CITY OF PICO RIVERA

Urban Greening Plan

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Table of Contents

Table of Contents (Continued)

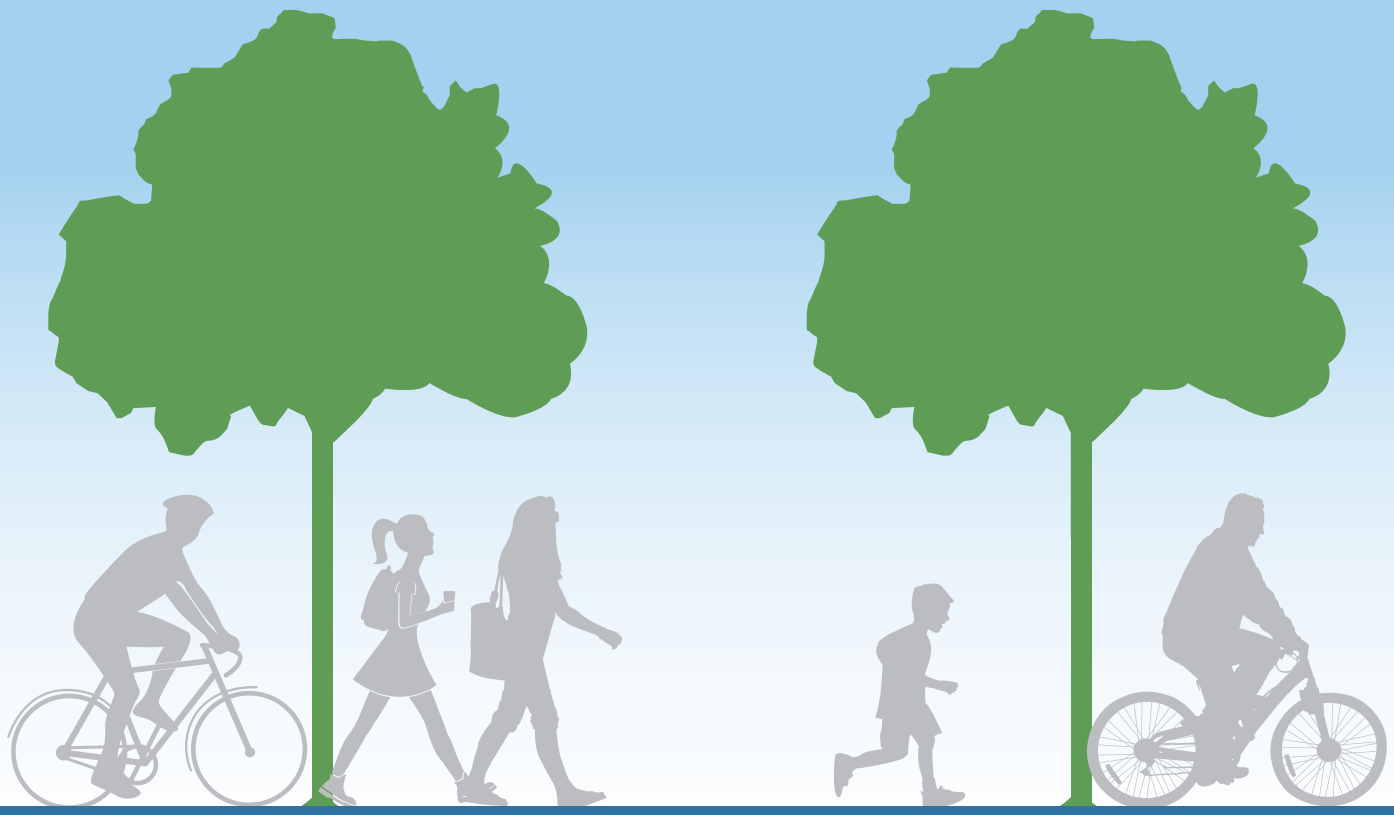
List of Figures

List of Figures (Continued)

List of Figures (Continued)

List of Tables

Appendices



Pico Rivera Urban Greening Plan

1 Project Overview

Purpose

The City of Pico Rivera's Urban Greening Plan (UGP) presents projects that provide a safe and connected bicycle network and pedestrian improvements, creates a unifying street tree canopy for more walkable and bikable neighborhoods, and identifies prospective green spaces and hydrology improvements. The UGP was created with input from the community and provides policy makers and City staff with tools to seek funding from grants and public/private partnerships. As a result, the UGP can help to improve the quality of life for all who live, work, and play in Pico Rivera.

The Urban Greening Plan establishes a system of green streets by incorporating walking, biking, stormwater management, and street trees within Pico Rivera's streets. Additionally, the plan provides recommendations on how to successfully implement and maintain these green streets.

The UGP takes into consideration the city's General Plan, the GCOG ATP Plan, and numerous ongoing planning projects. By incorporating resident feedback into the plan, the UGP also recommends facilities in places where people need them the most.

The city has experienced the cumulative impacts of environmental, social, and economic vulnerabilities that affect quality of life and the built environment. This plan addresses many of these issues by providing a safe and connected multi-modal transportation system, unifying street tree palette, and opportunities for stormwater management.

Major themes of this plan include:

- Creating opportunities for walking, biking, open space, and street trees by reclaiming excess street width
- Connecting community destinations through safe walking and biking facilities
- Incorporating pedestrian and bicycle facilities such as marked crosswalks, bike lanes and clearly identified bike routes into the city's existing roadway network
- Reducing speeding and enhance bicyclist and pedestrian safety through traffic calming
- Identifying opportunities for urban open space and stormwater management to reduce water discharge into the storm drain system
- Develop a unifying street tree palette that improves aesthetics, shade, and air quality

Figure 1-1: Study Area

Source: ESA, 2014. ESRI, 2016.

Study Area

As seen in Figure 1-1, Pico Rivera is located in the southeastern region of Los Angeles County, California, accessible by Interstate 605 on the east, Interstate 5 to the South, and CA Highway 19 (Rosemead Boulevard) which runs north-south through the center of the city. The city is bordered by the cities of Downey on the southwest, Santa Fe Springs on the southeast, Whittier on the east, Industry on the northeast, Montebello on the northwest and Commerce on the west. The San Gabriel River runs along the east side of the city while the Rio Hondo Channel runs along the west side of the city.

With a 2010 census population of 62,942 (and an estimated 2015 population of 64,218), Pico Rivera has a population density of 7,086 people per square mile within its 8.9 square mile area. The city's population is 62.6% White, 1.3% Black or African American, 1.9% American Indian, 3.1% Asian, and 35% identifying as another race. The city's hispanic population makes up approximately 91% of the total.

Pico Rivera and its surrounding area are home to several regional parks and natural areas, as shown in Figure 1-2. Additionally, the city is bounded by the San Gabriel River to the east and by the Rio Hondo Channel to the west.

Figure 1-2: Regional Recreation Facilities and Waterways

Source: ESA, 2014. KTU+A, 2017.

Rio Hondo River Trail

Green Streets

Streets are typically thought of as a route for vehicle traffic only. A "Green Street" combines the concept of Complete Streets with stormwater management and urban forestry to design streets that enable safe and attractive access throughout the city by foot, transit, bicycle, and car. Green Streets consider the street as a public space that enhances multi-modal connectivity, sustainability, and design for pedestrians, bicyclists, transit riders, and motorists.

Figure 1-3 shows a typical street condition in Pico Rivera. Most streets were not designed for pedestrian or bicycle access and often have non-ADA compliant sidewalks, little to no parkways, numerous sidewalk interruptions from driveways, and oversized vehicular travel lanes with no bicycle facilities. In contrast, Figure 1-4 shows a Green Street design that incorporate biking, walking, stormwater management, and street trees.

With this comprehensive approach to street design, Green Streets accomplish a number of positive outcomes including:

Better Stormwater and Urban Runoff Management

Tree canopies and landscaped areas can increase the permeability of street right-of-ways and prevent rainfall from becoming runoff. Green Streets reduce water velocity and water discharge in opens space areas, reduce the strain and cost to the storm drain, and ultimately help protect valuable surface and groundwater resources. Green Streets also help meet regulatory requirements for pollutant reduction and watershed resource management.

Local Water Resource Management

The City of Pico Rivera is uniquely located in an important regional groundwater recharge area that helps replenish the local aquifer that supply drinking water for the communities of Los Angeles. Capturing stormwater and allowing it to seep slowly back into the ground through Green Streets resupplies the local groundwater aquifer and regional water supply. Streets without Green Street elements that allow for capture and infiltration, lose an opportunity to better manage a precious resource, water.

Increased Pedestrian and Bicycle Routes

By providing safe environments for pedestrians and bicyclists, Green Streets encourage residents to walk and bike, ultimately helping to reduce air pollution, lowering vehicle miles traveled, and contributing to improved public health.

Improved Traffic Safety

Green Streets have trees and are visually attractive can reduce stress on drivers, lower blood pressure, and decrease perceived travel times for motorists. Green Streets can potentially reduce the occurrence of road rage and help make an everyday drive more enjoyable.

Increased Property Values

Green Streets add urban green space, trees, and wildlife experiences to daily routines. Attractive streets enhance properties and increase residential and business property values. The overall pride and investment in properties is often improved when a community's streets look and function properly.

Better Image and Community Marketing

Green Streets can physically and visually connect the major destinations found within Pico Rivera. This plan includes a street tree plan identifying streets that should receive specific theme trees to create a distinct character for each street. Street trees can aid in wayfinding and attractive public streets can create positive community image.

Upgraded Development

Green Streets encourage foot traffic and increase retail sales along commercial corridors. An attractive street environment encourages an upgraded quality for private developments, encourages higher value uses along the streets, and enhances business viability.

Figure 1-3: Typical Street Design in Pico Rivera

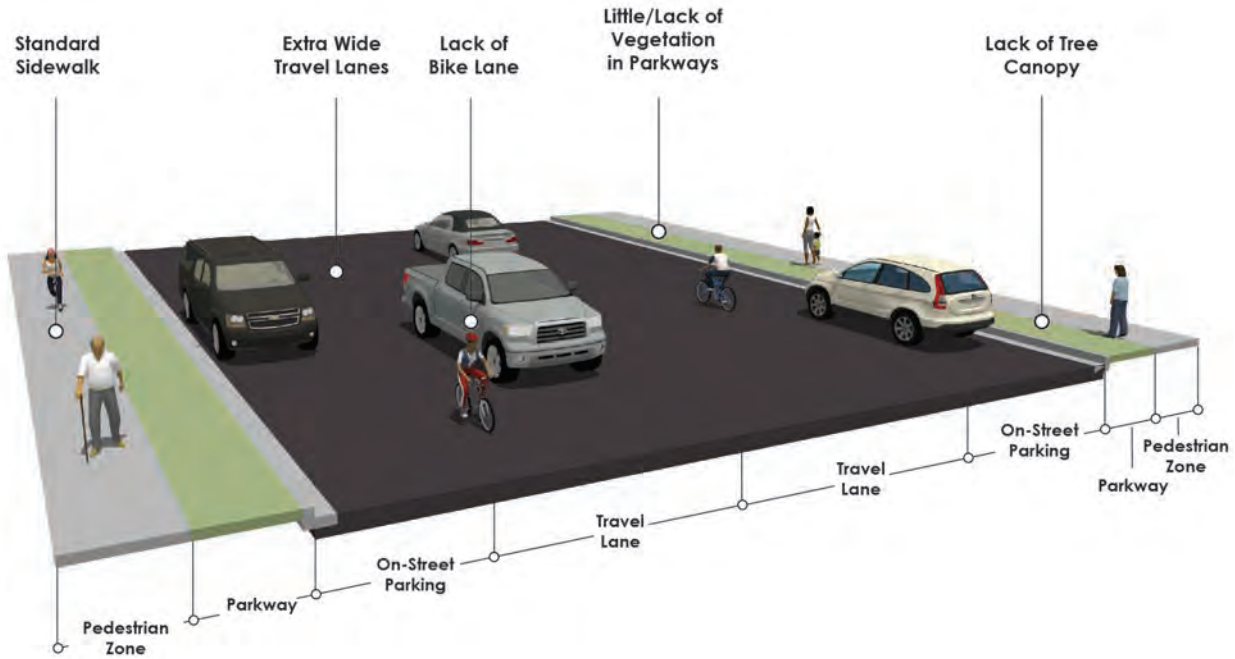
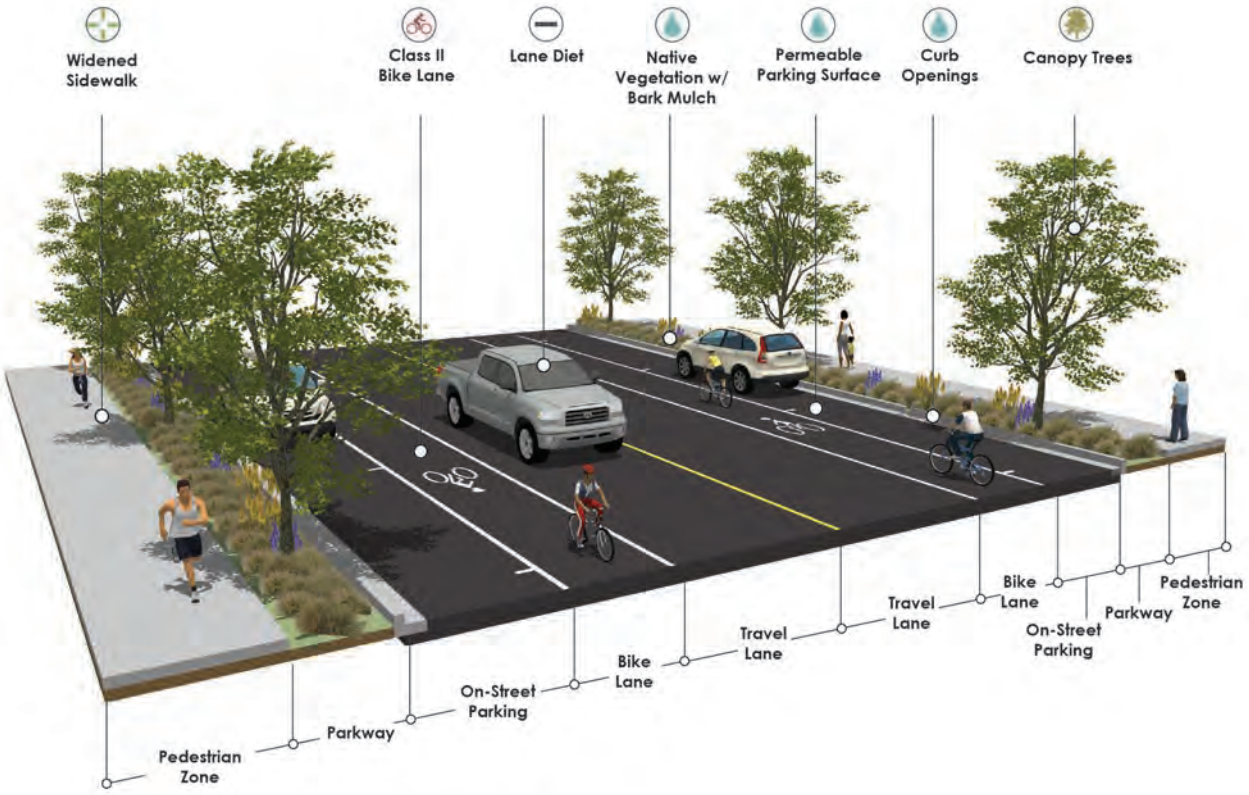


Figure 1-4: Green Street Design



Design Elements

The Pico Rivera Urban Greening Plan focuses on four separate elements including:

Bicycle Facilities: Providing safe bicycle facilities throughout Pico Rivera and connections to existing facilities.

Pedestrian Facilities: Providing safe pedestrian improvements near schools and parks throughout Pico Rivera.

Urban Runoff and Open Space: Increasing permeable areas that can decrease stormwater runoff, increase opportunities for green space and recharge of the local groundwater aquifer that supplies drinking water for the region's communities.

Urban Forestry: Increasing the quantity and quality of plants and trees to provide a variety of benefits, including shade and improved air quality.

Design Toolbox: Tools to build a desirable street and attractive public realm. This toolbox is organized by the four design elements and also considers where a solution is applied in a street cross section.

Green Street design brings these four elements together to transform auto-oriented thoroughfares into attractive multi-modal public spaces. Although each design element is discussed separately in this document, these elements should be implemented together to create the best possible outcome.

Previous Planning Efforts

The Pico Rivera UGP incorporates regional and local planning efforts that are directly related to walking, biking, stormwater, and street trees. These efforts range from long-range regional planning to neighborhood-specific plans. The following information provides a summary of the planning projects that have been taken into consideration as part of the Pico Rivera UGP.

Regional Plans

SCAG Regional Transportation Plan and Sustainable Communities Strategy (2012)

The 25-year Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) lists transportation projects and provides guidance to local governments on how to shape their General Plans. It is the first RTP completed since passage of SB 375, which requires regions to set GHG reduction targets and explain how the targets will be achieved in an SCS. The RTP/SCS was developed by the Southern California Assocaiation of Governments (SCAG) and includes recommendations within the City of Pico Rivera. The primary goal of the plan is to increase the mobility for the region's residents and visitors by proposing a region-wide network that supports walking, biking, and transit.

Lower San Gabriel River Water Management Plan (2015)

The Watershed Management Program (WMP) sets forth a path to achieve reductions in the pollutants in the waterbodies of the Lower San Gabriel River and its tributaries. The WMP includes a discussion of existing and planned watershed control measures, a Reasonable Assurance Analysis (RAA) based upon the Watershed Management Modeling System previously developed by the Los Angeles County Flood Control District in collaboration with the USEPA, and a Coordinated Integrated Monitoring Program (CIMP) being implemented over a four year period which began in 2013 with the installation of an early action monitoring site. This plan identifies existing and planned water management strategies within the City of Pico Rivera (and surrounding communities) which are incorporated into the Pico Rivera UGP.

Gateway Cities Council of Governments (GCCOG) Strategic Transportation Plan (STP) Active Transportation Element (2016)

The STP Active Transportation Plan (ATP) Element seeks to better manage the Gateway Cities regional active transportation network, provide more transportation options, and improve quality of life by making bicycling and walking safer and easier. The ATP outlines a strategy designed to meet growing demand for bicycle and pedestrian infrastructure and in turn address regional goals of reducing air pollution, easing congestion, reducing energy consumption, and improving public health.

The STP mapped all current bike routes in the Gateway Cities and identified where the gaps are. It recommends 55 bicycle routes that close those gaps and connect routes between cities and across community boundaries. These routes form a network, providing more ways to move around the Gateway Cities.

City of Pico Rivera Plans

Pico Rivera Safe Routes to School Program - Walk Audit Report (2015)

The Safe Routes to Schools program is intended to provide suggested routes and safety improvements for walking and biking around the city's schools. The recommendations in this report include traffic calming elements and roadway design that will increase the comfort and safety of residents walking and biking to school. The suggested improvements are provided for areas within a 15-minute walk from each of the schools.

Pico Rivera General Plan (2014)

The General Plan outlines the City's vision for the future and provides goals, policies and objective to help achieve that vision. The General Plan is designed to guide the City's immediate and long-term land use, development, and environmental management decisions. The plan includes a vision for topics including future land use, bike facilities, pedestrian facilities, stormwater management, street trees, roadway design, and trails.

Durfee Avenue Corridor Plan (2013)

This plan provides future recommendations for land use, bike facilities, and pedestrian facilities along Durfee Avenue between Beverly Boulevard and Whittier Boulevard.

Surrounding Community Plans

The City of Pico Rivera is surrounded by the cities of Downey, Santa Fe Springs, Whittier, City of Industry, Montebello, and Commerce. The bicycle master plans for Downey, Montebello, and Whittier were reviewed in order to provide connections to the proposed bicycle facilities in surrounding communities.

Public Outreach

The planning process included a number of public outreach efforts designed to gather information from a broad range of local residents, stakeholders, and city staff through a series of public events, stakeholder meetings, and online surveys.

Public Events

Resident feedback was collected at a series of public events including the City's Easter Egg-stravaganza on March 19, 2016, the Kids Bike Festival on April 23, 2016, and the Summer Street Fest on August 25, 2017. An interactive booth was set up at the events that included the following activities:

- Introduction board for the Urban Greening Plan including benefits, outcomes, and design elements
- Paper surveys (English and Spanish) that included questions related to biking and walking in Pico Rivera
- Table maps including aerial image, existing and proposed bike routes, schools, and parks - people were asked to identify areas of concern, issues, and opportunities.
- Visual preference survey that had residents place a sticker on their preferred options for improving walking and biking in Pico Rivera
- Postcards that included project information, links to the facebook page, twitter account, and a link to the survey online

Project Postcard

During the events, the booth attracted a large number of residents and the team was able to collect feedback using paper surveys and comments on the table maps. During the second event, the consultant team also participated in a bike ride along the Rio Hondo path and discussed biking in Pico Rivera with the participants.

City Working Group & Steering Committee

The City Working Group included representatives from the City of Pico Rivera, the Chamber of Commerce, and City Council while the steering committee included representatives from various community groups that provided input on social, technical, economic, environmental, and political topics.

These groups met together with the consultant team to provide input on the project approach, identify issues and concerns, discuss recommended projects, and provide essential local knowledge. From this group, project champions will emerge that will carry on the work of the UGP and to see these projects through to their completion.

Stakeholders

The stakeholder focus group included representatives from various local and regional organizations and provided speciailzed input. Stakeholders were asked to participate in an online survey or phone interview to provide input related to their specific areas aof expertise as it related to the Urban Greening Plan elements.

Planning Commission Meeting

The consultant team presented a draft report to Planning Commission during a public meeting held on December 19, 2017. Assistants were able to share their concerns, including multi-use paths and equestrian trails, unsafe left turns, the installation of bike boxes, and traffic conflicts at specific intersections. The Planning Commission provided direction and expressed general support of the plan.

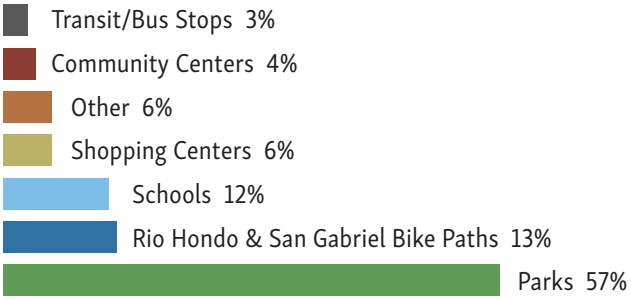
Surveys

Two online surveys were developed, one to collect feedback on walking and biking and one to collect feedback on street trees. A paper copy of the walking and biking survey was distributed at the public events and the online version was advertised on the project postcards which was distributed at the public events and various locations around the City. Between the paper and online surveys, 219 people completed the walking and biking survey. Based on this feedback, the consultant team was able to analyze residents' perspectives on walking and biking in Pico Rivera.

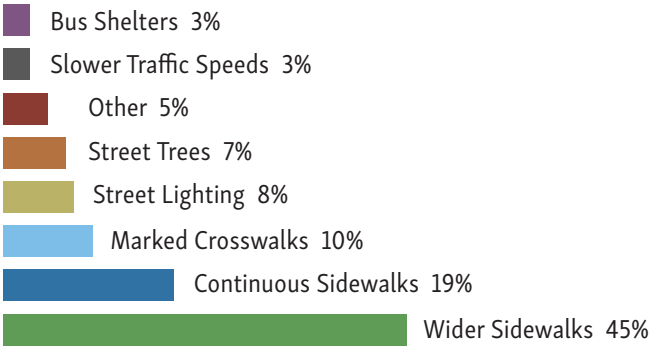
The street tree survey, which was also advertised in the City's monthly newsletter, included questions regarding the current condition of street trees and what types of trees people would like to see in the future. These results were used to inform the proposed street tree palette. The majority of respondants felt that there are not enough street trees in their neighborhood. Additionally, most respondants preferred that their neighborhood have multiple species of larger trees that provided shade and increase the aesthetic quaility of the neighborhood.

The full results from both surveys can be seen in Appendix B.

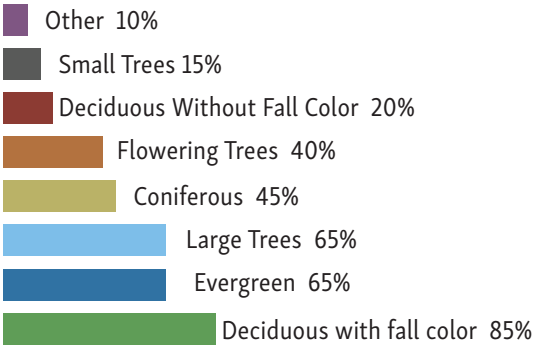
Where would you like to see better bicycle and pedestrian facilities to?



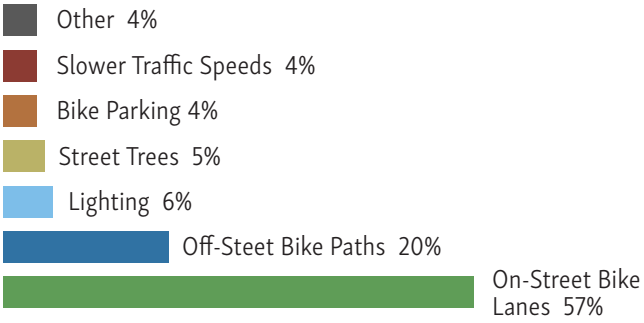
How would you improve walking in Pico Rivera?



What kind of trees would you prefer in your neighborhood?



How would you improve biking in Pico Rivera?



Easter Egg-stravaganza Event

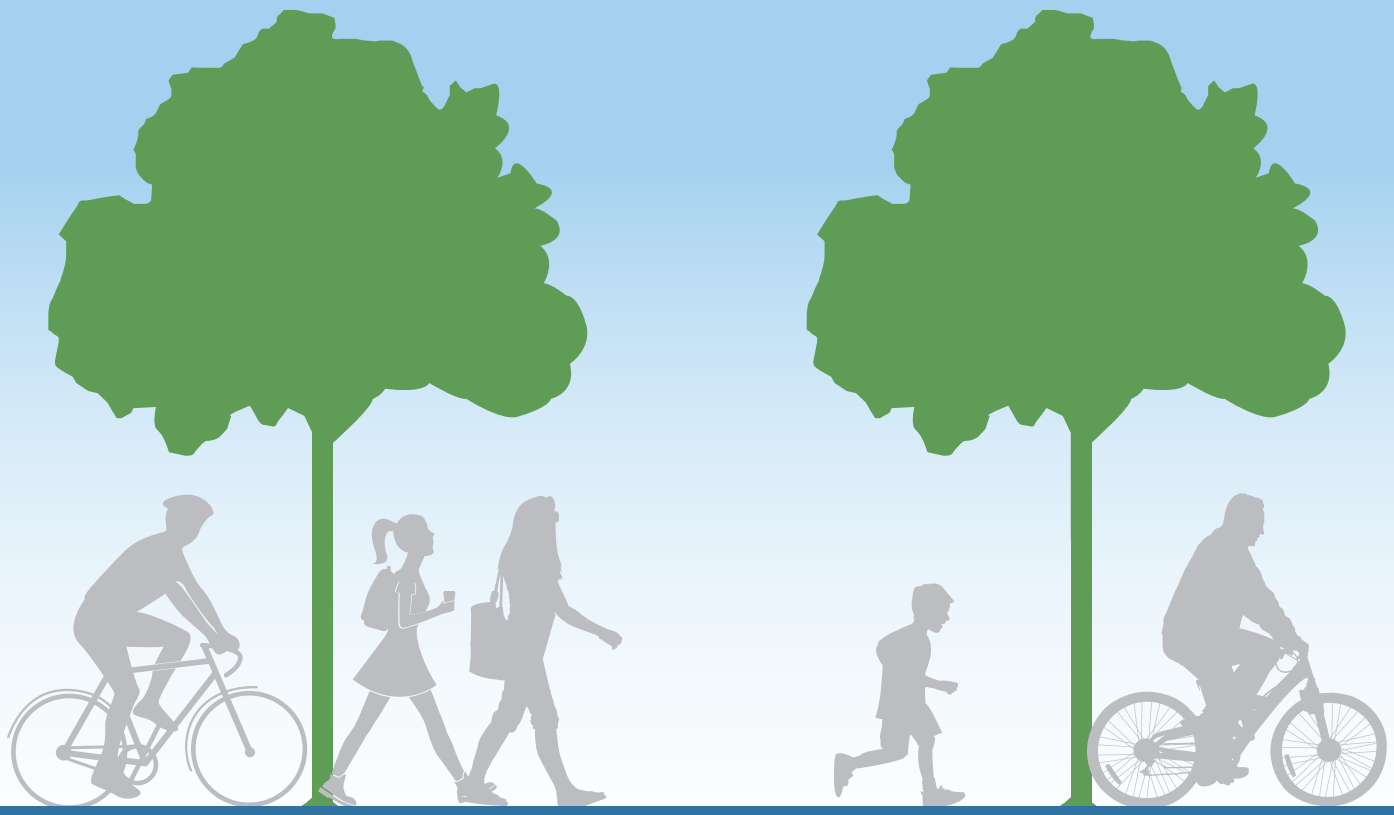
"Design Your Ideal Street" Activity During Egg-stravaganza Event

Kids Bike Festival Event

Bike Ride Along Rio Hondo Path

Summer Street Fest Event

Steering Committee Meeting



Pico Rivera Urban Greening Plan

2 Bicycle Facilities

Overview

Based on analysis of existing conditions, previous planning efforts, public input, and GIS data, specific recommendations for bicycle facilities were developed for the City of Pico Rivera.

An important step in the planning process for any transportation project is the assessment of needs. There are circumstances in which a portion of the transportation need could be met by non-motorized vehicles, including the development of new bicycle facilities or improvements to existing bicycle facilities. The potential for non-motorized travel and bicyclists' needs were determined by analyzing existing and planned land use, current and projected traffic levels, and the unique needs of the population.

The roadway may be suitable for bicycle travel if it:

- Serves an activity center, which could generate bicycle trips
- Is included on a regional, county or municipal bicycle master plan
- Provides continuity with or between existing bicycle facilities, including those of adjacent cities
- Is located on a roadway that is part of a mapped event or club bicycle route or utilized regularly by local bicycle clubs
- Passes within two miles of a transit center
- Passes within two miles of a high school or college
- Passes within a half mile of an elementary school or middle school
- Passes through an employment center, especially if there is a significant residential area within a three-mile radius
- Provides access to a recreation area or otherwise serves a recreation purpose

This assessment also addresses other factors including safety, public input, GIS modeling and field work. These topics all relate to one another and help identify what is needed for a complete bikeway system. For example, safety concerns were analyzed by identifying bicycle-related collision locations, frequencies and causes, and especially the frequency at certain notable locations. Cross-referencing these collisions and locations helps to identify where it may be best to install a bicycle facility to connect with other facilities, as well as future development.

Four data-intensive exercises were conducted in the analysis phase:

- Bicycle-Pedestrian Propensity Model
- Neighborhood Greenways Analysis
- Benefit-Cost Analysis
- Bicycle Collision Analysis

Public Input

Public input was an important factor in identifying bicycle facilities. Through various outreach events and steering committee meetings, the following corridors were identified the most.

- Rosemead Boulevard
- Passons Boulevard/Durfee Avenue
- Mines Avenue
- Beverly Road
- Paramount Boulevard
- Access to schools and parks

These corridors did not come as a surprise since they have been identified in previous planning efforts. However, they help solidify the bicycle improvement recommendations along these corridors.

Bicycle Facility Types

Conventional Bicycle Facility Types

There are four conventional bicycle facilities types in California. These facilities are recognized by the California Department of Transportation and details of their design, wayfinding and pavement markings can be found in the California Manual on Uniform Traffic Control Devices (MUTCD) and California Highway Design Manual.

Multi-Use Paths (Class 1)

Class 1 multi-use paths (frequently referred to as "bicycle paths") are physically separated from motor vehicle routes, with exclusive rights-of-way for non-motorized users like cyclists and pedestrians.

Bicycle Lanes (Class 2)

Bicycle lanes are one-way facilities that carry bicycle traffic in the same direction as the adjacent motor vehicle traffic. They are typically located along the right side of the street, between the adjacent travel lane and curb, road edge or parking lane.

Bicycle Routes (Class 3)

A bicycle route is a suggested bicycle route marked by signs designating a preferred route between destinations. Additionally, shared lane "sharrow" are commonly used where parking is allowed adjacent to the travel lane. They are recommended where traffic volumes and roadway speeds are fairly low (35 mph or less).

Separated Bike Lanes / Cycle Tracks (Class 4)

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. They can be either one-way or two-way depending on the street network, available right-of-way and adjacent land use. A cycle track is physically separated from motor traffic and distinct from the sidewalk. There are a variety of physical protection measures that range from reflective bollards to parked vehicles.

Multi-Use Path (Class 1)

Bicycle Lane (Class 2)

Bicycle Route (Class 3)

Separated Bike Lanes / Cycle Tracks (Class 4)

Enhanced Bicycle Facility Types

While the conventional bicycle facility types can be found throughout the country, there has been a shift towards enhancing these facilities. Just recently, the CA MUTCD has approved the installation of buffered bicycle lanes, while Shared Lane Markings or "Sharrows" have been around since 2008.

These enhancements are low cost, easy to install, and provide additional awareness to the location of cyclists. In many instances, installation of these bicycle facility enhancements can be coordinated with street resurfacing projects. The use of green paint has also become a simple and effective way to communicate the presence of bicyclists.

Buffered Bicycle Lanes

Buffered bicycle lanes are additional space between the bicycle lane and traffic lane, parking lane or both provide a more protected and comfortable space for cyclists than a conventional bicycle lane.

Bike Boxes

A bike box is a designated area at the head of a traffic lane at a signalized intersection that provides bicyclists with a safe and visible way to get ahead of queuing traffic during the red signal phase.

Bicycle Boulevards/Neighborhood Greenways

A bicycle boulevard or neighborhood greenway is an enhanced shared roadway where a local street has been modified to function as a prioritized through street for bicyclists while maintaining local access for automobiles. This is done by adding traffic-calming devices to reduce motor vehicle speeds and installing traffic diverters or controls that limit through movements by vehicles. A bike boulevard gives priority to through bicyclist movement and generally removes stops signs in the primary direction of the street.

Low Stress Bicycle Facility Types

There are a number of other non-conventional facilities that the City may find useful in specific situations. In many cases, the conventional bicycle facilities may not meet the safety perceptions of the bicycling community. Protected bicycle lanes, low-stress streets, bicycle prioritized routes are an ever-evolving, ever-improving state of practice.

The facilities in this section have been implemented in other cities with great success and are quickly being implemented all over the US. Cycle tracks and bicycle boulevards can be found throughout California since they are proven to improve bicycling safety and increase bicycle mode share.

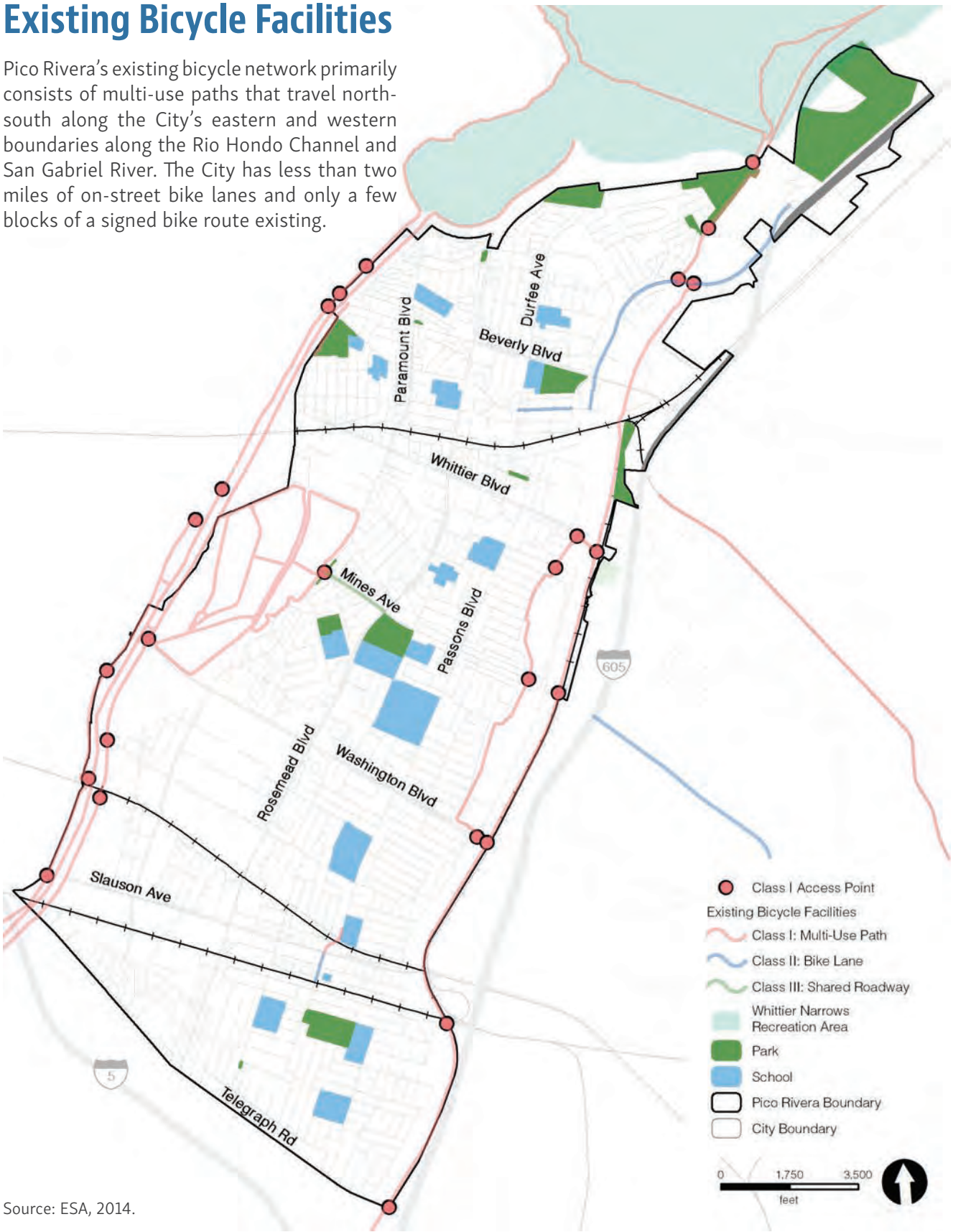
Details of these facilities and other treatments can be found in the NACTO Urban Bikeway Design Guide or AASHTO Guide of the Development of Bicycle Facilities.

Buffered Bicycle Lanes

Bike Boxes

Existing Bicycle Facilities

Pico Rivera's existing bicycle network primarily consists of multi-use paths that travel north-south along the City's eastern and western boundaries along the Rio Hondo Channel and San Gabriel River. The City has less than two miles of on-street bike lanes and only a few blocks of a signed bike route existing.



Source: ESA, 2014.

Figure 2-1: Existing Bicycle Facilities

Safety Analysis

Safety analysis entails the use of bicycle collision data to better understand collisions, including where they occur, why they occur and how they might be prevented. Over the five-year period studied (2009-2014), the city recorded 115 bicycle collisions with a low of 12 collisions in 2010 and a high of 30 collisions in 2012. Though reasons for the 2010 dip in collisions are unclear, the recent economic recession which began in 2008, wherein unemployment was high and commuting reduced for the use of all transportation modes, may have played a role. Collisions, by time of day, were at their highest from the late afternoon to evening, consistent with afternoon commutes. In this way, Pico Rivera is consistent with many cities where bicycle collisions peak during morning and evening commute times.

115

Bicycle Collisions from 2009-2014

Collision data for Pico Rivera was recorded at the intersection nearest the collision and included actual distance from the intersection. The idea of intersections as conflict points is nothing new, but the unique problems they present cyclists, including merges with vehicles, insufficient signal length or lack of bicycle-detecting signals, are just beginning to be understood and mitigated. The most problematic intersection, with five recorded collisions, was Paramount Boulevard and Whittier Boulevard. This site is the intersection of two high volume and high speed streets, one of which includes six travel/turn lanes. It is also near large shopping centers along Whittier Boulevard and lacks bicycle facilities. Passons Boulevard and Mines Avenue comes in second with four recorded collisions. The number of bicycle collisions correlates with high volumes of vehicular traffic.

The two overwhelming causes of reported incidents were "Wrong Side of Road" and "Violating Automobile Right-of-Way." These incidents indicate improper behavior by cyclists. A small minority of reported bicycle collisions resulted in severe injuries or fatalities; the majority of collisions resulted in property damage, complaints of pain or other visible injuries.

The following tables summarize the data collected to help understand trends, locations and recommendations at high collision frequency street segments and intersections.

Table 2-1: Bicycle Collisions

Year	# Bicycle Collisions	# Cyclists Injured	# Cyclists Killed
2009	21	20	1
2010	12	10	0
2011	17	17	0
2012	30	30	0
2013	18	19	0
2014	17	16	1
Total	115	112	2

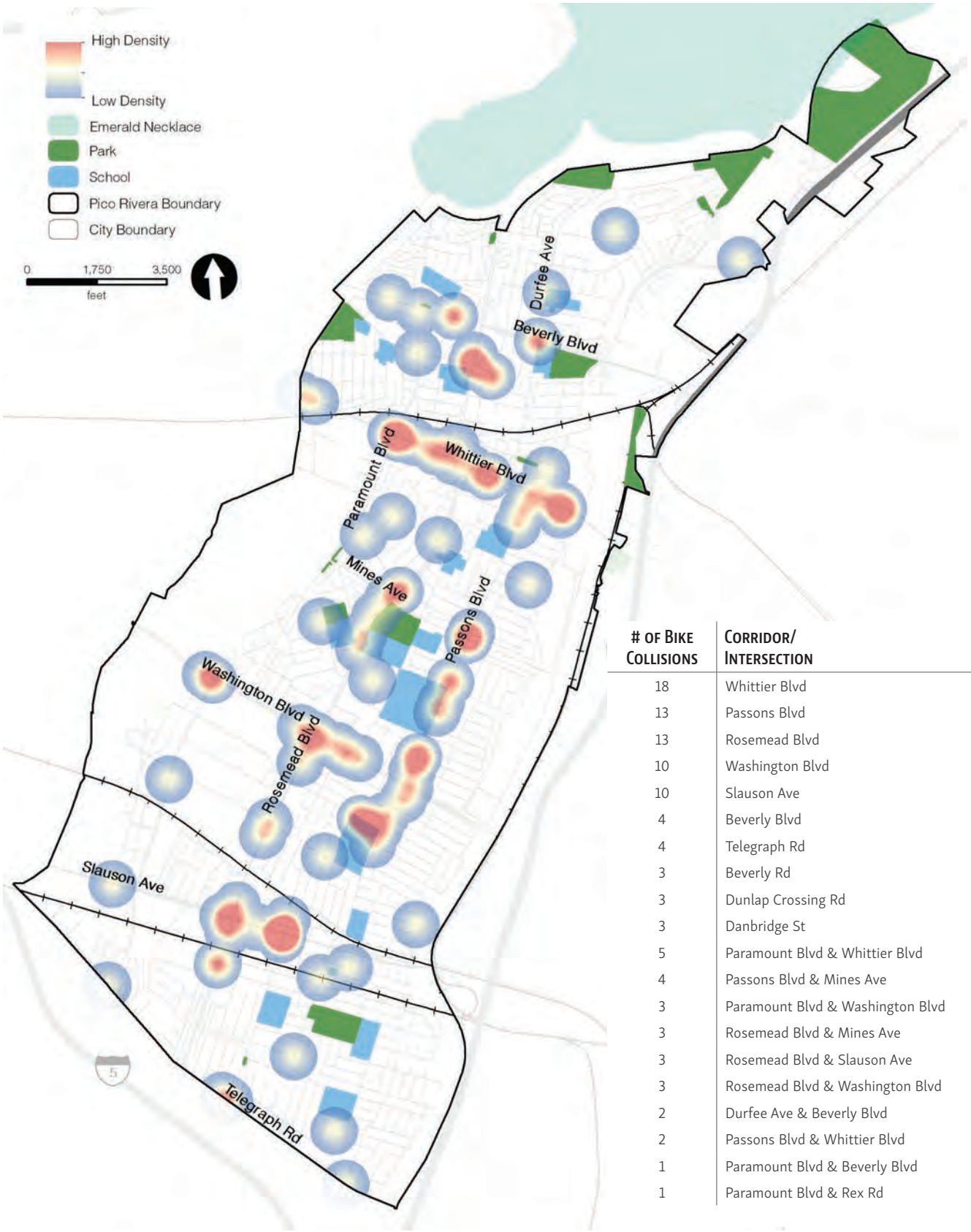
Time Period	# Bicycle Collisions
12am - 3am	2
12pm - 3pm	24
3pm - 6pm	29
6am - 9am	16
6pm - 9pm	21
9am - 12pm	17
9pm - 12am	6

Vehicle Code Violation	# Bicycle Collisions
Wrong Side of Road	41
Violating Automobile Right of Way	17
Other Hazardous Violation	13
Improper Turning	12
Traffic Signals and Signs	12

Crash Severity	# Bicycle Collisions
Fatal	2
Injury - Complaint of Pain	70
Other Visible Injury	37
Severe Injury	6

Source: SWITRS & UC Berkeley TIMS

Figure 2-2: Bicycle Collisions



# of Bike Collisions	Corridor/ Intersection
18	Whittier Blvd
13	Passons Blvd
13	Rosemead Blvd
10	Washington Blvd
10	Slauson Ave
4	Beverly Blvd
4	Telegraph Rd
3	Beverly Rd
3	Dunlap Crossing Rd
3	Danbridge St
5	Paramount Blvd & Whittier Blvd
4	Passons Blvd & Mines Ave
3	Paramount Blvd & Washington Blvd
3	Rosemead Blvd & Mines Ave
3	Rosemead Blvd & Slauson Ave
3	Rosemead Blvd & Washington Blvd
2	Durfee Ave & Beverly Blvd
2	Passons Blvd & Whittier Blvd
1	Paramount Blvd & Beverly Blvd
1	Paramount Blvd & Rex Rd

Source: ESA, 2014. SWITRS, 2009-2014.

Previously Planned Bicycle Facilities

Prior to developing the recommended bicycle projects in this plan, a thorough summary of previously identified bicycle facilities was conducted. By identifying proposed bicycle routes in the City's General Plan, the Gateway COG's Strategic Transportation Plan Active Transportation Elements, adjacent City bikeway plans, City's Safe Routes to School Plan, and other on-going plans, they formed the initial foundation for bikeways to further study.

Most of the routes that were previously planned followed the high-speed, high-volume arterials through the City, with very little connections through the neighborhoods and other activity centers. While many of these roads are still being recommended, they may require treatments such as narrowing lanes, and in some cases, road diets, where one lane in each direction is removed to accommodate bike lanes.

The recently completed Safe Routes to School Plan identified some bicycle routes near schools which helped to make connections to surrounding neighborhoods. This is very useful since routes to school have a high priority in this plan as well.

The City has plans to add additional bicycle amenities including bike repair stations and bike parking along the Rio Hondo Channel and San Gabriel River bike paths. At these locations, benches, shade, wayfinding and call systems are being recommended to improve and increase access to these bike paths.

What Kind Of Cyclist Are You?

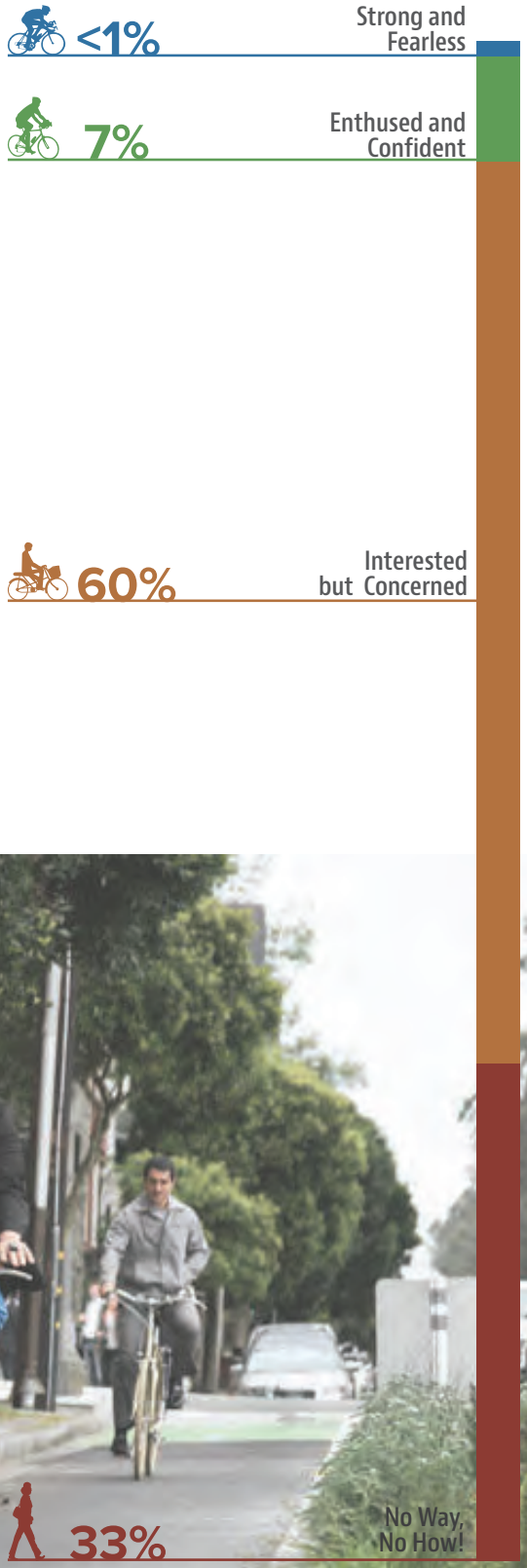
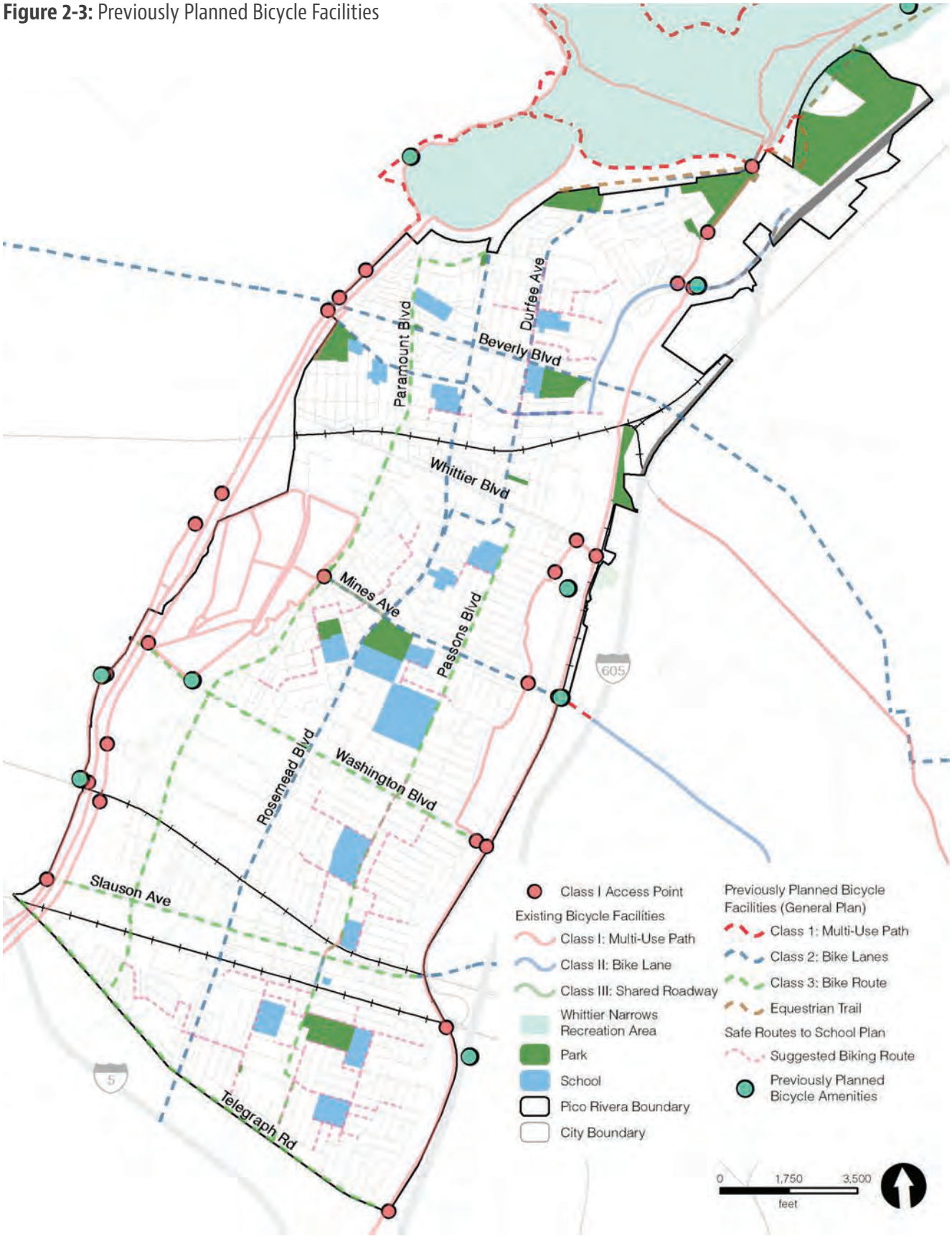


Figure 2-3: Previously Planned Bicycle Facilities



Source: ESA, 2014. Alta, 2015.

Land Use & Activity Centers

Activity centers are defined as a community's major employers, office buildings, industrial sites, government sites, retail centers, hospitals, major attractions, colleges, universities, schools or parks and open space. These centers particularly define trip origins and destinations, and generally include residential areas, employment centers, parks, schools and civic centers.

The commercial and retail activity centers can also be regarded as employment centers because, in addition to the customers that constitute typical activity center users, they also represent significant numbers of employees. The civic activity centers include the City's parks and schools, Pico Sports Arena, and the commercial centers along Whittier Boulevard, Washington Boulevard, Slauson Avenue, Telegraph Road, and sections of Rosemead Boulevard and Durfee Avenue. Rio Hondo College is the nearest college and is just outside the City limits, east of I-605.

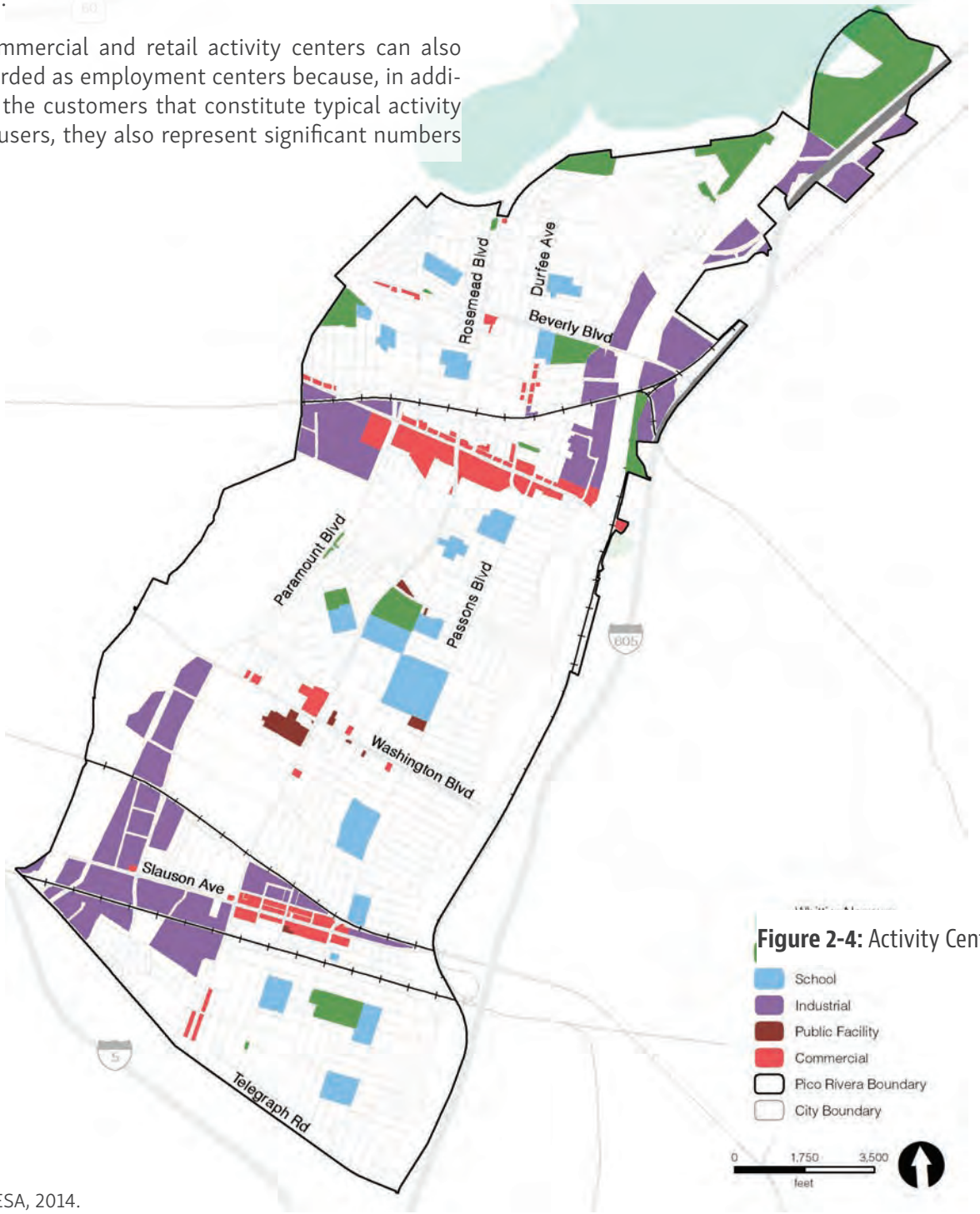
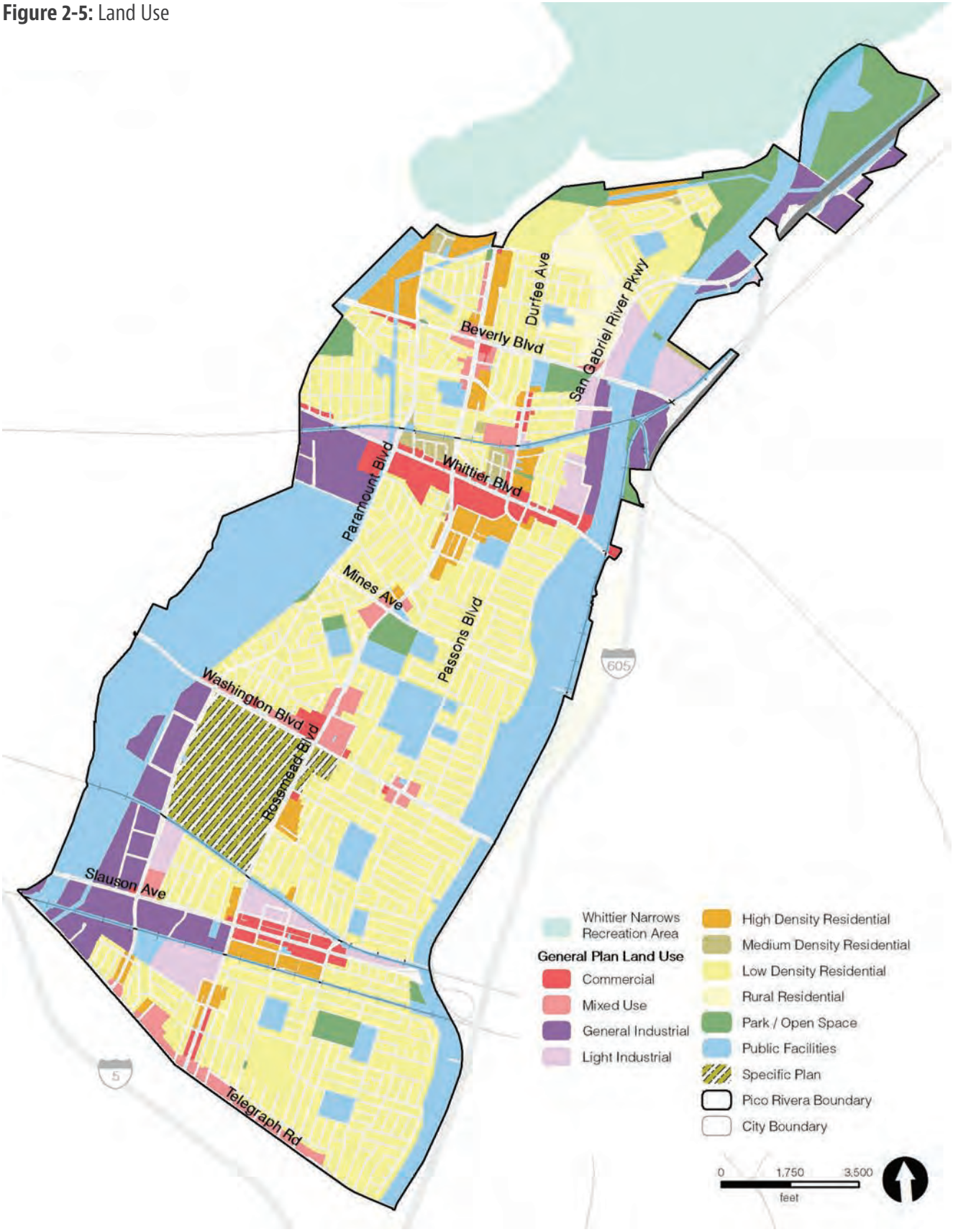


Figure 2-4: Activity Centers

Source: ESA, 2014.

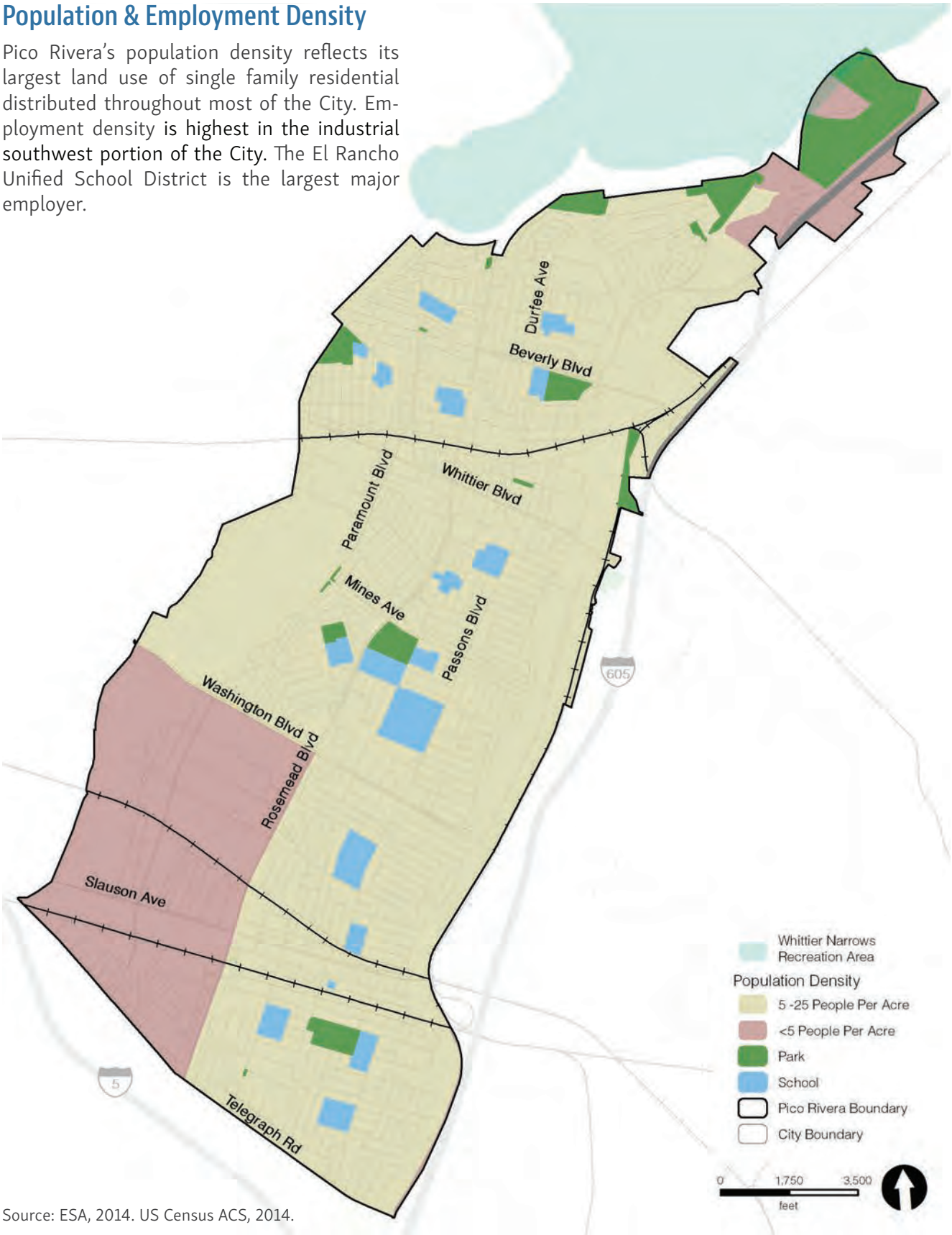
Figure 2-5: Land Use



Source: ESA, 2014.

Population & Employment Density

Pico Rivera's population density reflects its largest land use of single family residential distributed throughout most of the City. Employment density is highest in the industrial southwest portion of the City. The El Rancho Unified School District is the largest major employer.

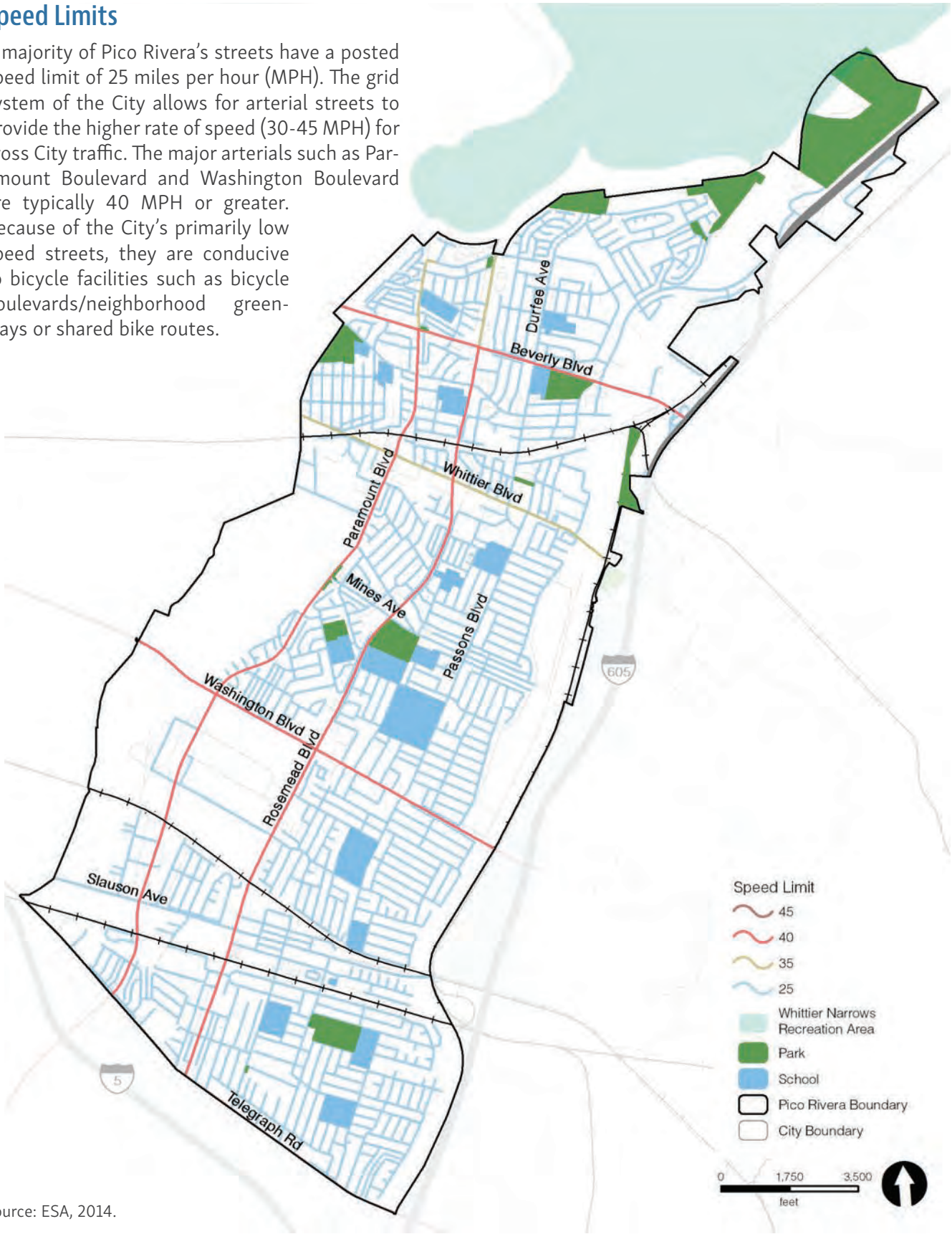


Source: ESA, 2014. US Census ACS, 2014.

Figure 2-6: Population & Employment Density

Speed Limits

A majority of Pico Rivera's streets have a posted speed limit of 25 miles per hour (MPH). The grid system of the City allows for arterial streets to provide the higher rate of speed (30-45 MPH) for cross City traffic. The major arterials such as Paramount Boulevard and Washington Boulevard are typically 40 MPH or greater. Because of the City's primarily low speed streets, they are conducive to bicycle facilities such as bicycle boulevards/neighborhood greenways or shared bike routes.

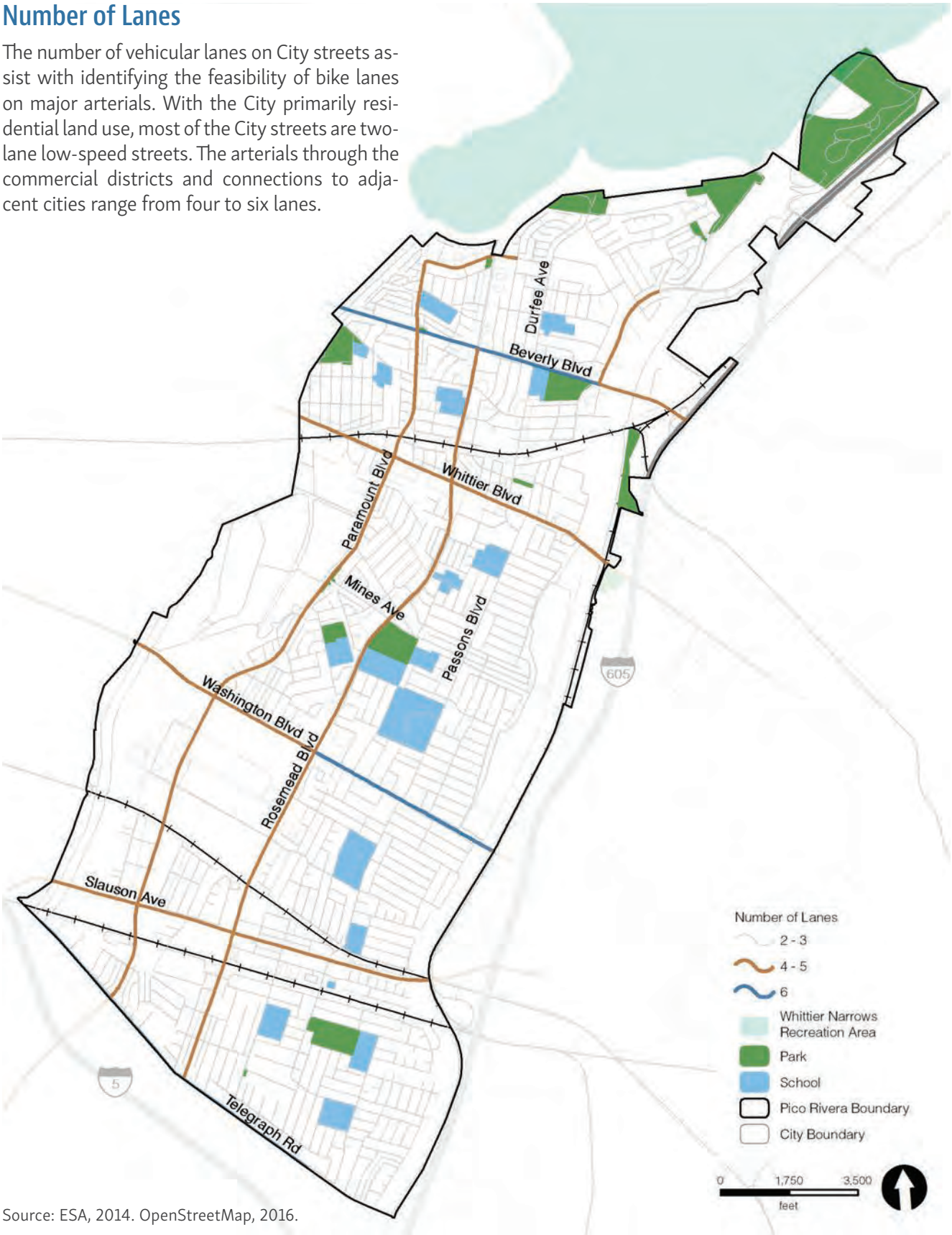


Source: ESA, 2014.

Figure 2-7: Speed Limits

Number of Lanes

The number of vehicular lanes on City streets assist with identifying the feasibility of bike lanes on major arterials. With the City primarily residential land use, most of the City streets are two-lane low-speed streets. The arterials through the commercial districts and connections to adjacent cities range from four to six lanes.

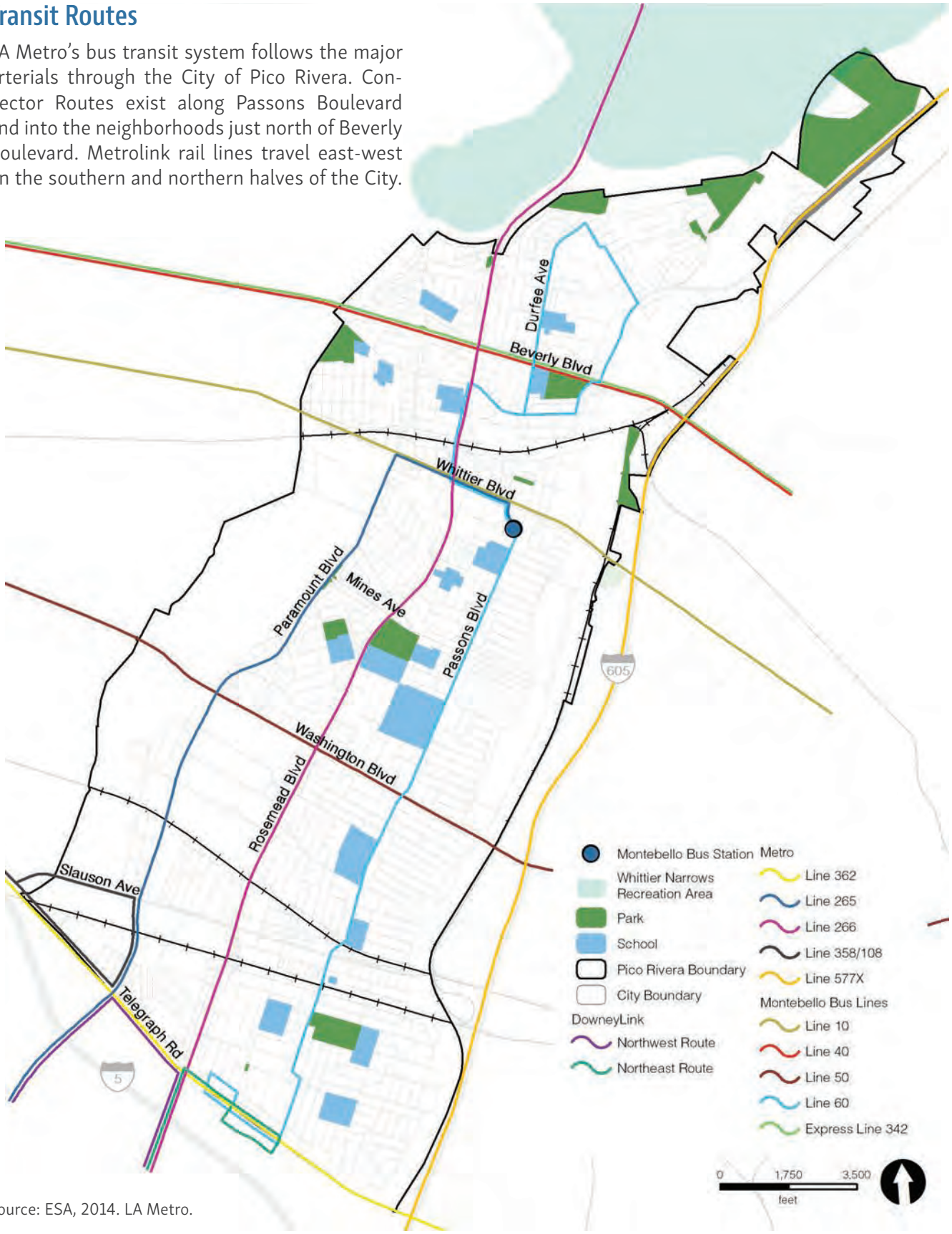


Source: ESA, 2014. OpenStreetMap, 2016.

Figure 2-8: Number of Lanes

Transit Routes

LA Metro's bus transit system follows the major arterials through the City of Pico Rivera. Connector Routes exist along Passons Boulevard and into the neighborhoods just north of Beverly Boulevard. Metrolink rail lines travel east-west on the southern and northern halves of the City.



Source: ESA, 2014. LA Metro.

Figure 2-9: Transit Routes

Equestrian Trails

There are various equestrian centers located just outside Pico Rivera that serve its large equestrian community. Currently, the City has one designated equestrian trail located northeast of Beverly Boulevard, which has a varying degree of amenities for users and equestrian accessibility. This trail extends beyond city limits to the north, where it connects with the regional multi-use paths in the Whitter Narrows Recreation Area, and may be potential to expand it east of San Gabriel River Parkway.

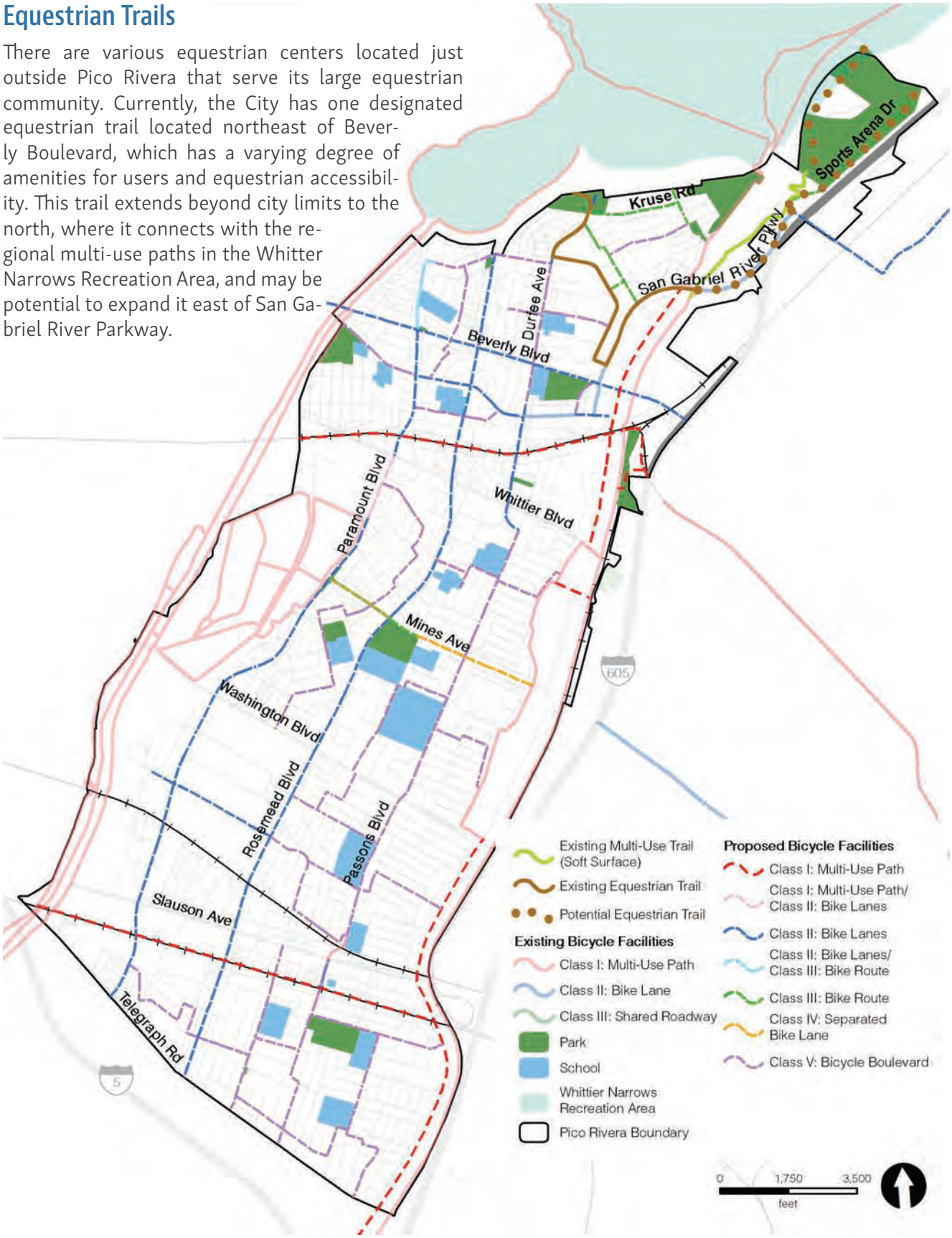


Figure 2-10: Equestrian Trails

Friendship Avenue

Equestrian Trail Along Durfee Avenue

For purposes of this Urban Greening Plan, only pedestrian and bicycle facilities and improvements are being proposed. The existing equestrian trails will be preserved to allow for equestrian accessibility in the area. However, an opportunity for a horse staging area was identified just east of Streamland Park on Kruse Road. Additionally, there is an opportunity to expand the existing equestrian trail from San Gabriel River Parkway to the Whittier Narrows Recreation Area Equestrian Center using the Parkway Trail through Sports Arena Drive and Rooks Road.w

Bicycle and Pedestrian Priority Model

There are many factors that can combine to create a situation where a street becomes an important bicycle and pedestrian connection in a community. To help facilitate and automate this analysis, a Geographic Information Systems (GIS) model was created using data of several of the factors previously mentioned. The Bicycle-Pedestrian Priority Model was developed to determine the most likely areas within the City where cyclists and pedestrians are likely to be, either currently or if improvements were made.

The model was created to first prioritize areas to visit during field work and consider for projects and later to assist with ranking project implementation. The Bicycle-Pedestrian Priority Model identifies existing and potential bicycle and pedestrian activity areas citywide utilizing existing data within an extensive GIS database.

The overall model is comprised of three basic models: the Attractor, Generator and Barrier Models. When these three interim models are combined, they create the Bicycle-Pedestrian Priority Model.

- **Attractors:** These are pedestrian and cycling-related geographic features likely to attract walking and bicycling. Examples of these features are schools, transit and shopping centers.
- **Generators:** These are demographic data indicating potential pedestrian and bicycle volume based on how many people live and work within the activity areas identified in the Attractor Model. Examples of generators are population and employment density, age density and primary mode of transportation to work.
- **Barriers:** These are features likely to discourage or detract people from walking and bicycling. These are generally physical limitations such as areas with high numbers of bicycle and pedestrian-related collisions, limited lane widths or high posted speed limits.

The model identifies the characteristics of each particular area in geographic space and assigns a numeric value for each of these characteristics. The score per area is then added to create a ranking for that particular area in geographic space. For details on the inputs and methodology of the model, see Appendix XXX: Project Prioritization and Methodology.

Benefit-Cost Ratio

The benefit-cost analysis measures the financial benefits associated with a corridor, normalized by the number of anticipated users (in turn a product of the facility type and length), and divided by rough order of magnitude construction cost estimates.

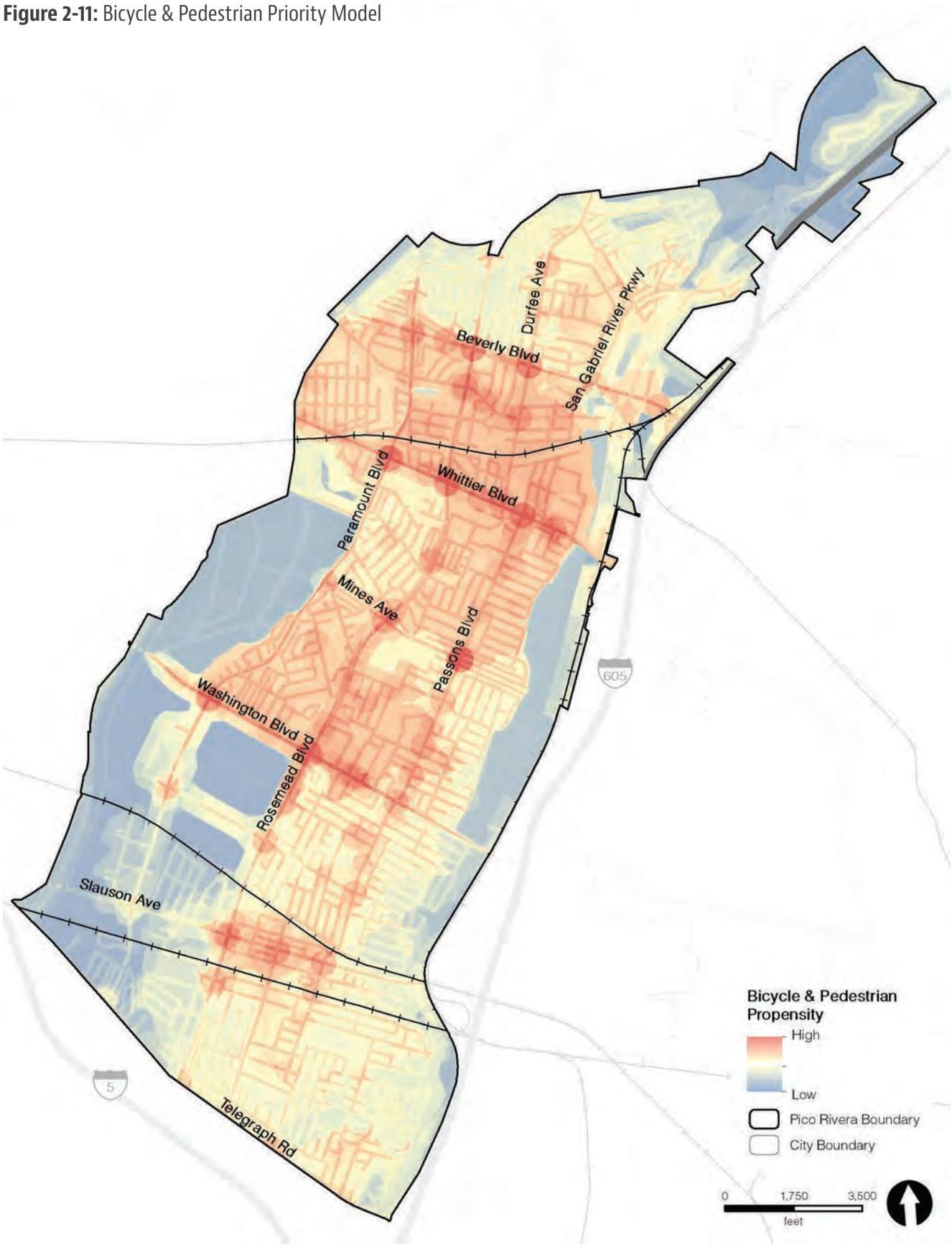
Using the *National Cooperative Highway Research Program (NCHRP) Report 552* methods, quarter, half and one mile buffers were drawn around each corridor to obtain American Community Survey (ACS), population and journey to work mode share data. An extrapolation of all bicycle trips was made and estimates of potential ridership developed based on multi-use path or bicycle lane attractiveness functions defined in the NCHRP research. Costs saving benefits were calculated using existing and estimated ridership, annual mobility, health, recreation and reduced auto use.

Bicycle Boulevard/Neighborhood Greenway Analysis

A neighborhood greenway is a bicycle priority route, generally located on calm residential streets, parallel to busier arterials and collectors. They are used by cyclists seeking low-stress experiences to travel corridors and access destinations. Candidate neighborhood greenway streets may vary in the amount of traffic calming (i.e. speed and volume reduction) and other interventions required, but are alike in requiring comprehensive wayfinding treatments.

Using GIS, a network analysis was performed to identify a system of suitable neighborhood greenways based on project-specific inputs and parameters. Parameters included 'local' street designation, vehicle traffic speeds, segment length and proximity to major crossings. Constraining results based on length helped guide selection toward the shortest possible routes. Parks, schools and commercial parcels were integrated into the network as origins and destinations. Knowledge of best practices was used to both eliminate disjointed segments and incorporate segments that appeared to be strong candidates, but which were excluded by the analysis due to the strict parameters. Results were incorporated as proposed projects.

Figure 2-11: Bicycle & Pedestrian Priority Model



Source: ESA, 2014. SWITRS, 2009-2014. US Census ACS, 2014.

Figure 2-12: Neighborhood Greenways

Source: ESA, 2014. KTU+A, 2016.

Recommended Bicycle Facilities

A list of recommended bicycle facilities was developed with the goal of improving connectivity and generally expanding the dedicated bicycle network. Existing conditions, field observations, and public input were all considered.

Bicycle Facility Designations

Each of the proposed bicycle routes was designated one of the following facility types:

- Multi-Use Path (Class 1)
- Bike Lane (Class 2)
- Bicycle Route (Class 3)
- Separated Bikeway (Class 4)
- Bicycle Boulevard/Neighborhood Greenway

While recommendations are often assessed in silos, such as bicycle lanes only compared to each other, all facilities recommended in this plan were assessed against the same criteria. This was done intentionally to better portray the trade-offs, particularly bicycling comfort levels between the different facility types. The criteria used to determine the appropriate facility type for each segment is described in the following sections.

Multi-use Paths (Class 1)

The typical width and horizontal clearance were measured using high-resolution aerial photos for segments where there appeared to be constraining factors. This data collection was then supplemented with on-site field work. The minimum width for a multi-use path was considered to be 10 feet for this plan, with at least two feet of clearance from obstructions on each side.

Typical costs per mile can vary a great deal due to potential right-of-way acquisition, bridges and other possible major expenses such as grading and facility width.

Bicycle Lanes (Class 2) and Cycle Tracks (Class 4)

Feasibility was determined by comparing the actual curb-to-curb roadway width with the minimum width necessary to support the current number of lanes plus five-foot bicycle lanes or eight-foot cycle tracks in each direction. The eight-foot cycle tracks are one-way and include a five-foot bicycle lane with a three-foot buffer for vertical separation elements. Painted medians and two-way left turn lanes were considered to be through/turn lanes in most cases. Raised medians and curb lines were considered to be static. These analyses assume that no physical construction or demolition would occur.

Through this comparison, it was determined whether bicycle lanes could be installed along a roadway segment without decreasing the number of lanes or eliminating any parking. The analysis typically broke proposed segments into smaller segments depending on changes in layout or physical characteristics.

Bicycle Routes (Class 3)

Bicycle routes are recommended as additional gap closures and connections where traffic speed, vehicular volumes and roadway geometry allow cyclists to safely and comfortably share the road with vehicles. Bicycle routes were only recommended where existing traffic volumes and speeds were low. In all cases, the gap closures are short segments that schools, parks and other attractors in low volume, low speed residential streets. Best practices recommend traffic calming measures to keep speeds down.

Bicycle Route Sharrow Marking

Shared Lane Markings or "Sharrows" can be installed along these routes with a maximum speed limit installation of 35 MPH. However, other considerations such as adjacent land use, on-street parking, connecting bicycle facilities and traffic volumes should be considering factors. While speed limit is a primary criterion, installation of Sharrows on streets above 25 MPH have not proven to be effective unless education and encouragement campaigns are conducted with the installation. While the presence of Sharrows does provide a visual cue that bicyclists can take the lane, bicyclists still will ride where they feel most comfortable, away from the center of lane, where the Sharrows are typically located. On streets that have lower speed limits and/ or have traffic calming features, Sharrows would be more appropriate and can be converted to bicycle boulevards.

Bicycle Boulevards/Neighborhood Greenways

Feasibility was assessed primarily on the basis of minimal out-of-direction travel and the "stress level" of existing streets. Calm, neighborhood streets that parallel busier arterial streets are natural bicycle boulevard candidates. Since it is assumed that all bicycle boulevards would be considered Class 3 facilities, roadway width was only studied to ensure it was sufficiently narrow, to encourage the safe and comfortable sharing of the roadway.

Bicycle boulevards, sometimes called "Neighborhood Greenways," require additional planning and engineering prior to implementation. Impacts to vehicular traffic flow, bicycle and pedestrian safety improvements at intersections and crossings, right-of-way acquisition, traffic calming, signage and utilities are examples of associated items that would require in-depth analysis. Education and enforcement of these facilities is also recommended to assist the community in correctly utilizing them following implementation.

Many of this plan's proposed bicycle projects fall into this category since a majority of the City's streets are local residential streets and connect to schools and parks. The traffic calming enhancements to these streets also help improve the pedestrian environment by reducing vehicular speeds, reducing crossing distances, if curb extensions are installed and can increase property values.

Project Feasibility & Prioritization

The recommended bicycle projects are a combination of previously planned (but not yet implemented) and newly recommended bicycle facilities, all subjected to the same evaluation criteria.

The resulting map of recommended bicycle projects is presented in Figure 2-13 with supplemental information provided in Table 2-2. Items included in the table include project rank (1 is the highest priority), project length, project extent, feasibility values, and additional notes (constraints, best practices and the need for inter-agency coordination). The feasibility and ranking categories are the most useful for implementation purposes.

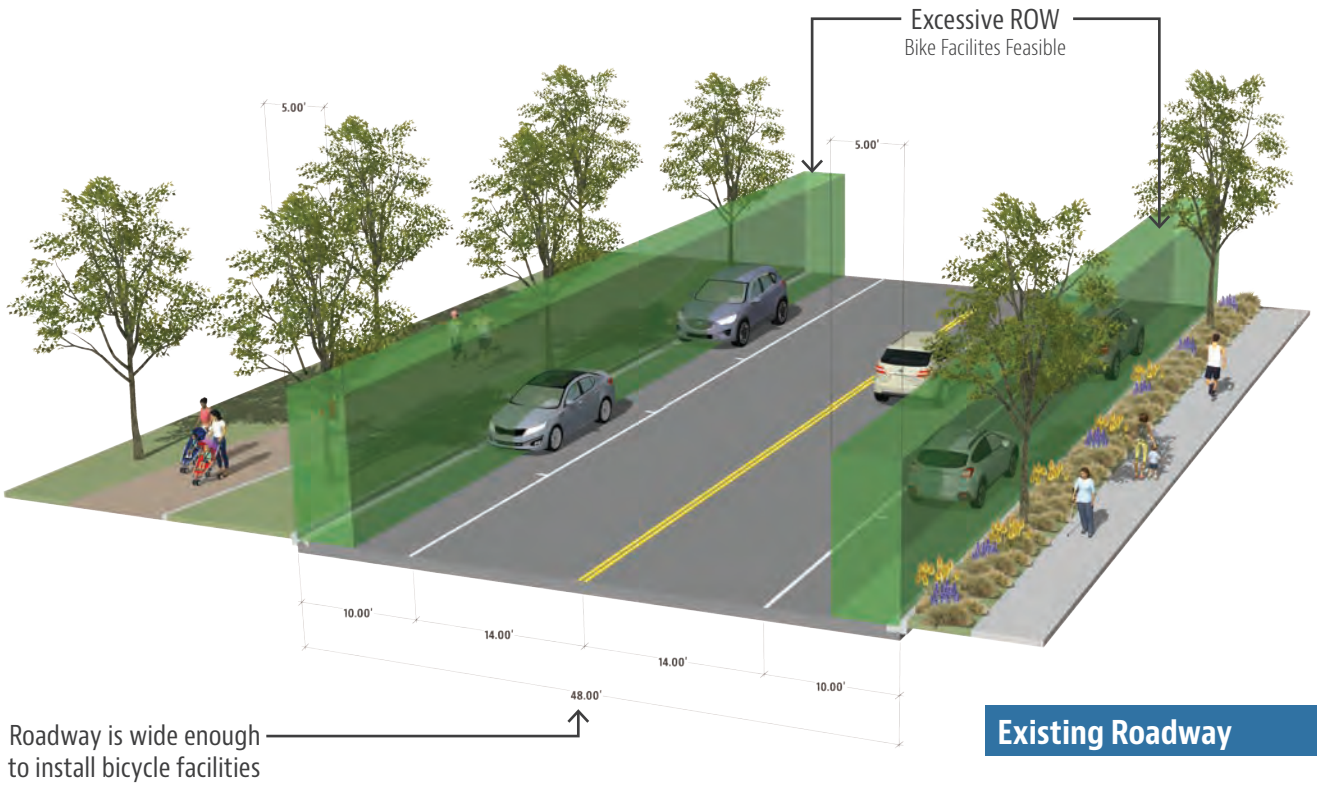
Feasibility

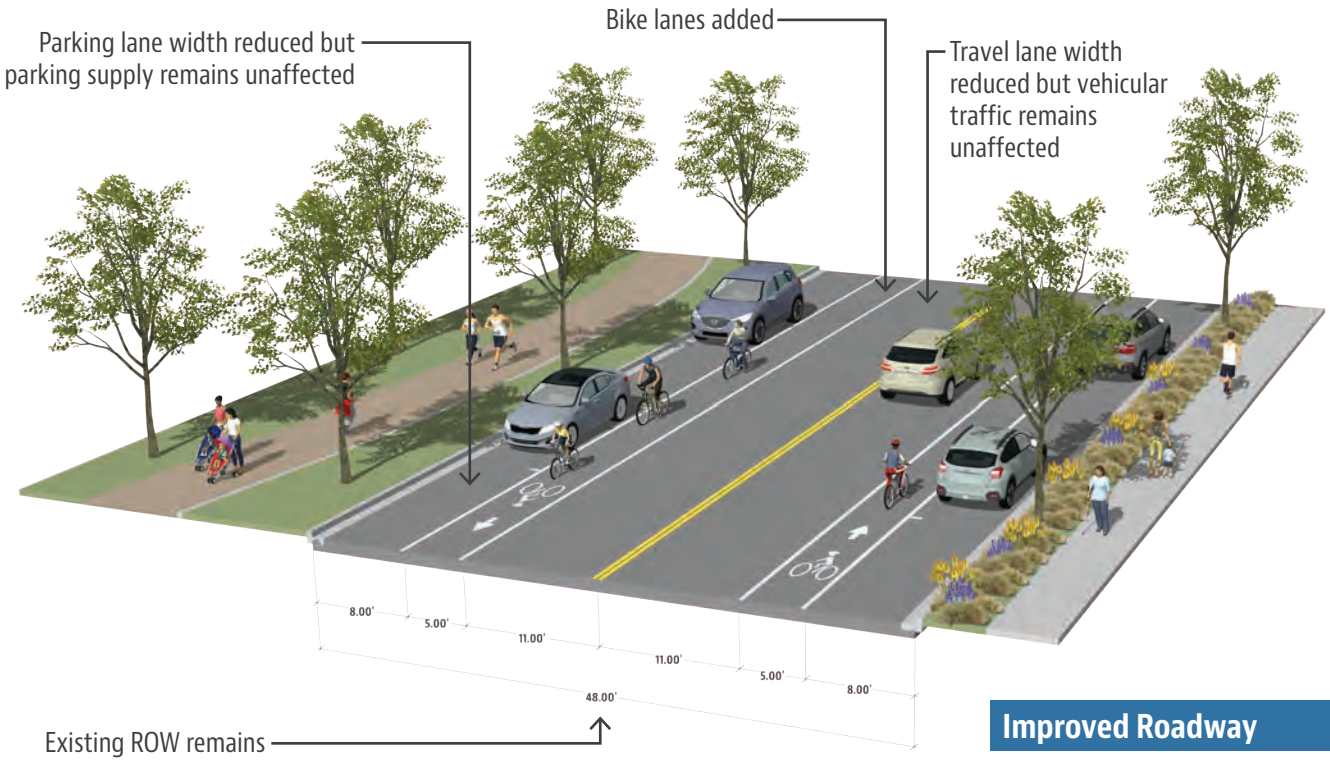
Each of the recommended bike routes were assessed for feasibility and divided into one of three categories:

6	Feasible to Implement with Existing ROW (≥0)
-3	Infeasible to Implement with Existing ROW (≤-1)
-1	Potentially Feasible (Within Four Feet of Necessary Minimum ROW) (-2 to -1)

The "Delta" values shown above provide an indication of available right-of-way (ROW) to install a given facility type while preserving vehicle travel lanes, turn lanes, medians and parking. A positive Delta value, color-coded green, indicates a ROW surplus, as shown in Figure 2-12. A negative Delta value, color-coded red, indicates a ROW deficit, which means that a road or lane diet may be necessary in order to fit bicycle facilities. A neutral Delta value, color-coded blue, indicates sufficient ROW. This value helps to determine the appropriate bicycle facility for each street.

Figure 2-13: Project Feasibility





Bicycle Facility Prioritization

The projects in this chapter include a combination of previously planned and newly recommended bicycle facilities. As the previously planned projects have yet to be implemented, prioritizing them along with the recommended projects subjects all of them to the same priority and implementation criteria. Project prioritization is a data-driven methodology supported as much as possible by objective information. As part of standard prioritization methodology, selected criteria are differentially weighted relative to each other, primarily to take advantage of local knowledge to help address specific local issues, conditions and values. For example, collisions were given higher consideration and weighting than city attractions such as retail and employment centers, as reduction in collisions is a high priority for Pico Rivera.

The following section describes the twelve criteria determined to be most useful in prioritizing recommended projects in Pico Rivera. The values for each criterion were generated using GIS software and various geoprocessing functions. Future facility ranking and implementation can be fine-tuned and adjusted accordingly based on any changing circumstances, and prioritized projects can be re-ranked to fit future funding cycles. The resulting priority of each project is reflected in the 'Project Number' in Table 2-2.

Attractors

This criterion addresses points of interest and destinations that people would be likely to visit, or also called attractions. The number of parks, public facilities, bus stops and retail facilities within 500 feet (or average block length) of the identified project alignment are totaled and those with a higher point value receive a higher overall score.

Schools

This criterion addresses schools along the project corridor. Schools within quarter-mile of the identified project alignment are counted, then totaled and those with a higher point value receive a higher overall score.

Public Transportation to Work

This criterion looks at the number of people who use public transit to get to work. By improving access to transit, projects may solve the first and last mile issues that may hinder increased transit use.

Under 14 Years Old

This criterion looks at the number of children under the age of 14. To encourage children to walk to school good facilities need to be put in use by knowing where large population of children live is important in this prioritization.

Walk to Work

This criterion looks at the number of people who walk to work. Neighborhoods with higher populations of people that walk to work, or walk to transit, should get higher priority for improvement, especially if they lack the necessary facilities. It can also be said, that neighborhoods that have very little walking activity can be prioritized to increase pedestrian activity.

Bike to Work

This criterion looks at the number of people who bike to work. Neighborhoods with higher populations of people that bike to work, or bike to transit, should get higher priority for improvement, especially if they lack the necessary facilities. It can also be said, that neighborhoods that have very little biking activity can be prioritized to increase cycling activity.

Households Without Vehicles

This criterion looks at the number of households with no vehicles. To people who have no car and rely on public transportation, bicycles or walking to get to work and other destinations it is important and to provide safe means of using these alternate transportations types.

Reported Collisions

This criterion addresses safety through five years of collision data, normalized by collisions per mile. Unlike automobile collisions, the lower volume of bike crashes and lack of robust, long term exposure data (i.e. number of bicyclists using each corridor) means that this dataset is not as statistically sound. However, it is still commonly reported and easily understood. Dataset is provided by the CA Statewide Integrated Traffic Records System (SWITRS)

2010 Population Density (Residents per acre)

This criterion looks at the population density around project corridors. Bicycle and pedestrian facilities are more efficient and work best in highly populated areas where there are people to use the facilities.

2010 Employment Density (Employed per 16+ Residents)

This criterion looks at the employment density around project corridors. Pedestrian facilities are more efficient when they help transport people to work either directly or through other means of transportation such as transit.

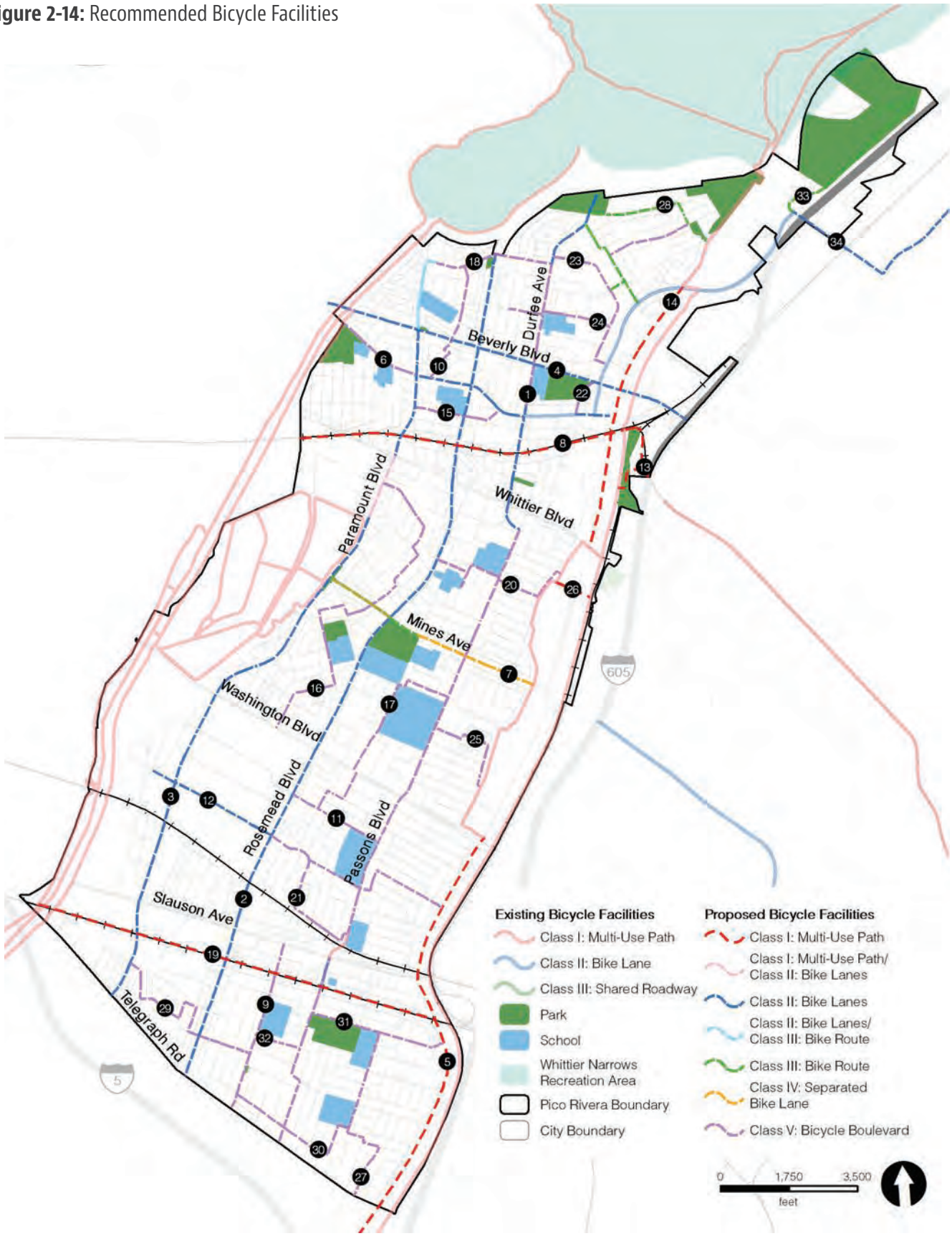
Economic Efficiency

This criterion measures the financial benefits associated with each corridor, normalized by the number of anticipated users, and divided by the rough order construction cost estimates. Using NCHRP Report 552 methods, 1/4, ½ and 1 mile buffers were drawn around each corridor to obtain American Community Survey (ACS) population and journey to work mode share data. An extrapolation of all bicycle trips was made and estimates of potential ridership developed based on Class 1 path or Class 2 bicycle lane attractiveness functions defined in the NCHRP research calculated. Using the existing and estimated ridership, annual mobility, health, recreation, and reduced auto use cost saving benefits were calculated.

Bicycle-Pedestrian Propensity Model

This criterion looks at the routes total model score from the Bicycle-Pedestrian Suitability Model and is then divided by the length of that project. The average score per square feet is then calculated to normalize the score for all facilities. This allows projects with smaller footprints to have the same scoring parameters as larger projects.

Figure 2-14: Recommended Bicycle Facilities



Source: ESA, 2014. KTU+A, 2016.

Table 2-2: Recommended Bicycle Facilities

Project Number	Recommended Bicycle Facility	Length (Miles)	Street Name	From Street	To Street	Project Feasibility	Notes
1	Bike Lanes	4.85	Durfee Ave	City Limits	Class I	10	Proposed Class II facility in General Plan. Existing equestrian facilities between bike path and Friendship Ave.
				Class I	Kruse Rd	10	
				Kruse Rd	Friendship Ave	0	
				Friendship Ave	Gallatin Rd	0	
	Bicycle Boulevard			Gallatin Rd	Harrell St	-10	SRTS Suggested Biking Route; Proposed Class II facility in General Plan; add traffic calming elements
				Harrell St		-2	
				Harrell St	Beverly Bl	-10	
				Beverly Blvd	Bartolo Ave	-2	
	Bike Lanes			Bartolo Ave	Beverly Rd	12	SRTS Suggested Biking Route; Proposed Class II facility in General Plan; add buffers where available
				Beverly Rd	Driveway	12	Proposed Class II facility in General Plan; add buffers as available
				Driveway	Verner St	11	
			Jackson St	Verner St	Passons Blvd	-2	
	Bicycle Boulevard		Passons Blvd	Jackson St	Loch Lomond Dr	-10	Proposed Class III facility in General Plan; Proposed Class II facility in RTP; add traffic calming elements
				Loch Lomond Dr	Balfour St	-2	
				Driveway	Marjorie St	-10	
				Marjorie St	Haney St	5	
				Haney St	Driveway	0	
				Homebrook St	Wampler St	-2	
				Wampler St	Goodbee St	-11	
				Goodbee St	Washington Blvd	-4	SRTS Suggested Biking Route; Proposed Class III facility in General Plan; Proposed Class II facility in RTP; add traffic calming elements
				Washington Blvd	Lochinvar Dr	-9	
				Lochinvar Dr	Nan St	-18	
				Nan St	Bert St	-11	
				Bert St	Canford St	-15	
				Canford St	Danbridge St	-8	
				Danbridge St	Rex Rd	-10	
				Rex Rd	Rivera Rd	-10	Proposed Class III facility in General Plan; Proposed Class II facility in RTP; Existing Multi-use path between Rivera Rd and Slauson Ave, add traffic calming elements
				Slauson Ave	Burke St	8	
				Burke St	Midblock	-7	
				Midblock	Myron St	-8	
				Myron St	Aero Dr	-8	
				Aero Dr	Shade Ln	-4	

Table 2-2: Recommended Bicycle Facilities (continued)

Project Number	Recommended Bicycle Facility	Length (Miles)	Street Name	From Street	To Street	Project Feasibility	Notes
1	Bicycle Boulevard	4.85 (Cont.)	Passons Blvd	Shade Ln	Shade Ln	19	SRTS Suggested Biking Route; Proposed Class III facility in General Plan; Proposed Class II facility in RTP; add traffic calming elements
				Shade Ln	La Docena Ln	-9	Proposed Class III facility in General Plan; Proposed Class II facility in RTP; add traffic calming elements
				La Docena Ln	Charlesworth	-13	
				Charlesworth Rd	Buhman	-9	
				Sunglow St	Claymore St	-9	SRTS Suggested Biking Route; Proposed Class III facility in General Plan; Proposed Class II facility in RTP; add traffic calming elements
				Claymore St	Telegraph Rd	-13	Proposed Class III facility in General Plan; Proposed Class II facility in RTP; add traffic calming elements
2	Bike Lanes	4.97	Rosemead Blvd	City Limits	Gallatin Rd	32	Proposed Class II facility in General Plan; add buffers where available
				Gallatin Rd	Beverly Blvd	18	
				Beverly Blvd	Beverly Rd	18	
				Beverly Rd	Olympic Blvd	15	
				Olympic Blvd	Speedway	-16	
				Speedway	Whittier Blvd	12	
				Whittier Blvd	Havenwood St	11	
				Havenwood St	Mines Ave	10	
				Mines Ave	Balfour St	11	
				Balfour St	Coffman Pico Rd	12	
				Coffman Pico Rd	Carron Dr	6	
				Carron Dr	Washington Blvd	4	
				Washington Blvd	Danbridge St	18	
				Danbridge St	Rex Rd	6	
				Rex Rd	Bermudez St	7	
				Bermudez St	Slauson Ave	6	
				Slauson Ave	Burke St	19	
				Burke St	Aero Dr	6	
				Aero Dr	Shade Ln	-5	
				Shade Ln	Maxine St	-3	
				Maxine St	Terradell St	-8	
				Terradell St	Alley	-7	
				Alley	Telegraph Rd	6	
				Telegraph Rd	City Limits	13	

Table 2-2: Recommended Bicycle Facilities (continued)

Project Number	Recommended Bicycle Facility	Length (Miles)	Street Name	From Street	To Street	Project Feasibility	Notes
3	Bike Lane or Bike Route	4.20	Gallatin Rd	Paramount Blvd	Calico Ave	-8	Proposed Class III facility in General Plan; remove on-street parking for bike lanes or reduce speeds to 35MPH or less to install shared-lane marking
			Paramount Blvd	Gallatin Rd	Isora St	-8	
				Isora St	Cope Dr	-2	
				Cope Dr	Ibsen St	-2	
				Ibsen St	Colmere Ave	-2	
				Colmere Ave	Beverly Blvd	-2	
	Bike Lanes			Beverly Blvd	Beverly Park Pl	1	Proposed Class III facility in General Plan; add buffers to bike lanes where available space exists
				Beverly Park Pl	Elba St	8	
				Elba St	Olympic Blvd	8	
				Olympic Blvd	Lexington Rd	17	
				Lexington Rd	Whittier Blvd	11	
	Multi-use Path or Bike Lanes			Whittier Blvd	Holbrook St	5	Proposed Class III facility in General Plan, Proposed Class I facility in RTP; add buffers to bike lanes where available space exists
	Multi-use Path or Bike Lanes			Holbrook St	Fishman Rd	-13	Proposed Class III facility in General Plan, Proposed Class I facility in RTP; remove on- street parking for bike lanes or reduce speeds to 35MPH or less to install shared-lane marking
				Fishman Rd	Loch Lomond Dr	-3	
	Bike Lanes			Loch Lomond Dr	Rosehedge Dr	-5	Proposed Class III facility in General Plan; add buffers to bike lanes where available space exists
				Rosehedge Dr	Dunlap Crossing Rd	6	
				Dunlap Crossing Rd	Unser St	-1	
				Unser St	Haney St	0	
				Haney St	Glendola Dr	4	
				Glendola Dr	Goodbee St	8	
				Goodbee St	Washington	-7	
				Washington Blvd		-2	
				Canford St	Parking	3	
				Parking Lot	Rex Rd	-1	
				Rex Rd	Warvale St	8	
				Warvale St	Trojan St	8	
				Trojan St	Slauson Ave	16	
				Slauson Ave	Driveway	2	
				Driveway	Maxine St	9	
				Maxine St	Telegraph Rd	2	
				Telegraph Rd	Telegraph Rd	8	

Table 2-2: Recommended Bicycle Facilities (continued)

Project Number	Recommended Bicycle Facility	Length (Miles)	Street Name	From Street	To Street	Project Feasibility	Notes
4	Bike Lanes	1.84	Beverly Blvd	City Limits	Class I	3	Proposed Class II facility in General Plan; add buffers as available
				Class I	Paramount Blvd	3	
				Paramount Blvd	Tobias Ave	-7	Proposed Class II facility in General Plan; Road diet needed for bike lanes or reduce raised median width
				Tobias Ave	City Limits	-2	Proposed Class II facility in General Plan; Proposed Class III facility in RTP; Road diet needed for bike lanes
5	Multi-use path	2.17	Proposed Facility	Pico Rivera Trail	City Limits	-10	Potential for adjacent equestrian/multi-use trail if bridge is retrofitted.
6	Bicycle Boulevard	1.19	Beverly Rd	Class I	Paramount Blvd	-4	Proposed Class II facility in General Plan & RTP; add traffic calming elements
	Bike Lanes			Paramount Blvd	Olympic Way	6	Proposed Class II facility in General Plan & RTP; add buffers where available; opportunity for road reconfiguration/open spacce/ stormwater infiltration at Olympic Way/ Beverly Road intersection
				Olympic Way	Deland Ave	2	
				Deland Ave	Durfee Ave	2	SRTS Suggested Biking Route; Proposed Class II facility in General Plan & RTP; add buffers where available
				Tobias Ave	City Limits	0	SRTS Suggested Biking Route; Proposed Class II facility in General Plan; add buffers where available
7	Separated Bike Lane/ Cyle Track	1.48	Mines Ave	Paramount Blvd	Calico Ave	20	SRTS Connection; Proposed Class II facility in General Plan; Proposed Class I facility in RTP; existing Class III bike route, reconfigure parking to accommodate separated bike lanes; stormwater/open space opportunities
				Calico Ave	Manzanar Ave	20	SRTS Suggested Biking Route; Proposed Class II facility in General Plan; Proposed Class I facility in RTP; existing Class III bike route, reconfigure parking to accommodate separated bike lanes; stormwater/open space opportunities
				Manzanar Ave	Rosemead Blvd	8	
	Bike Route			Rosemead Blvd	Lindsey Ave	-2	Proposed Class II facility in General Plan; Proposed Class I facility in RTP; reconfigure parking to accommodate separated bike lanes; stormwater/open space opportunities
	Separated Bike Lane/ Cyle Track			Lindsey Ave	Passons Blvd	20	Proposed Class II facility in General Plan; reconfigure parking to accommodate separated bike lanes; stormwater/open space opportunities
				Passons Blvd	Rimbank Ave	27	
	Multi-use path		Dunlap Crossing Rd	Midblock	Midblock	-10	Proposed Mines Street Bridge in General Plan

Table 2-2: Recommended Bicycle Facilities (continued)

Project Number	Recommended Bicycle Facility	Length (Miles)	Street Name	From Street	To Street	Project Feasibility	Notes
8	Multi-use path	1.59	Existing Rail Corridor	San Gabriel River Trail	Van Norman Rd	-10	Existing railroad corridor - additional feasibility analysis needed.
9	Bicycle Boulevard	0.84	Serapis Ave	Slauson Ave	Alley	1	Add traffic calming elements
				Alley	Burke St	1	
				Burke St	Myron St	-8	
				Myron St	Aero Dr	-12	SRTS Suggested Biking Route; Add traffic calming elements
				Aero Dr	La Docena Ln	-1	
				La Docena Ln	Terradell St	-15	
				Terradell St	Sunglow St	-1	
				Sunglow St	Claymore St	-6	
				Claymore St	Alley	-7	Add traffic calming elements
				Alley	Telegraph Rd	3	
10	Bicycle Boulevard	1.08	Acacia Ave	Gallatin Rd	Las Posas St	-10	Add traffic calming elements
			Acacia Ave	Las Posas St	Tilmont Ave	-14	
			Acacia Ave	Tilmont Ave	Beverly Blvd	-12	
			Acacia Ave	Beverly Blvd	Arma St	-13	
			Arma St	Acacia Ave	Los Toros Ave	-18	
			Los Toros Ave	Arma St	Beverly Rd	-23	
11	Bicycle Boulevard	0.47	Danbridge St	Rosemead Blvd	Blossom Ct	-13	Add traffic calming elements
				Blossom Ct	Bequette St	-13	
				Bequette St		-13	SRTS Suggested Biking Route; Add traffic calming elements
				Cravell Ave	Loch Alene	-13	
				Loch Alene Ave	Citronell Ave	-13	
				Citronell Ave	Kilgarry Ave	-13	
				Kilgarry Ave	Passons Blvd	-13	
12	Bike Lanes	1.69	Rex Rd	Crider Ave	Paramount Blvd	11	Add buffers to bike lanes where available space exists. Possible future connect to Rio Hondo Bike Path network
				Paramount Blvd	Driveway	12	
				Driveway	Rosemead Blvd	32	
	Bicycle Boulevard		Eglise Ave	Rosemead Blvd	Cravell Ave	-13	Add traffic calming elements
				Cravell Ave	Eglise Ave	-13	SRTS Suggested Biking Route; Add traffic calming elements
				Rex Rd	Lundahl Dr	-13	
			Lundahl Dr	Eglise Ave	Pico Vista Rd	-13	Add traffic calming elements
			Connection	Pico Vista Rd	Dead End	-10	Gate would need to be opened to provide access to Class I path

Table 2-2: Recommended Bicycle Facilities (continued)

Project Number	Recommended Bicycle Facility	Length (Miles)	Street Name	From Street	To Street	Project Feasibility	Notes
13	Multi-Use Path	0.18	Holbrook St Multi-Use Bridge	San Gabriel River Trail West	San Gabriel River Trail East	0	Mulit-use bridge that was originally part of the Mines Ave bike lane project. Connects Pico Rivera with Whittier through the San Gabriel River Trails. Potential for adjacent equestrian/multi-use trail.
14	Multi-Use Path	1.40	Proposed Facility	Whittier Blvd	San Gabriel River Pkwy	0	Continue the San Gabriel River Trail on the west side of the channel. Potential for adjacent equestrian/multi-use trail.
15	Bicycle Boulevard	0.44	Olympic Blvd	Paramount Blvd	Acacia Ave	-13	Add traffic calming elements
				Acacia Ave	Rosemead Blvd	-17	SRTS Suggested Biking Route; Add traffic calming elements
				Rosemead Blvd	Walnut Ave	-10	
				Walnut Ave	Olympic Way	-10	Add traffic calming elements
				Olympic Blvd	Beverly Rd	18	Urban open space/stromwater opportunity area; Add traffic calming elements
16	Bicycle Boulevard	0.84	Holbrook St	Paramount Blvd	Bridgeview Ave	-13	Add traffic calming elements
			Bridgeview Ave	Bridgeview Ave	Maris Ave	-13	SRTS Suggested Biking Route; Add traffic calming elements
			Maris Ave	Bexley Dr	Manzanar Ave	-19	
			Manzanar Ave	Maris Ave	Coolhurst Dr	-13	
			Coolhurst Dr	Manzanar Ave	Maris Ave	-13	
			Maris Ave	Coolhurst Dr	Coffman Pico Rd	-13	
			Coffman Pico Rd	Maris Ave	Winodee Dr	-13	
			Coffman Pico Rd	Winodee Dr	Crossway Dr	-13	Add traffic calming elements
			Crossway Dr	Coffman Pico Rd	Carron Dr	-21	
			Crossway Dr	Carron Dr	Washington Blvd	-13	
17	Bicycle Boulevard	1.08	Balfour St	Passons Blvd	Loch Alene Ave	-14	SRTS Suggested Biking Route; Add traffic calming elements
			Loch Alene Ave	Balfour St	Nan St	-14	Add traffic calming elements
			Nan St	Loch Alene Ave	Bequette St	-14	
			Bequette St	Nan St	Nan St	-14	
			Bequette St	Nan St	Danbridge St	-14	SRTS Suggested Biking Route; Add traffic calming elements

Table 2-2: Recommended Bicycle Facilities (continued)

Project Number	Recommended Bicycle Facility	Length (Miles)	Street Name	From Street	To Street	Project Feasibility	Notes
18	Bicycle Boulevard	0.58	Gallatin Rd	Calico Ave	Acacia Ave	-8	Proposed Class III facility in General Plan; Add traffic calming elements
				Acacia Ave	Rosemead Blvd	-7	
				Rosemead Blvd	Berkshire Rd	-6	
				Berkshire Rd	Durfee Ave	8	Add traffic calming elements
19	Multi-Use Path	2.00	Proposed Facility	Rio Hondo River Trail	Dead End	-10	Existing railroad corridor - additional feasibility analysis needed.
20	Bicycle Boulevard	0.82	Havenwood St	Manzanar Ave	Lindsey Ave	-5	Add traffic calming elements
				Alley	Citronell Ave	-5	SRTS Suggested Biking Route; Add traffic calming elements
			Citronell Ave	Havenwood St	Parking Lot	-14	
				Havenwood St	Loch Lomond Dr	-13	
			Loch Lomond Dr	Citronell Ave	Passons Blvd	-5	
				Passons Blvd	Pico Vista Rd	-12	Add traffic calming elements
			Pico Vista Rd	Loch Lomond Dr	Pico Rivera Trail	-14	Add traffic calming elements
21	Bicycle Boulevard	0.57	Serapis Ave			-13	Add traffic calming elements
			Rivera Rd	Serapis	Lemoran A	-18	
				Lemoran Ave	Passons Blvd	-5	
22	Bicycle Boulevard	0.19	Tobias Ave	Beverly Blvd	Beverly Rd	-19	Add traffic calming elements
23	Bicycle Boulevard	0.78	Friendship Ave	Durfee Ave	Melita St	-12	Add traffic calming elements
			Melita St	Amistad Ave	San Gabriel River Pkwy	-12	SRTS Suggested Biking Route; Add traffic calming elements
24	Bicycle Boulevard	0.50	Harrell St	Layman Ave	Sandoval Ave	-13	SRTS Suggested Biking Route; Add traffic calming elements
				Sandoval Ave	Amistad Ave	-12	
25	Bicycle Boulevard	0.51	Marjorie St	Passons Blvd	Marjorie St	-13	Add traffic calming elements
				Millux Ave	Pico Vista Rd	-20	
			Pico Vista Rd	Marjorie St	Carron Dr	-14	
			Connection	Pico Vista Rd	Pico Rivera Trail	-10	Proposed connection would require ROW acquisition
26	Multi-Use Path	0.53	Whittier Greenway Connection	San Gabriel River Trail	Whittier Greenway Trail	0	Multi-use path connecting San Gabriel River Trail to Whittier Greenway Trail. Utilizes Amigo Park to make connection. Also connects to proposed Railroad Multi-use Path

Table 2-2: Recommended Bicycle Facilities (continued)

Project Number	Recommended Bicycle Facility	Length (Miles)	Street Name	From Street	To Street	Project Feasibility	Notes
27	Bicycle Boulevard	0.97	Orange Ave	Shade Ln	La Docena Ln	-1	SRTS Suggested Biking Route; Add traffic calming elements
			Orange Ave	La Docena Ln	Sunglow St	-13	
			Orange Ave	Sunglow St	Florpark St	-5	
			Klinedale Ave	Florpark St	Florpark St	-13	
			Florpark St	Klinedale Ave	Clarinda Ave	-13	
			Clarinda Ave	Florpark St	Whiteland St	-13	Add traffic calming elements
			Whiteland St	Clarinda Ave	True Avenue	-13	
			True Avenue	Whiteland St	Telegraph Rd	-13	
28	Bike Route	1.53	Woodford St	San Gabriel River Pkwy	Greenglade Ave	-12	Connects to Streamland Park and future open space along Kruse Road
			Banta Rd	Woodford St	Friendship Ave	-11	
			Cate Rd	Greenglade Ave	Durfee Ave	-12	
			Durfee Ave	Cate Rd	Kruse Rd	0	Part of Durfee Rd bicycle recommendations
			Kruse Road	Durfee Ave	Narrows Dr	0	Connects to Streamland Park, future open space along Kruse Road and Obregon School
			Narrows Dr	Kruse Rd	Sandoval Ave	-8	
	Bicycle Boulevard		Sandoval Ave	Narrows Dr	Woodford St	-12	Adjacent to Obregon School. Add traffic calming elements
29	Bicycle Boulevard	1.00	Maxine St	Paramount Blvd	Elmont Ave	-13	SRTS Suggested Biking Route; Add traffic calming elements
			Fernadel Ave	Elmont Ave	Terradell St	-13	
			Terradell St	Fernadel Ave	Birchleaf Ave	-13	
			Birchleaf Ave			-13	
			Maxine St	Birchleaf Av	Manzanar	-13	
			Manzanar Ave	Maxine St	Terradell St	-10	
			Terradell St	Manzanar Ave	Arrington Ave	-10	
				Arrington Ave	Serapis Ave	-13	
30	Bicycle Boulevard	0.73	Claymore St	Serapis Ave	Passons Blvd	-9	Add traffic calming elements
				Passons Blvd	Songfest Dr	-13	
			Songfest Dr	Claymore St	Hamden St	-19	
				Hamden St	Florpark St	-19	SRTS Suggested Biking Route; Add traffic calming elements
			Florpark St	Songfest Dr	Klinedale Ave	-13	
31	Bicycle Boulevard	0.66	Shade Ln	Passons Blvd	Orange Ave	-13	SRTS Suggested Biking Route; Add traffic calming elements
				Orange Ave	Masoncrest Dr	-20	
			Masoncrest Dr	Masoncrest Dr	Dead End	-10	Currently undeveloped land - ROW acquisition needed

Table 2-2: Recommended Bicycle Facilities (continued)

Project Number	Recommended Bicycle Facility	Length (Miles)	Street Name	From Street	To Street	Project Feasibility	Notes
32	Bicycle Boulevard	0.22	La Docena Ln	Serapis Ave	Chaney Ave	-12	
				Chaney Ave	Passons Blvd	-15	SRTS Suggested Biking Route; calming elements
33	Bike Route	1.09	Pico Rivera Bicentennial Park	Pico Rivera Bicentennial Park	Rooks Rd	-12	Add Shared Lane Markings or widen road to add bike lanes. Connects to Bicentennial Park and Whittier Narrows Open Space
			Rooks Rd	Pico Rivera Bicentennial Park	Rose Hill Rd	-8	
			Rose Hill Rd	Rooks Rd	San Gabriel River Pkwy	-8	
34	Bike Lanes	1.30	Rose Hill Rd	San Gabriel River Pkwy	Shepherd St	4	Provides connection to Rio Hondo College. Removal of parking or road diet need to accommodate bike lanes.
				Shepherd St	Workman Mill Rd	-2	

Improvements to Existing Bicycle Facilities

Based on public input and field review, the following are improvements recommended for existing bicycle facilities.

Multi-use Paths (Class 1)

Add distance markers and additional signage and wayfinding. Also, along heavily used segments, a centerline stripe is recommended to identify right-of-way travel for all users.

Bicycle Lanes (Class 2)

Whenever repaving projects or traffic signal upgrades occur, install bicycle detector loops per CA MUTCD requirements. Wherever width is available, add a buffer between the bicycle lane and parked cars or between adjacent travel lane and bicycle lane where on-street parking is not present.

Bicycle Routes (Class 3)

Add Shared Lane Markings or "Sharrows" to existing bicycle routes, particularly at transitions from bicycle lanes to shared travel lanes. Also install "Bikes May Use Full Lane" (CA MUTCD R4-11) signs along these routes.

Separated Bikeways (Class 4)

The Governor signed Assembly Bill-1193 (Bikeways) in September 2014, which designates cycle tracks as a bikeway type in California. Statewide guidelines are now available as Design Information Bulletin 89. These facilities have been officially designated as Class 4 Separated Bikeways / Cycle Tracks.

Bicycle Parking

Vehicle drivers expect convenient and secure parking to be provided at all destinations. Similar, if not greater, accommodation should be made for bicycle parking. Bicycle parking should be provided routinely, at all destinations where cyclists are expected, such as at shopping centers, work places, parks, apartment buildings, etc. Bike parking should be conveniently located, near the main entrances of buildings or other destinations and no further from the entrance than the closest vehicle parking space. Bicycle parking should also be well-lit and secure, which increases confidence in longer-term bike storage, and may encourage more bicycle commuting (to work and school). The provision of convenient bike parking may make bicycle trips, particularly short ones, more attractive than driving.

Bike Rack Design

Good bike rack design is an essential component of bike parking. The most important element of good design is the ability to properly lock a bike, specifically the ability to secure the frame, the front wheel and the bike rack within a typically sized U-lock. Racks that support the bicycle, but either provide no way to lock the frame or require awkward lifting to enable locking, are not acceptable unless security is provided by other means, such as a locked enclosure or monitoring by attendants. See the Association of Pedestrian and Bicycle Professionals (APBP) Bike Parking Guidelines for more detailed information on bicycle parking design and placement. Bicycle racks must be designed so that they:

- Do not bend wheels or damage other bicycle parts
- Accommodate high security U-shaped bicycle locks
- Accommodate securing the frame and wheels
- Do not trip pedestrians
- Are easily accessed yet protected from vehicles
- Are covered if users will leave their bicycles for long periods

Custom racks that lend added aesthetic or placemaking value may also be encouraged, so long as they provide adequate security. Bicycle racks can be customized to incorporate an area's aesthetics, or designed to complement a specific building or business. For example, the City of Long Beach maintains a program funded by the American Recovery and Investment Act to help business owners install bicycle racks. Their program allows for businesses to choose from a range of existing designs or to design their own.

Bicycle Corrals

Bike corrals are groupings of bike racks, typically located in former vehicle parking stalls. Most bike corrals are located on streets, in former parallel parking spots, but some also exist within shopping center parking lots. Corrals can accommodate up to 20 bicycles per former vehicle parking space. On-street bicycle corrals provide the following benefits to businesses, pedestrians, cyclists and drivers:

- Businesses - Corrals provide a high customer to parking space ratio and advertise "bicycle friendliness." They also permit increased outdoor seating for restaurants by moving the bicycle parking off the sidewalk. Some cities have instituted programs that allow local businesses to sponsor or adopt a bicycle corral to improve bicycle parking in front of their business.
- Pedestrians - Corrals clear the sidewalks and those installed at corners also serve as curb extensions.
- Cyclists - Corrals increase cycling's visibility and greatly expand bicycle parking options.
- Vehicle drivers - Corrals improve visibility at intersections by preventing large vehicles from parking at street corners and blocking sight lines.

Bicycle Lockers

Bike lockers provide increased security for bicycles, their easily removable parts and attached accessories, such as lights, pump, tools and bags. Bike lockers are long-term parking facilities, intended for situations where bicycles are left unattended for long periods of time: apartments and condominium complexes, schools, places of employment and transit stops.

Bike Racks

Future Opportunities

Long-term potential bicycle facilities were identified based on City, County, and public input. These facilities are generally a variety of projects that may hinge on future roadway development, adjacent jurisdictional actions, or legislative changes. Most of the identified potential facilities follow existing truck routes where adequate right-of-way is not currently available to provide the separation between trucks and bicycles.

In addition to bicycle improvement, pedestrian improvements are also being proposed. When future improvements occur along these routes, closing sidewalk gaps can be an interim solution before bicycle facilities are installed. Although this is not preferred, is allows bicyclists to still use these routes if needed.

See Appendix A for detailed descriptions.

Bicycle Lockers

Bicycle Corral

Cost Estimates

Multi-use Path (Class 1) Costs

Unlike bike lanes and bike routes, multi-use paths are separate from roadways, meaning that planning level cost estimation requires an average per-mile cost to be applied based on local conditions. Actual cost for a particular facility should be determined as part of project implementation. Depending on a number of factors, multi-use path costs in the last few years have ranged between $750,000 and $2,800,000 per mile. For this plan, an average per-mile cost of $1,600,000 was used.

Bicycle Lane (Class 2) Costs

Class 2 bicycle lane cost can fall within a range of potential conditions. At the low end, it assumes that adequate space exists within the roadway to simply add bicycle lane striping and markings without modifying the roadway further that the roadway is in good condition and does not require maintenance or rehabilitation as part of the striping project, and no modifications to intersection signal equipment are assumed.

The high end in terms of cost occurs where the curb-to-curb width is not sufficient to install bicycle lanes and the roadway would need to be widened by at least 10 feet to accommodate them. This could therefore include widened pavement sections, new curb, gutter and sidewalk, and street light relocation. Intersections may also need to be modified to move signal equipment and install new curb returns. Proposed bicycle lanes were assigned an average per-mile cost of $58,080.

Bicycle Route (Class 3) Costs

This category assumes signage and shared-use pavement markings ("Sharrows") only along the length of the route at intervals of 0.25 miles in each direction and at intersections, and that the roadway does not require rehabilitation or pre-construction maintenance. Class 3 bicycle routes were assigned an average per-mile cost of $13,200.

Separated Bikeway (Class 4) Costs

Separated bikeways can vary in costs due to the various segment and intersection treatments associated with them. Segment protection can range from raised curbs to simple treatments such as striping with on-street parking or reflective bollards. If curbs are built, stormwater utilities would also need to be considered.

At intersections, additional striping, paint and in some cases, dedicated bicycle signals are needed. For planning costs, the assigned per-mile cost for separated bikeways use is $520,000.

Bicycle Boulevard/Neighborhood Greenway Costs

Bicycle boulevards or neighborhood greenways are essentially bike routes that may feature physical roadway modifications such as traffic calming measures or changes in intersection priority or access. Bicycle boulevard projects can therefore vary widely in cost, primarily due to the level of physical construction designed into them.

Because bicycle boulevards need to be evaluated in more detail to determine the extent of desired modification, this plan assumes that their costs are equivalent to those of typical bike route facilities employing signage and pavement markings only, to be revised as needed in final design prior to implementation.

Table 2-3: Bicycle Projects Cost Estimates

Project ID	Facility Type	Project Streets	Total
1	V, II	Durfee Avenue, Jackson Street, Passons Boulevard	$111,483
2	II	Rosemead Boulevard	$251,299
3	I, II, II/II, III	Gallatin Road, Paramount Boulevard	$735,995/219,316
4	II	Beverly Boulevard	$106,735
5	I	Pico Rivera Trail	$3,465,461
6	V, II	Beverly Road	$48,927
7	III, IV, I	Mines Avenue, Dunlap Crossing Road	$1,085,389
8	I	Existing Rail Corridor	$2,543,626
9	V	Serapis Avenue	$11,079
10	V	Acacia Avenue, Arma Street, Los Toros Avenue	$8,401
11	V	Danbridge Street	$6,269
12	V, II	Rex Road, Eglise Avenue, Lundahl Drive, Connection	$51,690
13	I	Holbrook Street Multi-Use Bridge	$847,054
14	I	Multi-Use Path San Gabriel River Connection	$2,191,810
15	V	Olympic Boulevard	$5,771
16	V	Holbrook Street, Bridgeview Avenue, Maris Avenue, Manzanar Avenue, Coolhurst Drive, Coffman Pico Road, Crossway Drive	$24,856
17	V	Balfour Street, Loch Alene Avenue, Nan Street, Bequette Street	$14,287
18	V	Gallatin Road	$7,604
19	I	Proposed Facility	$3,207,994
20	V	Havenwood Street, Citronell Avenue, Loch Lomond Drive, Pico Vista Road	$10,810
21	V	Serapis Avenue, Rivera Road	$7,551
22	V	Tobias Avenue	$2,522
23	V	Friendship Avenue, Melita Street	$10,346
24	V	Harrell Street	$6,568
25	V	Marjorie Street, Pico Vista Road, Connection	$6,798
26	I	Whitter Greenway Connection	$292,327
27	V	Orange Avenue, Klinedale Avenue, Florpark Street, Clarinda Avenue, Whiteland Street, True Avenue	$12,780
28	III, V	Woodford Street, Banta Road, Cate Road, Durfee Avenue, Kruse Road, Narrows Drive	$20,149
29	V	Maxine Street, Fernadel Avenue, Terradell Street, Birchleaf Avenue, Maxine Street, Manzanar Avenue, Terradell Street	$13,368
30	V	Claymore Street, Songfest Drive, Florpark Street	$9,677
31	V	Shade Lane, Masoncrest Drive	$8,773
32	V	La Docena Lane	$2,904
33	III	Pico Rivera Bicentennial Park, Rooks Road, Rose Hills Road	$14,347
34	II	Rose Hilll Road, Workman Mill Road	$75,867
		Total	**$15,220,519/$14,703,840**

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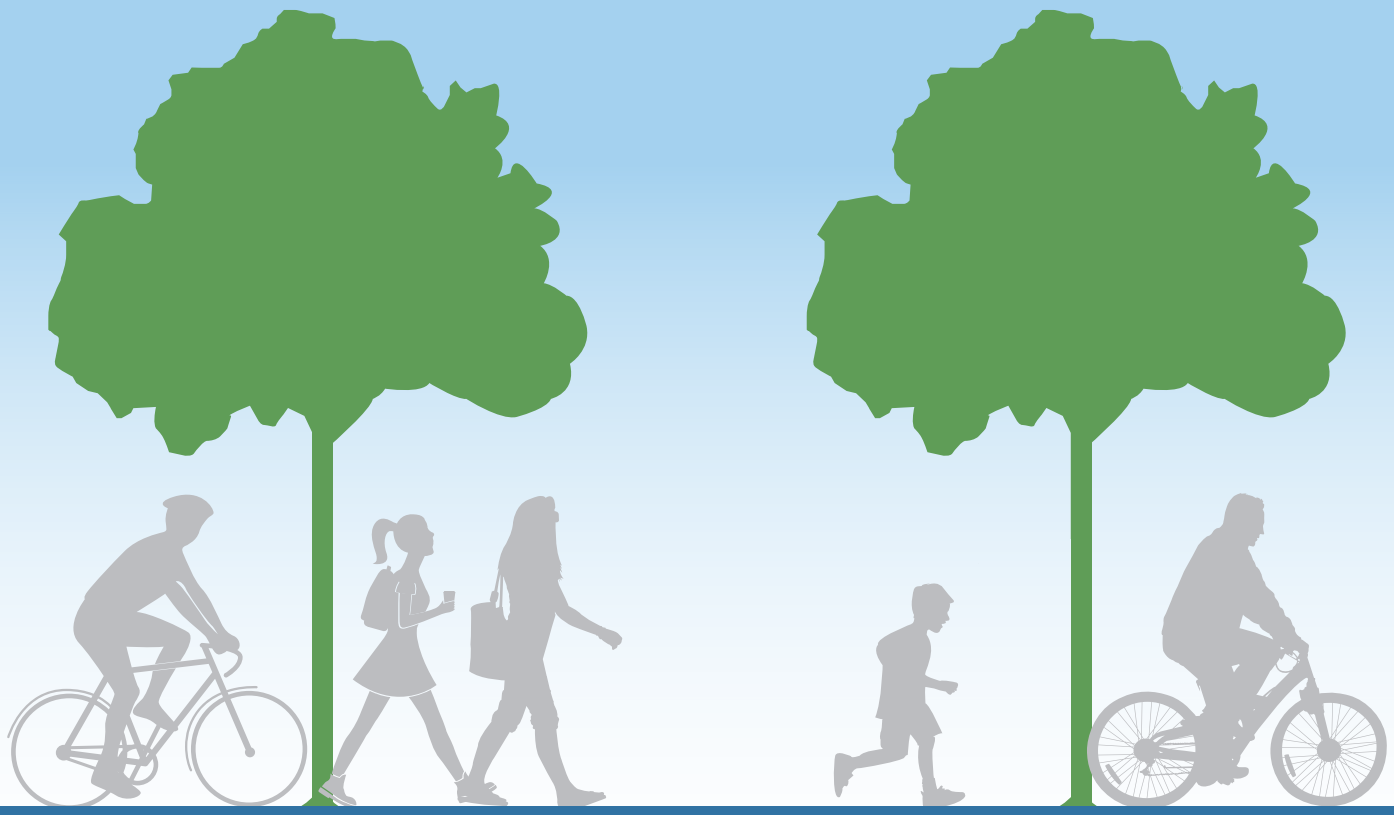


Pico Rivera Urban Greening Plan

3 Pedestrian Facilities

Pedestrian Facilities Overview

Defining Safe Routes to Parks (SRTP) and incorporating the recent Safe Routes to School (SR2S) study, completed in 2015, are the primary goals for the pedestrian element of the Urban Greening Plan.

Based on the public input for this plan and recent surveys conducted by the City and LA County Parks, the provison of safe access to parks was a determining factor in park usage and accessing recreation facilities. As a result, the Urban Greening Plan focuses on identifying pedestrian facilities in the areas around parks which will make it safer and easier for residents to access their local park on foot.

In order to identify the areas for pedestrian improvements around each of the city's parks, a GIS-based methodology was devised to create SRTP zones. Each of these zones were identified by creating a 10-minute/half-mile walk time buffer around each park, as seen in Figure 3-1. The buffer starts from the entrances of each park and extends outward using the existing streets and paths network. These SRTP zones were the primary method for prioritizing pedestrian improvements and are intended to build upon the Safe Routes to School efforts.

This street network-based method is valuable because it provides a more realistic picture of the area's existing walkability. This method accounts for the small but important gap connections that could be made to the surrounding neighborhoods, creating a more accurate depiction of potential walking routes to each park. It also accounts for the potential expansion of networks provided by multi-use path connections that overcome significant barriers like open space and freeway and rail crossings.

Existing Pedestrian Facilities in Pico Rivera

Figure 3-1: Safe Routes to Parks Zones

Pedestrian Facility Enhancements

The City of Pico Rivera has the framework to provide a pedestrian-friendly environment. Many of the streets already have sidewalks, although residents have expressed a desire to make the sidewalks wider to create a better pedestrian experience. Many of the areas currently without sidewalks have the right-of-way available to develop sidewalks in the future.

While many of the intersections along the city's street corridors are signalized and crosswalks exists, there are some segments with long blocks without places to cross. Providing crossing treatments will help reduce the jaywalking and mid-block crossings and provide a safer and more enjoyable walking experience for residents.

Wide Sidewalks

The typical sidewalk is only 3-5' wide. Wider sidewalks encourage more pedestrian use by providing additional comfort and safety. In some instances, wider sidewalks allow for more amenities to be incorporated into the pedestrian zone such as street furniture, sidewalk cafes, and lighting.

Pedestrian-Scale Lighting

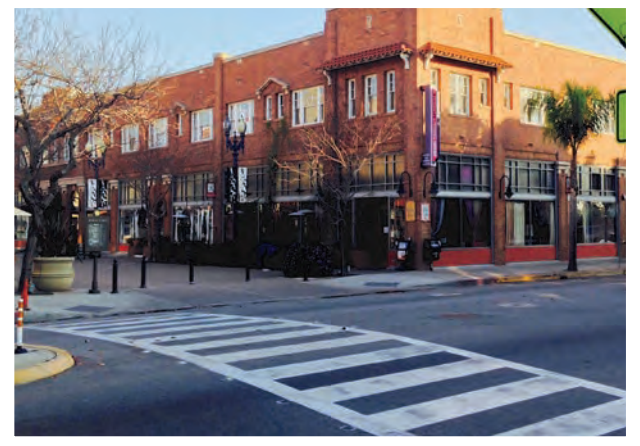
Pedestrian-scale lighting increases comfort, security, and safety for pedestrians. Lighting can also enhance the ambiance of an area and improve the visibility of pedestrian for motorists, especially in crosswalk areas.

Marked Crosswalks

Marked crosswalks are painted, paved, or otherwise delineated areas that identify the appropriate location for pedestrians to cross the street. Clearly marked crosswalks can increase safety for pedestrians by increasing the visibility of pedestrian areas for motorists.

Wide Sidewalks

Street Trees



Marked Crosswalks

Pedestrian Refuge

Mid-block Crossings

Curb Extensions

Street Trees

Street trees are typically planted in parkways areas between the sidewalk and vehicle travel lanes. By planting the appropriate species, trees can increase comfort and safety by providing shade for sidewalks and acting as a buffer between pedestrians and vehicles. Street trees can also serve as a traffic calming tool by encouraging lower vehicle speeds.

Street Furnishings

Street furnishings include small-scale features such as bike racks, benches, trash receptacles, bus shelters, and signs that can increase both the comfort and aesthetics of pedestrian areas. When designed correctly, street furniture can help create a sense of place and encourage walking.

Pedestrian Refuge

Refuge islands provide pedestrians and bicyclists a refuge area within intersection and mid-block crossings. Refuge islands provide a location for pedestrians or bicyclists to wait partially through their crossing.

Mid-block Crossings

Mid-block crossings provide convenient locations for pedestrians to cross urban thoroughfares in areas with infrequent intersection crossings or where the nearest intersection crossing creates substantial out-of-direction travel.

Curb Extensions

Also called bulb-outs or neck-downs, curb extensions extend the line of the curb into the travel way, reducing the width of the street. Typically occurring at intersections, they reduce the length a pedestrian has to cross.

Pedestrian Collision Analysis

The following tables summarize the pedestrian collision data collected to help understand trends. These trends guided recommendations for pedestrian facilities at high collision frequency street segments and intersections.

83

Pedestrian Collisions from 2009-2014

The pedestrian data for collisions per year showed a fair amount of variability, especially between 2009 and 2012. There was a significant dip in pedestrian collisions in 2010 and 2011 then rising again in 2012. Between 2012 and 2014, the number of collisions fluctuated slightly. Pedestrian collision data for time of day mirrored that for bicycle collisions, with afternoon/ evening seeing significantly more collisions than other times of day.

As seen in Figure 3-2, intersections with the greatest number of pedestrian collisions include Passons Boulevard at Telegraph Road and Rosemead Boulevard at Beverly Boulevard. Similar to the high bicycle collision intersections, these intersections include multi-lane, high vehicular speeds and volumes, and proximity to shopping centers. The road that has the highest rates of pedestrian collisions is Passons Boulevard with 12 over the past five years. The second most is Rosemead Boulevard with eight. Passons Boulevard has multiple schools, parks and civic facilities and is adjacent to residential neighborhood which makes pedestrian activity along this road fairly high.

The primary causes of pedestrian collisions, according to vehicle code, were "Pedestrian Violation" and "Violating Pedestrian Right-of-Way." At counts of 27 and 20, respectively, pedestrians were found to be most at fault in pedestrian collisions. Similar to bicycle collisions, the majority of pedestrian collisions resulted in complaints of pain and other visible injuries.

Year	# Pedestrian Collisions	# Pedestrians Injured	# Pedestrians Killed
2009	20	21	1
2010	7	6	1
2011	9	10	0
2012	16	16	0
2013	12	12	0
2014	19	16	3
Total	**83**	**81**	**5**

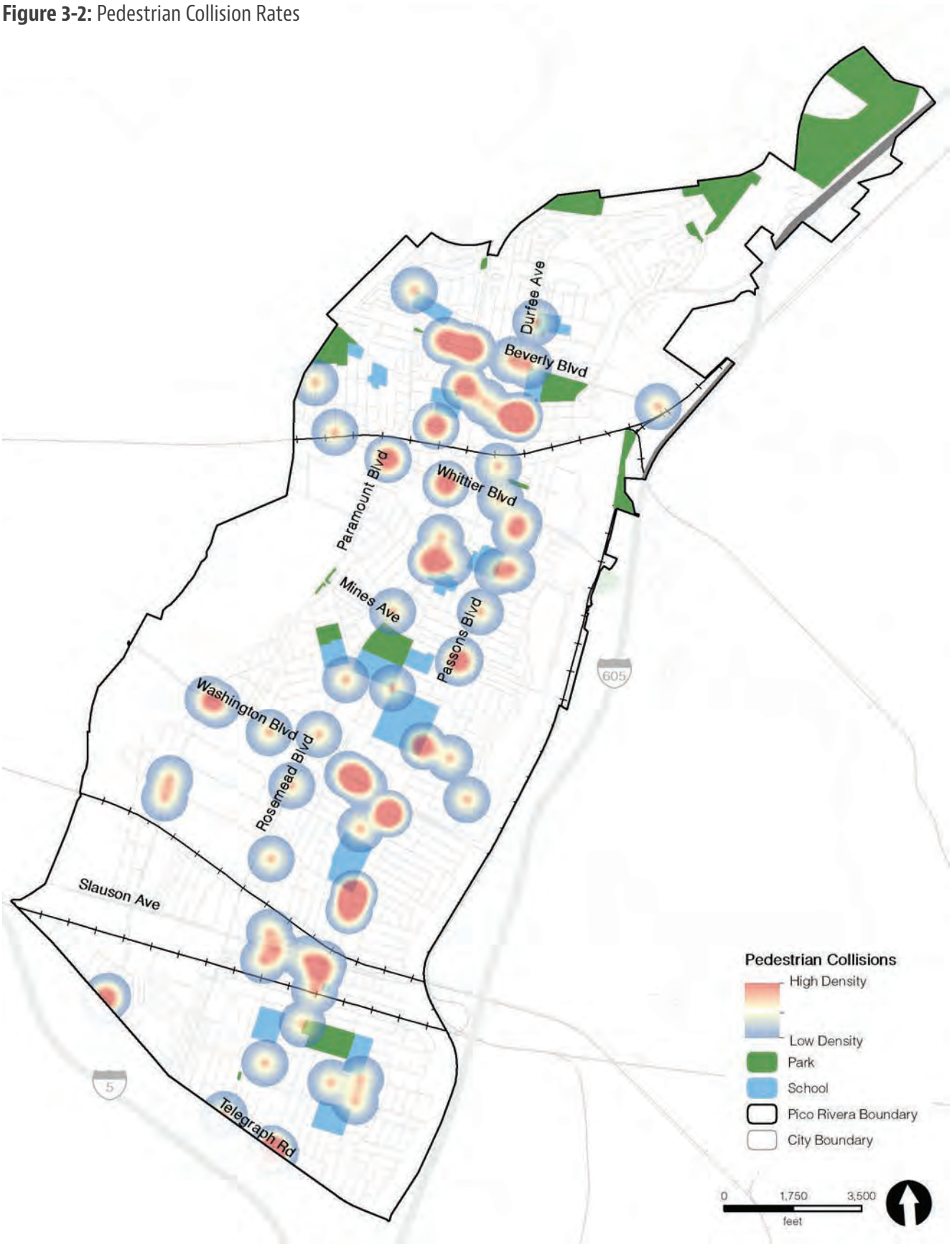
Time Period	# Bicycle Collisions
12am - 3am	4
12pm - 3pm	7
3am - 6am	1
3pm - 6pm	19
6am - 9am	19
6pm - 9pm	18
9am - 12pm	9
9pm - 12am	6

Vehicle Code Violation	# Bicycle Collisions
Pedestrian Violation	27
Violating Pedestrian Right of Way	20
Improper Turning	7
Unsafe Speed	5
Unsafe Starting or Backing	3
Other	21

Crash Severity	# Bicycle Collisions
Fatal	5
Injury - Complaint of Pain	54
Other Visible Injury	19
Severe Injury	5

Source: Statewide Integrated Traffic Records System (SWITRS), 2009-2014.

Figure 3-2: Pedestrian Collision Rates



Source: ESA, 2014. SWITRS, 2009-2014.

Safe Routes to Parks (SRTP) Projects

This chapter recommends pedestrian improvements within each of the Safe Routes to Parks zones shown in Figure 3-1. Since many of the city's parks are located adjacent to or near schools, the Safe Routes to Parks projects build upon the recommendations from the City's 2015 Safe Routes to School Plan. As a result, the SRTP projects will expand the recommended pedestrian improvements to improve access to both schools and parks.

Safe Routes to Parks (SRTP) Improvements

This plan recommends a total of 33.56 miles of pedestrian projects (sidewalk completion) and 143 curb ramp improvements. All of the recommendations were developed using public input, on-site investigations, and GIS analysis.

The following pages include an overview of the recommended improvements inside each of the SRTP Zones. In each zone, the 2015 Safe Routes to School (SRTS) projects are identified to show coordination between the two plans. This helps to build a stronger foundation to prioritize, obtain funding, and implement projects. SRTP projects are symbolized separately to distinguish between the SRTS projects and the SRTP projects. The maps show some of the suggested walking routes, as well as the location of pedestrian improvements that were proposed in the SRTS plan.

Enhanced crosswalks are recommended to improve the existing standard striping to continental or ladder crosswalks, particularly near parks. New crosswalks were also recommended in areas that can increase a pedestrian's visibility.

While the feasibility of constructing all of the recommended projects is difficult and costly, the City can leverage various funding sources to complete high priority improvements. As the City identifies areas of redevelopment or new development projects arise, the recommendations in this plan can be incorporated into the projects. This enables the improvements to be built without City spending. Since these projects also provide improvements near schools and have incorporated the SRTS projects, funding can be obtained as part of the SRTS plan.

Table 3-1 highlights the current population served by parks within the City. This provides an understanding of the location of parks, residents within a quarter-mile and areas in the City that are park deficient.

Table 3-1: Residents Served by Parks

Park Number	Park Name	Acres	Residents Served	% Residents Served
1	Pico Rivera Bicentennial Park	113.77	169	0.3%
3	Obregon Park	1.30	813	1.2%
4	Streamland Park	13.99	1,431	2.2%
5	Gallatin/Rosemead Pocket Park	0.52	2,510	3.8%
6	Rio Hondo Park	12.90	3,055	4.7%
7	Colmere Pocket Park	0.11	3,584	5.5%
8	Pico Park	12.52	3,460	5.3%
9	Veterans and Ladies Auxiliary Park	0.68	3,637	5.5%
14	Pio Pico State Historic Park	5.92	629	1.0%
10	Amigo Park	10.28	599	0.9%
11	Paramount / Mines Parkway	0.26	808	1.2%
12	Rio Vista Park	4.71	1,150	1.8%
13	William A Smith Park	16.48	3,902	5.9%
16	Rivera Park	17.28	5,350	8.2%
15	Serepis Pocket Park	0.13	2,175	3.3%

Recommendations

To summarize, this plan recommends a total of 79,358miles of pedestrian (sidewalk completion) projects, and 117 curb ramp improvements around schools. Many of the recommendations derived from public input, field investigations and analysis. The following pages include an overall key map of the SRTP Zones and individual cut-sheets of each. Project rankings are summarized in the following table with associated costs.

In these individual maps, the Safe Routes to School projects are generally identified to show coordination between the two plans, and not duplication. This helps to build a stronger foundation to prioritize, obtain funding and implementation. SRTP projects are symbolized separately to identify recommendations outside the SRTS projects.

Crosswalks were recommended to be enhanced from Standard striping to Continental or Ladder Crosswalks, particularly near parks. New crosswalks were also recommended particularly if they meet the necessary warrants for installation.

While the feasibility of constructing all these projects is difficult and costly, the City could leverage various funding sources to complete high priority improvements. As the City identifies areas of redevelopment or new development projects arise, the deficiencies can be conditioned into those projects. This enables the improvements to get built without City spending. In addition, by identifying projects associated with Safe Routes to School, funding can be obtained as part of the Safe Routes to School plan since these projects also provide improvements near schools.

Table 3-2: Summary of SRTP Recommendations

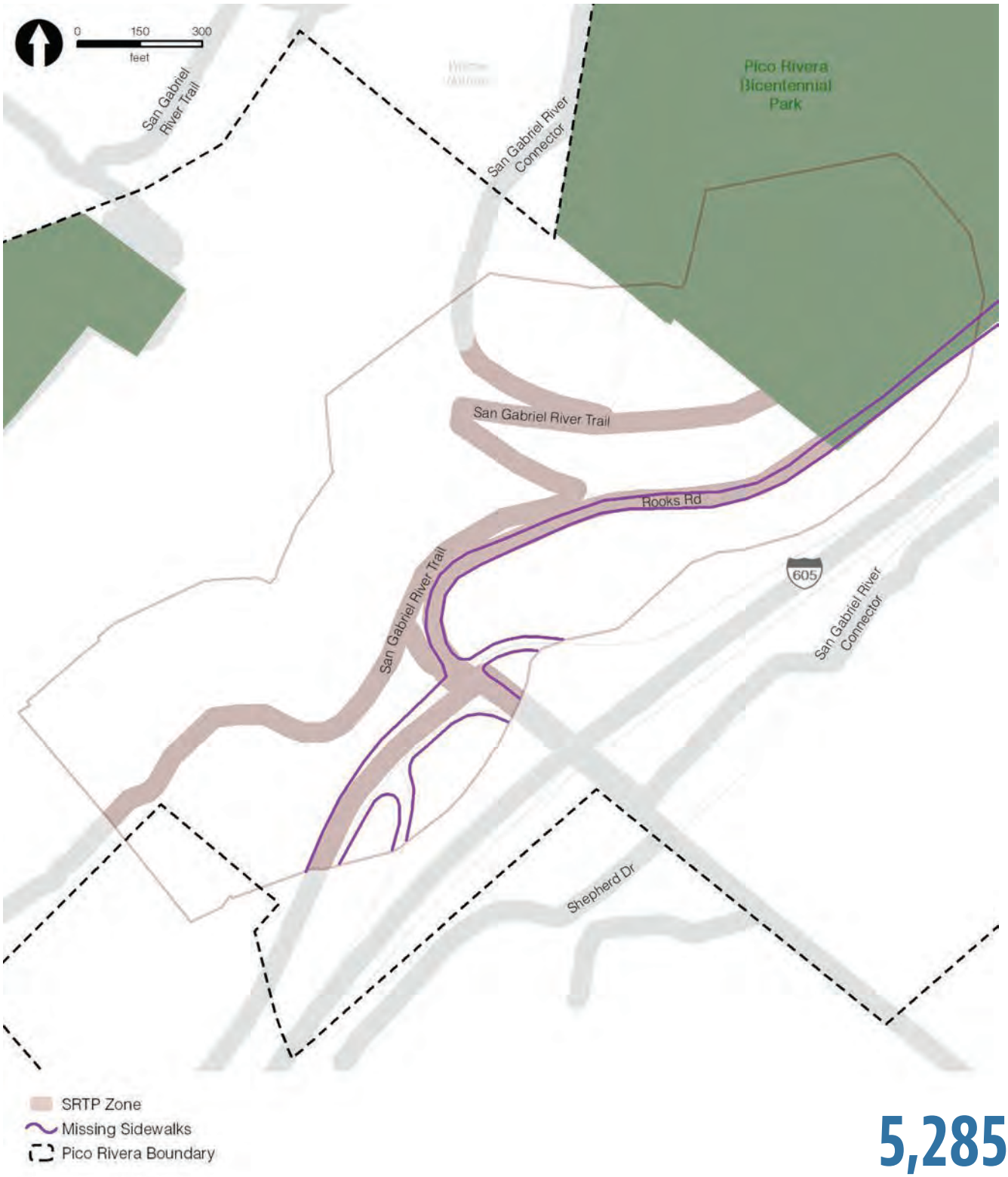
Name	Missing Sidewalks (LF)	Additional Improvements	Count
Gallatin/Rosemead Pocket Park	1,673	Curb Extension	2
		Curb Ramps	6
		Zebra Crosswalks	1
Obregon Park	4,087	Curb Ramps	5
Paramount/Mines Parkway, Rio Vista Park & William A Smith	30,247	Curb Ramps	41
		Zebra Crosswalks	3
		Curb Ramps	2
Pico Park	6,824	Gateway Amenities	1
		Widen Sidewalks	1
		Zebra Crosswalks	4
Pico Rivera Bicentennial Park North	11,627	-	-
Pico Rivera Bicentennial Park South	5,285	-	-
Pio Pico Park & Amigo Park	4,796	Widen Sidewalks	1
Rio Hondo Park & Colmere Pocket Park	4,145	Curb Ramps	15
		Install RRFB or PHB	1
		Zebra Crosswalks	5
Rivera Park & Serapis	3,707	Curb Ramps	31
		Gateway Amenities	1
		Zebra Crosswalks	1
Streamland Park	4,354	Curb Ramps	13
		Zebra Crosswalks	1
Veterans and Ladies Auxiliary Park	2,613	Curb Ramps	4
		Zebra Crosswalks	4

Figure 3-3: Recommended Pedestrian Improvements - Pico Rivera Bicentennial Park North

11,627

Linear Feet of New Sidewalk

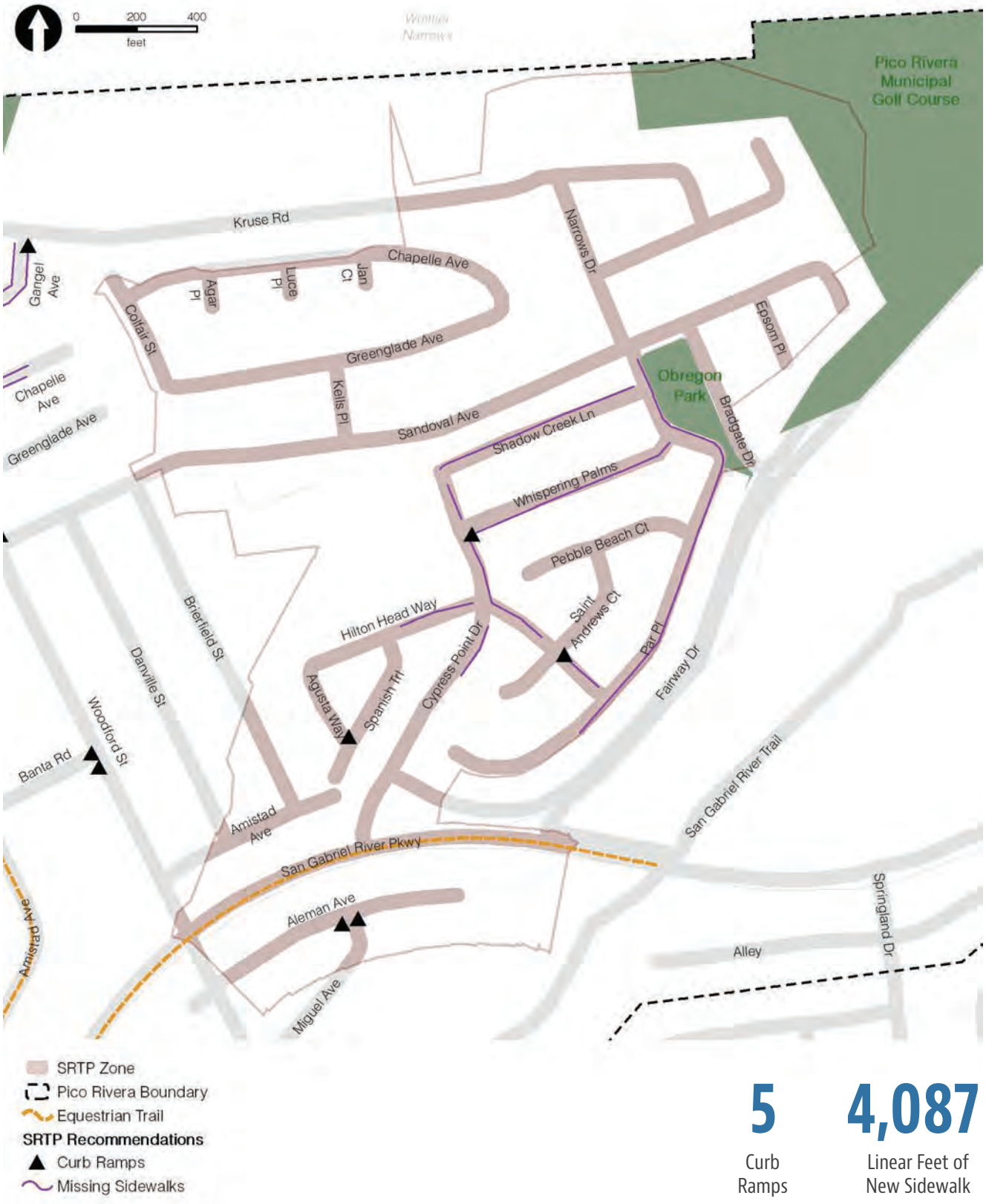
Figure 3-4: Recommended Pedestrian Improvements - Pico Rivera Bicentennial Park South



5,285

Linear Feet of New Sidewalk

Figure 3-5: Recommended Pedestrian Improvements - Obregon Park/Municipal Golf Course



5
Curb Ramps

4,087
Linear Feet of New Sidewalk

Figure 3-6: Recommended Pedestrian Improvements - Streamland Park

Figure 3-7: Recommended Pedestrian Improvements - Gallatin/Rosemead Pocket Park

Figure 3-8: Recommended Pedestrian Improvements - Rio Hondo Park & Colmere Pocket Park

Figure 3-9: Recommended Pedestrian Improvements - Pico Park

Figure 3-10: Recommended Pedestrian Improvements - Veterans and Ladies Auxiliary Park

Figure 3-11: Recommended Pedestrian Improvements - Pio Pico Park & Amigo Park

1
Widened Sidewalks

4,796
Feet of New Sidewalk

Figure 3-12: Recommended Pedestrian Improvements - Paramount/Mines Parkway, Rio Vista Park & William A Smith Park

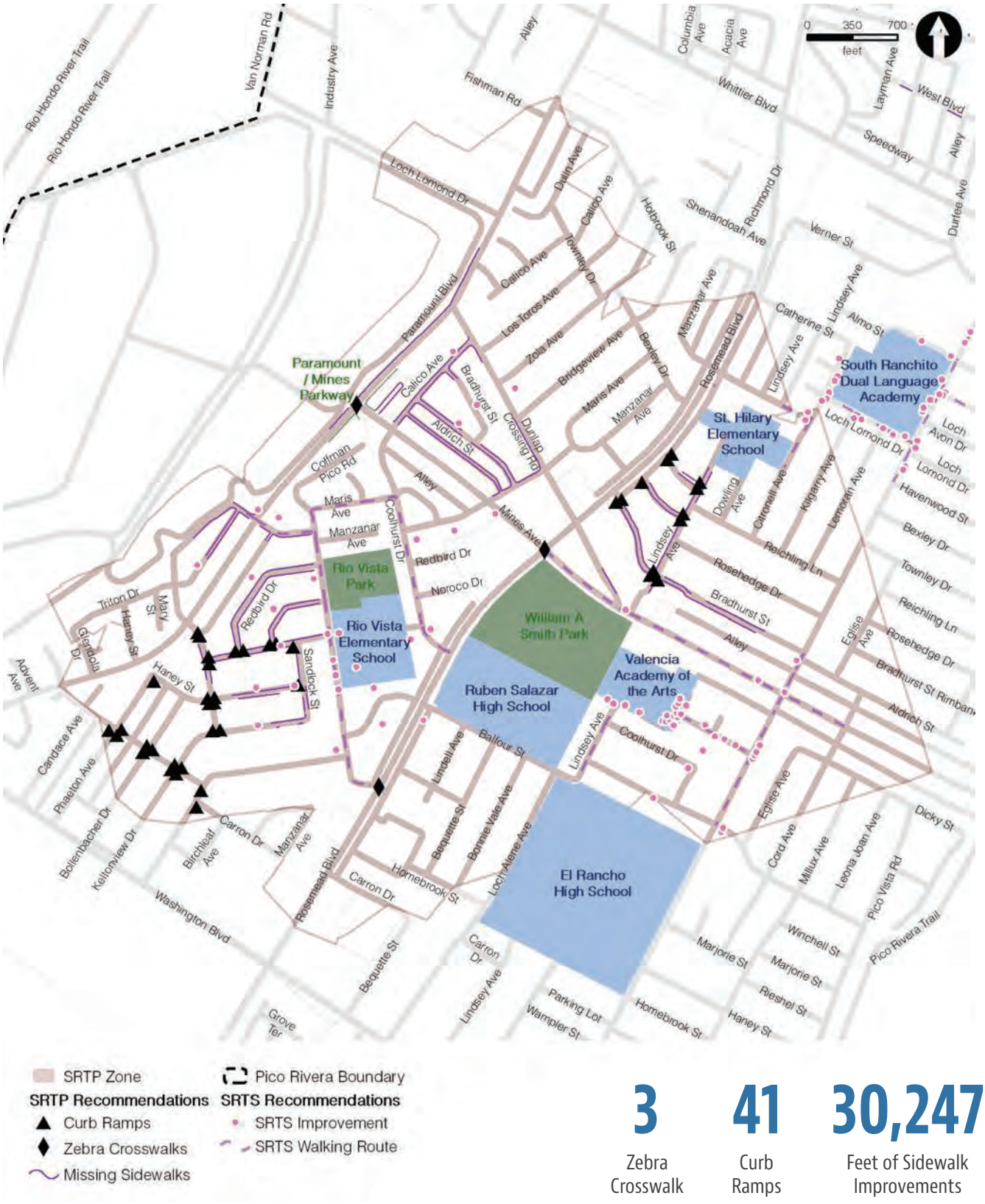


Figure 3-13: Recommended Pedestrian Improvements - Rivera Park and Serapis Pocket Park

1 Gateway Amenities

1 Zebra Crosswalks

31 Curb Ramps

3,707 Feet of Sidewalk Improvements

Cost Estimates

The following table provides general cost estimates for proposed pedestrian improvements inside each of the SRTP Zones.

Table 3-3: SRTP Pedestrian Improvements Cost Estimates

Gallatin/Rosemead Pocket Park				
Item	**Unit Cost**	**Unit**	**Qty**	**Cost**
Sidewalk	$14.00	SF	8,365	$117,110
Curb Extension	$40,000.00	EA	2	$80,000
Curb Ramp	$3,200.00	EA	6	$19,200
Zebra Crosswalk	$2,800.00	EA	1	$2,800
			Total	$219,110

Obregon Park				
Item	**Unit Cost**	**Unit**	**Qty**	**Cost**
Sidewalk	$14.00	SF	20,435	$286,090
Curb Ramp	$3,200.00	EA	5	$16,000
			Total	$302,090

Paramount/Mines Parkway, Rio Vista Park & William A Smith				
Item	**Unit Cost**	**Unit**	**Qty**	**Cost**
Sidewalk	$14.00	SF	151,235	$2,117,290
Curb Ramp	$3,200.00	EA	43	$137,600
Zebra Crosswalk	$2,800.00	EA	3	$8,400
			Total	$2,263,290

Pico Park				
Item	**Unit Cost**	**Unit**	**Qty**	**Cost**
Sidewalk	$14.00	SF	34,120	$477,680
Zebra Crosswalk	$2,800.00	EA	4	$11,200
			Total	$488,880

Pico Rivera Bicentennial Park North				
Item	**Unit Cost**	**Unit**	**Qty**	**Cost**
Sidewalk	$14.00	SF	58,135	$813,890
			Total	$813,890

Pico Rivera Bicentennial Park South				
Item	**Unit Cost**	**Unit**	**Qty**	**Cost**
Sidewalk	$14.00	SF	26,425	$369,950
			Total	$369,950

Table 3-3: SRTP Pedestrian Improvements Cost Estimates (Cont.)

Pico Park & Amigo Park				
Item	**Unit Cost**	**Unit**	**Qty**	**Cost**
Sidewalk	$14.00	SF	23,980	$335,720
			Total	$335,720

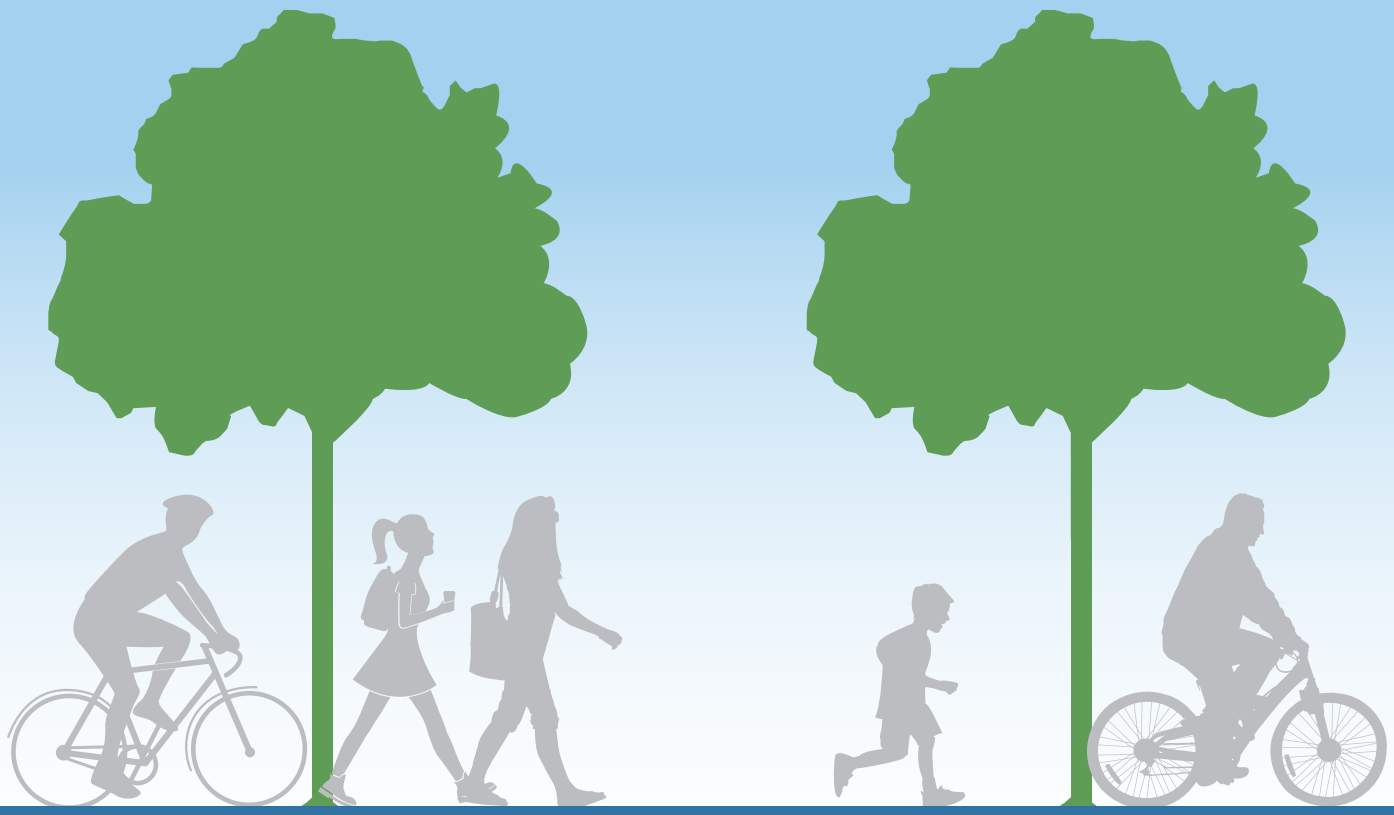
Rio Hondo Park & Colmere Pocket Park				
Item	**Unit Cost**	**Unit**	**Qty**	**Cost**
Sidewalk	$14.00	SF	20,725	$290,150
Curb Ramp	$3,200.00	EA	15	$48,000
RRFB	$22,000.00	EA	1	$22,000
Zebra Crosswalk	$2,800.00	EA	5	$14,000
			Total	$374,150

Rivera Park & Serapis				
Item	**Unit Cost**	**Unit**	**Qty**	**Cost**
Sidewalk	$14.00	SF	18,535	$259,490
Curb Ramp	$3,200.00	EA	31	$99,200
Zebra Crosswalk	$2,800.00	EA	1	$2,800
			Total	$361,490

Streamland Park				
Item	**Unit Cost**	**Unit**	**Qty**	**Cost**
Sidewalk	$14.00	SF	21,770	$304,780
Curb Ramp	$3,200.00	EA	13	$41,600
Zebra Crosswalk	$2,800.00	EA	1	$2,800
			Total	$349,180

Veterans and Ladies Auxiliary Park				
Item	**Unit Cost**	**Unit**	**Qty**	**Cost**
Sidewalk	$14.00	SF	13,065	$182,910
Curb Ramp	$3,200.00	EA	4	$12,800
Zebra Crosswalk	$2,800.00	EA	4	$11,200
			Total	$206,910

Total	**$6,084,660**



4

Pico Rivera Urban Greening Plan

Urban Runoff & Open Space

Urban Runoff

Due to the many impervious surfaces built in urban areas (roads, parking lots, sidewalks), rainwater is carried over these surfaces rather than being allowed to percolate into the soil. Unfortunately, water flowing on the surface of a street can pick up trash, oil, chemicals, and other contaminants. This contaminated water is known as urban runoff.

If left untreated, urban runoff and can result in major flooding issues and drinking water contamination, putting our health and the integrity of our natural resources at risk. In Pico Rivera, urban runoff can flow untreated into surrounding water sources such as the San Gabriel River. Additionally, neighborhoods throughout the city are at risk of flooding during major storm events.

Pico Rivera is situated within an important groundwater recharge basin that provides drinking water for the Los Angeles area. Soils below Pico Rivera are sandy, which allows runoff to slowly percolate and recharge the local groundwater. Capturing stormwater runoff from streets and parking lots and directing it to areas designed to percolate and filter this runoff can recharge the local groundwater, increase local water supply and reduce the impacts of pollutants on the San Gabriel River and Rio Hondo Channel. Additionally, capturing and allowing stormwater runoff to infiltrate into the ground reduces local flooding during large storm events.

Low Impact Development (LID)

The city can minimize the negative impacts of urban runoff by implementing various strategies known as low impact design (LID). LID addresses stormwater using small, cost-effective landscape features that can be incorporated into both new and existing developments. These planning and engineering strategies help mitigate urban runoff by slowing, filtering, and absorbing runoff into permeable surfaces. LID creates functional and appealing stormwater storage and site drainage techniques that regards stormwater as a resource rather than a waste product. Since Pico Rivera is located on an important local groundwater aquifer that supplies drinking water to the region, the city can play an important role in reducing imported water and improving water quality in the San Gabriel River and the Rio Honda Channel, while also reducing local flooding.

LID includes a wide variety of practices such as bioretention facilities, rain gardens, vegetated rooftops, rain barrels, and permeable pavers. Each LID strategy can be used alone or in conjunction with others to mitigate the negative impacts of urban runoff. By incorporating LID strategies in development throughout the city, Pico Rivera can create a network of natural areas that provide flood protection and cleaner water by retaining and filtering urban runoff, increasing the local water supply.

Figure 4-1 highlights Pico Rivera's drainage infrastructure and identifies target areas in the City that are particularly sensitive to urban runoff. Based on this, these areas should incorporate LID strategies into the street design.

Benefits of Low Impact Design (LID)

- Improves water quality by reducing the amount of sediment, metals, oil, fertilizers, and pesticides reaching the nearby water systems
- Reduces flooding during storm events by storing and absorbing stormwater into the ground
- Protects natural habitats by reducing the amount and speed of stormwater reaching natural water systems
- Increases groundwater recharge by allowing water to remain on-site and percolate into the water table
- Enhances neighborhood aesthetics by utilizing vegetation rather than concrete channels or basins
- Reduces heat island effect by shading and minimizing impervious surfaces

Figure 4-1: Storm Drains and Catch Basins Map

LID Strategies

Rain Gardens

Rain gardens are shallow, landscaped areas that use porous soils and a variety of vegetation to temporarily store and filter urban runoff.

Bioretention area

Bioretention areas are similar to rain gardens but also include a gravel sublayer and subdrain to help capture and divert more water during a large storm event. They can also be designed to capture and allow stormwater runoff to percolate into the soil and recharge the local groundwater table.

Bioswales

Bioswales are similar to rain gardens but instead of storing water, they are sloped to channel urban runoff to a specific location. They area strategically located to receive stormwater flow from surrounding areas and to divert surface runoff away from roads and other large drainage areas such as parking lots. Bioswales can help reduce runoff velocity of urban runoff.

Pervious Pavement

Pervious pavement is designed to allow water to percolate through the surface to the soil below. Pervious pavements can be created using a variety of strategies including porous asphalt/concrete or pavers assembled in a grid pattern and filled with grass or gravel to enable water to flow through.

Curb Cuts

Curb cuts are breaks in the curb that allow runoff to flow off of the roadway and into tree wells/parkway strips/bioswales and filter through the soil before either being absorbed into the ground or flowing into a sub-drain system.

Green Roofs

Green roofs are lightweight vegetation (along with a waterproof layer, root barrier, and drainage layer) built on an impervious roof. These structures help to reduce energy costs, reduce heat island effect, and create outdoor spaces.

Rain Barrels

Rain barrels capture rooftop runoff and/or rainwater to be used for irrigation, drinking water, and grey water.

Rain Garden

Bioswale

Pervious Pavement

Curb Cut

Stormwater Best Practices

Upon review of the City's MS4 maps and field investigations, streets within Pico Rivera that could be considered for stormwater LID as part of an overall green infrastructure plan include:

Washington Boulevard

This major arterial is a broad street with existing greenways that can be retrofitted with LID stormwater management techniques, which have the greatest potential for reduction in storm volumes and infiltration to the groundwater. The existing greenway can be regraded to allow for stormwater capture and retention. This can be done with bio-retention cells or in bio-retention strips along pedestrian walkways, replacement of concrete walkways with porous blocks or asphalt, and replacement of existing catchments with bio-filtration units. Washington Boulevard has the greatest number of LID retro-fit opportunities, making it very competitive for Prop 1 stormwater grants.

Passons Boulevard

Passons Boulevard does not have the right of way or existing greenways to accommodate LID retro-fits. However, several schools are located along this street, which provides opportunities for stormwater LID. These schools, in collaboration with the City, could accommodate bio-retention strips that provide wider and safer sidewalks and improved landscaping. Existing fencing adjacent next to the narrow sidewalk would need to be moved, improving the safety of pedestrian walkways and aesthetics of the neighborhood. Adding information signage on water saving plants, the importance of water quality in runoff and how this runoff can impact adjacent rivers and the underlying groundwater that supplies local drinking water provides educational opportunities. Additionally, the enhanced walkways would link the various education centers and civic facilities along Passons Boulevard.

If feasible, a larger underground stormwater capture and infiltration vault could be installed in one of the ball fields. The installation of the underground vault could be done with improvements to the recreational fields and provide educational opportunities on the importance of stormwater as a resource to reduce reliance on imported water, which has impacts on the environment. This will provide a significant volume of groundwater infiltration of stormwater, which would also be very competitive for Prop 1 stormwater grants.

Mines Avenue (Funded Project)

Mines Avenue has a number of existing traffic-calming landscaped bulb-outs east of Rosemead Boulevard that can only capture and retain stormwater for infiltration in the immediate area. Mines was recently awarded a grant to add bike lanes and stormwater treatment infrastructure through the California Urban Rivers Grant Program for $1.8M. The installation of bike paths on Mines Avenue and bike lanes on Rosemead Boulevard has been a part of the City of Pico Rivera's Circulation Element since 1993. Upon award of funding, the City will include project development and design costs and proceed with the environmental documentation and preliminary design. Construction funding will be appropriated and is anticipated to commence in 018.

A conceptual layout has already been developed as well as preliminary construction cost estimates of the proposed bikeway. Improvements include Class II Bike Lanes on Mines Avenue, Rosemead Boulevard and Class I bike path on Dunlap Crossing Road. The City has met with LA County to discuss the project bike bridge over the San Gabriel River and determined there are no restrictions that would prevent its construction.

The bike lanes along Mines Avenue and Rosemead Boulevard will be constructed within City right-of-way, which is currently used as a public street. The bike path and lanes on Dunlap Crossing Road will be constructed within Los Angeles County unincorporated area. Dunlap Crossing Road is currently a service road and public street.

Mines Avenue is an example of an urban greening street that takes into account active transportation and stormwater management while improving mobility for all users and incorporating stormwater best practices.

Mines Avenue curb extensions with planters

Figure 4-2: Potential Stormwater LID Projects

Source: ESA, 2014. City of Pico Rivera, 2016 & 2017.

Reclaimed Water Opportunities Analysis

The City of Pico Rivera receives recycled water from the San Jose Creek Water Reclamation Facility run by the LA County Sanitation District. This water is provided through a distribution system belonging to the Central Basin MWD. They also receive water from the Upper San Gabriel Valley Water District for irrigation for the Golf Course and sports Arena. Central Basin MWD is responsible for providing reclaimed water to the City.

There are three water districts serving the City of Pico Rivera: Pico Water District PWD (26%); San Gabriel Valley Water SGWA (4%); and the Pico Rivera Water Authority PRWA (70%). Both agencies by law must publish an Urban Water Management Plan that describes both potable and reclaimed water forecasts and supply and water shortfall measures. Pico Water has a final draft plan published in May of 2015 and Pico Rivera Water Authority has an updated plan from 2011.

The most efficient way to use reclaimed water is to spread and settle into existing water basins because it does not require the construction of new infrastructure and the retrofitting of existing irrigation systems. State and Federal government regulations limit the amount of recycled water used for spreading.

In 2010, only 78 Acre Feet (1 acre of water spread at a depth of 1 foot) was used in Pico Rivera at the Golf Course as reported by the PRWA. An analysis was conducted of potential users in the updated Urban Water Management Plan from 2011 that included Rio Hondo Park and Pico Park that could be served through an extension of their distribution system along Beverly Boulevard. Since the report, both Rio Hondo Park and Smith Park have reclaimed water. The median along Beverly Boulevard also now has reclaimed water.

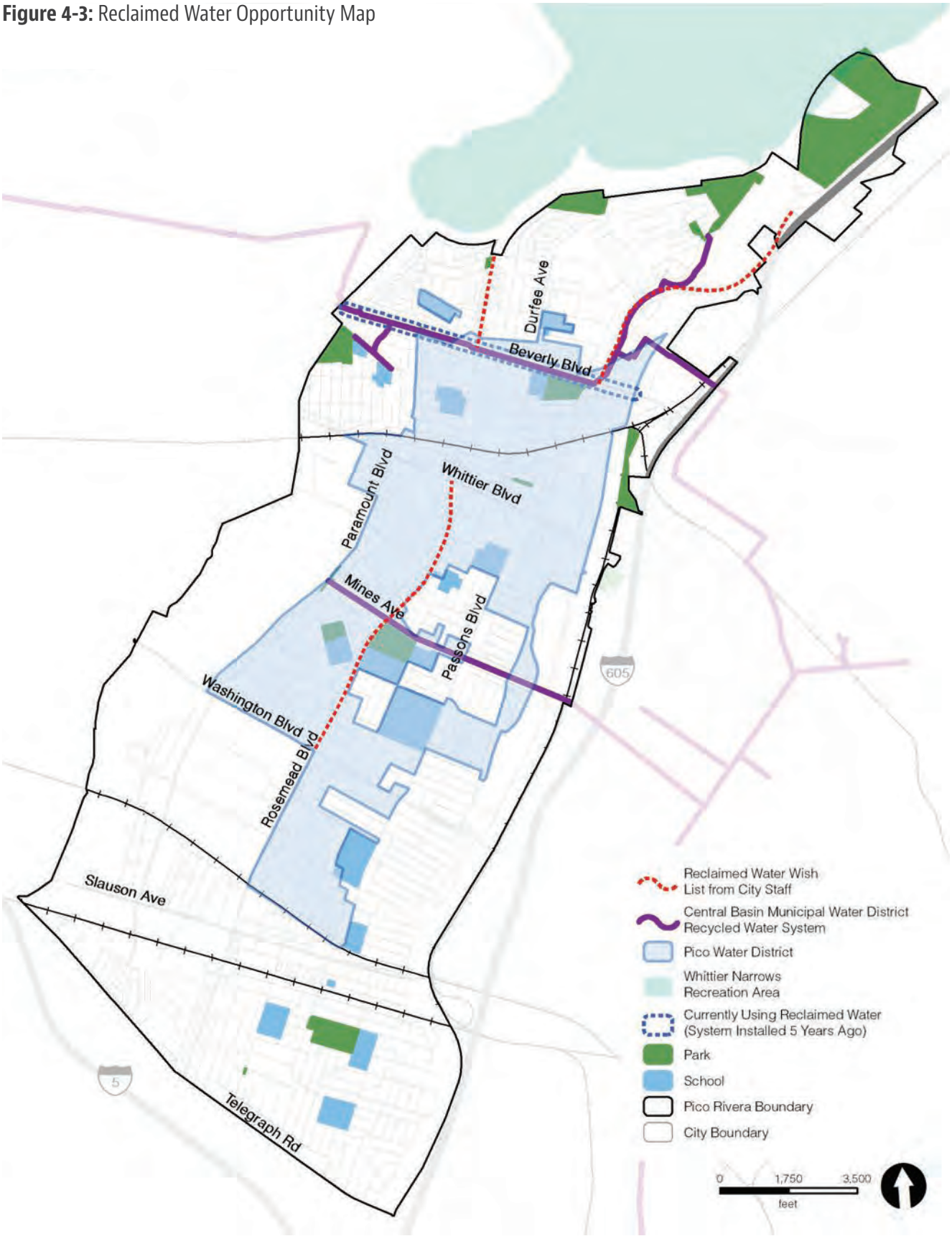
The PRWA report also notes that financial incentives have not been provided to encourage the use of reclaimed water for future projects. Those incentives might include pricing discounts, financing of retrofitting costs and assistance with any permitting or technical issues required to construct the projects.

Since 2008, PWD has provided reclaimed water to Smith Park. The PWD identified that additional transmission and distribution facilities would be required to deliver additional recycled water to customers in their service area. The Central Basin Recycled Water Master Plan Update identified 359 Acre Feet per Year of recycled water uses for landscape irrigation in highways, freeways, parks and schools in the District's service areas including Pico Park, several schools, apartment complexes and commercial developments. In 2015, their actual total reclaimed water use was reported as 39 Acre Feet.

The City of Pico Rivera Public Works Department was contacted and they provided a list of areas in their purview that might be good candidates for reclaimed water that could be pulled from nearby existing infrastructure. Rosemead Boulevard from Gallatin to Beverly, the San Gabriel River Parkway and Rosemead Boulevard center median from Whittier to Washington may be good candidates for the use of reclaimed water.

Reclaimed water can be used for irrigation of the landscaped areas and stormwater LID elements proposed in this plan.

Figure 4-3: Reclaimed Water Opportunity Map



Source: ESA, 2014. City of Pico Rivera, 2016.

Open Space

This section provides an overview of the city's existing open space areas while also identifying opportunities for new open spaces. Although open space most often refers to parks, the term can also include any outdoor space meant for recreation, relaxation, and enjoyment. In some cases, open space can also provide opportunities for managing urban runoff.

Existing Conditions

As seen in Figure 4-4, the City of Pico Rivera currently has 16 parks, providing a combined total of 236 acres of parkland. These parks include:

1. Pico Rivera Bicentennial Park (113.8 acres)
2. Pico Rivera Municipal Golf Course (24.4 acres)
3. Obregon Park (1.3 acre)
4. Streamland Park (14 acres)
5. Gallatin/Rosemead Pocket Park (0.5 acre)
6. Rio Hondo Park (12.9 acres)
7. Colmere Pocket Park (0.1 acre)
8. Pico Park (12.5 acres)
9. Veterans and Ladies Auxiliary Park (0.7 acre)
10. Amigo Park (10.3 acres)
11. Paramount / Mines Parkway (0.7 acre)
12. Rio Vista Park (4.7 acres)
13. William A Smith Park (16.8 acres)
14. Pio Pico State Historic Park (5.9 acres)
15. Serepis Pocket Park (0.1 acre)
16. Rivera Park (17.3 acres)

Figure 4-4 also displays a 1/2-mile boundary around each park. This boundary indicates the typical distance residents are willing to walk or bike to their local park. Based on this analysis, 51% of residents are within 1/2-mile from a park and can be considered well-served by parks. The areas further than 1/2-mile from a park should be considered priority areas for future park opportunities, particularly the areas between Washington Boulevard and Slauson Avenue.

Benefits of Open Space

- Improves physical health with increased use of parks and frequency of exercise
- Improves psychological health through exposure to nature and greenery
- Improves emotional health through increased opportunities for social interaction and reduced social isolation
- Strengthens communities and make neighborhoods more attractive places to live and work
- Increases the value of residential property
- Increases the value of commercial property and increase revenues
- Incorporates urban forestry and plantings for environmental benefits
- Captures and manages urban runoff and reduce stress on the drainage system
- Provides opportunities for community gardens

Figure 4-4: Existing Parks

Source: ESA, 2014. KTU+A, 2016.

Future Open Space Opportunities

Developing additional parks in Pico Rivera is challenging due to the limited amount of available land. However, the city can take advantage of unused or vacant parcels to convert them into spaces known as mini or pocket parks. Pocket parks are small-scale urban open spaces, usually smaller than 1/4 acre, and can include a variety of open space facilities and amenities for the surrounding neighborhoods.

Pocket parks are not intended to serve an entire city the same way as a city park, but should instead be developed to provide amenities desired by the surrounding neighborhoods. Pocket parks can include both open space features such as playgrounds and picnic areas as well as features that help to reduce urban runoff. A list of the potential uses within Pico Rivera for pocket parks can be seen on the following page.

Successful pocket parks have several qualities:

- Accessible by foot and bicycle
- Allow residents to engage in outdoor activities
- Provide clean and comfortable outdoor spaces
- Provide opportunities for residents to socialize

The following are some general ideas when opportunities are present, and space may be limited to additional park space.

- Utilize the rivers in some capacity for open space, keeping in mind the potential of flooding. Work with Army Corps of Engineers on possible opportunities and solutions.
- Partner with all schools to develop shared park space
- Coordinate with La County Department of Water and Power (DWP) and Edison easements for open space. The City currently supports the Community Gardens on one of the easements south of Beverly Road.
- Pico Rivera Campgrounds may also be used for additional recreational purposes

Community Garden

Tot Lot

Bioswale

Pocket Park Opportunities

As seen in Figure 4-5 on this page, the city of Pico Rivera has a variety of both publicly and privately-owned vacant parcels that could be converted to pocket parks. Publicly-owned land presents the best opportunity for new open spaces since it has already been acquired by the city. Although privately-owned land can be considered for future open space opportunities, it would require additional time and resources. The following images represent examples of potential pocket park elements that could be used for each vacant parcel.

For more an overview of each of the publicly-owned vacant parcels and identified potential pocket park elements within each of the spaces, see Appendix A.

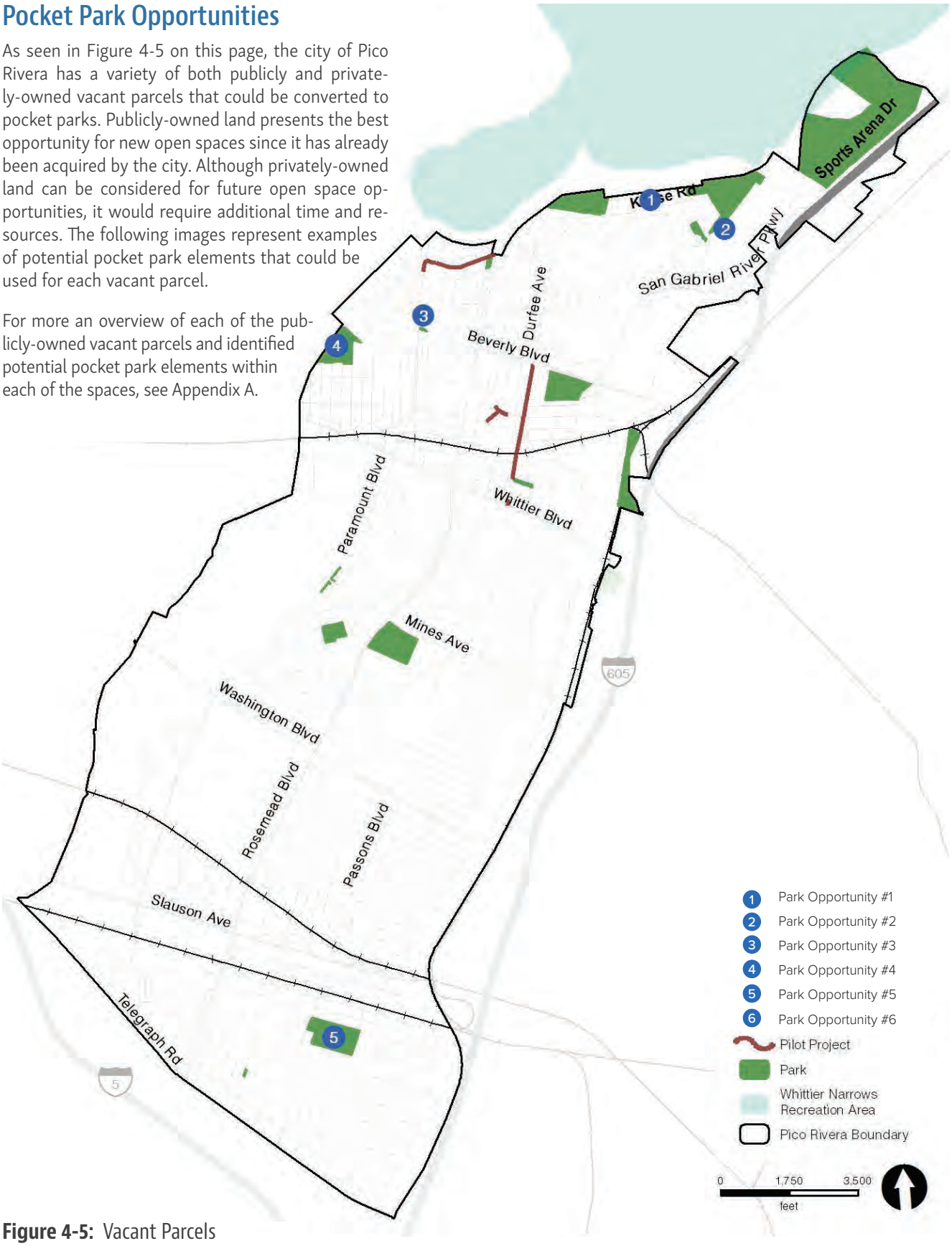


Figure 4-5: Vacant Parcels

Source: ESA, 2014. City of Pico Rivera, 2016.

Pocket Park Amenities Examples

Playground

Benches

Wayfinding

Community Garden

Multi-Use Path

Bike Repair Station

Lighting

Picnic Area

Bioswale

Permeable Pavers

Bike Racks

Ball Field

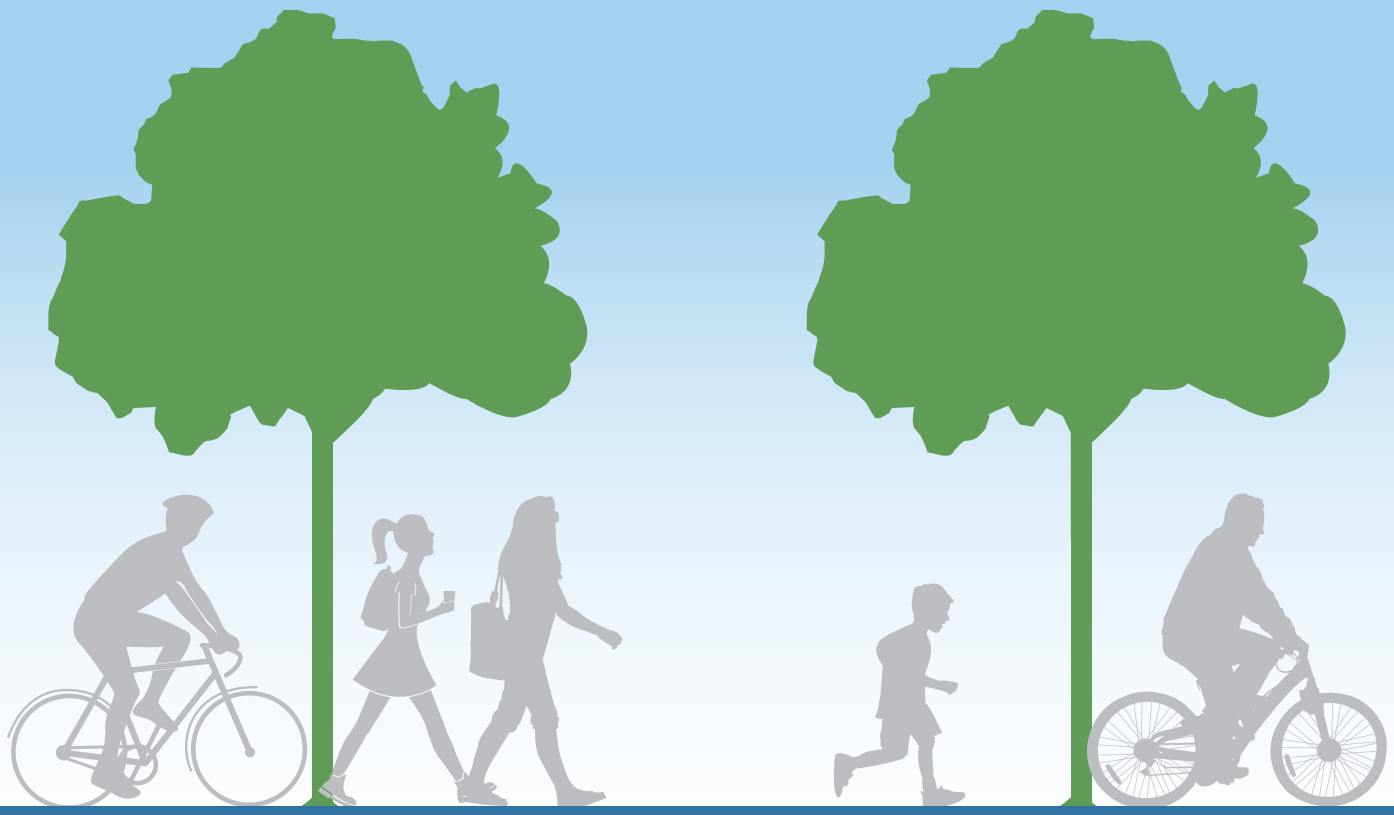
Kruse Road Feasibility Study and Development Plan

The Kruse Road Feasibility Study and Development Plan explores the viability for the conversion of a 15-acre industrial area to open space located north of Kruse Road in the City of Pico Rivera. The site sits between two active recreation areas, Streamland Park and Pico Rivera Municipal Golf Course, with single-family residential land uses to the south. The existing industrial uses are currently legally non-conforming uses and relics of an older business area that was encroached upon in the 1950s when the first housing developments were built across the street along Kruse Road. The conversion of the legally non-conforming industrial uses to open space would help reduce the deficiency of passive recreation areas in the City and create a larger regional link between open space and trails from Streamland Park up to the Pico Rivera Sports Arena area and the Whittier Narrows and Emerald Necklace Recreation areas. The feasibility study evaluates the possibility of a long-term strategy to convert the existing, legally non-conforming industrial uses to open space over time and includes recommendations for phasing that would assuage the impacts to business and property owners. The development plan identifies a matrix of possible funding opportunities for future implementation of the study recommendations, two alternative conceptual plans for the study area, and future implementation strategies and action items for the City.

Eastern Parcel

Western Parcel

Kruse Road Feasibility Study Area



5 Urban Forestry

Pico Rivera Urban Greening Plan

Urban Forestry

The term Urban Forestry pertains to the care and management of tree populations in urban settings for the purpose of securing environmental and social benefits for it's inhabitants. The Sustainable Cities Institute defines Urban Forestry as the art, science and technology of managing trees and natural systems in a and around urban areas for the health and well being of communities. Although an urban forest includes trees on both public and private property, the city is only responsible for those trees within the public right-of-way. These trees located within the right-of-way, also known as street trees, can create a multitude of benefits for the city's residents and should be carefully selected to ensure maximum results.

This plan focuses on increasing the number of street trees in Pico Rivera in order to create a canopy that will maximize the positive benefits of urban forestry. The street tree plan presented in this chapter identifies a range of tree species appropriate for the city's unique conditions and provides recommendations for the location of each species. The street tree plan is intended to assist the city in selecting trees that help reinforce community character while reducing future problems and expense.

Existing Conditions

Canopy Analysis

Canopy for both public and private trees in the City of Pico Rivera was calculated using i-Tree Canopy recent satellite imagery. The application estimates tree cover with random sampling over the entire city area. Using this method, 1,500 points were randomly distributed across the city and each point was classified as public tree, private tree, or non-tree. Public trees include all street trees. Private trees include any trees on private property outside of the designated parkway and trees in nature areas such as the San Gabriel River. Non-tree points include all non-tree surfaces such as buildings, asphalt, low shrubs and turf. The results of this analysis can be seen in Table 5-1.

Pico Rivera has an estimated 18,660 street trees for a city with a population of 64,942. That equals roughly one tree for every 3 residents. The amount of total canopy cover is approximately 6-7%, which is relatively low when compared to the City of Los Angeles (11.1%)and Santa Monica (12%). The average canopy cover for residential neighborhoods recommended by the USDA Forest service is 18%. Pico Rivera contains industrial areas and open space with relatively few trees that lowers the average canopy cover figures.

18,660

Estimated number of Street Trees in Pico Rivera

It is recommended that canopy cover be increased, especially in residential neighborhoods. Taking into consideration the industrial areas and open space corridors, a reasonable goal for combined canopy cover in Pico Rivera would be 9-10%. Recommended strategies to increase canopy cover could include:

- Plant only in parkways larger than 2 feet wide
- Enlarge sidewalk cut-outs
- Provide information about watering methods and encourage residents to regularly water existing trees
- Plant new trees mostly in the cool season to allow for root establishment
- Increase diversity of species
- Create green jobs to remove stakes, water and training prune young trees

Table 5-1: Tree Canopy Analysis

Land Cover	% Land Cover
Street Trees	1.87%
Trees on private property, park, and open space	4.87%
Non-Tree Surfaces	93.3%

Benefits of Urban Forestry

Increase Personal Comfort
Average temperatures have risen 6 degrees F in the last 50 years. Trees directly improve urban air quality by reducing air temperature, blocking intense sun during the heat of the day, removing air pollutants and releasing cooling water vapor from their leaves.

Climate Change Mitigation
Trees reduce carbon in the atmosphere by holding carbon in their roots, stems and branches while releasing oxygen into the air. One acre of mature trees can absorb the amount of carbon released when you drive a car 26, 000 miles.

Decrease Energy Consumption
Shade building and paved surfaces thereby reducing energy usage. Trees can cool an area by up to 10 °F.

Improved Quality of Life
Large mature trees can have a calming effect on children, provide habitat for wildlife, improve property values, and provide screening for privacy.

Protect Children from Sunburn
Trees can reduce sun exposure from UV-B radiation by about 50%.

Capture and Save Water
Large canopy trees can intercept rainfall and slowly allow it to percolate into the ground, reducing runoff into the storm drains and naturally recharging the groundwater table.

Green Jobs
Trees can generate local opportunities for green waste management and tree care services.

Tree Survey

A brief survey was conducted to determine dominant and alternate species of street trees that are managed by the City. Although every tree was not surveyed, the information was detailed enough to make predictions about dominant and alternate species citywide and provide a broad view of the condition of the urban forest. Figure 5-1 and Figure 5-2 show dominant and alternate species identified in this analysis.

Dominant species are those trees that already exist in Pico Rivera, while alternate species are trees that should be use in the future, since they will adapt better to the city's environmental conditions.

The current species palette for dominant and alternate species includes trees that are struggling because they are adapted to wetter climates with richer soils. Those species include Crape myrtle, Callery pear, Ginkgo and Magnolia. Other species are thriving in the local environmental conditions. Those trees include Brisbane box, African sumac, Chinese tallow tree, Bottle tree, Bottlebrush, Sweetshade, Canary island pine and Sweetshade.

A quick assessment was also made regarding average health and age of the trees. The average age of street trees is semi-mature and the average health rating is B or average.

Figure 5-1: Dominant Tree Species in Pico Rivera

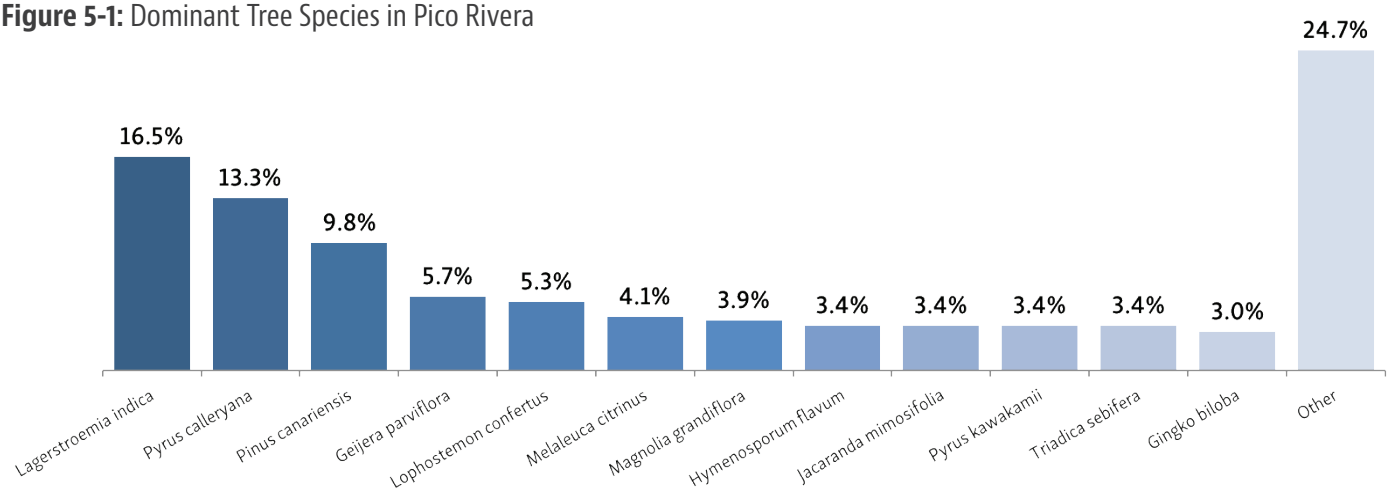
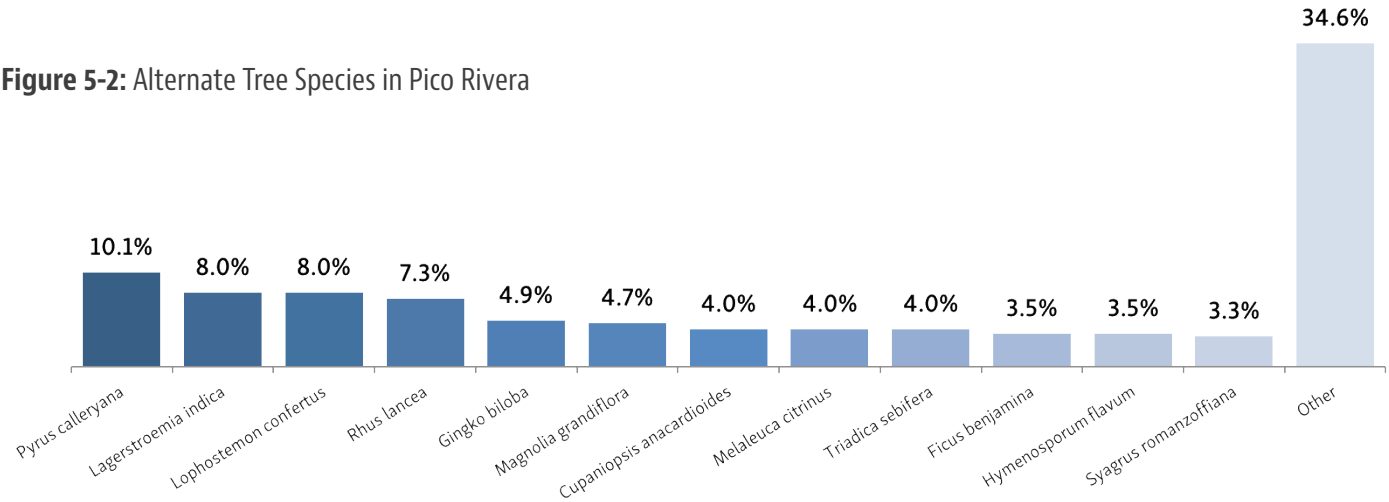


Figure 5-2: Alternate Tree Species in Pico Rivera



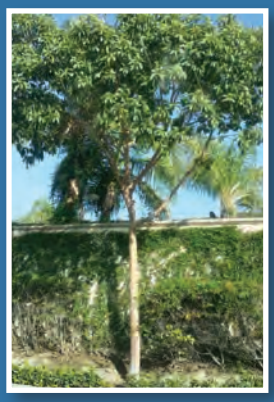
Pico Rivera Tree Species

Crape Myrtle
Lagerstroemia indica
Dominant/Alternate

Callery pear
Pyrus calleryana
Dominant

Canary Island Pine
Pinus canariensis
Dominant

Australian Willow
Geijera parviflora
Dominant

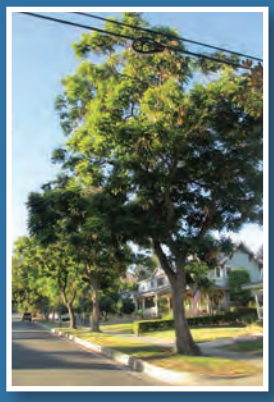


Brisbane Box
Lophostomon confertus
Dominant/Alternate

Bottle Brush
Melaleuca citrinus
Dominant/Alternate

Southern Magnolia
Magnolia grandiflora
Dominant

Sweetshade
Hymenosporum flavum
Dominant/Alternate



Jacaranda
Jacaranda mimosifolia
Dominant

Evergreen Pear
Pyrus kawakamii
Dominant

Chinese Tallow
Triadica sebifera
Dominant/Alternate

Maidenhair Tree
Gingko Biloba
Dominant

Callery pear
Pyrus calleryana
Alternate

Southern Magnolia
Magnolia grandiflora
Alternate

Carrotwood
Cupaniopsis anacardiodies
Alternate

African Sumac
Rhus lancea
Alternate

Maidenhair tree
Gingko biloba
Alternate

Weeping Fig
Ficus benjamina
Alternate

Queen Palm
Syagrus romanzoffiana
Alternate

Bottle Tree
Brachychiton populneus
Alternate

Street Tree Palette

Improving existing tree health will be an important part of increasing canopy cover in Pico Rivera. A rating system is provided in the recommended maintenance practices section of the document to help determine when a tree is in decline and not functioning to provide benefits to the community. It is important to keep corridors of healthy existing trees. New street improvement and utility projects are recommended to include the exact location, trunk diameter and canopy spread of existing trees on all conceptual and final design plans to avoid preventable damage to this important resouce. The existing street tree palette is show in Figure 5-3

Recommendations for new species take into consideration that trees need to be able to tolerate more heat, drought, salts and alkaline soils. Heat tolerance is related to genetics and environmental conditions such as wind, lack of mulch and reflected light off paving and other hard surfaces.

The street tree plan was developed with an emphasis on choosing the right tree for the right place. Street trees were selected with three major categories in mind: visual aesthetic, function, and viability. These factors are interrelated and should all be considered when selecting the street trees for a neighborhood or corridor.

The Urban Forestry element of this plan identifies a series of typologies for the corridors in Pico Rivera - commercial focus corridors, transit focus corridors, bike/ped focus and local streets. Each typology is assigned a specific tree palette in order to help the city create a unifying design for each of the city's streets.

Commercial Corridors

Commercial corridors in Pico Rivera are heavily traveled streets that are identified as major thoroughfares with large commercial land use. These streets should have consistent character due to their high visibility and importance as a connection to Pico Rivera's destinations. Some of these commercial corridors also include transit routes since they connect to retail.

Many of the existing commercial developments have right-of-way along the street that is maintained by the developer by agreement and median islands maintained by the City. Where new developments exist, proper pruning and maintenance practices will be key to enhancing canopy coverage and benefits. In the areas not maintained by developers, there are opportunities to plant new trees. The benefit to the community will be high for tree planting in these areas because the trees can buffer the 'drive through' traffic by collecting dust and pollution before it drifts into residential neighborhoods.

Figure 5-4 identifies these corridors. See Chapter 7 for details on design strategies and considerations for each type of green street.

Commercial Corridor Characteristics

- Streets that are well traveled and along commercial land use
- Streets that should have consistent character due to their high visibility and importance as a destination in Pico Rivera

Goals for Trees along Commercial Corridors

- Beautify commercial zones with trees that have showy flowers or foliage to encourage foot traffic and shopping.
- Increase canopy cover with broad spreading species. These trees may also have some traffic calming effects. (Tree planting in commercial neighborhoods may require coordination with planning to allow signage at a lower level so that patrons can see them under the canopy of the trees).
- Infill viable street tree vacancies with new trees in the cool season with permanent irrigation to give them the best chance to thrive.
- Use patterns of tall and short trees to create interest and increase diversity of species.

Figure 5-3: Street Tree Palette

Source: ESA, 2014. City of Pico Rivera, 2016.

- Begin replacing struggling trees that are not performing well by improving tree well and parkway planting conditions and using trees that are heat and/or drought tolerant.
- Improve commercial shopping experience by providing shade to buffer heat and direct sun exposure.
- Provide education with tree planting efforts to discourage destructive practices such as topping and lion's tailing that permanently damage tree form and reduce shade benefits.
- Use trees that are vase-shaped or upright in narrow areas that can grow to tolerate a clearance of 8 feet over the sidewalk and a span of 14 feet at the curb.

Transit Corridors

Transit Corridors are key streets that provide access and connectivity throughout Pico Rivera for residents and visitors through the use of transit. These corridors focus specifically on creating green streets to provide safe and aesthetically pleasing environments for transit users, which in turn may also encourage additional ridership.

All areas of Pico Rivera need improved canopy. In the areas highlighted as transit areas, the trees may need to be more columnar. Existing trees in many of these areas in the parkway are Canary Island Pine or Fern Pine, both species that have limited spread. It will be very important to preserve the existing trees and infill vacancies. There are locations that are predominantly Canary Island Pine that should be infilled with the same species even though it is not on the recommended list. Pine is a valuable species for the transit zone because of the shape and high level of benefits offered to the neighborhood in filtering pollutants.

Transit Corridor Characteristics

- Streets that have high transit use and connect to major destinations
- Provide access and connectivity throughout Pico Rivera for residents and visitors
- Some streets are integrated with Commercial and Bicycle-Pedestrian Focus Corridors

Goals for Trees along Transit Corridors:

- Increase canopy cover using upright species and varying height to add interest.
- Encourage infill of existing vacancies where feasible.
- Plant trees in patterns where feasible. Plant tall and short, fine textured with coarse textured to add interest to the street.
- Use predominantly columnar or vase-shaped species in the parkway.
- Median islands can be planted with broader crowing species and accented with specimen palms or other trees that can be used for wayfinding purposes.

Bicycle and Pedestrian Corridors

Bicycle and Pedestrian corridors are streets that are recommended for bicycle and pedestrian improvements. This network of corridors is based on the existing and recommended bicycle network in Chapter 2 and pedestrian improvements in Chapter 3. These streets should have consistent character due to bicycle and pedestrian improvements for non-motorized users, and their connections within Pico Rivera and surrounding cities.

Areas identified as Bike/Ped focus can use trees that are more diverse than the Commercial and Transit areas.

Bicycle-Pedestrian Corridor Characteristics

- Streets that have bicycle facilities and connections to schools, parks and retail
- Streets that should have wayfinding, consistent tree palette and adequate shade for pedestrians

Goals for Trees along Bicycle-Pedestrian Corridors

- Provide trees species that can be kept at 8 feet from grade to allow room for bicyclists.
- Decrease summer peak temperatures and sun exposure by increasing large crowning shade trees where parkway space allows.
- Avoid species with large hard pods or other obstructions that might land in the street.
- New tree planting should take into consideration that a bicyclist needs at least 3 feet of lateral clearance to operate and avoid trees that might encroach on that space.

Figure 5-4: Green Street Types

Source: ESA, 2014. KTU+A, 2016.

Neighborhood Streets

Local streets are all the other streets in Pico Rivera which are primaily low-volume, low-speed neighborhood or residential streets. Some neighborhoods within the City already have parkway strips where trees can be planted between the sidewalk and street. In other neighborhoods where sidewalks are not present, there should be coordination with the City on right-of-way or property lines prior to planting. As part of this plan, some missing sidewalks are being recommended to improve pedestrian access to parks and schools. When possible, include and adequate parkway strip to plant trees.

Neighborhood Streets

- Local residential streets

Goals for Trees along Neighborhood Streets

- Highly consistent tree species and consistent tree spacing
- Protect all existing healthy trees
- Include trees with a broad shade canopy
- Avoid trees with hard seed pods to reduce debris over bike lanes
- When necessary for removals, perform tree replacements in phases to retain shade and character

Street Tree Framework

Street trees give each street a distinct identity as well as provide mental and physical health benefits and positive environmental conditions. The framework for selecting street trees includes the following qualities:

- Drought and heat tolerance
- Native to California or adapted to this region
- Minimal root damage - related to parkway/planter size
- Long life span
- Good branch strength and structure
- Limited known insect/disease issues
- Low maintenance
- Shading potential
- Low amount of natural hydrocarbon production
- No messy fruit/other plant parts
- Colorful, attractive flowers

Recommended Street Trees

A canopy of trees provides a much greater return on the benefits of urban forestry than ground or shrub level plantings. Pico Rivera currently has a large range of different tree species. The recommended tree species list in Table 5-2 identifies preferred species for Pico Rivera based on the species' existing presence and the Street Tree Framework.

Table 5-2: Recommended Tree Species

Botanical Name	Common Name	Type	Height	Crown Spread
Agonis flexuosa	Peppermint tree	evergreen	20-30	20-30
Afrocarpus falcatus	African Fern Pine	evergreen	50-60	50-60
Banksia integrifolia	Coast banksia	evergreen	50-70	30-40
Callistemon salignus	White bottle brush	evergreen	30-40	15-20
Callistemon viminalis Slim	Slim bottle brush	evergreen	8-10	8-10

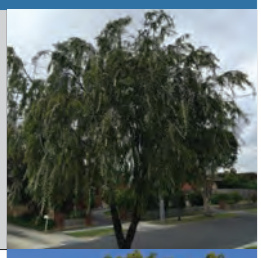
Spacing	Parkway Size	Water Use	Native	Flowers, Fruit, or Pods Color	Photo
15-20	4	Low	No	Cream	
20-30	5	Low	No	Not Showy	
15-20	5	Med	No	Cream	
10-15	4	Low	No	White	
10-15	3	Low	No	Red	

Table 5-2: Recommended Tree Species (Cont.)

Botanical Name	Common Name	Type	Height	Crown Spread
Cassia leptophylla	Gold medallion	evergreen	20-30	20-30
Cassia excelsa	Crown of Gold	deciduous	15-25	15-25
Caesalpinia mexicana	Mexican bird of paradise	evergreen	15-20	15-20
Cercidium floridium	Palo verde	deciduous	30-40	15-30
Chilopsis linearis	Desert willow	deciduous	15-25	15-25
Eucalpytus caesia spp. Magna	Silver princess	evergreen	20-25	15-25

Spacing	Parkway Size	Water Use	Native	Flowers, Fruit, or Pods Color	Photo
20-30	4	Med	No	Yellow	
15-20	4	Med	No	Yellow	
10-15	4	Low	No	Yellow	
15-20	6	Low	No	Yellow	
15-20	3	Low	No	Pink	
15-20	4	Low	No	Pink	

Table 5-2: Recommended Tree Species (Cont.)

Botanical Name	Common Name	Type	Height	Crown Spread
Eucalyptus erythrocorys	Red-cap gum	evergreen	20-30	20-25
Fraxinus velutina	Velvet ash	deciduous	30-40	25-35
Handroanthus chrysotrichus	Yellow trumpet	deciduous	20-30	20-30
Handroanthus impetiginosus	Pink trumpet	deciduous	30-50	20-30
Hesperocyparis (Cupressus) forbesii	Tecate cypress	evergreen	25-35	15-25
Hymenosporum flavum	Sweetshade	evergreen	30-45	15-20

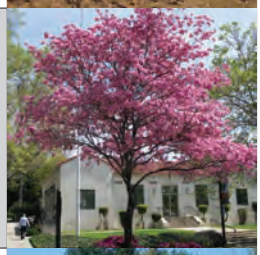
Spacing	Parkway Size	Water Use	Native	Flowers, Fruit, or Pods Color	Photo
20-30	4	Low	No	Coral	
20-30	OS/Park	Med	Yes	Cream	
15-20	3	Med	No	Yellow	
25-35	4	Med	No	Pink	
20-30	OS/Park	Low	Yes	Not Showy	
20-30	4	Med	No	Cream	

Table 5-2: Recommended Tree Species (Cont.)

Botanical Name	Common Name	Type	Height	Crown Spread
Koelreutaria bipinnata	Chinese flame	deciduous	30-40	20-30
Leptospermum Dark Shadows	Dark shadows tea tree	evergreen	30-40	25-35
Leptospermum petersonii	Lemon scented tea tree	evergreen	25-35	15-25
Lophostomon confertus	Brisbane box	evergreen	50-60	30-40
Markhamia hildebrandtii (lutea)	Nile tulip tree	evergreen	35-45	20-25
Melaleuca armillaris	Bracelet honey myrtle	evergreen	20-30	25-25

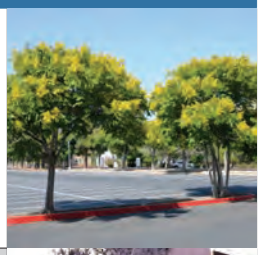
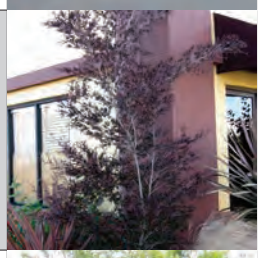
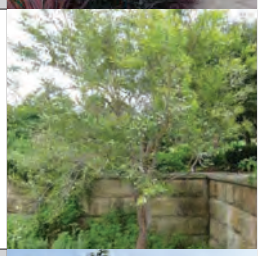
Spacing	Parkway Size	Water Use	Native	Flowers, Fruit, or Pods Color	Photo
25-35	4	Med	No	Yellow	
15-20	4	Low	No	Not Showy	
15-20	3	Low	No	Not Showy	
25=35	4	Med	No	White	
20-30	6	Med	No	Yelllow	
25-35	3	Low	No	Cream	

Table 5-2: Recommended Tree Species (Cont.)

Botanical Name	Common Name	Type	Height	Crown Spread
Melaleuca linarifolica	Flaxleaf paperbark	evergreen	20-30	15-20
Pinus pinea	Italian Stone Pine	evergreen	60-80	60-80
Pistachia chinensis	Chinese pistache 'Keith Davey'	deciduous	35-60	35-60
Platanus racemosa	California sycamore	deciduous	60-80	30-40
Platanus mexicanum	Mexican sycamore 'Alamo'	deciduous	60-80	30-40
Populus fremontii	Fremont cottonwood	deciduous	40-60	20-30

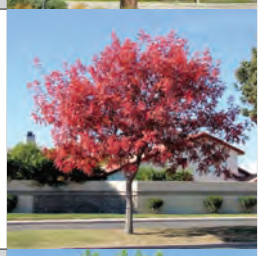
Spacing	Parkway Size	Water Use	Native	Flowers, Fruit, or Pods Color	Photo
20-30	4	Low	No	Cream	
40-50	8	Low	No	Not Showy	
30-40	5	Med	No	Not Showy	
40-50	8	Med	Yes	Not Showy	
40-50	6	Med	No	Not Showy	
30-40	OS/Park	Med	Yes	Not Showy	

Table 5-2: Recommended Tree Species (Cont.)

Botanical Name	Common Name	Type	Height	Crown Spread
Quercus agrifolia	Coast live oak	evergreen	60-80	40-50
Quercus engelmanii	Engelmann oak	deciduous	60-80	40-50
Quercus suber	Cork oak	evergreen	40-60	30-40
Sambucus cerulea	Blue elderberry	deciduous	25-35	25-35
Rhus lancea	African sumac	evergreen	20-30	20-25
Salix lasiandra	Pacific willow	deciduous	20 - 30	20-25

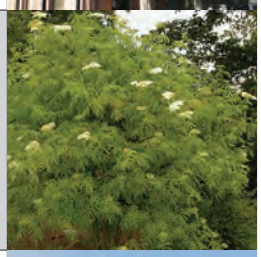
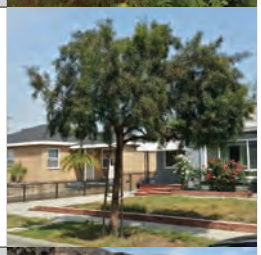
Spacing	Parkway Size	Water Use	Native	Flowers, Fruit, or Pods Color	Photo
35-45	6	Low	Yes	Acorns	
35-45	6	Low	Yes	Acorns	
30-40	6	Low	No	Acorns	
20-30	OS/Park	Low	Yes	Cream with Blue Fruit	
15-20	3	Low	No	Light Yellow	
25-35	OS/Park	Med	Yes	Yellow	

Table 5-2: Recommended Tree Species (Cont.)

Botanical Name	Common Name	Type	Height	Crown Spread
Stereospermum sinica	China doll	evergreen	20-30	15-25
Spathodea campanulata	African tulip	evergreen to partly deciduous	20-30	20-30
Stenocarpus sinuatus	Firewheel tree	evergreen	25-35	20-25
Tecoma stans	Yellow elder, Yellowbells	evergreen	15-25	15-25
Tipuanu tipu	Tipu tree	deciduous to partly deciduous	50-60	50-60
Triadica sebifera	Chinese tallow	deciduous	30 -40	20-30

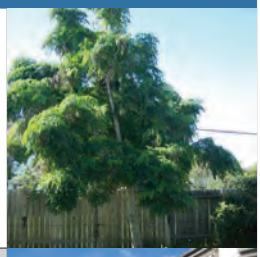
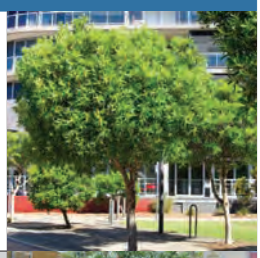
Spacing	Parkway Size	Water Use	Native	Flowers, Fruit, or Pods Color	Photo
20-30	4	Med	No	White	
30-40	4	Med	No	Orange	
25-35	4	Med	No	Orange	
15-20	4	Med	No	Yellow	
40-50	6	Low	No	Yellow	
20-30	4	Low	No	Not Showy	

Table 5-2: Recommended Tree Species (Cont.)

Botanical Name	Common Name	Type	Height	Crown Spread
Tristaniopsis laurina	Water gum	evergreen	20-30	15-30
Umbellularia californica	California bay	evergreen	30-50	25-35
Ulmus parvifolia 'Drake'	Evergreen Elm	evergreen to partly deciduous	30-50	30-50
Ulmus propinqua 'Emerald Sunshine'	Emerald Sunshine Elm	deciduous	25-35	20-25
Vitex agnus-castus	Chaste tree	deciduous	20-25	15-25

Spacing	Parkway Size	Water Use	Native	Flowers, Fruit, or Pods Color	Photo
15-20	4	Low	No	Cream	
20-30	OS/Park	Med	Yes	Cream	
30-40	4	Med	No	Not Showy	
30-40	5	Med	No	Not Showy	
15-20	3	Low	No	Purple	

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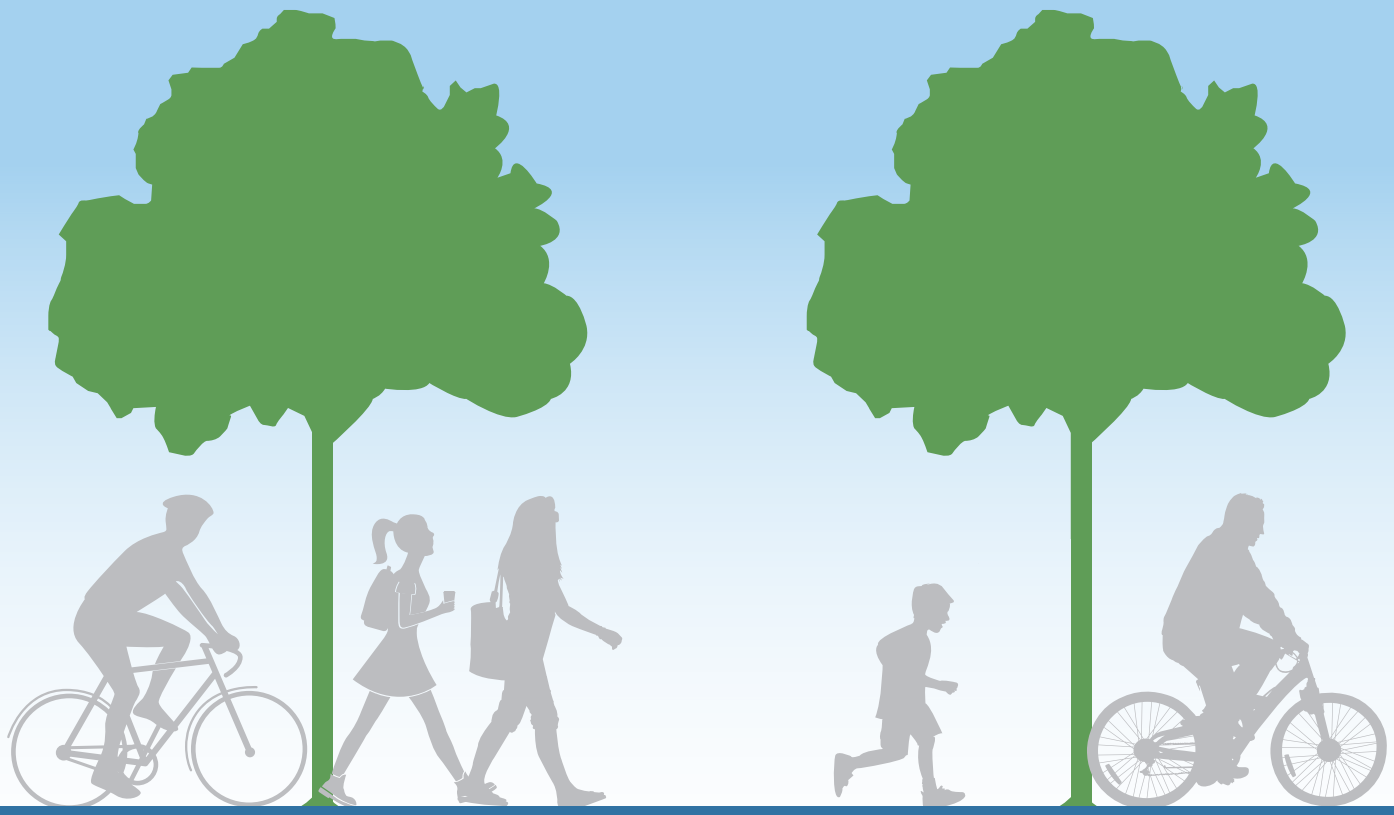


6 Street Design Toolbox

Pico Rivera Urban Greening Plan

Pico Rivera Street Design Toolbox

The Pico Rivera Street Design Toolbox is a tool that can be used to build a desirable street and attractive public realm. The Toolbox is organized by the four design elements and also considers where a solution is applied in a street cross section. This section includes options for Pedestrian Facilities, Bicycle Facilities, Urban Runoff and Open Space, and Urban Forestry Element.

The improvements shown in the preferred concept street graphics reference the Toolbox. The Toolbox is a matrix that includes the physical elements of a street and where these improvements should take place. The following pages identify the various improvements organized by the design elements of pedestrian facilities, bicycle facilities, urban runoff and open space, and urban forestry.

What are the Elements of the Toolbox?

Bicycle Facilities Element

This element focuses on safety and access improvements for bicyclists. These design options include bike lanes as well as bike lockers and racks.

Pedestrian Facilities Element

The design solutions found here focus on enhancing the pedestrian experience by providing a range of design options from crosswalks to lighting and wayfinding improvements.

Urban Runoff and Open Space Element

Urban Runoff addresses improvements as they relate to capturing water. These strategies can be incorporated into the sidewalk, parkway, median and even the roadway as the toolbox and cross sections highlight. Open spaces ideally occur adjacent to or part of the street. These can include parks, parklets, plazas, and other options. This element describes how open spaces can be placed in the public realm and integrated into all parts of street design.

Urban Forestry Element

This element addresses improvements that relate to “greening” the street. The improvements in this element must coordinate with the Urban Runoff and Open Space Element.

Figure 6-1: How to Use the Toolbox

Parkway Options

Relevant Design Element

Build-ing Edge | Building Interface Zone | Pedestrian Zone | Parkway | On-street Parking | Bike Lane | Travel Lane | Travel Lane | Median

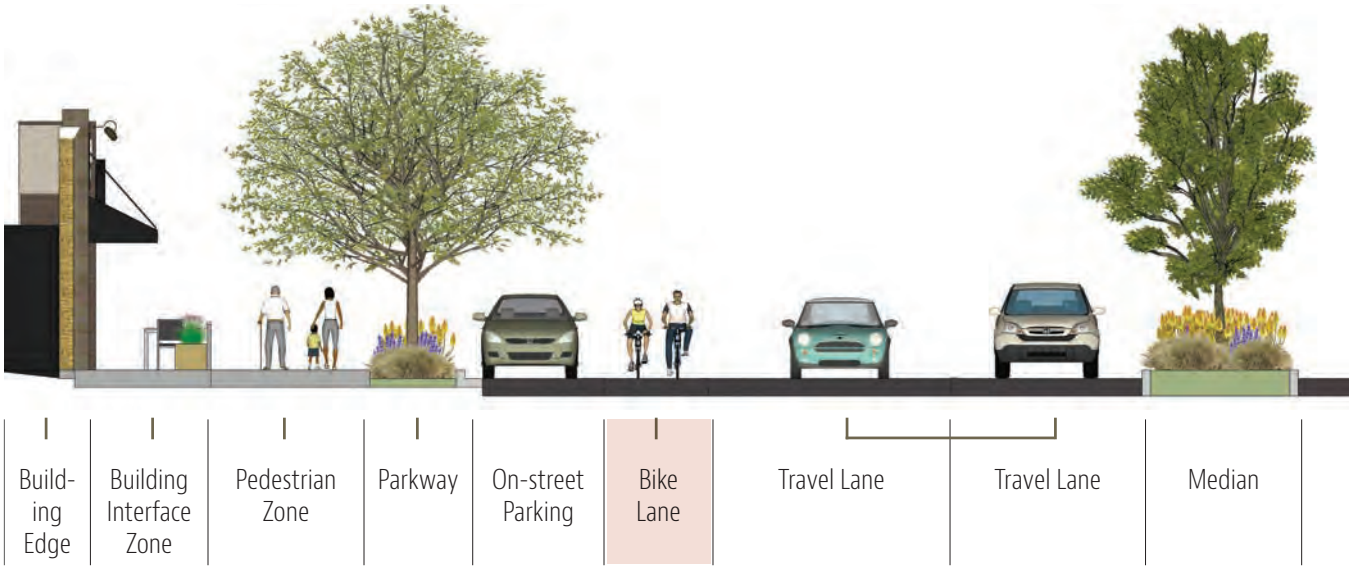
Improved Street Element

Bike Parking Corral

Individual Bike Rack

Tool Examples

Bike Facility Options



Standard Bike Lane

Bike Lane with Travel Lane Buffer

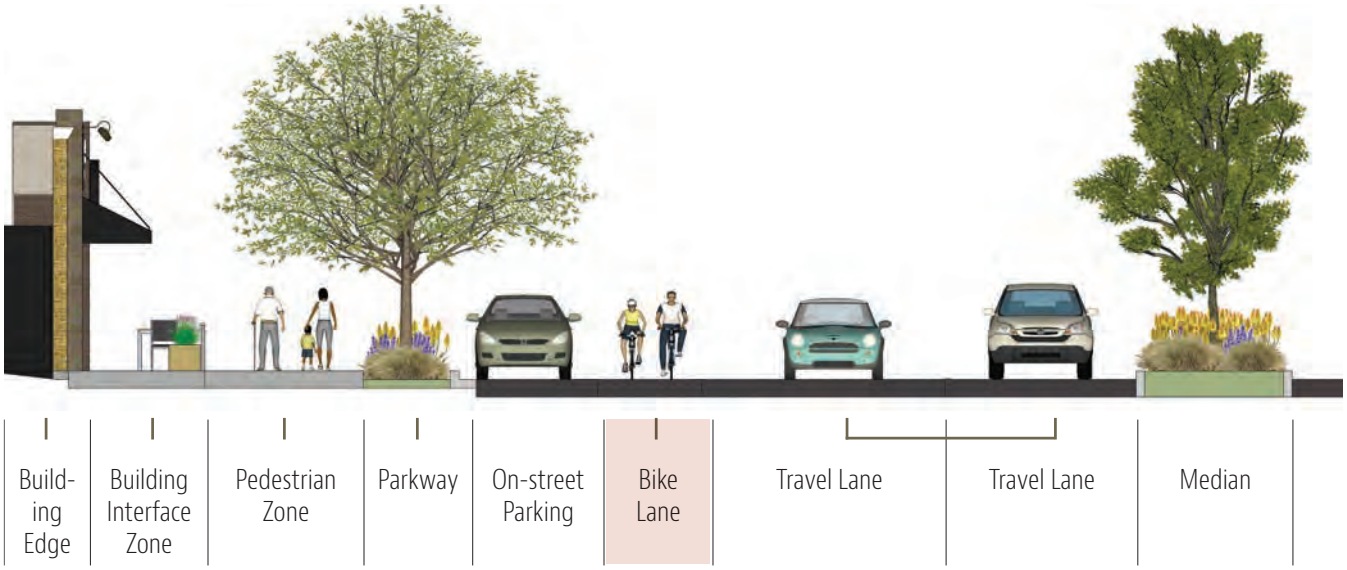
Class 2 Buffered Bike Lane - Both Sides Buffered

Bike Route- Shared Lane Marking or "Sharrow"

Class 3 Bike Route

Two-Way Cycle Track with Barrier or Multi-Use Path

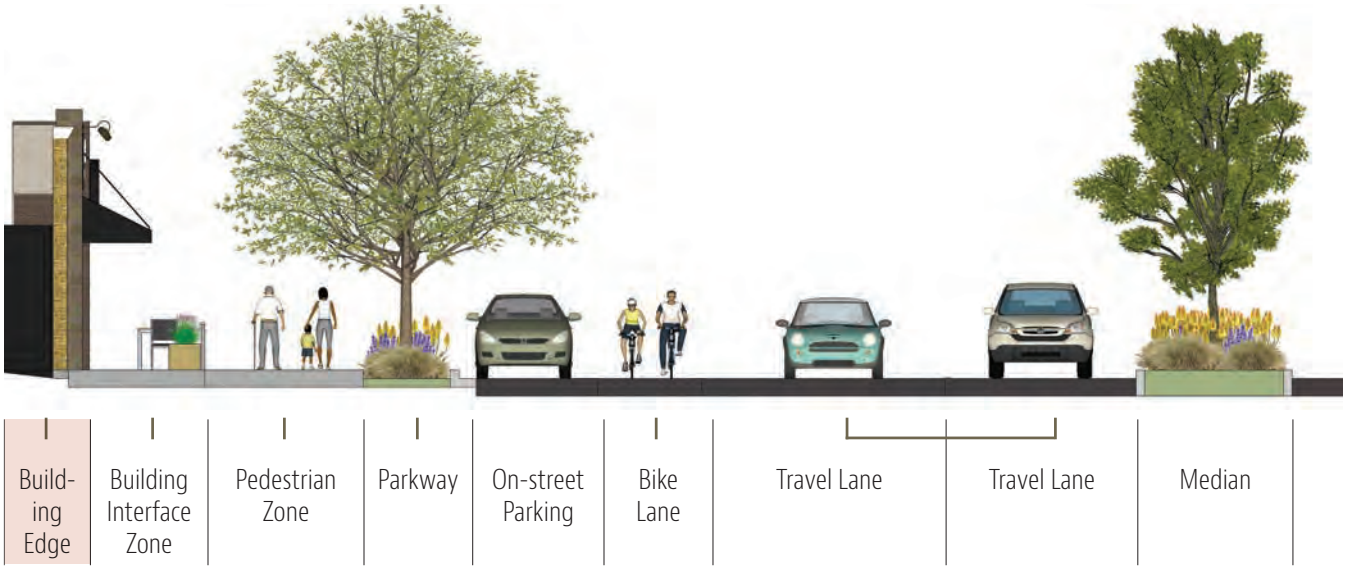
Bike Facility Options



Cross-Over Lane

Bike Boulevard with Vehicle Diverters to Limit through Traffic

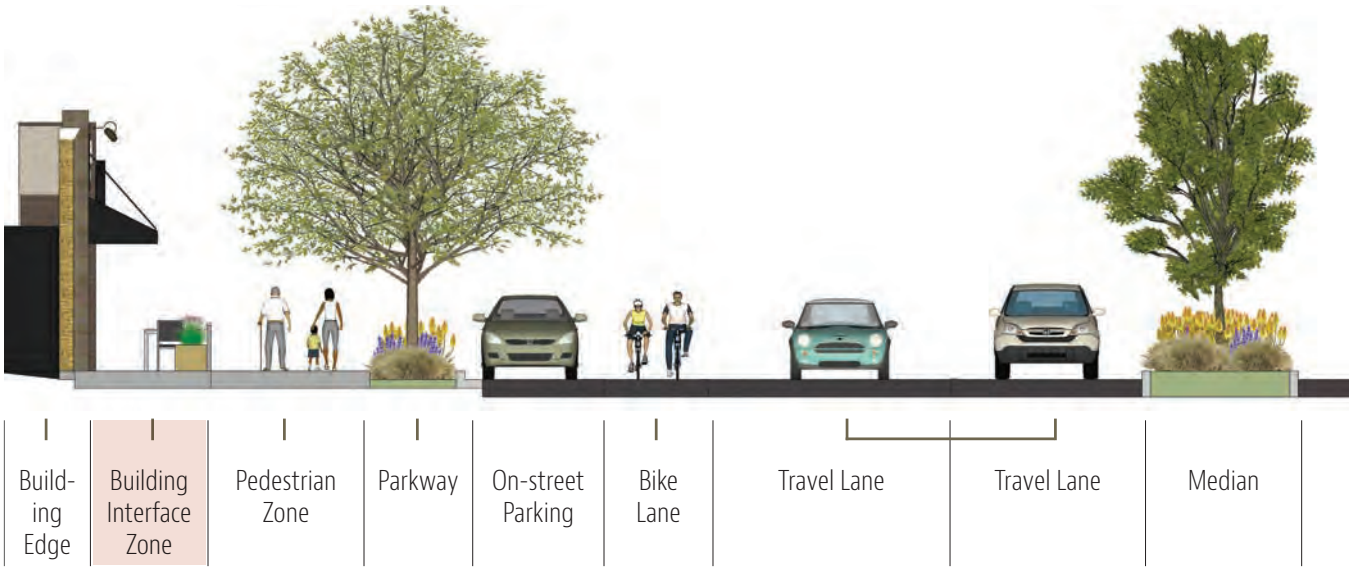
Building Edge Options



Park/Plaza on Private Development or Parklet on Public Land

Rooftop Park on New Development

Building Interface Options



Outdoor Cafes and Restaurant Seating

Merchandise Display or Sidewalk Sale

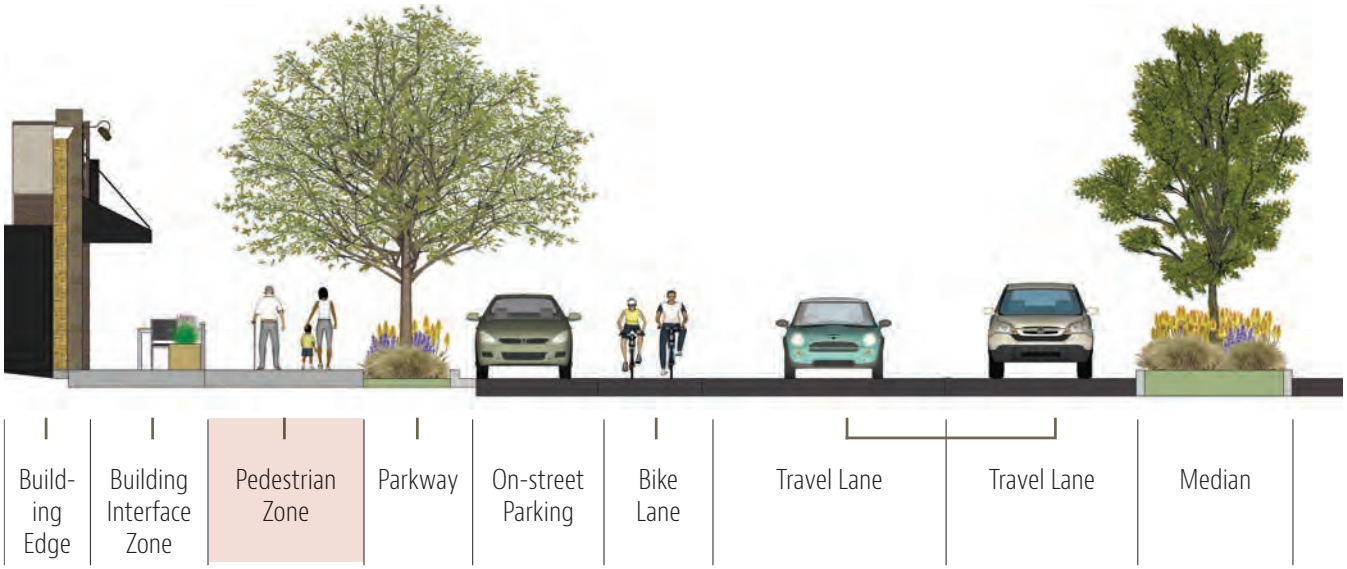
Public Seating

Bicycle Rack

Bike Lockers

Walkway Over Tree Grate

Hardscape Options



Permeable Pavers

Permeable Asphalt or Concrete

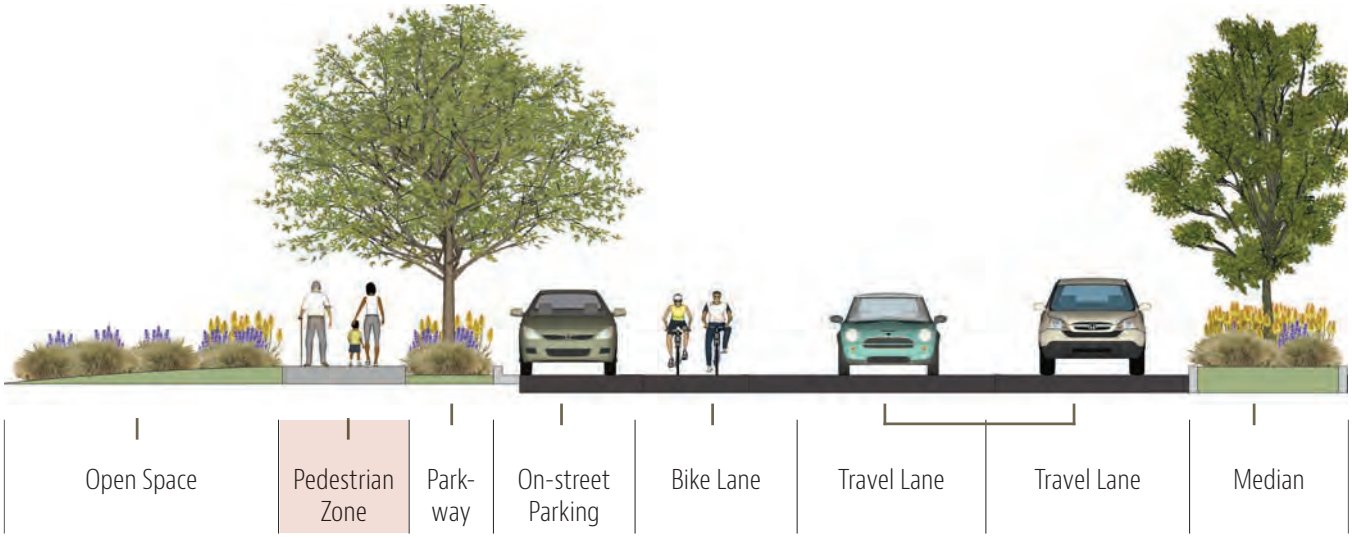
French Drain with Grates

Subsurface Silva Cell with Subsurface Drain

Compacted Decomposed Granite Walkway

Permeable Pavers

Hardscape Options

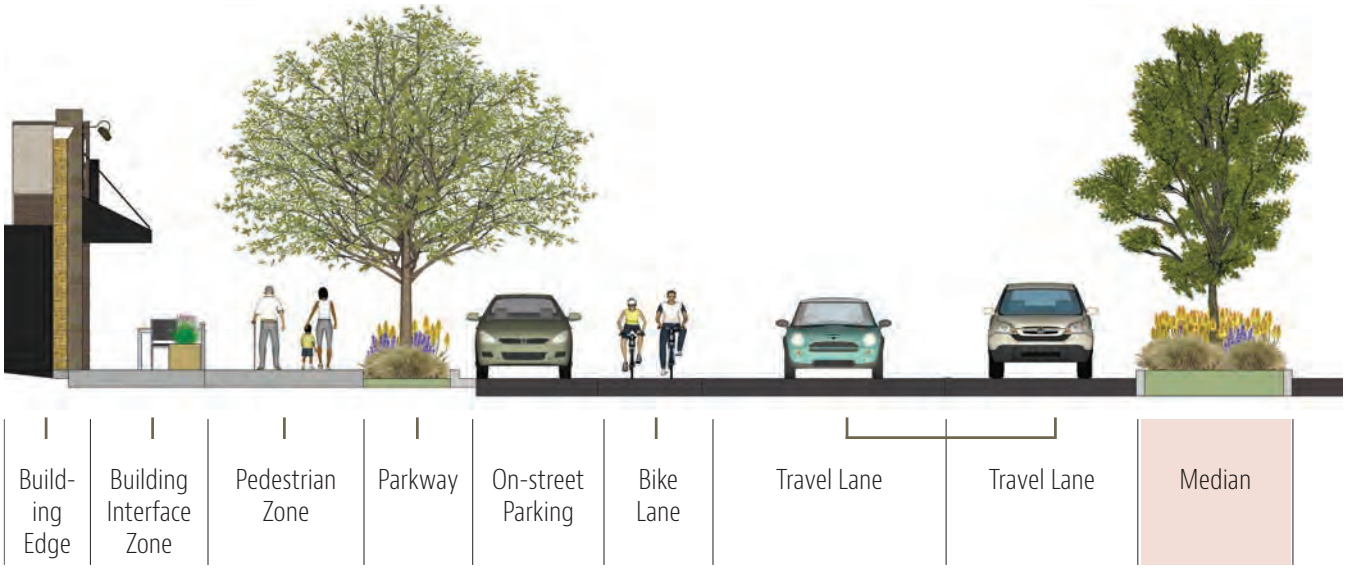


Compacted Decomposed Granite Walkway

Colored Integral Concrete Walkway

Stabilized Gravel Walkway

Median Options



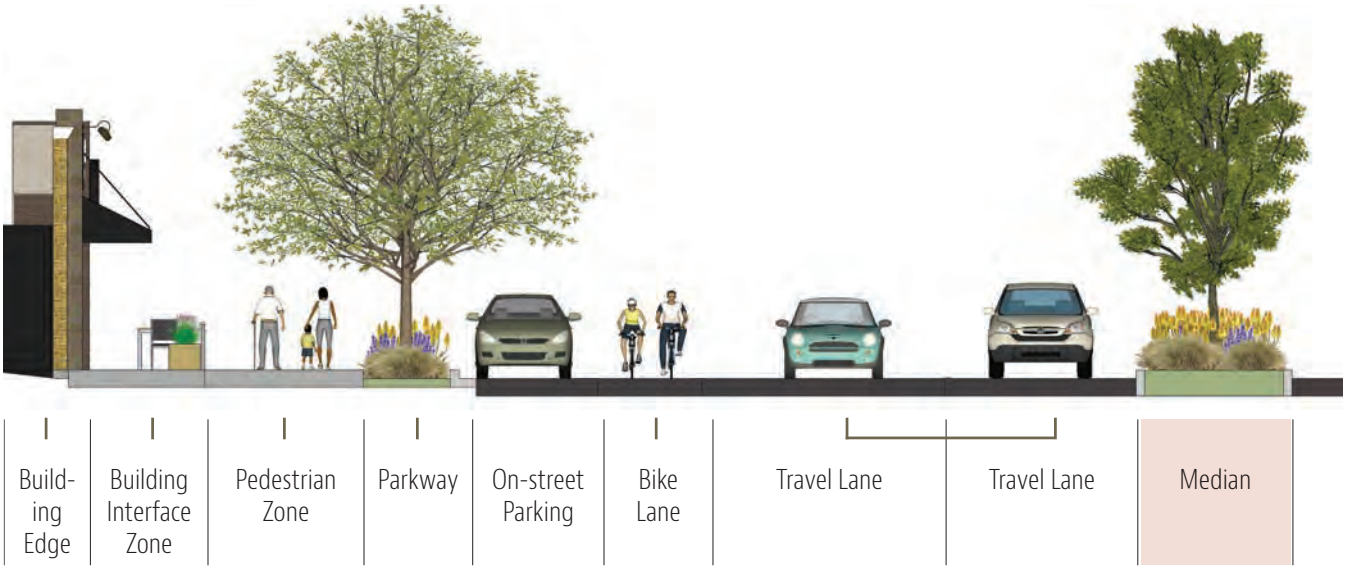
Left Turn Pocket

Signage/Monumentation

Median Based Pedestrian Signal

Median Pedestrian Signal Actuator

Median Options



Permeable Paver with Subsurface Filtration and Drains

Permeable Concrete with Sand Filtration and Subsurface Drain

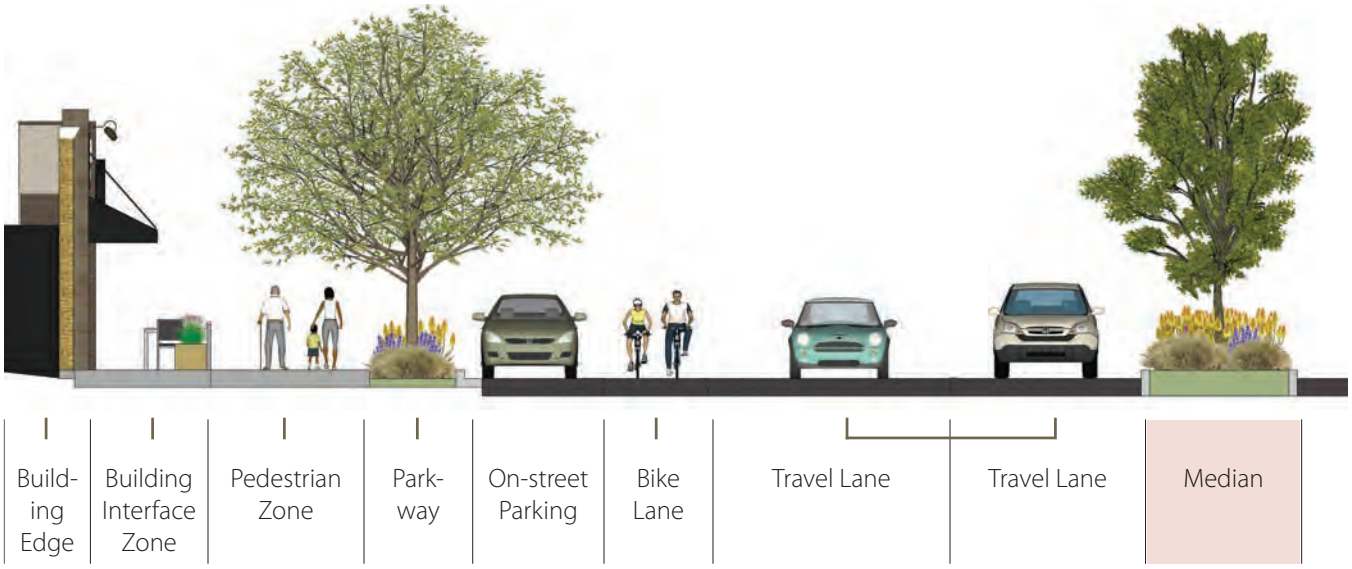
Decomposed Granite/Rock Swale/ Gravel Trench

Curb Openings Draining to Bioretention, Filtration, or Infiltration Areas

Infiltration Basin with Bioretention Soils and Subsurface Drain

Tree Basin with Bioretention Soils and Subsurface Drain

Median Options



Medium to Large Canopy Trees

Small Tree

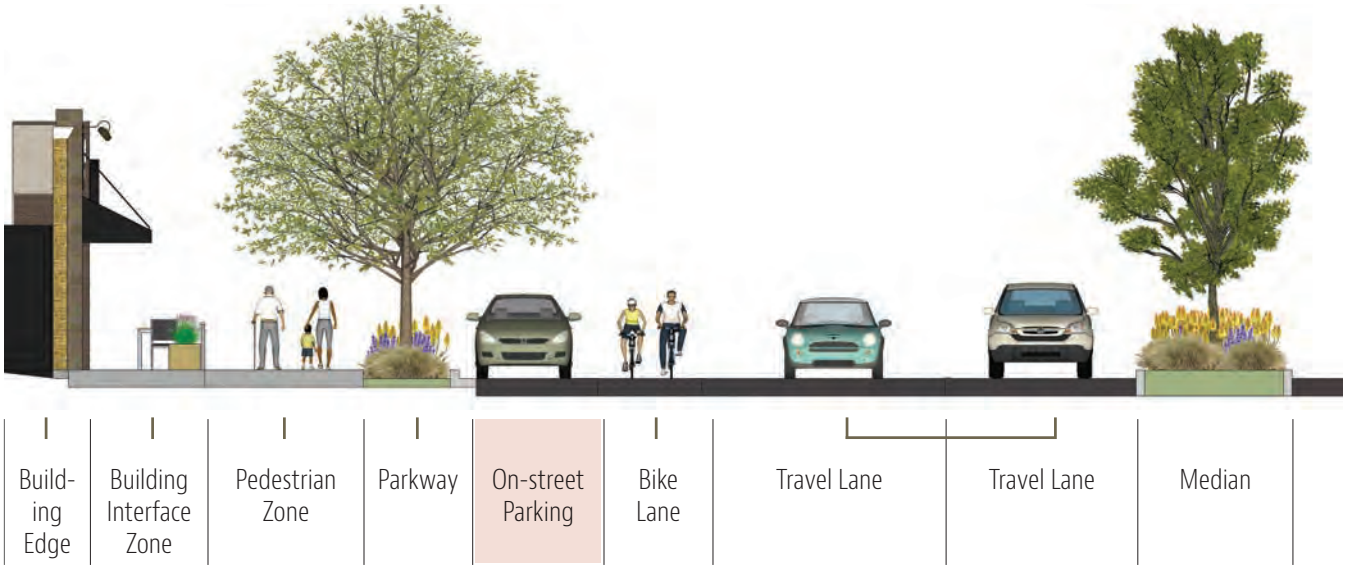
Vertical Tree/Palm

Native Shrubs, Succulents, Grasses with Rock Mulch

Shrubs/Groundcover

Shrubs with Bark Mulch

Parking Lane Options

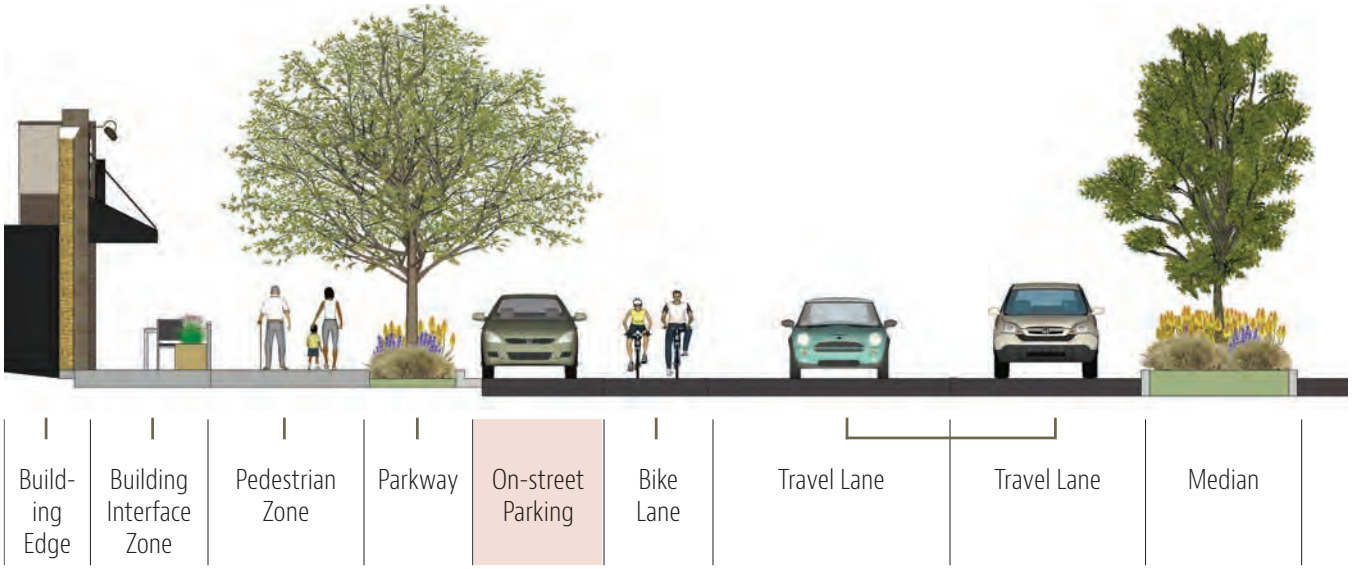


Convert On-Street Parking Into a Bike Corral

Back-in Angled Parking

Wrap-Around Parking Bulb-outs

Parking Lane Options

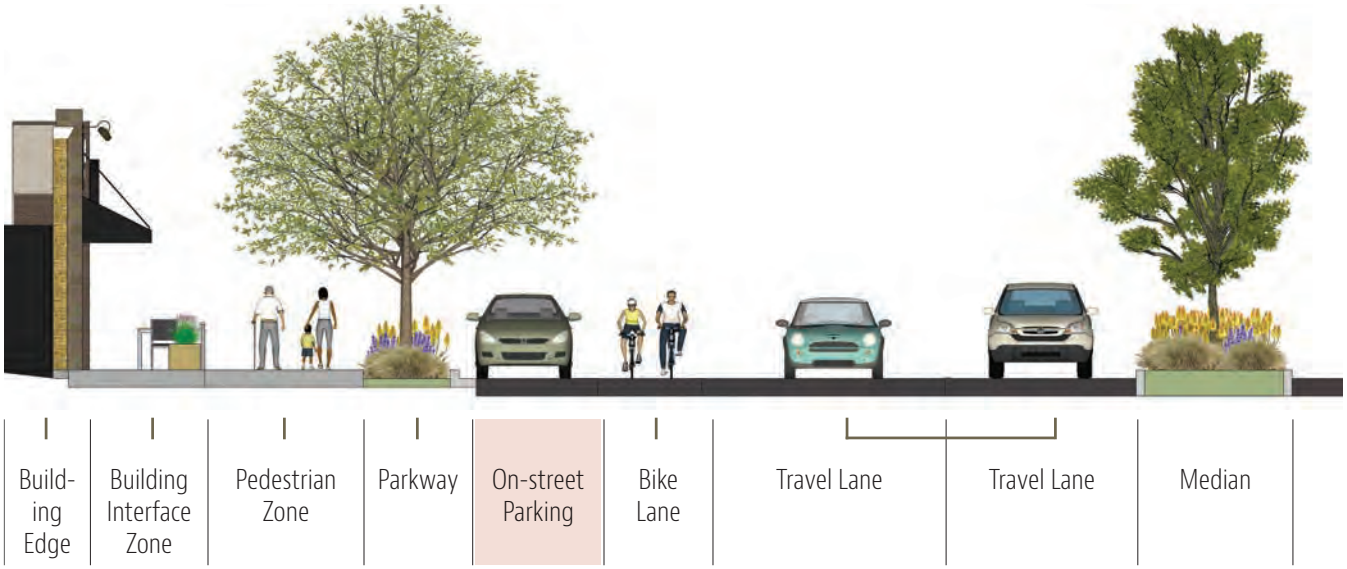


Convert On-Street Parking Into Public Cafe Seating

Convert On-Street Parking to extend Sidewalk and Public Seating

Convert a Paper Street into a Park

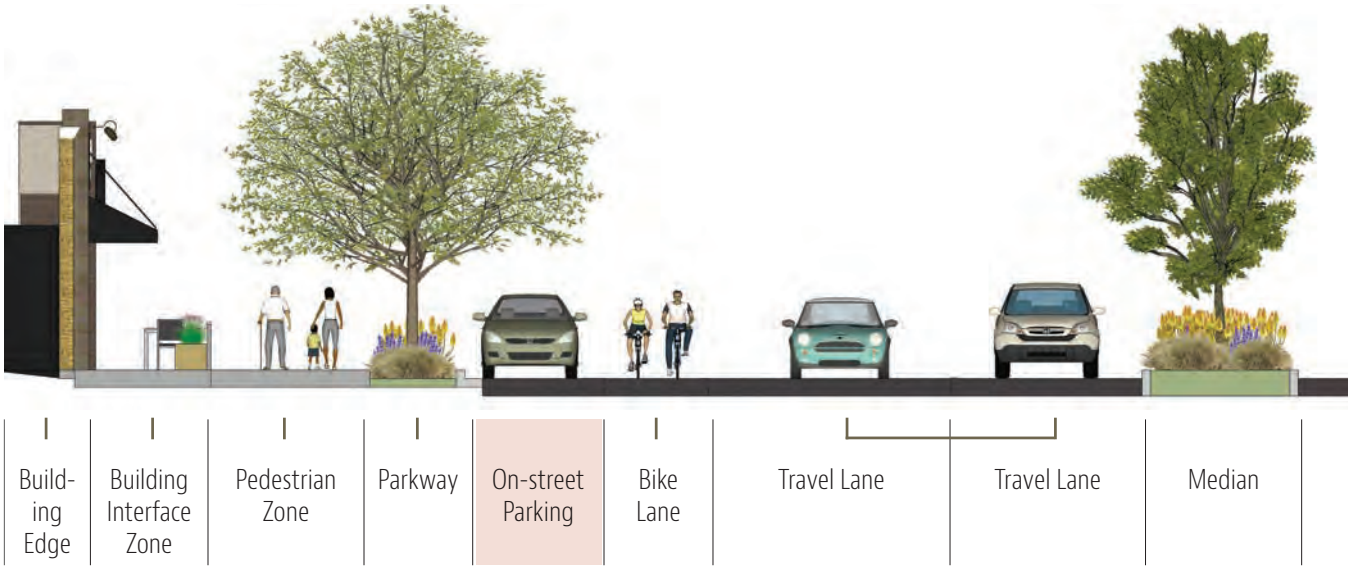
Parking Lane Options



Subsurface Silva Cell and Drain (Use with Permeable Surfaces)

Permeable Pavers

Parking Lane Options (With Bulb-outs)

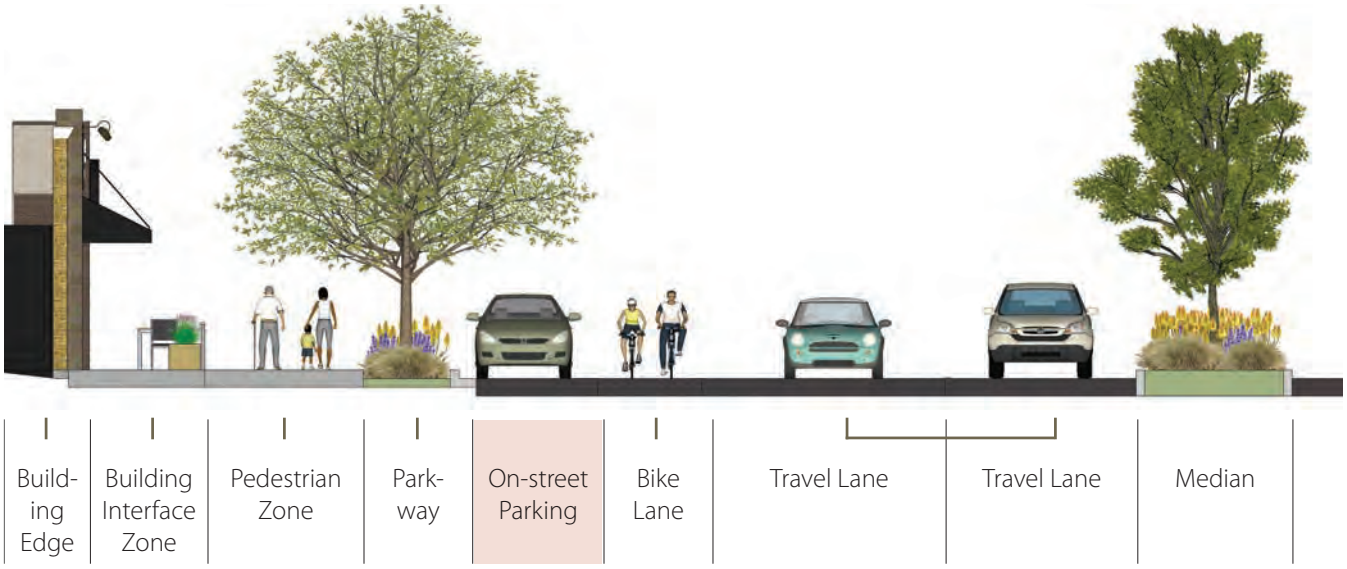


Intersection Bulbout with Bioretention Soil and Subsurface Drain

Mid-block Bulbout with Bioretention Soil and Subsurface Drain

Bulbout as an Infiltration Basin with Bioretention Soils and Subsurface Drain

Parking Lane Options (With Bulb-outs)



Medium to Large Canopy Trees

Small Open Tree

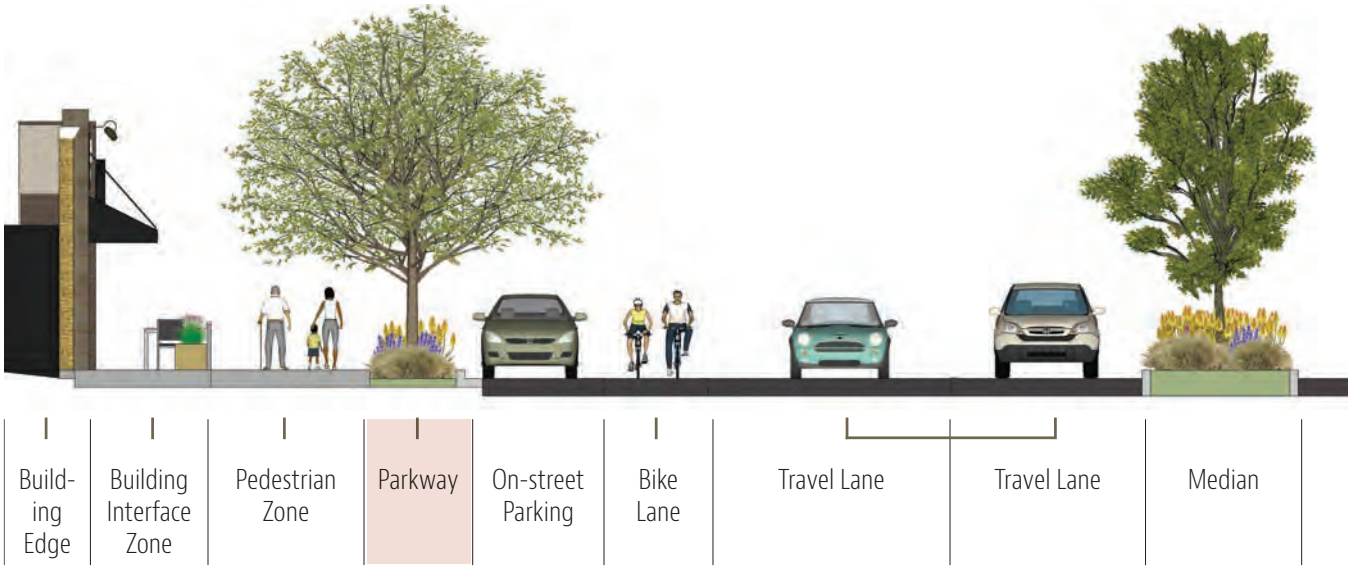
Native Shrubs, Succulents, Grasses with Bark Mulch

Low Shrubs and Groundcover in a Mid-block Bulbout

Small Open Tree

Native Shrubs, Succulents, Grasses with Bark Mulch

Parkway Options

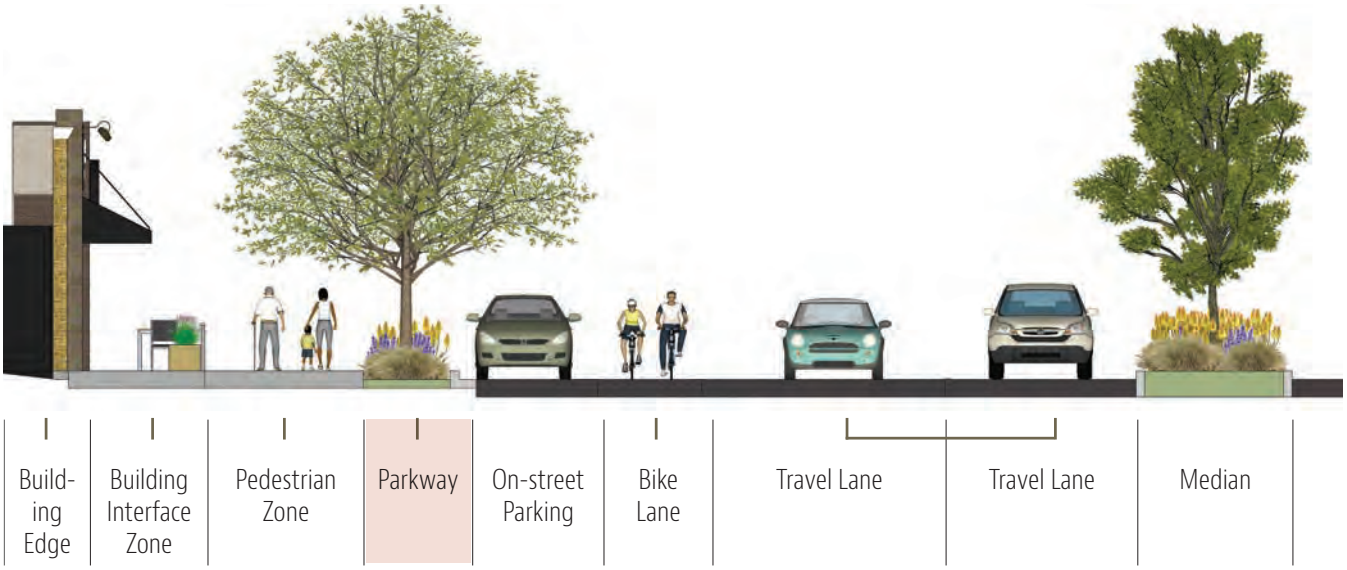


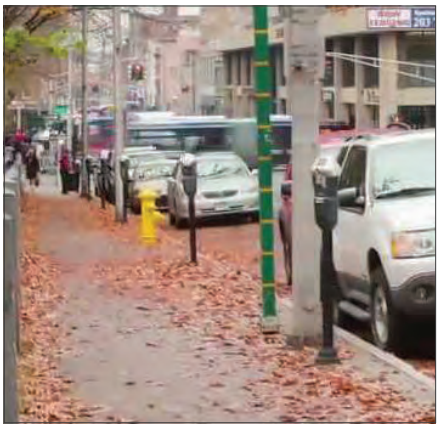
Bike Parking Corral

Individual Bike Rack

Custom Bike Racks

Parkway Options





Meters, Waste and Recycling Bins

Public Art/Wayfinding Banners

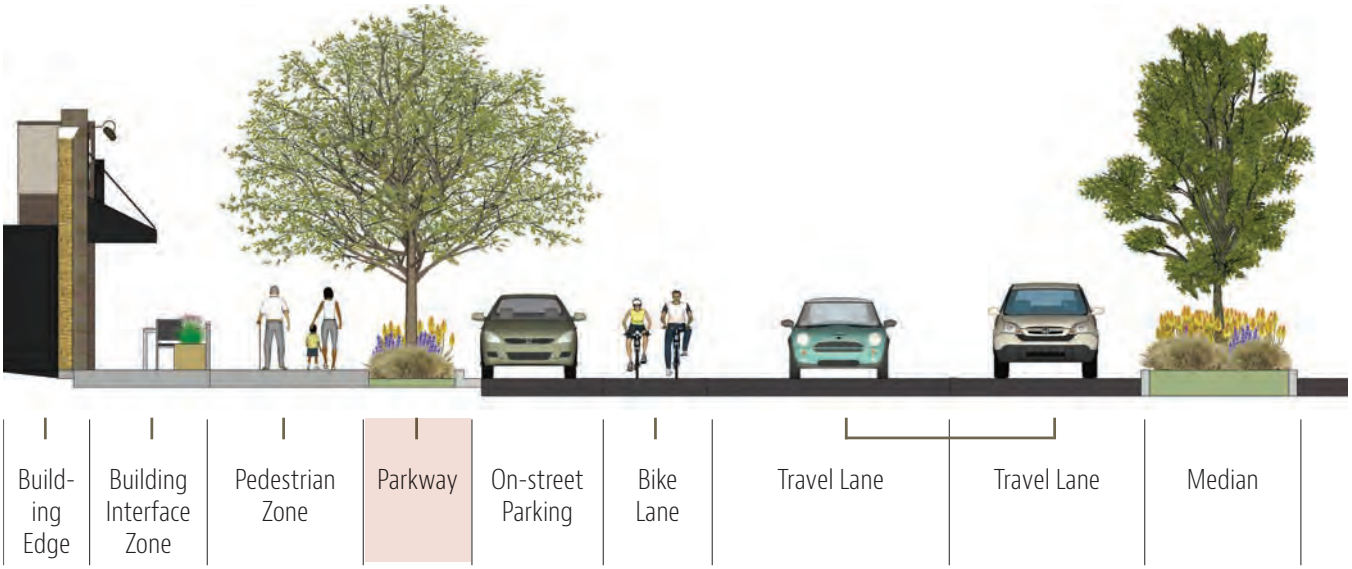
Pedestrian Scale Lighting

Transit Facilities with Shelters and Seating

Public Information and Transit Kiosks

Public Seating

Parkway Options



Rain Garden with Bioretention Soils and Subsurface Drain

Tree Basin with Filters and Subsurface Drain

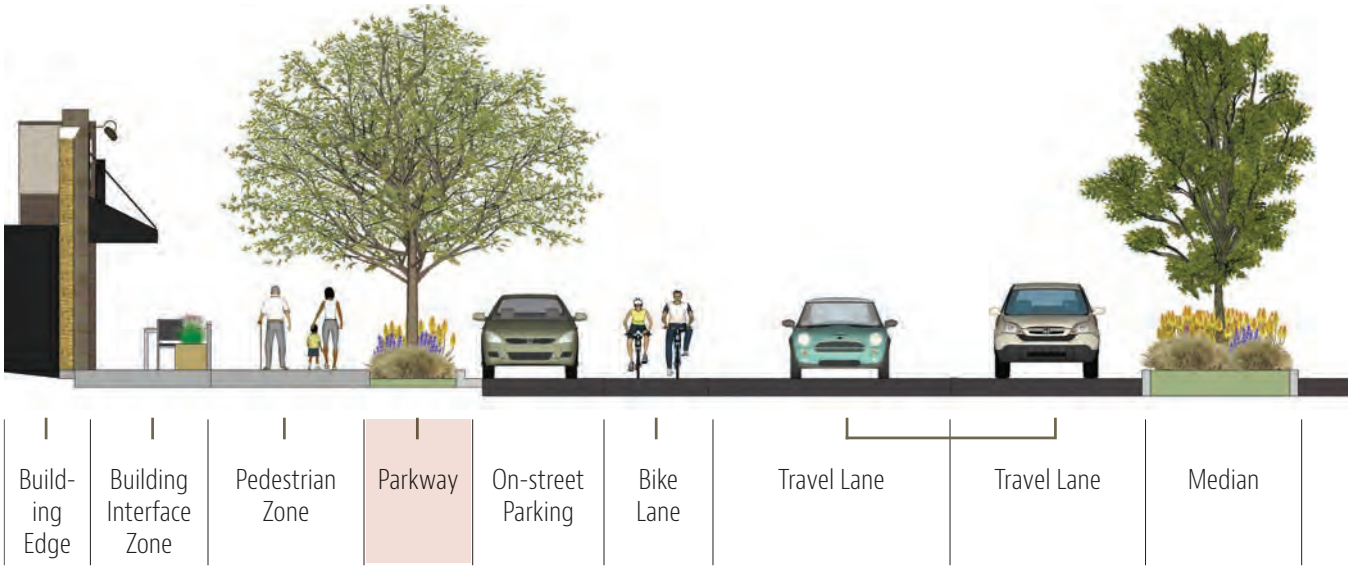
Infiltration Basin with Bioretention Soils and Subsurface Drain

Curb Openings Draining to Bioretention, Filtration, or Infiltration Areas

Tree Grates with Permeable Pavers (Only Commercial Streets)

Tree Box Filter

Parkway Options



Medium to Large Canopy Tree

Small Open Tree

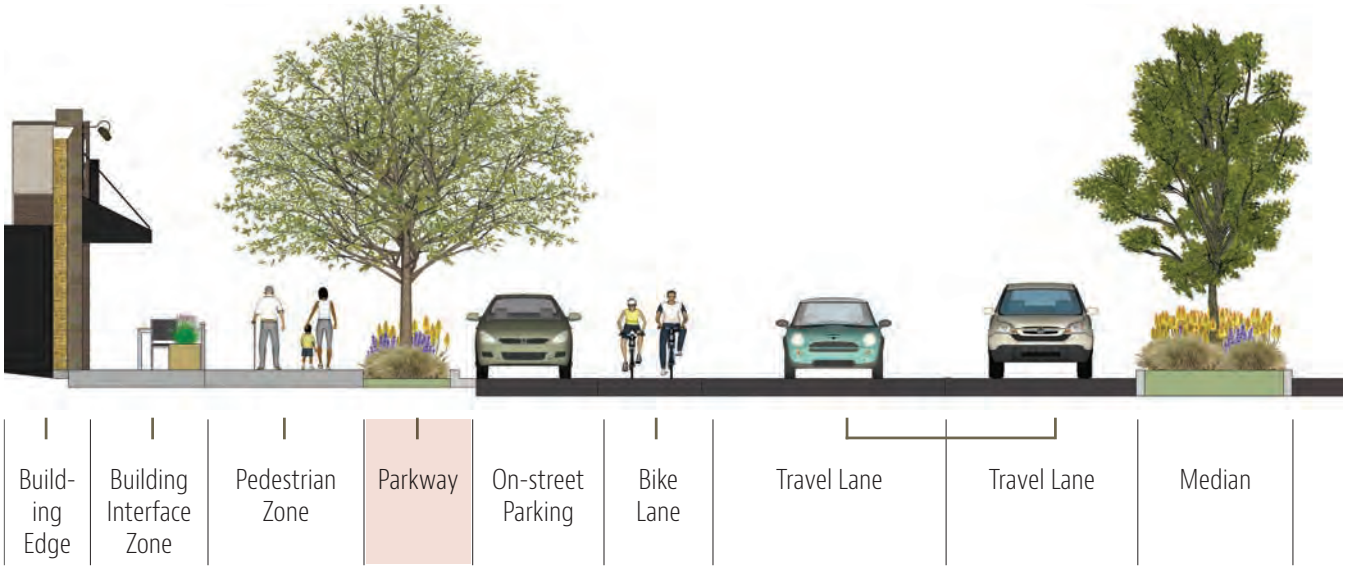
Native Shrubs, Succulents, Grasses with Rock Mulch

Shrubs and Low Plants with Bark Mulch

Small to Large Tree with Tree Grate

Small to Large Tree with Tree Grate

Parkway Options

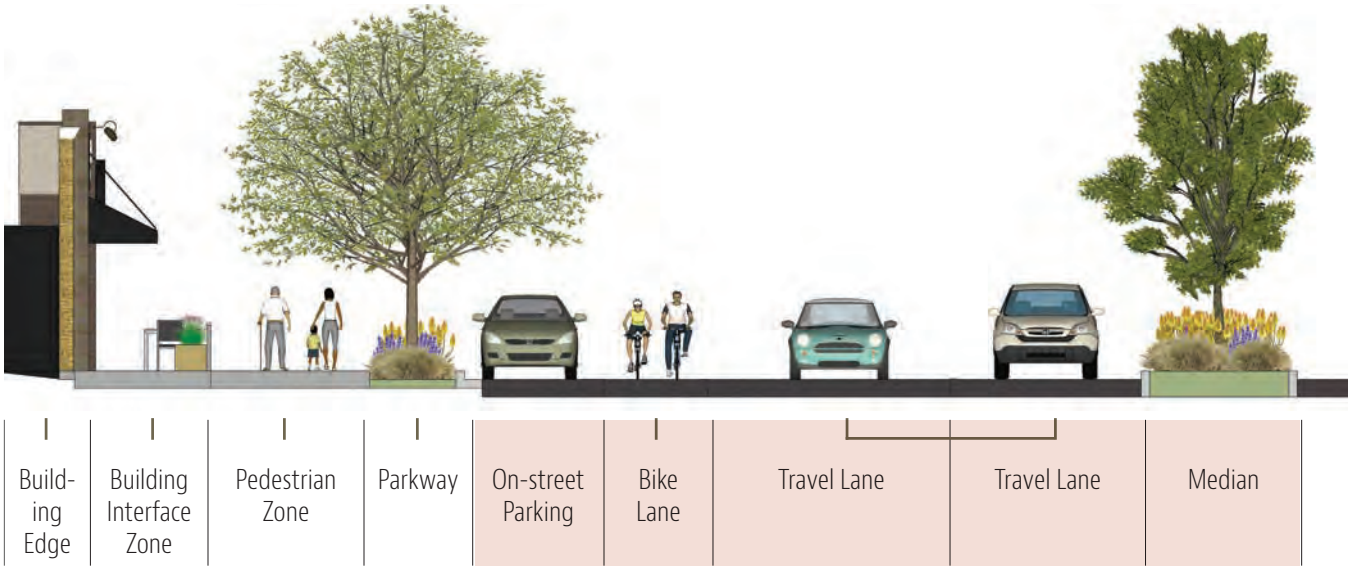


Wayfinding/Signage for Safe Route to Parks

Urban Park on Wide Parkway or Double Row of Trees

Decomposed Granite/Rock Swale/ Gravel Trench

Street Crossing Options



Median Refuge

Staggered Pedestrian Crosswalk

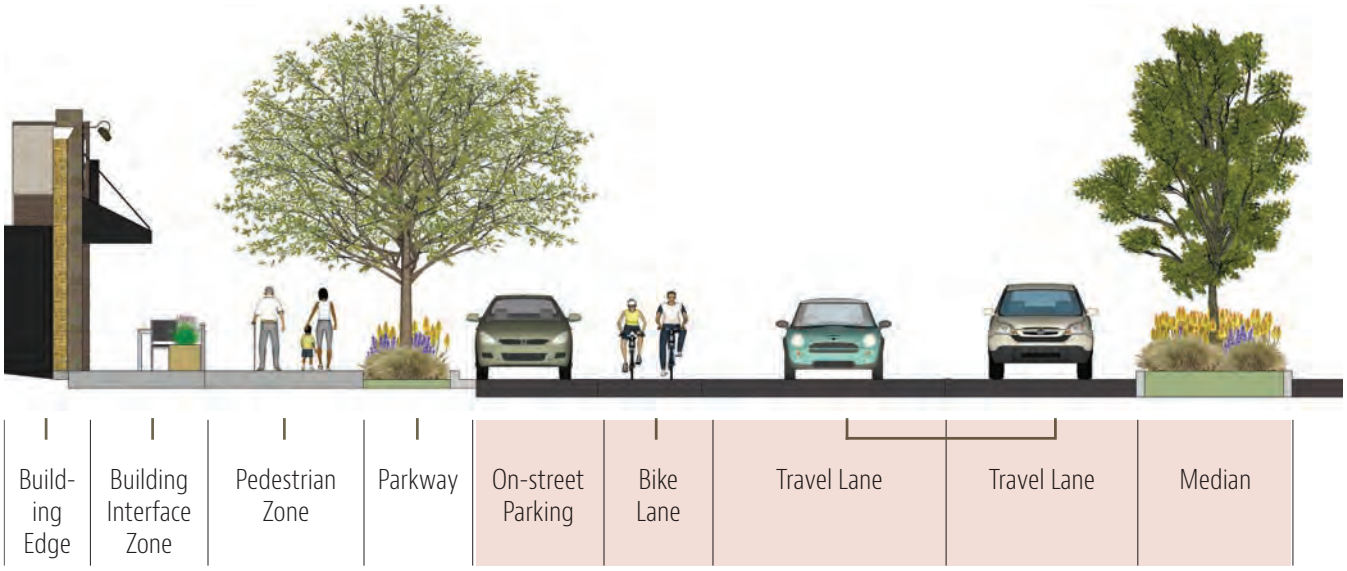
Enhanced Marked Pedestrian Crosswalks

Pedestrian Ramp and Bulbout (Midblock or Intersection)

In-Road Warning Lights at Mid-block Crossing

Pedestrian Hybrid Beacon (PHB)

Street Crossing Options



Pedestrian Signal

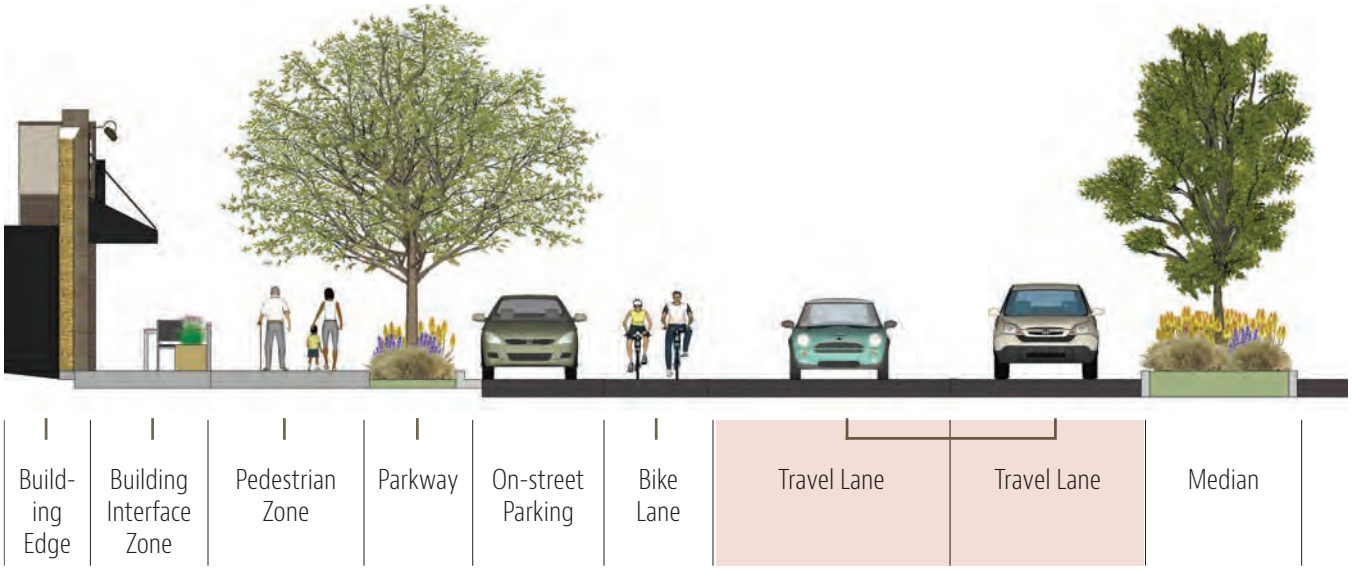
Rectangular Rapid Flashing Beacon

Traffic Signals at Intersection

Toucan Crossing

Raised Crosswalk

Travel Lane Options



Road Diet (Reduction in Number of Lanes)

Lane Diet (Reduction in Lane Width)

Speed Table

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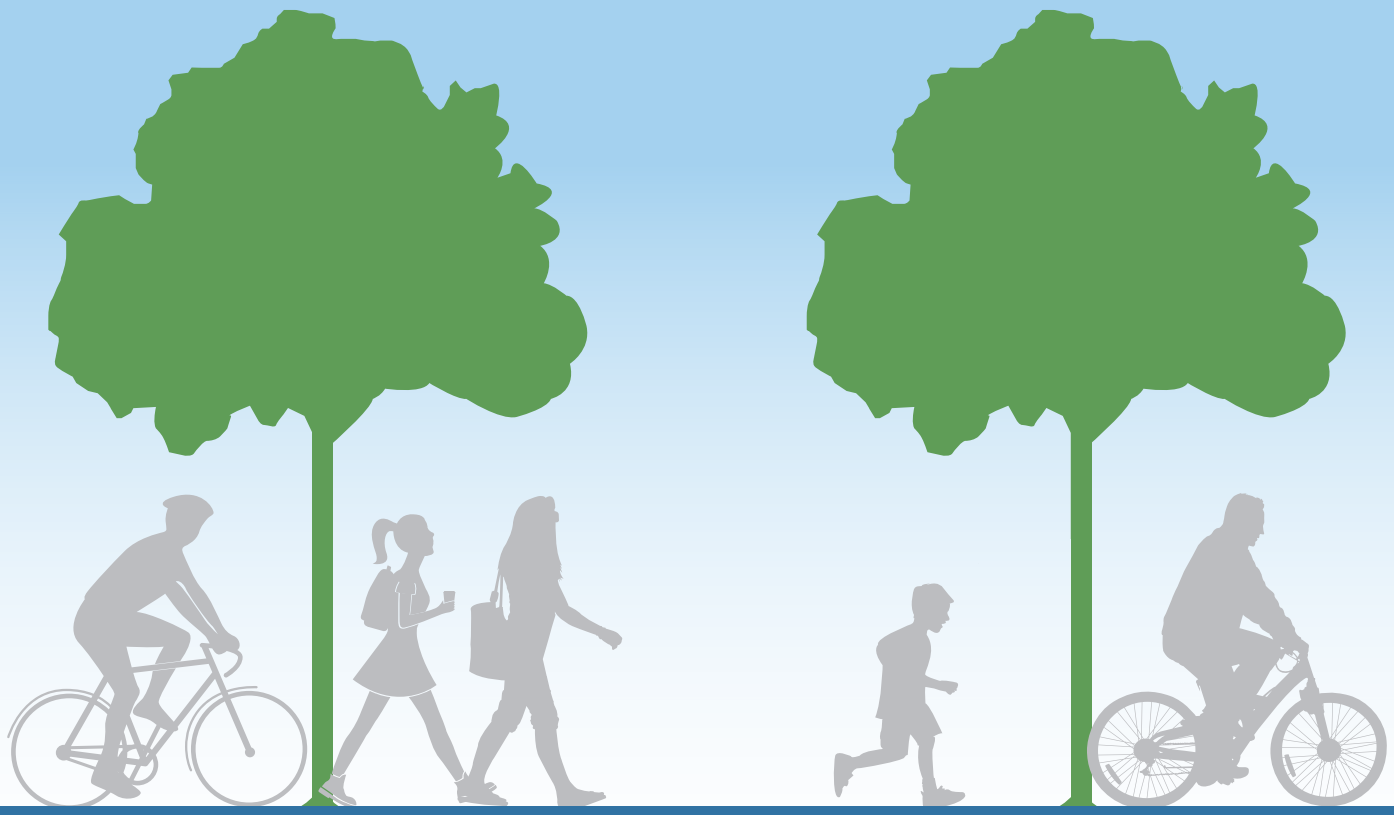


7 Green Streets

Pico Rivera Urban Greening Plan

Green Streets System

The streets in Pico Rivera were analyzed based on their functions, surrounding land uses, and community prioritized use of the streets. In addition, streets were evaluated for street use and right-of-way width.

The study area was divided into a number of multi-block segments so the community could select the areas they felt needed the most improvement. The community was asked to address topics of walkability, bicycle access, transit access, and commercial destinations, and selected potential improvement areas for each topic. Their top selections assisted in selecting commercial focus, transit focus, pedestrian/bike focus, and neighborhood focus streets. These street categories were all categorized as part of a Green Street System.

For each Green Street type, recommendations are made based on the use, width, and character of the street. Each Green Street type will be discussed in this section based on the four design elements of Bicycle Facilities, Pedestrian Facilities, Urban and Open Space, and Urban Forestry. Examples are provided for each Green Street type. Some of these street types can be a combination of two or more Green Street types. The predominance of land use prioritizes that street type.

The Green Street concepts in the following sections show concepts of Green Streets but are not necessarily recommendations. These are used as illustrations to demonstrate the four design elements.

Types of Green Streets

Commercial Green Street: Emphasizes specific branding to establish a strong retail presence. The street includes coordinated streetscape furnishings. Surrounding buildings are typically mixed-use with ground floor retail.

Transit Green Street: Highlights the transit stops on specific streets. These streets focus on creating safe, attractive pedestrian and/or bicycle connections as a priority to allow optimized access to transit stops.

Pedestrian/Bike Green Street: Creates a comfortable and safe walking environment which includes a bicycle facility or access to school and parks. The street design focuses on walking, biking, and connecting major origins and destinations.

Neighborhood Green Street: Enhances the walking environment, attracting more pedestrians and creating open space opportunities in residential neighborhoods. Design elements may include different paving materials and textures, landscaping that is adjacent to the roadway, and curbless streets.

Figure 7-1: Green Streets System

Source: ESA, 2014. KTU+A, 2016.

Commercial Green Street

Commercial green streets are defined by their retail focus. The land uses surrounding a commercial focus green street should be a blend of retail, office, and small businesses. To support these uses, the commercial focus green street should provide a continuous pedestrian path with limited driveway interruptions. The sidewalk should include an expanded walking area that incorporates broad canopied, high branching street trees in tree grates, significant pedestrian and bike amenities, and cohesive streetscape furnishings.

Considerations

- High levels of retail activity, transit, vehicles, pedestrians, and bike activity
- Desire for generous sidewalk zone and increased sense of character
- Connections to businesses and active retail use in the sidewalk
- Potential runoff storage in tree grates and adjacent below grade areas
- Safe and inviting access through parking lots that front major retail centers

Figure 7-2: Washington Boulevard Commercial Green Street

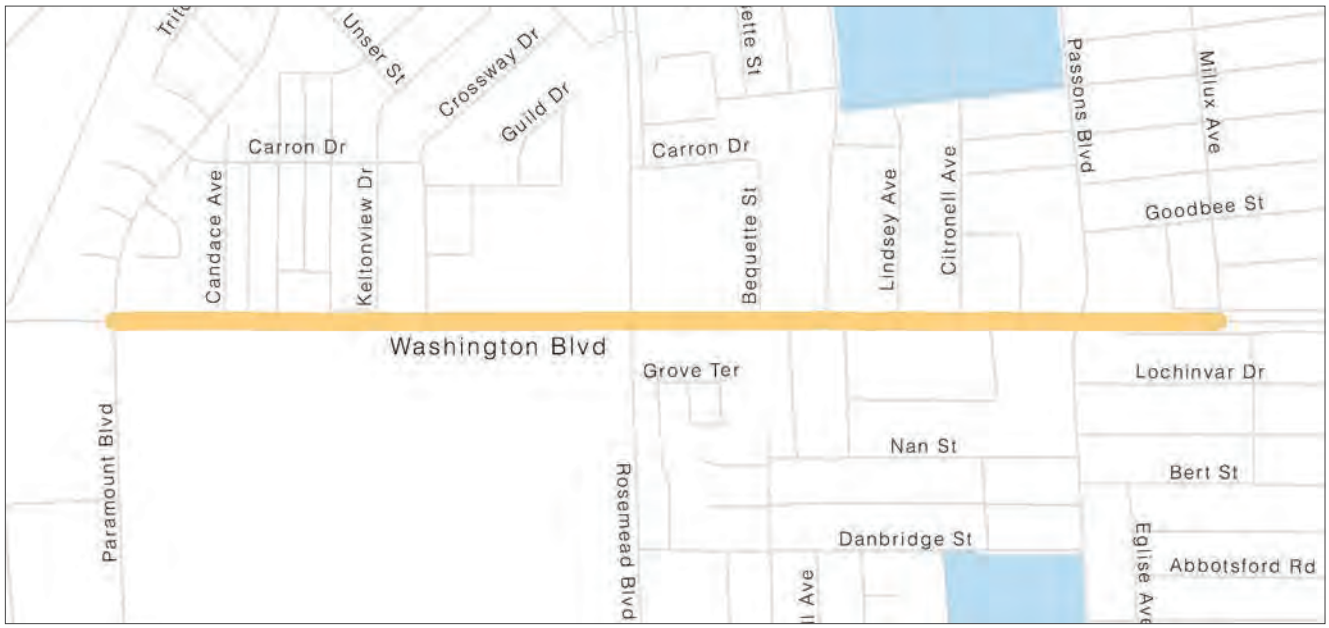
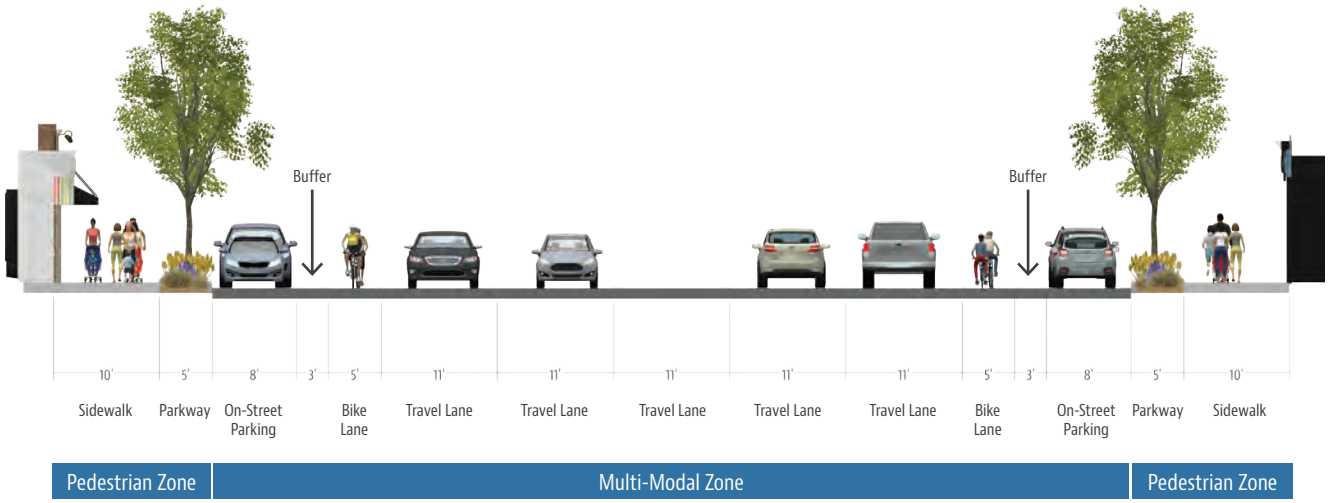


Figure 7-3: Example of Washington Boulevard with Green Street Design



What Defines a Commercial Green Street?

Bicycle Facilities Element

The commercial green street should provide safe bicycle routes, such as dedicated bike facilities on high volume/high speed streets or share bike facilities on low volume/low speed streets.

- Street furnishings should include bike racks and may include bike corrals

Pedestrian Facilities Element

The commercial green street is primarily concerned with the pedestrian environment, and safe routes for pedestrians should be provided, including:

- Timing of intersections and signal calibration
- Raised crosswalks and pedestrian signal countdowns
- Wide sidewalks with adequate street lighting
- Pedestrian parklets
- Access to adjacent retail

Urban Runoff and Open Space Element

Low impact development (LID) strategies for commercial focus green streets balance the need for improving stormwater with the pedestrian focus of the retail land use. The LID strategies assume street trees are in tree grates and the parkway is used to improve the walking environment. LID strategies include:

- Street trees in tree grates with subsurface drain (C.U. soil or silva cells are integrated with the adjacent tree grates and have open curb faces or pipe to allow water to flow into the street tree soil)
- Colored, permeable pavers that coordinate with the area's branding/character
- Permeable asphalt in parking areas
- Shrubs and groundcover with bioretention soil in bulb-out planting areas with flow through drainage

Planting area with incorporated LID strategy

Bike lane adjacent to the sidewalk

Bike lane adjacent to on street parking

Permanent parklet

Parklet

One opportunity for additional urban open space is capitalizing on parklets. A parking space can be converted into a public plaza, seating area, or passive green space with vertical separation between traffic and the parklet use. These can also be installed in commercial parking placed closer to storefronts, due to the large parking lots that front many retail land uses in Pico Rivera.

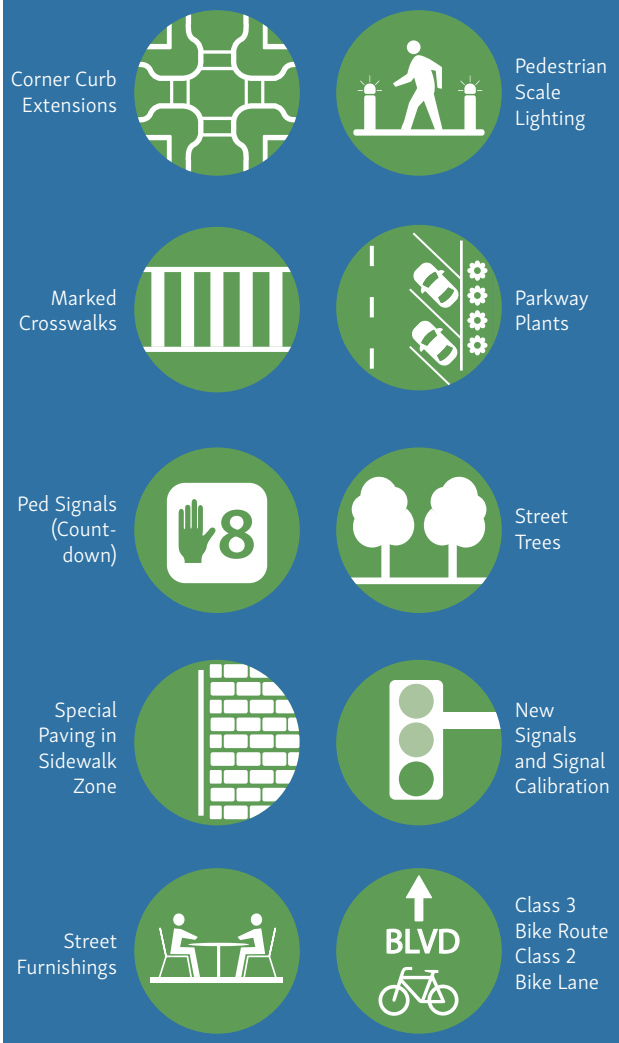
Urban Forestry Element

Commercial green streets require consistent street trees to create an attractive retail environment that, in turn, encourages people to stop, stay and shop. The canopy of the street trees should provide shade for cafes and walking areas.

Commercial Street Tree Palette
Chinese Pistache
Lemon Scented Tea Tree
Dark Shadows Tea Tree
Chinese Flame
Pink Trumpet
Yellow Trumpet
Brisbane Box
Nile Tulip Tree
Firewheel Tree
Cork oak
Fern Pine
Jacaranda

Recommended Combinations
Brisbane box/Lemon Scented Tea Tree
Brisbane Box/Chinese Pistache
Nile Tulip Tree/Fern Pine
Cork oak/Pink Trumpet
Cork oak/Dark Shadows Tea Tree

Standard Improvements



Case by Case Improvements

- Planted Medians
- PHB (Pedestrian Hybrid Beacon)
- Parklets
- Integral Public Seating

Transit Green Streets

Transit green streets follow the twelve bus routes in Pico Rivera. These transit green streets are vital to community connectivity in Pico Rivera.

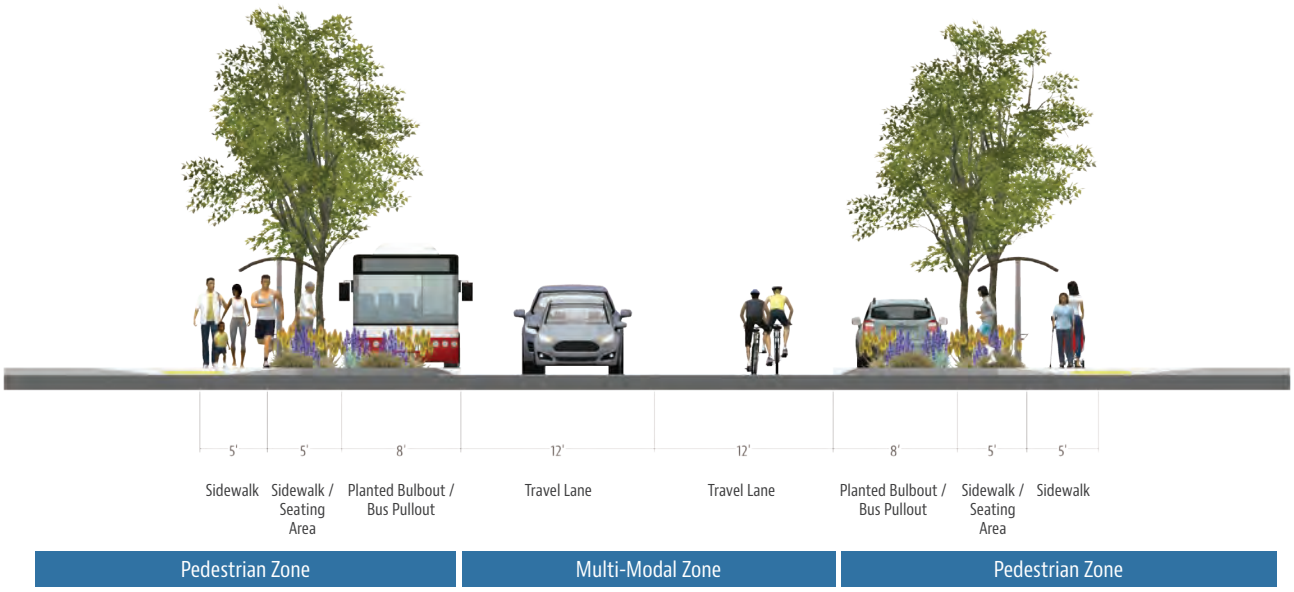
Transit green streets are key community destinations; they need to accommodate bus specific transportation while integrating safe pedestrian and bike access to transit stops. Transit access is critical to facilitating regional bus connections to and from Pico Rivera.

Considerations

- DowneyLINK, Metro and Montebello Bus routes along the streets
- Street design accommodates bus pads and stops while allowing vehicles, pedestrians, and bike visibility and access
- Bus stops are recommended to include transit plazas with shade structures and seating with artful design
- Expanded sidewalks and pedestrian scale street lighting for increased visibility and safety
- Integrated bike facilities, including bike racks and corrals

Figure 7-4: Passons Boulevard Transit Green Street

Figure 7-5: Example of Passons Boulevard with Green Street Design



What Defines a Transit Green Street?

Bicycle Facilities Element

In addition to walking, people may walk to a bus stop. It is important for adjacent streets to provide safe bicycle routes. Bicycle facilities include:

- Class 3 bike routes with sharrow markings and roadway signage that bikes may take the lane
- Bike lanes if right of way exists

Pedestrian Facilities Element

Since people commonly walk to a bus stop, it is important for adjacent streets to provide safe pedestrian routes. Pedestrian facilities include:

- Wider sidewalks that encourage pedestrian use by increasing comfort and safety
- Marked crosswalks that enhance safety for pedestrians by increasing their visibility
- Traffic calming measures

Urban Runoff and Open Space Element

Passons Boulevard and many other transit green streets have parkways adjacent to most of its sidewalks. Urban runoff recommendations for transit focus streets include:

- Tree box filters are recommended to allow for maximum walkway width
- Permeable pavers, concrete, or asphalt are strongly recommended
- Street trees in parkways with bioretention soil and flow through infiltration
- Pedestrian bulb-outs at corners with bioretention soil, sub drain, and flow through infiltration
- Tree bulb-outs that maintain curb and gutter

Tree box filters

Roadway signage and sharrow markings

Corner curb extensions provide larger public spaces near transit stops

HAWK crossing

Double row of street trees

Open space recommendations include:

- Expand parkways with a double row of street trees
- Create plazas with integrated public art next to transit stops
- Expand plazas into parking spaces to provide larger public spaces

Urban Forestry Element

Transit green streets provide good shade canopy for residents who walk to transit stops. In addition, tree branches are pruned and maintained and visibility to transit stops is maintained.

Transit Street Tree Palette	
Italian stone pine	Coast live oak
Tipu tree	Africam sumac
Sweetshade	White bottle brush
Brisbane box	Flaxleaf paperbark
California sycamore	Tecate cypress

Standard Improvements

Case by Case Improvements

- Planted Medians
- Below Grade Water Capture and Storage
- Permeable Surfaces
- HAWK (High-Intensity Activated crosswalk Beacon) for Mid-block Crossings
- Parklets
- Double Row of Trees with Seating
- Integral Public Seating
- Bike Corral
- Bike Lockers
- Combination Vehicle and Pedestrian Light Standards

Pedestrian/Bike Green Streets

In a series of workshops, participants identified key community destinations including businesses, schools, parks, and other day-to-day amenities. Ped/bike green streets connect these destinations. In addition, they are the streets used to connect residents to the other green streets.

Considerations

- Streets need to support high levels of pedestrian and/or bicycle activity
- Urban Runoff solutions should be integrated into the planting areas and parking areas
- Parallel on-street parking and angled on-street parking should be integrated into street design
- Excessively wide streets should be recaptured when possible to incorporate urban open space
- Broad canopied trees should be used to provide shade, but they must maintain a clearance of 7 feet from top of sidewalk to bottom of tree branches to allow for cyclists
- Planting areas incorporate street trees and shrubs shall be maintained to a maximum height of 30 inches for visibility

Figure 7-6: Example of Gallatin Road with Green Street Design

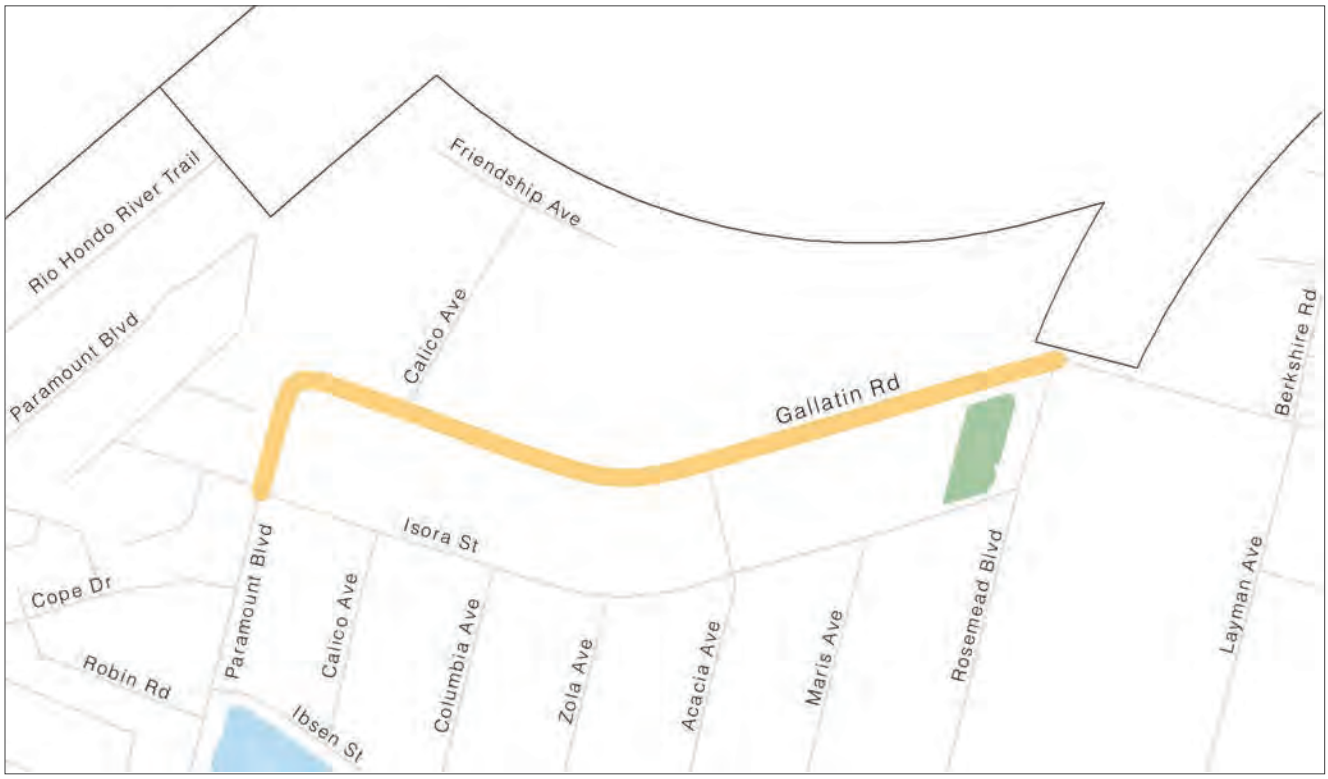


Figure 7-7: Example of Serapis Avenue with Green Street Design

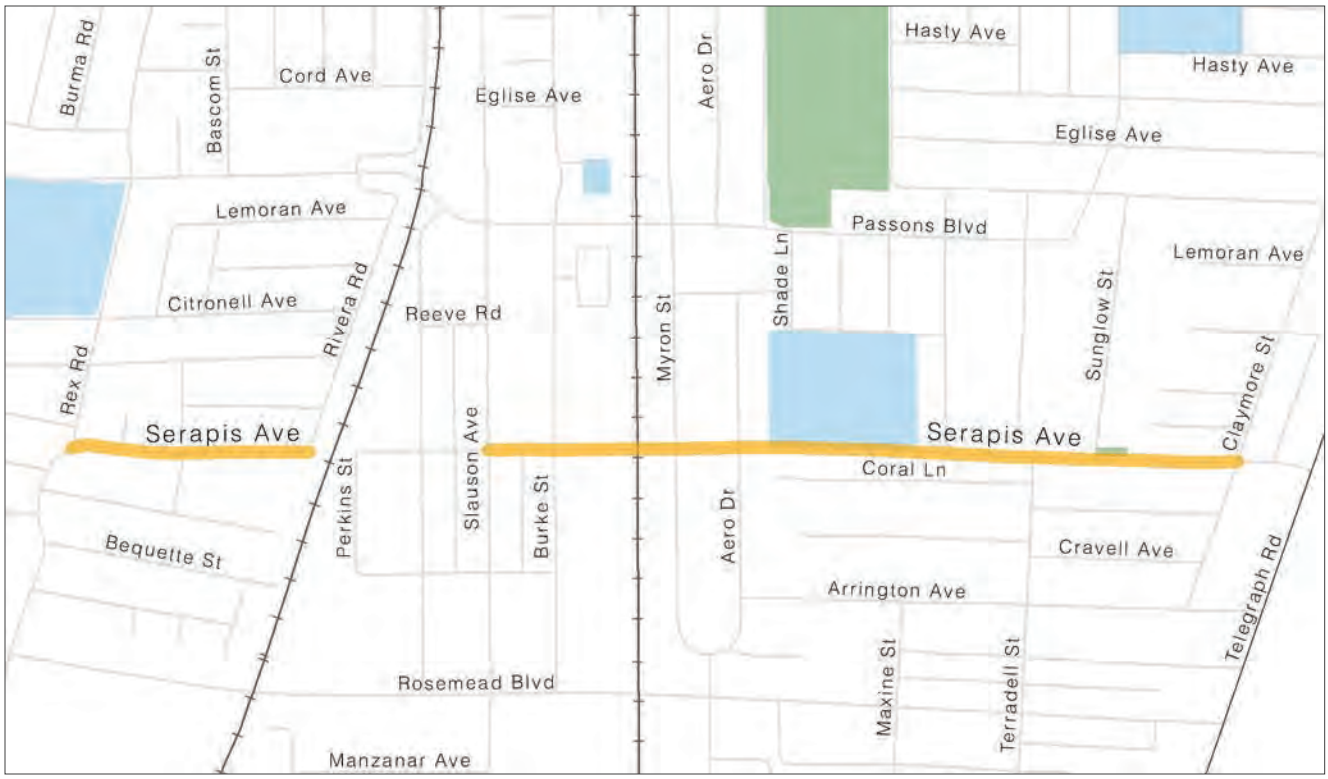


Figure 7-8: Example of Gallatin Road with Green Street Design

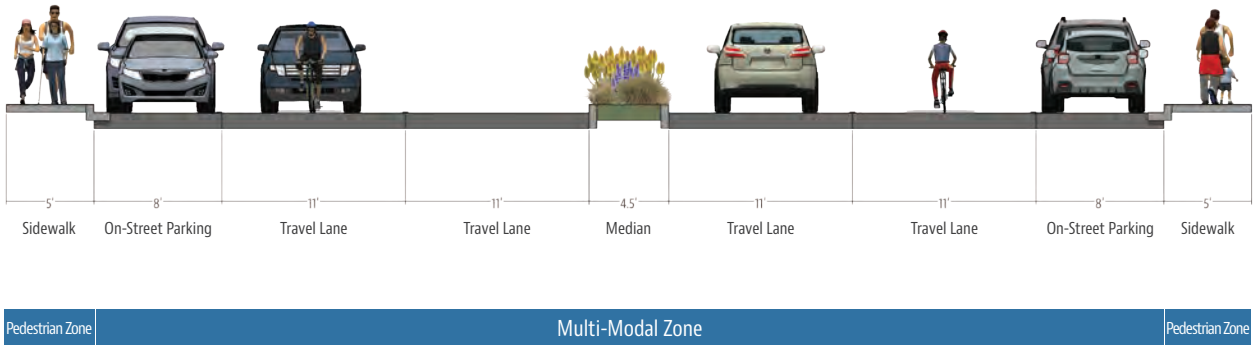
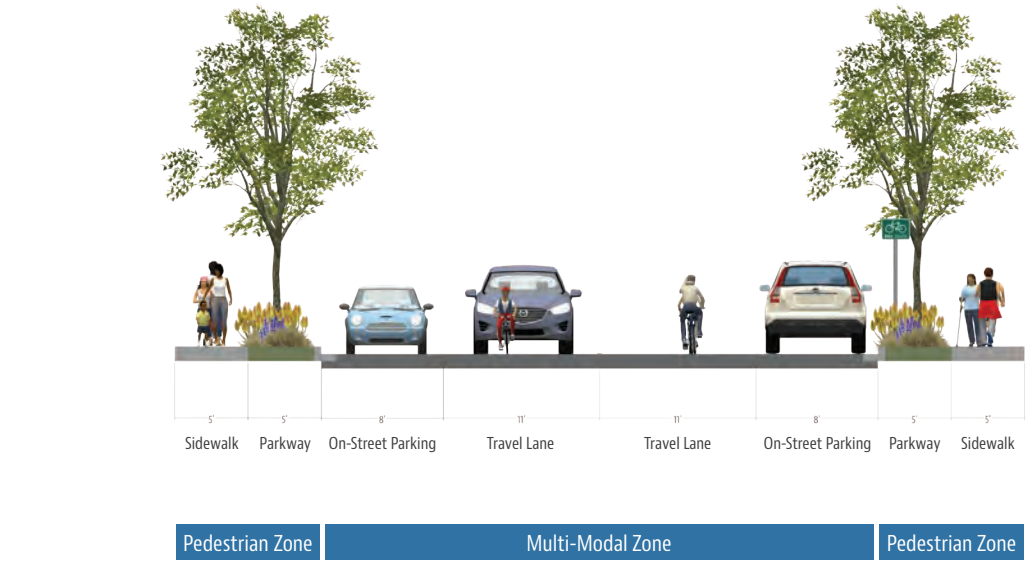


Figure 7-9: Example of Serapis Avenue with Green Street Design



What Defines a Ped/Bike Green Street?

There is a dual focus for the ped/bike green streets. The street should provide a minimum seven-foot clear unobstructed pedestrian route. However, a pedestrian focus street could allow for a wider sidewalk adjacent to a planted parkway. A bike focus street could use additional street width to provide a Class 2 buffered or non-buffered bike lane. A ped/bike focus street could incorporate a multi-use path for pedestrians and cyclists.

Bicycle Facilities Element

Each ped/bike green street prioritizes bicycle connectivity throughout Pico Rivera. Recommendations include:

- All ped/bike focus green streets should include a minimum of a bike route and bike racks
- A low stress, continuous and direct bicycle route
- Low traffic street that diverts vehicular traffic to other streets
- Enhanced wayfinding signs and pavement markings
- Smooth, even pavement surface

Pedestrian Facilities Element

Each ped/bike green street prioritizes pedestrian connectivity throughout Pico Rivera as well. Pedestrian facilities recommendations include:

- Five-foot minimum clear, unobstructed walking route (utilities and other small objects should not infringe on this clear area)
- Parkway strip between travel lane and sidewalk when right of way allows

Curb cut

Traffic diverter

Chicane

Urban Runoff and Open Space Element

Ped/bike street can incorporate parkways on most of its sidewalks. Urban runoff recommendations include:

- Parkways and bulb-outs with bioretention soil and flow through infiltration

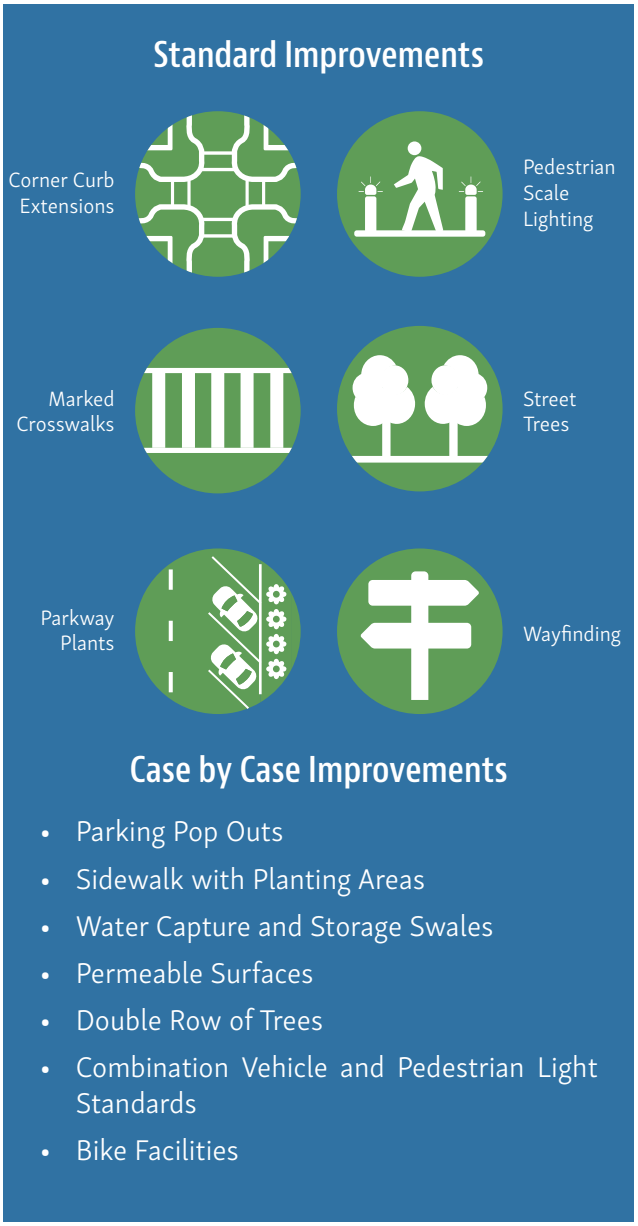
Ped/bike green streets have the greatest opportunities for urban open space. Additional space can be captured as urban open space by:

- Designing a street with a chicane to allow a planting area to be added to one side of a street. This will also act as a traffic calming m
- Adding additional area that could be used as an expanded self-treating planting area or could include a multi-use path.

Urban Forestry Element

Ped/bike green streets should incorporate street trees but do not require a consistent character throughout the entire street. The character of the street can change based on the neighborhood area or community input.

Ped/Bike Street Tree Palette
White bottle brush
Slim bottle brush
Pink trumpet
Chinese flame
Brisbane box
Flaxleaf paperbark
Bracelet honeymyrtle
Yellowbells
Chinese tallow
Evergreen elm
Italian stone pine
Chinese flame



Neighborhood Green Streets

Neighborhood green streets may be on any non-arterial street, and in some cases low volume arterial streets. These streets are usually surrounded by residential or mixed use that include residential uses. Neighborhood green streets emphasize pedestrian amenities, landscaping, historic character elements, and traffic calming.

Considerations

- Streets should have walkways and planting strips that encourage walking
- Driveways should not be encouraged in order to create a continuous sidewalk
- Pedestrian scaled lightning should be provided in order to increase comfort and safety for both pedestrians and bicyclists
- Urban runoff solutions should be considered in the street and traffic calming designs

What Defines a Neighborhood Green Street?

Bicycle Facilities Element

Bicycles will share the road with motor vehicles on neighborhood streets. Recommendations for neighborhood green streets include:

- A low stress, continuous and direct bicycle route
- Wayfinding signs and markings
- Smooth, even pavement

Pedestrian Facilities Element

Neighborhood green streets should prioritize pedestrian connectivity in Pico Rivera. Recommendations include:

- Sidewalks or walkways in areas without curbs to support pedestrian activity
- Pedestrian scaled lighting to increase safety and visibility, especially on streets leading to schools, community centers, and transit stops
- Avoid driveways that cross the sidewalk

Urban Runoff and Open Space Element

Neighborhood green streets should enhance the community and neighborhood livability, including the adequate management of urban runoff. Recommendations include:

- Parkways with bioretention soil and flow through infiltration

Neighborhood green streets should also create opportunities for open space in residential areas, such as:

- Increasing open space in the adjacent areas by providing nearby parks or community gardens

Bike route

Pedestrian scaled lighting

Bioswale

Avoid driveways the cross the sidewalk

Urban Forestry Element

Neighborhood green streets should incorporate wide planting strips, street trees, and landscaping that enhance the street for pedestrians and improve the community's aesthetic and livability.

Neighborhood Street Tree Palette
White bottle brush
Slim bottle brush
Pink Trumpet
Chinese Flame
Brisbane Box
Flaxleaf paperbark
Bracelet Honeymyrtle
Yellowbells
Chinese Tallow
Evergreen Elm
Italian Stone Pine
Chinese Flame

Standard Improvements

Case by Case Improvements

- Parking Pop Outs
- Sidewalk with Planting Areas
- Water Capture and Storage Swales
- Permeable Surfaces
- Double Row of Trees
- Combination Vehicle and Pedestrian Light Standards
- Bike Facilities

Examples of How to Apply Green Street Design

The existing ROW widths for typical streets in Pico Rivera range from 20 feet to 104 feet. The most common street width is 35 feet. For streets narrower than 72 feet, there is a limited ability to change the curb and gutter location and gain a significant benefit.

Green Street Design requires additional design consideration. They should all include street trees (see Chapter 5) and urban runoff/LID strategies.

Recommendations for all green streets:

- Small to medium canopy in the parkway
- Shrubs and groundcover in the parkway
- Self-treating soil in the parkway with flow through curb design
- Bioretention soil and sub-drain in the parkway (when connection to stormwater system is available)
- Curb openings to allow water to enter parkway and any bulb-outs
- Permeable pavers in the sidewalk
- Permeable concrete in on-street parking areas (stormwater analysis is required to identify where this is appropriate)
- Bicycle facilities and vertical signage
- A minimum of 5-foot clear unobstructed continuous pedestrian route

Recommendations for all two-lane streets:

- Shrubs and groundcover in the parkway
- Self-treating soil or bioretention soil in the parkway
- Permeable concrete in on-street parking areas
- Curb extension with street tree and groundcover

Recommendations for all four- or six-lane streets:

- Small to medium canopy in the parkway
- Shrubs and groundcover in the parkway
- Self-treating soil or bioretention soil in the parkway with flow through curb design
- Angled and parallel parking with permeable concrete
- Lane diet
- Curb extension with small to medium street trees

Pilot Projects

The pilot projects in this chapter highlight a cross-section of community connections and improvement opportunities. Each of these projects incorporates information gathered through previous planning efforts, field observations, and community input. Although specific projects have been identified, the pilot projects are intended to demonstrate how the Urban Greening Elements discussed in previous chapters can be implemented within Pico Rivera. Specific approaches shown in these pilot projects are for demonstration purposes and may need to be updated during the actual design process. However, the final design should maintain the goals of the original concept plans.

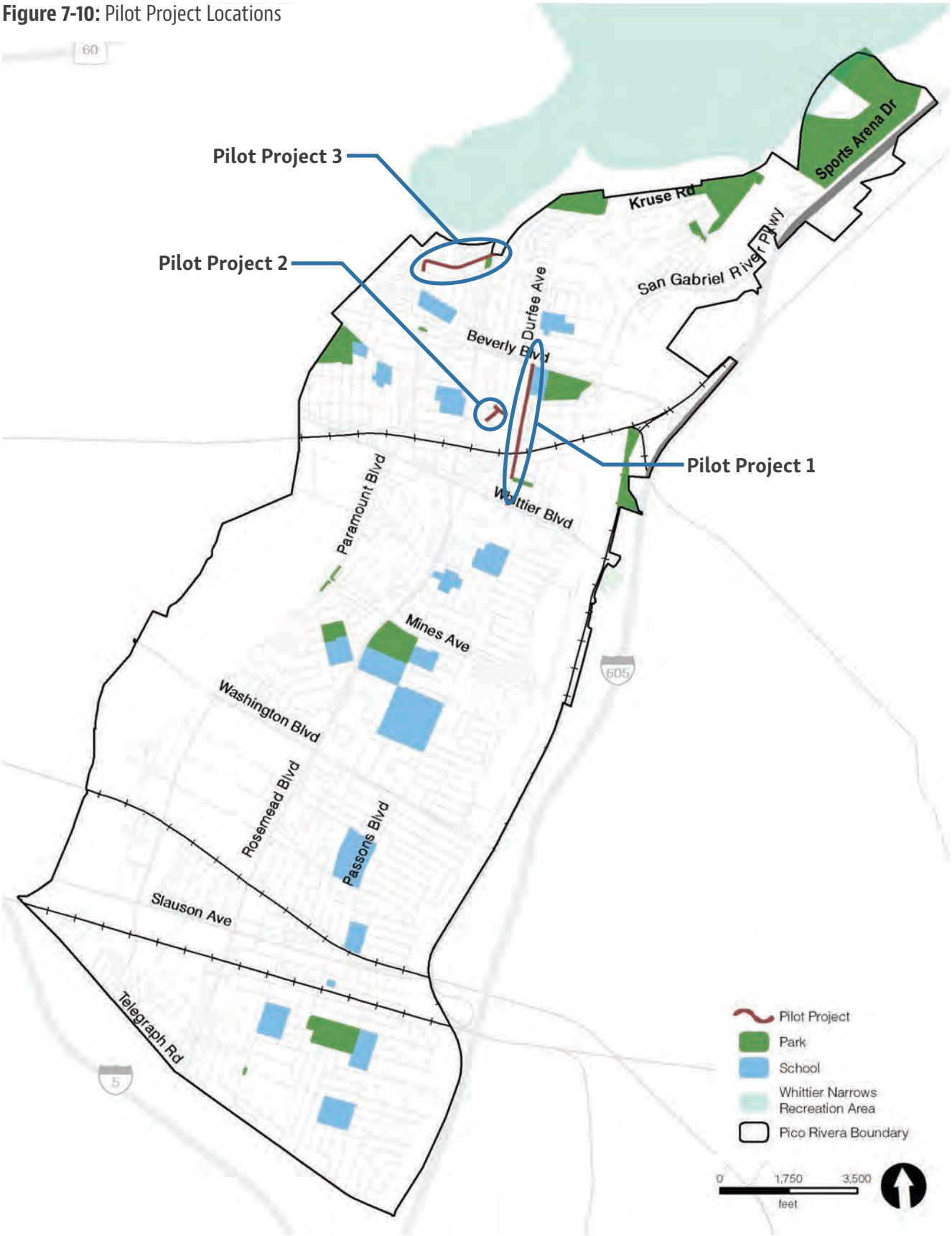
Since the City of Pico Rivera has limited capital improvement funds, it is important to seek grant funds to facilitate the construction of these projects. Cost estimates are provided for each pilot project to facilitate the grant writing process.

The pilot projects include:

- Pilot Project 1: Durfee Avenue between Beverly Boulevard and Whittier Boulevard (bike lane and bike route)
- Pilot Project 2: Beverly Road at the Intersection of Olympic Way (bike lane and bike route)
- Pilot Project 3: Gallatin Road between Paramount Boulevard and Rosemead Boulevard

San Gabriel River Bike Path

Figure 7-10: Pilot Project Locations



Source: ESA, 2014. KTU+A, 2016.

Durfee Avenue between Beverly Boulevard and Whittier Boulevard

Durfee Avenue has the potential to become a multi-modal green street. This pilot project uses the existing excess right-of-way to incorporate buffered bike lanes, bulb-outs, enhanced crosswalks and wider sidewalks. Other amenities include additional street trees and conflict zone striping at intersections. The northern and southern edges of the corridor will be transformed into shared facilities with special wayfinding and markings due to limited right-of-way. Parallel parking will remain at these two locations. Travel lanes will stay in place all through this pilot project. Green infrastructure will be implemented throughout the entire corridor and will consist of gardens, bioswales, curb cuts, and permeable paving.

Additionally, Speedway, an alleyway connecting Durfee Avenue and San Gabriel Place, will be transformed into a green alley. Street improvements include stop sign reversal, changing configuration to one directional traffic and placing a multi-use path on the north side that will include bioswales, permeable paving, permeable asphalt, curb cuts, and street trees.

Improvements

Bicycle

1. Conflict zone striping
2. Separation between bicyclists and vehicles
3. Bicycle signage and markings

Pedestrian

4. Multi-use path
5. Wider parkways
6. Separation between pedestrians and vehicles
7. Bulb-outs
8. Enhanced crosswalks

Urban Runoff/Open Space

9. Bioswales (used in parkways)
10. Rain gardens at bulb-outs
11. Curb openings
12. Permeable paving in sidewalk and multi-use path
13. Permeable asphalt in parking lane

Urban Forestry

14. Street Trees

Durfee Avenue Existing Conditions

Figure 7-11: Durfee Avenue between Beverly Boulevard and Whittier Boulevard Concept

Figure 7-11: Durfee Avenue between Beverly Boulevard and Whittier Boulevard Concept (Cont.)

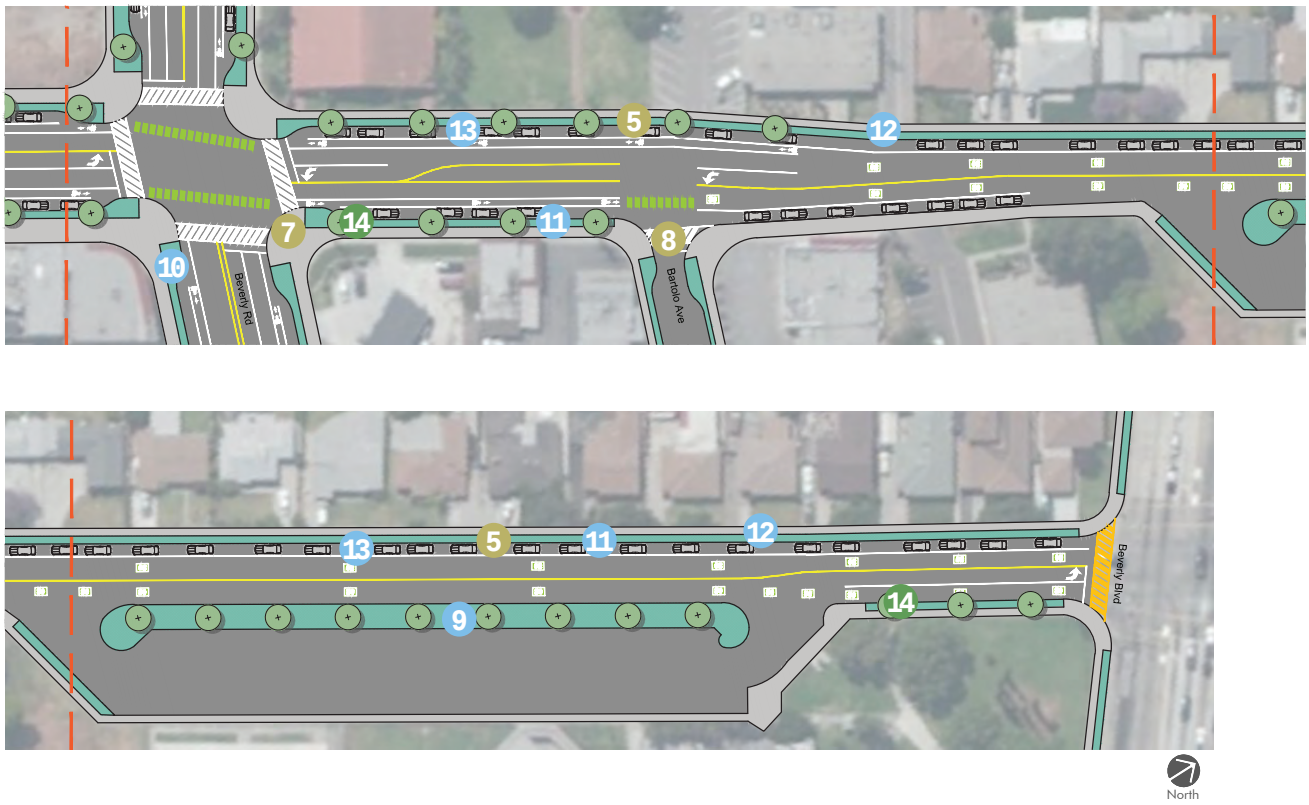


Figure 7-12: Speedway between Durfee Avenue and San Gabriel Place Concept

Beverly Road at the Intersection of Olympic Way

This pilot project addresses the issues created by the wide intersection, excess right-of-way and lack of pedestrian and bicycle facilities. To solve these issues, the concept reconfigures the street to provide sidewalks, enhanced crosswalks, bicycle lanes and conflict zone striping. In addition, the excess right-of-way is converted into rain gardens and open space which also provide traffic calming benefits. Both travel lanes and parallel parking remain in place. Visibility, safety, comfort, and environmental benefits are all provided with this concept.

Improvements

Bicycle

1. Buffered and standard bicycle lanes
2. Conflict zone striping
3. Separation between bicyclist and vehicles
4. Bicycle signage and markings

Pedestrian

5. New sidewalks and parkways
6. Separation between pedestrians and vehicles
7. Bulb-outs
8. Enhanced crosswalks

Urban Runoff/Open Space

9. Bioswales (designed into parkways)
10. Rain gardens at bulb-outs
11. Curb openings
12. Permeable paving in sidewalk

Urban Forestry

13. Street Trees

Beverly Road at Olympic Boulevard Intersection Existing Conditions

Figure 7-13: Beverly Road at the Intersection of Olympic Way Concept

Gallatin Road between Paramount Boulevards and Rosemead Boulevard

Currently, Gallatin Road is conducive to excessive speeding due to its excess right of way and lack of pedestrian and traffic calming elements. This pilot project intends to reconfigure Gallatin Road to solve existing issues. Sidewalks and enhanced crosswalks will be provided along this corridor to increase pedestrian safety. Additionally, a roundabout will be installed at the intersection of Gallatin Road and Acacia Avenue and traffic lanes will be reduced from four lanes to two, one for traffic in each direction, between Bolker Way and Brightonwood Avenue to improve vehicular flow and reduce excessive speeding. Lastly, excess right of way will be converted into rain gardens and bioswales to help facilitate infiltration of stormwater and provide additional traffic calming.

Improvements

Bicycle

1. Bicycle signage and markings

Pedestrian

2. New sidewalks and parkways
3. Separation between pedestrians and vehicles
4. Bulb-outs
5. Enhanced crosswalks

Urban Runoff/Open Space

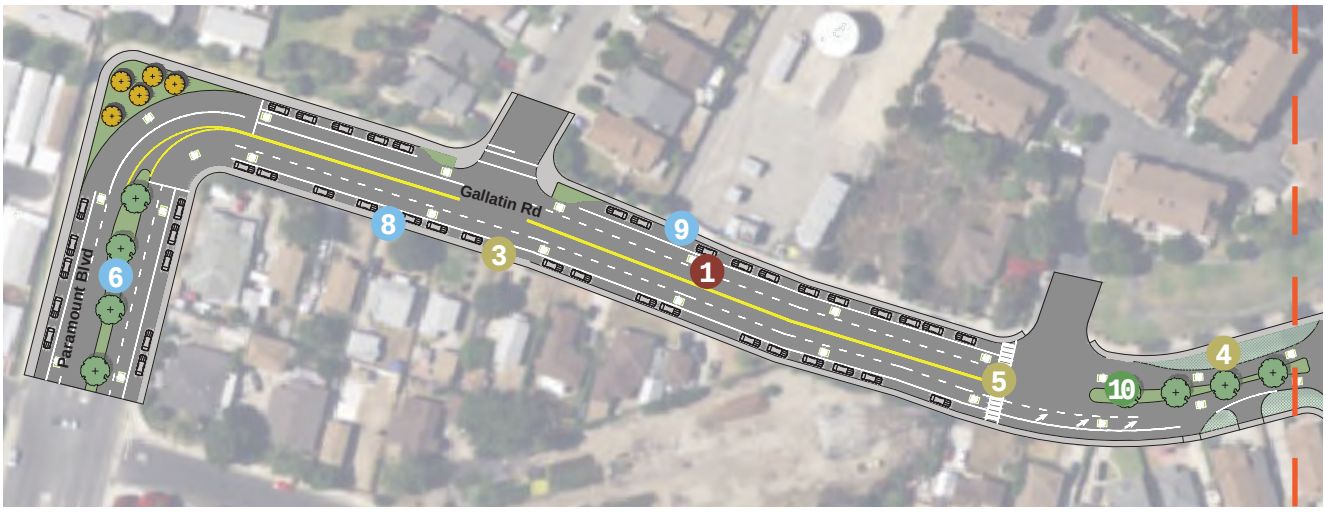
6. Bioswales (designed into parkways)
7. Rain gardens at bulb-outs
8. Curb openings
9. Permeable paving in sidewalk

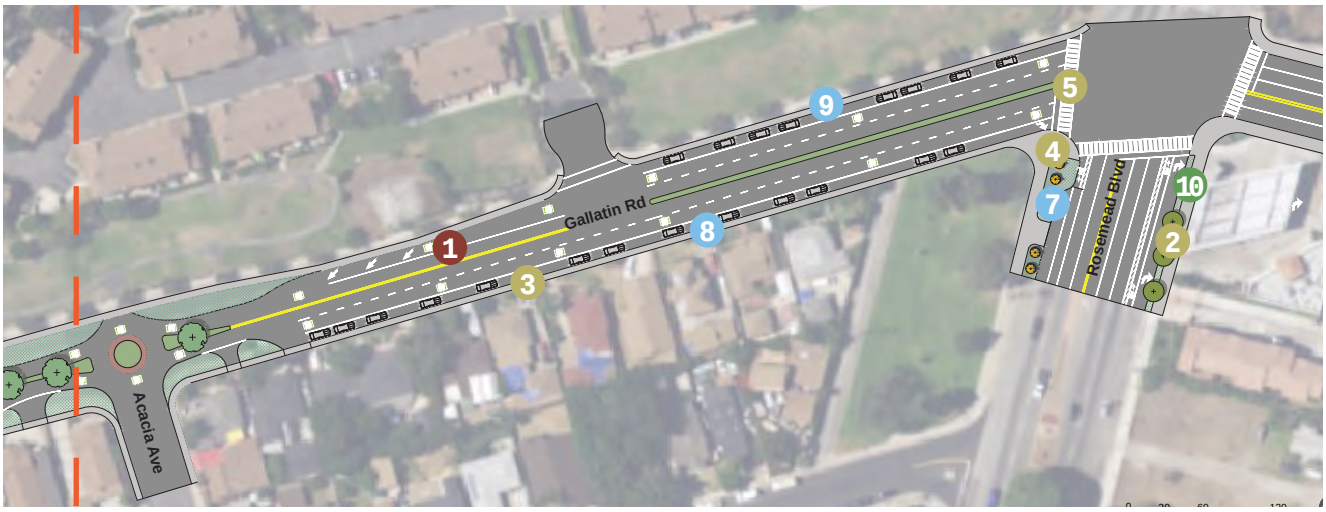
Urban Forestry

10. Street Trees

Gallatin Road Existing Conditions

Figure 7-14: Gallatin Road between Paramount Boulevard and Rosemead Boulevard Concept





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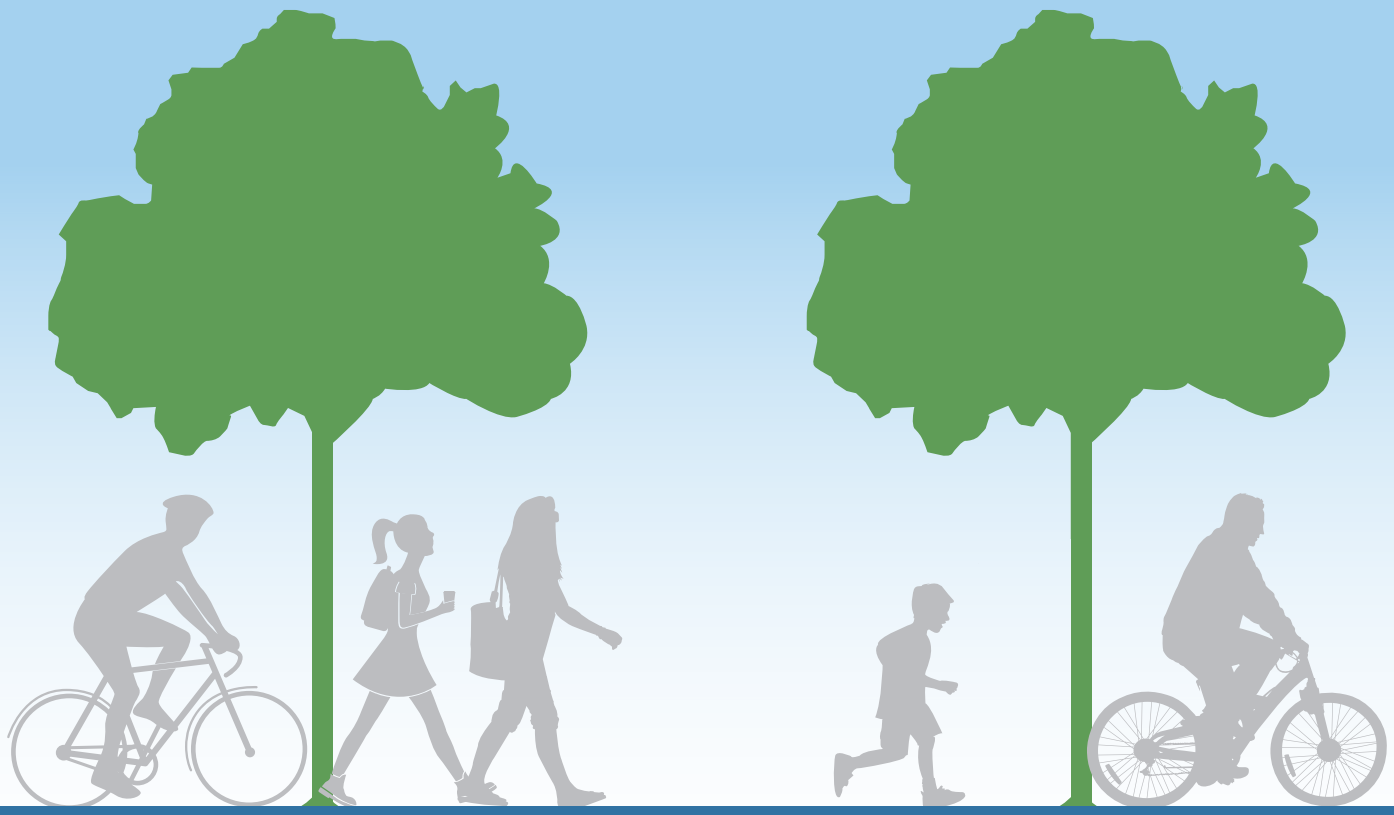

8 Implementation

Pico Rivera Urban Greening Plan

Implementation

Urban greening projects implementation is generally not governed by a specific timeline since the availability of funds for implementation is variable and often tied to the priorities of the City's capital projects. Plan implementation is also necessarily multi-faceted. Besides adoption of goals and policies, it often includes carrying out programs and pursuing project funding, whether through the City's capital improvements project process or grant funding. The plan addresses goals, policies, programs and projects that may not be feasible to implement immediately, but are included to inspire long-term actions.

Following plan adoption, the next tasks may include grant writing to fund projects and programs, amending City standards and design guidelines for consistency, including projects in the City's ongoing capital improvements programs, and implementing goals and policies in the everyday City and law enforcement management processes, whether in site plan review, street engineering decisions or traffic enforcement. Recommendations include projects and education and outreach programs that can be implemented by the City, schools, volunteers and law enforcement, but implementation ultimately rests on the community and City's desire to make this plan's recommendations a reality.

Implementation Steps

Implementation of some urban greening projects, such as street enhancements and other low impact development techniques described in this plan, will require a capital improvement project process. This includes identifying funding, a public and environmental review process and plan preparation. Other improvements can be integrated into planned construction, such as resurfacing, reconstruction, or utility work.

Each project will need a varying level of additional study and analysis before implementation. Depending upon the project's complexity, some can be done by City staff, while more complex projects may be contracted out to specialist consultants.

Potential Implementation Steps include:

1. Preliminary design and/or technical traffic studies
2. Parking study if parking removal is recommended
3. Construction drawings and detailed cost estimates
4. Funding (CIP, grant, etc.)
5. Recommendations for further environmental studies
6. Construction

Project Phasing

Short-term projects are those relatively easy to implement. These projects typically have low construction costs, would not necessitate the acquisition of right-of-way, and/or would require only a categorical exemption under the California Environmental Quality Act (CEQA) guidelines. An example of a potential short-term project could include restriping a roadway to include a buffer to remedy a door zone bicycle lane or creating accessible connections to an existing facility like the San Gabriel River Trail.

Mid-term projects are projects that will require a small amount of further study or a higher cost than projects that require only typical resurfacing and striping. The long-term projects involve pursuing grant funding opportunities or further study for the implementation of larger, and potentially costlier improvements which may require road diets and additional environmental analysis. Examples of these long-term projects are listed under Future Opportunities in the Bicycle Facilities Chapter.

Program Phasing

Program phasing can be addressed in phases in a similar manner. Each program is equally feasible for implementation, but some will require more time and funding investment from City staff, school districts and/or public volunteers. Short-term programs can be implemented without significant additional costs, staff or policy change. Mid-term programs may require budgetary considerations or significant volunteer involvement. Long-term programs will require additional staff, significant volunteer involvement, and additional funding through grants or budget additions.

Potential Funding Sources

Federal, State and local government agencies invest billions of dollars every year in the nation's transportation system. Only a fraction of that funding is used in development projects, policy development and planning to improve conditions for cyclists. Even though appropriate funds are limited, they are available, but desirable projects sometimes go unfunded because communities may be unaware of a fund's existence, or may apply for the wrong type of grants. Also, the competition between municipalities for the available bikeway funding is often fierce.

Whenever federal funds are used for bicycle projects, a certain level of State and/or local matching funding is generally required. State funds are often available to local governments on the similar terms. Almost every implemented bicycle program and facility in the United States has had more than one funding source and it often takes a good deal of coordination to pull the various sources together.

According to the publication by the Federal Highway Administration (FHWA), An Analysis of Current Funding Mechanisms for Bicycle and Pedestrian Programs at the Federal, State and Local Levels, where successful local bicycle facility programs exist, there is usually a full time bicycle coordinator with extensive understanding of funding sources. Cities such as Seattle, Washington, Portland, Oregon and Tucson are prime examples. Bicycle coordinators are often in a position to develop a competitive project and detailed proposal that can be used to improve conditions for cyclists within their jurisdictions. Some of the following information on Federal and State funding sources was derived from the previously mentioned FHWA publication.

Federal Sources

In late 2015, Congress passed a five year, $305 billion transportation bill, called the Fixing America's Surface Transportation (FAST) Act, which President Obama signed into law. It will replace MAP-21 as the latest Transportation Bill. It is the first law enacted in over 10 years that provides longterm funding certainty for surface transportation, meaning States and local governments can move forward with critical transportation projects. Notably, the bill requires all design for National Highway System roadways to take into account access for all modes of transportation. It also makes NACTO's Urban Design Guide one of the U.S. Department of Transportation's roadway design standards, as well as permits local governments to use their own adopted design guides if they are the lead project sponsor, even if it differs from their state guidelines.

There remains some uncertainties regarding the details and interpretations of these changes. The Federal levels of funding and scope have been set, yet it remains to be defined how the State and local programs will individually implement these funding mechanisms. Also, the latest reauthorization period is nearing its end, setting the stage for the next chapter of reauthorization.

The following list identifies the most relevant potential federal funding programs:

1. National Highway Performance Program: $22 billion (FY 2016)
2. Surface Transportation Program (STP): Wayfinding signage, trail traffic counters, bike parking, bus bike racks, etc.
    - Surface Transportation Block Grant Program: $10 billion
    - Surface Transportation Block Grant Program Set Aside: $820 million
3. Transportation Alternatives Program (TAP):
    - Pedestrian and Bicycle Projects (80%): Trails/Sidewalks/Traffic Calming/Safety/ADA
    - Safe Routes to School (10%): Infrastructure, Awareness campaigns, Education
    - Historic Projects/Environment (10%)
4. Congestion Mitigation and Air Quality Improvement (CMAQ): $2.26 billion
5. Highway Safety Improvement Program (HSIP): $2.1 billion

Notably, the FAST Act requires all design for National Highway System roadways to take into account access for all modes of transportation. It also permits local governments to use their own adopted design guides if they are the lead project sponsor, even if it differs from their state guidelines.

Bicycle and Pedestrian Program

The Federal Highway Administration (FHWA) Bicycle and Pedestrian Program promotes safe, comfortable, and convenient walking and bicycling for people of all ages and abilities, through funding, policy guidance, program management and resource development. Each State has a State Bicycle and Pedestrian Coordinator, and each FHWA Division office has an FHWA Bicycle and Pedestrian Coordinator point of contact.

The Transportation Alternatives Program (TAP) is probably the best known and most popular federal funding source for pedestrian and bicycle infrastructure. The accompanying matrix is based on a table provided on the FHWA website that summarizes potential eligibility for pedestrian and bicycle projects under Federal Transit and Federal Highway programs. This original table should be consulted as the starting point for investigating federal funding opportunities since it is likely to be the most up-to-date potential eligibility information source (http://www.fhwa.dot.gov/environment/bicycle_pedestrian/funding/funding_opportunities.cfm).

Specific program requirements must be met and eligibility must be determined on a case-by-case basis. Additional detail on the most popular programs are listed following the table.

Besides TAP, FHWA funds eligible pedestrian and bicycle projects primarily through the Congestion Mitigation and Air Quality Improvement (CMAQ) Program, Surface Transportation Program (STP), Highway Safety Improvement Program (HSIP), National Highway Performance Program (NHPP), and Federal Lands and Tribal Transportation Programs (FLTTP).

Each of these programs has different requirements, so to be eligible, pedestrian and bicycle projects must meet program requirements. For examples:

- FTA transit funds may be used for bike lanes and sidewalks if they provide direct access to transit.
- CMAQ funds must be used for projects that benefit air quality.
- HSIP projects must address a highway safety problem.
- NHPP-funded projects must benefit National Highway System (NHS) corridors.

Because bicycle and pedestrian elements are often included in large roadway projects funded through these programs, FHWA division offices can assist in determining options for using multiple funding sources to fund a specific single project. For example, pedestrian and bicycle facilities may be included on rehabilitated, reconstructed or new bridges to improve the overall active transportation network.

Funding is also available for non-infrastructure projects. For instance, NHTSA provides funding for behavioral safety aspects, education and enforcement, in coordination with State highway safety offices.

Eligible projects include stand-alone infrastructure or non-infrastructure projects. Projects must be completed within four years after project is amended into the FTIP. Targeted beneficiaries are children in grades K-8. No local match is required.

State Sources

Caltrans Active Transportation Program (ATP)

The Active Transportation Program was created by Senate Bill 99 (Chapter 359, Statutes 2013) and Assembly Bill 101 (Chapter 354, Statutes 2013) to encourage increased use of active modes of transportation, such as biking and walking. The ATP consolidates existing Federal and State transportation programs, including the Transportation Alternatives Program (TAP), Bicycle Transportation Account (BTA), and State Safe Routes to School (SR2S), into a single program with a focus to make California a national leader in active transportation. The ATP is administered by the Division of Local Assistance, Office of Active Transportation and Special Programs. This is a competitive program to:

- Increase biking and walking trips
- Increase safety
- Increase mobility
- Support regional agency GHG reduction
- Enhance public health
- Benefit disadvantaged communities (25 percent)
- Include a broad spectrum of projects

Recreational Trails Program

The California State Parks and Recreation Department administers Recreational Trails Program (RTP) funds. The RTP can be used to fund recreational trails, including bicycle and pedestrian paths.

Transportation Development Act Article 3 (Senate Bill 821)

TDA funds are based on a ¼ percent State sales tax, with revenues made available primarily for transit operating and capital purposes. By law, the Riverside County Auditor's office estimates the apportionment for the upcoming fiscal year.

TDA Article 3 funds may be used for the following activities related to the planning and construction of bicycle and pedestrian facilities:

- Engineering expenses leading to construction
- Right-of-way acquisition
- Construction and reconstruction
- Retrofitting existing bicycle facilities to comply with ADA requirements
- Route improvements, such as signal controls for cyclists, bicycle loop detectors and rubberized rail crossings
- Purchase and installation of bicycle facilities such as improved intersections, bicycle parking, benches, drinking fountains, rest rooms, showers adjacent to bicycle paths, employment centers, park-and-ride lots, and/or transit terminals accessible to the general public

Sustainable Transportation Planning Grant Program

Sustainable Transportation Planning Grants are awarded by Caltrans to help a jurisdiction improve sustainable transportation. These grants may be used for a wide range of transportation planning purposes that address local and regional transportation needs and issues. Implementation is intended to ultimately lead to the adoption, initiation and programming of transportation improvements.

Strategic Growth Council Urban Greening Program

The Strategic Growth Council Urban Greening Program was created when California voters passed the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Proposition 84) on November 7, 2006. This competitive grants program is administered by the California Natural Resources Agency, on behalf of the Strategic Growth Council (SGC). On of SGC's objectives is managing and awarding financial assistance to cities, counties, and nonprofit organizations for the preparation, planning, and implementation of urban greening projects and plans that reduce energy consumption, conserve water, improve air and water quality, and provide other community benefits. This will ultimately result in projects to help the State meet its environmental goals and the creation of healthy communities.

Safe Routes to School Programs

The California Department of Transportation (Caltrans) administers two separate Safe Routes to School programs. The first is the State-legislated program referred to as "SR2S" and the second is a federal program referred to as "SRTS." Both programs are intended to achieve the same basic goal of increasing the number of children walking and biking to school by making it safer for them to do so. SR2S is now a part of the Active Transportation Grant program (ATP) described under "State Sources."

The SRTS Program funds non-motorized facilities that improve access to schools through the Caltrans Safe Routes to School Coordinator. Eligible applicants include State, local and regional agencies experienced in meeting federal transportation requirements. Nonprofit organizations, school districts, public health departments and Native American Tribes must partner with a city, county, MPO, or RTPA to serve as the responsible agency for their project.

CAL FIRE Greenhouse Gas Reduction Fund (GGRF)

These program fund and implement projects to proactively restore forest health in order to reduce greenhouse gases, to protect upper watersheds where the state's water supply originates, to promote the long-term storage of carbon in forest trees and soils, minimize the loss of forest carbon from large, intense wildfires, and to further the goals of the California Global Warming Solutions Act of 2006 (Assembly Bill 32, Health and Safety Code Section 38500 et seq.) (AB 32). These projects may include reforestation, fuel reduction, pest management, conservation, and biomass utilization intended to increase forest health, increase carbon storage in forests, reduce wildfire emissions and protect upper watersheds, where much of the State's water supply originates. Projects that implement a mix of these activities, with multiple partners will be given priority.

http://www.fire.ca.gov/resource_mgt/resource_mgt_foresthealth_grants

AB 2766 Subvention Program

AB 2766 Clean Air Funds are generated by a surcharge on automobile registration. Air quality management districts allocate funds to cities according to their proportion of the region's population for projects that improve air quality. Projects can include the design, development and installation of designated bicycle routes, bikeways/bike paths and associated bike trail improvements, such as facilities that safely link residential areas and major activity centers and are physically separated from motor vehicle traffic. Another eligible category is bicycle facilities that promote and support non-motorized travel, such as bicycle racks, lockers, signals and bus racks, including installation of bike storage units within park and ride facilities, or at trailheads.

Per Capita Grant Program

The Per Capita Grant Program is administered by the California Department of Parks and Recreation and is intended to maintain a high quality of life for California's growing population by providing a continuing investment in parks and recreational facilities. Specifically, it supports the acquisition and development of neighborhood, community and regional parks and recreation lands and facilities in urban and rural areas. Per Capita grant funds can only be used for capital outlay, such as bike paths and trails. Regional park districts are eligible recipients.

Roberti-Z'Berg-Harris (RZH) Grant Program – Proposition 40

Funds for this grant program are allocated for projects pursuant to the Roberti-Z'berg- Harris Urban Open Space and Recreational Grant Program for a variety of uses related to parks and recreation. Project receive high priority that satisfy the most urgent park and recreation needs, with emphasis on unmet needs in the most heavily populated and most economically disadvantaged areas within each jurisdiction. Funding is intended to supplement local expenditures for park and recreation facilities. Bike paths and recreational trails are eligible uses of these funds.

Grant Sources Available to Non-Profit Advocacy Organizations

People for Bikes

People for Bikes' Community Grants Program typically focuses grant funding on bicycle infrastructure such as paths, lanes, trails and bridges, mountain bike facilities, bike parks and pump tracks, BMX facilities, and end-of-trip facilities such as bicycle parking. Grant funding is also available for other types of non-capital advocacy projects, such as programs that transform city streets, including Ciclovías and initiatives to increase ridership or investment in bicycle infrastructure. Most California grants have been for advocacy efforts in support of constructing Class I facilities.

Advocacy Advance

Advocacy Advance's Rapid Response Grants help State and local organizations take advantage of unexpected opportunities to win, increase, or preserve funding for biking and walking. These grants are for short-term campaigns that will increase or preserve investments in active transportation in communities where program choices are being made on how to spend federal, State, and local funding. Applications are accepted on a rolling basis.

Another program is Advocacy Advance's "Big Idea" Grants intended to help with unforeseen opportunities, short-term campaigns or to push campaigns into the end zone to win funding for biking and walking infrastructure and programs.

For either program, the grantee must be an Alliance for Biking and Walking and a League of American Bicyclists member and be a 501(c)(3) or 501(c)(4), with an immediate opportunity and a specific timeframe for a campaign to raise additional federal, State or local funding for biking and walking infrastructure and/or programs, or proposes a winnable, replicable campaign with measurable results.

Local Sources

Developer Impact Fees

As a condition for development approval, municipalities can require developers to provide certain infrastructure improvements, which can include bikeway projects. These projects have commonly provided bike lanes for portions of on-street, previously planned routes. They can also be used to provide bicycle parking or shower and locker facilities. The type of facility that should be required to be built by developers should reflect the greatest need for the particular project and its local area. Legal challenges to these types of fees have resulted in the requirement to illustrate a clear nexus between the particular project and the mandated improvement and cost.

New Construction

Future road widening and construction projects are one means of providing on-street bicycle facilities. To ensure that roadway construction projects provide bicycle lanes where needed, it is important that the review process includes input pertaining to consistency with the proposed system. Future development in the City will contribute only if the projects are conditioned.

Other Sources

Local sales taxes and fees may be implemented as new funding sources for bicycle projects. However, either of these potential sources would require a local election. Volunteer programs may be developed to substantially reduce the cost of implementing some routes, particularly multi-use paths. For example, a local college design class may use such a multi-use route as a student project, working with a local landscape architectural or engineering firm. Work parties could be formed to help clear the right of way for the route. A local construction company may donate or discount services beyond what the volunteers can do. A challenge grant program with local businesses may be a good source of local funding, in which the businesses can "adopt" a route or segment of one to help construct and maintain it.

Private Sources

Private funding sources can be acquired by applying through the advocacy groups such as the League of American Bicyclists and the Bikes Belong Coalition. Most of the private funding comes from foundations wanting to enhance and improve bicycle facilities and advocacy. Grant applications will typically be through the advocacy groups as they leverage funding from Federal, State and private sources.

Table 8-1 summarizes many of the numerous funding sources available.

Table 8-1: Funding Sources

FINDING, FRAMING AND FUNDING A PROJECT		FUNDING USES							
		Typical Approaches		ATYPICAL APPROACHES					
FUNDING SOURCE	FUNDING ORIGIN	CIP Development	Maint. & Operations	URBAN FORESTRY	SAFE & HEALTHY ACCESS	BACK TO NATURE	COMMUNITY GARDENS	LOW IMPACT DEVELOP-MENT	CULTURE AND HISTORY
Federal Funding Sources									
Land and Water Conservation Fund (LCWF)	U.S. National Park Service/ California Dept. of Parks and Recreation	✔				✔		✔	
Urban Community Forestry Program	U.S. National Park Service	✔		✔			✔		
Surface Transportation Program	Federal Highway Administration (FHWA) / Caltrans	✔			✔			✔	
Transportation Alternative Program	Federal Highway Administration (FHWA) / SCAG	✔			✔			✔	
Recreational Trails Program	Federal Highway Administration (FHWA) / Regional agency may also contribute	✔			✔	✔		✔	
Highway Safety Improvement Program	Federal Highway Administration (FHWA) / Caltrans	✔			✔			✔	
Transportation Investment Generating Economic Recovery Program (TIGER)	US Department of Transportation	✔			✔			✔	✔
EPA Brownfields Clean Up & Assessments	U.S. Environmental Protection Agency	✔			✔			✔	
Sustainable Communities Planning Grant and Incentive Program	U.S. Dept. of Housing and Urban Development (HUD)				✔				
Urban Revitalization & Livable Communities Act	U.S. Dept. of Housing and Urban Development (HUD)				✔		✔		
Community Development Block Grants	U.S. Dept. of Housing and Urban Development (HUD)	✔			✔	✔	✔		✔
ACHIEVE, Communities Putting Prevention to Work, Pioneering Communities	Center for Disease Control & Prevention				✔	✔	✔		
Wildlife Services	Department of Agriculture, Animal and Plant Health Inspection	✔		✔		✔		✔	
Urban and Community Forest Program	Department of Agriculture, Forest Service	✔		✔		✔		✔	
Community Forest and Open Space Conservation	Department of Agriculture, Forest Service	✔		✔		✔		✔	
Choice Neighborhoods Implementation Grants	Department of Housing and Urban Development, Office of Public and Indian Housing	✔			✔	✔		✔	

Table 8-1: Funding Sources (Cont.)

FINDING, FRAMING AND FUNDING A PROJECT		FUNDING USES							
		Typical Approaches		ATYPICAL APPROACHES					
FUNDING SOURCE	FUNDING ORIGIN	CIP Development	Maint. & Operations	URBAN FORESTRY	SAFE & HEALTHY ACCESS	BACK TO NATURE	COMMUNITY GARDENS	LOW IMPACT DEVELOP-MENT	CULTURE AND HISTORY
Undesirable/Noxious Plant Species	Department of the Interior, Fish and Wildlife Service		✔	✔		✔			
Recovery Act Funds - Habitat Enhancement, Restoration and Improvement	Department of the Interior, Fish and Wildlife Service	✔	✔	✔		✔		✔	
Cooperative Landscape Conservation	Department of the Interior, Fish and Wildlife Service	✔	✔	✔		✔		✔	
Save America's Treasures	Department of the Interior, National Park Service	✔	✔						✔
Safe Routes to School, Mini-grants	National Center for Safe Routes to School & Caltrans	✔			✔				
State Funding Sources									
Land and Water Conservation Fund (LCWF)	CA Dept. of Parks & Rec	✔			✔	✔		✔	
Statewide Park Program Prop 84 Round 2	CA Dept. of Parks & Rec	✔			✔		✔		
Recreational Trails Program	CA Dept. of Parks & Rec	✔	✔		✔	✔		✔	
Proposition 117 - Habitat Conservation	CA Dept. of Parks & Rec	✔		✔		✔		✔	
Nature Education Facilities	CA Dept. of Parks & Rec	✔	✔			✔			✔
Watershed Program	CA Dept. of Parks & Rec	✔				✔		✔	
Stormwater Flood Management Prop. 1E	CA Dept. of Parks & Rec	✔		✔		✔		✔	
Roberti-Z'Berg-Harris (RZH) Grant Program - Prop 40	CA Dept. of Parks & Rec	✔	✔	✔	✔	✔	✔		
Aquatic Center Grants	Dept. of Boating and Waterways	✔			✔				✔
Community Based Transportation Planning, Environmental Justice & Transit Planning	Caltrans	✔			✔			✔	

Table 8-1: Funding Sources (Cont.)

FINDING, FRAMING AND FUNDING A PROJECT		FUNDING USES							
		Typical Approaches		ATYPICAL APPROACHES					
FUNDING SOURCE	FUNDING ORIGIN	CIP Development	Maint. & Operations	URBAN FORESTRY	SAFE & HEALTHY ACCESS	BACK TO NATURE	COMMUNITY GARDENS	LOW IMPACT DEVELOP-MENT	CULTURE AND HISTORY
Active Transportation Planning Grants	Caltrans	✔			✔			✔	
Regional Improvement Program	Caltrans	✔			✔			✔	
Safe Routes to School Programs(SR2S)	Caltrans	✔			✔			✔	
Traffic Safety Grants	Office of Traffic Safety	✔			✔				
Coastal Conservancy Grants	CA Coastal Conservancy	✔		✔	✔	✔		✔	✔
Storm Water Grant Program (SWGP) Prop 1	State Water Resources Control Board	✔		✔				✔	
Non-point Source Pollution, Watershed Plans, Water Conservation (Props 13, 40, 50 & 84)	State Water Resources Control Board	✔	✔	✔				✔	
Sustainable Communities Planning, Regional SB 375	Strategic Growth Council/Dept of Conservation	✔		✔	✔	✔	✔	✔	✔
Environmental Enhancement & Mitigation (EEMP)	California Natural Resources Agency & Caltrans	✔				✔		✔	
California River Parkways and Urban Streams Restoration Grant	CA Natural Resources Agency / Dept of Water Resources	✔	✔		✔	✔		✔	
Strategic Growth Council Urban Greening Program	California Natural Resources Agency	✔		✔		✔	✔	✔	
California Cap and Trade Program	Cal EPA, Air Resources Board	✔		✔		✔	✔		
Greenhouse Gas Reduction Fund (GGRF) Forest Health	California Department of Forestry and Fire Protection (CAL FIRE)	✔		✔			✔		
Greenhouse Gas Reduction Fund (GGRF) Urban & Community Forestry	California Department of Forestry and Fire Protection (CAL FIRE)	✔		✔			✔		

Table 8-1: Funding Sources (Cont.)

FINDING, FRAMING AND FUNDING A PROJECT		FUNDING USES							
		Typical Approaches		ATYPICAL APPROACHES					
FUNDING SOURCE	FUNDING ORIGIN	CIP Development	Maint. & Operations	URBAN FORESTRY	SAFE & HEALTHY ACCESS	BACK TO NATURE	COMMUNITY GARDENS	LOW IMPACT DEVELOP-MENT	CULTURE AND HISTORY
Local Funding Sources									
Special Habitat Conservation Programs	Regional MPOs / Local Cities			✔		✔		✔	
Special Parks and Recreation Bond Revenues	Regional MPOs / Local Cities	✔	✔	✔	✔	✔	✔	✔	✔
Special Transportation Bonds and Sales Tax Initiatives	Regional MPOs / Local Cities	✔	✔	✔	✔	✔	✔	✔	✔
Advertising Sales/Naming Rights	Local Jurisdictions	✔	✔	✔	✔				✔
Community Facilities District (CFD) Infrastructure Financing District (IFD) Facilities Benefit Assessment District (BFA)	Local Jurisdictions	✔	✔	✔	✔	✔	✔	✔	✔
Business Improvement (BID) Maint. Districts (MAD) Property Based Improvement Districts (PBID) Landscape Maint. District (LMD)	Non-profits, business organizations or City		✔	✔	✔		✔	✔	
Easement Agreements/Revenues	Local Jurisdictions	✔	✔	✔			✔		
Equipment Rental Fees	Local Jurisdictions	✔	✔		✔	✔	✔		✔
Facility Use Permits Fees	Local Jurisdictions	✔	✔		✔	✔	✔		✔
Fees and Charges/Recreation Service Fees	Local Jurisdictions	✔	✔		✔	✔	✔		✔
Food and Beverage Tax	Local Jurisdictions	✔	✔		✔	✔	✔		✔
General Fund	Local Jurisdictions	✔	✔	✔	✔	✔	✔	✔	✔
General Obligation Bonds	Local Jurisdictions	✔	✔	✔	✔	✔	✔	✔	✔
Intergovernmental Agreements	Local Jurisdictions	✔	✔	✔	✔	✔	✔	✔	✔
Lease Revenues	Local Jurisdictions	✔	✔	✔	✔	✔	✔	✔	✔

Table 8-1: Funding Sources (Cont.)

FINDING, FRAMING AND FUNDING A PROJECT		FUNDING USES							
		Typical Approaches		ATYPICAL APPROACHES					
FUNDING SOURCE	FUNDING ORIGIN	CIP Development	Maint. & Operations	URBAN FORESTRY	SAFE & HEALTHY ACCESS	BACK TO NATURE	COMMUNITY GARDENS	LOW IMPACT DEVELOP-MENT	CULTURE AND HISTORY
Mello Roos Districts	Local jurisdictions	✔	✔	✔	✔	✔	✔	✔	✔
Residential Park Improvement Fees	Local Jurisdictions	✔		✔	✔	✔	✔	✔	✔
Park Impact Fees	Local Jurisdictions	✔		✔	✔	✔	✔	✔	✔
Traffic Impact Fees	Local Jurisdictions	✔	✔	✔	✔	✔	✔	✔	✔
In-Lieu Fees	Local Jurisdictions	✔		✔	✔	✔	✔	✔	✔
Pouring Rights Agreements	Local Jurisdictions	✔		✔	✔	✔	✔	✔	✔
Private Development Agreements	Local Jurisdictions	✔	✔	✔	✔	✔	✔	✔	✔
Surplus Real Estate Sale Revenues	Local Jurisdictions	✔		✔	✔	✔	✔	✔	✔
Revenue Bond Revenues	Local Jurisdictions	✔	✔	✔	✔	✔	✔	✔	✔
Sales Tax Revenues	Local Jurisdictions	✔	✔	✔	✔	✔	✔	✔	✔
Transient Occupancy Tax Revenues	Local Jurisdictions	✔	✔	✔	✔	✔	✔	✔	✔
Wastewater Fund Reserves	Local Jurisdictions		✔	✔	✔		✔	✔	
Utility Taxes	Local Jurisdictions	✔	✔	✔	✔	✔	✔	✔	✔
Private Funding Sources									
Community Stories Grant	California Council for the Humanities	✔							✔
Community Impact Grants Program	Home Depot	✔					✔		
California ReLeaf Urban Forestry Grant	California ReLeaf	✔		✔					
Preservation Funding	National Trust for Historic Preservation	✔	✔						✔
Grants for Parks	California State Parks Foundation	✔			✔	✔		✔	

Table 8-1: Funding Sources (Cont.)

FINDING, FRAMING AND FUNDING A PROJECT		FUNDING USES							
		Typical Approaches		ATYPICAL APPROACHES					
FUNDING SOURCE	FUNDING ORIGIN	CIP Development	Maint. & Operations	URBAN FORESTRY	SAFE & HEALTHY ACCESS	BACK TO NATURE	COMMUNITY GARDENS	LOW IMPACT DEVELOP-MENT	CULTURE AND HISTORY
Various Sports Field Grants	Various Agencies, Foundation & Corporations	✔	✔		✔				
Community Health Initiatives	Kaiser Permanente	✔			✔		✔	✔	
America's Historical Planning Grants	National Endowment for the Humanities	✔							✔
Corporate Sponsorships	Corporate Citizens	✔	✔	✔	✔	✔	✔	✔	✔
Private Sector Partnerships	Private Corporations	✔	✔	✔	✔	✔	✔	✔	✔
Non-Profit Partnerships	Non-Profit Corporations	✔	✔	✔	✔	✔	✔	✔	✔
Foundation Grants	Private Foundations	✔	✔	✔	✔	✔	✔	✔	✔
Private Donations	Private Individuals	✔	✔	✔	✔	✔	✔	✔	✔
Irrevocable Remainder Trusts	Private Individuals	✔	✔					✔	✔
Targeted Fund-raising Activities	Local Jurisdictions	✔	✔	✔	✔	✔	✔	✔	✔
Land Trusts	Non-Profit Corporations	✔		✔		✔		✔	✔

Other Programs

Pico Rivera Innovative Municipal Energy

The Pico Rivera Innovative Municipal Energy (PRIME) is a locally run electricity provider that started providing clean energy to those who live and work in Pico Rivera in September 2017. PRIME get its electricity from suppliers that get their power from a variety of generation sources. At a minimum, 35 percent of the electricity comes from renewable sources, such as wind, solar, and hydroelectricity. However, homes and businesses have the opportunity to opt up to 100 percent renewable energy. While the electricity production is provided by PRIME, Southern California Edison continues to supply electricity delivery and billing services. Also, Southern California Edison still owns and reads electric meters and provides maintenance and repair services.

Groundwater Reliability Improvement Program Advanced Water Treatment Facility

The Water Replenishment District of Southern California (WRD) has developed a suite of projects through its Water Independence Now (WIN) initiative to develop local and sustainable sources of water for use in groundwater replenishment activities; thus, helping to end our reliance on imported water. The cornerstone for WIN is the Groundwater Reliability Improvement Program (GRIP) Advanced Water Treatment Facility (AWTF). The purpose of the GRIP AWTF project is to fully eliminate the current demand for imported water by producing 21,000 acre-feet annually from local alternative sources for groundwater replenishment in the Central Basin.

The GRIP AWTF is in the process of being constructed on a 5.2-acre site in the City of Pico Rivera, adjacent to the San Gabriel River, allowing for direct delivery of purified recycled water via an existing pipeline leading into the San Gabriel Coastal Spreading Grounds where it will percolate in to the Central Basin. The GRIP AWTF will purify approximately 10,000 acre-feet (3.25 billion gallons) of tertiary treated (recycled) water annually to near distilled levels. Together with another 11,000 acre-feet (3.6 billion gallons) of recycled water, WRD will deliver 21,000 acre-feet of water to the spreading grounds for groundwater recharge. Once the facility is constructed, the GRIP AWTF will include an approximately 25,000 square foot operations and learning center, a 48,000 square foot process building, and an 8,000 square foot chemical storage area. Construction of the facility is expected to be completed in Summer 2018.

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