and/or supplemented with reflective materials to be visible at night.

Overhead Clearance

- Clearance to overhead obstructions should be 8 feet minimum, with 10 feet recommended.

Striping

- When striping is required, use a 4 inch dashed yellow centerline stripe with 4 inch solid white edge lines.
- Solid centerlines can be provided on tight or blind corners, and on the approaches to roadway crossings.



Discussion

Terminate the path where it is easily accessible to and from the street system, preferably at a controlled intersection or at the beginning of a dead-end street.

Additional References and Guidelines

AASHTO. *Guide for the Development of Bicycle Facilities.* 2012.
Caltrans *CA-MUTCD.* 2012.
Flink, C. *Greenways: A Guide To Planning Design And Development.* 1993.
Caltrans. *California HDM.* 2012.

Materials and Maintenance

Asphalt is the most common surface for bicycle paths. The use of concrete for paths has proven to be more durable over the long term. Saw cut concrete joints rather than troweled improve the experience of path users.

Shared-Use Paths in Active Rail Corridors

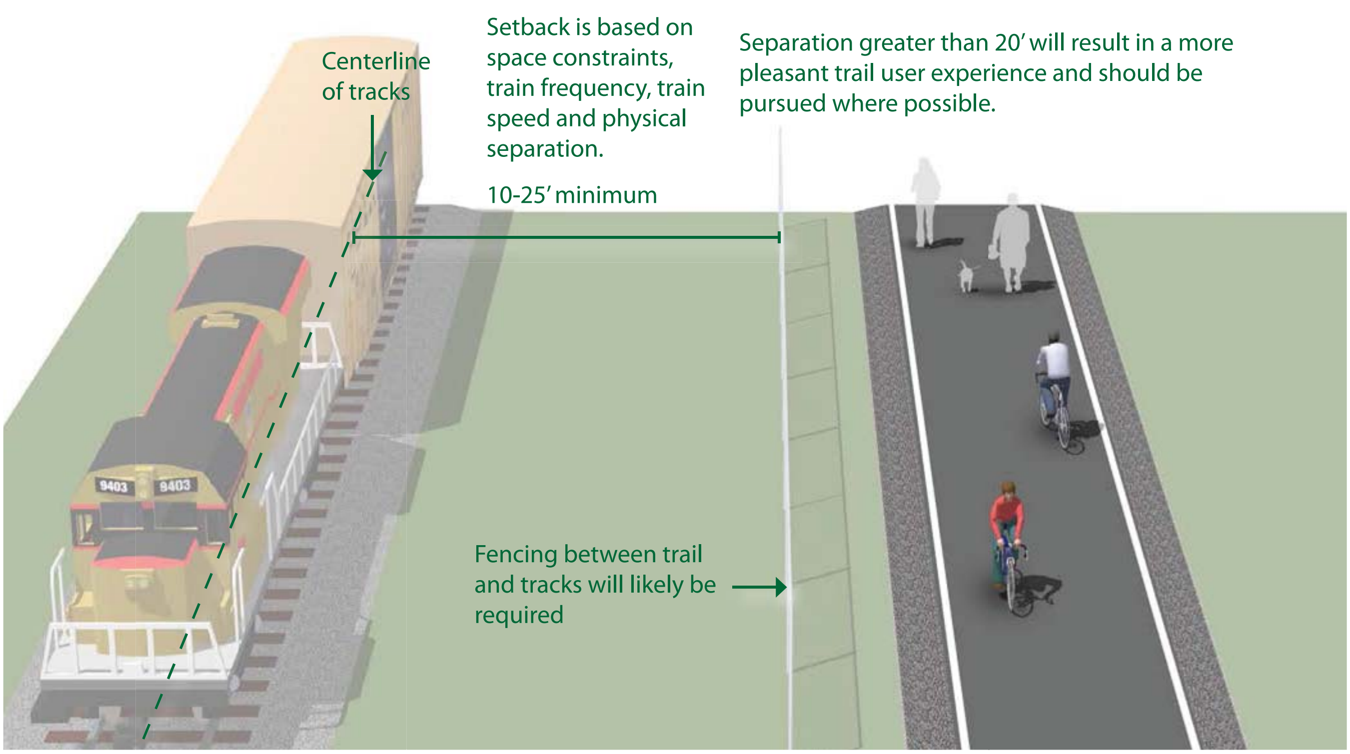
Description

Rails-with-Trails projects typically consist of paths adjacent to active railroads. It should be noted that some constraints could impact the feasibility of rail-with-trail projects. In some cases, space needs to be preserved for future planned freight, transit or commuter rail service. In other cases, limited right-of-way width, inadequate setbacks, concerns about safety/trespassing, and numerous mid-block crossings may affect a project's feasibility.

Guidance

Shared-use paths in utility corridors should meet or exceed general design standards. If additional width allows, wider paths, and landscaping are desirable.

If required, fencing should be a minimum of 5 feet in height with higher fencing than usual next to sensitive areas such as switching yards. Setbacks from the active rail line will vary depending on the speed and frequency of trains, and available right-of-way.



Discussion

Railroads may require fencing with rail-with-trail projects. Concerns with trespassing and security can vary with the volume and speed of train traffic on the adjacent rail line and the setting of the shared-use path, i.e. whether the section of track is in an urban or rural setting.

Additional References and Guidelines

AASHTO. *Guide for the Development of Bicycle Facilities.* 2012.
Caltrans *CA-MUTCD.* 2012.
FHWA. *Rails-with-Trails: Lessons Learned.* 2002.
California Public Utilities Commission. General Orders.

Materials and Maintenance

Asphalt is the most common surface for bicycle paths. The use of concrete for paths has proven to be more durable over the long term. Saw cut concrete joints rather than troweled improve the experience of path users.

Shared-Use Paths in River and Utility Corridors

Description

Utility and waterway corridors often offer excellent shared-use path development and bikeway gap closure opportunities. Utility corridors typically include powerline and sewer corridors, while waterway corridors include canals, drainage ditches, rivers, and beaches. These corridors offer excellent transportation and recreation opportunities for bicyclists of all ages and skills.

Guidance

Shared-use paths in utility corridors should meet or exceed general design practices. If additional width allows, wider paths, and landscaping are desirable.

Access Points

Any access point to the path should be well-defined with appropriate signage designating the pathway as a bicycle facility and prohibiting motor vehicles.

Path Closure

Public access to the shared-use path may be prohibited during the following events:

- Canal/flood control channel or other utility maintenance activities
- Inclement weather or the prediction of storm conditions

Discussion

Similar to railroads, public access to flood control channels or canals may be undesirable. Hazardous materials, deep water or swift current, steep, slippery slopes, and debris all may constitute risks for public access. Appropriate fencing may be desired to keep path users within the designated travel way. Creative design of fencing is encouraged to make the path facility feel welcoming to the user.

Additional References and Guidelines

AASHTO. *Guide for the Development of Bicycle Facilities*. 2012.
Caltrans *CA-MUTCD. 2012.*
Flink, C. *Greenways: A Guide To Planning Design And Development*. 1993.

Materials and Maintenance

Asphalt is the most common surface for bicycle paths. The use of concrete for paths has proven to be more durable over the long term. Saw cut concrete joints rather than troweled improve the experience of path users.

Shared-Use Paths Along Roadways

Description

Shared-use paths along roadways, also called sidepaths, are a type of path that run adjacent to a street.

Because of operational concerns it is generally preferable to place paths within independent rights-of-way away from roadways. However, there are situations where existing roads provide the only corridors available.

Along roadways, these facilities create a situation where a portion of the bicycle traffic rides against the normal flow of motor vehicle traffic and can result in wrong-way riding where bicyclists enter or leave the path.

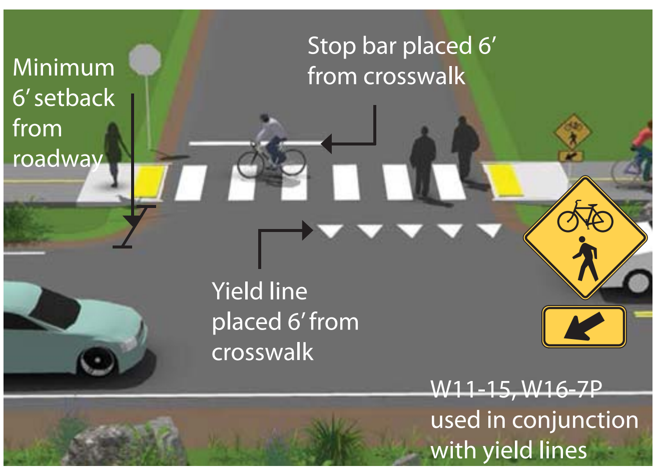
The AASHTO Guide for the Development of Bicycle Facilities cautions practitioners of the use of two-way sidepaths on urban or suburban streets with many driveways and street crossings.

In general, there are two approaches to crossings: adjacent crossings and setback crossings, illustrated below.

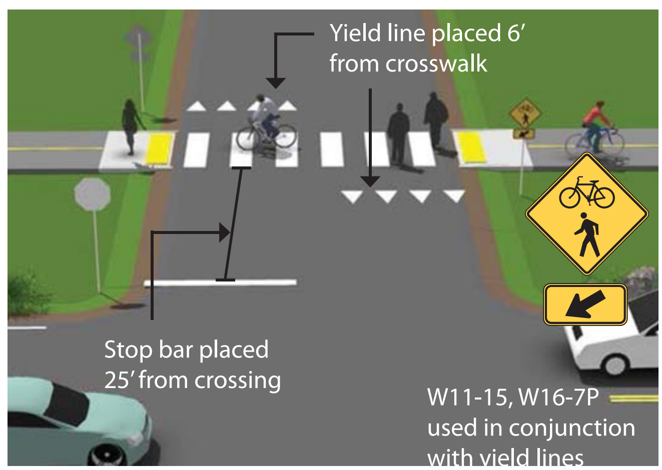
Guidance

- Guidance for sidepaths should follow that for general design practises of shared-use paths.
- A high number of driveway crossings and intersections create potential conflicts with turning traffic. Consider alternatives to sidepaths on streets with a high frequency of intersections or heavily used driveways.
- Where a sidepath terminates special consideration should be given to transitions so as not to encourage unsafe wrong-way riding by bicyclists.
- Crossing design should emphasize visibility of users and clarity of expected yielding behavior. Crossings may be STOP or YIELD controlled depending on sight lines and bicycle motor vehicle volumes and speeds.

Adjacent Crossing - A separation of 6 feet emphasizes the conspicuity of riders at the approach to the crossing.



Setback Crossing - A set back of 25 feet separates the path crossing from merging/turning movements that may be competing for a driver's attention.



Discussion

Sidepaths differ from Cycle Tracks because of lack of separation from pedestrians, lack of bicycle-specific accommodation at intersections, and often lack of consideration at driveways or minor street crossings. When right of way is available, cycle track installations are preferred to sidepaths.
To reduce potential conflicts in some situations, it may be better to place one-way sidepaths on both sides of the street.

Additional References and Guidelines

AASHTO. *Guide for the Development of Bicycle Facilities.* 2012.
NACTO. *Urban Bikeway Design Guide.* See entry on Raised Cycle Tracks. 2012.

Materials and Maintenance

Asphalt is the most common surface for bicycle paths. The use of concrete for paths has proven to be more durable over the long term. Saw cut concrete joints rather than troweled improve the experience of path users.

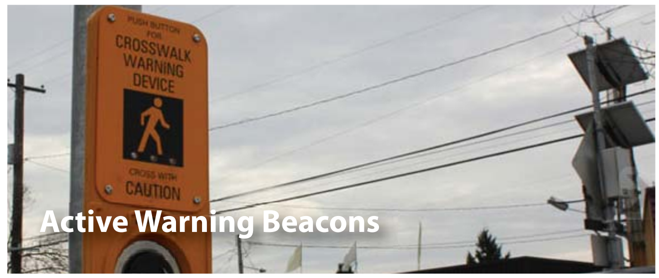
Path/Roadway Crossings

At-grade roadway crossings can create potential conflicts between path users and motorists, however, well-designed crossings can mitigate many operational issues and provide a higher degree of safety and comfort for path users. This is evidenced by the thousands of successful facilities around the United States with at-grade crossings. In most cases, at-grade path crossings can be properly designed to provide a reasonable degree of safety and can meet existing traffic and safety standards. Path facilities that cater to bicyclists can require additional considerations due to the higher travel speed of bicyclists versus pedestrians.

Consideration must be given to adequate warning distance based on vehicle speeds and line of sight, with the visibility of any signs absolutely critical. Directing the active attention of motorists to roadway signs may require additional alerting devices such as a flashing beacon, roadway striping or changes in pavement texture. Signing for path users may include a standard "STOP" or "YIELD" sign and pavement markings, possibly combined with other features such as bollards or a bend in the pathway to slow bicyclists. Care must be taken not to place too many signs at crossings lest they begin to lose their visual impact.

A number of striping patterns have emerged over the years to delineate path crossings. A median stripe on the path approach will help to organize and warn path users. Crosswalk striping is typically a matter of local and State preference, and may be accompanied by pavement treatments to help warn and slow motorists. In areas where motorists do not typically yield to crosswalk users, additional measures may be required to increase compliance.


Marked/Unsignalized Crossings



Active Warning Beacons


Route Users to Existing Signals


Pedestrian Hybrid Beacon Crossing


Full Traffic Control Signal Crossing

Marked/Unsignalized Crossings

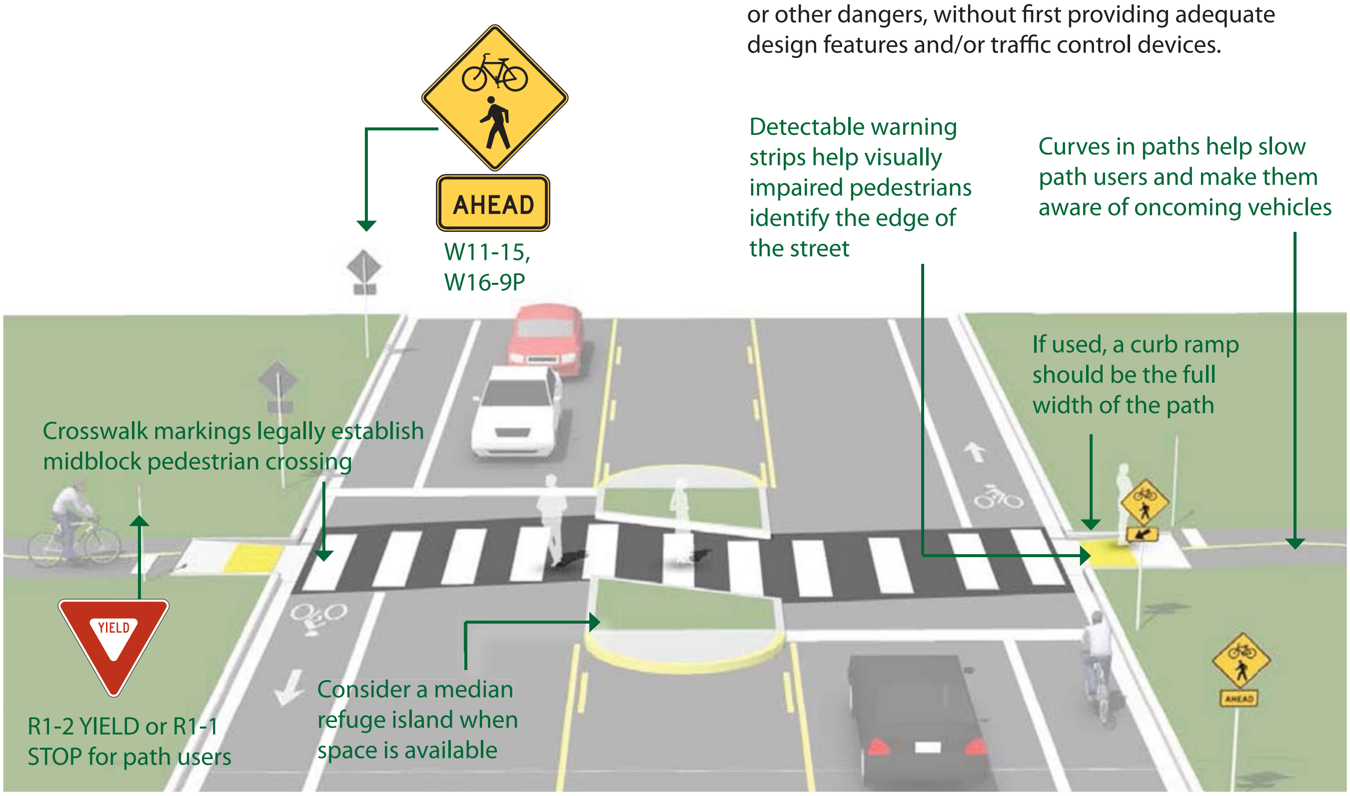
Description

A marked/unsignalized crossing typically consists of a marked crossing area, signage and other markings to slow or stop traffic. The approach to designing crossings at mid-block locations depends on an evaluation of vehicular traffic, line of sight, pathway traffic, use patterns, vehicle speed, road type, road width, and other safety issues such as proximity to major attractions.

When space is available, using a median refuge island can improve user safety by providing pedestrians and bicyclists space to perform the safe crossing of one side of the street at a time.

Guidance

- Refer to the FHWA report, "Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations" for specific volume and speed ranges where a marked crosswalk alone may be sufficient.
- Where the speed limit exceeds 40 miles per hour, marked crosswalks alone should not be used at unsignalized locations.
- Crosswalks should not be installed at locations that could present an increased risk to pedestrians, such as where there is poor sight distance, complex or confusing designs, a substantial volume of heavy trucks, or other dangers, without first providing adequate design features and/or traffic control devices.



Discussion

The assignment of right of way at path crossings requires a detailed understanding of user volumes, travel speeds, and approach sight distance. Installing unwarranted controls on path approaches can lead to a loss of respect for traffic control at more critical locations. Good engineering judgment should be used for deciding which treatment to use.

In conventional intersection design, right of way is assigned to the higher volume or higher speed approach. In many cases, path volumes will exceed that of minor crossed streets, and right of way may be assigned to the path traffic. In crossings with appropriate sight distances, "YIELD" control of the path or road can be an effective solution for users as it encourages caution without being overly restrictive. For further discussion see chapter 5 in the AASHTO *Guide for the Development of Bicycle Facilities.*

Additional References and Guidelines

AASHTO. *Guide for the Development of Bicycle Facilities.* 2012. Ch 5.
Caltrans *CA-MUTCD.* 2012
Caltrans. *California HDM.* 2012.

Materials and Maintenance

Locate markings out of wheel tread when possible to minimize wear and maintenance costs.

Active Warning Beacons

Description

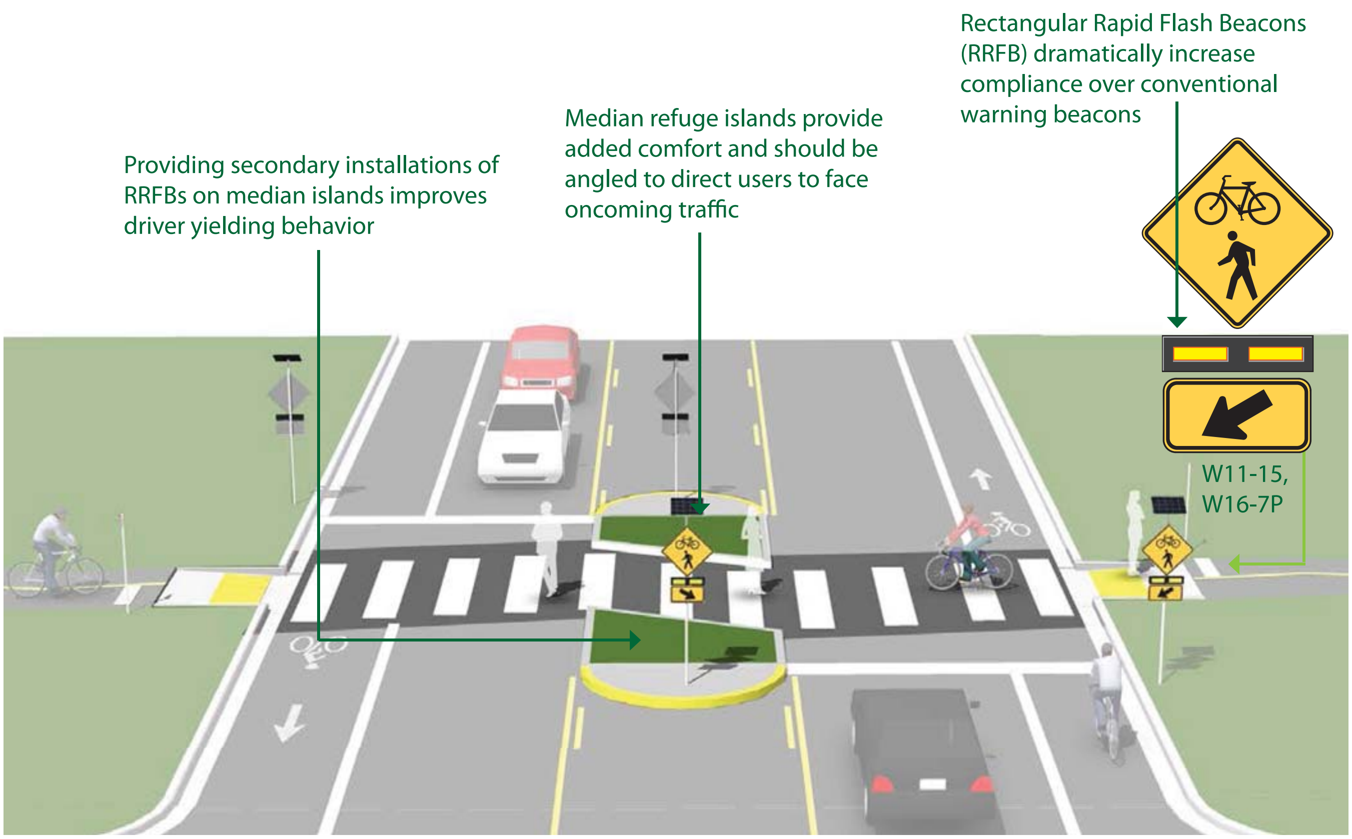
Enhanced marked crossings are unsignalized crossings with additional treatments designed to increase motor vehicle yielding compliance on multi-lane or high volume roadways.

These enhancements include pathway user or sensor actuated warning beacons, Rectangular Rapid Flash Beacons (RRFB) shown below, or in-roadway warning lights.

Guidance

Guidance for marked/unsignalized crossings applies.

- Warning beacons shall not be used at crosswalks controlled by YIELD signs, STOP signs, or traffic control signals.
- Warning beacons shall initiate operation based on user actuation and shall cease operation at a predetermined time after the user actuation or, with passive detection, after the user clears the crosswalk.



Discussion

Rectangular rapid flash beacons show the most increased compliance of all the warning beacon enhancement options.

A study of the effectiveness of going from a no-beacon arrangement to a two-beacon RRFB installation increased yielding from 18 percent to 81 percent. A four-beacon arrangement raised compliance to 88%. Additional studies of long term installations show little to no decrease in yielding behavior over time.

Additional References and Guidelines

NACTO. *Urban Bikeway Design Guide*. 2012.
Caltrans *CA-MUTCD. 2012.*
FHWA. *MUTCD - Interim Approval for Optional Use of Rectangular Rapid Flashing Beacons (IA-11)*. 2008.

Materials and Maintenance

Locate markings out of wheel tread when possible to minimize wear and maintenance costs. Signing and striping need to be maintained to help users understand any unfamiliar traffic control.

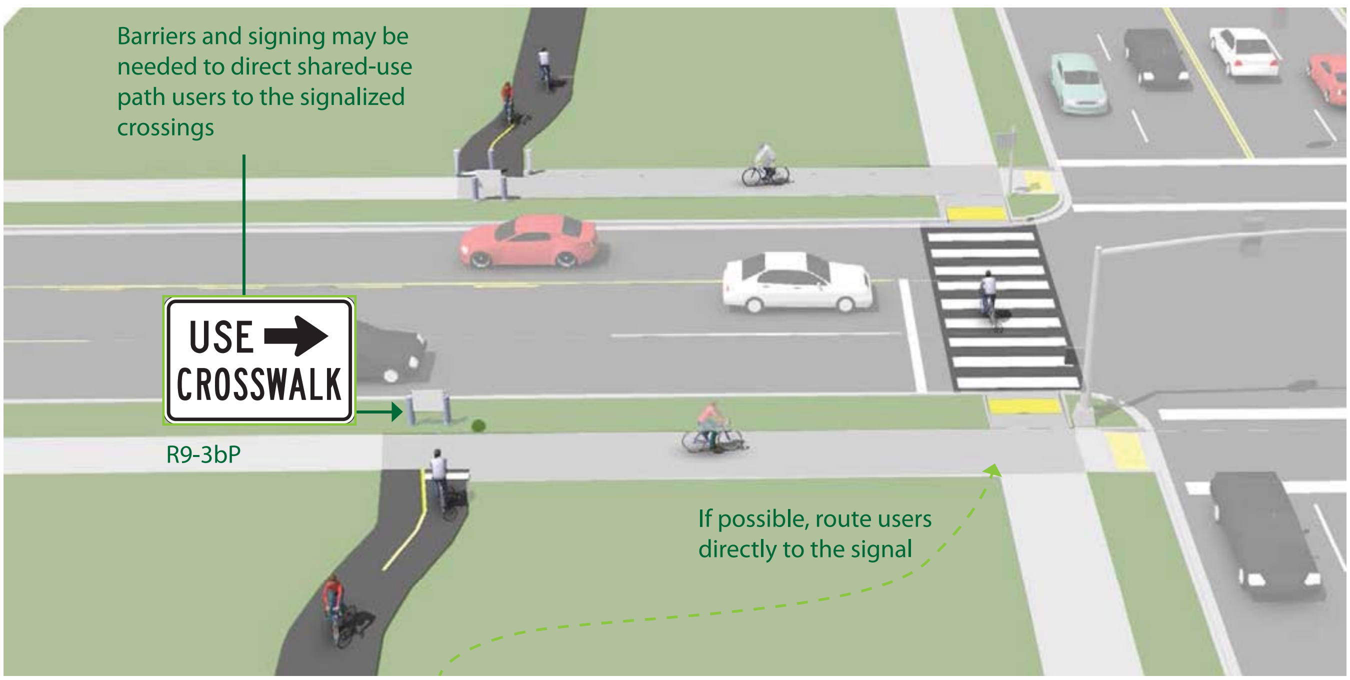
Route Users to Signalized Crossings

Description

Path crossings within approximately 400 feet of an existing signalized intersection with pedestrian crosswalks are typically diverted to the signalized intersection to avoid traffic operation problems when located so close to an existing signal. For this restriction to be effective, barriers and signing may be needed to direct path users to the signalized crossing. If no pedestrian crossing exists at the signal, modifications should be made.

Guidance

Path crossings should not be provided within approximately 400 feet of an existing signalized intersection. If possible, route path directly to the signal.



Discussion

In the US, the minimum distance a marked crossing can be from an existing signalized intersection varies from approximately 250 to 660 feet. Engineering judgement and the context of the location should be taken into account when choosing the appropriate allowable setback. Pedestrians are particularly sensitive to out of direction travel and jaywalking may become prevalent if the distance is too great.

Additional References and Guidelines

AASHTO. *Guide for the Development of Bicycle Facilities.* 2012.
AASHTO. *Guide for the Planning, Design, and Operation of Pedestrian Facilities.* 2004.

Materials and Maintenance

If a sidewalk is used for crossing access, it should be kept clear of snow and debris and the surface should be level for wheeled users.

Pedestrian Hybrid Beacon Crossings

Description

Pedestrian hybrid beacons provide a high level of comfort for crossing users through the use of a red-signal indication to stop conflicting motor vehicle traffic.

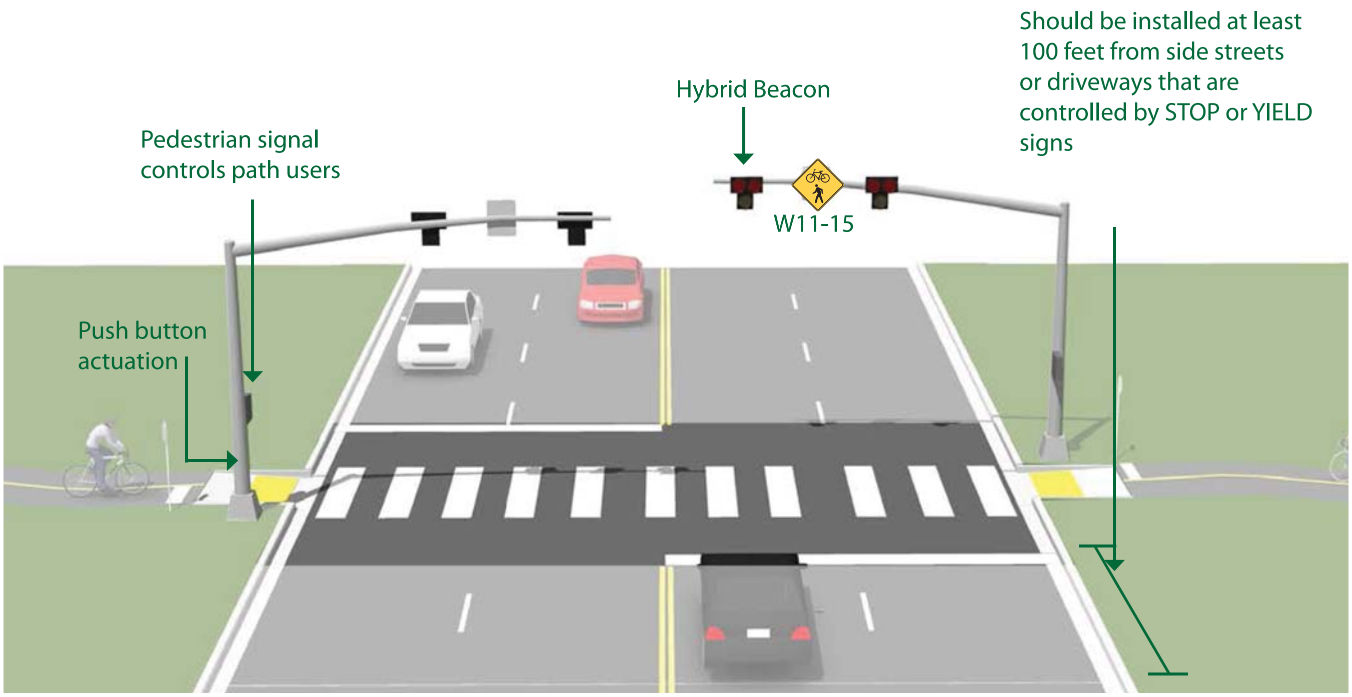
Hybrid beacon installation faces only cross motor vehicle traffic, stays dark when inactive, and uses a unique 'wig-wag' signal phase to indicate activation. Vehicles have the option to proceed after stopping during the final flashing red phase, which can reduce motor vehicle delay when compared to a full signal installation.

Guidance

Hybrid beacons (illustrated here) may be installed without meeting traffic signal control warrants if roadway speed and volumes are excessive for comfortable path crossings.

FHWA does not allow bicycle signals to be used with Hybrid beacons, though some cities have done so successfully.

To maximize safety when used for bicycle crossings, the flashing 'wig-wag' phase should be very short and occur after the pedestrian signal head has changed to a solid "DON'T WALK" indication as bicyclists can enter an intersection quickly.



Discussion

Shared-use path signals are normally activated by push buttons but may also be triggered by embedded loop, infrared, microwave or video detectors. The maximum delay for activation of the signal should be two minutes, with minimum crossing times determined by the width of the street.

Each crossing, regardless of traffic speed or volume, requires additional review by a registered engineer to identify sight lines, potential impacts on traffic progression, timing with adjacent signals, capacity and safety.

Additional References and Guidelines

FHWA. *Pedestrian Hybrid Beacon Guide.* 2014.
NACTO. *Urban Bikeway Design Guide.* 2012.
Caltrans *CA-MUTCD. 2012.*

Materials and Maintenance

Hybrid beacons are subject to the same maintenance needs and requirements as standard traffic signals. Signing and striping need to be maintained to help users understand any unfamiliar traffic control.

Full Traffic Signal Crossings

Description

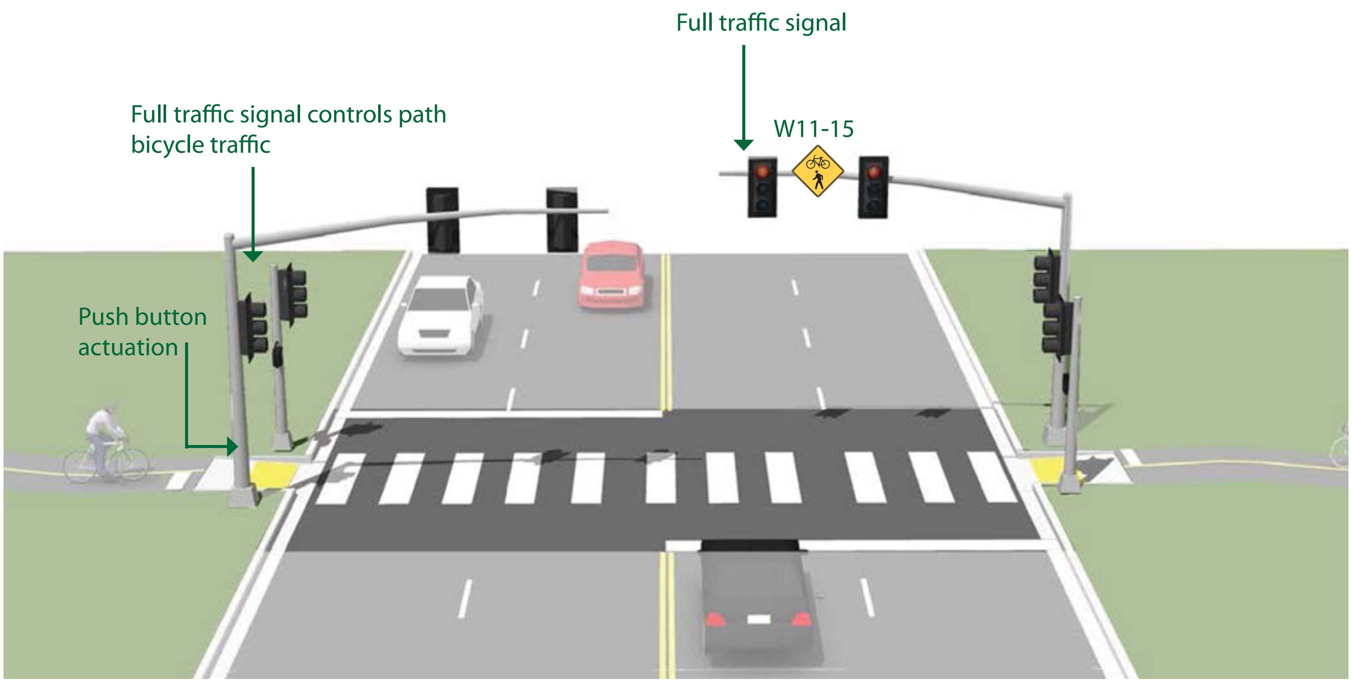
Signalized crossings provide the most protection for crossing path users through the use of a red-signal indication to stop conflicting motor vehicle traffic.

A full traffic signal installation treats the path crossing as a conventional 4-way intersection and provides standard red-yellow-green traffic signal heads for all legs of the intersection.

Guidance

Full traffic signal installations must meet MUTCD pedestrian, school or modified warrants. Additional guidance for signalized crossings:

- Located more than 300 feet from an existing signalized intersection
- Roadway travel speeds of 40 MPH and above
- Roadway ADT exceeds 15,000 vehicles



Discussion

Shared-use path signals are normally activated by push buttons but may also be triggered by embedded loop, infrared, microwave or video detectors. The maximum delay for activation of the signal should be two minutes, with minimum crossing times determined by the width of the street.

Each crossing, regardless of traffic speed or volume, requires additional review by a registered engineer to identify sight lines, potential impacts on traffic progression, timing with adjacent signals, capacity and safety.

Additional References and Guidelines

Caltrans *CA-MUTCD. 2012.*
NACTO. *Urban Bikeway Design Guide.* 2012.

Materials and Maintenance

Traffic signals require routine maintenance. Signing and striping need to be maintained to help users understand any unfamiliar traffic control.

Appendix B: Summary of Jurisdictional Outreach Meetings

In December 2013, the project team facilitated five (5) public Jurisdictional Meetings (one in each participating city) to present an overview of the plan process and gather input from the individual communities. All of the five individual meetings took place from 6:30pm – 8:00pm at centrally located public facilities.

The meetings followed an Open House format, with various stations throughout the room. Staff and volunteers from Bike SGV joined Alta Planning + Design staff to answer questions and prompt community members to provide their own ideas for how to create a more bike-friendly San Gabriel Valley. In addition to the Sign-In Table, six stations were provided to provide information and to collect ideas:

1. Bicycle Master Plan Presentation
2. Mapping
3. Bicycle Facility Types
4. Education, Encouragement & Evaluation – What's Working? What Can We Do Better?
5. Survey Station
6. Kids' Activity Station

B.1 Monterey Park (Library) – 12/03/2013

The first of five Jurisdictional Meetings for the SGVRBMP took place on Tuesday, December 3rd, 2013, at Monterey Park's Bruggemeyer Library. Twenty-four (24) people attended, among them several city staff and elected officials.

Image 48- *Project Staff with Monterey Park Resident at Public Meeting*

Station 2: Mapping

Destinations

- Shopping center at Atlantic & Riggin
- Cal State LA transit center
- Future Metro Garfield Station at SR-60 & Garfield
- Bruggemeyer Library
- Senior Center at Emerson & Ynez
- Businesses along Atlantic Blvd
- Rio Hondo Trail
- Schools

Challenges

- Underpass below I-10 on Ynez/6th is narrow & dark (it is a well-used alternative to Garfield and Atlantic)
- I-10 freeway (in general)
- Wide Hellman
- Tight/narrow crossings on Fremont & Atlantic
- Intersections along Floral near East LA College
- Monterey Pass Road

Suggested Routes/Improvements

- Path along Garvey Ave. to improve access to businesses
- Use transmission lines in southeast part of city for bike paths
- New Street goes all the way to San Gabriel Mission
- Improved I-10 crossing at Ynez
- Use Hellman & Ramona to parallel Garvey through Rosemead to access Rio Hondo; also, Emerson to Dorothy
- Check opportunity to reduce travel lane width on Potrero Grande
- Want bike lanes on Garfield from Huntington all the way down into Monterey Park
- Consider bikeways on slower residential streets instead of high traffic roads
- Improve pavement quality including slot drains – Alhambra
- On Hellman, maybe reduce travel lane width to install bike lanes
- Relocate Brightwood bike lane (route) to Floral

- Install bikeways on Emerson, because it connects several schools in the region
- Create a trail along Alhambra Wash
- Bikeway along Graves Ave
- Use Collegian/W. 1st St/S. Woods Ave to connect to Metro Gold Line Atlantic Station

Station 3: Bicycle Facilities

Comments

- Bike Parking is needed at East LA College Transit Center
- Suggestion: Put reflectors or lights along bike lane stripe
- Bike racks need to be simple and have instructions in Spanish & Chinese (the City's bike-shaped bike racks often go unused because people don't know what they are for)
- Nobody knows how to use Bicycle Lockers, or where to sign up

Which types do you prefer?

Bikeway Types			
Standard Bikeway Types	Number of Dots	"Innovative" Bikeway Types	Number of Dots
Off-Street Bike Path	0	Cycle Tracks	3
On-Street Bike Lanes	3	Buffered Bike Lanes	0
Signed Shared Roadway	2	Enhanced Colored Bike Lanes	3
Bicycle Boulevard	1	Super Sharrows	0

Bicycle Parking			
Short Term Bicycle Parking Facilities	Number of Dots	Long Term Bicycle Parking Facilities	Number of Dots
On-Street Bicycle Corral	1	Bicycle Lockers	1
Curb Extension Bicycle Racks	1	Bicycle Rooms and Compounds	0
Sidewalk Bicycle Racks	5	Bike Stations	4
Sheltered Bicycle Racks	1	Automated Bicycle Parking	0

Signage, Markings & Wayfinding	
Category	Number of Dots
Facility Signage and Pavement Markings	3
Wayfinding Signage	0

Station 4: Education, Encouragement & Enforcement

Comments

- Need bicycle education campaign for elderly residents & children (frequent violations)
- Encourage bike rider etiquette at all age levels (stop at stop signs, follow rules of road, etc.)
- Do outreach at Senior Center at Emerson & Ynez

Which types do you prefer?

Non-Infrastructure Programs	
Category	Number of Dots
Education	2
Encouragement	2
Enforcement	2

B.2 South El Monte (Senior Center) – 12/04/2013

The second Jurisdictional Meeting took place on Wednesday, December 4th, at the South El Monte Senior Center. Around 10 people attended, most of them families recruited from the adjacent Community Center.

Image 49- *Project Staff at South El Monte Public Meeting*

Station 2: Mapping

Destinations

- Superior Market on Peck Road
- Thienes River Trail Entrance
- Schools
- Center of town
- Parks
- Whittier Narrows Rec Area

Challenges

- Poor school access
- No good way to get to El Monte Transit Center on bike from South El Monte
- Potrero & Rush are both narrow
- High Volume Roadways
- Issues
- City of South El Monte received Metro grant to install bike lanes along Rush, Garvey, Merced, and Santa Anita
- Lots of cyclists use Durfee to get to Ramona, then to San Gabriel River Trail

Suggested Routes/Improvements

- Check for opportunity to connect Rush Street to Rio Hondo
- Address high volume roads near schools for student travel
- Check links to access Whittier Narrows Rec Area
- Potrero & Rush are key to connecting to Whittier Narrows, but they are narrow

Station 3: Bicycle Facilities

Which types do you prefer?

Bikeway Types			
Standard Bikeway Types	Number of Dots	"Innovative" Bikeway Types	Number of Dots
Off-Street Bike Path	0	Cycle Tracks	3
On-Street Bike Lanes	4	Buffered Bike Lanes	3
Signed Shared Roadway	1	Enhanced Colored Bike Lanes	1
Bicycle Boulevard	0	Super Sharrows	0

Bicycle Parking			
Short Term Bicycle Parking Facilities	Number of Dots	Long Term Bicycle Parking Facilities	Number of Dots
On-Street Bicycle Corral	2	Bicycle Lockers	0
Curb Extension Bicycle Racks	1	Bicycle Rooms and Compounds	1
Sidewalk Bicycle Racks	2	Bike Stations	4
Sheltered Bicycle Racks	2	Automated Bicycle Parking	0

Signage, Markings & Wayfinding	
Category	Number of Dots
Facility Signage and Pavement Markings	4
Wayfinding Signage	0

Image 50- *Residents' Preferences for Various Bicycle Parking Facilities*

Station 4: Education, Encouragement & Enforcement

Which types do you prefer?

Non-Infrastructure Programs	
Category	Number of Dots
Education	1
Encouragement	4
Enforcement	1

B.3 San Gabriel (Library) – 12/05/2013

The third Jurisdictional Meeting took place on Thursday, December 5th, at the San Gabriel Public Library. Seven people attended this meeting. While attendance was relatively low, the conversations with attendees were spirited and productive.

Image 51- *Resident Reviewing Potential Bicycle Facility Types*

Station 2: Mapping

Destinations

- Valley Blvd for commercial uses and regional connection to adjacent cities

Issues

- "Scared of getting hit"

Suggested Routes/Improvements

- Fairview Ave
- Del Mar Ave
- Mission Dr
- Las Tunas Dr
- Longden Ave
- Bike Blvd on/around Lafayette St

Station 3: Bicycle Facilities

Which types do you prefer?

Bikeway Types			
Standard Bikeway Types	Number of Dots	"Innovative" Bikeway Types	Number of Dots
Off-Street Bike Path	2	Cycle Tracks	4
On-Street Bike Lanes	0	Buffered Bike Lanes	0
Signed Shared Roadway	0	Enhanced Colored Bike Lanes	0
Bicycle Boulevard	0	Super Sharrows	0

Bicycle Parking			
Short Term Bicycle Parking Facilities	Number of Dots	Long Term Bicycle Parking Facilities	Number of Dots
On-Street Bicycle Corral	0	Bicycle Lockers	1
Curb Extension Bicycle Racks	0	Bicycle Rooms and Compounds	0
Sidewalk Bicycle Racks	0	Bike Stations	0
Sheltered Bicycle Racks	0	Automated Bicycle Parking	0

Signage, Markings & Wayfinding	
Category	Number of Dots
Facility Signage and Pavement Markings	2
Wayfinding Signage	0

Station 4: Education, Encouragement & Enforcement

Which types do you prefer?

Non-Infrastructure Programs	
Category	Number of Dots
Education	0
Encouragement	0
Enforcement	0

B.4 Baldwin Park (Arts & Recreation Center) – 12/11/2013

The fourth Jurisdictional Meeting took place at the Baldwin Park Arts & Recreation Center on Wednesday, December 11th. Fifteen (15) people attended, including many families who were already at the Center for youth dance classes. City staff and planning commissioners were also present, and they expressed strong interest in the bicycle plan process and potential results.

Station 2: Mapping

Destinations

- Employers in cities of Industry & La Puente

***Image 52-** Project Staff Speaking with Baldwin Park Residents*

- Schools
- Baldwin Park Metrolink station
- Baldwin Park Teen Center
- Baldwin Park High School
- Downtown West Covina (via Pacific)

Challenges

- Intersection of Baldwin Park Blvd & Merced
- I-605 Freeway overpass on Ramona; poor connection to San Gabriel River Trail

Suggested Routes/Improvements

- Safer ways to access jobs in Industry & La Puente
- On the image of the partially separated green bike lane, a participant wrote, "Would be better with more protection on both sides."
- Bike Blvds on small streets, such as Maine (South of Ramona) and Landis.
- Bike facility on Merced
- Bike facility on Frazier to Merced
- Construct Class I path along Walnut Creek Channel

Station 3: Bicycle Facilities

Comments

Which types do you prefer?

Bikeway Types			
Standard Bikeway Types	Number of Dots	"Innovative" Bikeway Types	Number of Dots
Off-Street Bike Path	1	Cycle Tracks	3
On-Street Bike Lanes	2	Buffered Bike Lanes	0
Signed Shared Roadway	0	Enhanced Colored Bike Lanes	1
Bicycle Boulevard	2	Super Sharrows	0

Bicycle Parking			
Short Term Bicycle Parking Facilities	Number of Dots	Long Term Bicycle Parking Facilities	Number of Dots
On-Street Bicycle Corral	2	Bicycle Lockers	0
Curb Extension Bicycle Racks	0	Bicycle Rooms and Compounds	2
Sidewalk Bicycle Racks	0	Bike Stations	0
Sheltered Bicycle Racks	2	Automated Bicycle Parking	0

Signage, Markings & Wayfinding	
Category	Number of Dots
Facility Signage and Pavement Markings	2
Wayfinding Signage	2

Station 4: Education, Encouragement & Enforcement

Which types do you prefer?

Non-Infrastructure Programs	
Category	Number of Dots
Education	2
Encouragement	3
Enforcement	0

B.5 El Monte (Senior Center) – 12/17/2013

The fifth and final Jurisdictional Meeting in this initial round took place on Tuesday, December 17th, at the City of El Monte's Jack Crippen Senior Center. At least 14 people attended this final meeting, including several families and teenagers that were using the adjacent recreation center.

Image 53- *El Monte Community Members at the Public Meeting*

Station 2: Mapping

Destinations

- Community & Senior Center
- Library
- Market
- Park
- Police Station
- Post Office
- Bank
- Bus Depot
- La Primaria Elementary School
- Le Gore Elementary School
- Rio Vista Elementary School

Challenges

- Flair and Baldwin is a very difficult intersection
- Tyler and Elliot is a difficult intersection.
- Mildred and Santa Anita is a difficult intersection.

Issues

- Streets are especially dangerous with high buses and trucks
- No bike lanes on Potrero between Enloe Street and Als Drive

Suggested Routes/Improvements

- Create safe lanes for motorcycles and bicycles to separate cars from them
- Streets are took dark and need more lights at night
- Illumination on trails, maybe solar powered lights, along Brockway
- Add a bike lane from Metrolink Station to Legg Lake Park (for use of library, pool, civic center)
- Rides on Valley from Garvey to Puente in City of Industry.
- Adding a bike lane from Legg Lake Park off on Santa Anita to where it ends and then go for a hike.
- Add a bike lane on Peck Road, it is a wide street.
- Family rides from South El Monte to school at Tyler and Ramona

Image 54- *Public Comments Placed on the El Monte Bikeways Map*

Station 3: Bicycle Facilities

Which types do you prefer?

Bikeway Types			
Standard Bikeway Types	Number of Dots	"Innovative" Bikeway Types	Number of Dots
Off-Street Bike Path	3	Cycle Tracks	4
On-Street Bike Lanes	3	Buffered Bike Lanes	2
Signed Shared Roadway	1	Enhanced Colored Bike Lanes	2
Bicycle Boulevard	0	Super Sharrows	0

Bicycle Parking			
Short Term Bicycle Parking Facilities	Number of Dots	Long Term Bicycle Parking Facilities	Number of Dots
On-Street Bicycle Corral	1	Bicycle Lockers	2
Curb Extension Bicycle Racks	3	Bicycle Rooms and Compounds	2
Sidewalk Bicycle Racks	1	Bike Stations	1
Sheltered Bicycle Racks	2	Automated Bicycle Parking	0

Signage, Markings & Wayfinding	
Category	Number of Dots
Facility Signage and Pavement Markings	4
Wayfinding Signage	4

Station 4: Education, Encouragement & Enforcement

Which types do you prefer?

Non-Infrastructure Programs	
Category	Number of Dots
Education	6
Encouragement	4
Enforcement	5

Appendix C: Bicycling Survey Form and Survey Results

SAN GABRIEL VALLEY BICYCLE MASTER PLAN

BIKEABLE STREETS FOR ALL

BICYCLE SURVEY

The San Gabriel Valley Bicycle Master Plan aims to encourage healthy and more active lifestyles by creating a safe and interconnected bicycle network that is easily accessible for people of all ages and abilities throughout the San Gabriel Valley.

Date: _____ /_____ / _____

1. Where do you live?
Address: ______________________________
City: ______________________________
Zip: ______________________________

2. What is your gender? ☐ Female ☐ Male

3. Do you work in the San Gabriel Valley? ☐ Yes ☐ No
If no, where do you work? City:______________ Zip: ________

4. How far is your work or school from where you live?
- ☐ Under 2 miles
- ☐ 2-5 miles
- ☐ 6-10 miles
- ☐ 11-20 miles
- ☐ Over 20 miles
- ☐ I don't work or go to school

5. What is your age group?
- ☐ Under 18
- ☐ 18-25
- ☐ 26-35
- ☐ 36-45
- ☐ 46-55
- ☐ Over 56

6. What is your primary mode of commuting? (3 days a week)
- ☐ Drive alone
- ☐ Carpool/vanpool
- ☐ Transit (bus, rail, dial-a-ride)
- ☐ Motorcycle
- ☐ Bike
- ☐ Walk
- ☐ Other:________________

7. How often do you commute by bicycle to work or school?
- ☐ 5+ days per week
- ☐ 3-4 days per week
- ☐ 1-2 days per week
- ☐ 1-2 days per month
- ☐ Less than 1-2 days per month
- ☐ I never commute by bicycle

8. How often do you ride a bicycle?
- ☐ 5+ days per week
- ☐ 3-4 days per week
- ☐ 1-2 days per week
- ☐ 1-2 days per month
- ☐ Less than 1-2 days per month
- ☐ I never ride a bicycle

9. If you ride a bicycle, what are your reasons? Check all that apply.
- ☐ Environmentally friendly
- ☐ Get to work or school
- ☐ Exercise/recreation
- ☐ Shop, run errands, or go eat
- ☐ Visit friends/family
- ☐ Get to/from transit
- ☐ Cheaper than other modes
- ☐ Other: ________________

10. If you ride for exercise/recreation, what prevents you from commuting by bike? Check all that apply.
- ☐ Lack of off-street bike paths (i.e. river trails, park trails, etc.)
- ☐ Lack of on-street bike lanes (dedicated bike lanes)
- ☐ Lack of bike routes (shared lanes with motor vehicles)
- ☐ Lack of bike parking or storage
- ☐ My work/school doesn't have showers
- ☐ I don't have enough time
- ☐ I live too far away
- ☐ I have too much stuff to carry
- ☐ I have to transport children
- ☐ Other: ______________________________

11. Do you know the Rules of the Road (California Vehicle Code) for bicycling on public streets? ☐ Yes ☐ No

12. If you ride a bicycle, do you wear a helmet?
☐ Always ☐ Sometimes ☐ Never

13. If you ride a bicycle, what is average length of your ride?
- ☐ Under 2 miles
- ☐ 2-5 miles
- ☐ 6-10 miles
- ☐ 11-20 miles
- ☐ Over 20 miles

14. How would you characterize your bicycling ability/level of interest?
- ☐ I am a confident rider who is comfortable in most traffic situations, regardless of bicycle facilities.
- ☐ I am a rider who is comfortable in some traffic situations and with appropriate bicycle facilities.
- ☐ I am a rider who is not comfortable in traffic situations and will only ride on paths/greenways and quiet, residential streets.
- ☐ I am not currently a rider, but am interested in taking up cycling.
- ☐ I am not interested in cycling.

15. What keeps you from riding more often in the San Gabriel Valley? Check all that apply.

- ☐ Lack of off-street bike paths (river trails, park trails, etc.)
- ☐ Lack of on-street bike lanes (dedicated bike lanes)
- ☐ Lack of bike routes (shared lanes with motor vehicles)
- ☐ Lack of bike parking or storage
- ☐ Insufficient lighting
- ☐ Vehicle volumes or speeds
- ☐ Bahvior of motorists
- ☐ Bahavior of other cyclists
- ☐ I do not feel safe
- ☐ I travel with small children
- ☐ I don't have enough time
- ☐ My destinations are too far away
- ☐ Health issues or concerns
- ☐ Weather
- ☐ Other: ______________________________

16. Please rank to what degree the following conditions effect your decision to ride a bicycle:

	1. Very important	2. Somewhat Important	3. Neutral	4. Somewhat Unimportant	5. Unimportant
Cohesive bike routes between cities	☐	☐	☐	☐	☐
Presence of off-street bike paths	☐	☐	☐	☐	☐
Presence of on-street bike lanes	☐	☐	☐	☐	☐
Presence of bike routes	☐	☐	☐	☐	☐
Condition of bikeway/roadway (i.e. pavement quality)	☐	☐	☐	☐	☐
Traffic volumes/speeds	☐	☐	☐	☐	☐
Behavior of motorists	☐	☐	☐	☐	☐
Behavior of other cyclists	☐	☐	☐	☐	☐
Amount of street lighting	☐	☐	☐	☐	☐
Access to bike parking and storage	☐	☐	☐	☐	☐
Ability to combine bicycle trips with transit trips	☐	☐	☐	☐	☐
Travel time	☐	☐	☐	☐	☐
Available information/knowledge of bike routes	☐	☐	☐	☐	☐
Weather	☐	☐	☐	☐	☐

17. Please rate your interest in the following bicycle programs:

	1. Not Interested	2. Somewhat Interested	3. Very Interested
Riding skills and safety courses for adults	☐	☐	☐
Riding skills and safety courses for children	☐	☐	☐
Safe Routes to School programs for children	☐	☐	☐
Public awareness campaigns	☐	☐	☐
Special events	☐	☐	☐
Maps and guides	☐	☐	☐
Bicycle information websites	☐	☐	☐
Commuter incentive programs	☐	☐	☐
Information and maps delivered to my home	☐	☐	☐
Booths at public events	☐	☐	☐

18. Where would you like to see new bicycle facilities (i.e. bike lanes, signs, parking, etc.)?

Street(s): ______________________________

Intersection(s): ______________________________

School(s): ______________________________

Park(s): ______________________________

Other public facility: ______________________________

19. Additional comments: ______________________________

Respondent Demographics

One-third of the survey respondents live in one of the five participating San Gabriel Valley cities. Respondents who do not live in one of the participating cities live in other cities and communities nearby. Nearly forty percent (40%) of survey respondents also work in one of the participating San Gabriel Valley cities.

Over half (53%) of the respondents are between 18 and 45 years old. In contrast, less than thirty percent (30%) of the respondents were over 46 years old. This suggests that the survey was either distributed predominantly to middle-aged populations or the bicycling populations in the participating San Gabriel Valley cities are generally of working age.

Respondent Bicycle Mode Characteristics

Fewer than sixty percent (60%) of survey respondents commute predominantly by driving alone, which is far below the average for the United States, State of California and County of Los Angeles . One quarter (25%) of respondents commute primarily by bicycle, and ten percent (10%) commute predominantly by walking, which means that a total of thirty-five percent (35%) of respondents get to work using active, non-motorized travel modes. This is a disproportionately high percentage as compared to the national averages of walking and bicycling to work, which is probably because people who ride a bicycle regularly are naturally more interested in participating in a survey about bicycling.

As further evidence that survey respondents are disproportionately bicycle riders, nearly half (42%) of respondents said they commute by bicycle at least one day each week, and just under thirty percent commute by bicycle more than twice per week. In addition, almost two-thirds (64%) ride a bicycle for exercise or recreation at least one day per week. Also, seventy-two percent (72%) of respondents said they were comfortable riding in some or most traffic situations. According to the cross-tabulation analyses, respondents from outside the San Gabriel Valley are more likely to identify as confident and comfortable riding alongside motor vehicle traffic.

Forty-six percent (46%) of respondents live less than five miles from work. It is likely that the short commute distance contributes to the disproportionate number of bike and walk commuters seen in the survey. Only a small proportion of respondents (4.3%) does not work or go to school.

The survey asked respondents to estimate bicycle trips that were not commute trips, such as bicycle rides for exercise or to run errands. The frequency of bicycle trips

Figure C-1 Age of Survey Respondents

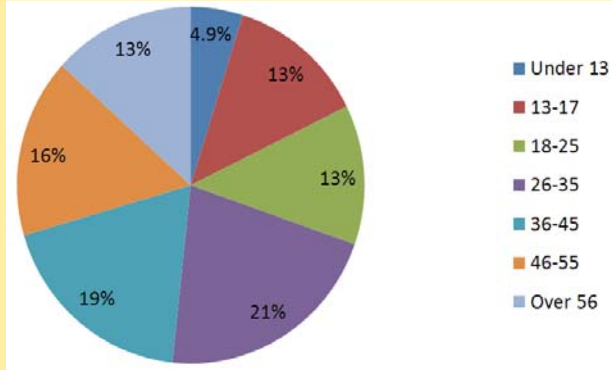


Figure C-2 Primary Commute Mode

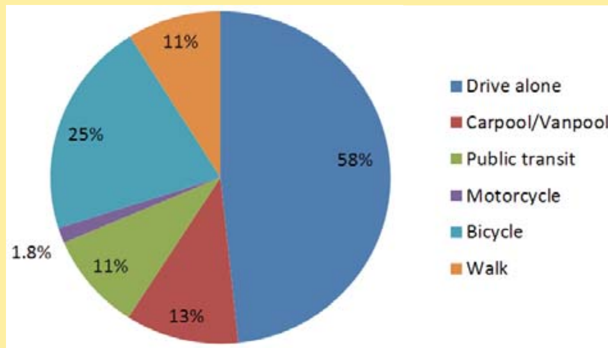


Figure C-3 Days per Week Commuting by Bicycle

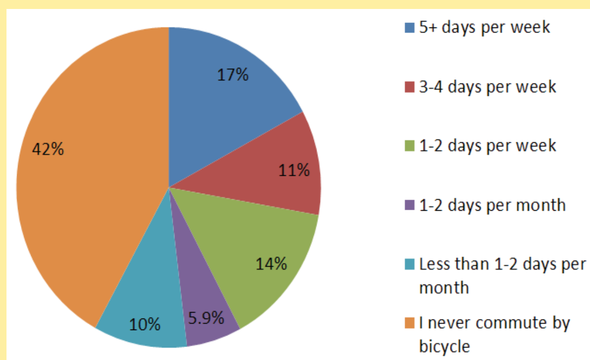
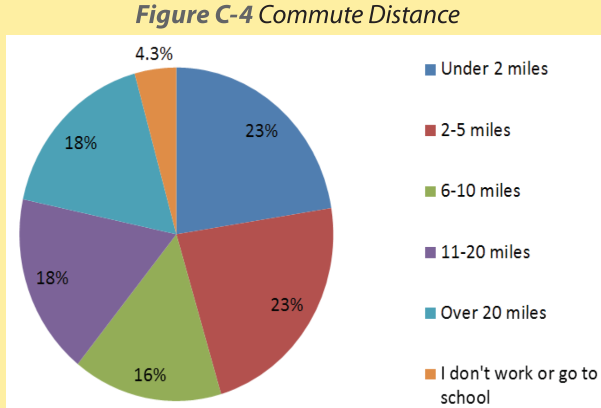
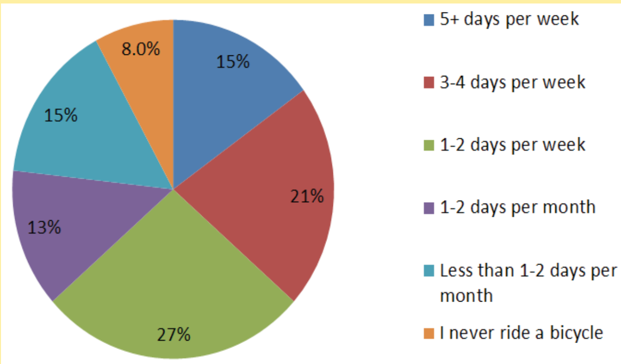


Figure C-4 Commute Distance



for non-commute purposes was significantly higher than those made for work or school. While nearly half of respondents (42%) said that they never ride to/from work or school, only eight percent replied that they never ride for recreation or exercise. Similarly, while just over forty percent of respondents commute by bike at least once a week, almost three-quarters ride their bicycles at least once a week for recreation or exercise.

***Figure C-5** Days per Week Riding a Bike for Recreation/ Excerise*



Of the optional responses, the top reason survey respondents selected as why they bicycle was for Exercise/Recreation; over eighty percent (80.7%) of the survey respondents selected this as a reason. A similar percentage (79.5%) of respondents stated they ride a bicycle because it is good for their health, and just above half (51%) of respondents do so because it is environmentally friendly. After these reasons, the next most common response was bicycling to shop, run errands, or eat out, which thirty-five percent (35%) of respondents listed as a reason that they ride a bicycle. The percentage of respondents bicycling for these utilitarian trips exceeds the percentage who reported that they bike to get to work or school (34.7%). This suggests that interventions that aim to increase bicycling, whether they are programs, infrastructure, or education, should target many destinations, not just job centers and schools, and focus on many different travel periods, not just the peak commuting hours.

According to cross-tabulation analyses, respondents from outside of the five partner cities and the San Gabriel Valley are more likely than those living within the San Gabriel Valley to ride a bicycle for environmental or personal health reasons, or to connect with public transit.

About one-third (31%) of survey respondents said that the average length of their bicycle trips is between two and five miles, while fifteen percent (15%) responded that their bicycle trips average less than two miles. Nearly one-fifth (19%) of respondents ride an average of more than twenty miles at a time.

Barriers to Bicycling

The survey asked respondents to note what prevents them from bicycling to work/school and from bicycling in general. It also asked respondents to rate the degree to which a number of conditions influence their decisions to bicycle.

A number of common themes emerged from the responses. Survey respondents highly value bicycle lanes. They cited lack of bicycle lanes as the biggest barrier that prevents them from biking to work or school. Similarly, respondents commonly cited lack of bicycle paths and routes as barriers to riding and rated these as very important factors in their decision to ride, as well. The cross-tabulation analyses showed that respondents living within the five partner cities are more likely than others to cite a lack of off-street bike paths as a reason for not riding a bicycle more often. On the other hand, all respondents cite a lack of on-street bike lanes a barrier at about the same rate.

A second common theme is the behavior of motorists, which scored highly on respondents' ranking of conditions that influenced their decision to ride a bicycle in their community. Motorist behavior was specifically one of the most common reasons that participants chose not to ride a bicycle. Similarly, respondents also considered vehicle volumes and speeds important factors in determining their decisions to ride.

Some of the conditions that respondents considered less important influences in their decisions to bicycle relative to the other options were distance to their destination (only 17% chose this as a barrier) and behavior of other bicycle riders (only 8% think it negatively influences their decision to ride a bicycle).

***Figure C-6** Average Bicycle Trip Length*

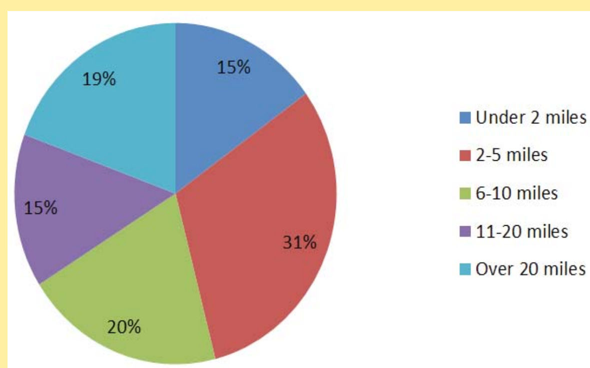


Table C-1, Table C-2, and Table C-3 display the full responses regarding barriers to riding.

Table C-1 Barriers to Commuting by Bicycle

What prevents you from commuting by bicycle to work/school more often?		
Answer Options	Response Percent	Response Count
Lack of off-street bike paths (river trails, park trails, etc.)	41.0%	171
Lack of on-street bike lanes (dedicated bike lanes)	48.0%	200
Lack of bike routes (shared lanes with motor vehicles)	33.6%	140
Lack of bike parking or storage	19.2%	80
My work/school doesn't have showers	18.2%	76
I don't have enough time	24.2%	101
I live too far away	23.7%	99
I have too much stuff to carry	28.1%	117
I have to transport children	6.0%	25
Other (please specify)	--	57
	answered question	417
	skipped question	70

Table C-2 Barriers to Riding in the San Gabriel Valley

What keeps you from riding more often in the San Gabriel Valley? Check all that apply.		
Answer Options	Response Percent	Response Count
Lack of off-street bike paths (river trails, park trails, etc.)	41.3%	170
Lack of on-street bike lanes (dedicated bike lanes)	52.7%	217
Lack of bike routes (shared lanes with motor vehicles)	36.9%	152
Lack of bike parking or storage	25.0%	103
Insufficient lighting	20.9%	86
Vehicle volumes or speeds	37.6%	155
Behavior of motorists	44.2%	182
Behavior of other cyclists	8.0%	33
I do not feel safe	26.5%	109
I travel with small children	6.6%	27
I don't have enough time	24.5%	101
My destinations are too far away	17.0%	70
Health issues or concerns	2.7%	11
Weather	12.1%	50
Other	--	33
	answered question	412
	skipped question	75

Table C-3 Factors that Influence Decisions to Ride a Bicycle

Please rank to what degree of importance the following conditions affect your decision to ride a bicycle:				
Answer Options	Very Important	Somewhat Important	Neutral	Not Important
Connected bike routes between cities	283	101	39	9
Presence of off-street bike paths	265	109	46	12
Presence of on-street bike lanes	317	84	21	9
Presence of bike routes	289	100	23	17
Condition of bikeway/roadway (e.g., pavement quality)	288	111	18	9
Traffic volumes/speeds	290	87	29	9
Behavior of motorists	299	90	25	9
Behavior of other cyclists	166	120	88	48
Amount of street lighting	221	111	75	20
Access to bike parking and storage	196	131	75	24
Ability to combine bicycle trips with transit trips	201	106	73	40
Travel time	196	137	72	23
Available information/knowledge of bike routes	210	127	63	22
Weather	185	137	70	33
			answered question	437
			skipped question	50

Bicycle Infrastructure and Programs

The survey invited participants to indicate where they would like to see new bicycle facilities and asked them to rank their interest in a number of bicycle programs. 242 of the 487 respondents gave specific feedback on where they would like to see bicycle facilities. The most popular programs were bicycle riding skills and safety education for children and adults, public awareness campaigns, maps and guides, and bicycle information websites. In addition, respondents from the five partner cities are more likely than other respondents to rank bicycle-related programs as "very important" to them. **Table C-4** displays the full responses on bicycle programs.

Table C-4 Bicycle Program Interest

Please rank to what degree of importance the following bicycle-related programs are to you:				
Answer Options	Very Important	Somewhat Important	Neutral	Not Important
Riding skills and safety education for adults	262	111	38	21
Riding skills and safety education for children	312	67	28	17
Public awareness campaigns	291	99	28	8
Special bicycle events (e.g., CicLAvia, Bike Month, etc.)	238	127	45	15
Bicycle maps and guides	253	131	28	14
Bicycle information websites or smart phone apps	242	130	40	11
Local business incentives (e.g., arrive by bike for 20% off)	232	116	63	15
Information booths at public events	192	133	73	21
			answered question	433
			skipped question	54

Cross-tabulation Analysis of Survey Responses

Code:

1 = From a San Gabriel Valley Regional Bicycle Master Plan Partner City

2 = From a Non-Partner City within the San Gabriel Valley

3 = From Areas Outside of the San Gabriel Valley

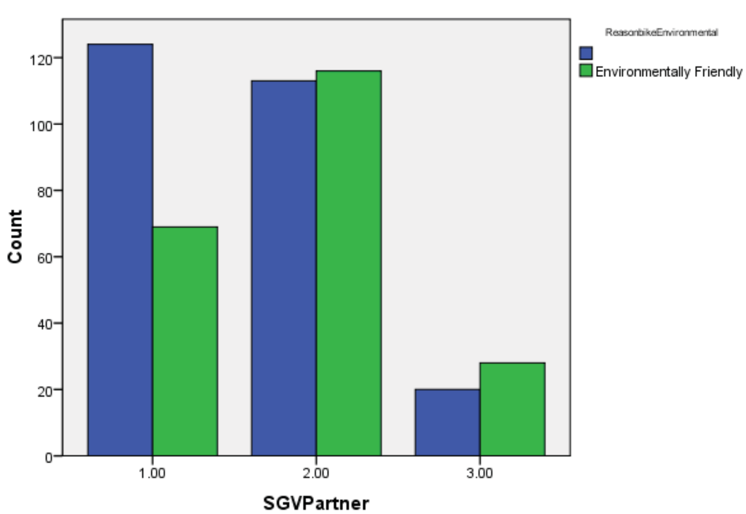
Note: Columns without a header represent respondents that did not choose that item on the survey.

If you ride a bike, what are your reasons? Check all that apply - Environmentally Friendly

SGVPartner * ReasonbikeEnvironmental Crosstabulation

			ReasonbikeEnvironmental		
				Environmentally Friendly	Total
SGVPartner	1	Count	124	69	193
		% within SGVPartner	64.2%	35.8%	100.0%
	2	Count	113	116	229
		% within SGVPartner	49.3%	50.7%	100.0%
	3	Count	20	28	48
		% within SGVPartner	41.7%	58.3%	100.0%
	Total	Count	257	213	470
		% within SGVPartner	54.7%	45.3%	100.0%

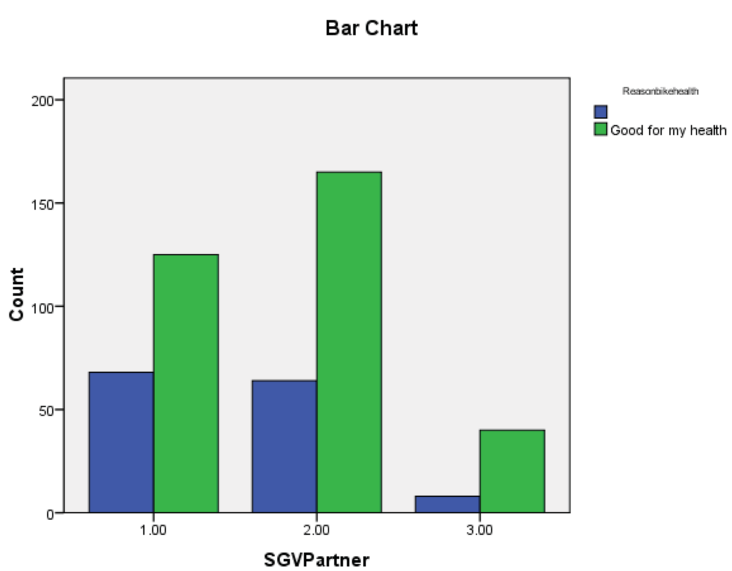
Bar Chart



If you ride a bike, what are your reasons? Check all that apply - Good for my health

SGVPartner * Reasonbikehealth Crosstabulation

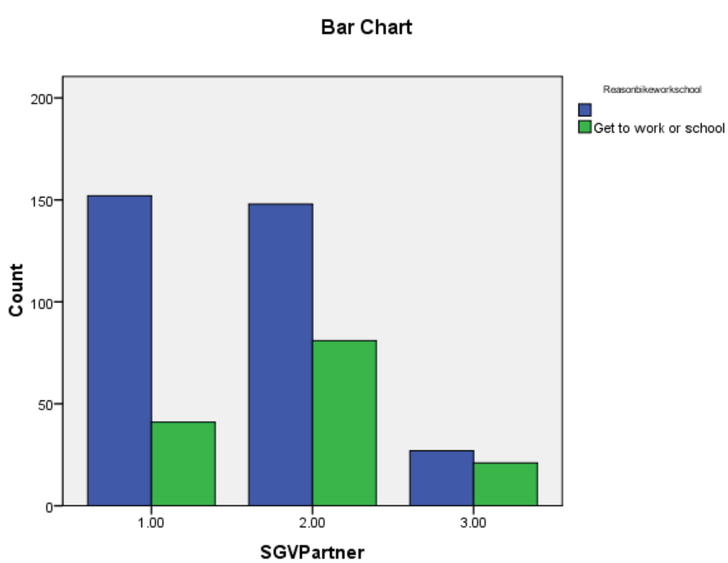
			Reasonbikehealth		
				Good for my health	Total
SGVPartner	1	Count	68	125	193
		% within SGVPartner	35.2%	64.8%	100.0%
	2	Count	64	165	229
		% within SGVPartner	27.9%	72.1%	100.0%
	3	Count	8	40	48
		% within SGVPartner	16.7%	83.3%	100.0%
	Total	Count	140	330	470
		% within SGVPartner	29.8%	70.2%	100.0%



If you ride a bike, what are your reasons? Check all that apply - Get to work or school

SGVPartner * Reasonbikeworkschool Crosstabulation

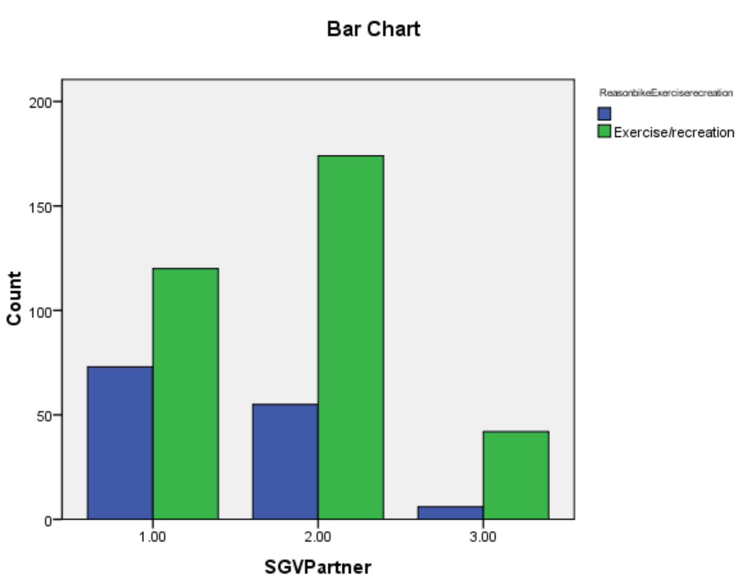
			Reasonbikeworkschool		
				Get to work or school	Total
SGVPartner	1	Count	152	41	193
		% within SGVPartner	78.8%	21.2%	100.0%
	2	Count	148	81	229
		% within SGVPartner	64.6%	35.4%	100.0%
	3	Count	27	21	48
		% within SGVPartner	56.2%	43.8%	100.0%
	Total	Count	327	143	470
		% within SGVPartner	69.6%	30.4%	100.0%



If you ride a bike, what are your reasons? Check all that apply - Exercise/recreation

SGVPartner * ReasonbikeExerciserecreation Crosstabulation

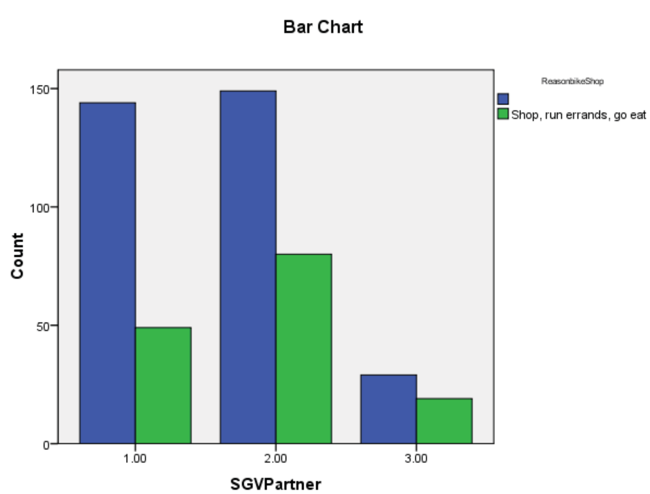
			ReasonbikeExerciserecreation		
				Exercise/recreation	Total
SGVPartner	1	Count	73	120	193
		% within SGVPartner	37.8%	62.2%	100.0%
	2	Count	55	174	229
		% within SGVPartner	24.0%	76.0%	100.0%
	3	Count	6	42	48
		% within SGVPartner	12.5%	87.5%	100.0%
	Total	Count	134	336	470
		% within SGVPartner	28.5%	71.5%	100.0%



If you ride a bike, what are your reasons? Check all that apply - Shop, run errands, go eat

SGVPartner * ReasonbikeShop Crosstabulation

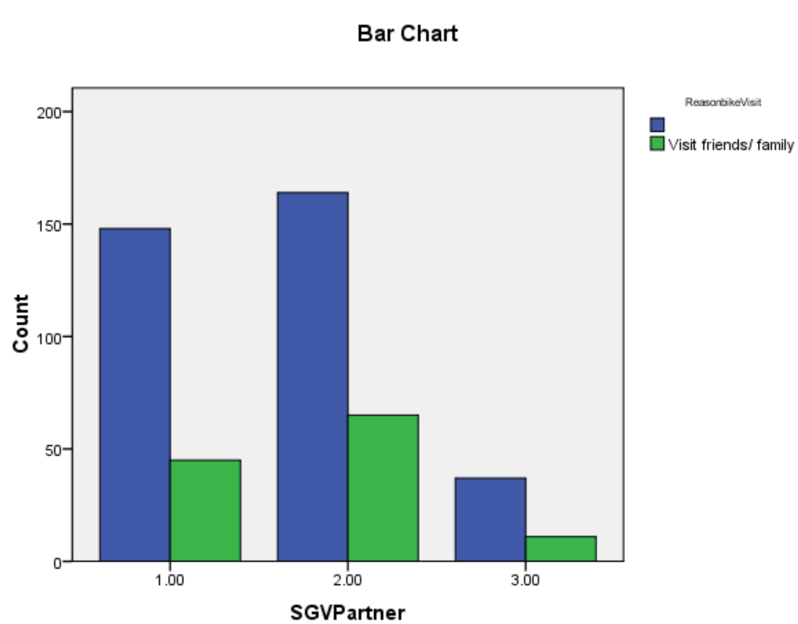
			ReasonbikeShop		
				Shop, run errands, go eat	Total
SGVPartner	1	Count	144	49	193
		% within SGVPartner	74.6%	25.4%	100.0%
	2	Count	149	80	229
		% within SGVPartner	65.1%	34.9%	100.0%
	3	Count	29	19	48
		% within SGVPartner	60.4%	39.6%	100.0%
	Total	Count	322	148	470
		% within SGVPartner	68.5%	31.5%	100.0%



If you ride a bike, what are your reasons? Check all that apply - Visit friends/ family

SGVPartner * ReasonbikeVisit Crosstabulation

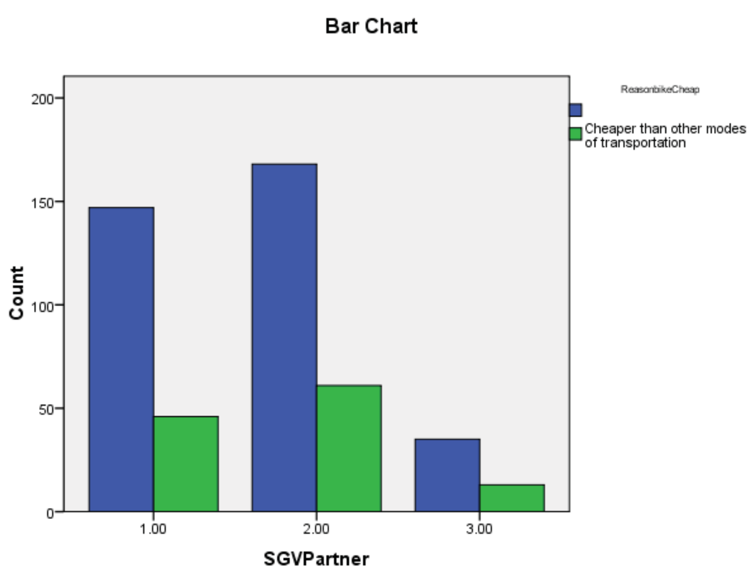
			ReasonbikeVisit		
				Visit friends/ family	Total
SGVPartner	1	Count	148	45	193
		% within SGVPartner	76.7%	23.3%	100.0%
	2	Count	164	65	229
		% within SGVPartner	71.6%	28.4%	100.0%
	3	Count	37	11	48
		% within SGVPartner	77.1%	22.9%	100.0%
	Total	Count	349	121	470
		% within SGVPartner	74.3%	25.7%	100.0%



If you ride a bike, what are your reasons? Check all that apply - Cheaper than other modes of transportation

SGVPartner * ReasonbikeCheap Crosstabulation

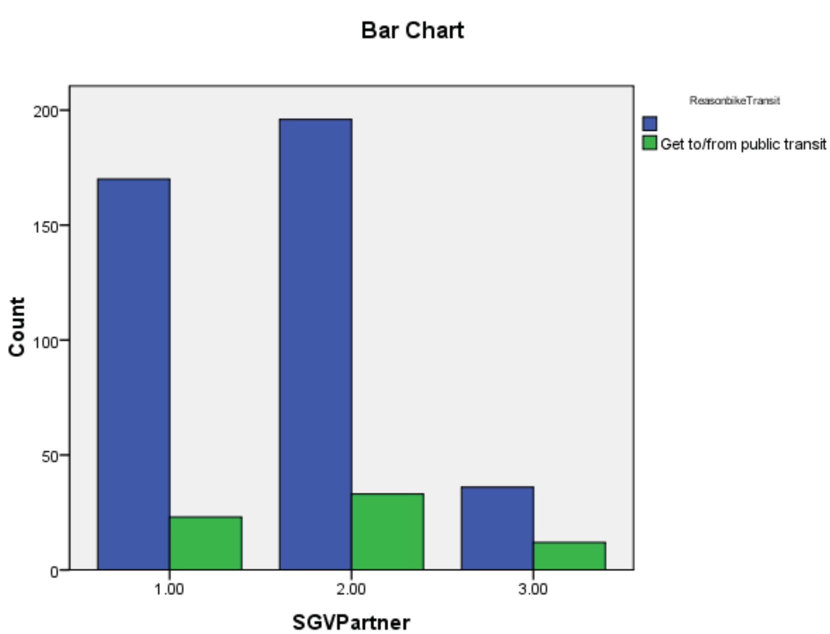
			ReasonbikeCheap		
				Cheaper than other modes of transportation	Total
SGVPartner	1	Count	147	46	193
		% within SGVPartner	76.2%	23.8%	100.0%
	2	Count	168	61	229
		% within SGVPartner	73.4%	26.6%	100.0%
	3	Count	35	13	48
		% within SGVPartner	72.9%	27.1%	100.0%
	Total	Count	350	120	470
		% within SGVPartner	74.5%	25.5%	100.0%



If you ride a bike, what are your reasons? Check all that apply - Get to/from public transit

SGVPartner * ReasonbikeTransit Crosstabulation

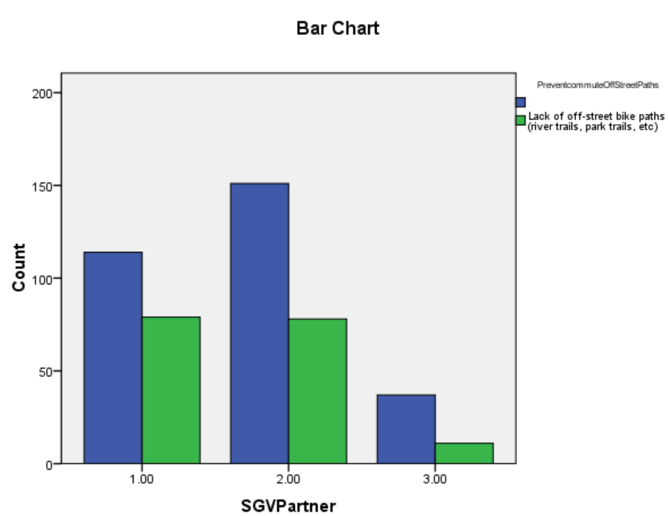
			ReasonbikeTransit		
				Get to/from public transit	Total
SGVPartner	1	Count	170	23	193
		% within SGVPartner	88.1%	11.9%	100.0%
	2	Count	196	33	229
		% within SGVPartner	85.6%	14.4%	100.0%
	3	Count	36	12	48
		% within SGVPartner	75.0%	25.0%	100.0%
	Total	Count	402	68	470
		% within SGVPartner	85.5%	14.5%	100.0%



What prevents you from commuting by bike to work/school more often? Check all that apply - Lack of off-street bike paths (river trails, park trails, etc.)

SGVPartner * PreventcommuteOffStreetPaths Crosstabulation

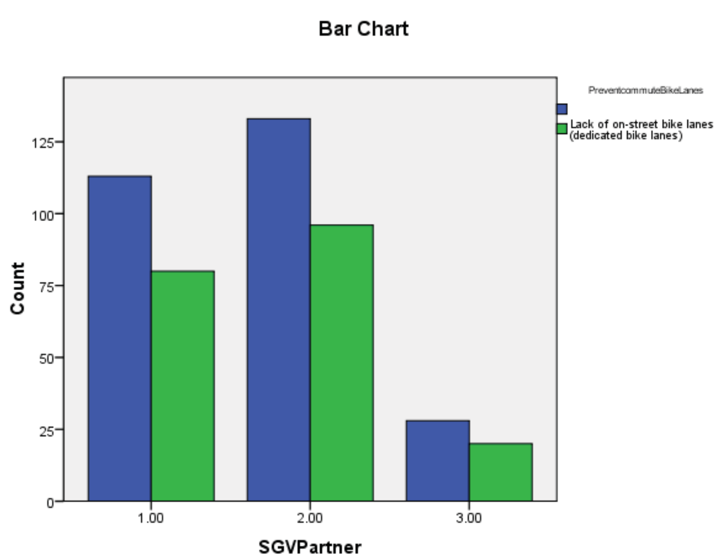
			PreventcommuteOffStreetPaths		
				Lack of off-street bike paths (river trails, park trails, etc)	Total
SGVPartner	1	Count	114	79	193
		% within SGVPartner	59.1%	40.9%	100.0%
	2	Count	151	78	229
		% within SGVPartner	65.9%	34.1%	100.0%
	3	Count	37	11	48
		% within SGVPartner	77.1%	22.9%	100.0%
	Total	Count	302	168	470
		% within SGVPartner	64.3%	35.7%	100.0%



What prevents you from commuting by bike to work/school more often? Check all that apply - Lack of on-street bike lanes (dedicated bike lanes)

SGVPartner * PreventcommuteBikeLanes Crosstabulation

			PreventcommuteBikeLanes		
				Lack of on-street bike lanes (dedicated bike lanes)	Total
SGVPartner	1	Count	113	80	193
		% within SGVPartner	58.5%	41.5%	100.0%
	2	Count	133	96	229
		% within SGVPartner	58.1%	41.9%	100.0%
	3	Count	28	20	48
		% within SGVPartner	58.3%	41.7%	100.0%
	Total	Count	274	196	470
		% within SGVPartner	58.3%	41.7%	100.0%

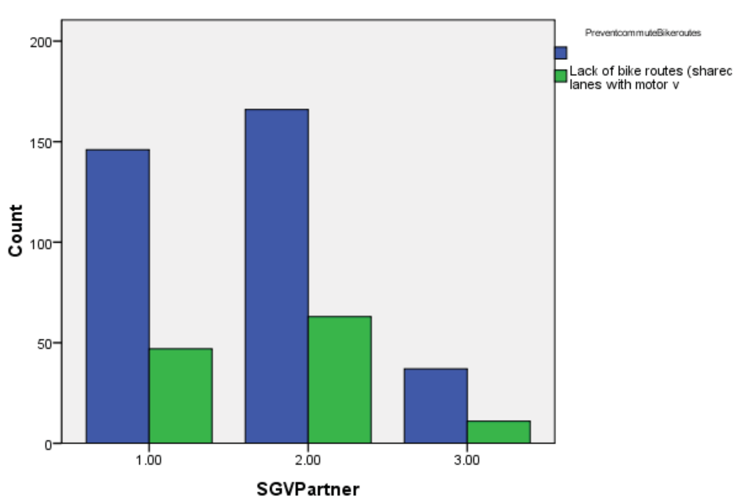


What prevents you from commuting by bike to work/school more often? Check all that apply - Lack of bike routes (shared lanes with motor vehicles)

SGVPartner * PreventcommuteBikeroutes Crosstabulation

			PreventcommuteBikeroutes		
				Lack of bike routes (shared lanes with motor v	Total
SGVPartner	1	Count	146	47	193
		% within SGVPartner	75.6%	24.4%	100.0%
	2	Count	166	63	229
		% within SGVPartner	72.5%	27.5%	100.0%
	3	Count	37	11	48
		% within SGVPartner	77.1%	22.9%	100.0%
	Total	Count	349	121	470
		% within SGVPartner	74.3%	25.7%	100.0%

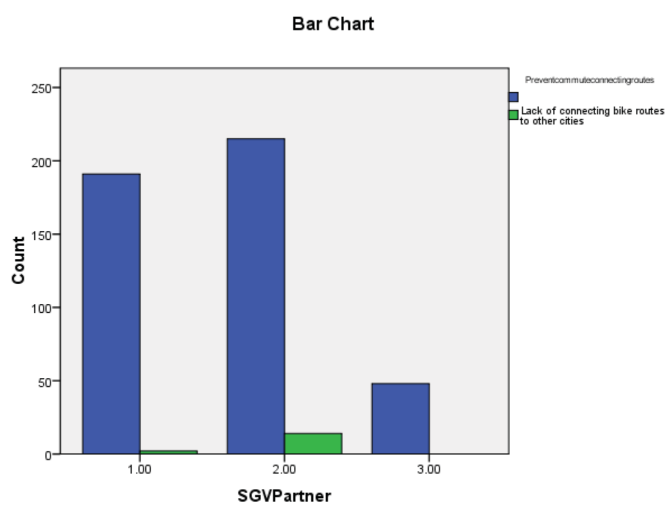
Bar Chart



What prevents you from commuting by bike to work/school more often? Check all that apply - Lack of Connecting Routes to other cities

SGVPartner * Preventcommuteconnectingroutes Crosstabulation

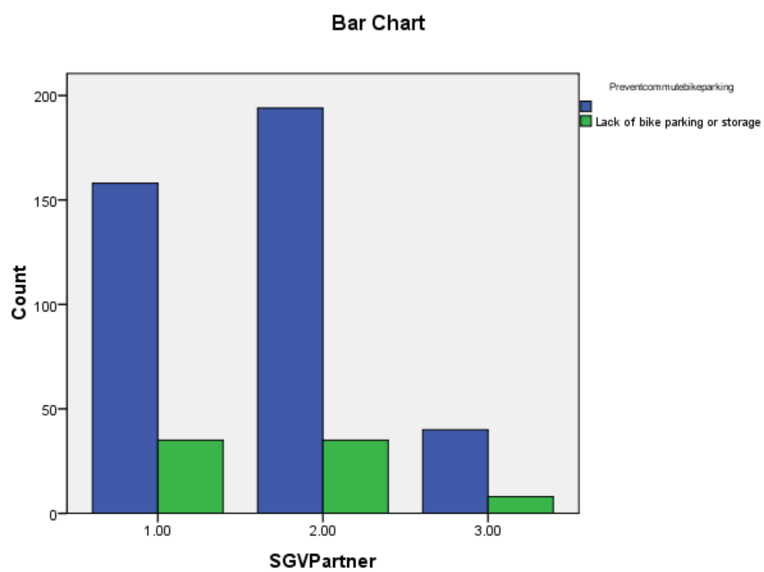
			Preventcommuteconnectingroutes		
				Lack of connecting bike routes to other cities	Total
SGVPartner	1	Count	191	2	193
		% within SGVPartner	99.0%	1.0%	100.0%
	2	Count	215	14	229
		% within SGVPartner	93.9%	6.1%	100.0%
	3	Count	48	0	48
		% within SGVPartner	100.0%	.0%	100.0%
	Total	Count	454	16	470
		% within SGVPartner	96.6%	3.4%	100.0%



What prevents you from commuting by bike to work/school more often? Check all that apply - Lack of bike parking or storage

SGVPartner * Preventcommutebikeparking Crosstabulation

			Preventcommutebikeparking		
				Lack of bike parking or storage	Total
SGVPartner	1	Count	158	35	193
		% within SGVPartner	81.9%	18.1%	100.0%
	2	Count	194	35	229
		% within SGVPartner	84.7%	15.3%	100.0%
	3	Count	40	8	48
		% within SGVPartner	83.3%	16.7%	100.0%
	Total	Count	392	78	470
		% within SGVPartner	83.4%	16.6%	100.0%

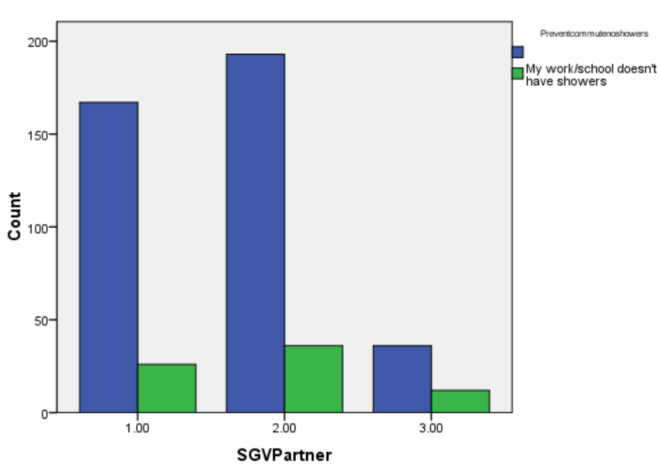


What prevents you from commuting by bike to work/school more often? Check all that apply - My work/school doesn't have showers

SGVPartner * Preventcommutenoshowers Crosstabulation

			Preventcommutenoshowers		
				My work/school doesn't have showers	Total
SGVPartner	1	Count	167	26	193
		% within SGVPartner	86.5%	13.5%	100.0%
	2	Count	193	36	229
		% within SGVPartner	84.3%	15.7%	100.0%
	3	Count	36	12	48
		% within SGVPartner	75.0%	25.0%	100.0%
	Total	Count	396	74	470
		% within SGVPartner	84.3%	15.7%	100.0%

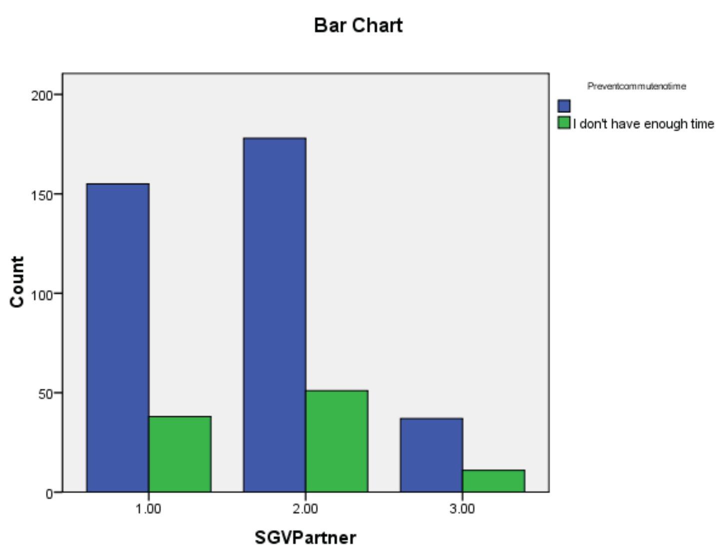
Bar Chart



What prevents you from commuting by bike to work/school more often? Check all that apply - I don't have enough time

SGVPartner * Preventcommutenotime Crosstabulation

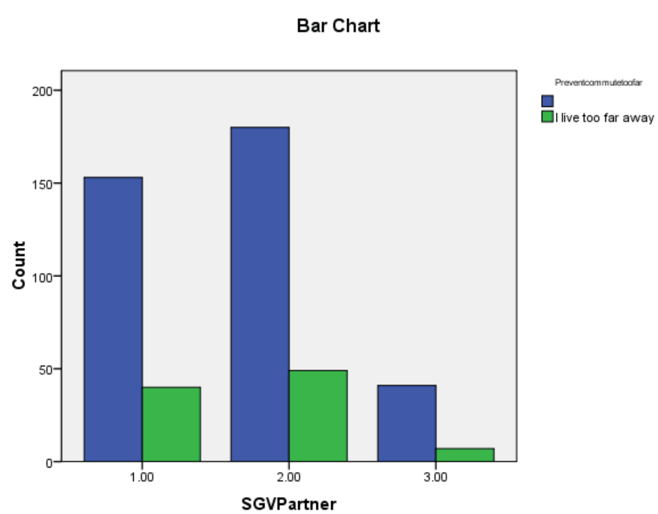
			Preventcommutenotime		
				I don't have enough time	Total
SGVPartner	1	Count	155	38	193
		% within SGVPartner	80.3%	19.7%	100.0%
	2	Count	178	51	229
		% within SGVPartner	77.7%	22.3%	100.0%
	3	Count	37	11	48
		% within SGVPartner	77.1%	22.9%	100.0%
	Total	Count	370	100	470
		% within SGVPartner	78.7%	21.3%	100.0%



What prevents you from commuting by bike to work/school more often? Check all that apply - I live too far away

SGVPartner * Preventcommutetoofar Crosstabulation

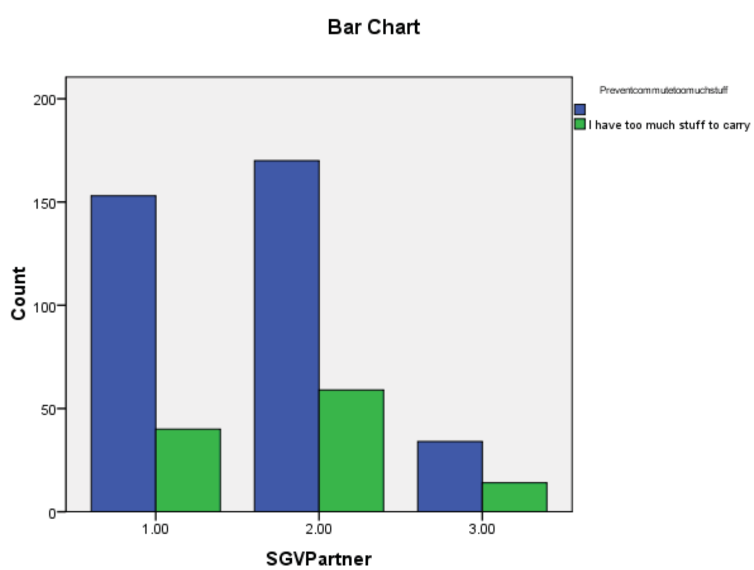
			Preventcommutetoofar		
				I live too far away	Total
SGVPartner	1	Count	153	40	193
		% within SGVPartner	79.3%	20.7%	100.0%
	2	Count	180	49	229
		% within SGVPartner	78.6%	21.4%	100.0%
	3	Count	41	7	48
		% within SGVPartner	85.4%	14.6%	100.0%
	Total	Count	374	96	470
		% within SGVPartner	79.6%	20.4%	100.0%



What prevents you from commuting by bike to work/school more often? Check all that apply - I have too much stuff to carry

SGVPartner * Preventcommutetoomuchstuff Crosstabulation

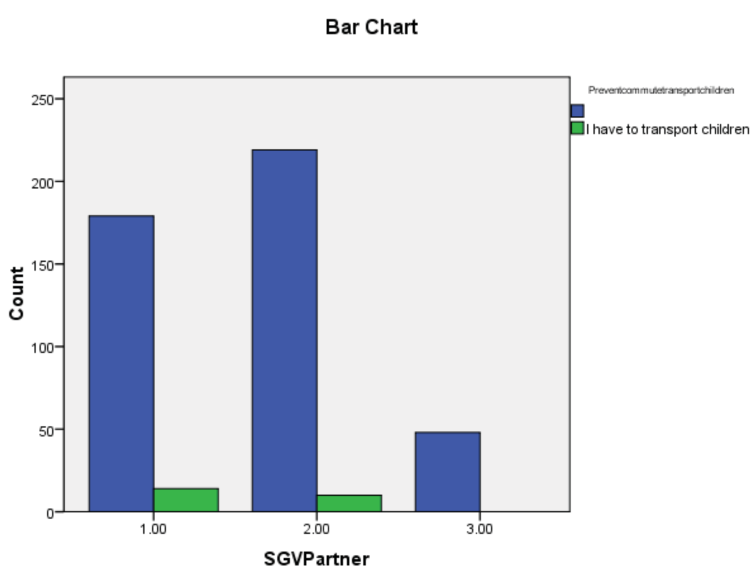
			Preventcommutetoomuchstuff		
				I have too much stuff to carry	Total
SGVPartner	1	Count	153	40	193
		% within SGVPartner	79.3%	20.7%	100.0%
	2	Count	170	59	229
		% within SGVPartner	74.2%	25.8%	100.0%
	3	Count	34	14	48
		% within SGVPartner	70.8%	29.2%	100.0%
	Total	Count	357	113	470
		% within SGVPartner	76.0%	24.0%	100.0%



What prevents you from commuting by bike to work/school more often? Check all that apply - I have to transport children

SGVPartner * Preventcommutetransportchildren Crosstabulation

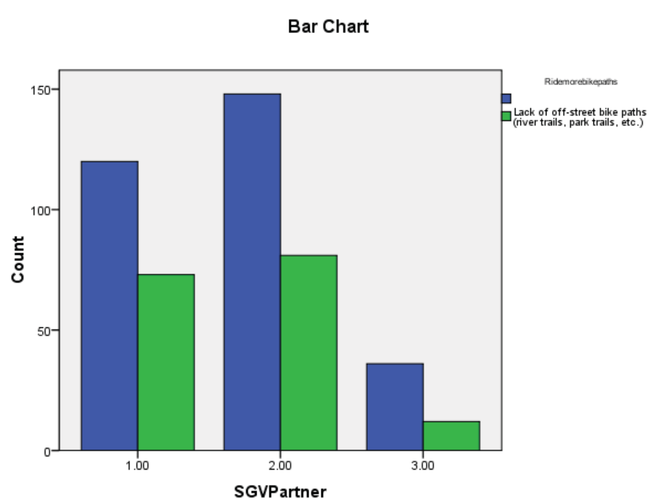
			Preventcommutetransportchildren		
				I have to transport children	Total
SGVPartner	1	Count	179	14	193
		% within SGVPartner	92.7%	7.3%	100.0%
	2	Count	219	10	229
		% within SGVPartner	95.6%	4.4%	100.0%
	3	Count	48	0	48
		% within SGVPartner	100.0%	.0%	100.0%
	Total	Count	446	24	470
		% within SGVPartner	94.9%	5.1%	100.0%



What keeps you from riding a bike more often where you live or work? Check all that apply - Lack of off-street bike paths (river trails, park trails, etc.)

SGVPartner * Ridemorebikepaths Crosstabulation

			Ridemorebikepaths		
				Lack of off-street bike paths (river trails, park trails, etc.)	Total
SGVPartner	1	Count	120	73	193
		% within SGVPartner	62.2%	37.8%	100.0%
	2	Count	148	81	229
		% within SGVPartner	64.6%	35.4%	100.0%
	3	Count	36	12	48
		% within SGVPartner	75.0%	25.0%	100.0%
	Total	Count	304	166	470
		% within SGVPartner	64.7%	35.3%	100.0%

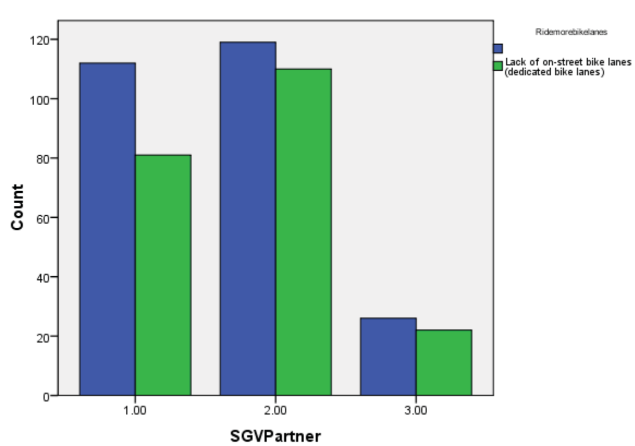


What keeps you from riding a bike more often where you live or work? Check all that apply - Lack of on-street bike lanes (dedicated bike lanes)

SGVPartner * Ridemorebikelanes Crosstabulation

			Ridemorebikelanes		
				Lack of on-street bike lanes (dedicated bike lanes)	Total
SGVPartner	1	Count	112	81	193
		% within SGVPartner	58.0%	42.0%	100.0%
	2	Count	119	110	229
		% within SGVPartner	52.0%	48.0%	100.0%
	3	Count	26	22	48
		% within SGVPartner	54.2%	45.8%	100.0%
	Total	Count	257	213	470
		% within SGVPartner	54.7%	45.3%	100.0%

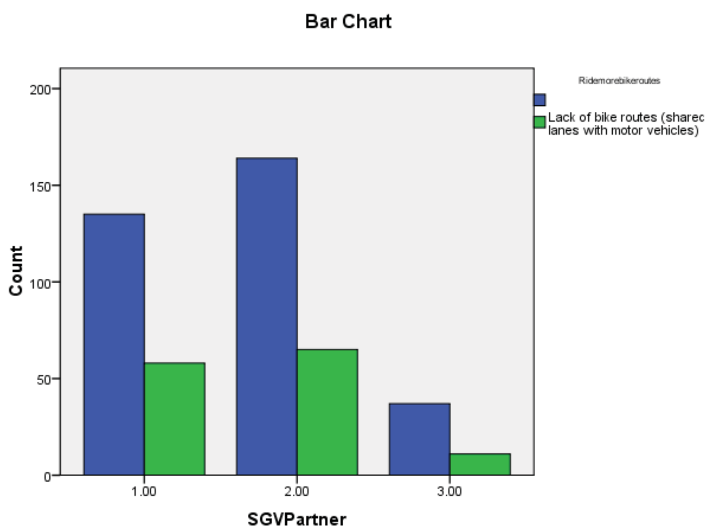
Bar Chart



What keeps you from riding a bike more often where you live or work? Check all that apply - Lack of bike routes (shared lanes with motor vehicles)

SGVPartner * Ridemorebikeroutes Crosstabulation

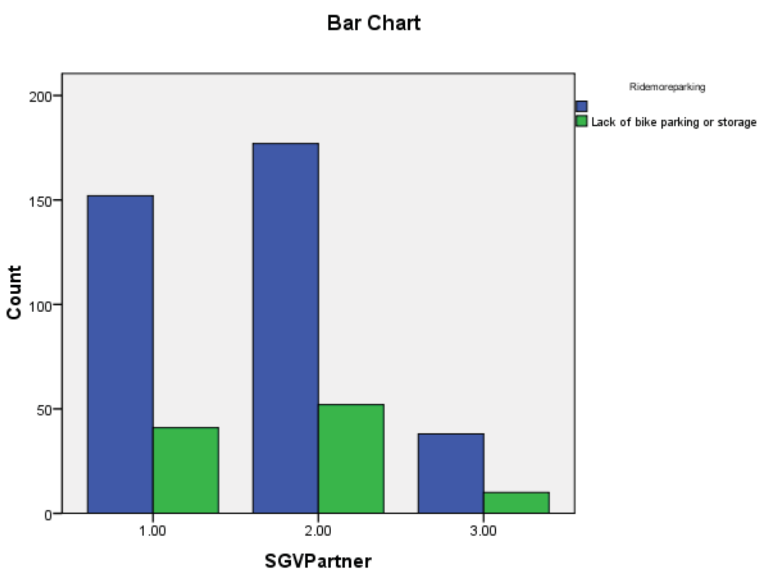
			Ridemorebikeroutes		
				Lack of bike routes (shared lanes with motor vehicles)	Total
SGVPartner	1	Count	135	58	193
		% within SGVPartner	69.9%	30.1%	100.0%
	2	Count	164	65	229
		% within SGVPartner	71.6%	28.4%	100.0%
	3	Count	37	11	48
		% within SGVPartner	77.1%	22.9%	100.0%
	Total	Count	336	134	470
		% within SGVPartner	71.5%	28.5%	100.0%



What keeps you from riding a bike more often where you live or work? Check all that apply - Lack of bike parking or storage

SGVPartner * Ridemoreparking Crosstabulation

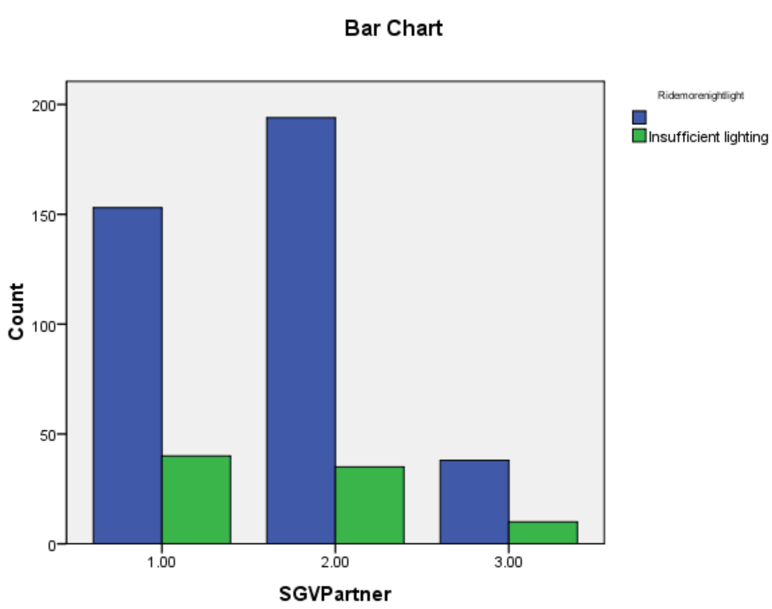
			Ridemoreparking		
				Lack of bike parking or storage	Total
SGVPartner	1	Count	152	41	193
		% within SGVPartner	78.8%	21.2%	100.0%
	2	Count	177	52	229
		% within SGVPartner	77.3%	22.7%	100.0%
	3	Count	38	10	48
		% within SGVPartner	79.2%	20.8%	100.0%
	Total	Count	367	103	470
		% within SGVPartner	78.1%	21.9%	100.0%



What keeps you from riding a bike more often where you live or work? Check all that apply - Insufficient lighting

SGVPartner * Ridemorenightlight Crosstabulation

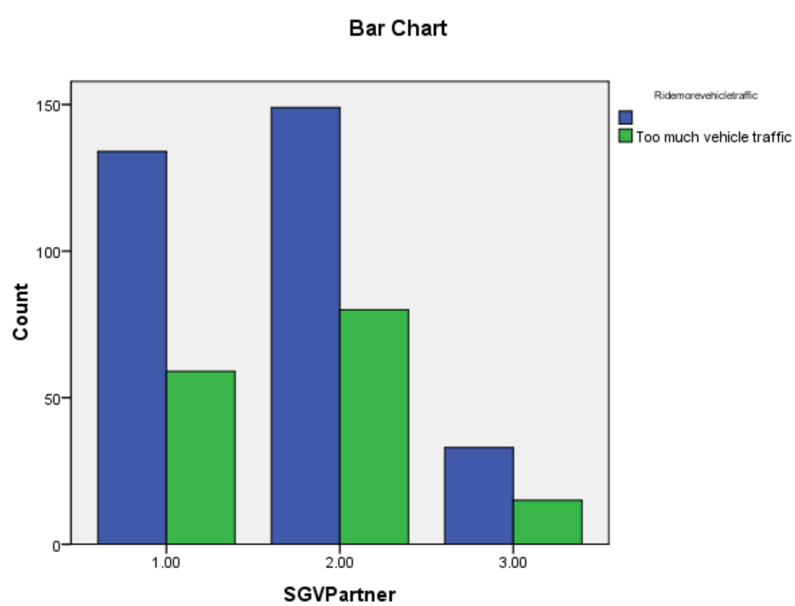
			Ridemorenightlight		
				Insufficient lighting	Total
SGVPartner	1	Count	153	40	193
		% within SGVPartner	79.3%	20.7%	100.0%
	2	Count	194	35	229
		% within SGVPartner	84.7%	15.3%	100.0%
	3	Count	38	10	48
		% within SGVPartner	79.2%	20.8%	100.0%
	Total	Count	385	85	470
		% within SGVPartner	81.9%	18.1%	100.0%



What keeps you from riding a bike more often where you live or work? Check all that apply - Vehicle volumes or speeds

SGVPartner * Ridemorevehicletraffic Crosstabulation

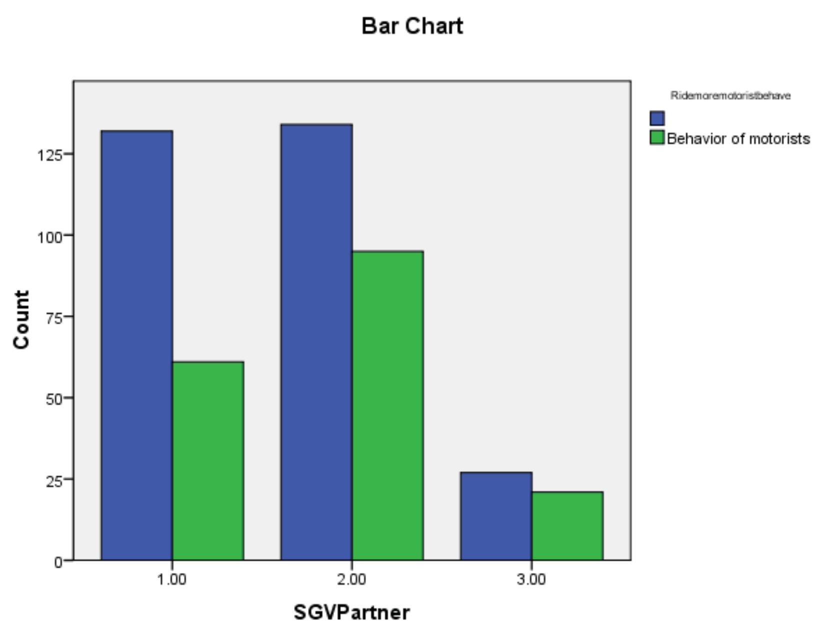
			Ridemorevehicletraffic		
				Too much vehicle traffic	Total
SGVPartner	1	Count	134	59	193
		% within SGVPartner	69.4%	30.6%	100.0%
	2	Count	149	80	229
		% within SGVPartner	65.1%	34.9%	100.0%
	3	Count	33	15	48
		% within SGVPartner	68.8%	31.2%	100.0%
	Total	Count	316	154	470
		% within SGVPartner	67.2%	32.8%	100.0%



What keeps you from riding a bike more often where you live or work? Check all that apply - Behavior of motorists

SGVPartner * Ridemoremotoristbehave Crosstabulation

			Ridemoremotoristbehave		
				Behavior of motorists	Total
SGVPartner	1	Count	132	61	193
		% within SGVPartner	68.4%	31.6%	100.0%
	2	Count	134	95	229
		% within SGVPartner	58.5%	41.5%	100.0%
	3	Count	27	21	48
		% within SGVPartner	56.2%	43.8%	100.0%
	Total	Count	293	177	470
		% within SGVPartner	62.3%	37.7%	100.0%

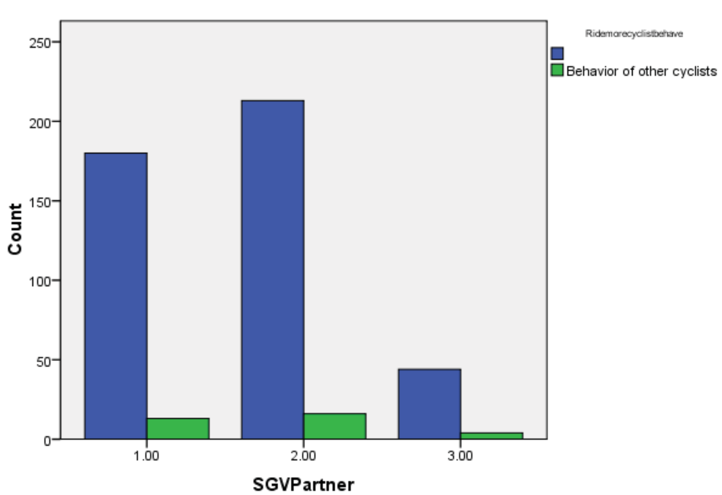


What keeps you from riding a bike more often where you live or work? Check all that apply - Behavior of other bicycle riders

SGVPartner * Ridemorecyclistbehave Crosstabulation

			Ridemorecyclistbehave		
				Behavior of other cyclists	Total
SGVPartner	1	Count	180	13	193
		% within SGVPartner	93.3%	6.7%	100.0%
	2	Count	213	16	229
		% within SGVPartner	93.0%	7.0%	100.0%
	3	Count	44	4	48
		% within SGVPartner	91.7%	8.3%	100.0%
	Total	Count	437	33	470
		% within SGVPartner	93.0%	7.0%	100.0%

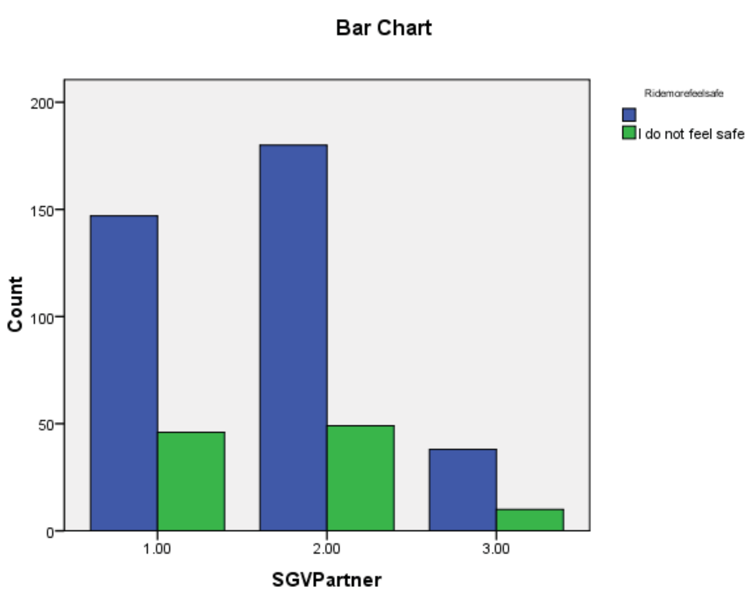
Bar Chart



What keeps you from riding a bike more often where you live or work? Check all that apply - I do not feel safe

SGVPartner * Ridemorefeelsafe Crosstabulation

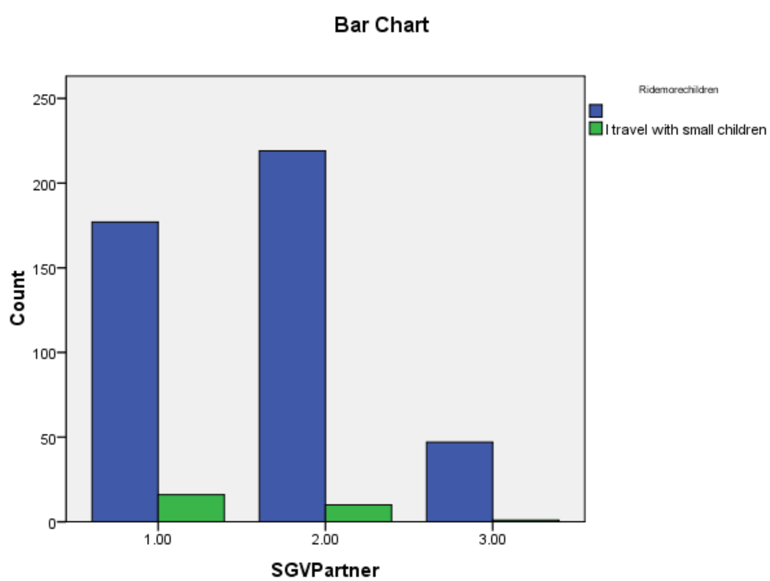
			Ridemorefeelsafe		
				I do not feel safe	Total
SGVPartner	1	Count	147	46	193
		% within SGVPartner	76.2%	23.8%	100.0%
	2	Count	180	49	229
		% within SGVPartner	78.6%	21.4%	100.0%
	3	Count	38	10	48
		% within SGVPartner	79.2%	20.8%	100.0%
	Total	Count	365	105	470
		% within SGVPartner	77.7%	22.3%	100.0%



What keeps you from riding a bike more often where you live or work? Check all that apply - I travel with small children

SGVPartner * Ridemorechildren Crosstabulation

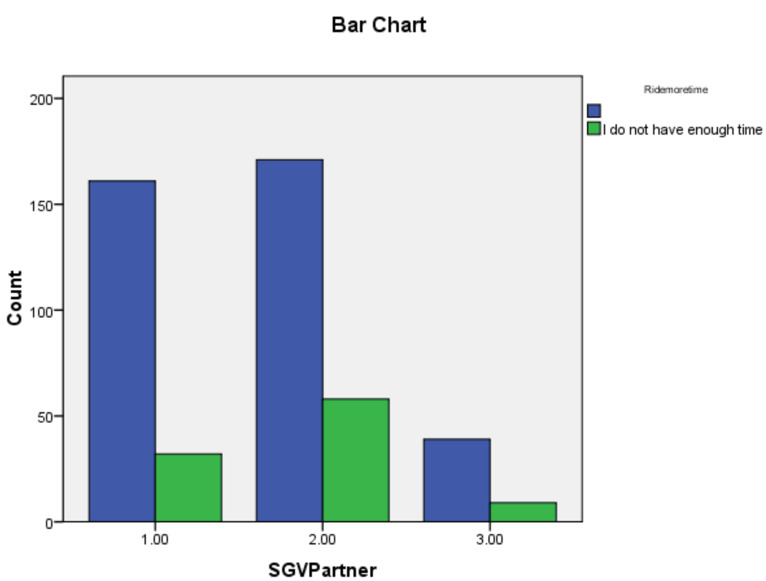
			Ridemorechildren		
				I travel with small children	Total
SGVPartner	1	Count	177	16	193
		% within SGVPartner	91.7%	8.3%	100.0%
	2	Count	219	10	229
		% within SGVPartner	95.6%	4.4%	100.0%
	3	Count	47	1	48
		% within SGVPartner	97.9%	2.1%	100.0%
	Total	Count	443	27	470
		% within SGVPartner	94.3%	5.7%	100.0%



What keeps you from riding a bike more often where you live or work? Check all that apply - I don't have enough time

SGVPartner * Ridemoretime Crosstabulation

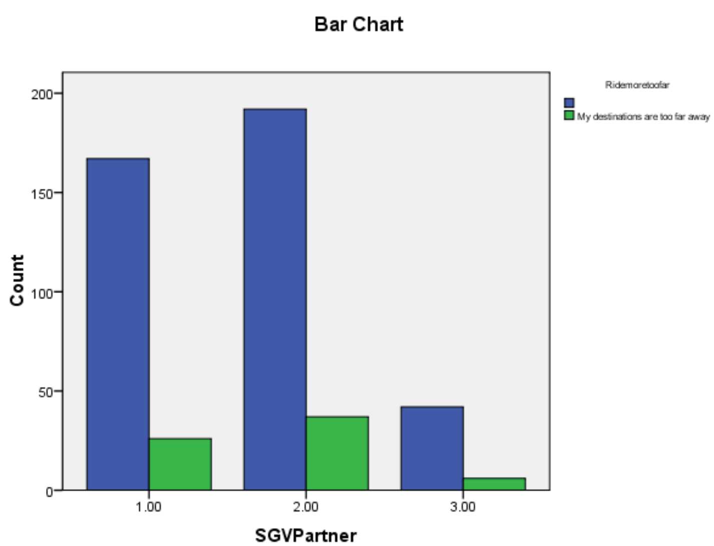
			Ridemoretime		
				I do not have enough time	Total
SGVPartner	1	Count	161	32	193
		% within SGVPartner	83.4%	16.6%	100.0%
	2	Count	171	58	229
		% within SGVPartner	74.7%	25.3%	100.0%
	3	Count	39	9	48
		% within SGVPartner	81.2%	18.8%	100.0%
	Total	Count	371	99	470
		% within SGVPartner	78.9%	21.1%	100.0%



What keeps you from riding a bike more often where you live or work? Check all that apply - My destinations are too far away

SGVPartner * Ridemoretoofar Crosstabulation

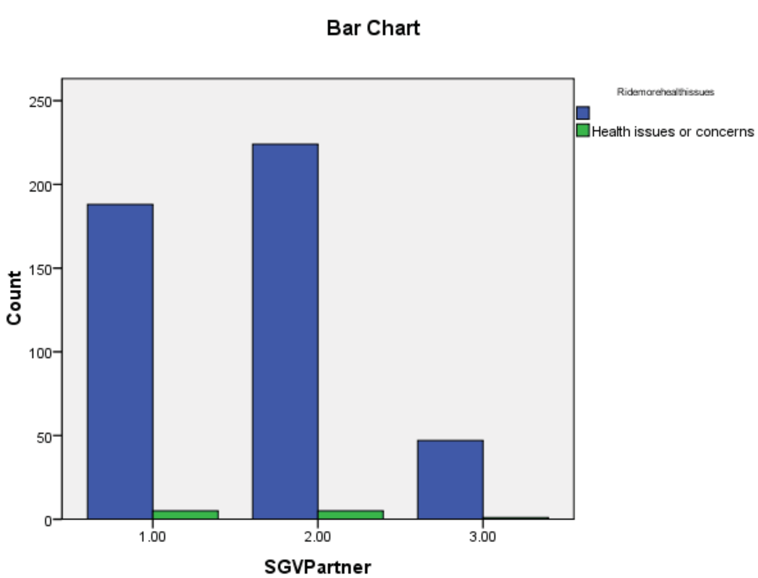
			Ridemoretoofar		
				My destinations are too far away	Total
SGVPartner	1	Count	167	26	193
		% within SGVPartner	86.5%	13.5%	100.0%
	2	Count	192	37	229
		% within SGVPartner	83.8%	16.2%	100.0%
	3	Count	42	6	48
		% within SGVPartner	87.5%	12.5%	100.0%
	Total	Count	401	69	470
		% within SGVPartner	85.3%	14.7%	100.0%



What keeps you from riding a bike more often where you live or work? Check all that apply - Health issues or concerns

SGVPartner * Ridemorehealthissues Crosstabulation

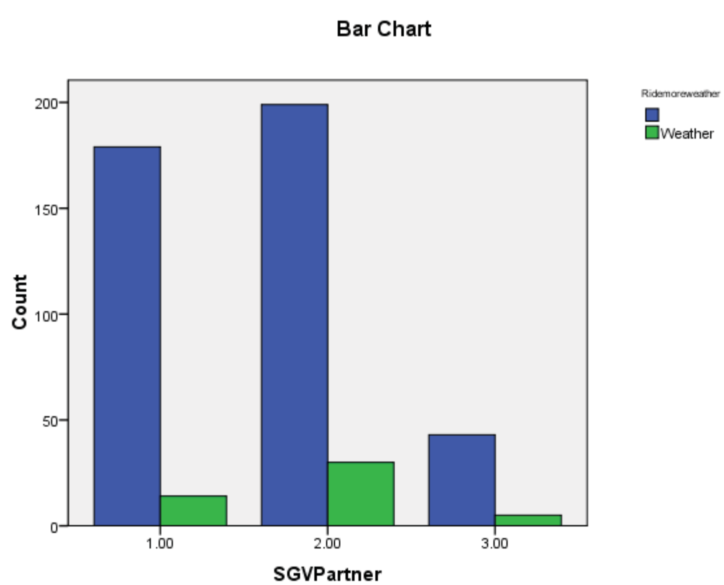
			Ridemorehealthissues		
				Health issues or concerns	Total
SGVPartner	1	Count	188	5	193
		% within SGVPartner	97.4%	2.6%	100.0%
	2	Count	224	5	229
		% within SGVPartner	97.8%	2.2%	100.0%
	3	Count	47	1	48
		% within SGVPartner	97.9%	2.1%	100.0%
	Total	Count	459	11	470
		% within SGVPartner	97.7%	2.3%	100.0%



What keeps you from riding a bike more often where you live or work? Check all that apply - Weather

SGVPartner * Ridemoreweather Crosstabulation

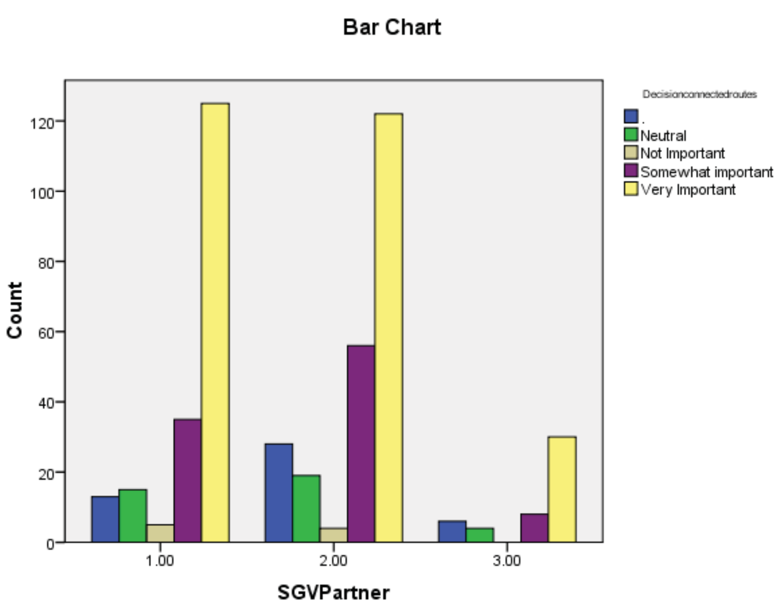
			Ridemoreweather		
				Weather	Total
SGVPartner	1	Count	179	14	193
		% within SGVPartner	92.7%	7.3%	100.0%
	2	Count	199	30	229
		% within SGVPartner	86.9%	13.1%	100.0%
	3	Count	43	5	48
		% within SGVPartner	89.6%	10.4%	100.0%
	Total	Count	421	49	470
		% within SGVPartner	89.6%	10.4%	100.0%



Please rank to what degree of importance the following conditions affect your decision to ride a bicycle: - Connected bike routes between cities

SGVPartner * Decisionconnectedroutes Crosstabulation

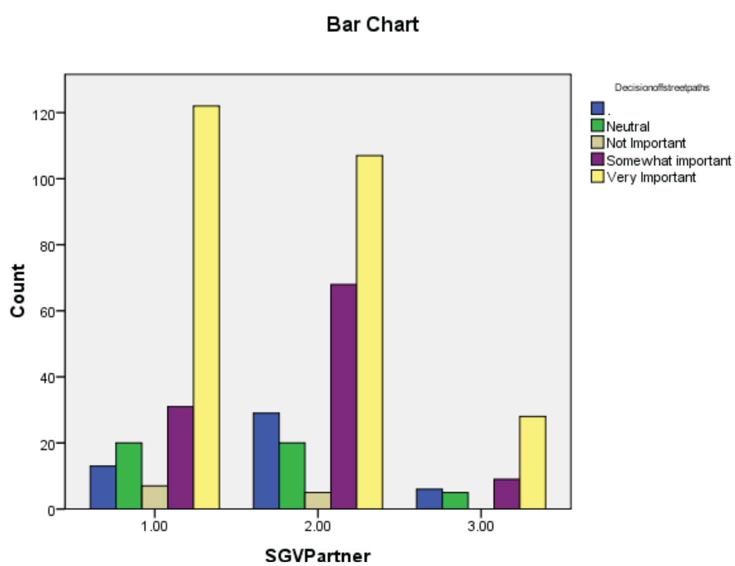
			Decisionconnectedroutes					
			.	Neutral	Not Important	Somewhat important	Very Important	Total
SGVPartner	1	Count	13	15	5	35	125	193
		% within SGVPartner	6.7%	7.8%	2.6%	18.1%	64.8%	100.0%
	2	Count	28	19	4	56	122	229
		% within SGVPartner	12.2%	8.3%	1.7%	24.5%	53.3%	100.0%
	3	Count	6	4	0	8	30	48
		% within SGVPartner	12.5%	8.3%	.0%	16.7%	62.5%	100.0%
	Total	Count	47	38	9	99	277	470
		% within SGVPartner	10.0%	8.1%	1.9%	21.1%	58.9%	100.0%



Please rank to what degree of importance the following conditions affect your decision to ride a bicycle: - Presence of off-street bike paths

SGVPartner * Decisionoffstreetpaths Crosstabulation

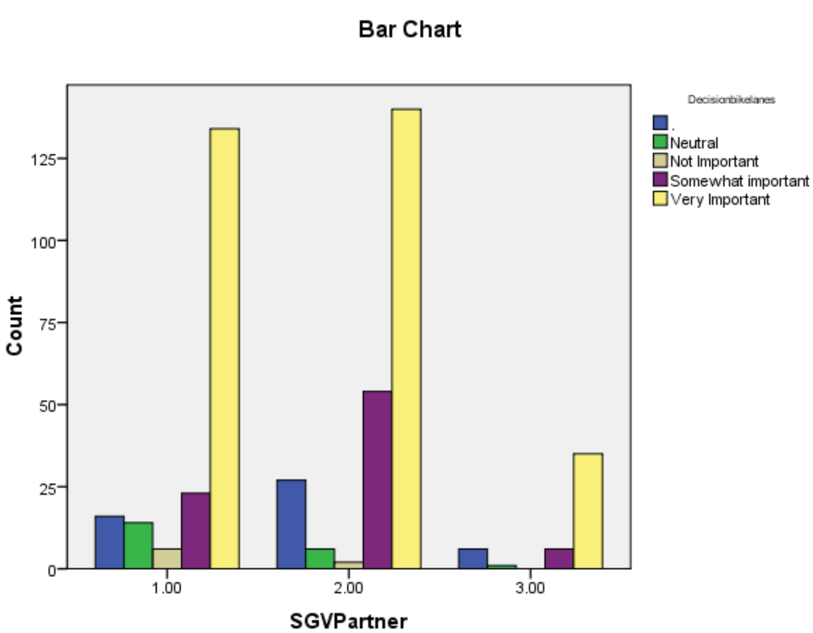
			Decisionoffstreetpaths					
			.	Neutral	Not Important	Somewhat important	Very Important	Total
SGVPartner	1	Count	13	20	7	31	122	193
		% within SGVPartner	6.7%	10.4%	3.6%	16.1%	63.2%	100.0%
	2	Count	29	20	5	68	107	229
		% within SGVPartner	12.7%	8.7%	2.2%	29.7%	46.7%	100.0%
	3	Count	6	5	0	9	28	48
		% within SGVPartner	12.5%	10.4%	.0%	18.8%	58.3%	100.0%
	Total	Count	48	45	12	108	257	470
		% within SGVPartner	10.2%	9.6%	2.6%	23.0%	54.7%	100.0%



Please rank to what degree of importance the following conditions affect your decision to ride a bicycle: - Presence of on-street bike lanes

SGVPartner * Decisionbikelanes Crosstabulation

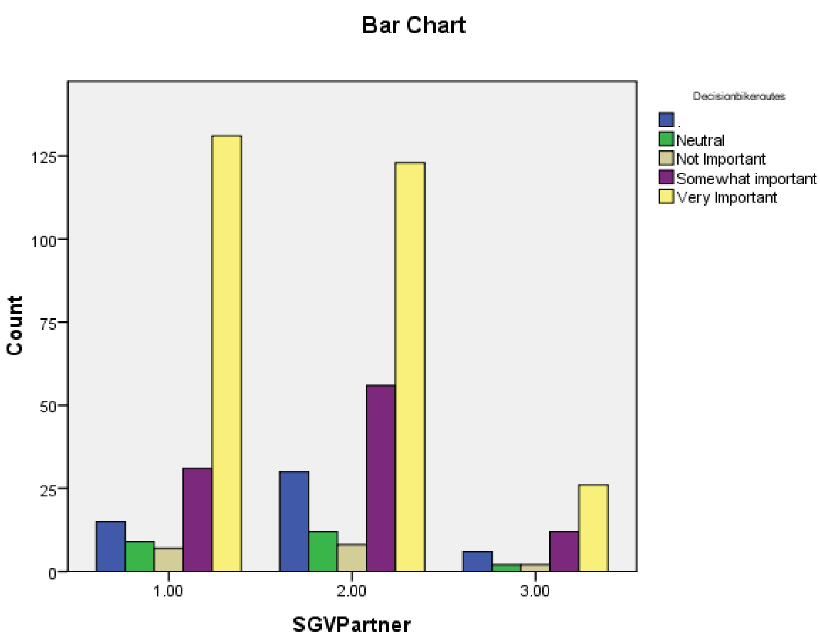
			Decisionbikelanes					
			.	Neutral	Not Important	Somewhat important	Very Important	Total
SGVPartner	1	Count	16	14	6	23	134	193
		% within SGVPartner	8.3%	7.3%	3.1%	11.9%	69.4%	100.0%
	2	Count	27	6	2	54	140	229
		% within SGVPartner	11.8%	2.6%	.9%	23.6%	61.1%	100.0%
	3	Count	6	1	0	6	35	48
		% within SGVPartner	12.5%	2.1%	.0%	12.5%	72.9%	100.0%
	Total	Count	49	21	8	83	309	470
		% within SGVPartner	10.4%	4.5%	1.7%	17.7%	65.7%	100.0%



Please rank to what degree of importance the following conditions affect your decision to ride a bicycle: - Presence of bike routes

SGVPartner * Decisionbikeroutes Crosstabulation

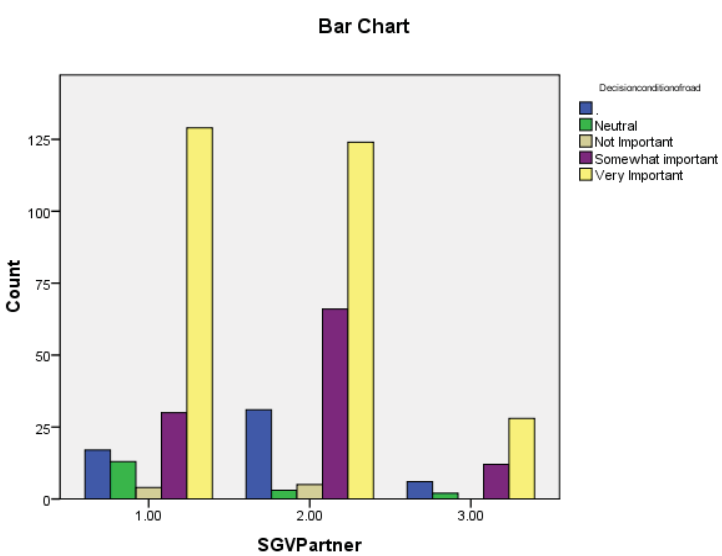
			Decisionbikeroutes					
			.	Neutral	Not Important	Somewhat important	Very Important	Total
SGVPartner	1	Count	15	9	7	31	131	193
		% within SGVPartner	7.8%	4.7%	3.6%	16.1%	67.9%	100.0%
	2	Count	30	12	8	56	123	229
		% within SGVPartner	13.1%	5.2%	3.5%	24.5%	53.7%	100.0%
	3	Count	6	2	2	12	26	48
		% within SGVPartner	12.5%	4.2%	4.2%	25.0%	54.2%	100.0%
	Total	Count	51	23	17	99	280	470
		% within SGVPartner	10.9%	4.9%	3.6%	21.1%	59.6%	100.0%



Please rank to what degree of importance the following conditions affect your decision to ride a bicycle: - Condition of bikeway/roadway (e.g., pavement quality)

SGVPartner * Decisionconditionofroad Crosstabulation

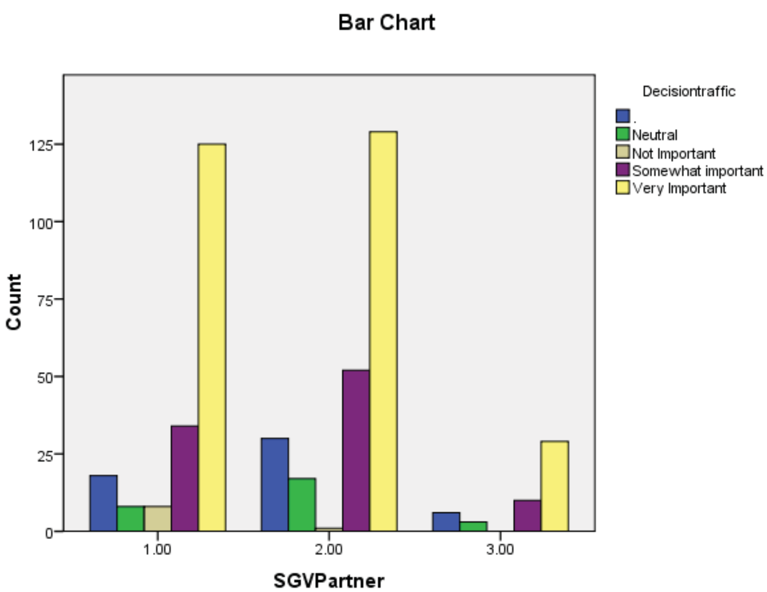
			Decisionconditionofroad					
			.	Neutral	Not Important	Somewhat important	Very Important	Total
SGVPartner	1	Count	17	13	4	30	129	193
		% within SGVPartner	8.8%	6.7%	2.1%	15.5%	66.8%	100.0%
	2	Count	31	3	5	66	124	229
		% within SGVPartner	13.5%	1.3%	2.2%	28.8%	54.1%	100.0%
	3	Count	6	2	0	12	28	48
		% within SGVPartner	12.5%	4.2%	.0%	25.0%	58.3%	100.0%
	Total	Count	54	18	9	108	281	470
		% within SGVPartner	11.5%	3.8%	1.9%	23.0%	59.8%	100.0%



Please rank to what degree of importance the following conditions affect your decision to ride a bicycle: - Traffic volumes/speeds

SGVPartner * Decisiontraffic Crosstabulation

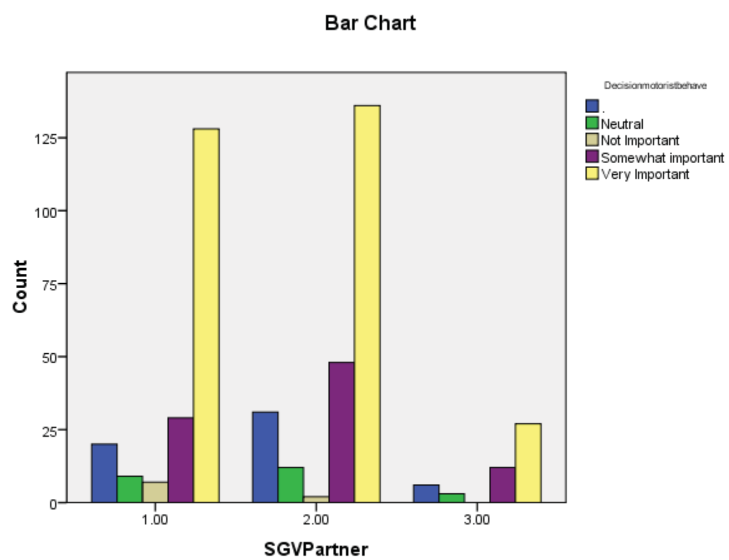
			Decisiontraffic					
			.	Neutral	Not Important	Somewhat important	Very Important	Total
SGVPartner	1	Count	18	8	8	34	125	193
		% within SGVPartner	9.3%	4.1%	4.1%	17.6%	64.8%	100.0%
	2	Count	30	17	1	52	129	229
		% within SGVPartner	13.1%	7.4%	.4%	22.7%	56.3%	100.0%
	3	Count	6	3	0	10	29	48
		% within SGVPartner	12.5%	6.2%	.0%	20.8%	60.4%	100.0%
	Total	Count	54	28	9	96	283	470
		% within SGVPartner	11.5%	6.0%	1.9%	20.4%	60.2%	100.0%



Please rank to what degree of importance the following conditions affect your decision to ride a bicycle: - Behavior of motorists

SGVPartner * Decisionmotoristbehave Crosstabulation

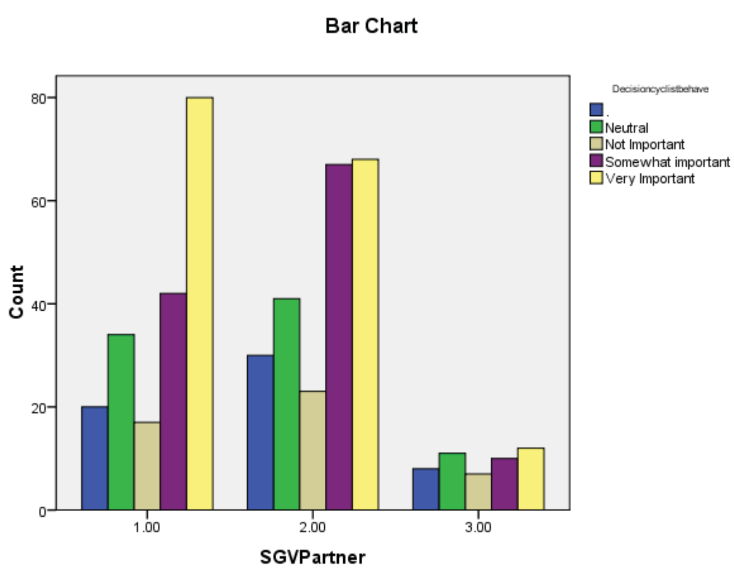
			Decisionmotoristbehave					
			.	Neutral	Not Important	Somewhat important	Very Important	Total
SGVPartner	1	Count	20	9	7	29	128	193
		% within SGVPartner	10.4%	4.7%	3.6%	15.0%	66.3%	100.0%
	2	Count	31	12	2	48	136	229
		% within SGVPartner	13.5%	5.2%	.9%	21.0%	59.4%	100.0%
	3	Count	6	3	0	12	27	48
		% within SGVPartner	12.5%	6.2%	.0%	25.0%	56.2%	100.0%
	Total	Count	57	24	9	89	291	470
		% within SGVPartner	12.1%	5.1%	1.9%	18.9%	61.9%	100.0%



Please rank to what degree of importance the following conditions affect your decision to ride a bicycle: - Behavior of other bicycle riders

SGVPartner * Decisioncyclistbehave Crosstabulation

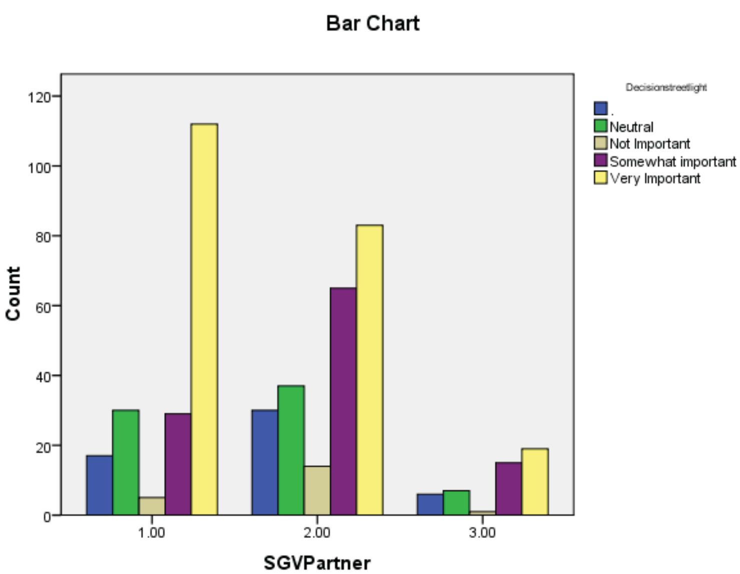
			Decisioncyclistbehave					
			.	Neutral	Not Important	Somewhat important	Very Important	Total
SGVPartner	1	Count	20	34	17	42	80	193
		% within SGVPartner	10.4%	17.6%	8.8%	21.8%	41.5%	100.0%
	2	Count	30	41	23	67	68	229
		% within SGVPartner	13.1%	17.9%	10.0%	29.3%	29.7%	100.0%
	3	Count	8	11	7	10	12	48
		% within SGVPartner	16.7%	22.9%	14.6%	20.8%	25.0%	100.0%
	Total	Count	58	86	47	119	160	470
		% within SGVPartner	12.3%	18.3%	10.0%	25.3%	34.0%	100.0%



Please rank to what degree of importance the following conditions affect your decision to ride a bicycle: - Amount of street lighting

SGVPartner * Decisionstreetlight Crosstabulation

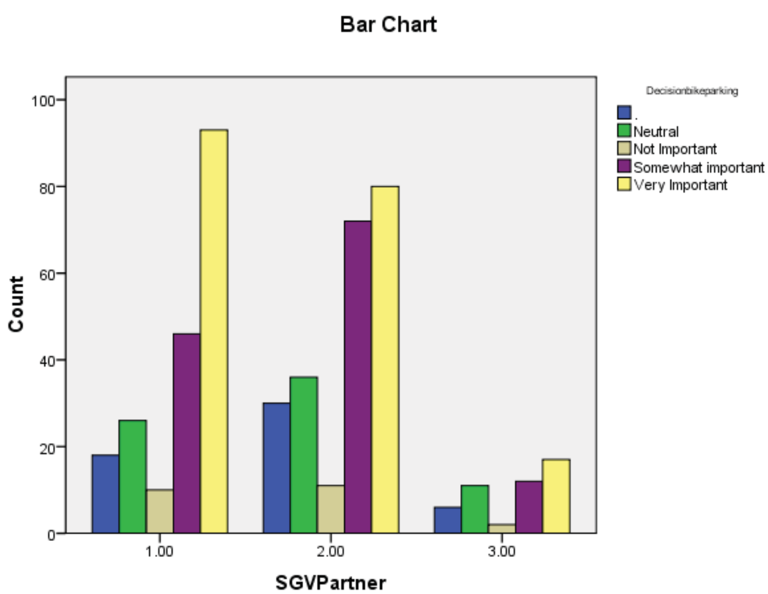
			Decisionstreetlight					
			.	Neutral	Not Important	Somewhat important	Very Important	Total
SGVPartner	1	Count	17	30	5	29	112	193
		% within SGVPartner	8.8%	15.5%	2.6%	15.0%	58.0%	100.0%
	2	Count	30	37	14	65	83	229
		% within SGVPartner	13.1%	16.2%	6.1%	28.4%	36.2%	100.0%
	3	Count	6	7	1	15	19	48
		% within SGVPartner	12.5%	14.6%	2.1%	31.2%	39.6%	100.0%
	Total	Count	53	74	20	109	214	470
		% within SGVPartner	11.3%	15.7%	4.3%	23.2%	45.5%	100.0%



Please rank to what degree of importance the following conditions affect your decision to ride a bicycle: - Access to bike parking and storage

SGVPartner * Decisionbikeparking Crosstabulation

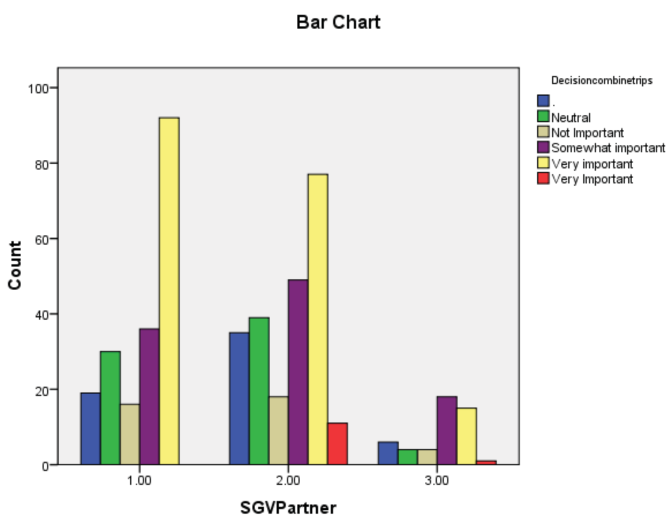
			Decisionbikeparking					
			.	Neutral	Not Important	Somewhat important	Very Important	Total
SGVPartner	1	Count	18	26	10	46	93	193
		% within SGVPartner	9.3%	13.5%	5.2%	23.8%	48.2%	100.0%
	2	Count	30	36	11	72	80	229
		% within SGVPartner	13.1%	15.7%	4.8%	31.4%	34.9%	100.0%
	3	Count	6	11	2	12	17	48
		% within SGVPartner	12.5%	22.9%	4.2%	25.0%	35.4%	100.0%
	Total	Count	54	73	23	130	190	470
		% within SGVPartner	11.5%	15.5%	4.9%	27.7%	40.4%	100.0%



Please rank to what degree of importance the following conditions affect your decision to ride a bicycle: - Ability to combine bicycle trips with transit trips

SGVPartner * Decisioncombinetrips Crosstabulation

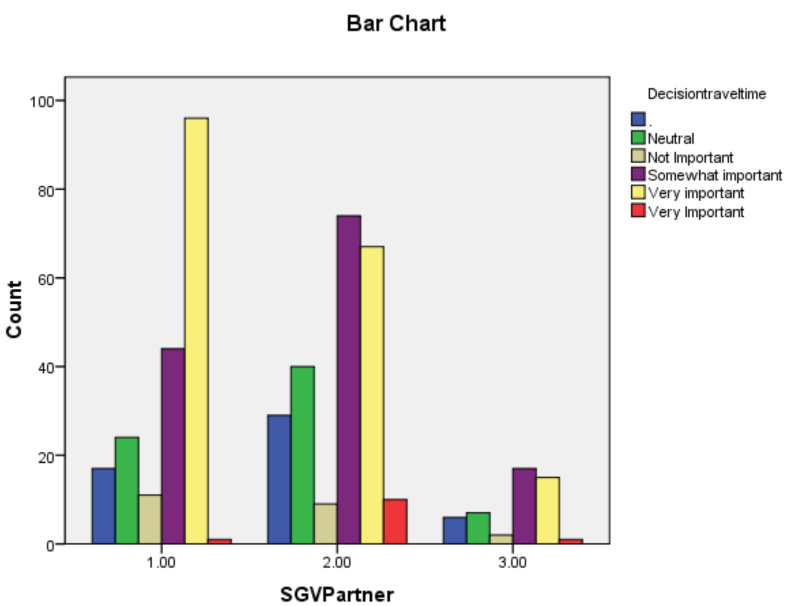
			Decisioncombinetrips						
			.	Neutral	Not Important	Somewhat important	Very Important	Very important	Total
SGVPartner	1	Count	19	30	16	36	0	92	193
		% within SGVPartner	9.8%	15.5%	8.3%	18.7%	.0%	47.7%	100.0%
	2	Count	35	39	18	49	11	77	229
		% within SGVPartner	15.3%	17.0%	7.9%	21.4%	4.8%	33.6%	100.0%
	3	Count	6	4	4	18	1	15	48
		% within SGVPartner	12.5%	8.3%	8.3%	37.5%	2.1%	31.2%	100.0%
	Total	Count	60	73	38	103	12	184	470
		% within SGVPartner	12.8%	15.5%	8.1%	21.9%	2.6%	39.1%	100.0%



Please rank to what degree of importance the following conditions affect your decision to ride a bicycle: - Travel time

SGVPartner * Decisiontraveltime Crosstabulation

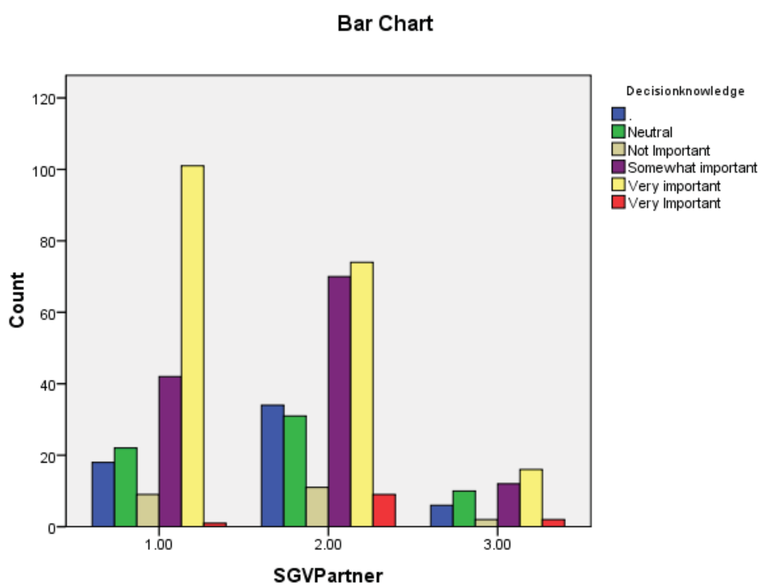
			Decisiontraveltime						
			.	Neutral	Not Important	Somewhat important	Very Important	Very important	Total
SGVPartner	1	Count	17	24	11	44	1	96	193
		% within SGVPartner	8.8%	12.4%	5.7%	22.8%	.5%	49.7%	100.0%
	2	Count	29	40	9	74	10	67	229
		% within SGVPartner	12.7%	17.5%	3.9%	32.3%	4.4%	29.3%	100.0%
	3	Count	6	7	2	17	1	15	48
		% within SGVPartner	12.5%	14.6%	4.2%	35.4%	2.1%	31.2%	100.0%
	Total	Count	52	71	22	135	12	178	470
		% within SGVPartner	11.1%	15.1%	4.7%	28.7%	2.6%	37.9%	100.0%



Please rank to what degree of importance the following conditions affect your decision to ride a bicycle: - Available information/knowledge of bike routes

SGVPartner * Decisionknowledge Crosstabulation

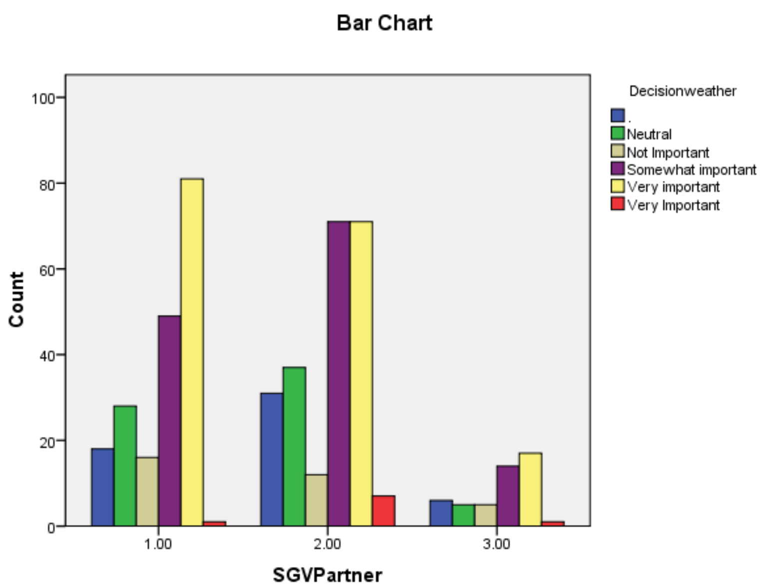
			Decisionknowledge						
			.	Neutral	Not Important	Somewhat important	Very Important	Very important	Total
SGVPartner	1	Count	18	22	9	42	1	101	193
		% within SGVPartner	9.3%	11.4%	4.7%	21.8%	.5%	52.3%	100.0%
	2	Count	34	31	11	70	9	74	229
		% within SGVPartner	14.8%	13.5%	4.8%	30.6%	3.9%	32.3%	100.0%
	3	Count	6	10	2	12	2	16	48
		% within SGVPartner	12.5%	20.8%	4.2%	25.0%	4.2%	33.3%	100.0%
	Total	Count	58	63	22	124	12	191	470
		% within SGVPartner	12.3%	13.4%	4.7%	26.4%	2.6%	40.6%	100.0%



Please rank to what degree of importance the following conditions affect your decision to ride a bicycle: - Weather

SGVPartner * Decisionweather Crosstabulation

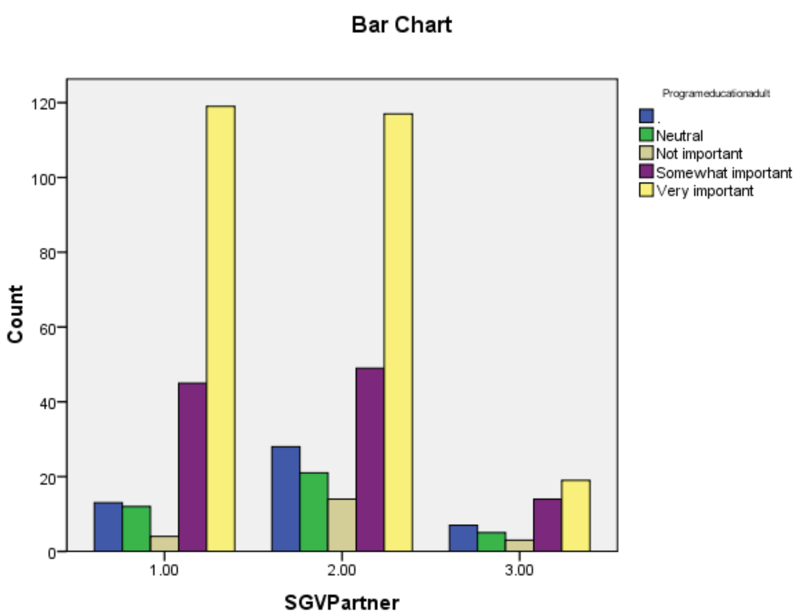
			Decisionweather						
			.	Neutral	Not Important	Somewhat important	Very Important	Very important	Total
SGVPartner	1	Count	18	28	16	49	1	81	193
		% within SGVPartner	9.3%	14.5%	8.3%	25.4%	.5%	42.0%	100.0%
	2	Count	31	37	12	71	7	71	229
		% within SGVPartner	13.5%	16.2%	5.2%	31.0%	3.1%	31.0%	100.0%
	3	Count	6	5	5	14	1	17	48
		% within SGVPartner	12.5%	10.4%	10.4%	29.2%	2.1%	35.4%	100.0%
	Total	Count	55	70	33	134	9	169	470
		% within SGVPartner	11.7%	14.9%	7.0%	28.5%	1.9%	36.0%	100.0%



Please rank to what degree of importance the following bicycle programs are to you: - Riding skills and safety education for adults

SGVPartner * Programeducationadult Crosstabulation

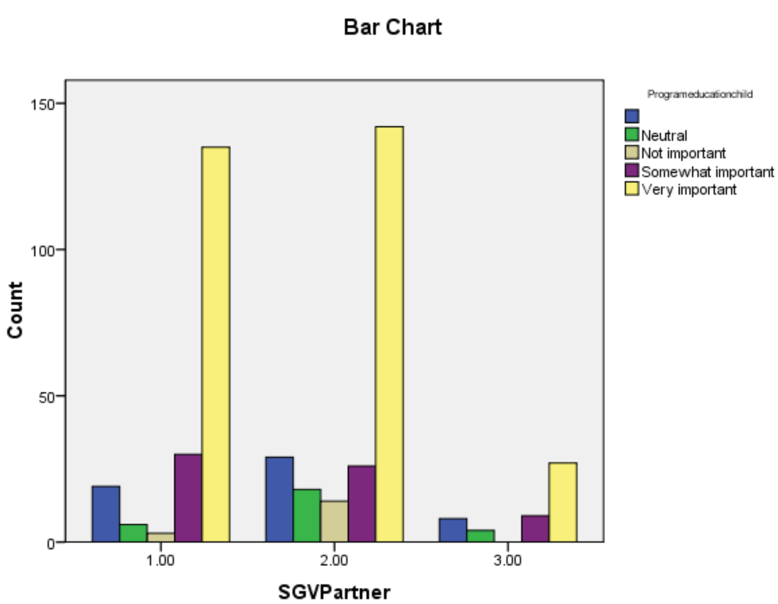
			Programeducationadult					
			.	Neutral	Not important	Somewhat important	Very important	Total
SGVPartner	1	Count	13	12	4	45	119	193
		% within SGVPartner	6.7%	6.2%	2.1%	23.3%	61.7%	100.0%
	2	Count	28	21	14	49	117	229
		% within SGVPartner	12.2%	9.2%	6.1%	21.4%	51.1%	100.0%
	3	Count	7	5	3	14	19	48
		% within SGVPartner	14.6%	10.4%	6.2%	29.2%	39.6%	100.0%
	Total	Count	48	38	21	108	255	470
		% within SGVPartner	10.2%	8.1%	4.5%	23.0%	54.3%	100.0%



Please rank to what degree of importance the following bicycle programs are to you: - Riding skills and safety education for children

SGVPartner * Programeducationchild Crosstabulation

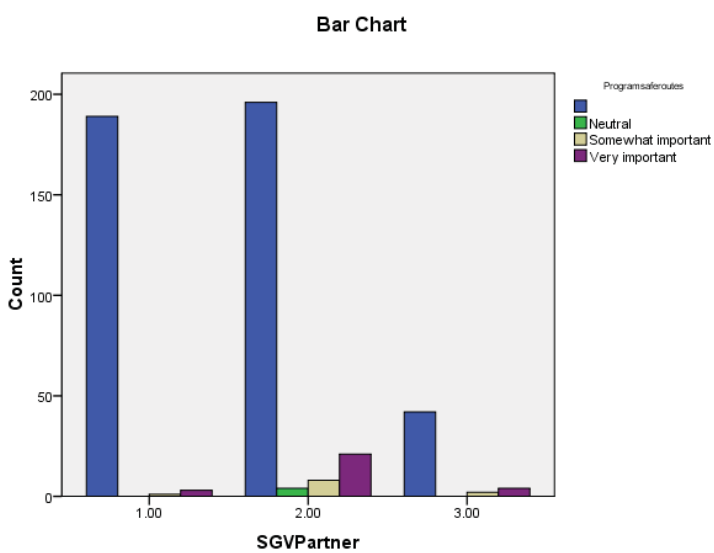
			Programeducationchild					
				Neutral	Not important	Somewhat important	Very important	Total
SGVPartner	1	Count	19	6	3	30	135	193
		% within SGVPartner	9.8%	3.1%	1.6%	15.5%	69.9%	100.0%
	2	Count	29	18	14	26	142	229
		% within SGVPartner	12.7%	7.9%	6.1%	11.4%	62.0%	100.0%
	3	Count	8	4	0	9	27	48
		% within SGVPartner	16.7%	8.3%	.0%	18.8%	56.2%	100.0%
	Total	Count	56	28	17	65	304	470
		% within SGVPartner	11.9%	6.0%	3.6%	13.8%	64.7%	100.0%



Please rank to what degree of importance the following bicycle programs are to you: - Safe Routes to School

SGVPartner * Programsaferoutes Crosstabulation

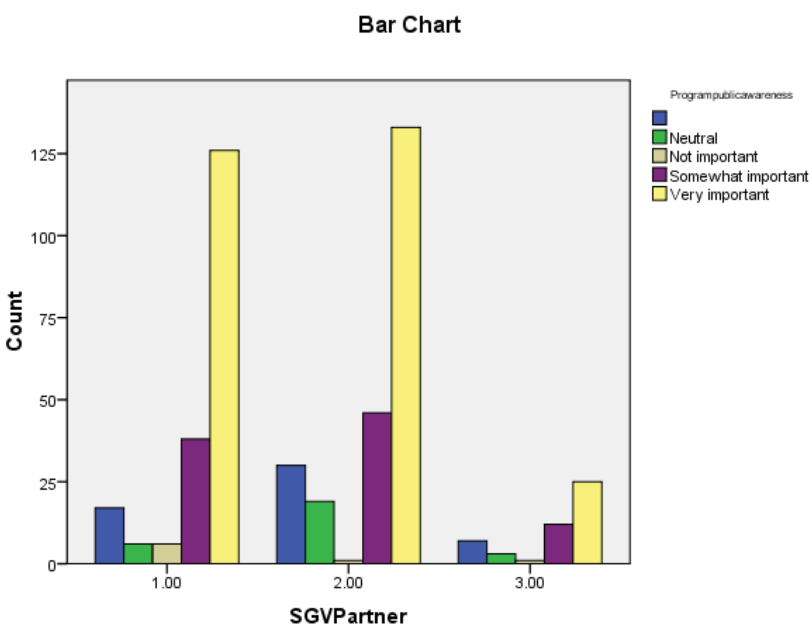
			Programsaferoutes				
				Neutral	Somewhat important	Very important	Total
SGVPartner	1	Count	189	0	1	3	193
		% within SGVPartner	97.9%	.0%	.5%	1.6%	100.0%
	2	Count	196	4	8	21	229
		% within SGVPartner	85.6%	1.7%	3.5%	9.2%	100.0%
	3	Count	42	0	2	4	48
		% within SGVPartner	87.5%	.0%	4.2%	8.3%	100.0%
	Total	Count	427	4	11	28	470
		% within SGVPartner	90.9%	.9%	2.3%	6.0%	100.0%



Please rank to what degree of importance the following bicycle programs are to you: - Public awareness campaigns

SGVPartner * Programpublicawareness Crosstabulation

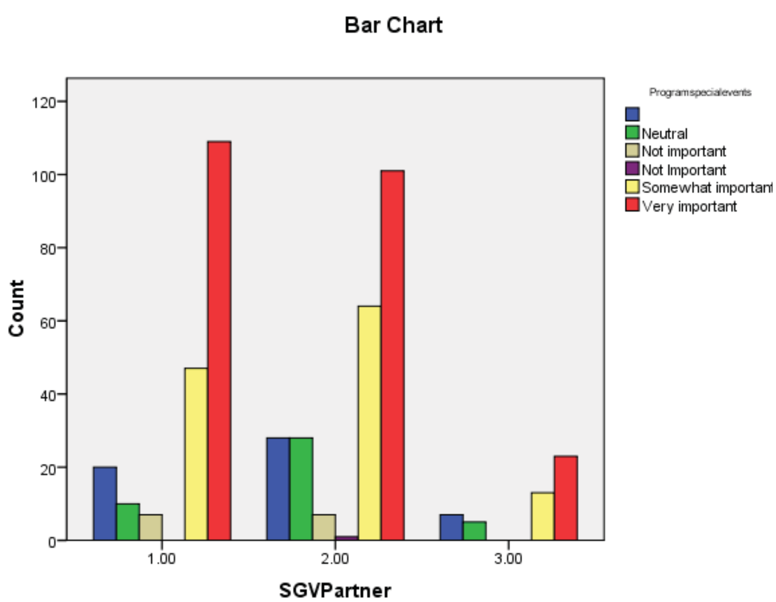
			Programpublicawareness					
				Neutral	Not important	Somewhat important	Very important	Total
SGVPartner	1	Count	17	6	6	38	126	193
		% within SGVPartner	8.8%	3.1%	3.1%	19.7%	65.3%	100.0%
	2	Count	30	19	1	46	133	229
		% within SGVPartner	13.1%	8.3%	.4%	20.1%	58.1%	100.0%
	3	Count	7	3	1	12	25	48
		% within SGVPartner	14.6%	6.2%	2.1%	25.0%	52.1%	100.0%
	Total	Count	54	28	8	96	284	470
		% within SGVPartner	11.5%	6.0%	1.7%	20.4%	60.4%	100.0%



Please rank to what degree of importance the following bicycle programs are to you: - Special bicycle events (e.g., CicLAvia, Bike Month, etc.)

SGVPartner * Programspecialevents Crosstabulation

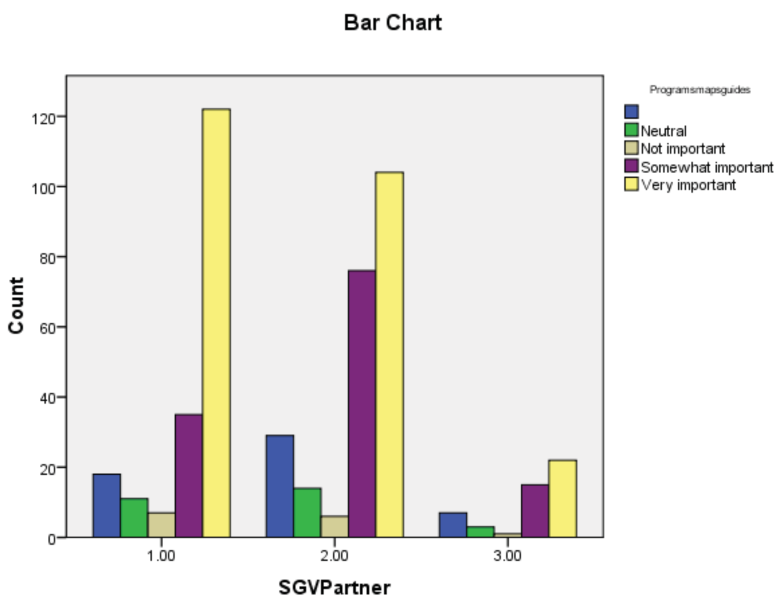
			Programspecialevents						
				Neutral	Not Important	Not important	Somewhat important	Very important	Total
SGVPartner	1	Count	20	10	0	7	47	109	193
		% within SGVPartner	10.4%	5.2%	.0%	3.6%	24.4%	56.5%	100.0%
	2	Count	28	28	1	7	64	101	229
		% within SGVPartner	12.2%	12.2%	.4%	3.1%	27.9%	44.1%	100.0%
	3	Count	7	5	0	0	13	23	48
		% within SGVPartner	14.6%	10.4%	.0%	.0%	27.1%	47.9%	100.0%
	Total	Count	55	43	1	14	124	233	470
		% within SGVPartner	11.7%	9.1%	.2%	3.0%	26.4%	49.6%	100.0%



Please rank to what degree of importance the following bicycle programs are to you: - Bicycle maps and guides

SGVPartner * Programsmapsguides Crosstabulation

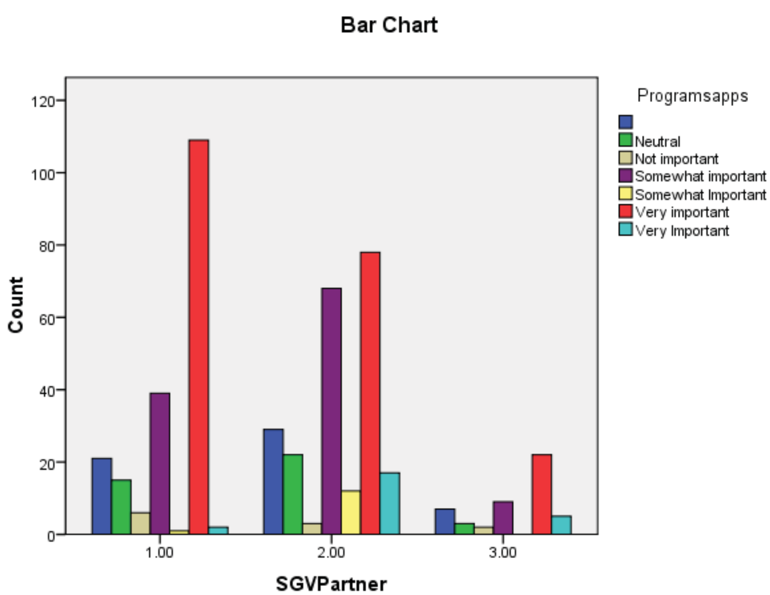
			Programsmapsguides					
				Neutral	Not important	Somewhat important	Very important	Total
SGVPartner	1	Count	18	11	7	35	122	193
		% within SGVPartner	9.3%	5.7%	3.6%	18.1%	63.2%	100.0%
	2	Count	29	14	6	76	104	229
		% within SGVPartner	12.7%	6.1%	2.6%	33.2%	45.4%	100.0%
	3	Count	7	3	1	15	22	48
		% within SGVPartner	14.6%	6.2%	2.1%	31.2%	45.8%	100.0%
	Total	Count	54	28	14	126	248	470
		% within SGVPartner	11.5%	6.0%	3.0%	26.8%	52.8%	100.0%



Please rank to what degree of importance the following bicycle programs are to you: - Bicycle information websites or smart phone apps

SGVPartner * Programsapps Crosstabulation

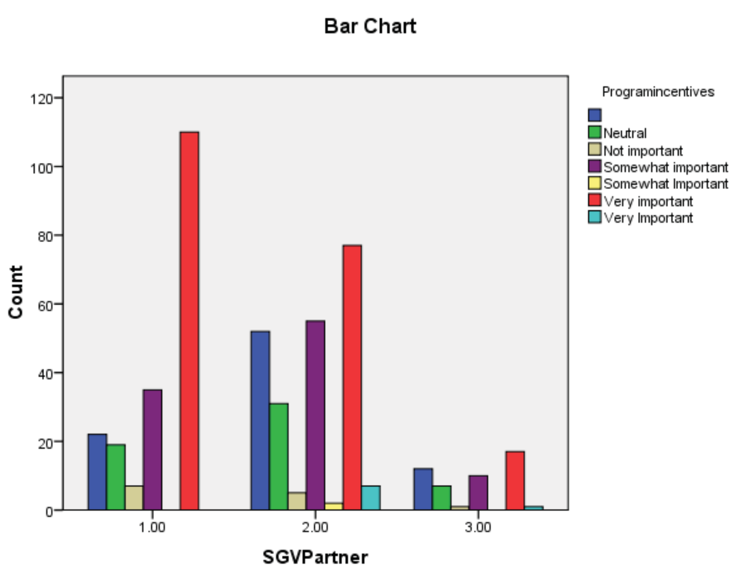
			Programsapps							
				Neutral	Not important	Somewhat Important	Somewhat important	Very Important	Very important	Total
SGVPartner	1	Count	21	15	6	1	39	2	109	193
		% within SGVPartner	10.9%	7.8%	3.1%	.5%	20.2%	1.0%	56.5%	100.0%
	2	Count	29	22	3	12	68	17	78	229
		% within SGVPartner	12.7%	9.6%	1.3%	5.2%	29.7%	7.4%	34.1%	100.0%
	3	Count	7	3	2	0	9	5	22	48
		% within SGVPartner	14.6%	6.2%	4.2%	.0%	18.8%	10.4%	45.8%	100.0%
	Total	Count	57	40	11	13	116	24	209	470
		% within SGVPartner	12.1%	8.5%	2.3%	2.8%	24.7%	5.1%	44.5%	100.0%



Please rank to what degree of importance the following bicycle programs are to you: - Local business incentives (e.g., arrive by bike for 20% off)

SGVPartner * Programincentives Crosstabulation

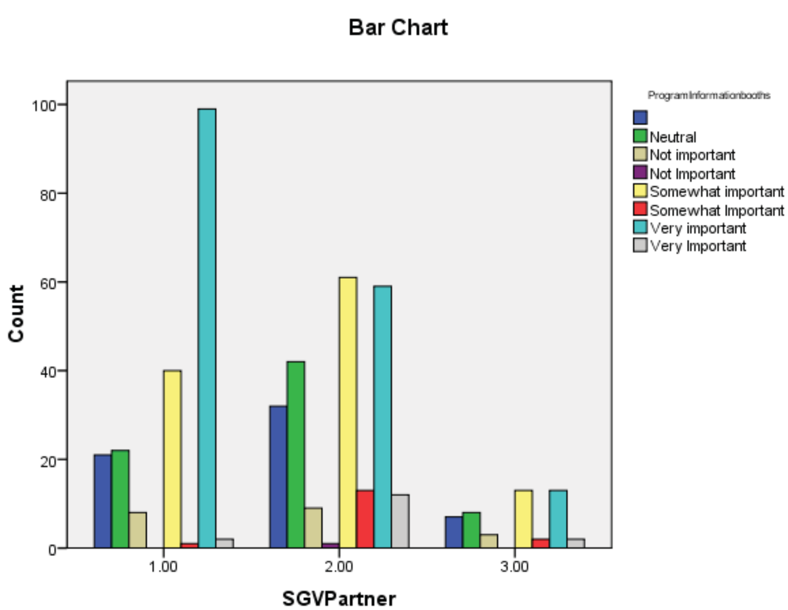
			Programincentives							
				Neutral	Not important	Somewhat Important	Somewhat important	Very Important	Very important	Total
SGVPartner	1	Count	22	19	7	0	35	0	110	193
		% within SGVPartner	11.4%	9.8%	3.6%	.0%	18.1%	.0%	57.0%	100.0%
	2	Count	52	31	5	2	55	7	77	229
		% within SGVPartner	22.7%	13.5%	2.2%	.9%	24.0%	3.1%	33.6%	100.0%
	3	Count	12	7	1	0	10	1	17	48
		% within SGVPartner	25.0%	14.6%	2.1%	.0%	20.8%	2.1%	35.4%	100.0%
	Total	Count	86	57	13	2	100	8	204	470
		% within SGVPartner	18.3%	12.1%	2.8%	.4%	21.3%	1.7%	43.4%	100.0%



Please rank to what degree of importance the following bicycle programs are to you: - Information booths at public events

SGVPartner * ProgramInformationbooths Crosstabulation

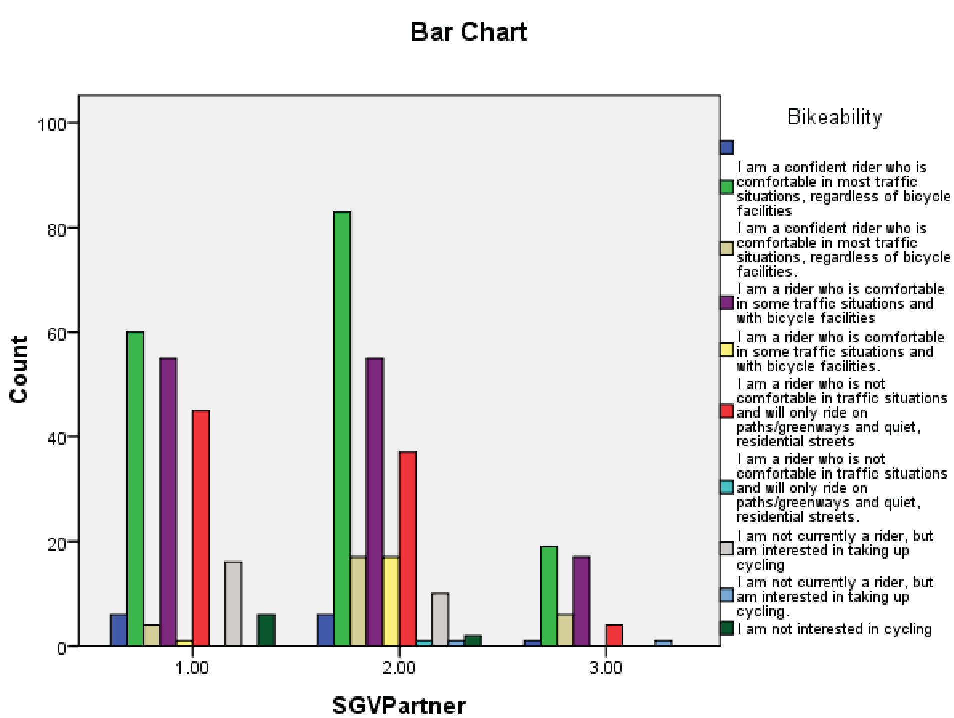
			ProgramInformationbooths								
				Neutral	Not Important	Not important	Somewhat Important	Somewhat important	Very Important	Very important	Total
SGVPartner	1	Count	21	22	0	8	1	40	2	99	193
		% within SGVPartner	10.9%	11.4%	.0%	4.1%	.5%	20.7%	1.0%	51.3%	100.0%
	2	Count	32	42	1	9	13	61	12	59	229
		% within SGVPartner	14.0%	18.3%	.4%	3.9%	5.7%	26.6%	5.2%	25.8%	100.0%
	3	Count	7	8	0	3	2	13	2	13	48
		% within SGVPartner	14.6%	16.7%	.0%	6.2%	4.2%	27.1%	4.2%	27.1%	100.0%
	Total	Count	60	72	1	20	16	114	16	171	470
		% within SGVPartner	12.8%	15.3%	.2%	4.3%	3.4%	24.3%	3.4%	36.4%	100.0%



How would you characterize your bicycling ability/level of interest?

SGVPartner * Bikeability Crosstabulation

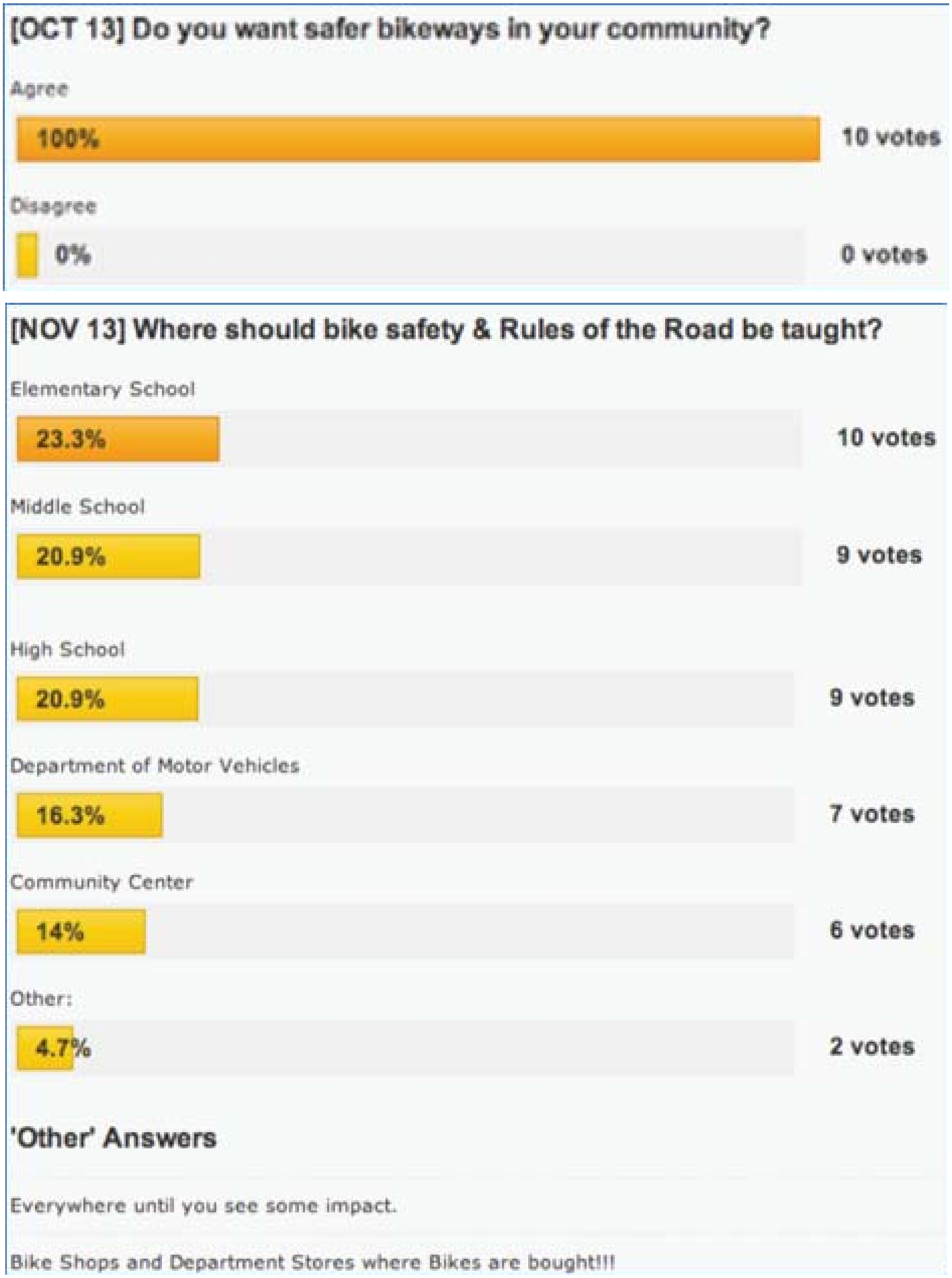
			Bikeability										
				I am a confident rider who is comfortable in most traffic situations, regardless of bicycle facilities	I am a confident rider who is comfortable in most traffic situations, regardless of bicycle facilities.	I am a rider who is comfortable in some traffic situations and with bicycle facilities	I am a rider who is comfortable in some traffic situations and with bicycle facilities.	I am a rider who is not comfortable in traffic situations and will only ride on paths/greenways and quiet, residential streets	I am a rider who is not comfortable in traffic situations and will only ride on paths/greenways and quiet, residential streets.	I am not currently a rider, but am interested in taking up cycling	I am not currently a rider, but am interested in taking up cycling.	I am not interested in cycling	Total
SGVPartner	1	Count	6	60	4	55	1	45	0	16	0	6	193
		% within SGVPartner	3.1%	31.1%	2.1%	28.5%	.5%	23.3%	.0%	8.3%	.0%	3.1%	100.0%
	2	Count	6	83	17	55	17	37	1	10	1	2	229
		% within SGVPartner	2.6%	36.2%	7.4%	24.0%	7.4%	16.2%	.4%	4.4%	.4%	.9%	100.0%
	3	Count	1	19	6	17	0	4	0	0	1	0	48
		% within SGVPartner	2.1%	39.6%	12.5%	35.4%	.0%	8.3%	.0%	.0%	2.1%	.0%	100.0%
	Total	Count	13	162	27	127	18	86	1	26	2	8	470
		% within SGVPartner	2.8%	34.5%	5.7%	27.0%	3.8%	18.3%	.2%	5.5%	.4%	1.7%	100.0%



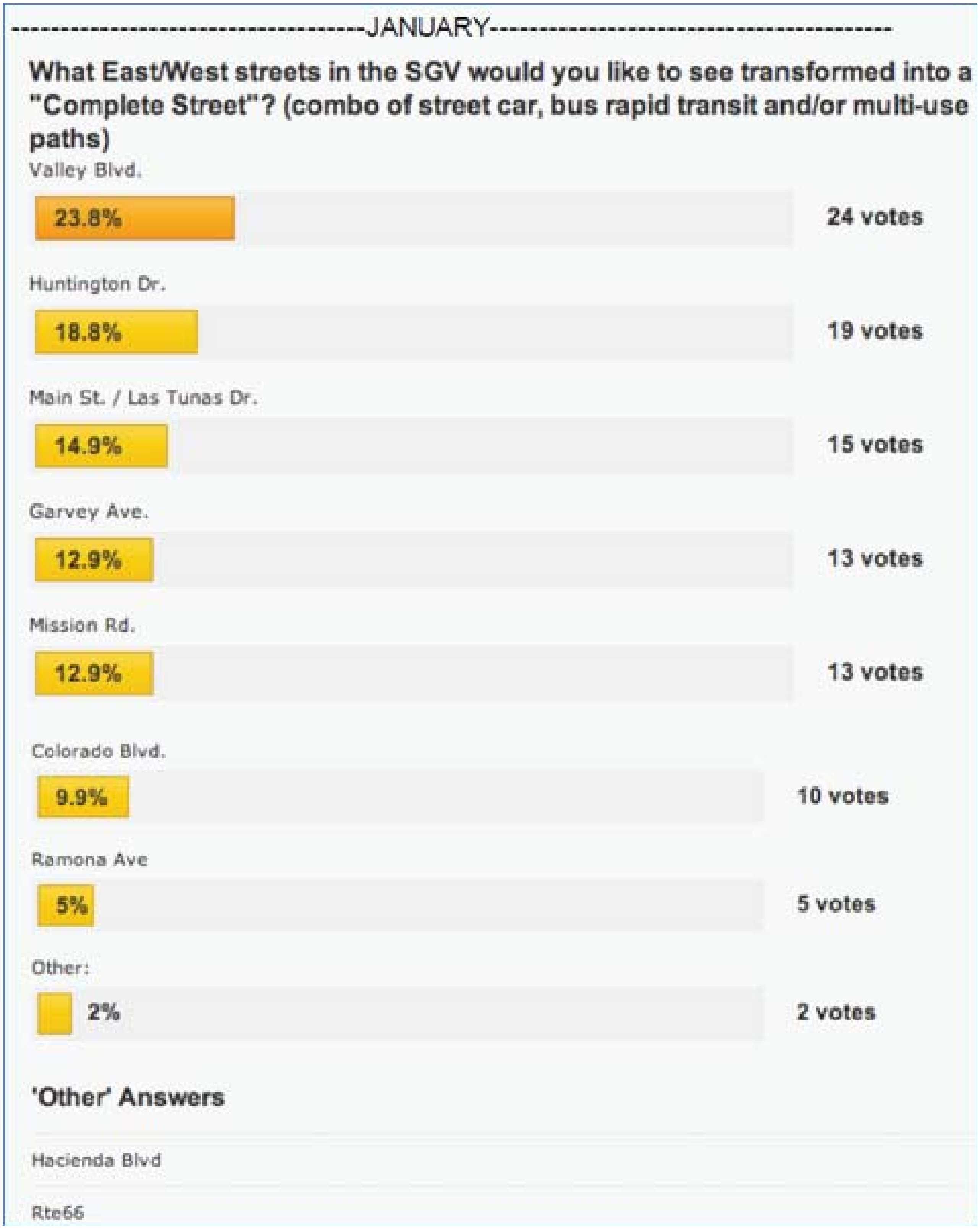
Appendix D: Online Poll Results and Comments

D.1 Online Poll Results

Between October 2013 and January 2014, online poll questions were posted on the project website (www.dobikeplan.com). The questions and results are shown in **Figure D-1**.




[DEC 2013] What type of open streets event (i.e. CicLAvia) would you like to see in the SGV?
2 per year, Multi-City (3-4), Medium Events (5-10 miles each)
34.8%
8 votes
4 per year, Single-City, Small Events (3-5 miles each)
30.4%
7 votes
1 per year, Multi-City (8-15), Large Event (20-50 miles) with various routes & small-mid size festivals throughout
26.1%
6 votes
Other:
8.7%
2 votes
'Other' Answers
cultural
One every week.


--JANUARY--
What East/West streets in the SGV would you like to see transformed into a "Complete Street"? (combo of street car, bus rapid transit and/or multi-use paths)
Valley Blvd.
23.8%
24 votes
Huntington Dr.
18.8%
19 votes
Main St. / Las Tunas Dr.
14.9%
15 votes
Garvey Ave.
12.9%
13 votes
Mission Rd.
12.9%
13 votes
Colorado Blvd.
9.9%
10 votes
Ramona Ave
5%
5 votes
Other:
2%
2 votes
'Other' Answers
Hacienda Blvd
Rte66

D.2 Online Comments

The following comments in **Table D-1** were submitted through the website (www.dobikeplan.com) between November 6, 2013, and February 27, 2014.

Table D-1 Online Comments Received

Date Submitted	Comment
11/06/13	Garvey Avenue and Newmark Avenue are main streets taken by people to get from East-West/West-East. Several schools, libraries, civic centers and shopping malls are within walking/biking distance of these streets. Garvey is particularly busy so Newmark can probably be an alternative bike lane. It may also be difficult to place a bike lane on Garvey because it is quite narrow. Bike lanes can definitely be added to Atlantic Blvd and possibly even keeping in mind the option of cycletracks. The boulevard is very wide and stretches from Pasadena all the way to Long Beach. However, it would be amazing if a cycletrack on Atlantic can stretch from Pasadena to Olympic which connects riders to Downtown LA or the Gold Line Station off Atlantic and Pomona Blvd.
11/06/13	A bikeway that can connect the San Gabriel Bikeway entrance from Durfee Ave, and peck rd near the 60 FWY and that goes along all the way on Durfee Ave until it meets with Garvey Ave near the entrance of the 10 FWY
11/16/13	Cycletrack on Rosemead Blvd to connect planned cycletracks in Temple City. Possible Bike route or bike lane should be considered on Peck Road to lead riders toward Workman Mills Road to connect to Whittier as well as El Monte. Everything else on the map is spot on.
12/05/13	Create two-direction protected lanes on either San Gabriel Blvd and/or Del Mar Blvd in San Gabriel around Gabrielino High School in San Gabriel (@ San Gabriel Blvd & Wells/Valley Blvd). Lots of potential student riders. Create two-direction protected lane on Las Tunas (San Gabriel) through Main St (Alhambra). Thank you for your consideration!
01/09/14	I think the route should be in group 1. Pasadena has easy access to public transportation, i.e., Gold Line. Pasadena is the most recognized city in the SGV, and I think they have the experience in hosting big events, i.e., Rose Parade/game. I will ride my bicycle there.
01/10/14	What a great idea, hope you can pull it off.
01/12/14	I think that is a great plan and I think it is possible to implement. Besides bike lanes, there also needs to be places where you could ride to and safely leave your bike (even with a strong bike lock on it, bikes are not safe from thieves). That is a major challenge for me. I would like to ride to the gym or to church, but even if there are bike racks, they are in obscure places that thieves can easily access. Since I have experience in public speaking, I could help you with presentations. I live in Arcadia and have been cycling the past few years. Took 2 outdoor cycling courses at Pasadena City College and rode in my first century in the spring of 2011. I do at least one group ride per week and do solo rides around the Rose Bowl a one or two days per week and a spin class at my gym.
01/23/14	Bike parking? That could work too no?

Date Submitted	Comment
02/02/14	Reading the text accompanying your master plan map it's not clear what the highlighted routes represent (it "provides an initial foundation", whatever that means). Are you suggesting these are suitable bike routes (perhaps deserving of some improvements), or is this a sort of wish list (identifying direct routes that could benefit from measures that would make them suitable for bike use in the future)? Case in point: Arrow Highway is without a doubt THE most dangerous route a cyclist could take trough San Dimas, La Verne, and Pomona (I live in La Verne). I've felt safe riding along freeway shoulders in rural areas where bikes are allowed, but I would NEVER consider riding along Arrow Highway. La Verne's long range Bicycle Gap Closure Project does call for a road diet on Arrow Highway that would add bike lanes, but none currently exist.
02/16/14	I think this is a great idea. I didn't look into it completely yet to give my comments; however I believe everything is doable. Just need to set the right people, funders, and supporters, etc. in place. Are their committees or volunteers for this project yet? I'd like to be a part of this initiative. Thanks.
02/27/14	I've been riding a bike for the last 16 years; and I use a bike like people use Autos. City hall talks a good talk but never follows through. El Monte has been known as an unfriendly city for bike riders. The bike paths that go through your so called emerald necklaced are disgusting! It's more liked laced with homeless encampments, beer bottles, trash, crap, people urinating; it's really, really bad! City Hall needs to get out on a bike ride now and then to check it out!

Appendix E: Sample Complete Streets Policy Language

Assembly Bill 1358

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. Below is the language from the bill as a reference for the participating San Gabriel Valley cities when implementing related policies presented in this Plan.

AB 1358, Leno. Planning: circulation element: transportation.

(1) Existing law requires the legislative body of each county and city to adopt a comprehensive, long-term general plan for the physical development of the county or city with specified elements, including a circulation element consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, any military airports and ports, and other local public utilities and facilities, all correlated with the land use element of the plan. This bill would require, commencing January 1, 2011, that the legislative body of a city or county, upon any substantive revision of the circulation element of the general plan, modify the circulation element to plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways, defined to include motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation, in a manner that is suitable to the rural, suburban, or urban context of the general plan. By requiring new duties of local officials, this bill would impose a state-mandated local program.

(2) Existing law establishes in the Office of the Governor the Office of Planning and Research with duties that include developing and adopting guidelines for the preparation of and content of mandatory elements required in city and county general plans. This bill would require the office, commencing January 1, 2009, and no later than January 1, 2014, upon the next revision of these guidelines, to prepare or amend guidelines for a legislative body to accommodate the safe and convenient travel of users of streets, roads, and highways in a manner that is suitable to the rural, suburban, or urban context of the general plan, and in doing so to consider how appropriate accommodation varies depending on its transportation and land use context. It would authorize the office, in developing these guidelines, to consult with leading transportation experts, including, but not limited to, bicycle transportation planners, pedestrian planners, public transportation planners, local air quality management districts, and disability and senior mobility planners.

(3) The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement. This bill would provide that no reimbursement is required by this act for a specified reason.

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. This act shall be known and may be cited as the California Complete Streets Act of 2008.

SEC. 2. The Legislature finds and declares all of the following: (a) The California Global Warming Solutions Act of 2006, enacted as Chapter 488 of the Statutes of 2006, sets targets for the reduction of greenhouse gas emissions in California to slow the onset of human-induced climate change. (b) The State Energy Resources Conservation and Development Commission has determined that transportation represents 41 percent of total greenhouse gas emissions in California. (c) According to the United States Department of Transportation's 2001 National Household Travel Survey, 41 percent of trips in urban areas nationwide are two miles or less in length, and 66 percent of urban trips that are one mile or less are made by automobile. (d) Shifting the transportation mode share from single passenger cars to public transit, bicycling, and walking must be a significant part of short- and long-term planning goals if the state is to achieve the reduction in the number of vehicle miles traveled and in greenhouse gas emissions required by current law. (e) Walking and bicycling provide the additional benefits of improving public health and reducing treatment costs for conditions associated with reduced physical activity including obesity, heart disease, lung disease, and diabetes. Medical costs associated with physical inactivity were estimated by the State Department of Health Care Services to be $28 billion in 2005. (f) The California Blueprint for Bicycling and Walking, prepared pursuant to the Supplemental Report of the Budget Act of 2001, sets the goal of a 50 percent increase in bicycling and walking trips in California by 2010, and states that to achieve this goal, bicycling and walking must be considered in land use and community planning, and in all phases of transportation planning and project design. (g) In order to fulfill the commitment to reduce greenhouse gas emissions, make the most efficient use of urban land and transportation infrastructure, and improve public health by encouraging physical activity, transportation planners must find innovative ways to reduce vehicle miles traveled and to shift from short trips in the automobile to biking, walking, and use of public transit. (h) It is the intent of the Legislature to require in the development of the circulation element of a local government's general plan that the circulation of users of streets, roads, and highways be accommodated in a manner suitable for the respective setting in rural, suburban, and urban contexts, and that users of streets, roads, and highways include bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, public transportation, and seniors.

SEC. 3. Section 65040.2 of the Government Code is amended to read: 65040.2. (a) In connection with its responsibilities under subdivision (l) of Section 65040, the office shall develop and adopt guidelines for the preparation of and the content of the mandatory elements required in city and county general plans by Article 5 (commencing with Section 65300) of Chapter 3. For purposes of this section, the guidelines prepared pursuant to Section 50459 of the Health and Safety Code shall be the guidelines for the housing element required by Section 65302. In the event that additional elements are hereafter required in city and county general plans by Article 5 (commencing with Section 65300) of Chapter 3, the office shall adopt guidelines for those elements within six months of the effective date of the legislation requiring those additional elements. (b) The office may request from each state department and agency, as it deems appropriate, and the department or agency shall provide, technical assistance in readopting, amending, or repealing the guidelines. (c) The guidelines shall be advisory to each city and county in order to provide assistance in preparing and maintaining their respective general plans. (d) The guidelines shall contain the guidelines for addressing environmental justice matters developed pursuant to Section 65040.12. (e) The guidelines shall contain advice including recommendations for best practices to allow for collaborative land use planning of adjacent civilian and military lands and facilities. The guidelines shall encourage enhanced land use compatibility between civilian lands and any adjacent or nearby military facilities through the examination of potential impacts upon one another. (f) The guidelines shall contain advice for addressing the effects of civilian development on military readiness activities carried out on all of the following: (1) Military installations. (2) Military operating areas. (3) Military training areas. (4) Military training routes. (5) Military airspace. (6) Other territory adjacent to those installations and areas. (g) By March 1, 2005, the guidelines shall contain advice, developed in consultation with the Native American Heritage Commission, for consulting with California Native American tribes for all of the following: (1) The preservation of, or the mitigation of impacts to, places, features, and objects described in Sections 5097.9 and 5097.993 of the Public Resources Code. (2) Procedures for identifying through the Native American Heritage Commission the appropriate California Native American tribes. (3) Procedures for continuing to protect the confidentiality of information concerning the specific identity, location, character, and use of those places, features, and objects. (4) Procedures to facilitate voluntary landowner participation to preserve and protect the specific identity, location, character, and use of those places, features, and objects. (h) Commencing January 1, 2009, but no later than January 1, 2014, upon the next revision of the guidelines pursuant to subdivision (i), the office shall prepare or amend guidelines for a legislative body to accommodate the safe and convenient travel of users of streets, roads, and highways in a manner that is suitable to the rural, suburban, or urban context of the general plan, pursuant to subdivision (b) of Section 65302. (1) In developing guidelines, the office shall consider how appropriate accommodation varies depending on its transportation and land use context, including urban, suburban, or rural environments. (2) The office may consult with leading transportation experts including, but not limited to, bicycle transportation planners, pedestrian planners, public transportation planners, local air quality management districts, and disability and senior mobility planners. (i) The office shall provide for regular review and revision of the guidelines established pursuant to this section.

SEC. 4. Section 65302 of the Government Code is amended to read: 65302. The general plan shall consist of a statement of development policies and shall include a diagram or diagrams and text setting forth objectives, principles, standards, and plan proposals. The plan shall include the following elements: (a) A land use element that designates the proposed general distribution and general location and extent of the uses of the land for housing, business, industry, open space, including agriculture, natural resources, recreation, and enjoyment of scenic beauty, education, public buildings and grounds, solid and liquid waste disposal facilities, and other categories of public and private uses of land. The location and designation of the extent of the uses of the land for public and private uses shall consider the identification of land and natural resources pursuant to paragraph (3) of subdivision (d). The land use element shall include a statement of the standards of population density and building intensity recommended for the various districts and other territory covered by the plan. The land use element shall identify and annually review those areas covered by the plan that are subject to flooding identified by flood plain mapping prepared by the Federal Emergency Management Agency (FEMA) or the Department of Water Resources. The land use element shall also do both of the following: (1) Designate in a land use category that provides for timber production those parcels of real property zoned for timberland production pursuant to the California Timberland Productivity Act of 1982 (Chapter 6.7 (commencing with Section 51100) of Part 1 of Division 1 of Title 5). (2) Consider the impact of new growth on military readiness activities carried out on military bases, installations, and operating and training areas, when proposing zoning ordinances or designating land uses covered by the general plan for land, or other territory adjacent to military facilities, or underlying designated military aviation routes and airspace. (A) In determining the impact of new growth on military readiness activities, information provided by military facilities shall be considered. Cities and counties shall address military impacts based on information from the military and other sources. (B) The following definitions govern this paragraph: (i) "Military readiness activities" mean all of the following: (I) Training, support, and operations that prepare the men and women of the military for combat. (II) Operation, maintenance, and security of any military installation. (III) Testing of military equipment, vehicles, weapons, and sensors for proper operation or suitability for combat use. (ii) "Military installation" means a base, camp, post, station, yard, center, homeport facility for any ship, or other activity under the jurisdiction of the United States Department of Defense as defined in paragraph (1) of subsection (e) of Section 2687 of Title 10 of the United States Code. (b) (1) A circulation element consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, any military airports and ports, and other local public utilities and facilities, all correlated with the land use element of the plan. (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. (c) A housing element as provided in Article 10.6 (commencing with Section 65580). (d) (1) A conservation element for the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources. The conservation element shall consider the effect of development within the jurisdiction, as described in the land use element, on natural resources located on public lands, including military installations. That portion of the conservation element including waters shall be developed in coordination with any countywide water agency and with all district and city agencies, including flood management, water conservation, or groundwater agencies that have developed, served, controlled, managed, or conserved water of any type for any purpose in the county or city for which the plan is prepared. Coordination shall include the discussion and evaluation of any water supply and demand information described in Section 65352.5, if that information has been submitted by the water agency to the city or county. (2) The conservation element may also cover all of the following: (A) The reclamation of land and waters. (B) Prevention and control of the pollution of streams and other waters. (C) Regulation of the use of land in stream channels and other areas required for the accomplishment of the conservation plan. (D) Prevention, control, and correction of the erosion of soils, beaches, and shores. (E) Protection of watersheds. (F) The location, quantity and quality of the rock, sand and gravel resources. (3) Upon the next revision of the housing element on or after January 1, 2009, the conservation element shall identify rivers, creeks, streams, flood corridors, riparian habitats, and land that may accommodate floodwater for purposes of groundwater recharge and stormwater management. (e) An open-space element as provided in Article 10.5 (commencing with Section 65560). (f) (1) A noise element that shall identify and appraise noise problems in the community. The noise element shall recognize the guidelines established by the Office of Noise Control and shall analyze and quantify, to the extent practicable, as determined by the legislative body, current and projected noise levels for all of the following sources: (A) Highways and freeways. (B) Primary arterials and major local streets. (C) Passenger and freight on-line railroad operations and ground rapid transit systems. (D) Commercial, general aviation, heliport, helistop, and military airport operations, aircraft overflights, jet engine test stands, and all other ground facilities and maintenance functions related to airport operation. (E) Local industrial plants, including, but not limited to, railroad classification yards. (F) Other ground stationary noise sources, including, but not limited to, military installations, identified by local agencies as contributing to the community noise environment. (2) Noise contours shall be shown for all of these sources and stated in terms of community noise equivalent level (CNEL) or day-night average level (Ldn). The noise contours shall be prepared on the basis of noise monitoring or following generally accepted noise modeling techniques for the various sources identified in paragraphs (1) to (6), inclusive. (3) The noise contours shall be used as a guide for establishing a pattern of land uses in the land use element that minimizes the exposure of community residents to excessive noise. (4) The noise element shall include implementation measures and possible solutions that address existing and foreseeable noise problems, if any. The adopted noise element shall serve as a guideline for compliance with the state's noise insulation standards. (g) (1) A safety element for the protection of the community from any unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence, liquefaction, and other seismic hazards identified pursuant to Chapter 7.8 (commencing with Section 2690) of Division 2 of the Public Resources Code, and other geologic hazards known to the legislative body; flooding; and wildland and urban fires. The safety element shall include mapping of known seismic and other geologic hazards. It shall also address evacuation routes, military installations, peakload water supply requirements, and minimum road widths and clearances around structures, as those items relate to identified fire and geologic hazards. (2) The safety element, upon the next revision of the housing element on or after January 1, 2009, shall also do the following: (A) Identify information regarding flood hazards, including, but not limited to, the following: (i) Flood hazard zones. As used in this subdivision, "flood hazard zone" means an area subject to flooding that is delineated as either a special hazard area or an area of moderate or minimal hazard on an official flood insurance rate map issued by the Federal Emergency Management Agency. The identification of a flood hazard zone does not imply that areas outside the flood hazard zones or uses permitted within flood hazard zones will be free from flooding or flood damage. (ii) National Flood Insurance Program maps published by FEMA. (iii) Information about flood hazards that is available from the United States Army Corps of Engineers. (iv) Designated floodway maps that are available from the Central Valley Flood Protection Board. (v) Dam failure inundation maps prepared pursuant to Section 8589.5 that are available from the Office of Emergency Services. (vi) Awareness Floodplain Mapping Program maps and 200-year flood plain maps that are or may be available from, or accepted by, the Department of Water Resources. (vii) Maps of levee protection zones. (viii) Areas subject to inundation in the event of the failure of project or nonproject levees or floodwalls. (ix) Historical data on flooding, including locally prepared maps of areas that are subject to flooding, areas that are vulnerable to flooding after wildfires, and sites that have been repeatedly damaged by flooding. (x) Existing and planned development in flood hazard zones, including structures, roads, utilities, and essential public facilities. (xi) Local, state, and federal agencies with responsibility for flood protection, including special districts and local offices of emergency services. (B) Establish a set of comprehensive goals, policies, and objectives based on the information identified pursuant to subparagraph (A), for the protection of the community from the unreasonable risks of flooding, including, but not limited to: (i) Avoiding or minimizing the risks of flooding to new development. (ii) Evaluating whether new development should be located in flood hazard zones, and identifying construction methods or other methods to minimize damage if new development is located in flood hazard zones. (iii) Maintaining the structural and operational integrity of essential public facilities during flooding. (iv) Locating, when feasible, new essential public facilities outside of flood hazard zones, including hospitals and health care facilities, emergency shelters, fire stations, emergency command centers, and emergency communications facilities or identifying construction methods or other methods to minimize damage if these facilities are located in flood hazard zones. (v) Establishing cooperative working relationships among public agencies with responsibility for flood protection. (C) Establish a set of feasible implementation measures designed to carry out the goals, policies, and objectives established pursuant to subparagraph (B). (3) After the initial revision of the safety element pursuant to paragraph (2), upon each revision of the housing element, the planning agency shall review and, if necessary, revise the safety element to identify new information that was not available during the previous revision of the safety element. (4) Cities and counties that have flood plain management ordinances that have been approved by FEMA that substantially comply with this section, or have substantially equivalent provisions to this subdivision in their general plans, may use that information in the safety element to comply with this subdivision, and shall summarize and incorporate by reference into the safety element the other general plan provisions or the flood plain ordinance, specifically showing how each requirement of this subdivision has been met. (5) Prior to the periodic review of its general plan and prior to preparing or revising its safety element, each city and county shall consult the California Geological Survey of the Department of Conservation, the Central Valley Flood Protection Board, if the city or county is located within the boundaries of the Sacramento and San Joaquin Drainage District, as set forth in Section 8501 of the Water Code, and the Office of Emergency Services for the purpose of including information known by and available to the department, the office, and the board required by this subdivision. (6) To the extent that a county's safety element is sufficiently detailed and contains appropriate policies and programs for adoption by a city, a city may adopt that portion of the county's safety element that pertains to the city's planning area in satisfaction of the requirement imposed by this subdivision.

SEC. 5. No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because a local agency or school district has the authority to levy service charges, fees, or assessments sufficient to pay for the program or level of service mandated by this act, within the meaning of Section 17556 of the Government Code.

Complete Streets Policy Elements

According to the National Coalition for Complete Streets (http://www.completestreets.org/changing-policy/policy-elements/), an ideal complete streets policy:

- Includes a vision for how and why the community wants to complete its streets
- Specifies that 'all users' includes pedestrians, bicycle riders and transit passengers of all ages and abilities, as well as trucks, buses and automobiles.
- Applies to both new and retrofit projects, including design, planning, maintenance, and operations, for the entire right of way.
- Makes any exceptions specific and sets a clear procedure that requires high-level approval of exceptions.
- Encourages street connectivity and aims to create a comprehensive, integrated, connected network for all modes.
- Is adoptable by all agencies to cover all roads.
- Directs the use of the latest and best design criteria and guidelines while recognizing the need for flexibility in balancing user needs.
- Directs that complete streets solutions will complement the context of the community.
- Establishes performance standards with measurable outcomes.
- Includes specific next steps for implementation of the policy

Appendix F: Manual Bicycle Count Tables

Table F-1 Weekday Morning Bicycle Count Results (Tuesday-Thursday, 7:00 AM to 9:00 AM)

Count Location	Number of Bicycle Riders			Characteristics			
	Male	Female	Total	Child <13	No Helmet	On Sidewalk	Wrong Way
Baldwin Park							
Baldwin Park Blvd b/t Bess Ave & Walnut Creek	24	4	28	2	24	24	0
Francisquito Ave b/t Ramona Blvd & Cosbey Ave	13	1	14	0	12	10	1
Maine Ave b/t Los Angeles St & Estella St	27	1	28	0	24	9	2
Merced Ave b/t Ramona Pkwy & Ramona Blvd	2	0	2	0	1	1	1
Ramona Blvd b/t San Gabriel River Trail & I-605 Freeway	38	4	42	0	--	--	0
W. Badillo St b/t Puente Ave & Downing Ave	13	0	13	0	13	3	0
El Monte							
Garvey Ave b/t Nevada Ave & Tyler Ave	37	0	37	0	33	27	0
Garvey Ave b/t Tyler Ave & Consol Ave	36	5	41	0	36	34	12
Ramona Blvd b/t California St & Valley Blvd	18	1	19	0	16	16	1
Ramona Blvd b/t Nevada Ave & Tyler Ave	--	--	--	--	--	--	--
Tyler Ave b/t Garvey Ave & Concert St	24	4	28	0	25	12	2
Tyler Ave b/t Bryant Rd & Basye St	18	3	21	0	21	16	0
Tyler Ave b/t Iris Ln & Valley Mall	23	6	29	0	23	9	1
Tyler Ave b/t Ramona Blvd & Amador St	36	8	44	0	38	18	2
Valley Blvd b/t Monterey Ave & Santa Anita Ave	18	2	20	0	19	12	0
Monterey Park							
Avenida Cesar Chavez b/t Schoolside Ave & Collegian Ave	26	5	31	0	26	16	1
E. Pomona Blvd b/t S. Garfield Ave & Juneway Rd	2	0	2	0	2	2	0
E. Garvey Ave b/t S. Rural Dr & S. Sefton Ave	20	4	24	2	21	17	2
Monterey Pass Rd b/t Vagabond Dr & W. Newmark Ave	13	0	13	0	5	0	2
N. Atlantic Blvd b/t W. Hellman Ave & W. Hampton Ave	10	2	12	0	9	2	1
N. Garfield Ave b/t W. Hellman Ave & W. Hampton Ave	9	1	10	0	10	7	1
S. Atlantic Blvd b/t W. Floral Dr & W. Riggin St	17	2	19	0	14	12	0
S. Garfield Ave b/t W. Riggin St & W. Fernfield Dr	7	0	7	0	7	6	0
W. Garvey Ave b/t N. Ynez Ave & N. Pherrin Ave	17	2	19	1	15	12	0
San Gabriel							
E. Valley Blvd b/t Walnut Grove Ave & S. Delta St	--	--	--	--	--	--	--
E. Las Tunas Dr b/t Country Club Dr & S. California St	5	0	5	0	5	1	2
E. Mission Dr b/t S. San Gabriel Blvd & S. Gladys Ave	6	4	10	0	10	6	0
Las Tunas Dr b/t S. Alammay Ave & N. Sycamore Dr	3	0	3	0	3	2	0
S. Del Mar Ave b/t W. Las Tunas Dr & W. Live Oak St	0	2	2	0	1	1	0
S. Mission Dr b/t Carmelita Dr & W. Santa Anita Ave	2	1	3	0	1	2	0

Count Location	Number of Bicycle Riders			Characteristics			
	Male	Female	Total	Child <13	No Helmet	On Sidewalk	Wrong Way
San Gabriel Blvd b/t E. Wells St & E. Valley Blvd	--	--	--	--	--	--	--
W. Valley Blvd b/t Prospect Ave & Abbot Ave	24	2	26	0	24	17	0
South El Monte							
Durfee Ave b/t Santa Anita Ave & Peck Rd	11	0	11	0	9	8	0
Durfee Ave b/t Thienes Ave & Broadmead St	14	1	15	0	14	9	1
Durfee Ave b/t Thienes Ave & Rush St	11	1	12	0	12	5	0
Thienes Ave b/t Durfee Ave & Fruitvale Ave	6	0	6	0	5	2	0
Thienes Ave b/t Durfee Ave & Maxson Rd	11	0	11	2	8	2	0
Thienes Ave b/t Parkway Dr & San Gabriel River Trail	15	2	17	0	16	0	0
Thienes Ave b/t Tyler Ave & Floradale Ave	--	--	--	--	--	--	--
Tyler Ave b/t Thienes Ave & Santa Anita Ave	--	--	--	--	--	--	--

Table F-2 Weekday Afternoon Bicycle Count Results (Tuesday-Thursday, 4:00 PM to 6:00 PM)

Count Location	Number of Bicycle Riders			Characteristics			
	Male	Female	Total	Child <13	No Helmet	On Sidewalk	Wrong Way
Baldwin Park							
Baldwin Park Blvd b/t Bess Ave & Walnut Creek	15	0	15	0	14	10	0
Francisquito Ave b/t Ramona Blvd & Cosbey Ave	31	5	36	0	30	16	2
Maine Ave b/t Los Angeles St & Estella St	27	5	32	5	22	9	0
Merced Ave b/t Ramona Pkwy & Ramona Blvd	41	0	41	2	35	23	8
Ramona Blvd b/t San Gabriel River Trail & I-605 Freeway	30	4	34	0	31	15	3
W. Badillo St b/t Puente Ave & Downing Ave	18	1	19	0	15	3	1
El Monte							
Garvey Ave b/t Nevada Ave & Tyler Ave	28	1	29	0	28	27	0
Garvey Ave b/t Tyler Ave & Consol Ave	--	--	--	--	--	--	--
Ramona Blvd b/t California St & Valley Blvd	21	0	21	0	19	17	1
Ramona Blvd b/t Nevada Ave & Tyler Ave	13	2	15	0	12	7	6
Tyler Ave b/t Garvey Ave & Concert St	--	--	--	--	--	--	--
Tyler Ave b/t Bryant Rd & Basye St	--	--	--	--	--	--	--
Tyler Ave b/t Iris Ln & Valley Mall	15	2	17	0	13	13	5
Tyler Ave b/t Ramona Blvd & Amador St	--	--	--	--	--	--	--

Count Location	Number of Bicycle Riders			Characteristics			
	Male	Female	Total	Child <13	No Helmet	On Sidewalk	Wrong Way
Valley Blvd b/t Monterey Ave & Santa Anita Ave	8	0	8	0	6	2	2
Monterey Park							
Avenida Cesar Chavez b/t Schoolside Ave & Collegian Ave	18	2	20	1	17	12	0
E. Pomona Blvd b/t S. Garfield Ave & Juneway Rd	2	2	4	2	2	0	0
E. Garvey Ave b/t S. Rural Dr & S. Sefton Ave	21	6	27	5	22	14	0
Monterey Pass Rd b/t Vagabond Dr & W. Newmark Ave	13	0	13	0	3	0	0
N. Atlantic Blvd b/t W. Hellman Ave & W. Hampton Ave	15	2	17	0	13	10	0
N. Garfield Ave b/t W. Hellman Ave & W. Hampton Ave	--	--	--	--	--	--	--
S. Atlantic Blvd b/t W. Floral Dr & W. Riggin St	9	1	10	0	10	6	1
S. Garfield Ave b/t W. Riggin St & W. Fernfield Dr	6	0	6	0	5	3	1
W. Garvey Ave b/t N. Ynez Ave & N. Pherrin Ave	16	1	17	0	15	14	0
San Gabriel							
E. Valley Blvd b/t Walnut Grove Ave & S. Delta St	41	15	56	1	49	42	0
E. Las Tunas Dr b/t Country Club Dr & S. California St	8	1	9	0	8	6	0
E. Mission Dr b/t S. San Gabriel Blvd & S. Gladys Ave	9	7	16	4	13	4	0
Las Tunas Dr b/t S. Alammay Ave & N. Sycamore Dr	13	3	16	3	13	11	1
S. Del Mar Ave b/t W. Las Tunas Dr & W. Live Oak St	--	--	--	--	--	--	--
S. Mission Dr b/t Carmelita Dr & W. Santa Anita Ave	5	1	6	0	6	4	0
San Gabriel Blvd b/t E. Wells St & E. Valley Blvd	--	--	--	--	--	--	--
W. Valley Blvd b/t Prospect Ave & Abbot Ave	46	1	47	0	38	37	0
South El Monte							
Durfee Ave b/t Santa Anita Ave & Peck Rd	4	0	4	0	4	2	0
Durfee Ave b/t Thienes Ave & Broadmead St	19	0	19	1	17	0	2
Durfee Ave b/t Thienes Ave & Rush St	19	0	19	0	18	12	1
Thienes Ave b/t Durfee Ave & Fruitvale Ave	20	0	20	1	20	6	4
Thienes Ave b/t Durfee Ave & Maxson Rd	13	0	13	0	13	5	1
Thienes Ave b/t Parkway Dr & San Gabriel River Trail	14	0	14	0	13	0	0
Thienes Ave b/t Tyler Ave & Floradale Ave	19	0	19	1	18	12	7
Tyler Ave b/t Thienes Ave & Santa Anita Ave	18	0	18	0	17	13	*1*

Table F-3 Weekend Bicycle Count Results (Saturday-Sunday, 11:00 AM to 1:00 PM)

Count Location	Number of Bicycle Riders			Characteristics			
	Male	Female	Total	Child <13	No Helmet	On Sidewalk	Wrong Way
Baldwin Park							
Baldwin Park Blvd b/t Bess Ave & Walnut Creek	5	0	5	0	4	3	1
Francisquito Ave b/t Ramona Blvd & Cosbey Ave	22	0	22	0	21	8	6
Maine Ave b/t Los Angeles St & Estella St	28	1	29	6	28	20	0
Merced Ave b/t Ramona Pkwy & Ramona Blvd	12	0	12	1	12	4	3
Ramona Blvd b/t San Gabriel River Trail & I-605 Freeway	69	5	74	10	/a	69	0
W. Badillo St b/t Puente Ave & Downing Ave	15	0	15	1	9	5	1
El Monte							
Garvey Ave b/t Nevada Ave & Tyler Ave	57	2	59	2	55	49	18
Garvey Ave b/t Tyler Ave & Consol Ave	--	--	--	--	--	--	--
Ramona Blvd b/t California St & Valley Blvd	22	1	23	0	22	13	2
Ramona Blvd b/t Nevada Ave & Tyler Ave	--	--	--	--	--	--	--
Tyler Ave b/t Garvey Ave & Concert St	--	--	--	--	--	--	--
Tyler Ave b/t Bryant Rd & Basye St	34	0	34	0	24	10	1
Tyler Ave b/t Iris Ln & Valley Mall	20	3	23	0	16	7	1
Tyler Ave b/t Ramona Blvd & Amador St	28	4	32	1	30	17	2
Valley Blvd b/t Monterey Ave & Santa Anita Ave	19	0	19	0	14	11	7
Monterey Park							
Avenida Cesar Chavez b/t Schoolside Ave & Collegian Ave	8	0	8	0	7	4	0
E. Pomona Blvd b/t S. Garfield Ave & Juneway Rd	--	--	--	--	--	--	--
E. Garvey Ave b/t S. Rural Dr & S. Sefton Ave	16	4	20	0	18	14	0
Monterey Pass Rd b/t Vagabond Dr & W. Newmark Ave	7	1	8	0	4	0	0
N. Atlantic Blvd b/t W. Hellman Ave & W. Hampton Ave	11	1	12	0	9	5	2
N. Garfield Ave b/t W. Hellman Ave & W. Hampton Ave	8	1	9	0	5	6	0
S. Atlantic Blvd b/t W. Floral Dr & W. Riggin St	6	1	7	0	5	3	0
S. Garfield Ave b/t W. Riggin St & W. Fernfield Dr	10	4	14	0	7	7	0
W. Garvey Ave b/t N. Ynez Ave & N. Pherrin Ave	6	1	7	0	7	6	0
San Gabriel							
E. Valley Blvd b/t Walnut Grove Ave & S. Delta St	--	--	--	--	--	--	--
E. Las Tunas Dr b/t Country Club Dr & S. California St	7	1	8	0	4	4	1
E. Mission Dr b/t S. San Gabriel Blvd & S. Gladys Ave	8	3	11	0	10	5	0
Las Tunas Dr b/t S. Alammay Ave & N. Sycamore Dr	7	1	8	1	5	3	0
S. Del Mar Ave b/t W. Las Tunas Dr & W. Live Oak St	--	--	--	--	--	--	--
S. Mission Dr b/t Carmelita Dr & W. Santa Anita Ave	--	--	--	--	--	--	--

Count Location	Number of Bicycle Riders			Characteristics			
	Male	Female	Total	Child <13	No Helmet	On Sidewalk	Wrong Way
San Gabriel Blvd b/t E. Wells St & E. Valley Blvd	19	2	21	0	20	14	0
W. Valley Blvd b/t Prospect Ave & Abbot Ave	25	6	31	0	23	21	0
South El Monte							
Durfee Ave b/t Santa Anita Ave & Peck Rd	--	--	--	--	--	--	--
Durfee Ave b/t Thienes Ave & Broadmead St	33	4	37	1	35	27	0
Durfee Ave b/t Thienes Ave & Rush St	21	1	22	0	20	12	7
Thienes Ave b/t Durfee Ave & Fruitvale Ave	22	4	26	2	25	9	8
Thienes Ave b/t Durfee Ave & Maxson Rd	6	1	7	0	6	2	2
Thienes Ave b/t Parkway Dr & San Gabriel River Trail	50	7	57	0	39	0	0
Thienes Ave b/t Tyler Ave & Floradale Ave	2	0	2	0	2	2	0
Tyler Ave b/t Thienes Ave & Santa Anita Ave	8	0	8	0	8	1	0

Appendix G: Recommended Bicycle Parking Standards

Short-Term Bicycle Parking

Short-term bicycle parking comes in the form of bicycle racks that are meant for storing bicycles up to two hours. Bicycle rack designs should include racks 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. Recommended bicycle rack types shown in **Figure G-1** include the Inverted U-rack (commonly known as the U-rack), flat top rack, post and ring rack, and custom racks that provide the security mentioned above.

Figure G-1 *Recommended Types of Short-Term Bicycle Parking*

Inverted U	Flat Top	Circular (Horseshoe)	Custom
			

Long-Term Bicycle Parking

Commuters and other bicycle riders that plan to stay at their destinations longer than two hours require more secure bicycle parking. Long-term bicycle parking, with examples shown in **Figure G-2** 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.

Bicycle lockers can hold up to two bicycles and come in a variety of materials, such as metal and polyethylene.

Figure G-2 *Recommended Types of Long-Term Bicycle Parking*

Metal	Metal Triangular	Polyethylene
		

High-Volume Bicycle Parking

Where bicycle parking demand is high, more formal structures and larger facilities should be provided. Several options for high-volume bicycle parking are outlined below.

On-Street Bike Parking Corral

A relatively inexpensive solution to providing high-volume bicycle parking is to convert one or two on-street motor vehicle parking spaces into on-street bicycle parking. Bike racks are installed in the street and protected from motor vehicles with removable curbs and bollards. These facilities move bicycles off the sidewalks, and leave space for sidewalk café tables or pedestrians. Bicycle parking does not block sightlines like motor vehicles do, so it may be possible to locate bicycle parking in no-parking zones near intersections and crosswalks.

Bike Oasis

Bike Oases are installed on curb extensions and consist of attractive covered bike parking and an information panel. Portland's Bike Oases, for example, provide parking space for ten bicycles. Bicycling and walking maps are installed on the information panel.

Bike Station

Bike Stations serve as one-stop bicycle service centers for bicycle commuters. They include 24-hour secure bicycle parking and may provide additional amenities such as a store to purchase items (e.g., helmets, raingear, tubes, patch kits, bike lights, and locks), bicycle repair facilities, showers and changing facilities, bicycle rentals, and information about bicycling. Some Bike Stations provide free bike parking, while others charge a fee or require membership.

Bike Stations have been installed in several cities in California, including Covina, Claremont, Long Beach, San Francisco, Los Angeles and Berkeley, as well as in Chicago, and Seattle.

The following amenities should be considered for Bike Stations:

- Attended bicycle parking
- Bicycle rental establishment
- Accessory shop
- Bicycle repair shop
- Changing rooms
- Shower and locker facilities

Bicycle Parking Styles Not Recommended

Bicycle rack styles are not recommended if they do not provide two points of contact with the bicycle so that it can be locked from both the front wheel/frame and the rear wheel. Examples of rack styles not recommended include "wheel bender" and wave racks. Because both types of racks do not provide two points of contact, parked bicycles are not supported and can fall, which can potentially cause damage to the bicycle. Without two points of contact, there are fewer places to lock the bicycle, which reduces the amount of security provided by the rack. Wave racks, in particular, are also not recommended because the lack of two points of contact causes bicycles to tip over and reduces the racks' capacity.

Appendix H: Bicycle Parking Study for the San Gabriel Valley Bike Plan Partner Cities

Introduction

The Los Angeles Department of Transportation has compiled a complete inventory of bike parking facilities and capacity on a Google-based mapping platform for the Cities of Los Angeles, Santa Monica, and Long Beach. However, a similar effort has yet to be conducted in the San Gabriel Valley. As part of the San Gabriel Valley Bicycle Master Plan, this study aims to explore and analyze existing bicycle parking facilities in the participating cities of Monterey Park, Baldwin Park, San Gabriel, El Monte, and South El Monte (Figure 1). As such, this report is the first comprehensive study of bicycle parking facilities and related amenities and services specific to the San Gabriel Valley.

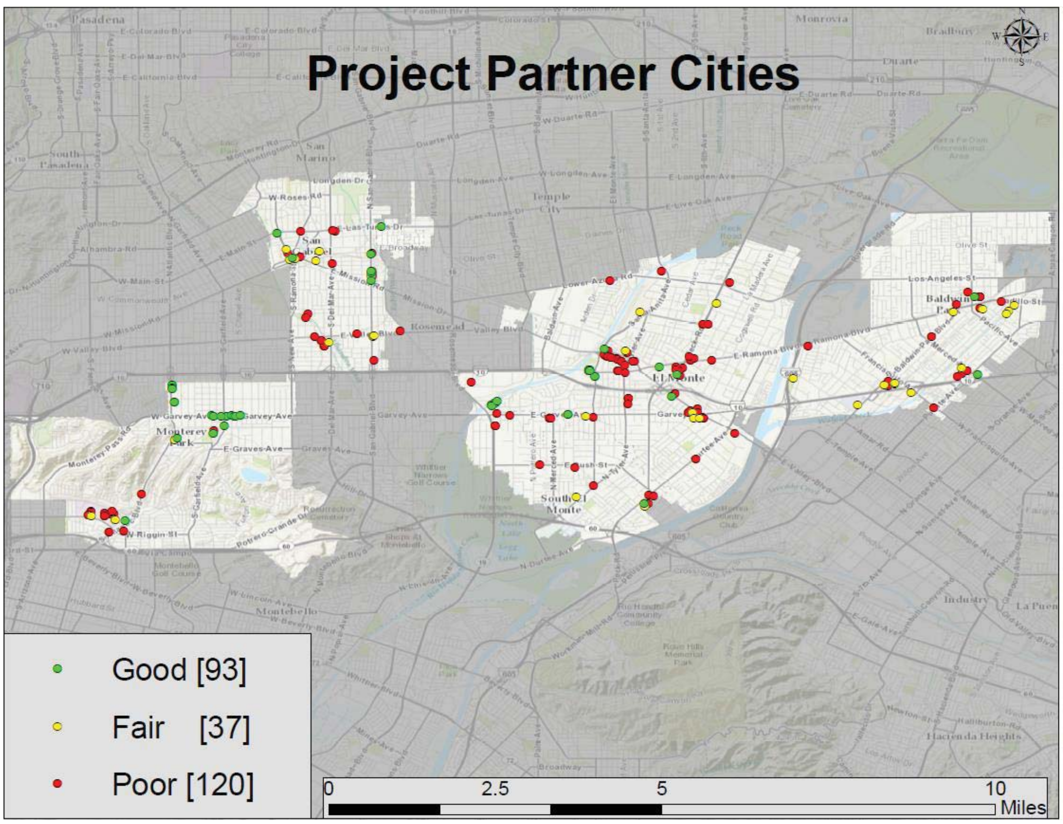


Figure 1: Representation of Partner Cities and bike rack locations.
From left to right: Monterey Park; San Gabriel; South El Monte; El Monte; Baldwin Park.

What is Bicycle Parking?

Bicycle parking is a dedicated space on public or private property that is designated for parking bicycles. Bike parking facilities come in many forms with endless styles and designs. Bike parking is classified in two categories:

- Short-term – Typically located on the sidewalk or street in front of buildings or attractive destinations. Designed to accommodate convenience, utility, and improved safety and visibility.
- Long-term – Usually require a wider variety of fixtures and site plan layouts. These fixtures come in the form of enclosed rooms, lockers, or cages that maintain exclusive access. This type of parking facility focuses on improved security from theft and weather damage.

Why is Bicycle Parking Important?

At the most basic level, bike parking encourages people to ride, especially if safe and secure bike parking is available at their intended destination. However, well-designed bicycle parking greatly contributes to a more sustainable, healthier and vibrant community by:

- Increasing general parking capacity;
- Encouraging physical activity through active transportation;
- Reducing greenhouse gas emissions;
- Maintaining orderly streetscape, visual aesthetics and overall community pleasantness;
- Preserving the pedestrian right-of-way by maintaining clear walkways;
- Minimizing nuisance parking on posts, benches, hand rails, and other public furniture;
- Increasing security thereby reducing the opportunity for theft; and

- Minimizing potential for damage to bicycles resulting from weather, abrasive materials, or congested surroundings.

What Makes a Good Bike Rack?

A good bike rack supports a bicycle frame at two or more points on a horizontal plane. This configuration offers added stability, which allows users to easily load and unload cargo without the bicycle tipping over. All bike racks should meet the following criteria:

- Supports the bicycle in at least two places, preventing it from falling over;
- Prevents the wheel from bending, turning or tipping;
- Allows frame and one or both wheels to be locked with a u-lock;
- Allow front-in and back-in parking;
- Is securely anchored to the ground;
- Resists tampering, cutting, rusting, bending, vandalism or deformation;
- Allows adequate space on all sides of the rack.

Complex designs with a learning curve result in unintended use, reduced security and creates an obstruction for other users, which ultimately limits the bike rack effectiveness. All bicycle rack designs should strive to accommodate both conventional and non-traditional bicycle types such as recumbent, adult tricycles, folding bicycles, and other. Racks that only support the wheel and do not support the frame are not recommended. Such racks often bend the wheel of the bicycle.

What are bike parking support amenities and services?

In order to encourage more commuting and travel via bicycles, bike parking facilities in attractive destinations must be accompanied with more specific types of support amenities. Support amenities are any addition or enhancement to a concentration of bike parking facilities that further encourages or supports bicycle ridership. Examples of such amenities may include but are not limited to the following:

Hydration Station Needless to say, riding a bike can work up a quite a thirst, especially in a warmer climate area such as Southern California. Modern water fountains such as the one demonstrated on the right, promotes sustainability through the use of reusable water bottles while providing water to bicycle riders, pedestrians and dogs alike. Typically, cities partner with local organizations to offer free reusable water bottles in conjunction with education around water conservation, limiting single-use plastic water bottles, and tips for living in a drought.	
Repair Stations Similar to gas stations that offer basic amenities for cars such as water, air, and windshield wipers, a bicycle repair station serves as the equivalent amenity to the cycling community. Repair stations provide a work stand, pump and basic tools to conveniently conduct general bike repairs such as brake and derailleur adjustments, flat tire inflation and more. Fix-it stations are designed to thwart theft and are most ideal for locations with a high volume of bicycle riders such as universities, K-12 schools, downtown districts, etc.	

<u>Emergency Call Box</u> Emergency call boxes are emerging tools that serve multiple benefits, especially in communities with higher rates of crime. Beyond having a direct line to 911 operators, call boxes can also be rigged with security cameras, sirens, and lights. This tool is primarily used to report suspicious behavior, theft, assault or other illegal activities. Moreover, emergency call boxes are well suited for lower income communities where owning a cell phone is not prevalent.	
<u>Information Kiosks</u> Information kiosks have become a staple amenity at transportation hubs, tourist attractions, malls and central business areas. Kiosks typically include a map and legend to help orient users while providing general information and guidance specific to the area. Information kiosks that specific to bike parking facilities can include a bikeway network map, safe travel tips, parking instructions, rules of the road, public services announcements, location of support amenities in the area and much more.	
<u>Bicycle Vending Machine</u> Many communities with higher rates of bicycling are installing vending machines that cater directly to cyclists. Basic accessories, tools, tubes, snacks and drinks for normally available for purchase 24 hours a day, 7 days a week. Bicycle vending machines would be ideal for community centers, schools, malls, etc.	
<u>High Capacity Bike Parking</u> Venues that attract lots of people such as transportation centers, regional parks, downtown districts and concert halls will likely benefit from high capacity bike parking facilities. These facilities provide a central, safe and highly visible solution for bicycle parking and increases overall general parking capacity. Such amenities are most ideal for venues that host large audiences such as the Rose Bowl, Santa Anita Race Track and universities.	

Bike Valet

Similar to car valet, patrons are issued a numbered ticket that coincides with their respective bicycle, which is then subjected to the care and supervision of valet attendants in an enclosed safe zone. Bike valet is usually offered as a complimentary service at mid- to large-scale events such as farmer's markets, art and music festivals, concerts in the park, and community carnivals.

What are the Different Types of Bike Racks and what are their Advantages/Disadvantages?

Bicycle parking spaces and space efficiency are interrelated and thus require a delicate balance between the amount of spaces available and the effective use of space in a given area. A bike rack with lots of spaces doesn't always equate to an effective use of space. Additionally, all bike racks should hold the number of bicycles that it's designed to hold. Although the quality of bike parking facilities is often overlooked, great care, consideration, and research should be devoted to ensure that bike parking facilities are maximized to their full effectiveness.

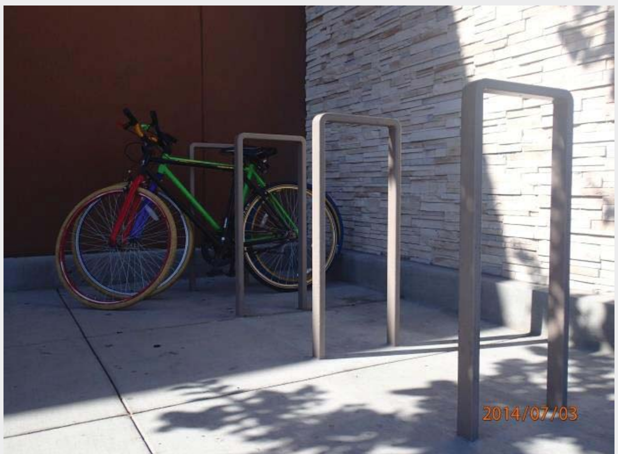
For example, a comb rack with 20 parking spaces typically only accommodates up to 10 bicycles due to the inadequate use of space between each individual parking space. Poor design combined with low security, lack of frame support and wheel bending properties, the comb rack ultimately discourages cyclists from using them. As a result, the comb rack is widely considered to be an ineffective bike parking facility option.

On the flip side, a set of 5 Inverted U bike racks are considered to be effective based on their ability to accommodate 10 bikes while minimizing the amount of space it occupies. Plus, the frame can be supported at two points thereby improving security and resulting in a much more user friendly bike rack.

As previously mentioned, bike racks are an important component of bicycle infrastructure and way to encourage more bicycling in a community. The following tables examine the vast array of bike parking facilities, their individual pros and cons and safety ratings among other characteristics.

---------- *Continued on to the next page.*

INVERTED U



Other Names & Variants	• U-Rack • A-Rack • Staple Rack • Sheffield Rack • Flat-Top Rack
Pros	☑ Supports the bicycle in at least two places, preventing it from falling over; ☑ Prevents the wheel from bending, turning or tipping ☑ Allows frame and one or both wheels to be locked with a u-lock ☑ Allow front-in and back-in parking ☑ Is securely anchored to the ground ☑ Resists tampering, cutting, rusting, bending, vandalism or deformation ☑ Allows adequate space on all sides of the rack
Cons	☒ While resistant to cutting, square tubing is recommended over round tubing due to round tubing being more vulnerable to cutting.
Safety & Detectability	• Racks and parked bicycles detectable to pedestrians and bicycle riders • Parking of bicycle does not interfere with pedestrian activities.
Capacity	• Two bicycles per each Inverted U-rack

ROUND RACKS



Other Names & Variants	• Circle Rack
Pros	☑ Supports the bicycle in at least two places, preventing it from falling over; ☑ Prevents the wheel from bending, turning or tipping ☑ Allows frame and one or both wheels to be locked with a u-lock ☑ Allow front-in and back-in parking ☑ Is securely anchored to the ground ☑ Resists tampering, cutting, rusting, bending, vandalism or deformation ☑ Allows adequate space on all sides of the rack
Cons	☒ While resistant to cutting, square tubing is recommended over round tubing due to round tubing being more vulnerable to cutting.
Safety & Detectability	• Racks and parked bicycles detectable to pedestrians and bicycle riders • Parking of bicycle does not interfere with pedestrian activities.
Capacity	• Two bicycles per each Round rack

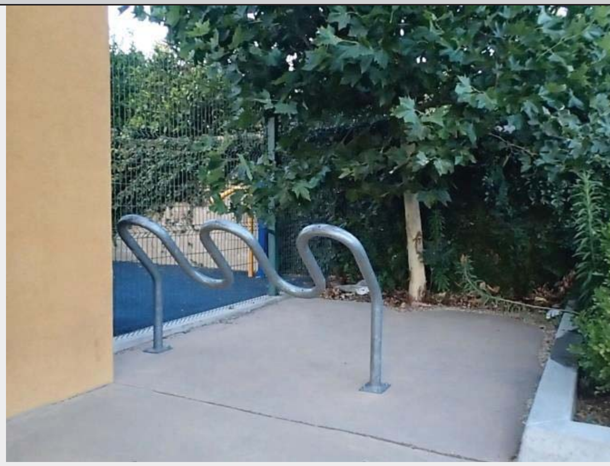
POST & LOOP RACK

Other Names & Variants	• Post and Ring Rack • Hoop-and-Post • Bollard Rack
Pros	☑ Supports the bicycle in at least two places, preventing it from falling over; ☑ Prevents the wheel from bending, turning or tipping ☑ Allows frame and one or both wheels to be locked with a u-lock ☑ Allow front-in and back-in parking ☑ Is securely anchored to the ground ☑ Resists tampering, cutting, rusting, bending, vandalism or deformation ☑ Allows adequate space on all sides of the rack
Cons	☒ While resistant to cutting, square tubing is recommended over round tubing due to round tubing being more vulnerable to cutting. ☒ Metal rings vulnerable to prying
Safety & Detectability	• Racks and parked bicycles detectable to pedestrians and bicycle riders • Parking of bicycle does not interfere with pedestrian activities.
Capacity	• Two bicycles per each Post-and-Loop rack

LIGHTNING BOLT RACK

Other Names & Variants	• Secured Wheel-well Rack • Bike Dock
Pros	☑ Supports the bicycle in at least two places, preventing it from falling over; ☑ Additional support due to the addition of a wheel-well ☑ Prevents the wheel from bending, turning or tipping ☑ Allows frame and one or both wheels to be locked with a u-lock ☑ Allow front-in and back-in parking ☑ Is securely anchored to the ground ☑ Resists tampering, cutting, rusting, bending, vandalism or deformation ☑ Allows adequate space on all sides of the rack
Cons	☒ Locking loop vulnerable to prying ☒ Accessible from only one side
Safety & Detectability	• Racks and parked bicycles detectable to pedestrians and bicycle riders • Parking of bicycle does not interfere with pedestrian activities.
Capacity	• One bicycle per each wheel-well

WAVE RACK



Other Names & Variants	• Undulating Rack • Serpentine Rack • Sine Wave Rack • Ribbon Rack
Pros	☑ Allows frame and one or both wheels to be locked with a u-lock ☑ Allow front-in and back-in parking ☑ Is securely anchored to the ground ☑ Resists tampering, cutting, rusting, bending, vandalism or deformation
Cons	☒ Does not support bicycle at two points ☒ Arrangement of parking spaces reduces capacity and efficiency ☒ Constricting design may cause handlebar conflicts ☒ While resistant to cutting, square tubing is recommended over round tubing due to round tubing being more vulnerable to cutting.
Safety & Detectability	• Racks and parked bicycles detectable to pedestrians and bicycle riders • Parking of bicycle does not interfere with pedestrian activities.
Capacity	• One bicycle per space • May not hold advertised capacity • One bicycle parked parallel reduces total capacity to two bicycles.

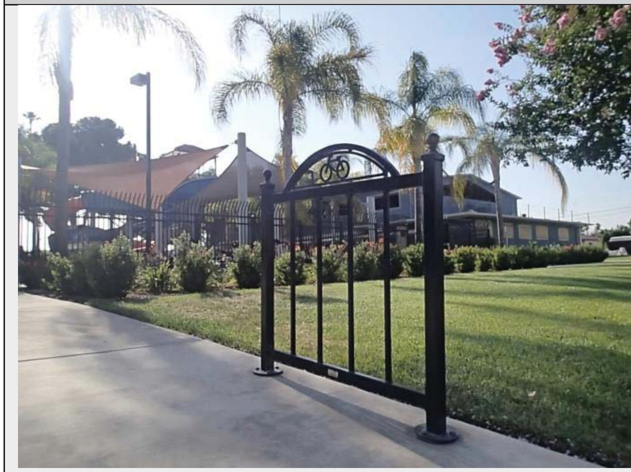
SPIRAL RACK	
	
Other Names & Variants	• Helix Rack
Pros	☑ Allows frame and one or both wheels to be locked with a u-lock ☑ Allow front-in and back-in parking ☑ Is securely anchored to the ground ☑ Thicker round tubing resists tampering, cutting, rusting, bending, vandalism or deformation[Left Image]
Cons	☒ Does not support bicycle at two points ☒ Arrangement of parking spaces reduces capacity and efficiency ☒ Constricting design may cause handlebar conflicts ☒ Thinner round tubing is susceptible to tampering, cutting, rusting, bending, vandalism, or deformation [Right Image]
Safety & Detectability	• Racks and parked bicycles detectable to pedestrians and bicycle riders • Parking of bicycle does not interfere with pedestrian activities.
Capacity	• One bicycle per space • May not hold advertised capacity

COAT-HANGER RACK	
	
Other Names & Variants	• Modified Coat-hanger
Pros	☑ Supports the bicycle in at least two places, preventing it from falling over; ☑ Allows frame and one or both wheels to be locked with a u-lock ☑ Allow front-in and back-in parking ☑ Is securely anchored to the ground ☑ Allows adequate space on all sides of the rack
Cons	☒ Locking loop vulnerable to prying ☒ Constricting design may cause handlebar problems ☒ Arrangement of parking spaces reduces capacity and efficiency ☒ Some bicycles may not fit under rack
Safety & Detectability	• Racks and parked bicycles detectable to pedestrians and bicycle riders • Parking of bicycle does not interfere with pedestrian activities.
Capacity	• One bicycle per coat-hanger loop • May not hold advertised capacity

TOAST RACK

Other Names & Variants	• N/A
Pros	☑ Allow front-in and back-in parking ☑ Is securely anchored to the ground
Cons	☒ Does not support bicycle at two points ☒ Bicycle frame not supported ☒ Arrangement of parking spaces reduces capacity and efficiency ☒ Constricting design may cause handlebar conflicts ☒ Susceptible to bending, cutting, and prying ☒ Some bicycles may not fit in rack ☒ Wheels susceptible to bending
Safety & Detectability	• Racks may not be initially detectable to pedestrians and bicycle riders • Parking of bicycle may block an interfere with pedestrian activities • Cane detectable, but may pose tripping hazard depending on height
Capacity	• One bicycle per space • May not hold advertised capacity

COMB RACK




Other Names & Variants	• N/A
Pros	☑ Allow front-in and back-in parking
Cons	☒ Does not support bicycle at two points ☒ Bicycle frame not supported ☒ Arrangement of parking spaces reduces capacity and efficiency ☒ Constricting design may cause handlebar conflicts ☒ Susceptible to bending, cutting, and prying ☒ Some bicycles may not fit in rack ☒ Wheels susceptible to bending
Safety & Detectability	• Racks may not be initially detectable to pedestrians and bicycle riders • Parking of bicycle may block an interfere with pedestrian activities • Cane detectable, but may pose tripping hazard • Racks are rarely anchored, reducing safety and security
Capacity	• One bicycle per space • May not hold advertised capacity

WHEEL-WELL RACK	
	
Other Names & Variants	• Concrete Slots
Pros	☑ Allow front-in and back-in parking
Cons	☒ Does not support bicycle at two points ☒ Bicycle frame not supported ☒ Arrangement of parking spaces reduces capacity and efficiency ☒ Constricting design may cause handlebar conflicts ☒ Susceptible to bending, cutting, and prying ☒ Some bicycles may not fit in rack ☒ Wheels susceptible to bending ☒ Does not support U-lock
Safety & Detectability	• Racks are difficult to detect for pedestrians and bicycle riders • Parking of bicycle may block an interfere with pedestrian activities • Cane detectable, but may pose tripping hazard • Racks are rarely anchored, reducing safety and security
Capacity	• One bicycle per space • May not hold advertised capacity

GROOVED RACK	
	
Other Names & Variants	• N/A
Pros	☑ Allow front-in and back-in parking
Cons	☒ Does not support bicycle at two points ☒ Bicycle frame not supported ☒ Arrangement of parking spaces reduces capacity and efficiency ☒ Constricting design may cause handlebar conflicts ☒ Susceptible to bending, cutting, and prying ☒ Some bicycles may not fit in rack ☒ Wheels susceptible to bending ☒ Does not support U-lock
Safety & Detectability	• Racks are difficult to detect for pedestrians and bicycle riders • Parking of bicycle may block an interfere with pedestrian activities • Cane detectable, but may pose tripping hazard
Capacity	• One bicycle per space • May not hold advertised capacity

CUSTOM DESIGN RACKS




Other Names & Variants	• N/A
Pros	☑ Unique designs ☑ Completely customizable ☑ Gives the location a sense of identity ☑ Allow purchaser to determine visuals, design, rack type, safety, etc.
Cons	☒ Cost increase
Safety & Detectability	• Due to their unique designs, racks and parked bicycles are easily detectable to pedestrians and bicycle riders • Parking of bicycle does not usually interfere with pedestrian activities.
Capacity	• Varies depending on bike rack design

Bike Lockers

Bike lockers provide an individual-secured, enclosed space for each stored bicycle and are primarily used for long-term bicycle parking in public places. Bike lockers are the most secure way to park a bicycle for long periods of time. However, lockers should still be located close to entrances, high traffic, and visible areas, and be convenient to the bicycle rider's destination. This helps in encouraging a bicycle rider's continued use of bike lockers while simultaneously discouraging theft and vandalism. Lockers can be rented to a single individual who possesses a key, or they can be made available to the public through the installation of code locks or locking mechanisms provided by the bicycle rider such as a U-lock.

The security of a bicycle locker depends on the security of the wall panels, door, frame, and the locking mechanism. All bike lockers should meet the following criteria:

- Locker doors should open at least 90 degrees to allow easy loading/unloading
- Lockers should be clearly labeled as bicycle parking
- Directions for use should be posted on or near the lockers
- Information about how to access the lockers should be posted on or near the locker.
- Stacked lockers should have a wheel track to guide the bicycle into the locker.

Lockers can be square or triangular. Square lockers are often stacked to provide additional parking while triangular lockers can be installed back-to-back in circular formations to save space (APBP, 2010). Bike lockers are typically constructed out of fiberglass, metal, or plastic. The following provides more information on bike locker types.

Fiberglass	
	
Overall Status	• Highly Recommended
Pros	☑ Constructed of reinforced fiberglass ☑ Optional transparent panels allow visibility into lockers ☑ Acclimate better to harsh weather conditions over metal ☑ More heavy duty than plastic but not as heavy duty as metal ☑ High Security Level
Cons	☒ N/A

Metal	
 	
Overall Status	• Highly Recommended
Pros	☑ Constructed of solid and/or mesh metal walls ☑ Mesh walls allows visibility into lockers ☑ Suitable for double-stacking ☑ Heavy-duty ☑ Best for locations that may experience a high degree of snow load
Cons	☒ In hot climates, metal bike lockers can get very hot, which may cause harm to users

Plastic	
	
Overall Status	• Not Recommended
Pros	☑ Lower Cost
Cons	☒ Constructed of plastic walls ☒ Highly flammable ☒ Susceptible to prying ☒ Panels can separate from the frame ☒ Does not have the option to have transparent panels ☒ Least amount of security among all bike locker types

Bike Corrals

Bike corrals are bicycle parking facilities that can accommodate multiple bicycle spaces within a single parking space. They can typically accommodate 8-10 Inverted U bicycle racks, though this varies depending on the size of the parking space. Inverted U bike racks are the most recommended type of bike rack to be used for these designated spaces. Other types, such as coat-hanger and wave bike racks, can be implemented as well, though this is strongly not recommended.

According to a study conducted by Portland State University's School of Urban Studies and Planning, there are five perceived bike corral benefits, which is as follows:

- Bike Corrals help promote sustainability
- Bike corrals enhance the street and neighborhood identity
- Bike corrals increase transportation options for employees and patrons
- Bike corrals increase foot and bike traffic
- Bike corrals increase the visibility of businesses from the street

Methodology

Bike racks were located by bicycling throughout the project cities with a special emphasis on streets and areas with businesses, parks, transit centers, community centers, and other attractive destinations. Residential communities were not explored because they typically do not have bicycle-parking facilities. K-12 schools were also not explored due to limited access during the summer months. Maps were created using ArcMap 10.2.2. Pictures and locations of each bike rack were taken with an Olympus TG-1 digital camera with an internal GPS feature. However, due to the cameras 100-foot margin of error, Geographic Information Systems [GIS] and Google Maps were used to pinpoint and identify the exact coordinates of each bike rack. Microsoft Excel was used to log each rack along with the following data:

1. ID
2. Rack Type
3. Total Bike Parking Spaces
4. Bike Rack Status
5. Bike Rack Condition
6. City
7. State
8. Zip Code
9. Nearby Street Name
10. Nearby Address
11. Nearby Business
12. Park/School
13. Latitude
14. Longitude
15. Creation Date
16. Creator
17. Edit Date
18. Editor
19. Additional Comments

The information above was combined with a picture of each bike rack to provide a visual aid. After entering the data in to ArcMap, the Identity Tool [Figure 2] can be used to click on any specific point, which prompts an attribute table to be displayed thereby providing access to all associated information. Once completed, this mapping tool will be published on the San Gabriel Valley Bicycle Master Plan website.

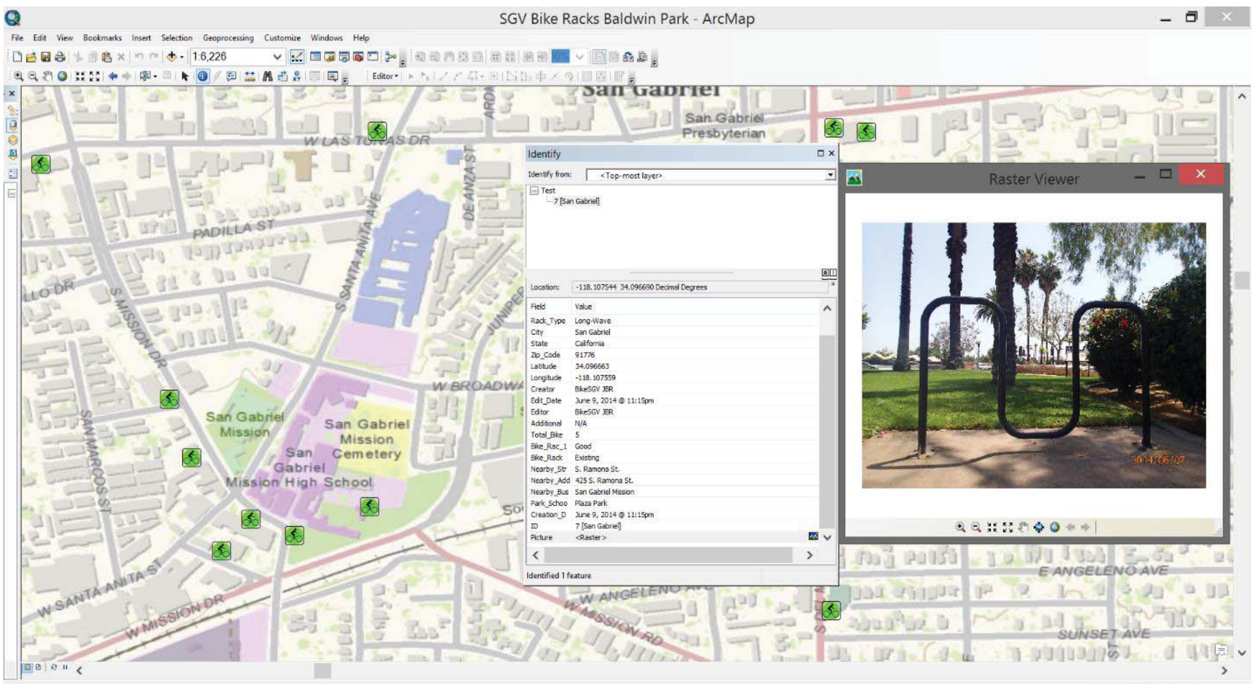


Figure 3: Example of how the data will be used in ArcMap. As can be seen, this selected point shows all 19 categories of information as well as a picture of what the bike rack and its surroundings look like. This feature will be available for every bike rack point.

Moreover, to evaluate the practical effectiveness of each bike rack, a “report card” was created consisting of 10 questions, each with its own specific criteria. Each criteria is weighted a different score for a maximum of 100 possible points overall. The criteria and point distribution per question is as follows:

- **[1] Bike rack supports the bike frame in at least two places?**
  - Supported in two or more places **[20 points]**
  - Bike rack does not support at two point at all **[0 points]**

- **[2] Bike rack allows adequate room for frame and one wheel to be locked with a u-lock?**
  - Yes **[10 points]**
  - No **[0 points]**

- **[3] Bike rack is located within 50 feet of closest building entrance, transportation stop, recreational area, or other destination?**
  - <= 50 feet **[10 points]**
  - 51-75 feet **[8 points]**
  - 75-100 feet **[5 points]**
  - 100-120 feet **[3 points]**
  - > 120 feet **[0 points]**

**When dealing with bike corrals, the closest bike rack will be used for measurement.*

- **[4] Parking facility does not require the user to lift the bike?**
  - Yes **[10 points]**
  - No **[0 points]**

- **[5] Bike parking has at least 2 feet of clearance on all usable sides?**
  - Yes **[10 points]**
  - No **[0 points]**

- **[6] Bike rack has no damage?**
  - No Damage **[10 points]**
  - Slight corrosion, peeling, but nothing significant **[8 points]**
  - Bike rack contains bent portions but all spaces are still intact and usable **[6 points]**
  - Bike rack contains bent portions that render some (but not all) spaces unusable **[4 points]**
  - Bike rack contains cut portions that render some (but not all) spaces unusable **[2 points]**
  - Severe damage. Bike rack unusable and/or highly damaged **[0 points]**

- **[7] Bike rack does not interfere with pedestrian activities or violate ADA compliance once parked?**
  - Yes **[10 points]**
  - No **[0 points]**

- **[8] Is the location in a place of high visibility (Day and Night)?**
    - Visible in both day and night **[5 points]**
    - Visible during the day but not at night **[3 points]**
    - Location is not very visible at all **[0 points]**

- **[9] Is the bike parking facility located in an attractive and convenient location?**
    - Yes **[5 points]**
    - Location is attractive but not convenient or vice-versa **[3 points]**
    - No **[0 points]**

- **[10] Is the bike rack bolted and secure?**
    - Yes **[10 points]**
    - No **[0 points]**

Scores ranged from 0 to 100 points with 100 being the best and 0 being the worst. Bike racks that scored 80-100 were categorized as “Good,” and set the standard for high quality bike parking. Bike racks that scored in the range of 70-79 were categorized as “Fair” and may contain flaws or cause for concerns related to the overall security of the bicycles being parked. Bike racks that score 0-69 were categorized as “Poor” and as such, are not recommended for use due to a lack of support, security, and/or potential damage to the bike.

While not yet included, each question and overall score will be incorporated as information for each specific bike rack point for both ArcMap and Google Maps. This will bring a total of 30 unique sets of information per bike rack point, expanding upon the existing 19 once completed.

Results

El Monte

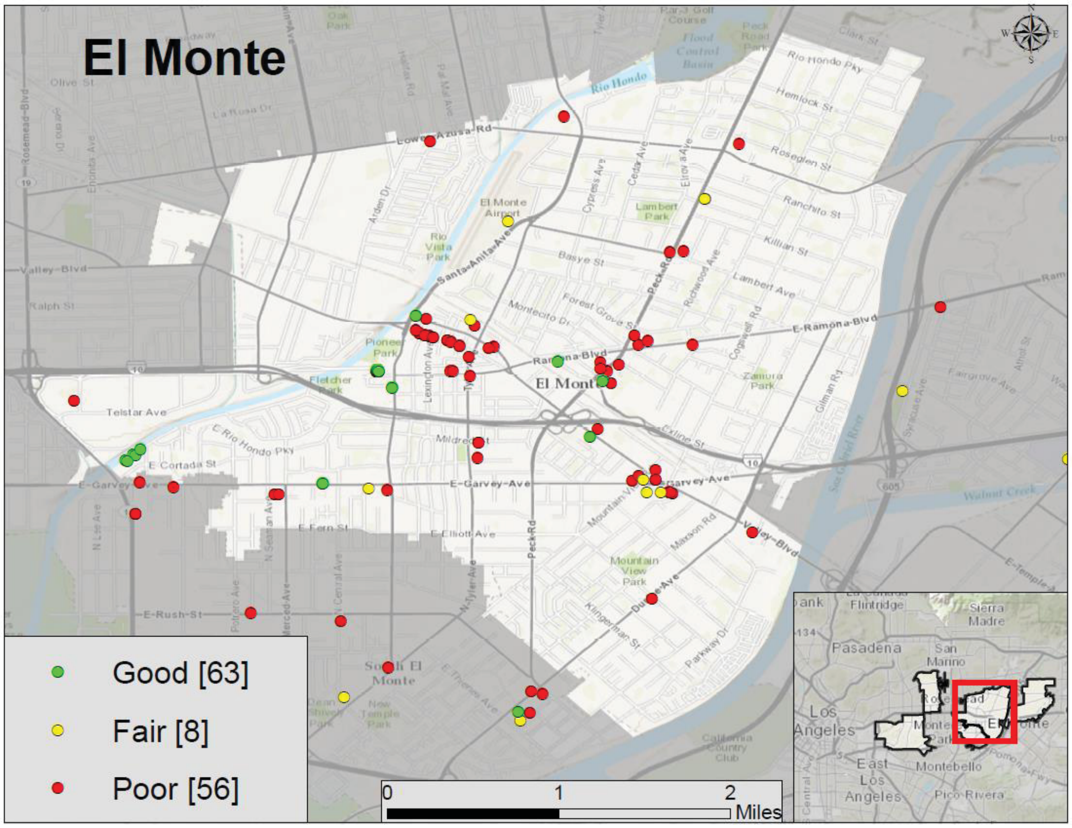


Figure 4: Map of El Monte and as well as bike rack locations. Green and yellow points signify good and fair bike racks for use. Red points signify poor bike racks that are not recommended for use.

El Monte	Good Racks	Good Capacity	Fair Racks	Fair Capacity	Poor Racks	Poor Capacity	Total Racks	Total Capacity
Count	63	140	8	50	56	266	127	456
Percent	49.60%	30.70%	6.30%	10.96%	44.10%	58.34%	100%	100%

Table 1: Numerical and percentage values of good, fair, and poor racks and parking space capacity, respectively, for the City of El Monte.

The City of El Monte has a total of 127 bike racks, with a capacity of 456 spaces. "Good" bike parking totaled 63 bike racks, with 140 parking spaces, which include 50 bike racks (100 parking spaces) located at the El Monte Bus Station. Excluding this outlier, there are only 12

"Good" bike racks distributed throughout the city with a capacity of 40 parking spaces; 8 "Fair" bike racks, with 50 parking spaces; and 56 "Poor" bike racks, with 266 parking spaces.

As identified in the map, the City of El Monte has four main clusters of bike racks. The first and largest concentration of bike racks is located at the El Monte Bus Station. The second cluster is located is in the downtown area, also known as the Valley Mall. A third cluster is located near the intersection of Ramona Blvd. and Peck Rd., and the last cluster is located near the intersection of Garvey Ave. and Valley Blvd.

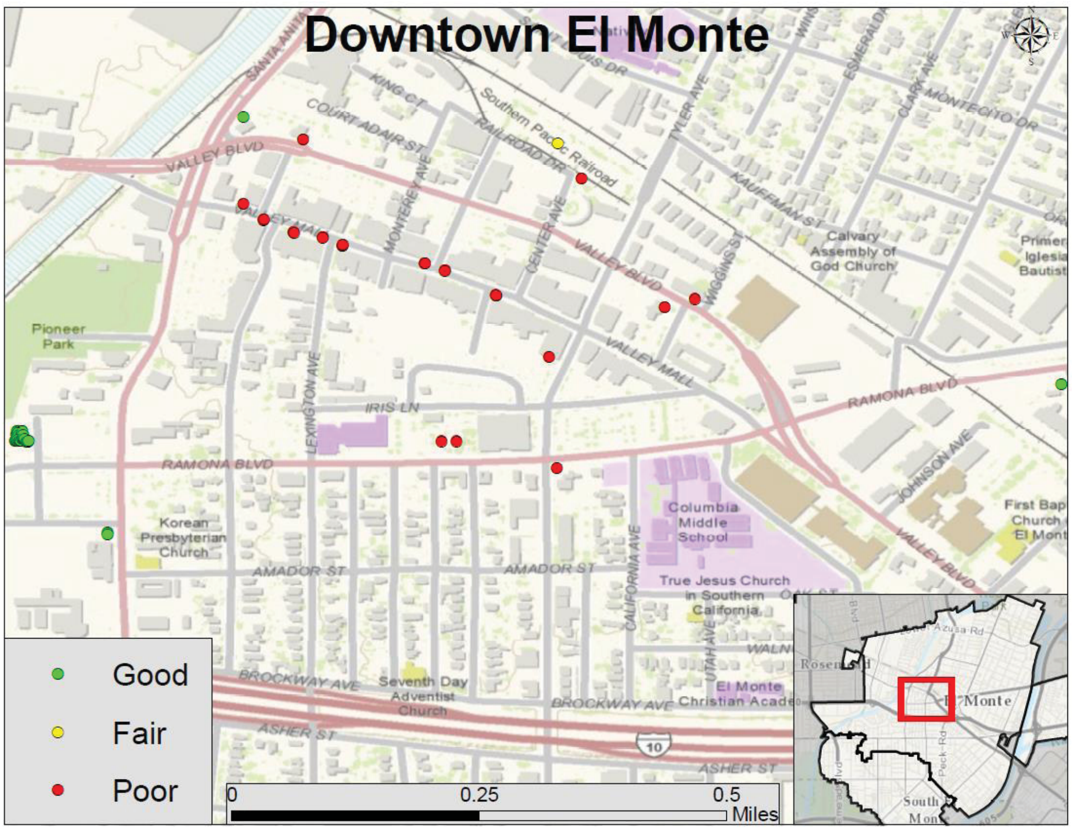


Figure 5: Map of El Monte downtown areas and bike rack locations. Green and yellow points signify good and fair bike racks for use. Red points signify poor bike racks that are not recommended for use.

Downtown El Monte contains mostly "Poor" bike parking. Although there are many bike racks in this area, the majority are in the form of concrete slot bike racks (Page 14), which are arguably one of the worst bike racks for bicycle riders. When presented with poor bike parking facilities, bicycle riders typically resort to non-bike specific alternatives, such as light posts, benches, or trees. Electing to park a bicycle on more secure street furniture has an adverse effect on pedestrian right-of-ways and tends to depict bicycle riders as scofflaws.

South El Monte

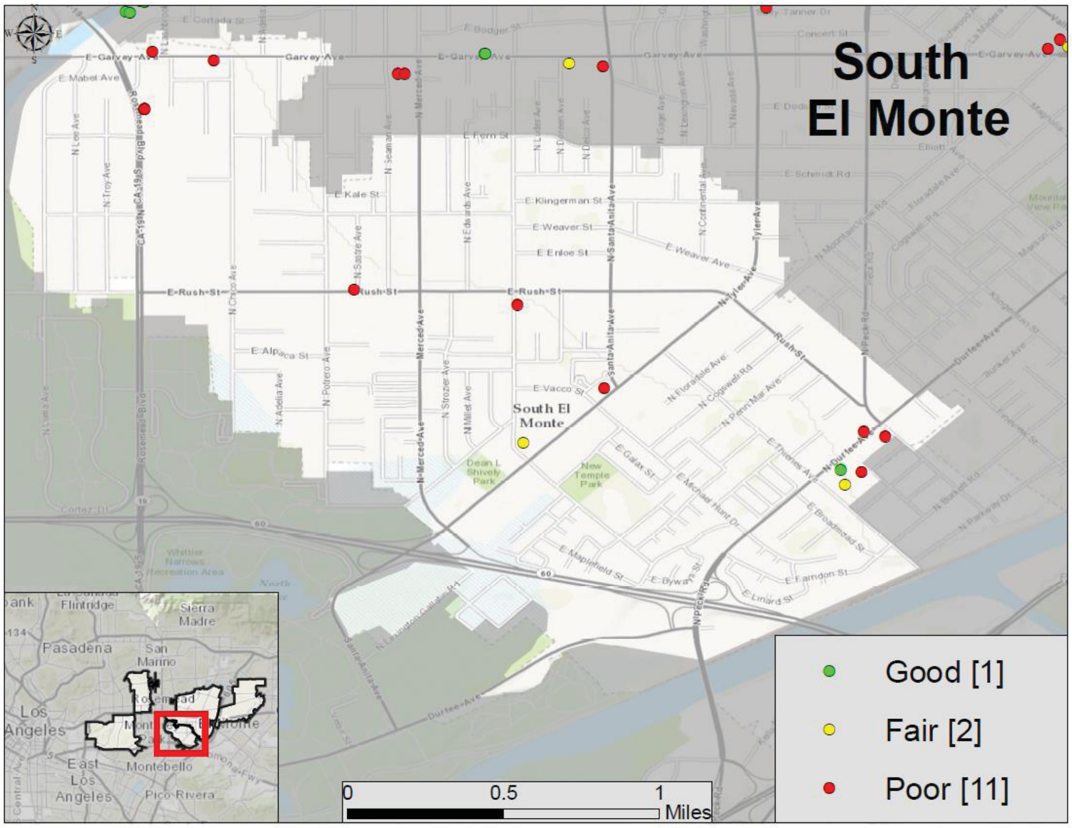


Figure 6: Map of South El Monte and as well as bike rack locations. Green and yellow points signify good and fair bike racks for use. Red points signify poor bike racks that are not recommended for use.

South El Monte	Good Racks	Good Capacity	Fair Racks	Fair Capacity	Poor Racks	Poor Capacity	Total Racks	Total Capacity
Count	1	7	2	14	11	49	14	70
Percent	7.14%	10%	14.29%	20%	78.57%	70%	100%	100%

Table 2: Numerical and percentage values of good, fair, and poor racks and parking space capacity, respectively, for the City of South El Monte.

The City of South El Monte has a total of 14 bike racks, with a total of 70 parking spaces. *Good* bike parking totaled 1 bike rack, with 7 parking spaces available. *Fair* bike parking totaled 2 bike racks, with 14 parking spaces available. *Poor* bike parking totaled 11 bike racks, with 49 parking spaces available. There were very few bike racks in the City of South El Monte. However, there was one cluster near the intersection of Durfee Ave. and Rush St.

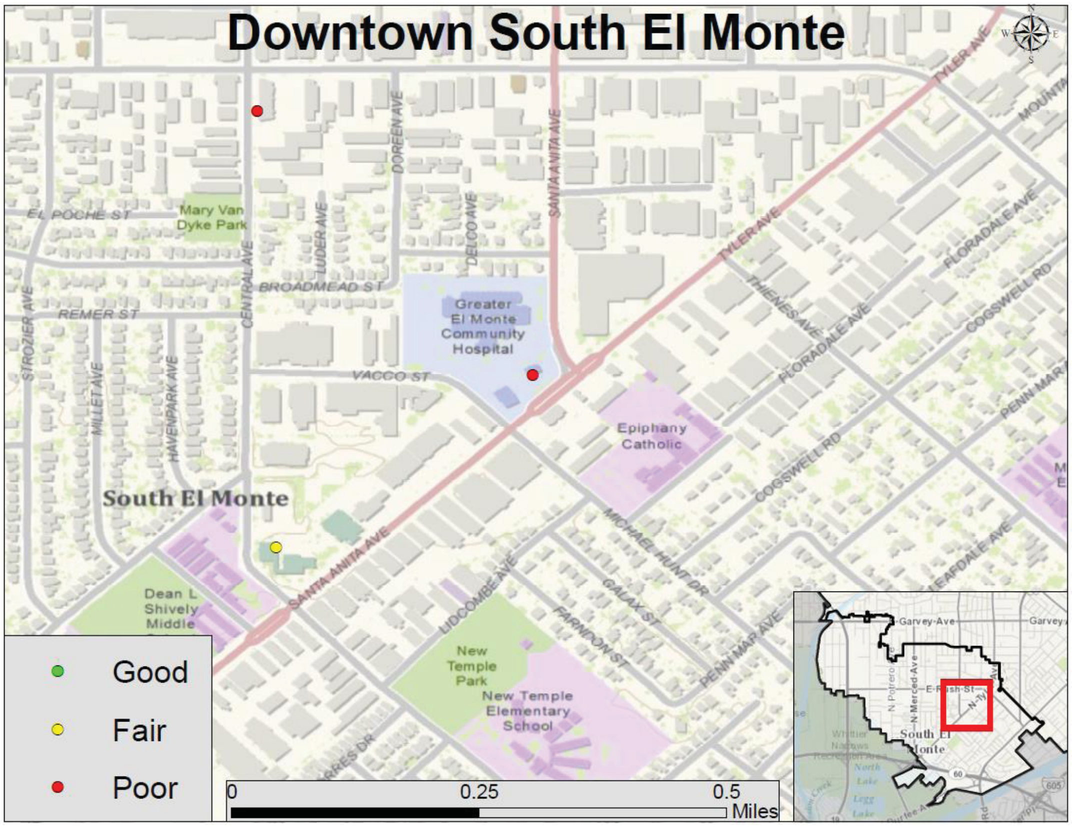


Figure 7: Map of South El Monte downtown area and bike rack locations. Green and yellow points signify good and fair bike racks for use. Red points signify poor bike racks that are not recommended for use.

Downtown South El Monte only contains three bike racks, none of which are within close proximity to one another. Of these, only one, located at the South El Monte public library, received a grade of *fair*. The remaining two received a grade of *poor*. Besides the library, there are not very many places that are attractive destinations for bicycle riders in this area, a potential contributing factor to the lack of bike parking.

Baldwin Park

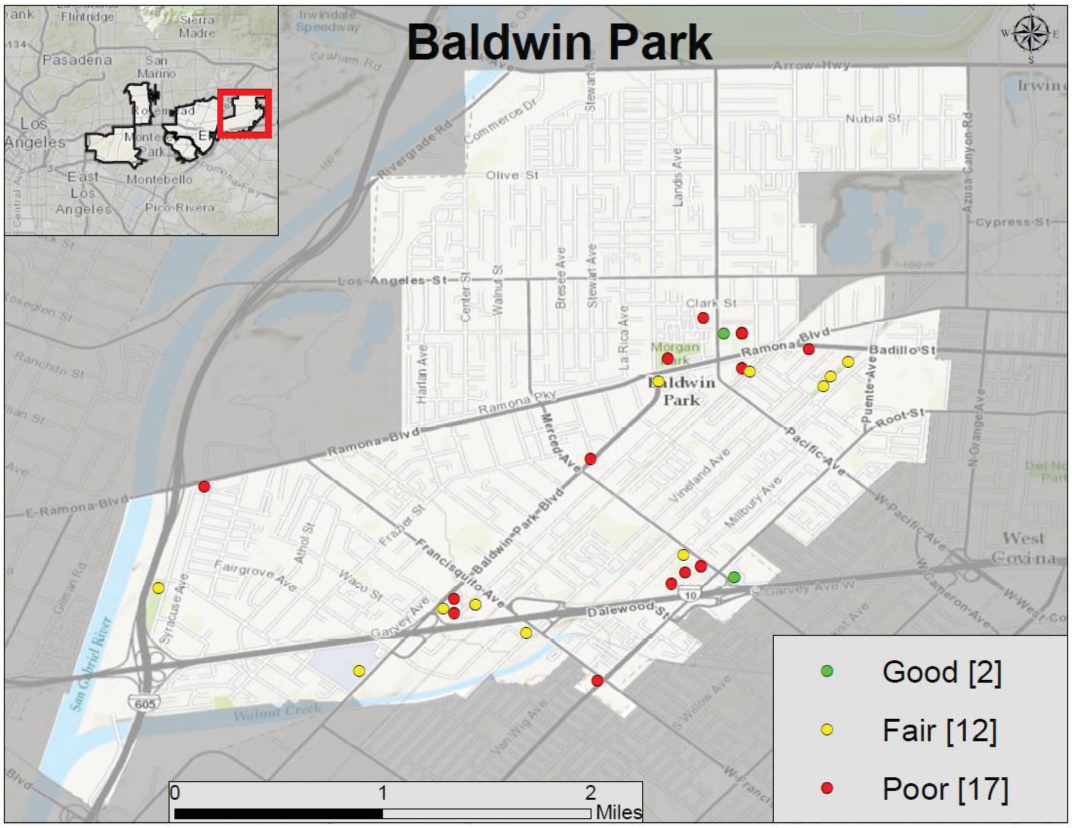


Figure 8: Map of Baldwin Park as well as bike rack locations. Green and yellow points signify good and fair bike racks for use. Red points signify poor bike racks that are not recommended for use.

Baldwin Park	Good Racks	Good Capacity	Fair Racks	Fair Capacity	Poor Racks	Poor Capacity	Total Racks	Total Capacity
Count	2	9	12	76	17	136	31	221
Percent	6.45%	4.07%	38.71%	34.39%	54.84%	61.54%	100%	100%

Table 3: Numerical and percentage values of good, fair, and poor racks and parking space capacity, respectively, for the City of Baldwin Park.

The City of Baldwin Park has a total of 31 bike racks with 221 spaces for parking available. *Good* bike parking totaled 2 bike racks, with 9 parking spaces available. *Fair* bike parking totaled 12 bike racks, with 76 parking spaces available. *Poor* bike parking bike parking totaled 17 bike racks, with 136 parking spaces available.

There are three main clusters in Baldwin Park. The first two clusters are located at the Francisquito Ave. – Baldwin Park Blvd. and Merced Ave. - Puente Ave. intersections. These areas are of high traffic due to banks, restaurants, and stores. The third cluster is a rather weak, though well spread out cluster located in the downtown area.

Figure 9: Map of Baldwin Park downtown area and bike rack locations. Green and yellow points signify good and fair bike racks for use. Red points signify poor bike racks that are not recommended for use.

Downtown Baldwin Park contains a mix of bike parking. The bulk of *good* and *fair* bike parking in Baldwin Park, most of which are wave racks, exist in the Hilda Solis Recreational Area and the Metrolink station. There are 8 total bike racks that are *poor*. Overall, there is definitely room for improvement in bike parking in this area, especially with a bike lane running the length of Ramona Blvd. through the downtown area. Sidewalks in this area contain adequate and sufficient room for implementation of Inverted U bike racks. Evidence of nuisance bike parking on posts and trees suggests that existing parking supply is not meeting parking demand.

Unlike downtown El Monte, however, the use of this alternative parking occurs because there is no bike parking available in the immediate vicinity. These factors further reinforce the need for an increase in *good* bike parking infrastructure.

Monterey Park

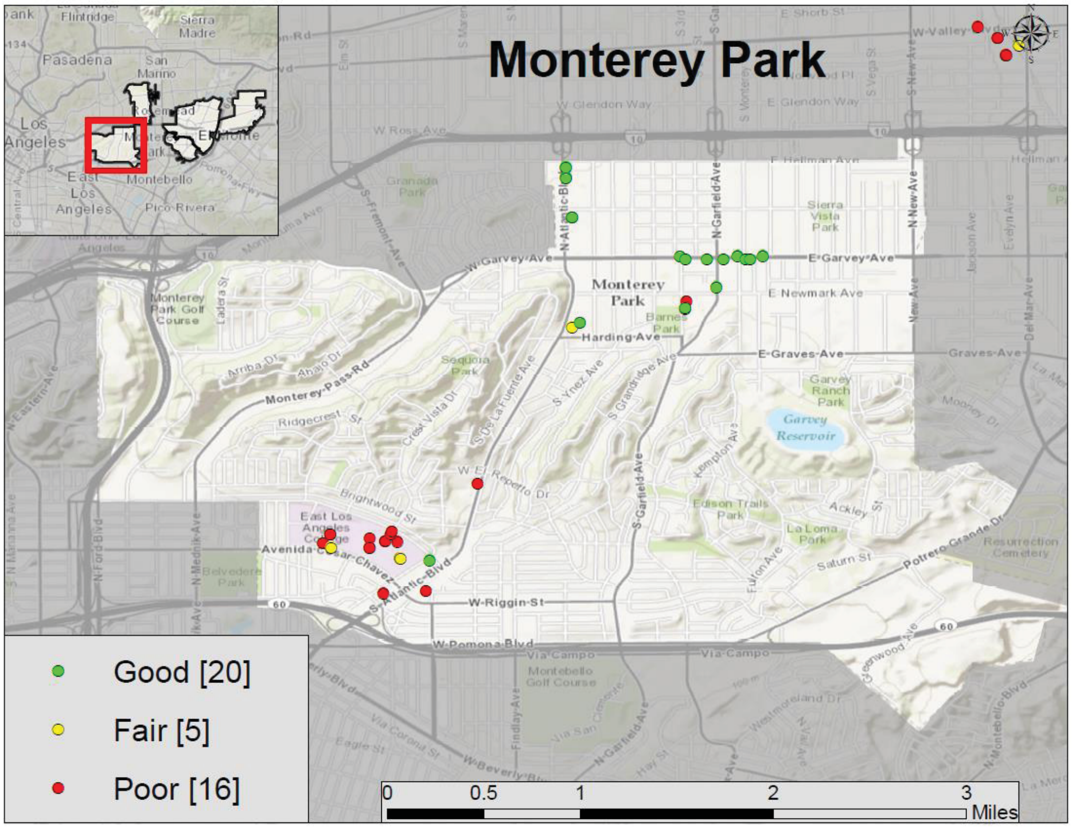


Figure 10: Map of Monterey Park as well as bike rack locations. Green and yellow points signify good and fair bike racks for use. Red points signify poor bike racks that are not recommended for use.

Monterey Park	Good Racks	Good Capacity	Fair Racks	Fair Capacity	Poor Racks	Poor Capacity	Total Racks	Total Capacity
Count	20	50	5	45	16	152	41	247
Percent	48.78%	20.24%	12.20%	18.22%	39.02%	61.54%	100%	100%

Table 4: Numerical and percentage values of good, fair, and poor racks and parking space capacity, respectively, for the City of Monterey Park.

The city of Monterey Park has a total of 41 bike racks, with 247 spaces for parking available. 16 of those bike racks are located at the East Los Angeles Community College, accounting for 160 total bike parking spaces. *Good* bike parking totaled 20 bike racks, with 50 parking spaces. *Fair* bike parking totaled 5 bike racks, with 45 parking spaces. *Poor* bike parking totaled 20 bike racks, with a total of 152 parking spaces. However, East Los Angeles Community College contains 12 *poor* bike racks which contain 122 parking spaces, thus accounting for the bulk of the *poor* bike racks in the City. Excluding these outliers, Monterey Park has a true *poor* bike rack count of 8 bike racks, with 30 total parking spaces.

Two main clusters of bike racks exist in Monterey Park. The first is located at East Los Angeles Community College. A majority of bike racks here are *poor*, though current construction work may be contributing to this. It is recommended to check back in this area after construction work is completed. A second cluster exists in the downtown area as depicted in figure 9.

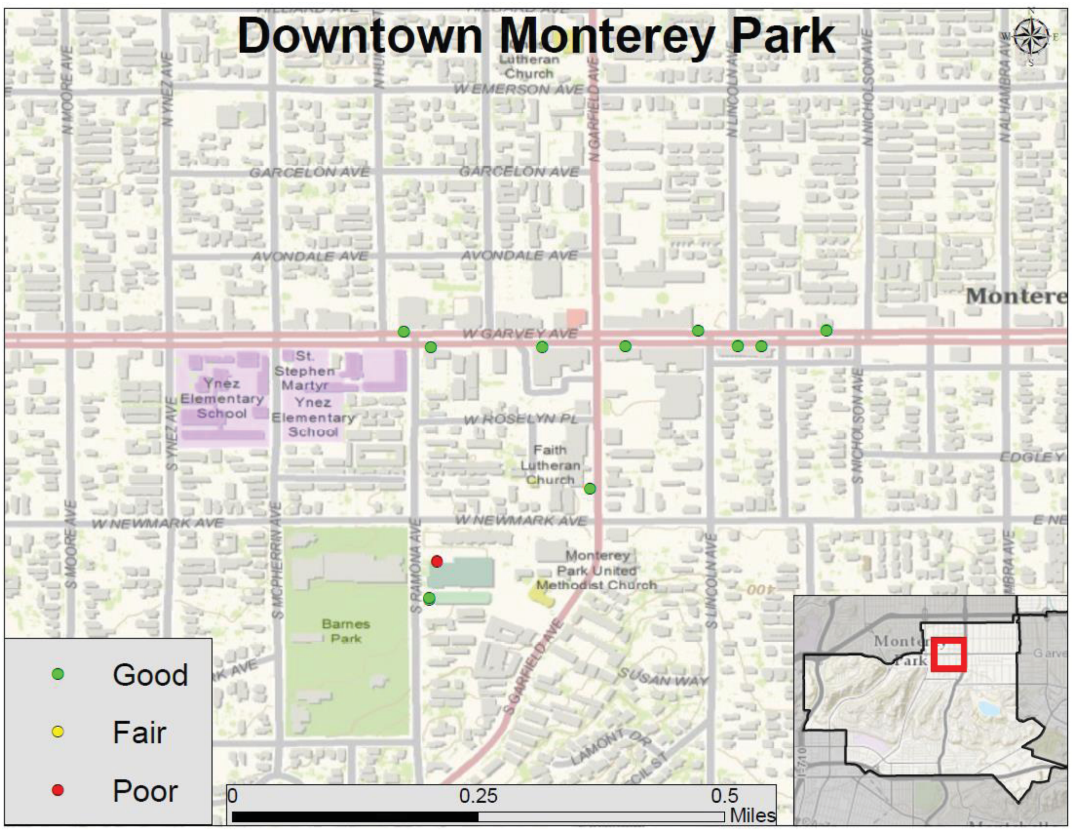


Figure 11: Map of Monterey Park downtown area and bike rack locations. Green and yellow points signify good and fair bike racks for use. Red points signify poor bike racks that are not recommended for use.

With the exception of one inadequate bike rack, Downtown Monterey Park contains only *good* bike racks. Garvey Ave. constitutes the main street that runs through downtown Monterey Park and as such, contains the majority of bike racks. All bike racks along this street are custom bike racks and are very easy to visualize and identify. They are very secure and can accommodate up to two bikes each, making Monterey Park arguably the best downtown area for bike parking among the five project cities.

San Gabriel

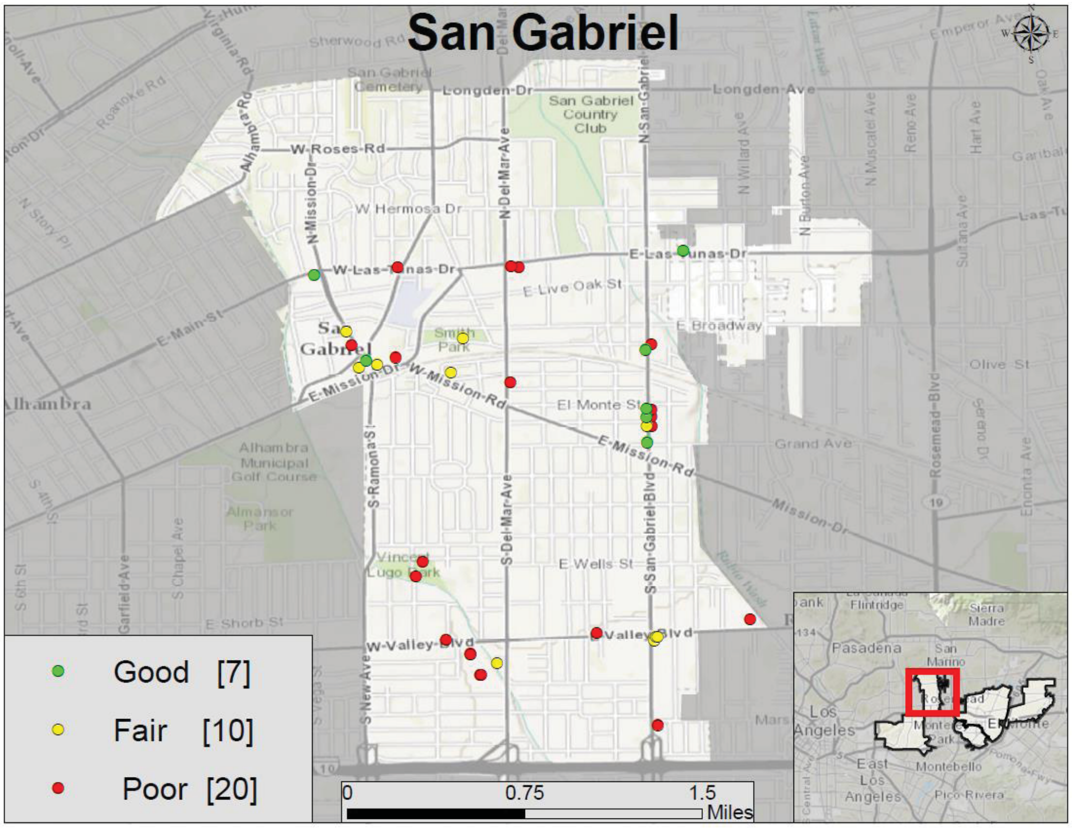


Figure 12: Map of San Gabriel as well as bike rack locations. Green and yellow points signify good and fair bike racks for use. Red points signify poor bike racks that are not recommended for use.

San Gabriel	Good Racks	Good Capacity	Fair Racks	Fair Capacity	Poor Racks	Poor Capacity	Total Racks	Total Capacity
Count	7	35	10	56	20	197	37	288
Percent	18.92%	12.15%	27.03%	19.45%	54.05%	68.40%	100%	100%

Table 5: Numerical and percentage values of good, fair, and poor racks and parking space capacity, respectively, for the City of San Gabriel.

The City of San Gabriel has a total of 37 bike racks with 288 spaces for parking available. *Good* bike parking totaled 7 bike racks, with 35 parking spaces available. Acceptable bike parking totaled 10 bike racks, with 56 parking spaces. *Poor* bike parking totaled 20 bike racks, with 197 parking spaces available.

There are two main clusters in San Gabriel. The first is located in the Mission district, which also happens to be the downtown area. The second is located just north of the Mission Rd. – San Gabriel Blvd. intersection. Oddly enough, while there are bike racks located on both sides of this street, only the southbound lane has businesses alongside it, making the northbound bike racks less convenient.

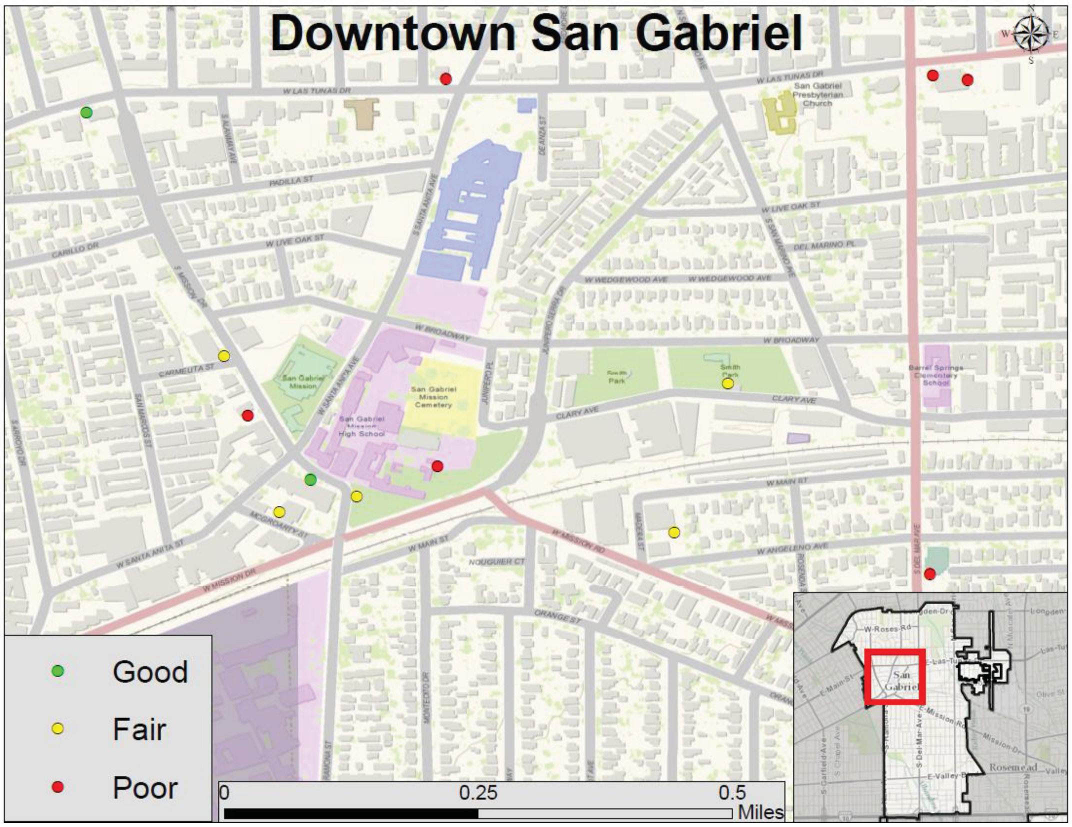


Figure 13: Map of San Gabriel downtown area and bike rack locations. Green and yellow points signify good and fair bike racks for use. Red points signify poor bike racks that are not recommended for use.

Downtown San Gabriel contains mostly *fair* and *poor* bike racks. However, there is one bike rack that was graded as *good*. Mission Dr. makes up the main street that runs through downtown San Gabriel. As such, we see the most bike racks here. Most bike racks here are wave racks and are easy to visualize and identify. There are, however, two comb racks, one of which was unbolted when surveyed.

Discussion

In our bicycle report card, the only bike racks that made a *good* rating were the following:

- Inverted U
- Round
- Custom
- Post-and Loop
- Wave
- Helix

All Inverted U bike racks got a grade of "*good"* only, therefore making these bike racks the best kind to use and implement. All custom bike racks in the study area were also designed in a way to where they all got a grade of "*good*." While there were no lightning bolt racks in the study area, these bike racks would also always get a grade of "*good"* at all times assuming they were properly installed and in appropriate locations. Round bike racks got a grade of either "*good*" or "*poor*." The four that were graded "*poor*" were located in Baldwin Park and were constructed of poor material that could be easily cut.

Post-and-Loop racks were typically categorized as "*good*." However, there were instances in which certain post-and-loop bike racks were placed too close together, thus leaving little space to park multiple bicycles. As a result, these remaining bike racks were categorized as "*poor*."

Wave bike racks varied between "*good*," "*fair*," and "*poor*." with the largest amount of wave racks being graded "*fair*." Helix bike racks that were a certain height and could hold the bicycle at two points would always get a grade of "*good*," while others that didn't meet height requirements were "*fair*." Finally, all toast, comb, and wheel-well bike racks got a grade of "*poor*," making them the least ideal type of bike rack to be used. While there were no grooved bike racks in the study area, these types of bike racks would also not have been ideal and would all score "*poor*" should there have been any.

Bike Rack Counts and Percentages

Bike Rack Type	Good		Fair		Poor	
Inverted U	8	3.20%	0	0.00%	0	0.00%
Round	5	2.00%	0	0.00%	4	1.60%
Post-and-Loop	5	2.00%	0	0.00%	2	0.80%
Lightning Bolt	0	0.00%	0	0.00%	0	0.00%
Wave	12	4.80%	36	14.40%	17	6.80%
Helix	1	0.40%	1	0.40%	0	0.00%
Coathanger	0	0.00%	0	0.00%	0	0.00%
Toast	0	0.00%	0	0.00%	49	19.60%
Comb	0	0.00%	0	0.00%	32	12.80%
Wheel-well	0	0.00%	0	0.00%	16	6.40%
Grooved	0	0.00%	0	0.00%	0	0.00%
Custom	62	24.80%	0	0.00%	0	0.00%
TOTAL:	**93**	**37.20%**	**37**	**14.80%**	**120**	**48.00%**

Table 6: The following table shows bike rack counts and percentages across the Project Cities. Only bike racks are analyzed in this table and are divided based on how they scored in the bicycle report card.

When looking at bike rack parking type, 93 bike racks contributed to "*good*" bike parking, accounting for 37.2 percent of all bike racks. There were 37 bike racks that contributed to "*fair*" parking, accounting for 14.8 percent of bike racks. Finally, 120 bike racks contributed to "*poor*" parking, accounting for 48 percent. As can be seen in Table 6, "*poor*" bike racks constitute the majority of bike racks across the project cities, accounting for nearly half of all bike racks. Wave racks were the most common types of bike racks found, though they did vary in terms of grade. However, toast racks were the most common type of bike racks found within a single grading category.

Bicycle Parking Spaces and Percentages

Bike Rack Type	Good		Fair		Poor	
Inverted U	16	1.25%	0	0.00%	0	0.00%
Round	10	0.78%	0	0.00%	8	0.62%
Post-and-Loop	10	0.78%	0	0.00%	4	0.31%
Lightning Bolt	0	0.00%	0	0.00%	0	0.00%
Wave	78	6.08%	236	18.41%	80	6.24%
Helix	4	0.31%	5	0.39%	0	0.00%
Coathanger	0	0.00%	0	0.00%	0	0.00%
Toast	0	0.00%	0	0.00%	346	26.99%
Comb	0	0.00%	0	0.00%	332	25.90%
Wheel-well	0	0.00%	0	0.00%	20	1.56%
Grooved	0	0.00%	0	0.00%	0	0.00%
Custom	133	10.37%	0	0.00%	0	0.00%
TOTAL:	**251**	**19.58%**	**241**	**18.80%**	**790**	**61.62%**

Table 7: The following table shows bicycle parking spaces and percentages across the Project Cities. Only bike parking spaces are analyzed in this table and are divided based on how they scored in the bicycle report card.

When looking at bicycle parking spaces and percentages, patterns start to emerge when comparing parking spaces with bike rack counts and percentages. As can be seen in Table 7, "*good*" parking consists of 251 spaces, making up 19.58 percent of total parking. "*Fair*" parking consists of 241 spaces, making up 18.80 percent of all parking spaces. Finally, "*poor*" parking spaces consist of 790 spaces, making up 61.62 percent of all parking spaces.

While "*poor*" bike racks make up 48 percent of all bike racks in the project cities, bicycle parking spaces account for nearly two-thirds of all bicycle parking. This increase seems ideal at first. For less bike racks, you get more parking spaces. However, it is because of this very reason that bicycle riders use this type of bicycle parking the least. The increase in parking spaces comes at the cost of safety and security, rendering these types of parking unpopular.

A similar pattern can be seen with "*fair*" parking. "*Fair*" parking makes up 14.80 percent of all bike racks in the project cities, yet sees an increase in bicycle parking spaces at 18.8 percent of all parking spaces. While these kinds of bicycle parking are safer to use than "*poor*" parking spaces, it can be seen that "*fair*" parking spaces follow a similar pattern of an increase in parking space when compared to total bike rack count, though the sacrifices in safety and security are nowhere near that of "*poor*" bike racks.

"*Good*" parking spaces break this pattern by seeing a decrease in parking spaces when compared to bike rack counts. "*Good*" bicycle parking spaces make up 19.58 percent of all parking spaces in the project cities, yet the total bike rack count makes up 37.2 percent of all bike racks. This initially seems bad, as it seems that more bike racks means less parking spaces overall when compared to "*fair*" and "*poor*" bicycle parking. However, the increased safety and security of these bike racks makes them the most popular and commonly used of all bike racks. Therefore, it is important that businesses and/or cities focus on the long-term beneficial properties of bike racks by using those categorized as "*good*." While "*fair*" and "*poor*" bike racks may seem more beneficial at first, the truth is that these types of bike racks lack the safety and security features of "good" bike racks, thus rendering them inferior and less used by bicycle riders. It is recommended that if bike racks are being considered, those that have a grade of "*good*" should only be considered, specifically Inverted U, Round, Post-and-Loop, or Lightning Bolt bike racks.

Recommendations

Currently in the San Gabriel Valley, there are very few good bicycle parking facilities and support amenities. There is a drastic need for improvement in bicycle parking. Of all the bike racks in the project cities, 48 percent of them accounted for *poor* parking. This is amplified even further for these racks account for 61.6 percent of all bike parking in the project cities. To put this into perspective *good* bike racks accounted for 37.5 percent of all bike racks in the project cities, which makes up only 19.6 percent of parking spaces. While these *poor* bike racks contain more parking spaces, they are less likely to be used due to their lack of support and security. Despite this, there is a massive downgrade in bicycle parking in the project cities, with *poor* bike parking outnumbering *good* bike parking 3 to 1.

In order to improve bicycle parking infrastructure in these project cities, it is recommended that these cities adopt and install inverted U bike racks alongside city sidewalks and stores. Lightning Bolt bike racks are also recommended for schools and libraries. Custom bike racks that meet the requirements of the bike parking report card are also recommended. An excellent example of this is Monterey Park, which just recently installed custom bike racks in its downtown district.

In the analysis of bicycle racks across the San Gabriel Valley, water fountains were only encountered when in parks and community centers. There needs to be an increase in water fountains in order to accommodate bicycle riders and pedestrians. Additionally, the San Gabriel Valley has only four fix-it stations that are available to the public free of charge. Three of these are located in Pasadena at the following locations: Day One office, Pasadena Community College, and the California Institute of Technology. The remaining fix-it station is located in Azusa at Azusa Pacific University. There was one fix-it station at the El Monte bus station; however, use of this fix-it station was not free and had a cost associated with its use. Besides this, none others were found in the project cities. It is critical that more-fix-it stations be installed in order to promote and encourage more bicycle riding in the San Gabriel Valley. Ideal locations for fix-it stations and water fountains include the commercial district in El Monte, downtown El

Monte, downtown Monterey Park, East Los Angeles Community College, the Baldwin Park community center, and Metrolink stations.

Support facilities such as lockers and showers are critical yet often overlooked elements of a complete bikeway system (Alta, 2014). In order to encourage and empower individuals to utilize bicycles, a wide range of bicycle parking and support facilities must be provided. In particular, showers and lockers are recommended at or near the work area to promote work commuting.

Limitations

Our study did have limitations. While areas of high traffic were explored by bicycle, these areas were explored only once. As such, some bike racks may have been missed and not included in the report. Additionally, bike rack occupancy was not explored. A greater depth of information may have been obtained by exploring bike rack occupancy. It is recommended that bike rack occupancy be observed over time in order to establish a bike occupancy rate. This could lead to a better understanding of what areas experience the most bicycle traffic and further assist in implementing a better bicycle parking infrastructure. Another possible improvement to the study could have been interviewing bicycle riders. Personal interviews could elicit information regarding bicycle riders' knowledge, attitudes. This method could have added important qualitative data and greater insight into the thoughts and opinions of bicycle riders in regards to bicycle parking infrastructure.

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Master Table

City	Count/ Percent	Good Racks	Good Capacity	Fair Racks	Fair Capacity	Poor Racks	Poor Capacity	Total Racks	Total Capacity
El Monte	Count	63	140	8	50	56	266	127	456
	Percent	49.60%	30.70%	6.30%	10.96%	44.10%	58.34%	100%	100%
South El Monte	Count	1	7	2	14	11	49	14	70
	Percent	7.14%	10%	14.29%	20%	78.57%	70%	100%	100%
Baldwin Park	Count	2	9	12	76	17	136	31	221
	Percent	6.45%	4.07%	38.71%	34.39%	54.84%	61.54%	100%	100%
Monterey Park	Count	20	50	5	45	16	152	41	247
	Percent	48.78%	20.24%	12.20%	18.22%	39.02%	61.54%	100%	100%
San Gabriel	Count	7	35	10	56	20	197	37	288
	Percent	18.92%	12.15%	27.03%	19.45%	54.05%	68.40%	100%	100%

Appendix I: Active Transportation Program (ATP) Compliance Tables

Table M-1 Baldwin Park Active Transportation Program (ATP) Compliance Table

Requirement	Section(s)
a) The estimated number of existing bicycle trips in the plan area and the estimated increase in the number of bicycle trips resulting from implementation of the plan.	3.2.1, 3.2.2
b) The number and location of collisions, serious injuries, and fatalities suffered by bicycle riders in the plan area, both in absolute numbers and as a percentage of all collisions and injuries, and a goal for collision, serious injury, and fatality reduction after implementation of the plan.	2.1, 3.2.3
c) A map and description of existing and proposed land use and settlement patterns which shall include, but not be limited to, locations of residential neighborhoods, schools, shopping centers, public buildings, major employment centers, and other major destinations.	3.1.1
d) A map and description of existing and proposed bicycle transportation facilities.	3.1.3, 3.3
e) A map and description of existing and proposed end-of-trip bicycle parking facilities. These shall include, but not be limited to, parking at schools, shopping centers, public buildings, and major employment centers.	3.1.3, 3.3.4
f) A description of existing and proposed policies related to bicycle parking in public locations, private parking garages and parking lots and in new commercial and residential developments.	2.1, 3.3.4
g) A map and description of existing and proposed bicycle transport and parking facilities for connections with and use of other transportation modes. These shall include, but not be limited to, parking facilities at transit stops, rail and transit terminals, ferry docks and landings, park and ride lots, and provisions for transporting bicycle riders and bicycles on transit or rail vehicles or ferry vessels.	3.1.3, 3.3.4
h) A map and description of existing and proposed facilities for changing and storing clothes and equipment. These shall include, but not be limited to, locker, restroom, and shower facilities near bicycle parking facilities.	3.1.3, 3.3.4
i) A description of proposed signage providing wayfinding along bicycle networks to designated destinations.	2.1
j) A description of the policies and procedures for maintaining existing and proposed bicycle facilities, including, but not limited to, the maintenance of smooth pavement, freedom from encroaching vegetation, maintenance of traffic control devices including striping and other pavement markings, and lighting.	2.1, 3.1.3
k) A description of bicycle safety and education programs conducted in the area included within the plan, efforts by the law enforcement agency having primary traffic law enforcement responsibility in the area to enforce provisions of the Vehicle Code pertaining to bicycle operation, and the resulting effect on accidents involving bicycle riders.	3.1.4
l) A description of the extent of citizen and community involvement in development of the plan, including disadvantaged and underserved communities.	1.5, Appendix
m) A description of how the bicycle transportation plan has been coordinated and is consistent with other local or regional transportation, air quality, or energy conservation plans, including, but not limited to, general plans and a Sustainable Community Strategy in a Regional Transportation Plan.	2.2, 3.1.2
n) A description of the projects and programs proposed in the plan and a listing of their priorities for implementation, including the methodology for project prioritization and a proposed timeline for implementation.	3.3, 3.5, Ch. 8
o) A description of past expenditures for bicycle facilities and programs, and future financial needs for projects and programs that improve safety and convenience for bicycle riders in the plan area. Include anticipated revenue sources and potential grant funding.	3.1.5, 3.4, 3.5.4, Ch. 9

Requirement	Section(s)
p) A description of steps necessary to implement the plan and the reporting process that will be used to keep the adopting agency and community informed of the progress being made in implementing the plan.	3.5.3
q) A resolution showing adoption of the plan by the city.	Pending

Table M-2 El Monte Active Transportation Program (ATP) Compliance Table

Requirement	Section(s)
a) The estimated number of existing bicycle trips in the plan area and the estimated increase in the number of bicycle trips resulting from implementation of the plan.	4.2.1, 4.2.2
b) The number and location of collisions, serious injuries, and fatalities suffered by bicycle riders in the plan area, both in absolute numbers and as a percentage of all collisions and injuries, and a goal for collision, serious injury, and fatality reduction after implementation of the plan.	2.1, 4.2.3
c) A map and description of existing and proposed land use and settlement patterns which shall include, but not be limited to, locations of residential neighborhoods, schools, shopping centers, public buildings, major employment centers, and other major destinations.	4.1.1
d) A map and description of existing and proposed bicycle transportation facilities.	4.1.3, 4.3
e) A map and description of existing and proposed end-of-trip bicycle parking facilities. These shall include, but not be limited to, parking at schools, shopping centers, public buildings, and major employment centers.	4.1.3, 4.3.4
f) A description of existing and proposed policies related to bicycle parking in public locations, private parking garages and parking lots and in new commercial and residential developments.	2.1, 4.3.4
g) A map and description of existing and proposed bicycle transport and parking facilities for connections with and use of other transportation modes. These shall include, but not be limited to, parking facilities at transit stops, rail and transit terminals, ferry docks and landings, park and ride lots, and provisions for transporting bicycle riders and bicycles on transit or rail vehicles or ferry vessels.	4.1.3, 4.3.4
h) A map and description of existing and proposed facilities for changing and storing clothes and equipment. These shall include, but not be limited to, locker, restroom, and shower facilities near bicycle parking facilities.	4.1.3, 4.3.4
i) A description of proposed signage providing wayfinding along bicycle networks to designated destinations.	2.1
j) A description of the policies and procedures for maintaining existing and proposed bicycle facilities, including, but not limited to, the maintenance of smooth pavement, freedom from encroaching vegetation, maintenance of traffic control devices including striping and other pavement markings, and lighting.	2.1, 4.1.3
k) A description of bicycle safety and education programs conducted in the area included within the plan, efforts by the law enforcement agency having primary traffic law enforcement responsibility in the area to enforce provisions of the Vehicle Code pertaining to bicycle operation, and the resulting effect on accidents involving bicycle riders.	4.1.4
l) A description of the extent of citizen and community involvement in development of the plan, including disadvantaged and underserved communities.	1.5, Appendix
m) A description of how the bicycle transportation plan has been coordinated and is consistent with other local or regional transportation, air quality, or energy conservation plans, including, but not limited to, general plans and a Sustainable Community Strategy in a Regional Transportation Plan.	2.2, 4.1.2

Requirement	Section(s)
n) A description of the projects and programs proposed in the plan and a listing of their priorities for implementation, including the methodology for project prioritization and a proposed timeline for implementation.	4.3, 4.5, Ch. 8
o) A description of past expenditures for bicycle facilities and programs, and future financial needs for projects and programs that improve safety and convenience for bicycle riders in the plan area. Include anticipated revenue sources and potential grant funding.	4.1.5, 4.4, 4.5.4, Ch. 9
p) A description of steps necessary to implement the plan and the reporting process that will be used to keep the adopting agency and community informed of the progress being made in implementing the plan.	4.5.3
q) A resolution showing adoption of the plan by the city, county, or district.	Pending

Table M-3 Monterey Park Active Transportation Program (ATP) Compliance Table

Requirement	Section(s)
a) The estimated number of existing bicycle trips in the plan area and the estimated increase in the number of bicycle trips resulting from implementation of the plan.	5.2.1, 5.2.2
b) The number and location of collisions, serious injuries, and fatalities suffered by bicycle riders in the plan area, both in absolute numbers and as a percentage of all collisions and injuries, and a goal for collision, serious injury, and fatality reduction after implementation of the plan.	2.1, 5.2.3
c) A map and description of existing and proposed land use and settlement patterns which shall include, but not be limited to, locations of residential neighborhoods, schools, shopping centers, public buildings, major employment centers, and other major destinations.	5.1.1
d) A map and description of existing and proposed bicycle transportation facilities.	5.1.3, 5.3
e) A map and description of existing and proposed end-of-trip bicycle parking facilities. These shall include, but not be limited to, parking at schools, shopping centers, public buildings, and major employment centers.	5.1.3, 5.3.4
f) A description of existing and proposed policies related to bicycle parking in public locations, private parking garages and parking lots and in new commercial and residential developments.	2.1, 5.3.4
g) A map and description of existing and proposed bicycle transport and parking facilities for connections with and use of other transportation modes. These shall include, but not be limited to, parking facilities at transit stops, rail and transit terminals, ferry docks and landings, park and ride lots, and provisions for transporting bicycle riders and bicycles on transit or rail vehicles or ferry vessels.	5.1.3, 5.3.4
h) A map and description of existing and proposed facilities for changing and storing clothes and equipment. These shall include, but not be limited to, locker, restroom, and shower facilities near bicycle parking facilities.	5.1.3, 5.3.4
i) A description of proposed signage providing wayfinding along bicycle networks to designated destinations.	2.1
j) A description of the policies and procedures for maintaining existing and proposed bicycle facilities, including, but not limited to, the maintenance of smooth pavement, freedom from encroaching vegetation, maintenance of traffic control devices including striping and other pavement markings, and lighting.	2.1, 5.1.3

Requirement	Section(s)
k) A description of bicycle safety and education programs conducted in the area included within the plan, efforts by the law enforcement agency having primary traffic law enforcement responsibility in the area to enforce provisions of the Vehicle Code pertaining to bicycle operation, and the resulting effect on accidents involving bicycle riders.	5.1.4
l) A description of the extent of citizen and community involvement in development of the plan, including disadvantaged and underserved communities.	1.5, Appendix
m) A description of how the bicycle transportation plan has been coordinated and is consistent with other local or regional transportation, air quality, or energy conservation plans, including, but not limited to, general plans and a Sustainable Community Strategy in a Regional Transportation Plan.	2.2, 5.1.2
n) A description of the projects and programs proposed in the plan and a listing of their priorities for implementation, including the methodology for project prioritization and a proposed timeline for implementation.	5.3, 5.5, Ch. 8
o) A description of past expenditures for bicycle facilities and programs, and future financial needs for projects and programs that improve safety and convenience for bicycle riders in the plan area. Include anticipated revenue sources and potential grant funding.	5.1.5, 5.4, 5.5.4, Ch. 9
p) A description of steps necessary to implement the plan and the reporting process that will be used to keep the adopting agency and community informed of the progress being made in implementing the plan.	5.5.3
q) A resolution showing adoption of the plan by the city, county, or district.	Pending

Table M-4 San Gabriel Active Transportation Program (ATP) Compliance Table

Requirement	Section(s)
a) The estimated number of existing bicycle trips in the plan area and the estimated increase in the number of bicycle trips resulting from implementation of the plan.	6.2.1, 6.2.2
b) The number and location of collisions, serious injuries, and fatalities suffered by bicycle riders in the plan area, both in absolute numbers and as a percentage of all collisions and injuries, and a goal for collision, serious injury, and fatality reduction after implementation of the plan.	2.1, 6.2.3
c) A map and description of existing and proposed land use and settlement patterns which shall include, but not be limited to, locations of residential neighborhoods, schools, shopping centers, public buildings, major employment centers, and other major destinations.	6.1.1
d) A map and description of existing and proposed bicycle transportation facilities.	6.1.3, 6.3
e) A map and description of existing and proposed end-of-trip bicycle parking facilities. These shall include, but not be limited to, parking at schools, shopping centers, public buildings, and major employment centers.	6.1.3, 6.3.4
f) A description of existing and proposed policies related to bicycle parking in public locations, private parking garages and parking lots and in new commercial and residential developments.	2.1, 6.3.4
g) A map and description of existing and proposed bicycle transport and parking facilities for connections with and use of other transportation modes. These shall include, but not be limited to, parking facilities at transit stops, rail and transit terminals, ferry docks and landings, park and ride lots, and provisions for transporting bicycle riders and bicycles on transit or rail vehicles or ferry vessels.	6.1.3, 6.3.4
h) A map and description of existing and proposed facilities for changing and storing clothes and equipment. These shall include, but not be limited to, locker, restroom, and shower facilities near bicycle parking facilities.	6.1.3, 6.3.4

Requirement	Section(s)
i) A description of proposed signage providing wayfinding along bicycle networks to designated destinations.	2.1
j) A description of the policies and procedures for maintaining existing and proposed bicycle facilities, including, but not limited to, the maintenance of smooth pavement, freedom from encroaching vegetation, maintenance of traffic control devices including striping and other pavement markings, and lighting.	2.1, 6.1.3, 6.4.2
k) A description of bicycle safety and education programs conducted in the area included within the plan, efforts by the law enforcement agency having primary traffic law enforcement responsibility in the area to enforce provisions of the Vehicle Code pertaining to bicycle operation, and the resulting effect on accidents involving bicycle riders.	6.1.4
l) A description of the extent of citizen and community involvement in development of the plan, including disadvantaged and underserved communities.	1.5, Appendix
m) A description of how the bicycle transportation plan has been coordinated and is consistent with other local or regional transportation, air quality, or energy conservation plans, including, but not limited to, general plans and a Sustainable Community Strategy in a Regional Transportation Plan.	2.2, 6.1.2
n) A description of the projects and programs proposed in the plan and a listing of their priorities for implementation, including the methodology for project prioritization and a proposed timeline for implementation.	6.3, 6.5, Ch. 8
o) A description of past expenditures for bicycle facilities and programs, and future financial needs for projects and programs that improve safety and convenience for bicycle riders in the plan area. Include anticipated revenue sources and potential grant funding.	6.1.5, 6.4, 6.5.4, Ch. 9
p) A description of steps necessary to implement the plan and the reporting process that will be used to keep the adopting agency and community informed of the progress being made in implementing the plan.	6.5.3
q) A resolution showing adoption of the plan by the City, county, or district.	Pending

Table M-5 South El Monte Active Transportation Program (ATP) Compliance Table

Requirement	Section(s)
a) The estimated number of existing bicycle trips in the plan area and the estimated increase in the number of bicycle trips resulting from implementation of the plan.	7.2.1, 7.2.2
b) The number and location of collisions, serious injuries, and fatalities suffered by bicycle riders in the plan area, both in absolute numbers and as a percentage of all collisions and injuries, and a goal for collision, serious injury, and fatality reduction after implementation of the plan.	2.1, 7.2.3
c) A map and description of existing and proposed land use and settlement patterns which shall include, but not be limited to, locations of residential neighborhoods, schools, shopping centers, public buildings, major employment centers, and other major destinations.	7.1.1
d) A map and description of existing and proposed bicycle transportation facilities.	7.1.3, 7.3
e) A map and description of existing and proposed end-of-trip bicycle parking facilities. These shall include, but not be limited to, parking at schools, shopping centers, public buildings, and major employment centers.	7.1.3, 7.3.4
f) A description of existing and proposed policies related to bicycle parking in public locations, private parking garages and parking lots and in new commercial and residential developments.	2.1, 7.3.4

Requirement	Section(s)
g) A map and description of existing and proposed bicycle transport and parking facilities for connections with and use of other transportation modes. These shall include, but not be limited to, parking facilities at transit stops, rail and transit terminals, ferry docks and landings, park and ride lots, and provisions for transporting bicycle riders and bicycles on transit or rail vehicles or ferry vessels.	7.1.3, 7.3.4
h) A map and description of existing and proposed facilities for changing and storing clothes and equipment. These shall include, but not be limited to, locker, restroom, and shower facilities near bicycle parking facilities.	7.1.3, 7.3.4
i) A description of proposed signage providing wayfinding along bicycle networks to designated destinations.	2.1
j) A description of the policies and procedures for maintaining existing and proposed bicycle facilities, including, but not limited to, the maintenance of smooth pavement, freedom from encroaching vegetation, maintenance of traffic control devices including striping and other pavement markings, and lighting.	2.1, 7.1.3
k) A description of bicycle safety and education programs conducted in the area included within the plan, efforts by the law enforcement agency having primary traffic law enforcement responsibility in the area to enforce provisions of the Vehicle Code pertaining to bicycle operation, and the resulting effect on accidents involving bicycle riders.	7.1.4
l) A description of the extent of citizen and community involvement in development of the plan, including disadvantaged and underserved communities.	1.5, Appendix
m) A description of how the bicycle transportation plan has been coordinated and is consistent with other local or regional transportation, air quality, or energy conservation plans, including, but not limited to, general plans and a Sustainable Community Strategy in a Regional Transportation Plan.	2.2, 7.1.2
n) A description of the projects and programs proposed in the plan and a listing of their priorities for implementation, including the methodology for project prioritization and a proposed timeline for implementation.	7.3, 7.5, Ch. 8
o) A description of past expenditures for bicycle facilities and programs, and future financial needs for projects and programs that improve safety and convenience for bicycle riders in the plan area. Include anticipated revenue sources and potential grant funding.	7.1.5, 7.4, 7.5.4, Ch. 9
p) A description of steps necessary to implement the plan and the reporting process that will be used to keep the adopting agency and community informed of the progress being made in implementing the plan.	7.5.3
q) A resolution showing adoption of the plan by the city, county, or district.	Pending

Appendix J: Model Bicycle Parking Ordinance

ChangeLab Solutions
Law & policy innovation for the common good.

Model California Bicycle Parking Ordinance

WITH ANNOTATIONS

ChangeLab Solutions is a nonprofit organization that provides legal information on matters relating to public health. The legal information provided in this document does not constitute legal advice or legal representation. For legal advice, readers should consult a lawyer licensed to practice law in California.

September 2012

An Ordinance of [Jurisdiction (e.g. *the City of* ________)] Providing for Bicycle Parking and Adding to the [Jurisdiction] [Zoning/Planning/Municipal/County] Code.

The [Adopting Body] does ordain as follows:

SECTION I. FINDINGS. The [Adopting Body] hereby finds and declares as follows:

> **COMMENT:** Ordinances often include "findings of fact" ("whereas" clauses) that support the need for the jurisdiction to adopt the ordinance. From a legal standpoint, they provide the justification for expending resources (both monetary and non-monetary), and taking actions to support the purpose of the ordinance. While such findings are part of the ordinance, they are not usually codified in the local code. An adopting body should select those findings it views as most significant for its community and add any findings related to local conditions or concerns. The footnotes are provided in order to provide documentation for the findings but are not intended to be included in the adopted ordinance.

1. **WHEREAS,** the [Adopting Body] has a goal of improving the health of its residents and the air quality of the community;

2. **WHEREAS,** both obesity and insufficient physical activity are creating significant health problems for Americans, leading to increased risk of heart disease, diabetes, endometrial, breast, and colon cancers, high blood pressure, high cholesterol, stroke, liver and gallbladder disease, sleep apnea, respiratory problems, and osteoarthritis;[i]

3. **WHEREAS**, a primary contributor to obesity is lack of sufficient physical activity;[ii]

4. **WHEREAS,** bicycling is a safe, low-impact aerobic activity, enjoyed by millions of Americans, and provides a convenient opportunity to obtain physical exercise while traveling to work, shops, restaurants, and many other common destinations;[iii]

5. **WHEREAS**, bicycling frequently provides a practical alternative to driving, since 28 percent of all car trips are to destinations within 1 mile of home,[iv] 40 percent of all trips are two miles or less from home,[v] and around 30 percent of commuters travel 5 miles or less to work;[vi]

6. **WHEREAS,** bicycling can greatly increase access to important services and provide more range of travel for the 36% of Californians who do not operate a car,[vii] including our increasing aging population, children and youth, people who are low-income, and those with disabilities or medical restrictions on driving due to issues like seizure disorders or vision impairments;[viii]

7. **WHEREAS**, replacing car trips with bicycle trips improves air quality by reducing the amount of carbon dioxide emissions, in light of the fact that transportation sources account for nearly one third of all such emissions in the United States, an average motor vehicle emits 8.8 kilograms of carbon dioxide per gallon of gasoline that it burns, and biking emits essentially none;[ix]

8. **WHEREAS**, the California Global Warming Solutions Act of 2006 (known as A.B.32), sets targets for the reduction of green house gas emission in California to slow the onset of human-induced climate change,[x] and shifting the transportation mode share from single passenger cars to alternative modes, including bicycling, must be a significant part of short and long-term planning goals if the state is to achieve the reductions required by current law;

9. **WHEREAS**, asthma rates in California are higher than the national average,[xi] and have increased steadily over the years to a high of 13%,[xii] and replacing motor vehicle trips with bicycle trips reduces the pollutants that directly contribute to asthma in both children and adults;[xiii]

10. **WHEREAS**, replacing car trips with bicycle trips reduces congestion and wear and tear on roads, improving quality of life for residents and providing a financial benefit for [Jurisdiction];

11. **WHEREAS,** providing safe, convenient, and adequate bicycle parking is necessary to encourage increased use of bicycles as a form of transportation;[xiv]

12. **WHEREAS**, cities that have improved bicycle infrastructure, including parking, have seen a measurable increase in bicycle trips;[xv]

13. **WHEREAS**, in light of the foregoing, [Adopting Body] desires to add new bicycle parking requirements to increase the availability of safe and convenient bicycle parking; and

14. **WHEREAS**, it is the intent of the [Adopting Body] in enacting this Ordinance to (1) encourage healthy, active living, (2) reduce traffic congestion, air pollution, wear and tear on roads, and use of fossil fuels, and (3) improve safety and quality of life for residents of [Jurisdiction] by providing safe and convenient parking for bicycles;

SECTION II. [ARTICLE/CHAPTER] OF THE [JURISDICTION] [ZONING/PLANNING/MUNICIPAL/COUNTY CODE] IS HEREBY ADDED TO READ AS FOLLOWS: "BICYCLE PARKING REQUIREMENTS FOR NEW DEVELOPMENT AND MAJOR RENOVATIONS."

§ 1. PURPOSE: The purpose of this section is to provide sufficient safe and convenient bicycle parking in New Developments and Major Renovations to encourage bicycling as a form of transportation, reducing traffic congestion, air pollution, wear and tear on roads, and use of fossil fuels, while fostering healthy physical activity.

> **COMMENT:** Jurisdictions may include additional reasons or tailor these reasons to their individual community.

§ 2. DEFINITIONS: Unless the context clearly requires otherwise, the following terms shall have the following meanings:

(A) **"Bicycle Parking Space":** A physical space that is a minimum of [2.5] feet in width by [6] feet in length with a vertical clearance of at least [7] feet that allows for the parking of one bicycle, and if located outside, is hard surfaced and well drained.

(B) **"Bike Locker":** A lockable enclosure consistent with industry standards that (i) can hold one bicycle, (ii) is made of durable material, (iii) is designed to fully protect the bicycle against [insert specific local weather concerns, e.g.: rain, snow, ice, high winds], (iv) provides secure protection from theft, (v) opens sufficiently to allow bicyclists easy access, and (vi) is of a character and color that adds aesthetically to the immediate environment.

> **COMMENT:** This provision allows for flexibility in the manner in which Bike Lockers are locked. Options include lockers designed for use with (1) bicyclist-provided locks, (2) leased keys, or (3) a smartcard or similar system.
>
> If improper use of lockers is a concern in a particular community, this definition can be modified to expressly allow for an optional opening of up to 9 inches at the base of the locker to allow for security inspections.

(C) **"Bike Rack"**: A device consistent with industry standards that (i) is capable of supporting a bicycle in a stable position, (ii) is made of durable materials, (iii) is no less than [36] inches tall (from base to top of rack) and no less than [1.5] feet in length, (iv) permits the securing of the bicycle frame and one wheel with a U-shaped lock, and (v) is of a character and color that adds aesthetically to the immediate environment.

COMMENT: U-shaped locks are one of the most effective bike locks.

(D) **"In-Street Bicycle Parking":** A portion of a vehicle parking lane or other area on a roadway that is set aside for the parking of bicycles.

(E) **"Long-Term Bicycle Parking":** Bicycle parking that is primarily intended for bicyclists who need bicycle parking for more than 3 hours and is fully protected from the weather.

COMMENT: As recognized by most bicycle parking laws enacted in recent years, it is important to provide for not only the short-term bicycle parking needs of community residents out shopping, eating, attending appointments, etc., but also the long-term bicycle parking needs of employees, multi-family housing residents, and students who park their bikes at work, school, or home for many hours or overnight. The two types of bicycle parking have different requirements. Security is a heightened concern for long-term bicycle parking, while immediate proximity to the destination is a greater priority for short-term bicycle parking. Additionally, short-term bicycle parking is generally not required to protect bicycles from the weather, while long-term bicycle parking necessitates full weather protection.

(F) **"Long-Term Bicycle Parking Space":** A Bicycle Parking Space that provides Long-Term Bicycle Parking.

(G) **"Major Renovation":** Any physical improvement of an existing building or structure, excluding single-family dwellings and multi-family dwellings with 4 or fewer units, that requires a building permit and has an estimated construction cost equal to or exceeding [$250,000], excluding cost of (1) compliance with accessibility requirements for individuals with disabilities under governing federal, state, or local law, and (2) seismic or other structural safety retrofit.

COMMENT: Since construction costs can vary widely by region, the suggested amount of $250,000 may need to be adjusted up or down depending on local conditions. If inflation is a concern, the jurisdiction may want to indicate that the dollar amounts will be adjusted based on a particular index, such as a regional building cost index, the Engineering News-Record (ENR) cost indices, or the Producer Price Index - New Office Building Construction as reported in the *PPI Detailed Report* published by the U.S. Bureau of Labor Statistics.

(H) **"New Development":** Any construction of a new building or facility that requires a building permit, excluding single-family dwellings and multi-family dwellings with 4 or less units.

(I) **"Short-Term Bicycle Parking"**: Bicycle parking primarily intended for bicyclists who need bicycle parking for 3 hours or less.

(J) **"Short-Term Bicycle Parking Space"**: A Bicycle Parking Space that provides Short-Term Bicycle Parking.

§ 3. BICYCLE PARKING SPACES REQUIRED: Short-Term and Long-Term Bicycle Parking Spaces shall be required for all New Development and Major Renovations.

> **COMMENT:** While many bicycle parking ordinances focus on new development, some cities, like Oakland and San Francisco, CA, and Tucson, AZ extend bicycle parking requirements to major renovations as well. This is particularly important because many cities are already substantially built-out.

(A) Required Number of Bicycle Parking Spaces: All New Development and Major Renovations shall provide at least the number of Short-Term and Long-Term Bicycle Parking Spaces identified in the table in this subsection [Section II, § 3(A)]; however, the number shall not fall below a minimum of [2] Short-Term and [2] Long-Term Bicycle Parking Spaces, regardless of other provisions herein, except that multi-family dwellings that have private garages (or equivalent separate storage space for each unit) are not required to provide any Long-Term Bicycle Parking Spaces. Where the calculation of total required spaces results in a fractional number, the next highest whole number shall be used. Up to half of the required Short-Term Bicycle Parking Spaces may be replaced with Long-Term Bicycle Parking Spaces.

General Use Category	Specific Use	Number of Short-Term Bicycle Parking Spaces Required	Number of Long-Term Bicycle Parking Spaces Required
Residential	Multi-Family Dwelling with more than 4 units:		
	(a) *without* private garage or equivalent separate storage space for each unit	[.05] per bedroom *or* [1] per [20] units	[.5] per bedroom *or* [1-4] per [4] units
	(b) *with* private garage or equivalent separate storage space for each unit	[.05] per bedroom *or* [1] per [20] units	None

General Use Category	Specific Use	Number of Short-Term Bicycle Parking Spaces Required	Number of Long-Term Bicycle Parking Spaces Required
Commercial	Office Building	[1] per each [20,000] sq.ft. of floor area.	[1-1.5] per [10,000] sq.ft. of floor area.
	General Retail	[1] per each [5,000] sq.ft. of floor area.	[1] per [10,000-12,000] sq.ft. of floor area
	Grocery	[1] per each [2,000] sq.ft. of floor area.	[1] per [10,000-12,000] sq.ft. of floor area.
	Restaurant	[1] per each [2,000] sq.ft. of floor area.	[1] per [10,000-12,000] sq.ft. of floor area.
	Indoor Parking Garage	[2] spaces.	[1] per [20] motor vehicle spaces .
	Outdoor Parking Lot	[1] per [20] motor vehicle spaces	[2] spaces.
Civic	Non-assembly cultural (e.g., library, government buildings)	[1] per each [8,000 - 10,000] sq. ft. of floor area.	[1 -1.5] per each [10-20] employees
	Assembly (e.g., church, theater, stadiums, parks)	Spaces for [2-5] per cent of maximum expected daily attendance.	[1- 1.5] per each [20] employees.
	Schools (K-12)	[1] per each [20] students of planned capacity.	[1] per each [10-20] employees and [1] per each [20] students of planned capacity for grades 6-12.
	Colleges and Universities	[1] per each [10] students of planned capacity.	[1] per each [10-20] employees and [1] per each [10] students of planned capacity *or* [1] per each [20,000] sq. feet of floor area, whichever is greater.
Industrial	Manufacturing and Production, Agriculture	[2] spaces (Can be increased at discretion of Planning/Zoning Administrator)	[1] per 20 employees.

COMMENT: The recommended numbers of required spaces in this table are based on the Bicycle Parking Guidelines, 2nd Ed., prepared by the Association of Pedestrian and Bicycle Professionals, as well as a review of bicycle parking ordinances adopted in various locales around the country. Where ranges are provided, the higher range is recommended for areas that are more urban or have (or anticipate having) higher levels of bicycle use. The required number of spaces typically varies by zoning district (e.g. residential, commercial, industrial) as well as specific land use (e.g. restaurant, hotel, senior center). In the interests of simplicity, the above table only includes requirements for a limited number of specific uses. If a jurisdiction is interested in including requirements for a more detailed list of uses, Tucson, Arizona's bicycle parking law provides an example: http://cms3.tucsonaz.gov/sites/default /files/bicycle/Parking_Ordinance.PDF (see pages 31-34).

Jurisdictions usually link the number of required spaces to one or more of the following measurements that are already used in their zoning process: residential dwelling unit or number of bedrooms, square footage, building occupancy/number of employees, or automobile parking spaces. This allows for easy incorporation of bicycle parking into the planning process. Thus, if a jurisdiction's zoning law uses different measurements than those used in this table, the jurisdiction may want to modify the above table to reflect the measurements used by its specific zoning law -- with one caveat. Linking the number of required bicycle parking spaces to a percentage of the required motor vehicle parking spaces, as some jurisdictions have done, is not recommended. This is because jurisdictions may decide to decrease the required number of motor vehicle parking spaces in order to encourage use of alternative forms of transportation. If such a decrease also automatically decreases the number of required bicycle parking spaces, the goal of encouraging use of alternative forms of transportation would be undermined.

Note also that while California community colleges must comply with applicable city and county zoning and building regulations,[xvi] California school districts may exempt themselves from city or county zoning ordinances provided that certain criteria are met.[xvii] Also, some jurisdictions may prefer to address bicycle parking requirements for government-owned property by internal regulation, in which case government buildings should be excluded from the above chart and separate internal regulations should be adopted.

Finally, jurisdictions that anticipate future growth in population and/or bicycle ridership may want to consider including a provision that either encourages or requires locating bicycle parking in an area that would allow for later expansion.

(B) If the New Development or Major Renovation is for a use not listed in the above table, the number of Bicycle Parking Spaces required shall be calculated on the basis of a similar use, as determined by the [Planning Director/Zoning Administrator].

COMMENT: Many municipal codes in California provide guidelines or criteria for making a "similar use" determination. *See, e.g.,* Calistoga Municipal Code Section 17.02.190: "Planning Commission determinations of similar uses." Available online at:

www.codepublishing.com/ca/calistoga/html/Calistoga17/Calistoga1702.html#17.02.190. The jurisdiction should make sure to cross-reference any such provision, if it exists.

(C) If the Major Renovation has an estimated construction cost of between [$250,000] and [$1,000,000], excluding the cost of (1) compliance with accessibility requirements for individuals with disabilities under governing federal, state, or local law, and (2) seismic or other structural safety retrofit, the number of Bicycle Parking Spaces required by subsections [Section II, § (3)(A)-(B)], shall be reduced by 50 percent; however, the minimum requirement of [2] short-term and [2] long-term bicycle parking spaces shall still apply.

COMMENT: The purpose of this section is to distinguish between Major Renovations that are very extensive and Major Renovations that are less extensive, but still qualify as major. While Major Renovations that fall in the first category are subject to the same bicycle parking requirements as New Development, the requirements for Major Renovations that fall within the second category are reduced by 50%.

Since construction costs can vary widely by region, the suggested range of $250,000 – $1,000,000 may need to be adjusted up or down depending on local conditions. If inflation is a concern, the jurisdiction may want to indicate that the dollar amounts will be adjusted based on a particular index, such as a regional building cost index, Engineering News-Record (ENR) cost indices, or the Producer Price Index - New Office Building Construction as reported in the *PPI Detailed Report* published by the U.S. Bureau of Labor Statistics.

§ 4. BUILDING PERMITS AND CERTIFICATES OF OCCUPANCY: Prior to issuance of a building permit for New Development or a Major Renovation, the submitted plans must include specific provisions for bicycle parking that are consistent with the requirements of this Ordinance. No certificate of occupancy for said building permit shall issue at the conclusion of the project until [Jurisdiction] finds that the applicable provisions of this Ordinance have been complied with.

§ 5. EXISTING BICYCLE PARKING AFFECTED BY CONSTRUCTION: In the event that the [Jurisdiction] has authorized a permit holder to remove existing bicycle parking in the public right-of-way due to construction, the permit holder shall replace such bicycle parking no later than the date of completion of the construction. At least [7] days prior to removal of such bicycle parking, the permit holder shall post, in the immediate vicinity of the bicycle parking area, a weather-proof notice, with a minimum type size of [1] inch, specifying the date of removal. In the event that any bicycles remain parked on the date of the removal, such bicycles shall be stored for a reasonable period, not less than [45] days, and a conspicuous, weather-proof notice shall be placed as close as feasible to the site of the removed bicycle parking containing information as to how to retrieve a removed bicycle.

If bicycle parking is likely to be removed, pursuant to this section, for more than [120] days, it shall, to the extent possible, be temporarily re-sited, in coordination with [insert appropriate department, such as Department of Public Works], to a location as close to the original site as feasible, pending completion of the construction. If the temporary site is not clearly visible from the original site, the permit holder shall post a conspicuous, weather-proof notice in the immediate vicinity of the original site informing bicyclists of the location of the temporary site.

> **COMMENT:** This provision is designed to ameliorate the reduction of bicycle parking that occurs when existing bicycle parking is eliminated as an unavoidable byproduct of the construction process. Providing advance notice and a way to retrieve bicycles also addresses a problem that has been experienced in some communities, in which bicycles are confiscated or destroyed without notice or recourse when existing bicycle parking is removed. Just as there is typically signage informing motorists how a towed car can be retrieved, this provision is designed to provide bicyclists with a similar form of recourse. Note that this provision applies to all construction projects requiring a permit, regardless of whether the project is subject to the bicycle parking requirements of this ordinance.

§ 6. <u>BICYCLE PARKING STANDARDS - GENERAL:</u>

(A) All Bicycle Parking Spaces shall be:

(1) well lit if accessible to the public or bicyclists after dark;

(2) located to ensure significant visibility by the public and building users, except in the case of Long-Term Bicycle Parking that is located in secured areas;

> **COMMENT:** Good lighting and a general sense that the area is publicly visible (often known as "eyes on the street") provide a strong deterrent against theft, attacks, and vandalism.

(3) accessible without climbing more than one step or going up or down a slope in excess of [12] percent, and via a route on the property that is designed to minimize conflicts with motor vehicles and pedestrians.

(B) All In-Street Bicycle Parking and Bicycle Parking Spaces located in a parking facility shall be:

(1) clearly marked; and

(2) separated from motor vehicles by some form of physical barrier (such as bollards, concrete or rubber curbing or pads, reflective wands, a wall, or a combination thereof) designed to adequately protect the safety of bicyclists and bicycles.

(C) All Bike Racks shall be located at least [36] inches in all directions from any obstruction, including but not limited to other Bike Racks, walls, doors, posts, columns, or exterior or interior landscaping.

> **COMMENT:** The 36 inch clearance requirement allows for easy access for bikes with all kinds of handlebars and panniers and is best practice.

(D) Unless Bicycle Parking Spaces are clearly visible from an entrance, a sign indicating their location shall be prominently displayed outside the main entrance to the building or facility, and additional signs shall be provided as necessary to ensure easy way finding. A “Bicycle Parking” sign shall also be displayed on or adjacent to any indoor room or area designated for bicycle parking. All outdoor signs required by this subsection [Section II, § 6(D)] shall be no smaller than [12] x [18] inches and utilize a type size of at least [2] inches. All indoor signs required by this subsection [Section II, § 6(D)] shall be no smaller than [8] x [10] inches and utilize a type size of at least [5/8] inch.

> **COMMENT**: Cities should ensure that outdoor signs are large enough to be easily seen and understood. The Manual on Uniform Traffic Control Devices (2009 Ed.), published by the U.S. Dep’t. of Transportation, recommends a minimum size of 12 x 18 for outdoor bicycle parking signs. Available on-line at: http://mutcd.fhwa.dot.gov/pdfs/2009/pdf_index.htm (Part 9 (Traffic Control for Bicycle Facilities), Table 9B-1 (p. 792). A sample sign design is also set forth in Figure 9B-4 (sign D4-3) at p. 800.
>
> Standard letter visibility charts indicate that every one inch of letter height provides 10 feet of readability with the best impact. For example, two-inch tall letters make the best impact within 20 feet; however, they are still readable from much further away (48-58 feet) depending on color, capitalization and design. Three-inch tall letters have their best impact within 30 feet but are readable up to 100 feet. A 5/8 inch type size for indoor signs is consistent with ADA signage requirements.
>
> If a jurisdiction already has an ordinance governing signage, it should be consulted to ensure consistency.

§ 7. ADDITIONAL REQUIREMENTS APPLICABLE TO SHORT-TERM BICYCLE PARKING ONLY: All Short-Term Bicycle Parking Spaces shall contain Bike

Racks and shall meet the following requirements, in addition to the requirements in [Section II, § 3] above:

(A) Location:

(1) Short-Term Bicycle Parking must be located either (a) within [50] feet of the main public entrance of the building or facility, or (b) no further than the nearest motor vehicle parking space to the main public entrance (excluding parking for individuals with disabilities), whichever is closer. If the New Development or Major Renovation contains multiple buildings or facilities, the required Short-Term Bicycle Parking shall be distributed to maximize convenience and use.

COMMENT: After security, convenience is the most important factor for bicyclists. Fifty feet is generally considered the maximum distance bicyclists are willing to lock their bikes up to a rack before looking for another object to lock to. Many jurisdictions, including Fort Worth, TX, and Palo Alto and Emeryville, CA, require that the furthest bicycle parking rack be no further away from an entrance than the nearest vehicle parking space.

(2) Short-Term Bicycle Parking Spaces may be located either (a) on-site or (b) in the public right-of-way (e.g., sidewalk or In-Street Bicycle Parking), provided that an encroachment permit is obtained for the installation and the installation meets all other requirements of [indicate the law governing encroachments on public rights-of-way]. If Bike Racks are located on public sidewalks, they must provide at least [5] feet of pedestrian clearance, and up to [6] feet where available, and be at least [2] feet from the curb.

COMMENT: Sufficient clearance requirements are necessary to ensure that bicyclists can easily access and lock their bikes while avoiding interference with pedestrians. While six feet for pedestrian clearance is best practice, and is particularly important in areas with many pedestrians, an acceptable alternative is 5 feet. This is consistent with guidelines developed by the U.S. Architectural and Transportation Barriers Compliance Board and the U.S. Department of Transportation for designing public sidewalks (available on-line at: http://www.access-board.gov/prowac/guide/PROWguide.pdf"), and ensures that the sidewalk is fully accessible to individuals with disabilities.

In-Street Bicycle Parking (in place of one or more vehicle parking spaces) can be an attractive option in dense commercial areas where demand for bicycle parking is high and there are limited off-street options or sidewalk clearance. In-street bicycle parking provides commercial districts with 8-12 bicycle parking spaces to each vehicle space and clearly advertises that it is a bike friendly area.

(B) Bike Rack Requirements: Bike Racks used for Short-Term Bicycle Parking must be securely attached to concrete footings, a concrete sidewalk, or another comparably secure concrete surface, and made to withstand severe weather and permanent exposure to the elements.

> **COMMENT:** Bike racks bolted to asphalt, dirt, or grass can become dislodged over time or due to theft or vandalism, and do not provide secure parking. Bike racks made with powder-coated metal or stainless steel can withstand severe weather and permanent exposure to the elements.
>
> While more expensive up front, high quality racks require less maintenance, last longer, and look better. Also, even a good quality bike rack costs a fraction of a vehicle parking space, particularly considering that 8-12 bicycles parking spaces can typically fit in one vehicle parking space. According to the Pedestrian and Bicycle Information Center, the cost to purchase and install a bike rack is generally $150-$300, and $1,000 - $4,000 for a bike locker. In contrast, a parking space can cost from $2,200 per space in a surface lot to $23,000 per space in a garage.

§ 8. <u>ADDITIONAL REQUIREMENTS APPLICABLE TO LONG-TERM BICYCLE PARKING ONLY:</u> Long-Term Bicycle Parking shall be provided in either (1) Bike Lockers or (2) indoor rooms or areas specifically designated for bicycle parking (including designated areas of an indoor parking facility), and shall satisfy the following requirements, in addition to those set forth in [Section II, § 3] above:

(A) Location: Long-Term Bicycle Parking may be located either on- or off-site. If located off-site, it shall be no more than [300 feet] from the main public entrance.

> **COMMENT:** Jurisdictions should select an appropriate distance based on population size and local conditions. Smaller cities, like Boulder, Colorado and Tucson, Arizona, tend to use 300 feet; larger cities may allow a greater distance, like 500 feet (Oakland) or 750 feet (Portland). Some large cities allow this requirement to be expanded, upon a showing that a proposed or existing bike station or similar high-capacity bicycle parking facility is located within 1,000 feet (around three or four city blocks).

(B) Requirements for Indoor Long-Term Bicycle Parking: Long-Term Bicycle Parking located in designated indoor rooms or areas shall contain Bike Racks or comparable devices. Such rooms shall be designed to maximize visibility of all portions of the room or designated area from the entrance. Supplemental security measures (such as limiting access to a designated indoor bike parking room to persons with a key, smart card, or code) are optional.

COMMENTS: Providing adequate security is critical to the willingness of bicyclists to use Long-Term Bicycle Parking. This model ordinance requires that, at a minimum, Long-Term Bicycle Parking shall be provided either in lockable Bike Lockers or in indoor rooms or areas (including parking garages) that contain lockable Bike Racks. It also provides flexibility, however, in the event that local conditions warrant additional security measures.

§ 9. MOTOR VEHICLE PARKING SPACE CREDITS:

(A) For every [6] Bicycle Parking Spaces provided, the number of required off-street motor vehicle parking spaces (excluding parking spaces for individuals with disabilities) on a site shall be reduced by [1] space.

COMMENT: This type of "parking exchange formula" is very popular with developers, allowing them to reduce the number of vehicle parking spaces (which are more costly than bike parking spaces) when they provide bicycle parking. Such a provision is an effective incentive for both increasing bicycle parking and reducing the amount of land devoted to off-street vehicle parking. If a community is concerned about maintaining a certain minimum number of vehicle parking spaces, a provision can be added that caps the available credit, e.g. "The total number of required off-street vehicle parking spaces shall not be reduced by more than [20]% pursuant to this credit."

(B) To encourage the installation of showers at non-residential sites, the number of required off-street motor vehicle parking spaces for such sites shall be reduced as follows: A credit of [1] space shall be provided for the first shower installed, with additional off-street motor vehicle parking credits available at a rate of [1] space for each additional shower provided per [25] required Bicycle Parking Spaces. In order to claim these credits, which shall be in addition to the bicycle parking credits provided for in [Section II, § 9(A)], shower facilities must be readily available for use by all employees of the New Development or Major Renovation.

COMMENT: Destination amenities (such as showers, lockers and changing rooms) in commercial or industrial buildings are designed to encourage more people to commute (or commute further) to work by bicycle. Particularly where climates are warm or humid, the ability to shower can help make commuting by bicycle or by foot a more feasible alternative to driving. Like bike parking generally, these provisions can be viewed as a "win-win" situation. Developers can promote these facilities as a benefit for tenants, businesses can promote employee health and fitness, and employees receive improved options for bicycling to work. Such showers often benefit non-bicycling employees as well, such as those who exercise during lunch or who spend long hours at the office.

Some jurisdictions that anticipate large, high-density commercial developments may choose to make the installation of showers (and/or other destination amenities) in such developments mandatory rather than optional. Currently, a few cities (such as Seattle, WA, Oakland, San Francisco, and San Jose, CA, Boston, MA, and Minneapolis, MN), require shower facilities in new commercial developments if they exceed a specified square footage (ranging widely from 10,000 sq. ft. (San Francisco) to 500,000 sq. ft (Minneapolis)). If a community wishes to make this a mandatory requirement, the following provision can be substituted: "Non-residential uses shall provide [4] showers, along with [4] clothing lockers per shower, for buildings that are [ ] square feet or more. [Two] additional showers shall be provided for each additional [ ] square feet). An off-street vehicle parking credit of [1] space per shower shall be provided, up to one shower per [25] required Bicycle Parking Spaces. In order to claim this credit, which shall be in addition to the other bicycle parking credits provided for, showers must be easily accessible to all employees of the New Development or Major Renovation."

It is also worth noting that in areas that contain existing fitness clubs, employers can also be encouraged to subsidize memberships for employees in a nearby gym that already has showers. This additional option, or alternative to on-site showers, not only provides showers for bicycle commuters but benefits all employees, as well as the employer, since healthier employees tend to have higher productivity.[xviii] Such programs can be linked to employee commuter programs, physical activity promotions or other similar local initiatives.

§ 10. (*optional*) <u>MODIFICATION OF REQUIREMENTS</u>: In the event that satisfying all of the requirements of [Section II] would be (a) infeasible due to the unique nature of the site, or (b) cause an unintended consequence that undermines the purpose of this Ordinance, a property owner (or designee) may submit a written request to the [Planning Director/Zoning Administrator/other Local Administrator or designee] for a modification of the requirements of [Section II]. The request shall state the specific reason(s) for the request, provide supporting documentation, and propose an alternative action that will allow the purposes of this Ordinance to be fulfilled as much as possible.

COMMENT: Jurisdictions should consult their local laws and regulations to determine if they already include procedures for modifications or waivers that would either conflict with, or duplicate, this provision.

SECTION III. [ARTICLE/CHAPTER] OF THE [JURISDICTION] [ZONING/PLANNING/MUNICIPAL/COUNTY CODE] IS HEREBY ADDED TO READ "BICYCLE PARKING REQUIREMENTS FOR PARKING FACILITIES."

§ 1. <u>PURPOSE:</u> The purpose of [Section III] is to provide sufficient safe and convenient bicycle parking in parking facilities so as to encourage bicycling as a form of transportation, which in turn reduces traffic congestion, air pollution, wear and tear on roads, and use of fossil fuels, while fostering healthy physical activity.

COMMENT: Since vehicle parking lots and garages are already in the business of providing parking, it is relatively easy for these uses to include bicycle parking, and thus significantly expand bicycle parking options in locations already identified as desirable destinations.

This section is designed to apply to existing parking facilities licensed by the jurisdiction, as well as new parking facilities, once they become established and are licensed.

§ 2. DEFINITIONS: The definitions set forth in [Section II, § 2] shall apply to [Section III], unless the context clearly requires otherwise.

§ 3. LICENSING CONDITIONS: As a condition of issuance or renewal of a license required by [the Jurisdiction] for a parking facility, parking facilities which are:

(1) indoor parking garages (i.e. 50% or more of the motor vehicle parking spaces are provided indoors or under a roof) shall provide [1] Long Term Bicycle Parking Space per [20] vehicle parking spaces provided (minimum 2) and [2] Short Term Bicycle Parking Spaces;

(2) outdoor parking lots (i.e. 51% or more of the motor vehicle parking spaces are provided outdoors with no roof) shall provide [1] Short Term Bicycle Parking Space per [20] vehicle parking spaces provided (minimum 2),and [2] Long Term Bicycle Parking Spaces.

COMMENT: Note that the bicycle parking requirements for *new* parking facilities (see Section II, § 3) are consistent with the requirements of this section. Cleveland requires bicycle parking in all licensed parking lots and garages at a rate of 1 per 20 vehicle spaces. San Francisco has a similar provision, but reduces the ratio to 1 per 40 vehicle spaces for garages that provide over 500 spaces. In Cincinnati, the rate is also 1 per 20 vehicles although the law is limited to new and expanded parking garages. If desired, the ordinance can impose a cap on the maximum number of bicycle parking spaces that can be required (San Francisco has a cap of 50; Cleveland and Cincinnati have a cap of 24).

Since most cities require businesses to obtain an annual license to operate, linking compliance to licensing should achieve the goals of this section in a relatively efficient manner. Parking facilities that face an imminent renewal at the time the ordinance becomes effective are afforded a grace period in which to comply by Section VIII of this ordinance. It is recommended, however, that all licensed parking facilities in existence at the time the ordinance is enacted receive a notice of Section III of the ordinance [“Bicycle Parking Requirements for Parking Facilities”], along with Section VIII [“Effective Date of Ordinance”] in order to facilitate prompt compliance. In the event that a jurisdiction’s business licenses remain valid for more than one year, the jurisdiction may want to consider expediting compliance by adding the new bicycle parking requirements to existing licenses. Local government counsel, however, should be consulted to determine whether the jurisdiction has authority to modify an existing license, and if so, under what conditions.

§ 4. LOCATION: All Bicycle Parking Spaces required by [Section III] shall be located in an area, preferably on the ground floor, that (i) can be conveniently and safely accessed by bicycle and by foot in a way that minimizes conflicts with motor vehicles, (ii) is not isolated, and (iii) maximizes visibility by parking facility patrons and attendants. If the licensed parking facility has multiple entrances, the required Bicycle Parking Spaces may be spread out among the multiple entrances. Bicycle Parking Spaces shall be accessible without climbing more than one step or going up or down a slope in excess of [12] percent.

§ 5. BIKE RACKS: All Bicycle Parking Spaces required by [Section III] shall contain Bike Racks and shall be well lit if accessible to the public or bicyclists after dark or if in an interior or darkened location. All Bike Racks shall also provide a clearance of at least [36] inches in all directions from any obstruction (including but not limited to other bike racks, walls, doors, posts, columns or landscaping), and shall be separated from vehicles by some form of physical barrier (such as bollards, concrete or rubber curbing or pads, reflective wands, a wall, or a combination thereof) designed to adequately protect the safety of bicyclists and bicycles. All Bike Racks located outdoors shall also be securely attached to concrete footings and made to withstand severe weather and permanent exposure to the elements.

§ 6. SIGNAGE: Parking facilities shall also install prominent signs, no smaller than [12] x [18] inches and utilizing a type size of at least [2] inches, in or near each entrance that advertise the availability of bicycle parking, and the location, if it is not visible from the entrance.

Comment: See Comment to Section II, § 6(D) regarding signage.

§ 7. CONTRACTUAL LIMITS ON LIABILITY: [Section III] shall not interfere with the rights of a parking facility owner (or designee) to enter into agreements with facility users or take other lawful measures to limit the parking facility's liability to users, including bicycle users, with respect to parking in the parking facility, provided that such agreements or measures are otherwise in accordance with the requirements of [this Ordinance] and the law.

COMMENT: This provision simply permits parking facilities to extend to bicyclists the same contractual limitations that they ordinarily apply to motorists.

SECTION IV. [ARTICLE/CHAPTER] OF THE [JURISDICTION] [ZONING/PLANNING/MUNICIPAL/COUNTY CODE] IS HEREBY ADDED TO READ "BICYCLE PARKING REQUIREMENTS FOR SPECIAL EVENTS INVOLVING STREET CLOSURES."

§ 1. PURPOSE: The purpose of [Section IV] is to provide sufficient safe and convenient bicycle parking at special events involving street closures to encourage bicycling as a form of transportation, which in turn reduces traffic congestion, air pollution, wear and tear on roads, and use of fossil fuels, while fostering healthy physical activity.

COMMENT: Monitored bicycle parking at large civic and sporting events has become increasingly popular around the country as event organizers and local governments see the many benefits: (1) it encourages attendees to leave their cars at home and arrive by bicycle, which is a healthy, non-polluting form of transport; (2) it can increase the number of attendees by encouraging residents who might not otherwise attend at all because of concerns regarding traffic congestion, car parking hassles, and lack of safe, secure bicycle parking; and (3) it helps reduce traffic congestion caused by the street closures and the increased number of people attracted to the area.

§ 2. CONDITIONS ON STREET CLOSURE PERMITS: As a condition of a permit for the closure of a street for a special event in which the daily number of participants is projected to be [1,000] or more, monitored bicycle parking shall be provided by the event sponsor (or a designee) for at least [1] % of expected daily participants beginning [½ hour] before and ending [½ hour] after the time of the event each day of the event.

COMMENT: The cities of Alameda and San Francisco, California both implement their monitored bicycle parking requirement for large events involving street closures through their temporary street closure and event permit application and review process.

If, over time, the demand for monitored bicycle parking increases, jurisdictions can easily increase the amount of monitored bicycling parking required through a simple amendment to the ordinance.

§ 3. REQUIREMENTS FOR MONITORED PARKING: Monitored bicycle parking shall include the presence, at all times, of one attendant, or more as needed, to receive bicycles, dispense claim checks, return bicycles, and provide security for all bicycles.

§ 4. LOCATION: All monitored bicycle parking shall be located within [500] feet of at least one regular entrance or access point to the event.

COMMENT: Possible locations for monitored parking would include school yards, in-street vehicle parking spaces, garages, or designated sections of closed streets. Generally, 8-12 bicycles will fit in 1 vehicle parking space.

§ 5. PUBLICITY AND SIGNAGE: All publicity, including signs, for the event shall state the availability of monitored bicycle parking, its location, and cost, if any. All event maps shall include the location of monitored bicycle parking. If monitored bicycle parking is not within eyeshot of each entrance, signs shall be provided to ensure easy way finding.

§ 6. INSURANCE COVERAGE AND FEES: The event sponsor or designee must provide insurance coverage for the monitored bicycle parking in case of damaged or stolen bicycles, and may charge users a fee to cover the cost of providing the monitored parking.

COMMENT: According to the San Francisco Bicycle Coalition, it has never had a bicycle lost or stolen in the 10 years it has provided monitored bicycle parking at local events. Bicycling organizations that offer monitored bike parking at events (commonly referred to as "valet bike parking") generally have insurance coverage as a precautionary measure, and such a requirement is recommended.

SECTION V. [ARTICLE/CHAPTER] OF THE [ZONING/PLANNING/MUNICIPAL/COUNTY CODE] IS HEREBY ADDED TO READ "REMOVAL OF ABANDONED BICYCLES."

§ 1. PURPOSE: The purpose of [Section V] is to ensure the reasonably prompt removal of bicycles abandoned in Bicycle Parking Spaces so as to encourage bicycling as a form of transportation, which in turn reduces traffic congestion, air pollution, wear and tear on roads, and use of fossil fuels, while fostering healthy physical activity.

§ 2. DEFINITIONS: The definitions set forth in [Section II, § 2] of this Ordinance shall apply to [Section V], unless the context clearly requires otherwise.

§ 3. REMOVAL REQUIREMENTS: On [a quarterly basis], owners of property (or a designee) subject to [Sections II or III of this Ordinance] shall remove, from all Bicycle Parking Spaces associated with their property, including those located on the public right-of-way, bicycles that have been abandoned. A bicycle shall be deemed to be abandoned if it has not been removed after having been tagged with a notice of removal for [2] weeks for Short-Term Bicycle Parking Spaces or [4] weeks for Long-Term Bicycle Parking Spaces. However, a bicycle shall not be deemed to be abandoned if the bicyclist and property owner (or designee) have a written agreement regarding provision of long term storage covering the time period in question. Abandoned bicycles shall be disposed of in a manner consistent with the California Civil Code.

COMMENT: Removal of abandoned bicycles is critical. Not only do they effectively eliminate bicycle parking spaces, but they are also an eyesore, deter bicycle users, and turn others against bicycle parking. Some cities, like Emeryville, California, require property owners to remove abandoned bicycles from short-term spaces on a monthly basis.

Under California law, personal property is abandoned when it is thrown away, or its possession is intentionally forsaken by the owner.[xix] In the event that the original owner later disputes the abandonment, the issue of whether the item was "intentionally forsaken," usually turns on the original owner's actions and the specific circumstances. Evidence that a bicycle has been neglected for an extended period in a public bicycle parking area, particularly after having been tagged with an abandonment notice, would provide evidence of abandonment. Jurisdictions can also encourage property owners to post a sign near bicycle parking that notifies bicyclists that abandoned bicycles will be donated or disposed of in a lawful manner, and identifies the criteria for finding abandonment set forth in the ordinance. Such a sign could provide additional evidence of abandonment in the event a dispute arose.

Under state law, personal property of unknown ownership worth more than $100[xx] (including property left by tenants[xxi]) must be turned over to the local police department, where the property will be held for at least 90 days to allow the owner to claim it.[xxii] Similar procedures apply to personal property found at a public agency or by a public employee.[xxiii] A jurisdiction may have an abandoned property ordinance in place, as authorized by the California Civil Code; if so, the local ordinance should be cross-referenced in this provision.[xxiv]

SECTION VI. [ARTICLE/CHAPTER] OF THE [JURISDICTION] [ZONING/PLANNING/MUNICIPAL/COUNTY CODE] IS HEREBY ADDED TO READ "IMPLEMENTATION OF ORDINANCE."

§ 1. Regulations and Procedures: The [Planning Director/Zoning Administrator and/or other relevant local administrator(s)] [is/are] authorized to promulgate new and amend existing rules, regulations, procedures or forms as necessary or appropriate to implement the provisions of [this Ordinance].

§ 2. Training: [Jurisdiction] shall periodically make trainings or training materials available to planners and other employees involved in the implementation and enforcement of [this Ordinance].

COMMENT: Local planners or staff may not be familiar with the multitude of different bike parking design and site lay-out issues that arise in the context of bicycle parking. Providing training or training materials can be crucial to the effective implementation of a bicycle parking ordinance. Resources that could be used to develop training materials are available from some bicycling organizations such as the Association of Pedestrian and Bicycle Professionals (www.apbp.org) and the Alliance for Biking and Walking (www.peoplepoweredmovement.org). Also, some bicycle parking ordinances, such as Portland's, include helpful diagrams of possible bike parking site layouts. (Portland's ordinance is available on-line at www.portlandonline.com/bps/index.cfm?a=53320 (see pages 25-27).)

§ 3. Reporting: The [Planning Director/Zoning Administrator] shall provide an annual report to the [Adopting Body] regarding the implementation of this Ordinance that shall, at a minimum, include the following information relevant to the preceding year: (1) the number of Short and Long-Term Bicycle Parking Spaces created pursuant to [Sections II and III], and the number of events for which special event bicycle parking was provided under [Section IV] ; (2) *(if applicable*) a brief summary of each request for modification received and action taken in response thereto; and (3) any other information learned that would improve future implementation of [this Ordinance] and its goals.

COMMENT: This crucial accountability provision enables local law-makers and the public to assess the effectiveness of the ordinance. If desired, jurisdictions can include additional reporting requirements designed to assist with future bicycle programs or plans. Such requirements could include reporting on actual use of bicycle parking spaces or on changes in bicycling rates.

SECTION VII. STATUTORY CONSTRUCTION:

(A) All ordinances or parts thereof that conflict or are inconsistent with this Ordinance are repealed to the extent necessary to give this Ordinance full force and effect.

(B) If any section or portion of this Ordinance is judicially invalidated for any reason, that portion shall be deemed a separate and independent provision, and such ruling shall not affect the validity of the remaining portions of this Ordinance.

COMMENT: These standard provisions ensure there is no conflict with any other existing laws and that any partial invalidation does not affect the remainder of the ordinance. Your jurisdiction's attorney may wish to substitute a different version of this language.

SECTION VIII. EFFECTIVE DATE: This Ordinance shall be effective [upon passage (*insert other date if desired*)] ("Effective Date"), except that:

(A) [Section II, § 3] ("Bicycle Parking Spaces Required"), and [Section II, § 4] ("Building Permits and Certificates of Occupancy") shall only apply to New Development and Major Renovations for which a building permit is issued on or after [120] days from the Effective Date.

> **COMMENT:** The 120 day grace period seeks to provide a reasonable balance between (1) a jurisdiction's interest in achieving the goals of the ordinance without delay, and (2) allowing developers and local planners reasonable notice of, and time to prepare for implementation of, the ordinance. Depending on local conditions, jurisdictions can adjust the length of this grace period to best effectuate this balance.

(B) [Section III] ("Bicycle Parking Requirements for Parking Facilities") shall apply to Parking Facilities that were licensed prior to the Effective Date, and have less than [180] days remaining on their license, as follows: [1/2] of the required number of Bicycle Parking Spaces shall be provided no later than [120] days from the expiration of the parking facility's license, with full implementation required no later than [180] days from the expiration of the parking facility's license.

(C) [Section IV] ("Bicycle Parking Requirements for Special Events Involving Street - Closures") shall not apply to events for which the temporary street closure was authorized pursuant to an application submitted prior to the Effective Date.

[i] Centers for Disease Control and Prevention. *Overweight and Obesity: Health Consequences.* Atlanta: CDC, 2012. Available at: www.cdc.gov/obesity/causes/health.html.

[ii] Centers for Disease Control and Prevention. *Overweight and Obesity: Causes and Consequences.* Atlanta: CDC, 2012. Available at: www.cdc.gov/obesity/causes/index.html.

[iii] *See* Active Living Research. *Active Transportation: Making the Link from Transportation to Physical Activity and Obesity, Research Brief.* 2009. Available at: www.activelivingresearch.org/files/ALR_Brief_ActiveTransportation.pdf.

[iv] *See* America Bikes, League of American Bicyclists. *Factsheet: National Household Travel Survey.* Available at: www.bikeleague.org/resources/reports/pdfs/nhts09.pdf; *see also* T. Litman. *"Short and Sweet Analysis of Shorter Trips Using National Personal Travel Survey Data."* Victoria Transport Policy Institute (February 22, 2012) at 3**.** (41% of all trips are 3 miles or less (and 67% of those are by car), and 19% of all trips are 1 mile or less (and 42% of those are by car)). Available at: *www.vtpi.org/short_sweet.pdf.*

[v] *See* America Bikes, League of American Bicyclists. *Factsheet: National Household Travel Survey.* Available at: www.bikeleague.org/resources/reports/pdfs/nhts09.pdf; *see also* Rails-to-Trails Conservancy. *Turning Potential into Practice: Walking and Biking as Mainstream Transportation Choices*. 2007. Available at: www.railstotrails.org/resources/documents/whatwedo/TrailLink%2007%20Program_Mobility.pdf (citing FHWA 2006).

[vi] Research and Innovative Technology Administration, Bureau of Transportation Statistics. "Figure 2 On a typical day, how many miles one-way do you travel from home to work?" *Omnistats*, 3(4): 2003. Available at: www.bts.gov/publications/omnistats/volume_03_issue_04/html/figure_02.html.

[vii] U.S. Department of Transportation, Federal Highway Administration. *Highway Statistics 2009: Licensed Drivers by Sex and Ratio to Population - 2009*. Washington: Federal Highway Administration, 2011 (providing data permitting calculation of percentage of California population that is licensed to drive). Available at: www.fhwa.dot.gov/policyinformation/statistics/2009/dl1c.cfm.

[viii] US Department of Transportation, Federal Highway Administration. *Highway Statistics 2009 - User's Guide*. www.fhwa.dot.gov/policyinformation/statistics/2009/userguide.cfm. (Updated May 10, 2012; accessed July 19, 2012; at "Driver Demographics"). *See also* Office of the Prime Minister, Social Exclusion Unit. *Making the Connections: Final Report on Transport and Social Exclusion*. 2003, p. 1-7. Available at: http://webarchive.nationalarchives.gov.uk/+/www.cabinetoffice.gov.uk/media/cabinetoffice/social_exclusion_task_force/assets/publications_1997_to_2006/making_transport_2003.pdf.

[ix] U.S. Department of Transportation, Federal Highway Administration. *The 'Carbon Footprint' of Daily Travel: NHTS Brief.* 2009. Available at: http://nhts.ornl.gov/briefs/Carbon%20Footprint%20of%20Travel.pdf.

[x] California Global Warming Solutions Act of 2006, Cal. Health & Safety Code § 38550 (West 2012).

[xi] California Air Resources Board. *Asthma and Air Pollution.* 2010. Available at: www.arb.ca.gov/research/asthma/asthma.htm.

[xii] Wolstein J, Meng YY and Babey SH. *Income Disparities in Asthma Burden and Care in California.* 2010, p. 3. Available at: www.healthpolicy.ucla.edu/pubs/files/asthma-burden-report-1210.pdf.

[xiii] *See*, *e.g.*, US Environmental Protection Agency. *Our Nation's Air - Status and Trends through 2010: Air Pollution*. 2011, p. 3-4. Available at: www.epa.gov/airtrends/2011/report/fullreport.pdf. Environmental Working Group. *Auto Asthma Index: Asthma and Automobiles*. Available at: www.ewg.org/sites/asthmaindex/about/; *Asthma and Air Pollution*, *supra* note 11.

[xiv] *See, e.g.*, Vanderbilt T. "What Would Get Americans Biking to Work? Decent Parking." *Slate*, Aug. 17, 2009. Available at: www.slate.com/id/2225511/; *see also, e.g.*, City of New York Department of City Planning, Transportation Division. *The New York City Bicycle Survey: A Report Based on the Online Public Opinion Questionnaire Conducted for Bike Month 2006*. 2007. Available at: www.nyc.gov/html/dcp/pdf/transportation/bike_survey.pdf at p.15 (NYC commuters report a lack of safe storage for bicycles as a leading reason for not commuting by bike).

[xv] *See, e.g.*, Marin County Bicycle Coalition. *Economic Benefits of Bicycling in Urban Environments*. Available at: www.marinbike.org/Resources/EconomicBenefitsOfBicycling.pdf (citing a 118%-125% increase in bicycle use in Marin County over the last ten years due to improvements in infrastructure, including pathways, shared use lanes, intersection improvements and bicycle parking; and pointing to increased revenue due to retail purchases by bicyclists with adequate access to infrastructure and parking; *see also* J. Dill and T. Carr. "If You Build Them, Commuters Will Use Them - Another Look." Transportation Research Board 2003 Annual Meeting (cities with higher levels of bicycle infrastructure (bike lanes and paths) witnessed higher levels of bicycle commuting). Available at: www.palgrave-journals.com/jphp/journal/v30/nS1/full/jphp200856a.html.

[xvi] Cal. Educ. Code § 81951.

[xvii] Cal. Gov't Code § 53094; *City of Santa Cruz v. Santa Cruz City Schools Bd. of Educ*., 210 Cal. App. 3d 1 (1989).

[xviii] *See* Centers for Disease Control and Prevention. *Workplace Health Promotion: Increase Productivity*. Atlanta: CDC, 2011. Available at: www.cdc.gov/workplacehealthpromotion/businesscase/benefits/productivity.html.

[xix] *See Ananda Church of Self-Realization v. Massachusetts Bay Ins. Co.*, 95 Cal. App. 4th 1273, 1282, 116 Cal. Rptr. 2d 370, 376-77 (2002).

[xx] Cal. Civ. Code § 2080.1.

[xxi] If the owner is reasonably known, the landlord must follow the disposition procedures set out in Cal. Civ. Code § 1983. See generally Cal. Civ. Prac. Real Property Litigation §27:4 (West 2012) (abandonment of personal property by tenants).

[xxii] Cal. Civ. Code § 2080.1 (delivery to police or sheriff; affidavit; charges); § 2080.2 (restoration to owner).

[xxiii] See Cal. Civ. Code §§ 2080.6, 2080.3, 2080.8.

[xxiv] The abandoned property ordinances of individual jurisdictions must comply with state minimum time periods for retaining property and procedures for disposal. See Cal. Civ. Code § 2080.4. If it is clear that an owner intentionally abandoned their property, the procedures set out in the Civil Code do not apply. See Cal. Civ. Code § 2080.7.