JUNE 2021

Riverside PACT

Pedestrian Target Safeguarding Plan
Active Transportation Plan
Complete Streets Ordinance
Trails Master Plan

DRAFT

CITY OF RIVERSIDE

CITY OF RIVERSIDE PACT

SCAG
INNOVATING FOR A BETTER TOMORROW

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Acknowledgments

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Thank you to the hundreds of public participants who engaged with this planning process through public comment forms, committee meetings and over 30 public events from October 2019 - April 2020.

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Section 1:
PACT Introduction

The City of Riverside completed a four part planning process called the Riverside PACT. The City of Riverside PACT consists of: a **P**edestrian Target Safeguarding Plan (PTS), an **A**ctive Transportation Plan (AT Plan), a **C**omplete Streets Ordinance (CSO), and a **T**rails Master Plan (TMP). The PACT provides four plans that will help the City to create robust, sustainable and accessible transportation options and public spaces for residents and visitors well into the future. These plans include creating funding strategies and opportunities to provide more transportation options such as walking, bicycling, and taking public transit from one place to another. The PACT vision statement was developed through the community engagement process and is the aspirational goal for the this entire planning process.

The City of Riverside's vision is to build a safer, healthier, and more sustainable transportation network. PACT is an opportunity to continue to examine neighborhood roadways and set up a vision for years to come.

IMPETUS FOR DEVELOPING THE PACT

The PACT furthers SCAG's regional transportation goals and strategies, including those outlined in the 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) in the Active Transportation Appendix, and incorporate strategies outlined in the Draft Connect SoCal. These strategies include developing a regional active transportation network, increasing the number of short trips taken by walking and biking, encouraging the implementation of complete street policies, and others as outlined in the RTP/SCS. The PACT was developed to be consistent with and include all required elements for the California Active Transportation Program. The PACT Goals include:

Photo Caption: Trail segment on the corner of Van Buren Blvd and Wood Rd

- Develop a plan that identifies funding sources to implement and maintain active transportation infrastructure.
- Evaluates existing conditions, identifies and prioritizes active transportation projects, provides a community engagement plan, and identifies ATP support programs.
- Develop an Active Transportation Toolbox to include sample plans, exhibits, and photos to be applied along corridors and trails selected for inclusion within the active transportation network.
- Develop a PTS to identify physical infrastructure designs for high pedestrian activity areas at greater risk of exposure to vehicular traffic and implementation plans to secure high-traffic pedestrian areas at greatest risk.
- Develop a Complete Streets Ordinance to ensure safe, multimodal streets for all ages and abilities.

ACTIVE TRANSPORTATION PLAN

The City of Riverside Active Transportation Plan integrates walking, bicycling, and other transportation modes into a single plan that includes policies, infrastructure recommendations, and supporting programs. It identifies context specific funding sources, prioritized infrastructure projects, and implementation strategies.

TRAILS MASTER PLAN

This Trails Master Plan serves as an update to the Multi-Purpose Recreational Trails Master Plan and Trails Standards document. This update provides the City, residents, trails advocates, and developers with a single, comprehensive reference point representing the most current vision for Riverside's trail network, design, maintenance, and funding. In addition to updating trail design guidelines and standards, the TMP proposes and prioritizes new trails and gap closures, addresses integration of trail facilities with the City's on-street active transportation network, and identifies potential funding sources.

PEDESTRIAN TARGET SAFEGUARDING PLAN

The Pedestrian Target Safeguarding Plan provides building perimeter and public space security design solutions intended to protect against threats resulting from unauthorized vehicles entering public spaces.

Based on stakeholder interviews the Plan identifies and provides design recommendations for six high priority areas within the City of Riverside.

COMPLETE STREETS ORDINANCE

The Complete Streets Ordinance provides guidance on street character, connectivity, access for all users, development of continuous pedestrian paths and urban trails/recreation opportunities, and the inclusion of public gathering spaces equitably placed throughout the City.

The Complete Streets Ordinance references the Pedestrian Target Safeguarding Recommendations, Active Transportation Plan, and Trails Master Plan for specific project location recommendations.

CALTRANS ACTIVE TRANSPORTATION PROGRAM

The Active Transportation Program (ATP) was created by Senate Bill 99 (Chapter 359, Statutes of 2013) and Assembly Bill 101 (Chapter 354, Statutes of 2013) to encourage increased use of active modes of transportation. Senate Bill 1 (SB 1) (Chapter 2031, statutes of 2017) stipulates that $100,000,000 of revenues from the Road Maintenance and Rehabilitation Account will be available annually to the ATP. 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.

Photo Caption: Riverside residents walking along the Main St Pedestrian Mall

The purpose of ATP is to encourage increased use of active modes of transportation by achieving the following goals:

- Increase the proportion of trips accomplished by biking and walking
- Increase safety and mobility for non-motorized users
- Advance the active transportation efforts of regional agencies to achieve Greenhouse Gas (GHG) reduction goals, pursuant to SB 375 (of 2008) and SB 341 (of 2009)
- Enhance public health
- Ensure that disadvantaged communities fully share in the benefits of the program
- Provide a broad spectrum of projects to benefit many types of active transportation users.

To supplement the ATP funding source, the PACT has identified and developed a comprehensive list of funding sources for implementation that can be found in the following sections of the document.

- *Active Transportation Plan, p.110*
- *Trails Master Plan, p.82*

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Section 2:
Existing Conditions

Introduction

The purpose of this technical report is to identify and evaluate the City of Riverside's existing conditions as they relate to active transportation. A comprehensive understanding of conditions as they exist today is necessary to develop a plan for the future that is consistent with community goals and that ultimately will improve the lives of Riverside residents. This includes analysis of:

- Current walking, biking, and transit usage rates
- Demographics of those who walk, bike, and take transit
- The existing active transportation network
- Key origins and destinations
- Pedestrian and bicycle collisions
- Air quality conditions
- Roadway conditions
- The existing transit network
- Existing plans and policies

This report includes a citywide assessment of these metrics as well as a more detailed assessment for each city ward. The results will inform the recommendations that will be developed at a later phase of the planning process.

PEDESTRIAN TARGET SAFEGUARDING PLAN

In addition to the Active Transportation Plan (ATP), the project team will develop a Pedestrian Target Safeguarding[1] Plan (PTSP) for six priority areas in the City of Riverside. The goal of the PTSP is to improve the walking environment with measures that reduce pedestrian exposure and vulnerability to collisions, while enhancing the look and feel of public spaces. Existing conditions as they relate to the PTSP priority areas, particularly collision history and key amenities, are included in this report to facilitate development of the PTSP at a later stage.

1 ***Pedestrian Target Safeguarding:*** *Ensuring public areas are safe and secure utilizing strategies to reduce the opportunities for crime and acts of terror.*

Current Walking, Bicycling, and Transit Use

Before planning for the growth of walking and biking in the City of Riverside, it's important to understand how people are currently using active transportation to move around the City. However, creating a detailed picture of how people get around in a community is often difficult due to data limitations. The U.S. Census Bureau is the primary source for data related to commuting, but does not include transportation information for people who do not work—including children, retirees, and the unemployed. It also does not capture information for non-work trips. Survey data collected by the community, including data presented later in this section, helps to supplement the Census data but only paints a partial picture due to the relatively small sample sizes. As a result, this analysis of current walking, biking, and transit use in Riverside reflects the available data, but should not be taken as a comprehensive account of all travel behavior.

According to the U.S. Census Bureau, there are approximately 141,435 workers 16 years and over residing in the City of Riverside. Those who walk, bike, or take transit represent roughly 6.1 percent of the Riverside worker population, or approximately 8,628 people. The majority of workers (74.4 percent) drive alone. The rates of driving alone and walking to work in Riverside are similar to those of California as a whole, but public transit use (2.4 percent) and biking (0.7 percent) are considerably lower. The remaining commuters carpool, work from home, or use a taxicab, motorcycle, or other means of getting to work. Figure 2-1 shows the means of transportation for work by each mode for the City of Riverside compared to California.

In 2019, as part of the Connecting Five Points project in Ward 6, the City distributed a survey that included a question asking respondents how they typically travel around their community. Of the 146 responses, 56 percent drive, 27 percent walk, 7 percent use public transit, and 6 percent bike. Though driving is the most common mode of transportation for respondents, a significant number of them also walk, and to a lesser extent, ride transit or bicycle. Though the survey was limited in number and geography, it suggests that walking, biking, and transit are important modes of transportation for people in Riverside. The results of the survey question are presented in Figure 2-2.

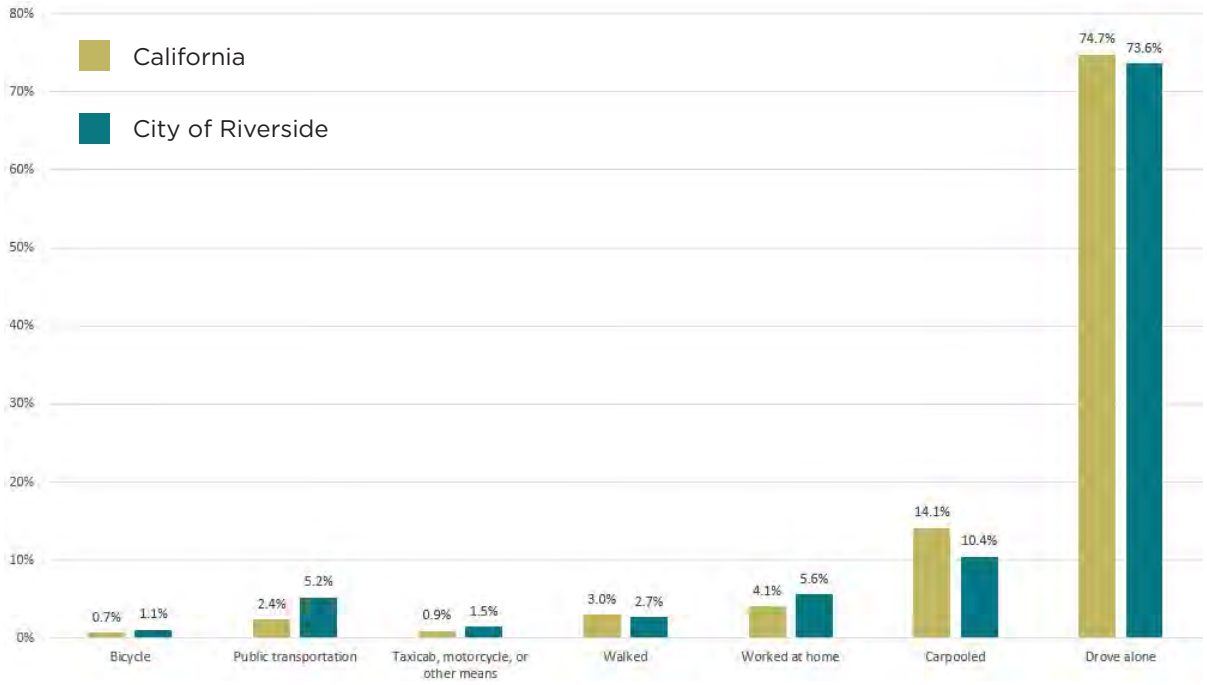


FIGURE 2-1 MEANS OF TRANSPORTATION TO WORK (WORKSERS 16 YEARS AND OVER)

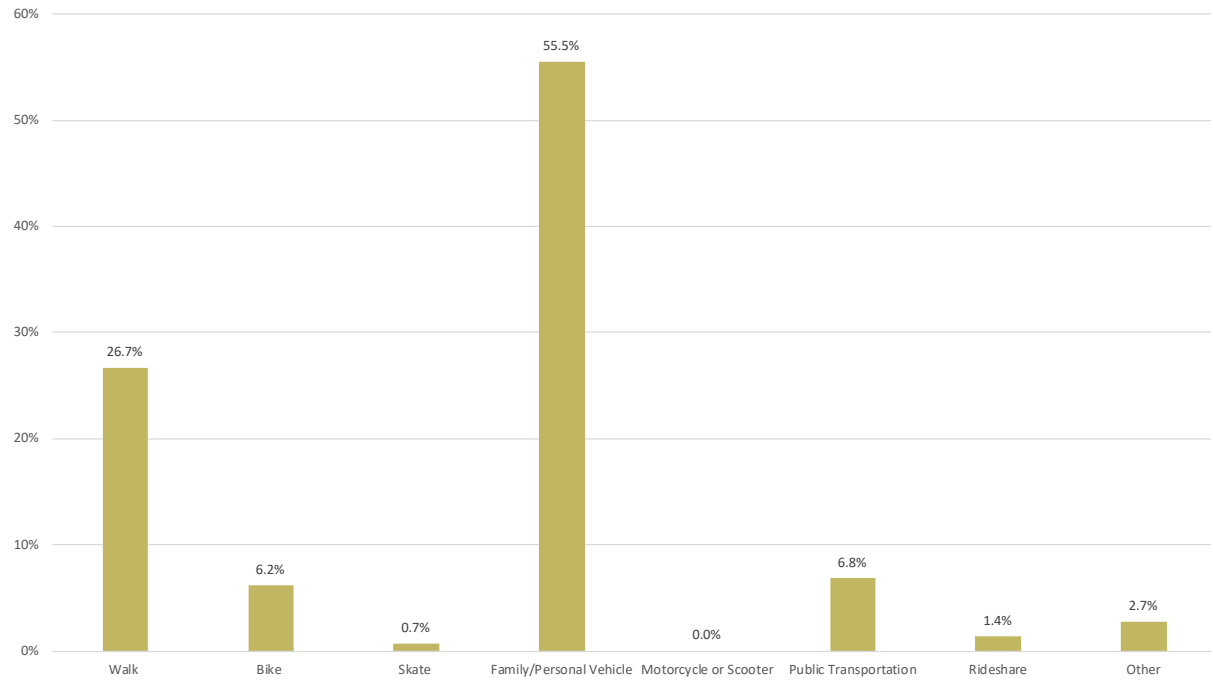


FIGURE 2-2 TYPICAL TRAVEL MODE, CONNECTING FIVE POINTS SURVEY RESULTS

Data Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

Demographics

Understanding the demographic characteristics of a community's current walkers, bicyclists, and transit users is helpful to ensure that future transportation improvements will meet their needs. Unfortunately, census data related to the demographics of commuters who walk and bicycle is limited to estimates for each sex. In Riverside, pedestrian commuters are more likely to be female and bicycle commuters are more likely to be male. Women are slightly more likely to take public transit than men.

More detailed demographic data is available for those who commute by public transit, which is summarized in Figure 2-3.

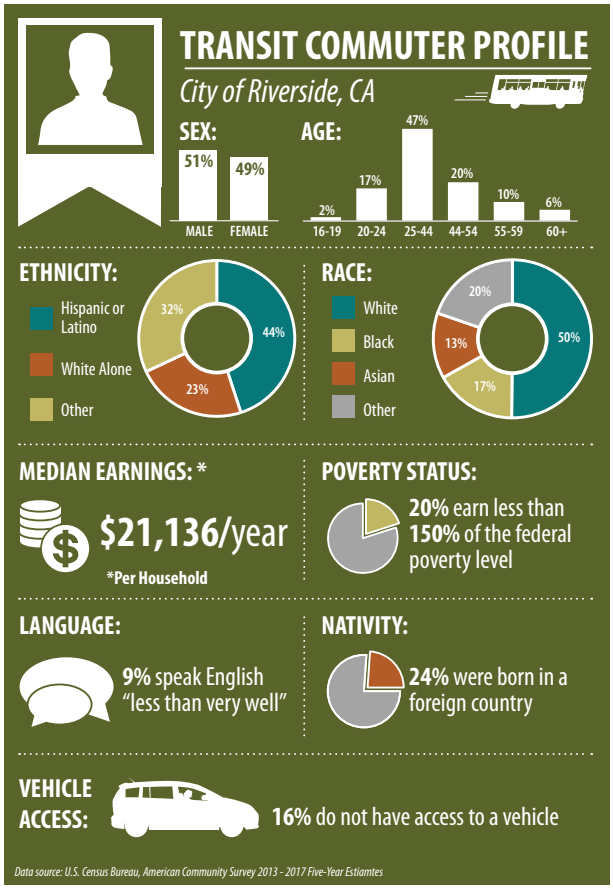


FIGURE 2-3 TRANSIT USER PROFILE

Active Transportation Network

The City of Riverside's existing active transportation network consists of approximately 80 miles of Class I, II, and III bicycle facilities. The majority—69 miles—are Class II bike lanes. There are approximately 10.6 miles of Class I off-street paths and there is one Class III bike route on a .4 mile segment of Eucalyptus Ave.

A completed portion of the Santa Ana River Trail, a Class I facility, runs along Riverside's northern border. The Juan Batista De Anza Trail is a planned regional trail that will intersect the Santa Ana trail at Rancho Jurupa Regional Park and will travel southeast through the City.

Class I facilities like the Santa Ana River Trail are off-street paved paths, typically shared by different types of non-motorized users. Because they are completely separated from vehicular traffic, they provide the greatest level of comfort and are the most accessible facility for people of all ages and abilities.

Class II bike lanes are the most prevalent facility in Riverside. Striped lanes for the exclusive use of bicyclists are located alongside vehicle travel lanes. In some instances a striped buffer provides separation from vehicles. Bike lanes are most appropriate on streets with relatively low traffic speeds and not more than a single lane of traffic in each direction. Within Riverside, bike lanes tend to be located on multi-lane roads like Magnolia Avenue and California Avenue with posted speed limits of 35 mph.

Class III bike routes are roads where bicyclists and motor vehicles share a travel lane. Signage or shared lane markings may be present to alert motorists to the potential presence of bicyclists. Bike routes are only appropriate on low-speed, low-volume streets. The portion of Eucalyptus Avenue that is designated as a Class III bike route is a five-lane road with a posted speed limit of 35 mph.

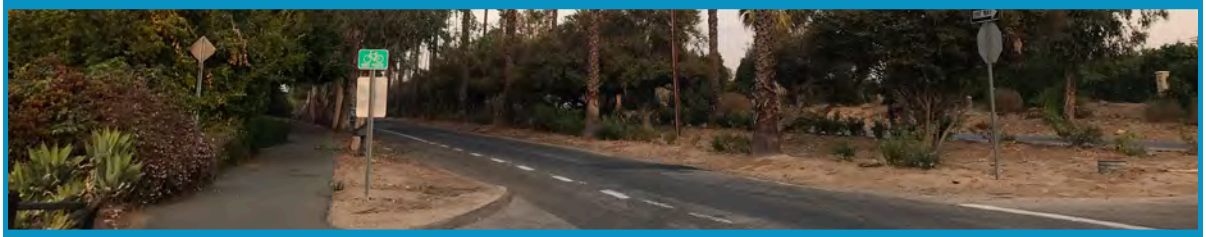
Class IV separated bikeways are on-street facilities reserved for use by bicyclists, with physical separation between the bikeway and vehicular travel lanes. Separated bikeways can be one-way facilities on both sides of the street or two-way facilities on one side of the street. Physical separation can include concrete curbs, landscaping, parking lanes, bollards, or other vertical elements. Riverside has one existing Class IV facility located at the intersection of University Ave and Cayon Crest Dr adjacent to the UC Riverside campus.

Figure 2-4 illustrates the City of Riverside's existing active transportation network, as well as planned facilities. Currently, there is moderate southwest to northeast connectivity, but a lack of complementary facilities in other directions results in an incomplete network. Future facilities, such as bike lanes and bike routes, will help to fill those gaps. There are no planned Class IV (on-street) protected bike facilities at present.

CLASS I - SHARED USE PATH

Santa Ana River Trail

CLASS II - BIKE LANE

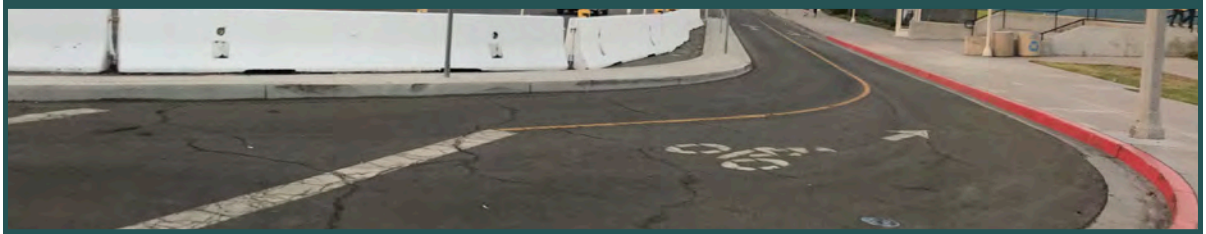


California Avenue

CLASS III - BIKE ROUTE

Mission Inn Avenue

CLASS IV - CYCLE TRACK



University Avenue

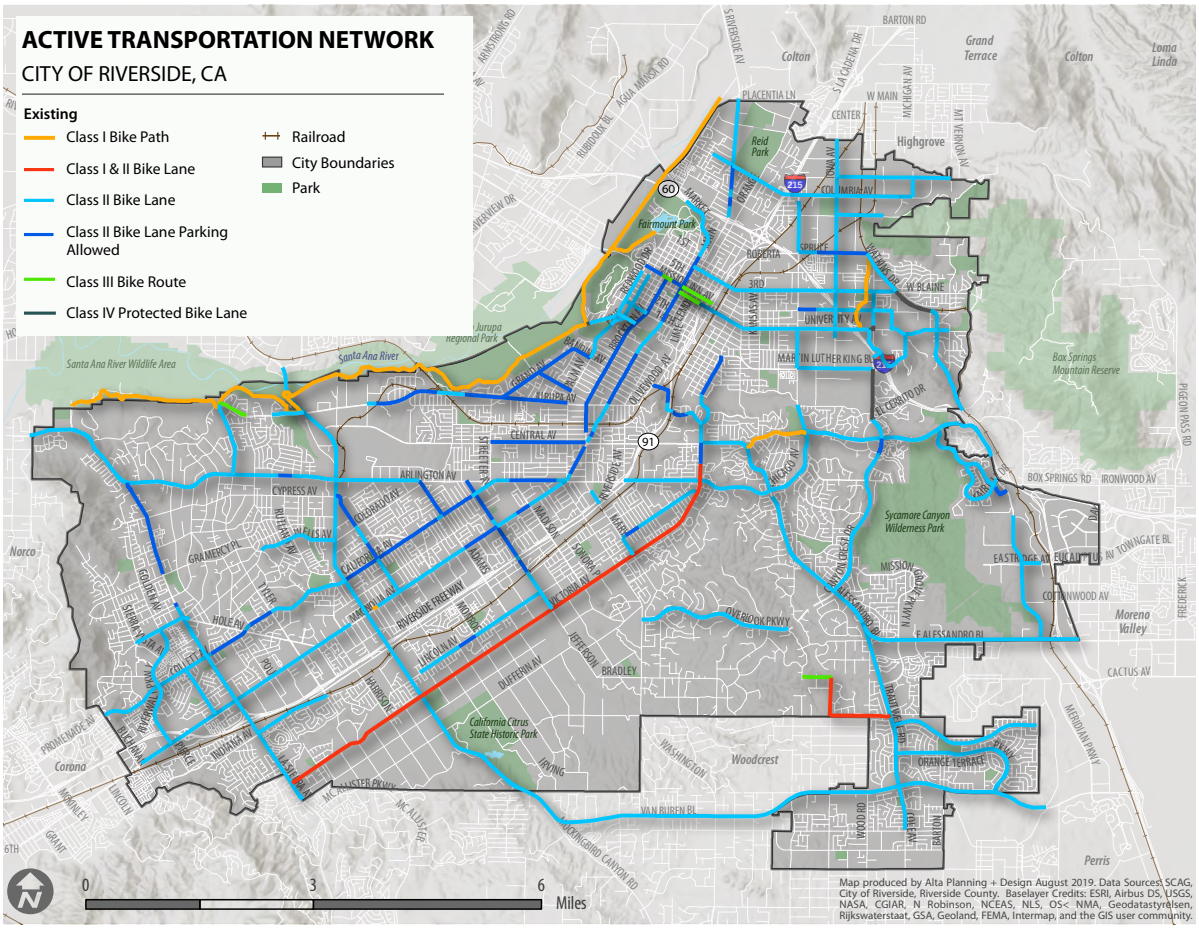


FIGURE 2-4 ACTIVE TRANSPORTATION NETWORK MAP

Origins and Destinations

There are a number of origins and destinations that tend to generate bicycle and pedestrian activity. These typically include commercial or shopping areas, downtowns, areas with high concentrations of jobs, high density neighborhoods, schools, parks, community centers, and cultural institutions like museums, and libraries among others.

Figure 2-5 displays the city facilities and land use categories in Riverside that constitute these types of origins and destinations. They are concentrated along State Route 91 (the Riverside Freeway) which runs southwest to northeast through the center of Riverside. There are considerably more origins and destinations located north of the freeway, including downtown Riverside. The most northern and eastern extents of the City also have employment zones of significant size.

The street grid in these areas is dense and follows a primarily orthogonal pattern, which is amenable to walking and biking.

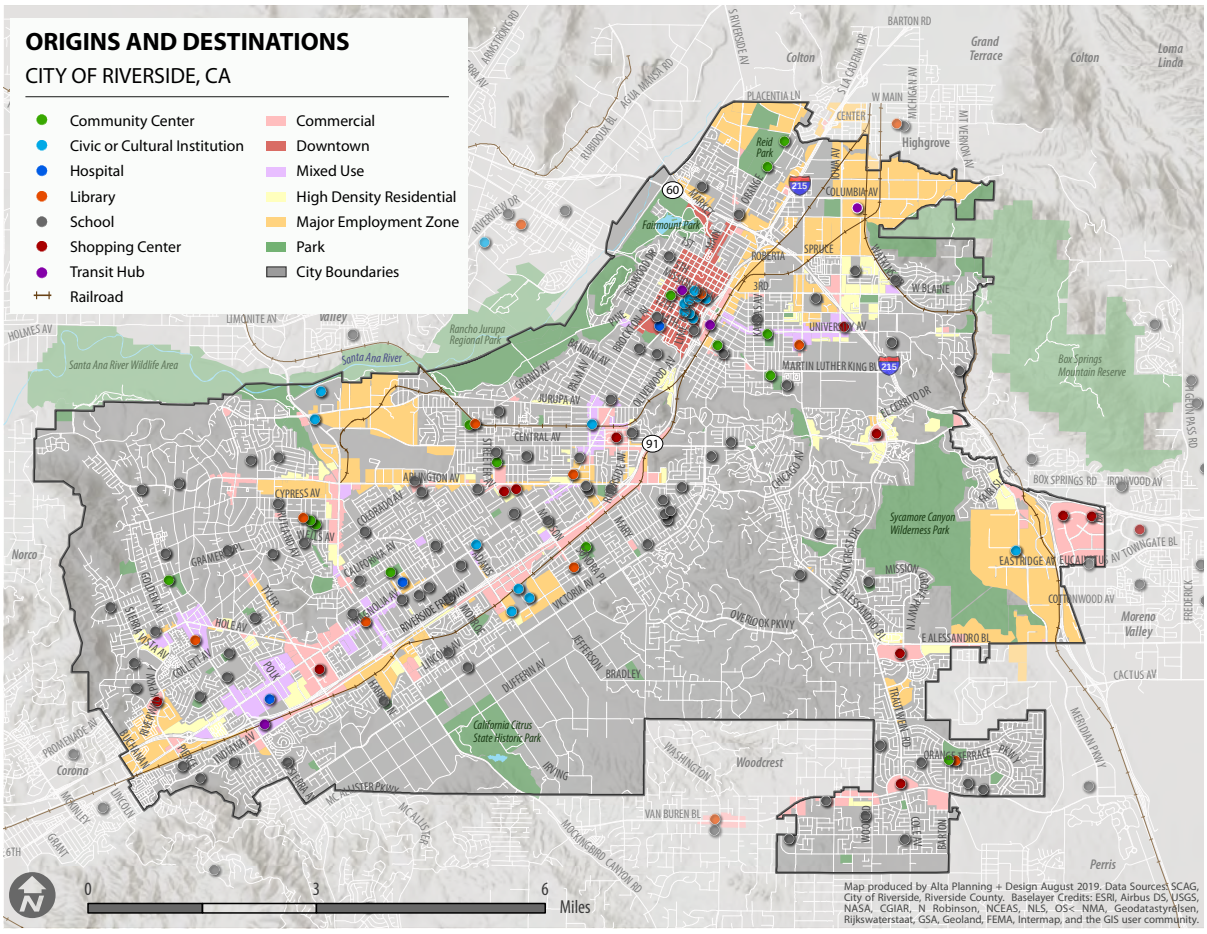


FIGURE 2-5 ORIGINS AND DESTINATIONS MAP

Bicycle - & Pedestrian - Involved Collisions

There are significant safety risks for those walking and biking in Riverside. From January 1, 2015 to December 31, 2018 there have been 350 bicycle-involved collisions and 398 pedestrian-involved collisions within the City. Twenty-one of those collisions have been fatal and 82 have resulted in severe injury.

Collisions have primarily occurred in the northern portion of the City, along major arterials such as Magnolia Avenue, Van Buren Boulevard, University Avenue, Iowa Avenue, and throughout downtown.

Figure 2-6 presents bicycle-involved collisions by primary collision factor. The majority of collisions (60 percent) were caused by a party (assumed the bicycle in most cases) traveling on the wrong side of the road, or the bicyclist violating the automobile's right of way. The absence of bicycle facilities on most of Riverside's streets may lead some bicyclists to violate the law as they attempt to navigate vehicle traffic, thus contributing to these collisions. Approximately 14 percent of bike-involved collisions were occurred at traffic signals and signs and 11 percent caused by improper turning, indicating a need for conflict mitigation at intersections as well.

Figure 2-7 breaks down pedestrian-involved collisions by the pedestrian's action at the time of the collision. Approximately 38 percent of pedestrians were hit by a vehicle while in a crosswalk and 31 percent were hit while crossing outside of a crosswalk, indicating a need for improvements to existing crosswalks and the addition of new crosswalks to provide safer opportunities for pedestrians to cross the street.

Figure 2-8 shows the locations of all bicycle- and pedestrian-involved collisions between 2015 and 2018. The color of each hexagon in the map represents the number of collisions that occurred in that area. The location of fatal collisions are also identified.

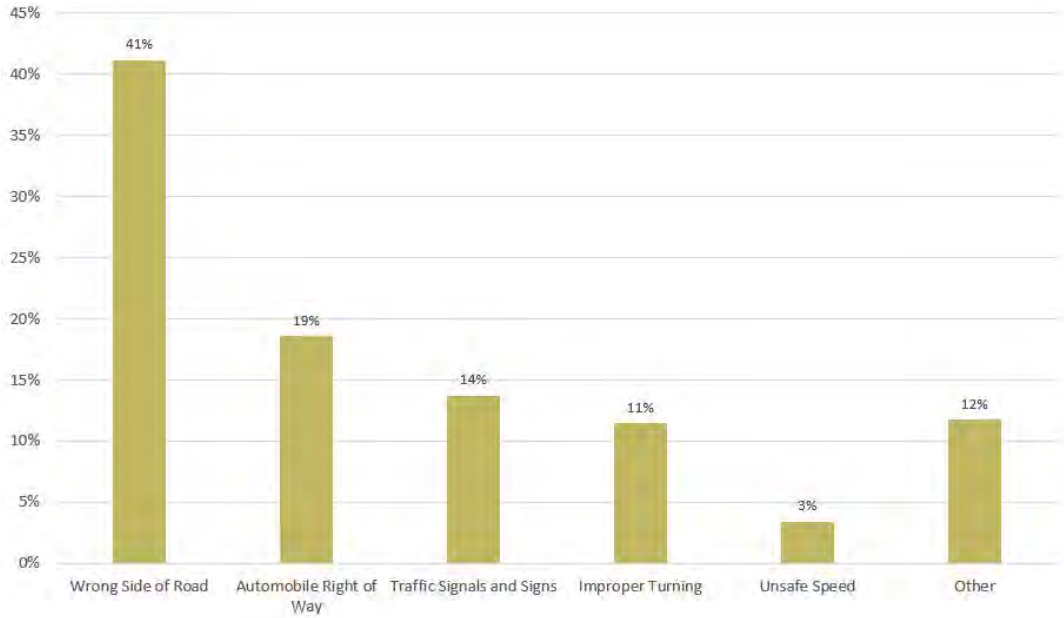


FIGURE 2-6 BICYCLE-INVOLVED COLLISIONS BY PRIMARY COLLISION FACTOR (2015 - 2018)

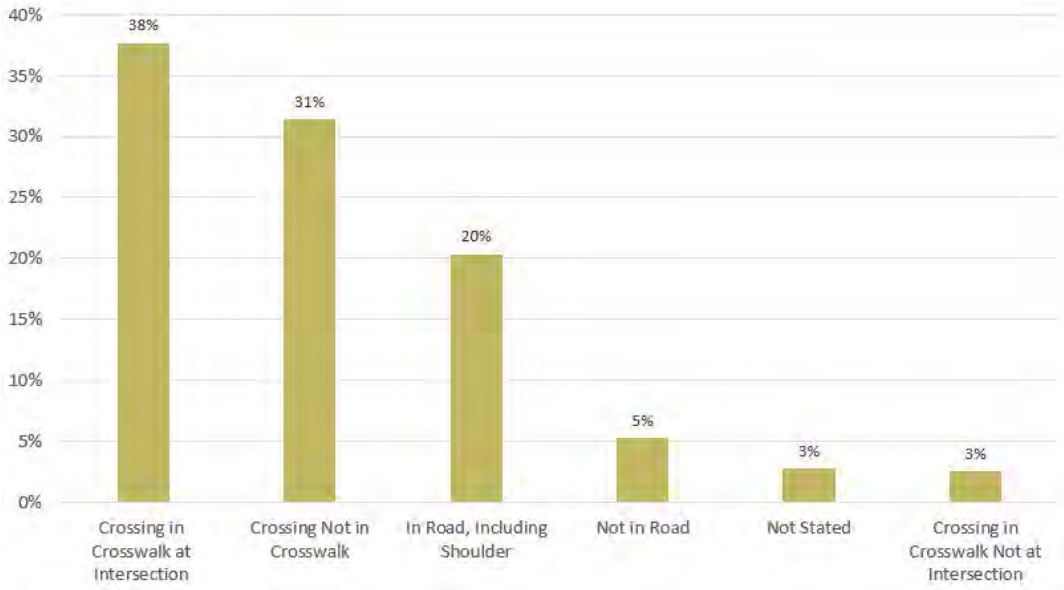


FIGURE 2-7 PEDESTRIAN-INVOLVED COLLISIONS BY PEDESTRIAN ACTION (2015 - 2018)

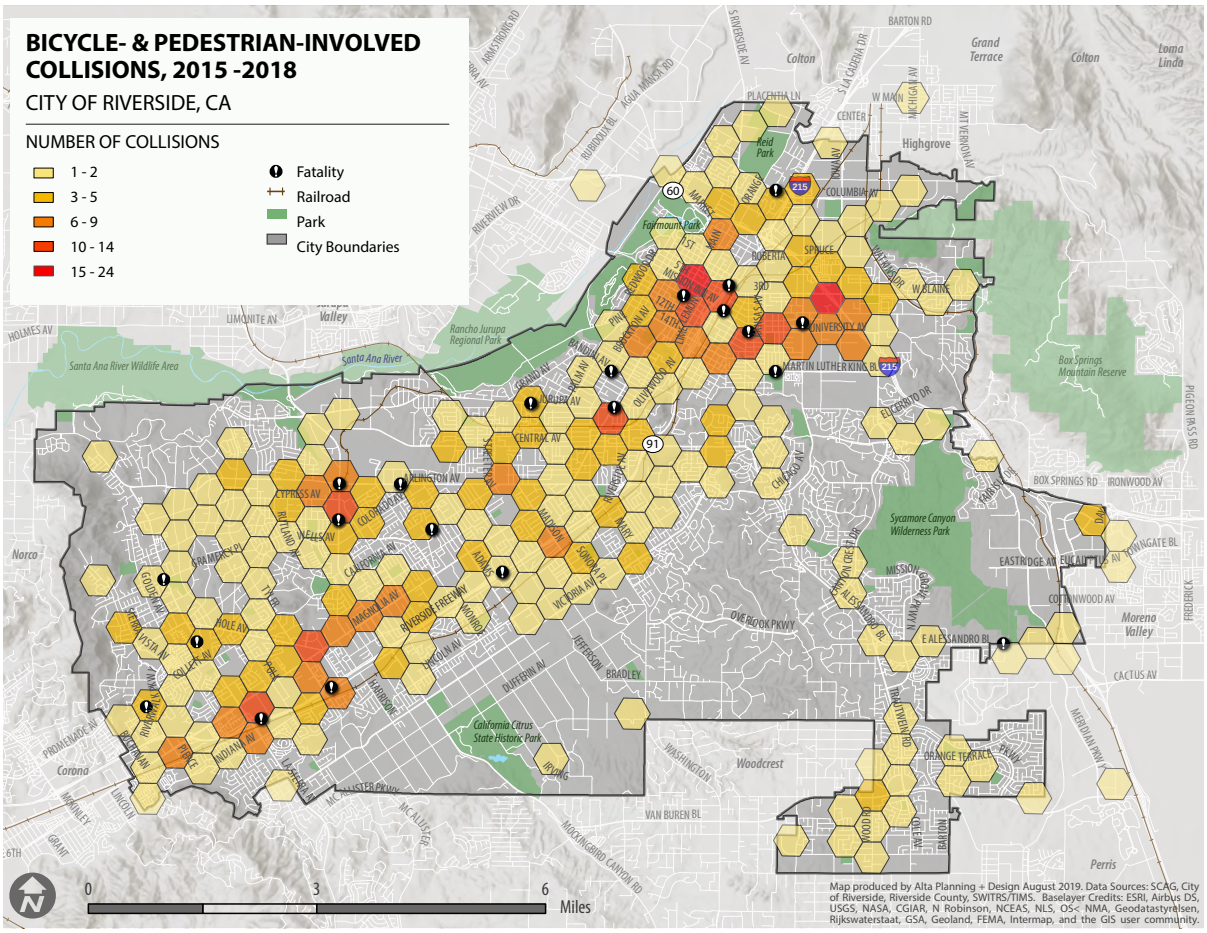
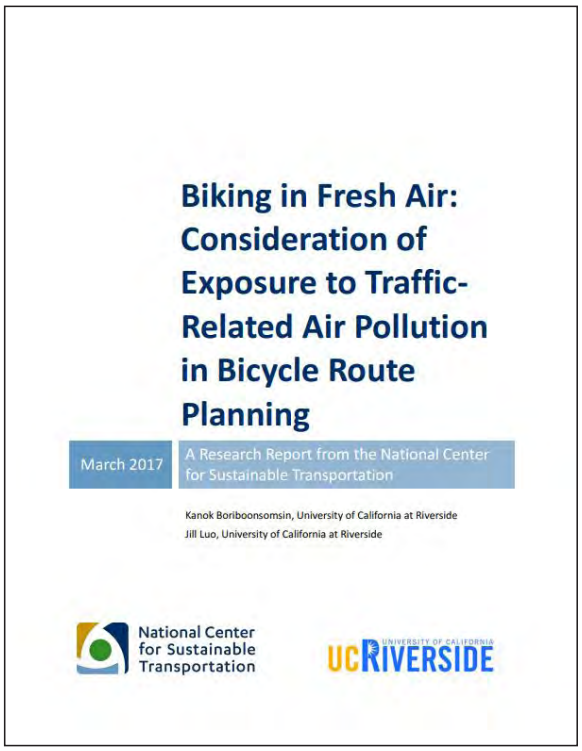


FIGURE 2-8 BICYCLE- AND PEDESTRIAN-INVOLVED COLLISIONS MAP

Air Quality

A report from the National Center for Sustainable Transportation "Biking in Fresh Air: Considerations of Exposure to Traffic-Related Air Pollution in Bicycle Route Planning" (Boriboonsomsin & Luo, 2017) and UC Riverside argued that exposure to air pollution is an important consideration when developing bicycle routes, as it puts bicyclists at risk for breathing in harmful particles. The report authors developed a method for integrating this exposure into bicycle route planning and collected air pollution data for the City of Riverside. Specifically, they estimated traffic-related concentrations of primary fine particle (PM2.5) concentrations based on traffic activity, traffic emissions, and air pollutant dispersion modeling. The concentration values were then weighted by level of bicycle activities by time of day (morning, midday, and afternoon) and by month of year (based on the GPS dataset in the 2010-12 California Household Travel Survey). This resulted in a map and interactive bicycle route planning tool that estimated bicyclist level of exposure to traffic-related air pollution for each roadway segment in the City.

Figure 2-9 displays the data collected by the researchers for the Biking in Fresh Air report. Exposure to air pollution is highest on roads closest to SR-91 and Interstate 215. Major roads such as Magnolia Avenue and Arlington Avenue also have relatively high levels of pollution. Though identifying the ideal routes for bicycle facilities is based on many factors, some of which may be in conflict with the air quality data (for instance, many origins and destinations are located on or near streets with the highest exposure to air pollution), choosing routes with lower levels of air pollution when possible will be a benefit to people's health.



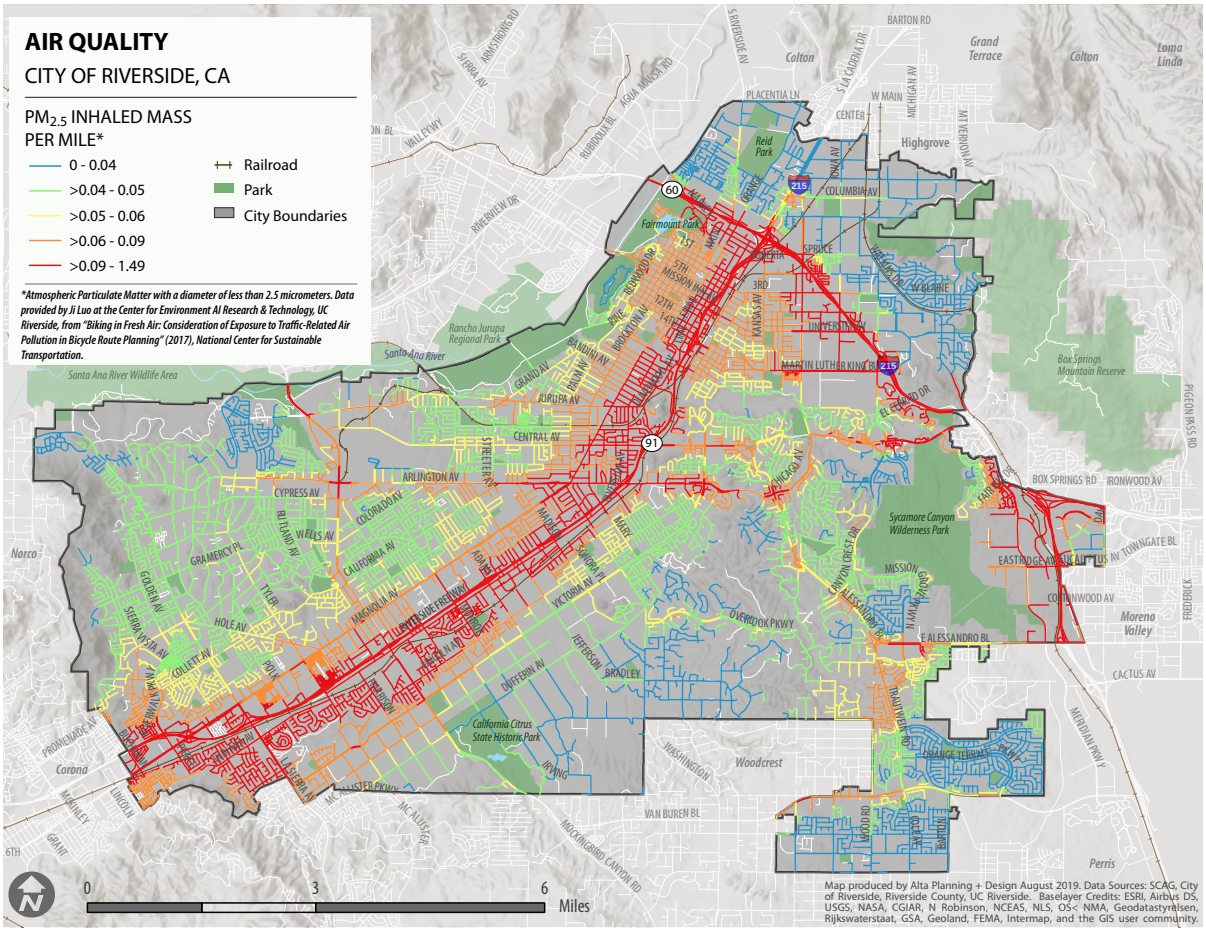


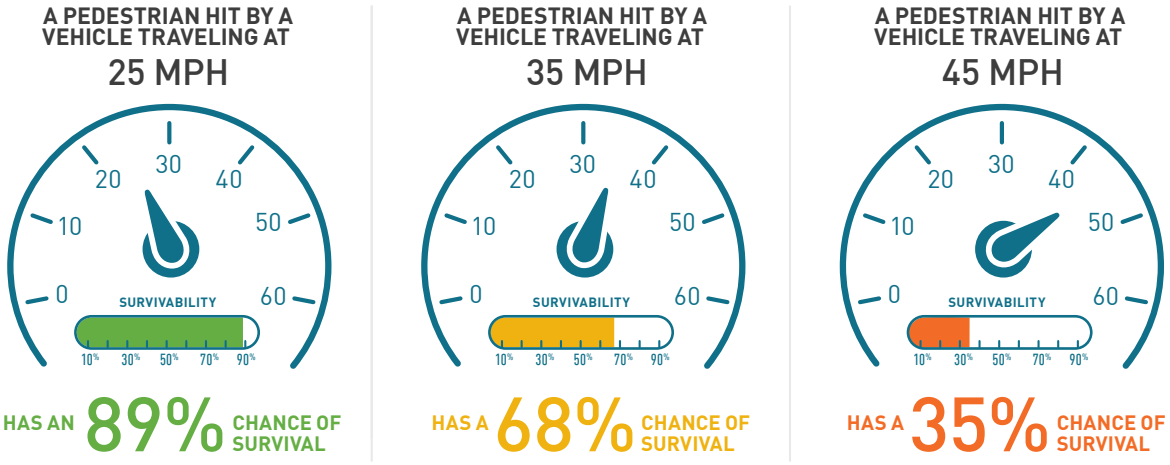
FIGURE 2-9 AIR QUALITY MAP

Roadway Conditions

The speed at which vehicles are traveling has a significant impact on the comfort and safety of pedestrians and bicyclists who are also using the same right-of-way. As Figure 2-10 below illustrates, a pedestrian's chance of survival after being hit by a vehicle at 25 mph is 89 percent but drops to only 35 percent if the vehicle is traveling at 45 mph.

Outside of highways, the highest posted speed limit in Riverside is 35 mph. According to research by Tefft (2013), pedestrians have a 68 percent chance of surviving when hit by a vehicle traveling at that speed. This emphasizes the importance of providing bicycle and pedestrian facilities that are appropriate for the existing roadway, or changing the design of the road to be safer for all road users. In addition, posted speeds are not necessarily the same as actual speeds. Therefore, roadway design and enforcement are also import factors contributing to vehicle speeds.

Posted speed limits for Riverside's streets are illustrated in Figure 2-11.



Tefft, B. C. *Impact speed and a pedestrian's risk of severe injury or death*. Accident Analysis & Prevention 50 (2013) 871-878.

FIGURE 2-10 PEDESTRIAN SURVIVABILITY BY SPEED

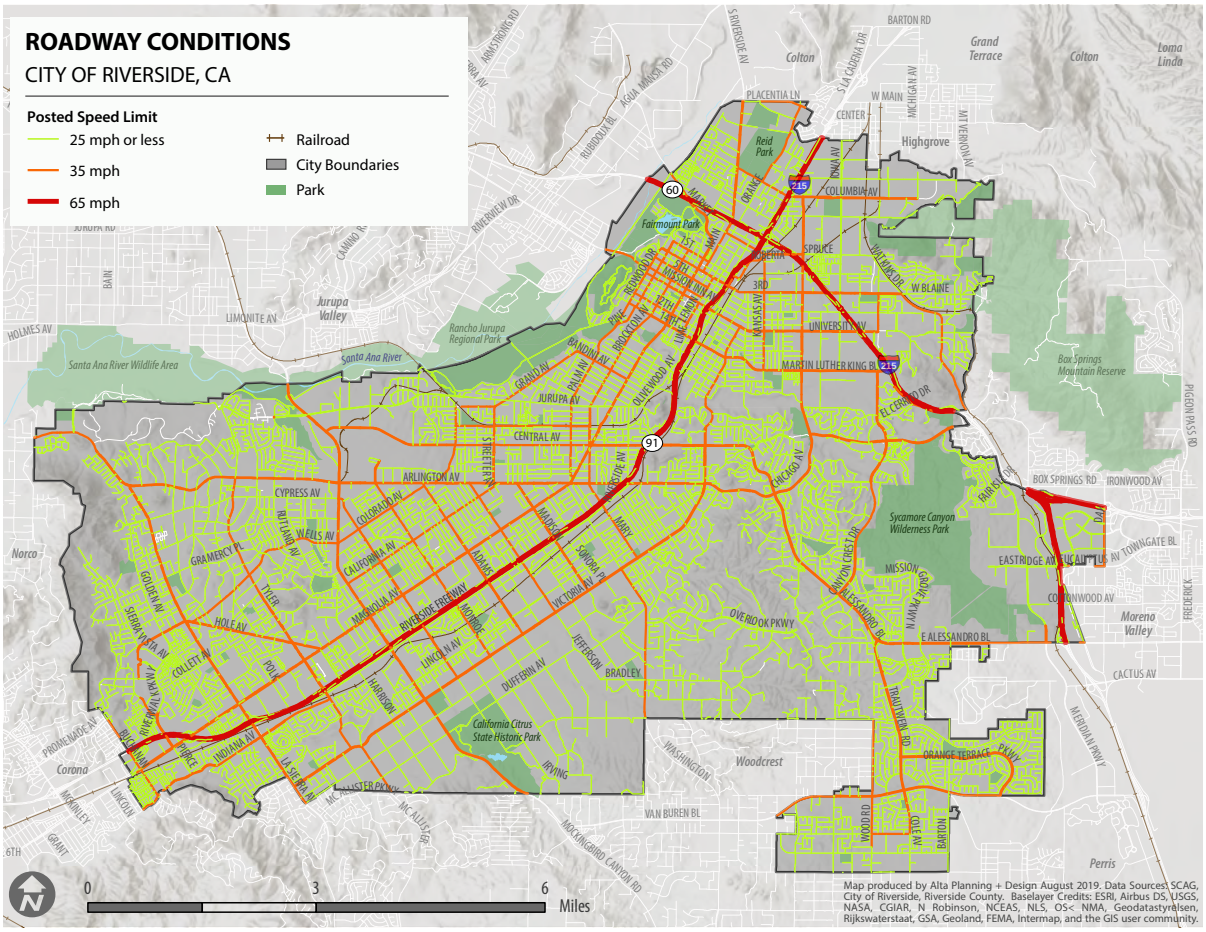


FIGURE 2-11 ROADWAY CONDITIONS MAP

Transit Network

The City of Riverside is served by three transit agencies, the Riverside Transit Agency (RTA), which provides local and regional bus service throughout Riverside County, Metrolink, which provides regional commuter rail service throughout Southern California, and Amtrak, the nationwide rail system.

Metrolink service in Riverside includes two lines, the Inland Empire line with service to San Bernardino and Oceanside and the Riverside Line with service to downtown Los Angeles. There are three Metrolink Stations, La Sierra located in the southwest part of the City on the Perris Valley Line, the Downtown Riverside Station on the edge of downtown opposite SR-91 and the Hunter Park Station; all rail lines service this station. Amtrak's Southwest Chief Line with service to Chicago also utilizes this station.

There are currently 32 RTA bus routes that provides service throughout the City. The majority of routes travel along or near SR-91 and I-215 corridors and terminate or pass through downtown. These corridors correlate relatively closely with SCAG's High Quality Transit Areas, or areas within one-half mile of major transit stops and frequent transit service.[1] Though most of the City 's area is not served by high quality transit, the densest and most diverse parts of the City, land-use wise, are.

Figure 2-12 shows Riverside's existing transit network.

RTA Bus-Downtown Riverside

Riverside-Dowtown Metrolink Station. Source: RCTC

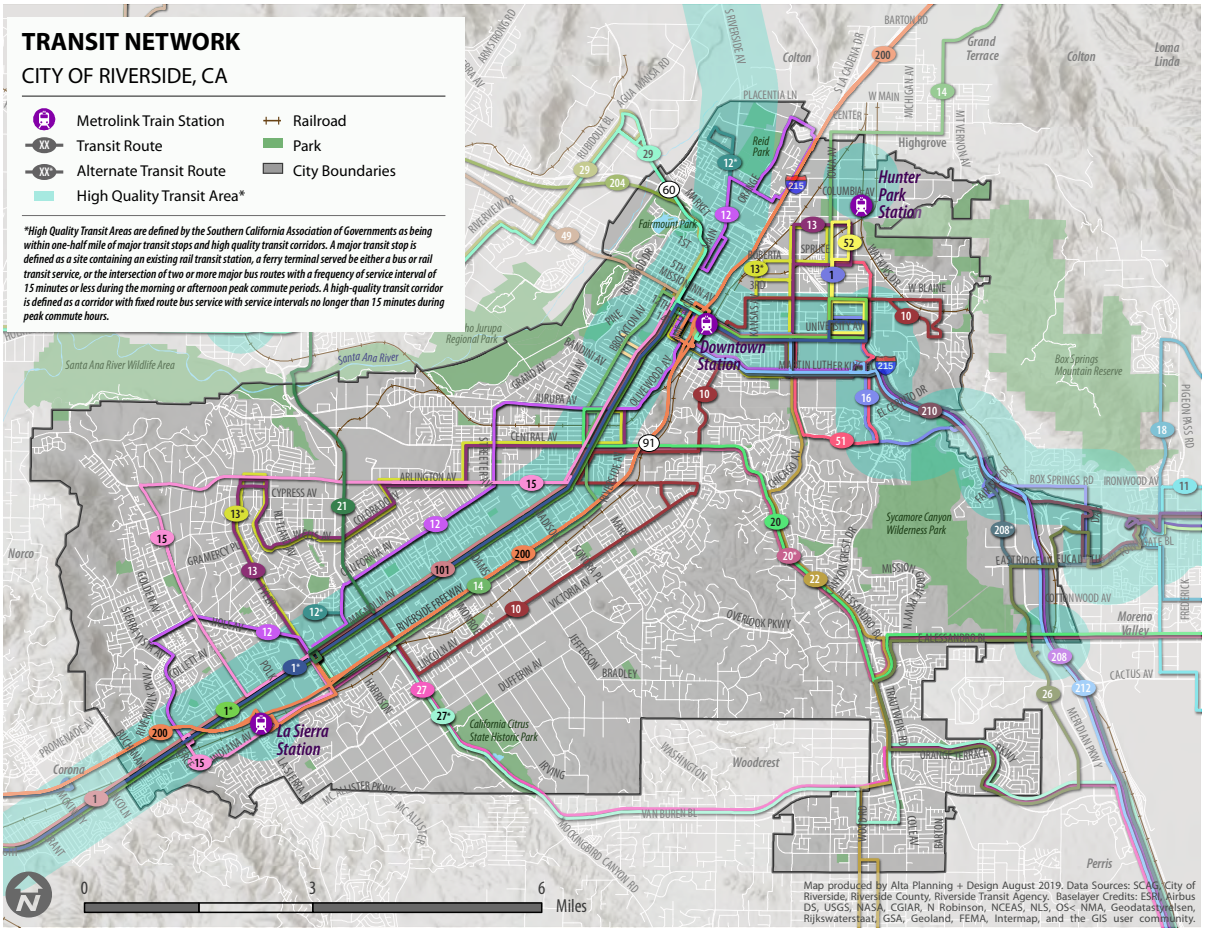


FIGURE 2-12 TRANSIT NETWORK MAP

Wards

The City of Riverside is divided into seven wards, each represented by a councilperson. The following section summarizes the existing conditions of each ward.

Wards are depicted in Figure 2-13.

Erin Edwards
Ward 1

Andy Melendrez
Ward 2

Steve Hemenway
Ward 7

Ronaldo Fierro
Ward 3

Chuck Conder
Ward 4

Gaby Plascencia
Ward 5

Jim Perry
Ward 6

RIverside City Council Members and their represented Wards as of 2021.

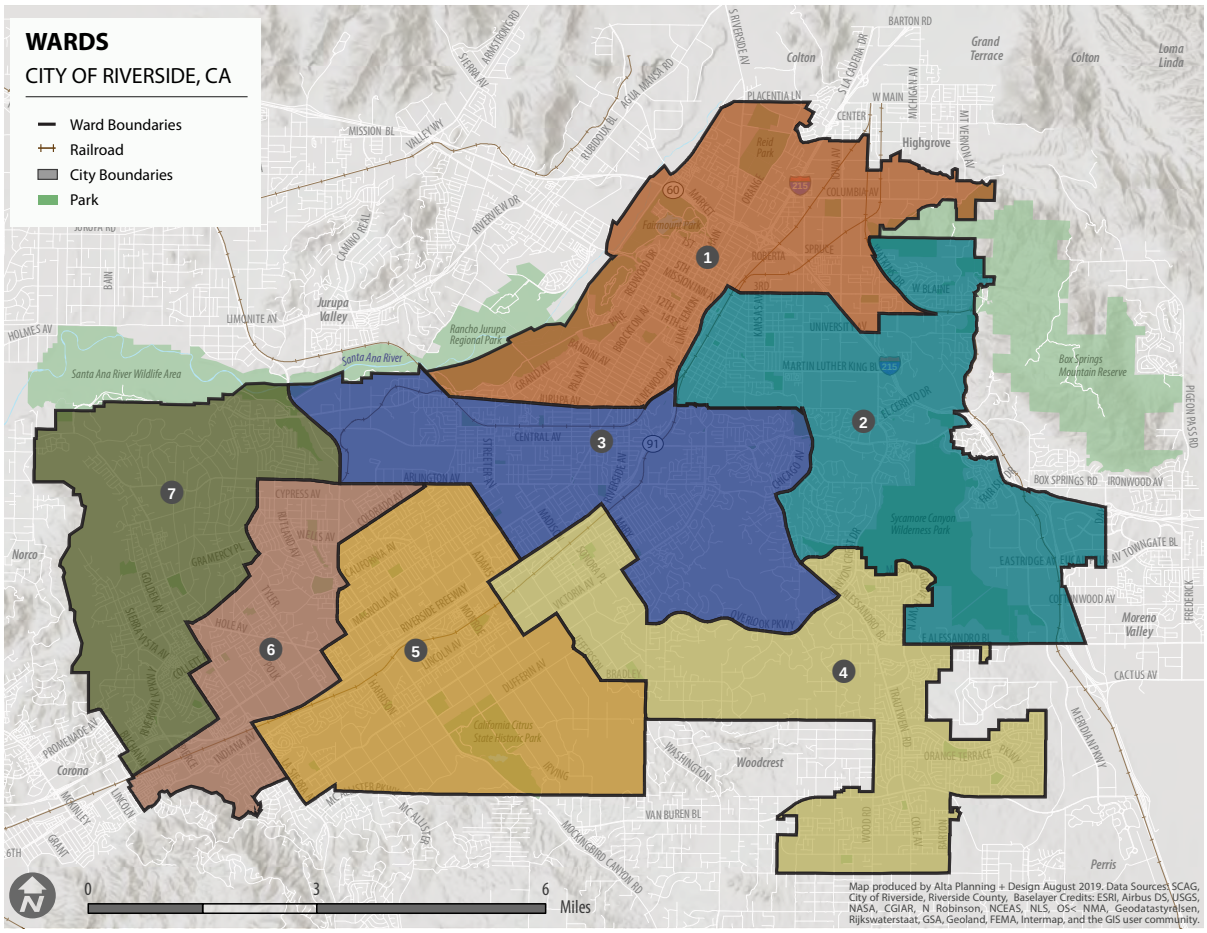


FIGURE 2-13 WARDS MAP

Ward 1 Characteristics

Ward 1 is the northernmost Ward in the City of Riverside, covering 11.8 square miles, and sharing the city border with the City of Jurupa Valley and the unincorporated community of High Grove. It is bisected by SR-91 and SR-60, which are the main arteries for vehicular travel to and through Riverside.

DEMOGRAPHICS

According to 2017 American Community Survey data, Ward 1 within the City of Riverside is home to approximately 63,200 people and is 53% of Hispanic or Latino origin and 47% of residents not of Hispanic or Latino origin. Ward 1 consists largely of working age individuals and young families, 27% of individuals being within the age range of 30-39 while the second largest group was 21% consisting of individuals within the range of 20-29 years of age. The education level in Ward 1 is made up mostly of High School graduates at 28% as well as "Some College" at 23%. The income distribution of Ward 1 is representative of middle-class working salaries with approximately 68% of households reportedly having an income of less than $75,000.

ORIGINS AND DESTINATIONS

Ward 1 is the economic and cultural hub of Riverside. It has a diverse mix of land uses and encompasses the downtown core, where most of the City's civic and cultural buildings reside. Downtown is situated around the Main Street pedestrian mall, which is closed to vehicle traffic and is bordered by retail shops, restaurants, and other attractions.

Ward 1 is also home to several of the City's most visited destinations, including Riverside City College, Riverside Convention Center, and Mission Inn. There are several parks, most notably Fairmount Park, Mt. Rubidoux Park, and a portion of Rancho Jurupa Regional Park, which stretch along the ward's entire western boundary South of SR-60.

ACTIVE TRANSPORTATION NETWORK

The existing active transportation network in Ward 1 is relatively well-connected, particularly the west side due in large part to the rectilinear street grid and extensive sidewalk infrastructure. These amenities are less extensive outside of the downtown core, north of SR-60 and east of SR-91, and access to downtown is limited due to the highways.

The regional Santa Ana River Trail follows the Santa Ana River along Ward 1's western border, providing connectivity to San

Bernardino to the northeast and Norco to the southwest. There are several existing Class II bike lanes, the most significant being the Magnolia Avenue bike lane which provides access through downtown and to southeast Riverside. A number of Class III bike routes are planned for the downtown area, as are several Class II bike lanes in the eastern portion of the ward. The regional Juan Batista De Anza Trail will eventually travel through the ward to connect to the Santa Ana River Trail in Ryan Bonaminio Park.

Figure 2-14 is a map of Ward 1's existing conditions, including origins and destinations and the active transportation network.

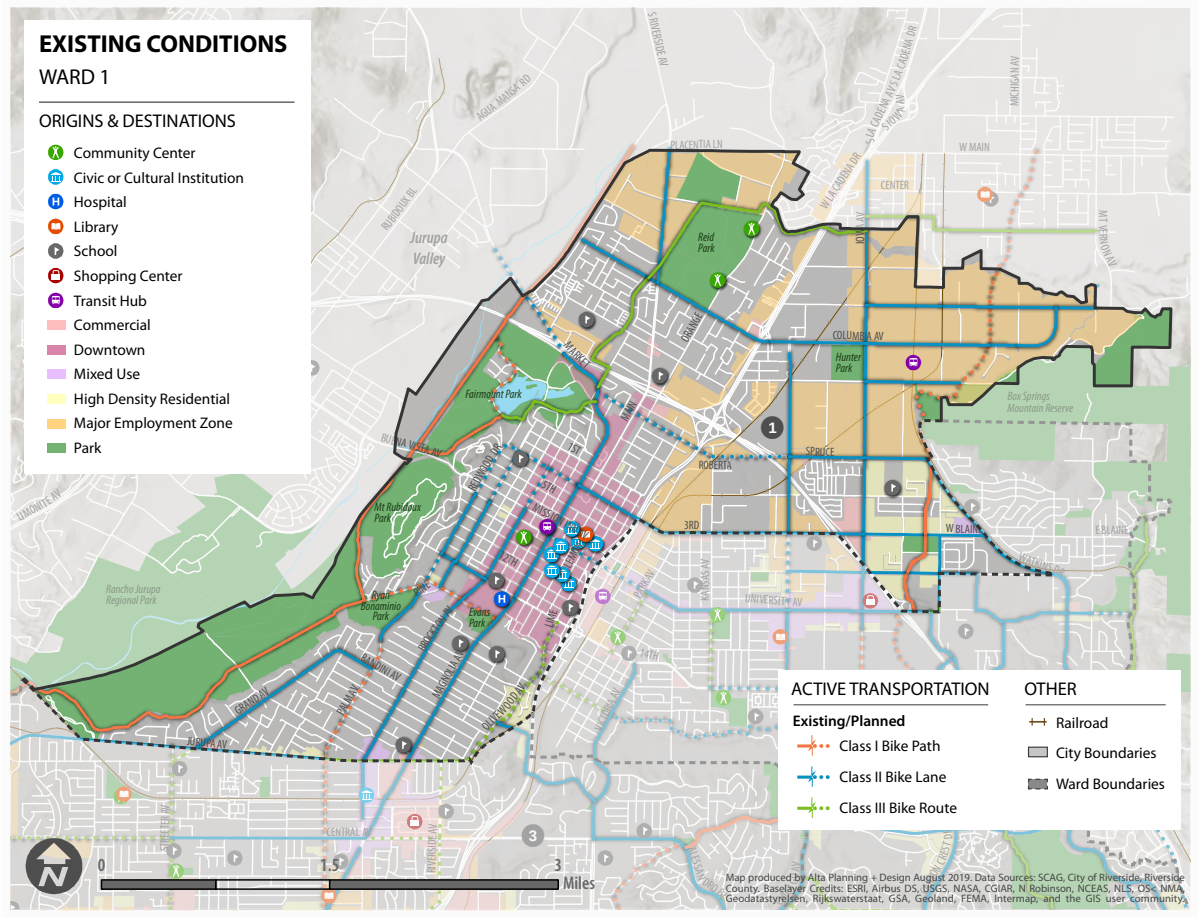


FIGURE 2-14 WARD 1 EXISTING CONDITIONS MAP

Bicycle- and Pedestrian-Involved Collisions

Ward 1 had the greatest concentration of bicycle- and pedestrian-involved collisions. Approximately one-quarter (186 collisions), of all bicycle- and pedestrian collisions between 2015 and 2018 occurred in Ward 1. Six of those collisions were fatal and 19 resulted in severe injury.

Most of these collisions occur in downtown, where people are more likely to walk and bike than anywhere else in the City. 40-percent (75 collisions) of all Ward 1 bicycle- and pedestrian-involved collisions occurred in downtown Riverside or within the immediate vicinity, most commonly along 14th Street and Market Street.

Outside of downtown, collisions are concentrated along Iowa Avenue (13 collisions), Blaine Street (10 collisions), and Jurupa Avenue (10 collisions). Eight of the collisions on Iowa Avenue and Blaine Street occurred at the intersection of the two streets. Two fatal collisions occurred on Jurupa Avenue, one at Magnolia Avenue, the other at Meadowbrook Lane.

Table 2-1 lists the five intersections with the highest number of bicycle- and pedestrian-involved collisions in Ward 1. Table 2-2 lists the five streets with the highest number of collisions, and Table 2-3 lists the locations of the fatal collisions. Figure 2-15 shows the locations of all bicycle- and pedestrian-involved collisions between 2015 and 2018 in Ward 1. The color of each hexagon in the map represents the number of collisions that occurred in that area. The location of fatal collisions and those resulting in severe injury are also identified.

TABLE 2-1 - WARD 1: INTERSECTIONS WITH THE MOST COLLISIONS

Intersection	Number of Collisions
Iowa Ave & Blaine St	8
3rd St & Trade Center Dr	4
Main St & Strong St	4
Mission Inn Ave & Main St	4
University Ave & Orange St	4

TABLE 2-2 - WARD 1: STREETS WITH THE MOST COLLISIONS

Street	Number of Collisions
Market St	17
Iowa Ave	13
Main St	12
14th St	11
Blaine St	10
Jurupa Ave	10

TABLE 2-3 - WARD 1: INTERSECTIONS WITH FATAL COLLISIONS

Intersection	Fatal Collisions
Brockton Ave & Bandini Ave	1
Columbia Ave & Mulberry St	1
Jurupa Ave & Magnolia Ave	1
Jurupa Ave & Meadowbrook Ln	1
Market St & University Ave	1
SR-91 Eastbound & 3rd St	1

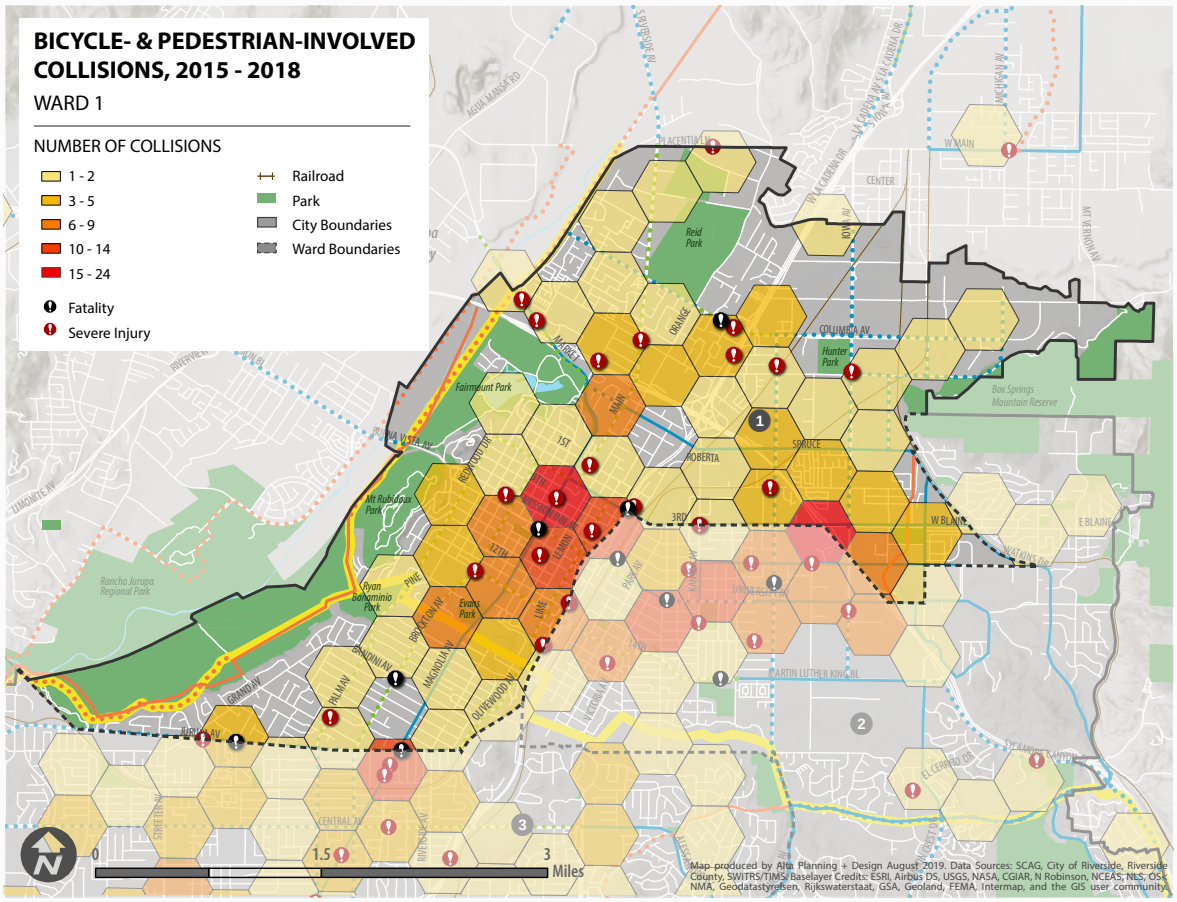


FIGURE 2-15 WARD 1 BICYCLE- AND PEDESTRIAN-INVOLVED COLLISIONS (2015-2018) MAP

Ward 2 Characteristics

Ward 2 is located in the eastern sector of Riverside and is approximately 14.5 square miles in size. It borders downtown and SR-91 to the west. Its shares its eastern border with the City, where it abuts the City of Moreno Valley and unincorporated Riverside County. I-215 crosses the ward in the northeast and again in the southeast corners of the ward.

DEMOGRAPHICS

Ward 2 within the City of Riverside is home to approximately 49,789 people and is 57% of Hispanic or Latino origin and 43% of residents not of Hispanic or Latino origin. Ward 2 consists largely of working age individuals and young families, 25% of individuals being within the age range of 30-39 while the second largest group was 23% consisting of individuals within the range of 20-29 years of age. Similar to Ward 1 the education level in Ward 2 is made up mostly of High School graduates at 22% as well as “Some College” at 23%, differing however with 17% of people obtaining a Bachelor’s Degree and 10% of people obtaining a Master’s Degree. The income distribution of Ward 2 is bottom heavy with 21% of individuals having an income of less than $25,000, which decreases by a few percentage points the larger the income quantity. This trend is representative of approximately 58% of households reportedly having an income of less than $75,000 and approximately 30% of households reportedly having an income $100,000 or more.

ORIGINS AND DESTINATIONS

Ward 2 is home to the 1,200 acre University of California Riverside located on the east side of I-215. Multi-family housing and local amenities are concentrated along University Avenue to the south of the campus. Just west of I-215 opposite the main campus, is University Village, a popular open-air retail and dining destination.

The Downtown Riverside Metrolink station is located in the northwest corner of Ward 2 near the border with Ward 1. Otherwise, amenities are fairly sparse, and development is of low-density, particularly south of Central Avenue, where large tract single-family housing and curvilinear streets predominate. The area on the eastern end of Martin Luther King Boulevard is predominately agricultural.

Sycamore Canyon Wilderness Park is a large park located in the southern half of the ward. Immediately to the east of the park is a considerable employment zone where a number of national corporations have distribution centers. East of I-215 is the Canyon Crossings Mall and a number of big box stores.

ACTIVE TRANSPORTATION NETWORK

The area around the UC Riverside campus has several Class II bike lanes, most of which travel east to west along major thoroughfares. Central Avenue, running east to west, also has bike lanes. However, there are no facilities that connect to downtown Riverside. North-south bicycle connections are also lacking, particularly those that cross I-215.

Planned Class III bike routes would fill the gaps in the network connecting to downtown. Planned bike lanes on Canyon Crest Drive and Sycamore Canyon Boulevard would provide connections to the southern reaches of the ward where there are currently none. Once built, the regional Juan Batista De Anza trail will bisect the ward, enabling access to downtown Riverside, the Santa Ana River Trail to the northwest, and eastern Riverside County.

Figure 2-16 is a map of Ward 2's existing conditions, including origins and destinations and the active transportation network.

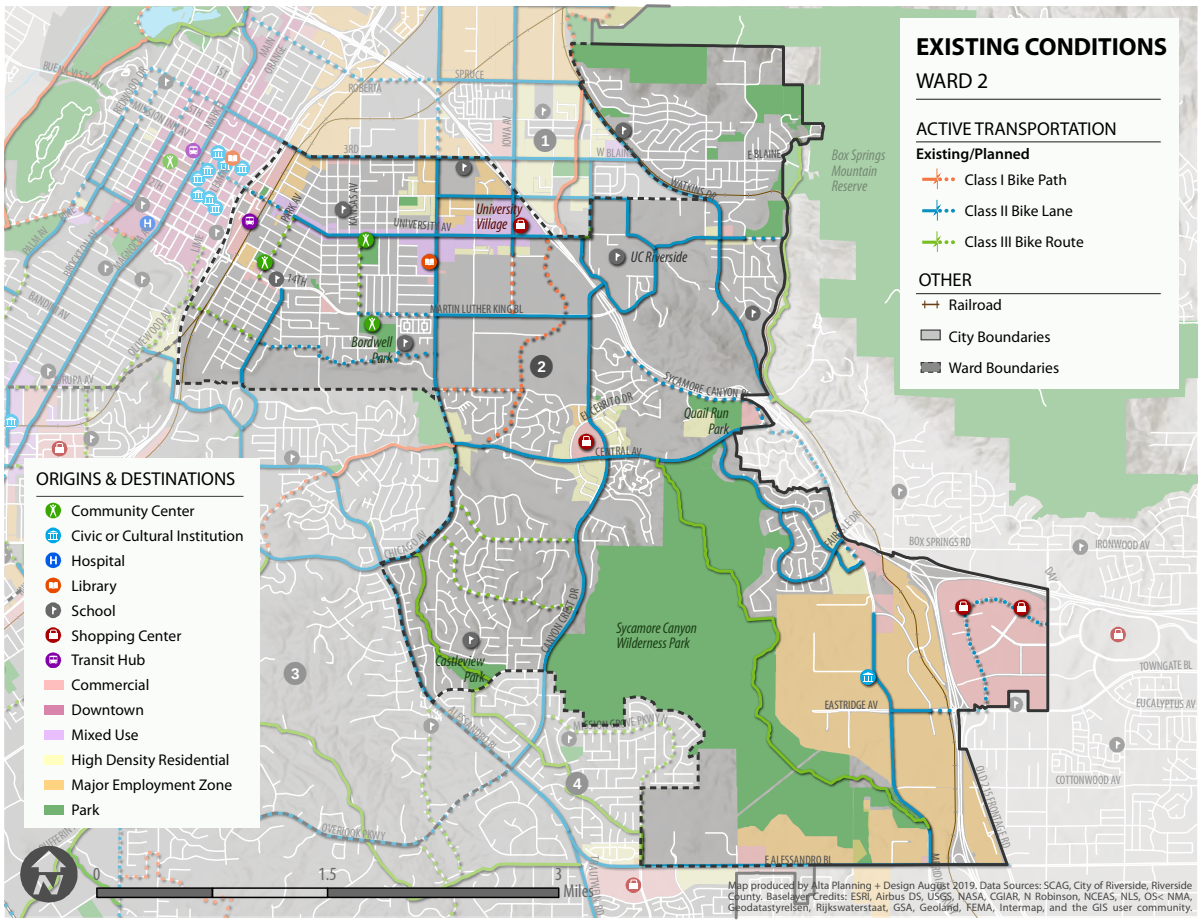


FIGURE 2-16 WARD 2 EXISTING CONDITIONS MAP

Bicycle- and Pedestrian-Involved Collisions

Ward 2 had 109 bicycle- and pedestrian-involved collisions between 2015 and 2018 (15% of citywide bicycle- and pedestrian-involved collisions). They were concentrated in the northern part of the ward, north of Martin Luther King Boulevard, where the street grid is densest. Five of the collisions were fatal; 12 resulted in severe injury.

Collisions are particularly concentrated on University Avenue; 24 collisions occurred on University Avenue between 2015 and 2018, six at the intersection with Interstate-215, five at the intersection with Iowa Avenue, and four at the intersection with Cranford Avenue. A fatal pedestrian-involved collision occurred at University Avenue and Comer Avenue.

Table 2-4 lists the five intersections with the highest number of bicycle- and pedestrian-involved collisions in Ward 2 from 2015 and 2018. Table 2-5 lists the five streets with the highest number of collisions, and Table 2-6 lists the locations of the fatal collisions. Figure 2-17 shows the locations of all bicycle- and pedestrian-involved collisions between 2015 and 2018 in Ward 2. The color of each hexagon in the map represents the number of collisions that occurred in that area. The location of fatal collisions and those resulting in severe injury are also identified.

TABLE 2-4 - WARD 2: INTERSECTIONS WITH THE MOST COLLISIONS

Intersection	Number of Collisions
University Ave & I-215	6
University Ave & Iowa Ave	5
University Ave & Cranford Ave	4
Chicago Ave & Linden St	4
Day St & Canyon Springs Pkwy	4

TABLE 2-5 - WARD 2: STREETS WITH THE MOST COLLISIONS

Street	Number of Collisions
University Ave	24
Chicago Ave	8
14th St	7
Linden St	5
Day St	5

TABLE 2-6 - WARD 2: INTERSECTIONS WITH FATAL COLLISIONS

Intersection	Fatal Collisions
Chicago Ave & 7th St N	1
Mission Inn Ave & Commerce St	1
University Ave & Comer Ave	1
Alessandro Blvd & Gem Ln	1
Martin Luther King Blvd & Douglass Ave	1

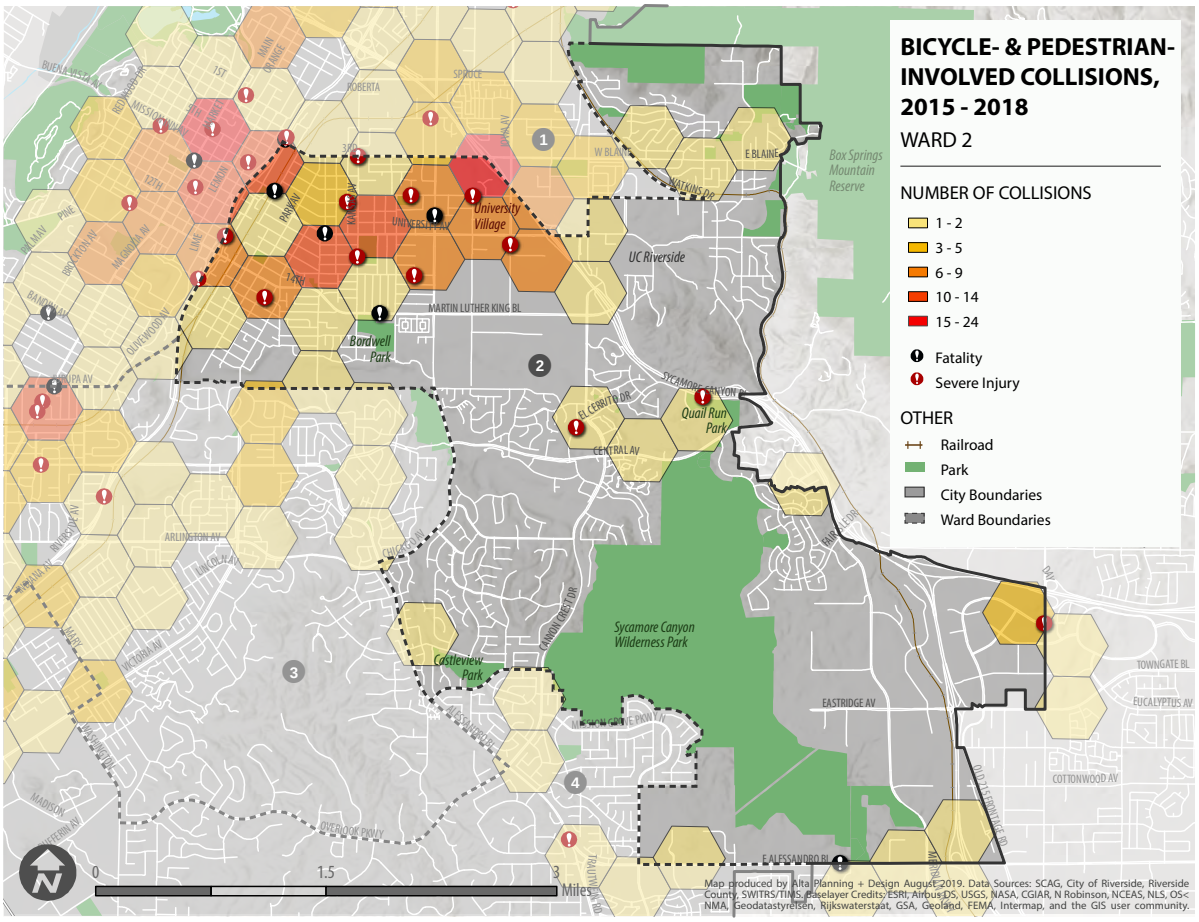


FIGURE 2-17 WARD 2 BICYCLE- AND PEDESTRIAN-INVOLVED COLLISIONS (2015 - 2018) MAP

Ward 3 Characteristics

Ward 3 is centrally located within the City of Riverside and is 12.6 square miles. The ward is bisected by SR-91.

DEMOGRAPHICS

Ward 3 within the City of Riverside is home to approximately 90,711 people and is 49% of Hispanic or Latino origin and 51% of residents not of Hispanic or Latino origin. Ward 3 consists largely of working age individuals and young families, 25% of individuals being within the age range of 30-39 while the second largest group was 16% consisting of individuals within the range of 20-29 and 10-19 years of age. Similar to Ward 1 the education level in Ward 2 is made up mostly of High School graduates at 26% as well as “Some College” at 24%, differing however with 17% of people obtaining a Bachelor’s Degree and 10% of people obtaining a Master’s Degree. The income distribution of Ward 3 is representative of middle-class working salaries with the largest percentage at 21% for the $25,000-$49,000 income range and the second largest income share at 18% for the $50,000-$100,00 income range.

ORIGINS AND DESTINATIONS

West of SR-91, development is primarily residential with concentrations of commercial and retail establishments following the main corridors of Central Avenue and Magnolia Avenue. Two large shopping centers, Arlington Square and Riverside Plaza, are located at Arlington Avenue and Madison Street, and Arlington Avenue and Central Avenue, respectively. The characteristics of this ward include smaller lots and orthogonal blocks and streets. There are several community centers, schools, and the Department of Motor Vehicles are also located in this area. The far western portion of the ward encompasses the Riverside Municipal Airport.

East of SR-91, development is more suburban in nature with a mix of rectilinear and curvilinear streets. There is a concentration of commercial land use along the highway, otherwise residential neighborhoods predominate with the exception of one commercial land use cluster along the highway

ACTIVE TRANSPORTATION NETWORK

The existing active transportation network in Ward 3 contains some bicycle facilities but is largely underserved. There is one north-south Class II bike lane that connects to downtown along Magnolia Ave, and one

east-west Class II bike lane along Arlington Ave. Several bike lanes and bike routes are planned according to the City of Riverside Bicycle Master Plan, that will improve both north-south and east-west connectivity.

Figure 2-18 is a map of Ward 3's existing conditions, including origins and destinations and the active transportation network.

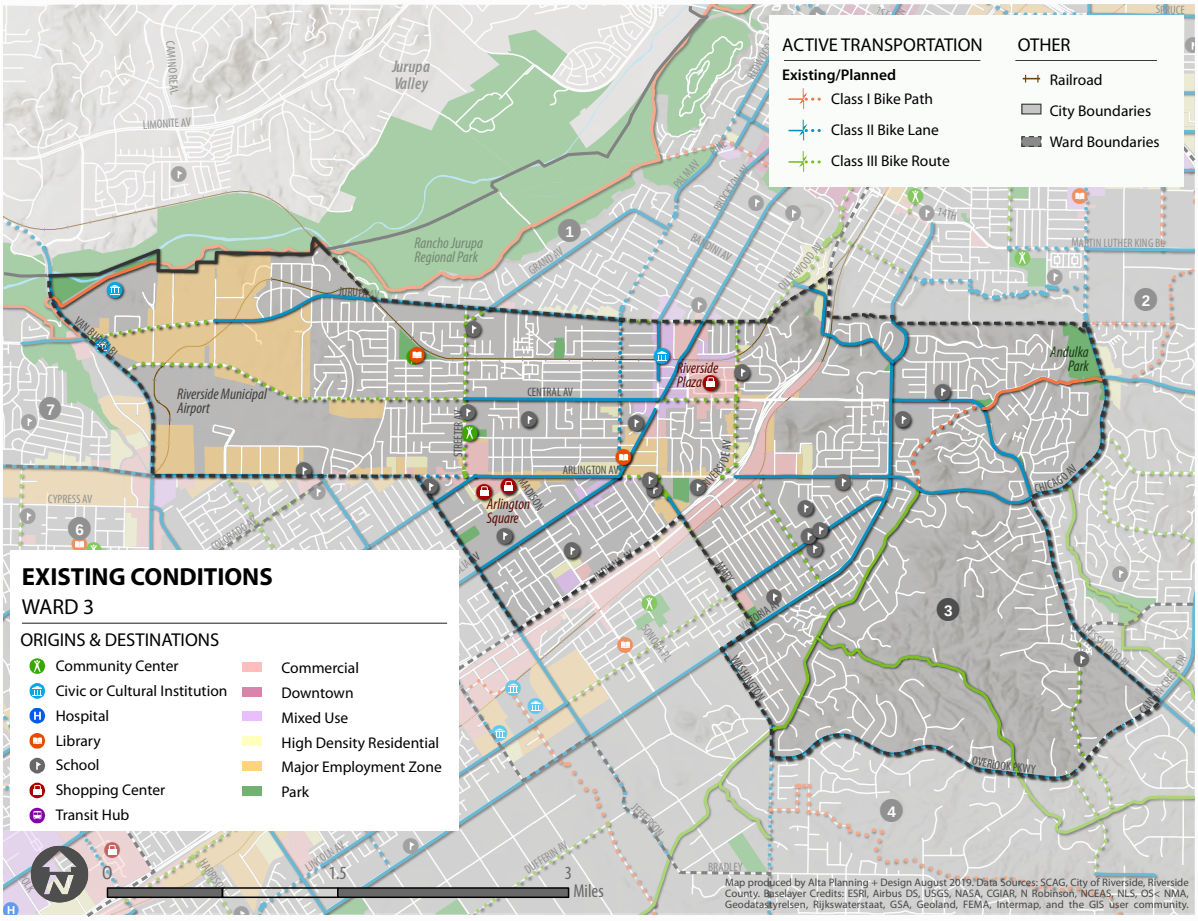


FIGURE 2-18 WARD 3 EXISTING CONDITIONS MAP

Bicycle- and Pedestrian-Involved Collisions

Ward 3 had 103 bicycle- and pedestrian-involved collisions between 2015 and 2018, (14% of citywide bicycle- and pedestrian-involved collisions). Eight collisions resulted in a severe injury; one collision at Arlington Avenue and Weaver Street resulted in a fatality.

Collisions are concentrated in the central part of the ward where development is densest, particularly along Arlington Avenue, Central Avenue, and Magnolia Avenue.

Table 2-7 lists the five intersections with the highest number of bicycle- and pedestrian-involved collisions in Ward 3. Table 2-8 lists the five streets with the highest number of collisions, and Table 2-9 lists the location of the single fatal collision in Ward 3. Figure 2-19 shows the locations of all bicycle- and pedestrian-involved collisions between 2015 and 2018 in Ward 3. The color of each hexagon in the map represents the number of collisions that occurred in that area. The location of collisions resulting in severe injury are also identified.

TABLE 2-7 - WARD 3: INTERSECTIONS WITH THE MOST COLLISIONS

Intersection	Number of Collisions
Magnolia Ave & Elizabeth St	5
Central Ave & SR-91	4
Central Ave & Streeter Ave	4
Central Ave & Victoria Ave	4
Magnolia Ave & Madison St	3

TABLE 2-8 - WARD 3: STREETS WITH THE MOST COLLISIONS

Street	Number of Collisions
Arlington Ave	22
Central Ave	15
Magnolia Ave	12
Brockton St	5
Madison St	4
Victoria Ave	4

TABLE 2-9 - WARD 3: INTERSECTIONS WITH FATAL COLLISIONS

Intersection	Fatal Collisions
Arlington Ave & Weaver St	1

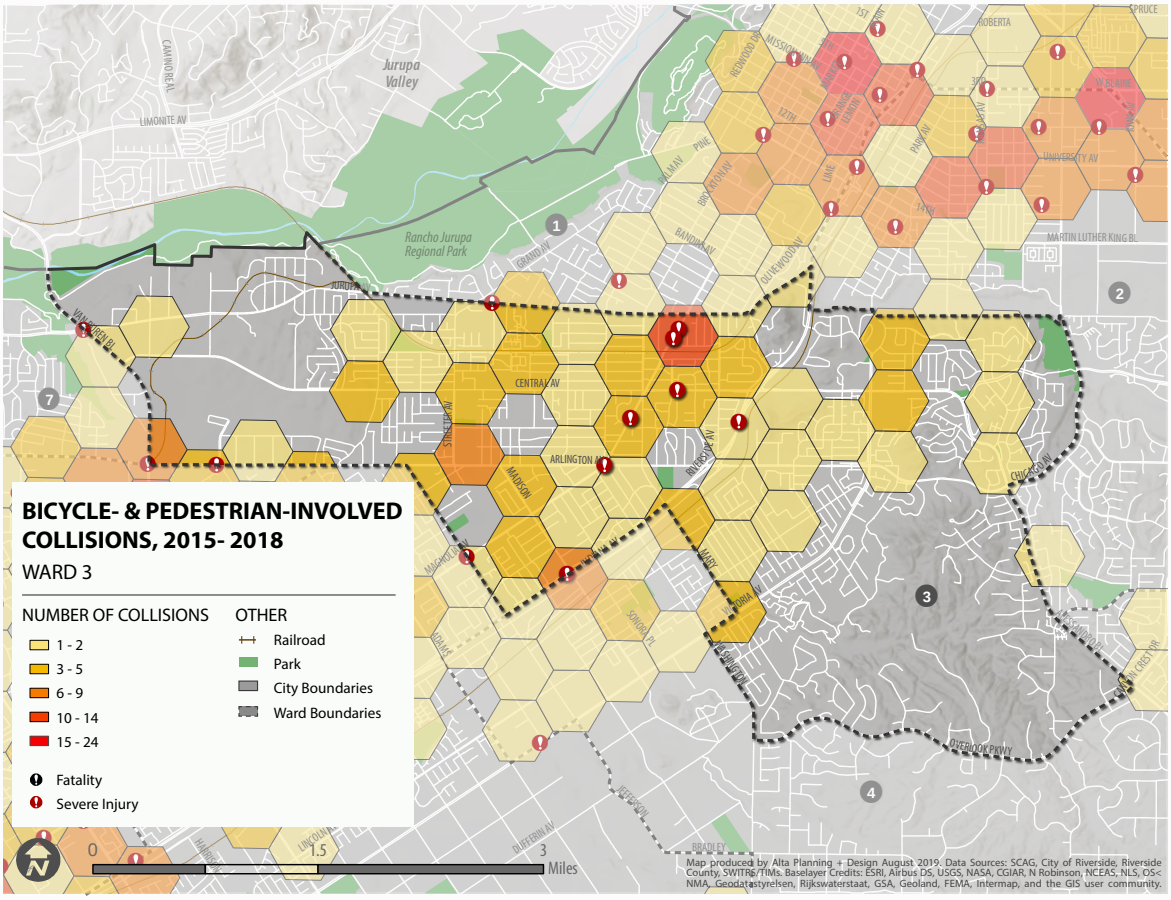


FIGURE 2-19 WARD 3 BICYCLE- AND PEDESTRIAN-INVOLVED COLLISIONS (2015 - 2018) MAP

Ward 4 Characteristics

Ward 4 is located on the southern border of the City of Riverside and is 12.9 square miles in size. SR-91 forms its northwest border with Ward 3.

DEMOGRAPHICS

Ward 4 within the City of Riverside is home to approximately 72,570 people and is 62% of Hispanic or Latino origin and 38% of residents not of Hispanic or Latino origin. Similar to Ward 3, Ward 4 consists largely of working age individuals and young families, 22% of individuals being within the age range of 30-39, however with an increased population share of the 40-59 years of age range which accounts for roughly 30% of the Ward population. The education level in Ward 4 is made up mostly of "Some College" at 25%, this Ward has a largely educated base with only approximately 15% of individuals who have received less education than a High School Diploma. The income distribution of Ward 4 is relatively evenly distributed with the largest share percentage being 15% at $50,00-$74,000, while the lowest share percentage is 10% at the $125,000-$150,00 range.

ORIGINS AND DESTINATIONS

Ward 4 is predominately suburban and rural/agricultural. The central portion of the ward is characterized by large-lot residences and open space. The eastern and southern portions of the ward have denser suburban neighborhoods. Commercial areas are concentrated at East Alessandro Boulevard and Trautwein Road, and along the Van Buren Boulevard corridor. The northwest portion of the ward that abuts SR-91 is primarily commercial and employment zones, many of them car dealerships and auto-centric businesses.

ACTIVE TRANSPORTATION NETWORK

The existing active transportation network in Ward 4 contains some bicycle facilities but is largely underserved. Existing facilities include one Class II bike lane along Victoria Avenue that bisects the western most portion of the ward and a Class I bike path loop within the suburban development in the eastern-most area of the ward. There are a few planned bike lanes and bike routes according to the City of Riverside Bicycle Master Plan, that will improve connectivity in the area, but the active transportation network will remain fairly sparse.

Figure 2-20 is a map of Ward 4's existing conditions, including origins and destinations and the active transportation network.

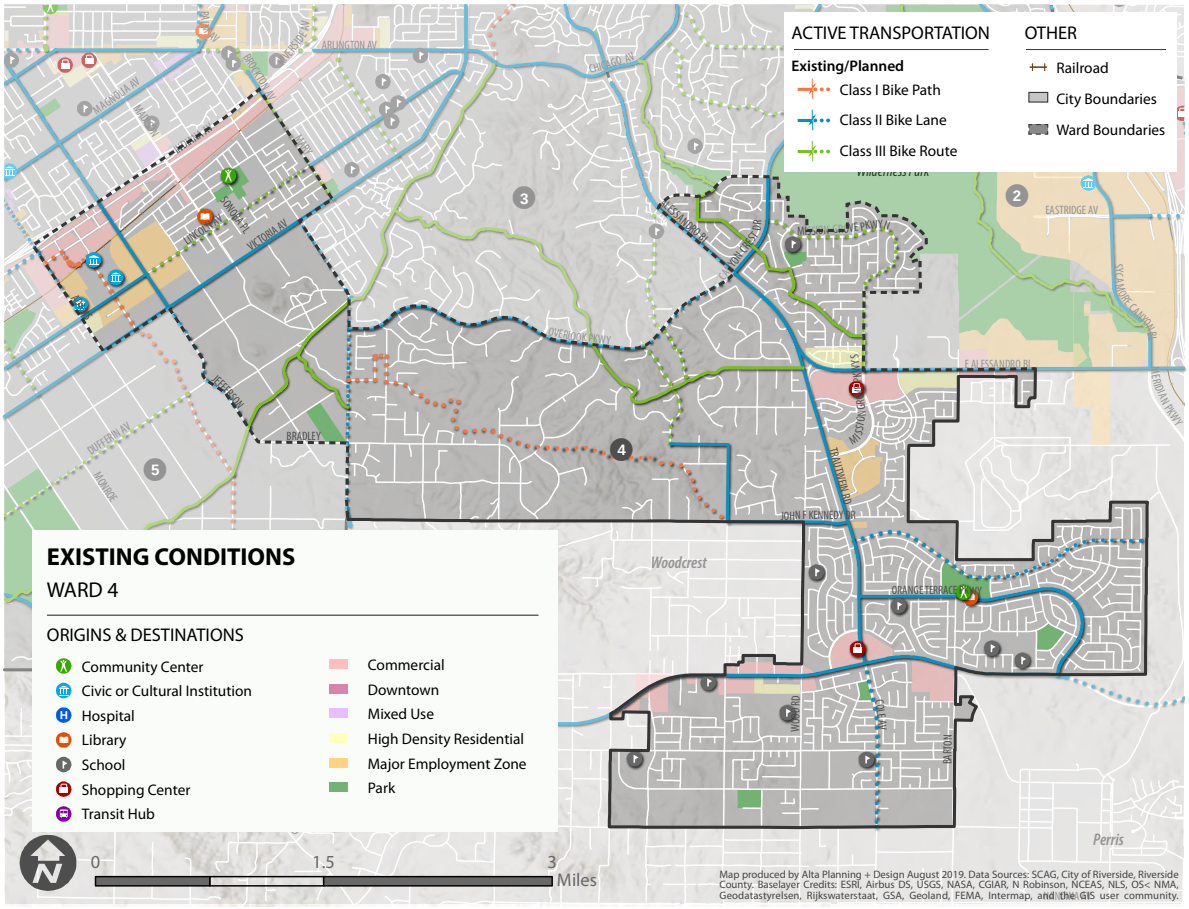


FIGURE 2-20 WARD 4 EXISTING CONDITIONS MAP

Bicycle- and Pedestrian-Involved Collisions

Ward 4 had 49 bicycle- and pedestrian-involved collisions between 2015 and 2018, (7% of citywide bicycle- and pedestrian-involved collisions). This relative dearth of collisions is likely due to the nature of the ward's development, which is relatively low-density with few amenities.

Collisions are concentrated in the denser portions of the ward, in the northern-most section along Madison Street near SR-91, and the southern-most section centered around the intersection of Van Buren Boulevard and Wood Road. None of the collisions were fatal and only two resulted in severe injury, one at Trautwein Road and Berry Road and the other at Victoria Avenue and Saint Lawrence Street.

Table 2-10 lists the two intersections with the highest number of bicycle- and pedestrian-involved collisions in Ward 4 and Table 2-11 lists the three streets with the highest number of collisions. Figure 2-21 shows the locations of all bicycle- and pedestrian-involved collisions between 2015 and 2018 in Ward 4. The color of each hexagon in the map represents the number of collisions that occurred in that area. The location of fatal collisions and those resulting in severe injury are also identified.

TABLE 2-10 - WARD 4: INTERSECTIONS WITH THE MOST COLLISIONS

Intersection	Number of Collisions
Van Buren Blvd & Wood Rd	4
Madison & Indiana	3

TABLE 2-11 - WARD 4: STREETS WITH THE MOST COLLISIONS

Street	Number of Collisions
Madison St	10
Van Buren Blvd	5
Wood Rd	4

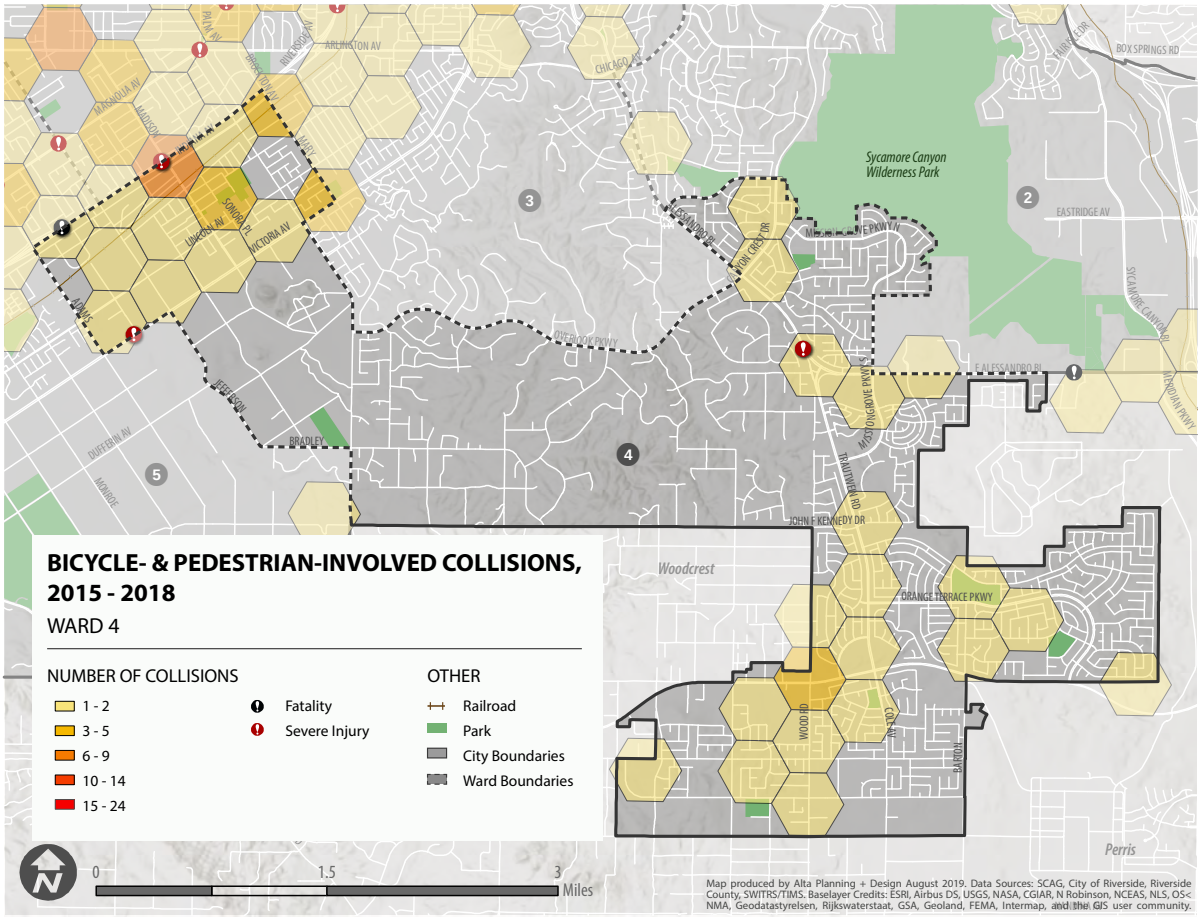


FIGURE 2-21 WARD 4 BICYCLE- AND PEDESTRIAN-INVOLVED COLLISIONS (2015 - 2018) MAP

Ward 5 Characteristics

Ward 5 is located on the southwestern border of the City of Riverside and is 12.8 square miles in size. This ward is bisected by SR-91.

DEMOGRAPHICS

Ward 5 within the City of Riverside is home to approximately 75,794 people and is 52% of Hispanic or Latino origin and 48% of residents not of Hispanic or Latino origin. Much like the previous four Wards, Ward 5 also consists largely of working age individuals and young families, 27% of individuals being within the age range of 30-39 while the second largest group was 15% consisting of individuals within the range of 20-29 and 10-19 years of age. The education level in Ward 5 is made up mostly of High School graduates at 27% as well as “Some College” at 25%. The income distribution of Ward 5 is representative of middle-class working salaries with the three lowest income ranges all having the same percentage share of 19%: Less than $25,000, $25,000-$50,000, and $50,000-$75,000.

ORIGINS AND DESTINATIONS

The northern half of Ward 5 is fairly dense, with large office and industrial uses along the highway, less dense commercial centers north of the highway, and a prominent commercial intersection at Magnolia Avenue and Van Buren Boulevard. The area closest to the highway contains the highest concentrations of amenities including several schools and institutions, such as California Baptist University. La Sierra Metrolink Station is located in the ward’s western-most corner.

The southern half of the ward is primarily rural and agricultural in nature with a street system that is characterized by large blocks. Other than the California Citrus State Historic Park and the Arlington Heights Sports Park, there are relatively few amenities in this section of the ward.

ACTIVE TRANSPORTATION NETWORK

The existing active transportation network in Ward 5 has four existing east-west bicycle facilities but no north-south facilities connecting across SR- 91. Existing facilities include Class II bike lanes on Victoria Avenue and Magnolia Avenue. There are several planned bicycle facilities that will improve the connectivity of the ward, such as the facilities along Dufferin Ave, Van Buren Blvd, and Jackson St that will provide greater access to amenities like the Arlington Sports Complex and California Citrus State Historic Park.

Figure 2-22 is a map of Ward 5's existing conditions, including origins and destinations and the active transportation network.

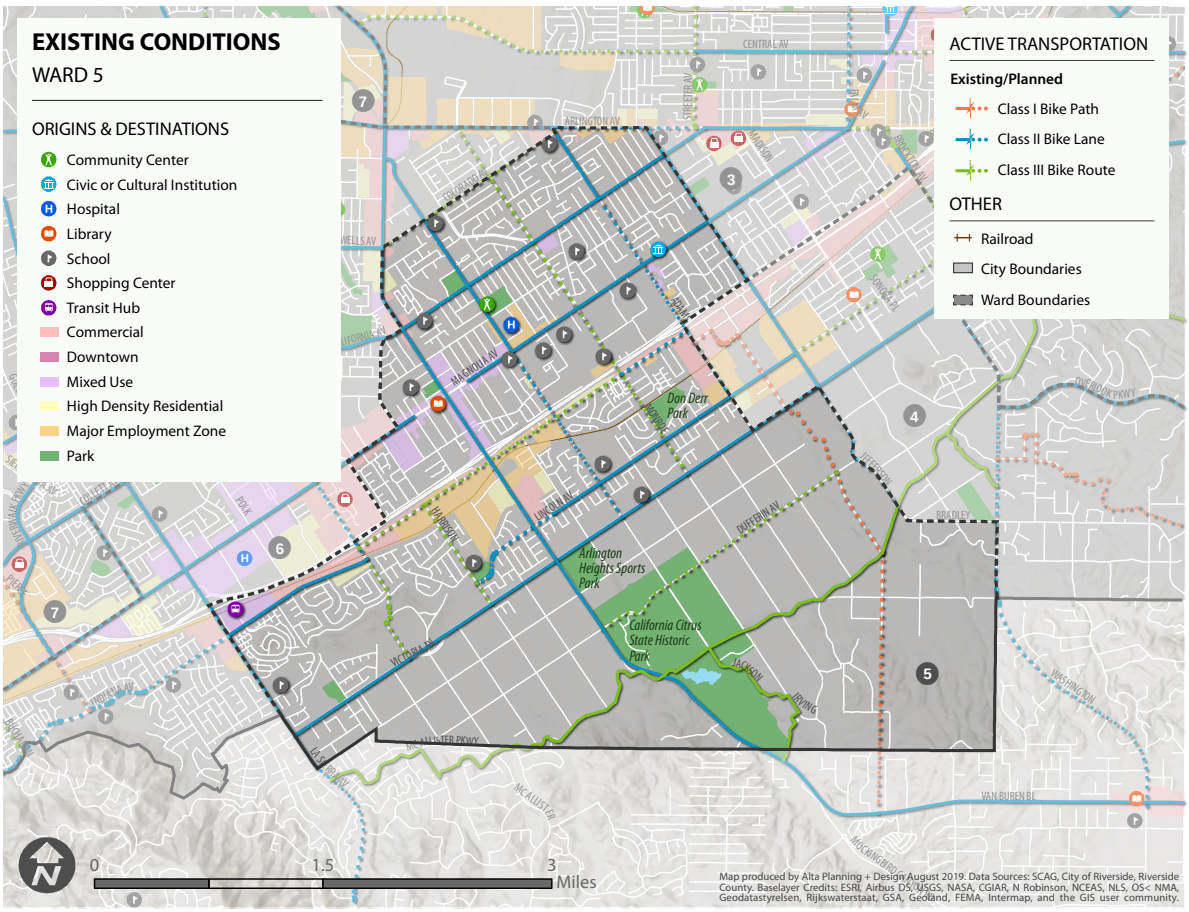


FIGURE 2-22 WARD 5 EXISTING CONDITIONS MAP

BICYCLE- AND PEDESTRIAN-INVOLVED COLLISIONS

Ward 5 had 65 bicycle- and pedestrian-involved collisions between 2015 and 2018, (9% of citywide bicycle- and pedestrian-involved collisions.) This relative dearth of collisions is likely due, at least in part, to the more rural character of the southern portion of the ward where amenities are sparse and development is low-density.

Collisions are concentrated in the northern half of the ward where development is densest, particularly along the Magnolia Avenue corridor. Three collisions were fatal and nine resulted in severe injury from 2015-2018.

Table 2-12 lists the five intersections with the highest number of bicycle- and pedestrian-involved collisions in Ward 5 and Table 2-13 lists the four streets with the highest number of collisions. Locations of fatal collisions are listed in Table 2-14. Figure 2-23 shows the locations of all bicycle- and pedestrian-involved collisions between 2015 and 2018 in Ward 5. The color of each hexagon in the map represents the number of collisions that occurred in that area. The location of fatal collisions and those resulting in severe injury are also identified.

TABLE 2-12 - WARD 5: INTERSECTIONS WITH THE MOST COLLISIONS

Intersection	Number of Collisions
Magnolia Ave	15
Van Buren Blvd	8
Jackson St	6
Indiana Ave	5
Monroe St	4

TABLE 2-13 - WARD 5: STREETS WITH THE MOST COLLISIONS

Street	Number of Collisions
Magnolia Ave & Jackson St	4
Van Buren Blvd & Magnolia Ave	4
Indiana Ave & Van Buren Blvd	3
SR-91 & Tyler St	3

TABLE 2-14 - WARD 5: INTERSECTIONS WITH FATAL COLLISIONS

Intersection	Fatal Collisions
California Ave & Heidi Rd	1
SR-91 & Tyler St	1
SR-91 Westbound & Adams St	1

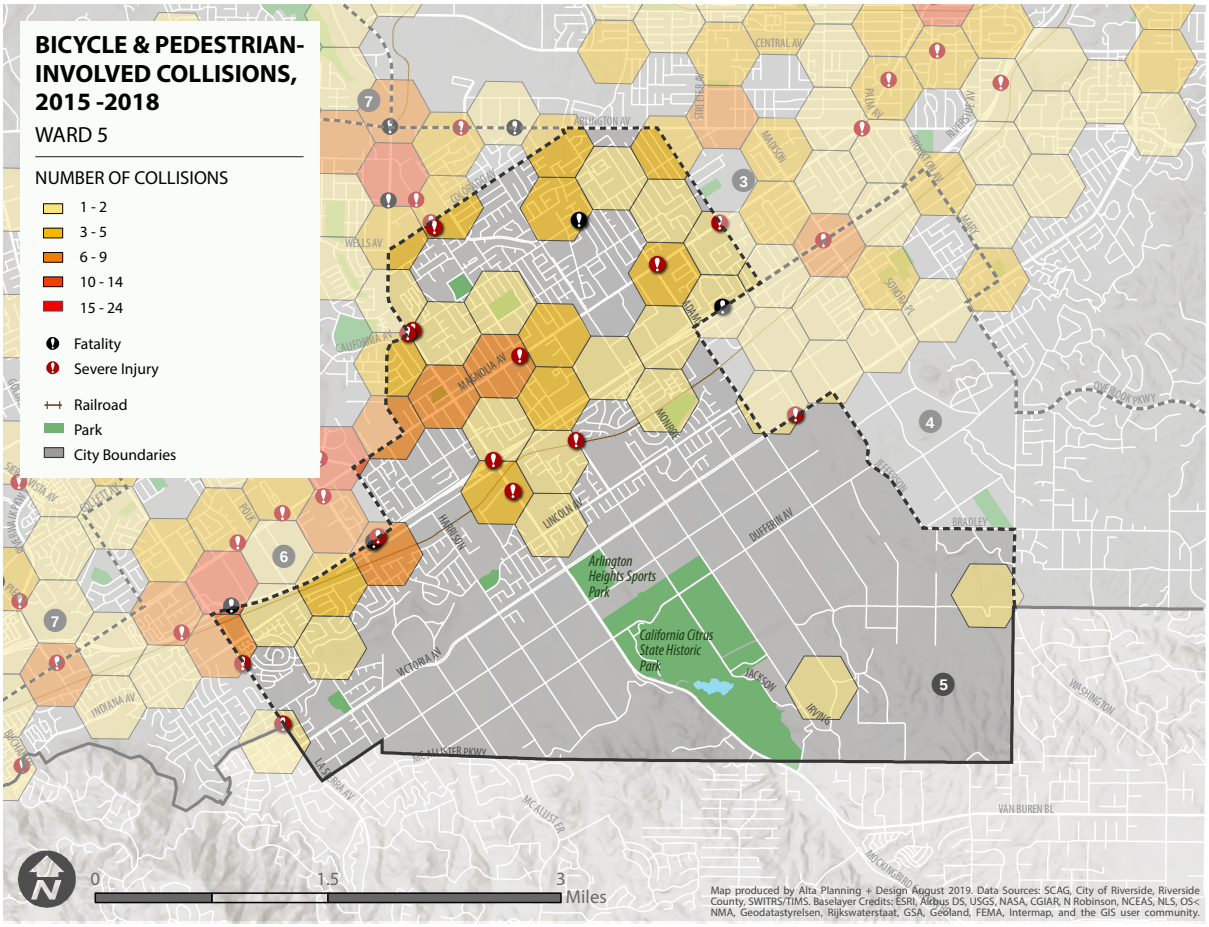


FIGURE 2-23 WARD 5 BICYCLE- AND PEDESTRIAN-INVOLVED COLLISIONS (2015 - 2018) MAP

Ward 6 Characteristics

Ward 6 is located on the southwestern border of the City of Riverside and is 6.3 square miles in size, making it the smallest ward in the City.

DEMOGRAPHICS

Ward 6 within the City of Riverside is home to approximately 92,694 people and is 64% of Hispanic or Latino origin and 36% of residents not of Hispanic or Latino origin. Ward 6 consists largely of working age individuals and young families, 26% of individuals being within the age range of 30-39 with approximately 88% of the Ward 6 population is 49 years of age and under. The education level in Ward 6 is made up mostly of High School graduates at 28% as well as "Some College" at 23%, while roughly 33% of the Ward 6 population has less than a High School education. The income distribution of Ward 6 is representative of lower middle-class working salaries with approximately 43% of households reportedly having an income of less than $50,000.

ORIGINS AND DESTINATIONS

Ward 6 encompasses a relatively broad variety of land uses. Commercial activity is concentrated along several corridors: Magnolia Avenue, which traverses the center of the ward and part of its border, and Tyler Street, Hole Avenue, and Van Buren Boulevard, which all intersect Magnolia Avenue. Notable destinations include the Riverside Medical Center at Magnolia Avenue between Park Sierra Drive and Polk Street, and the Galleria at Tyler shopping mall at Magnolia Avenue between Tyler Street and Hughes Alley. Beyond these corridors are relatively dense single-family suburban residential neighborhoods.

ACTIVE TRANSPORTATION NETWORK

The only existing bicycle facilities in Ward 6 are Class II bike lanes along Magnolia Avenue, California Avenue, and La Sierra Avenue. Several planned facilities will improve connectivity upon completion, but overall orientation and pattern of the street system poses a challenge for the active transportation network.

Figure 2-24 is a map of Ward 6's existing conditions, including origins and destinations and the active transportation network.

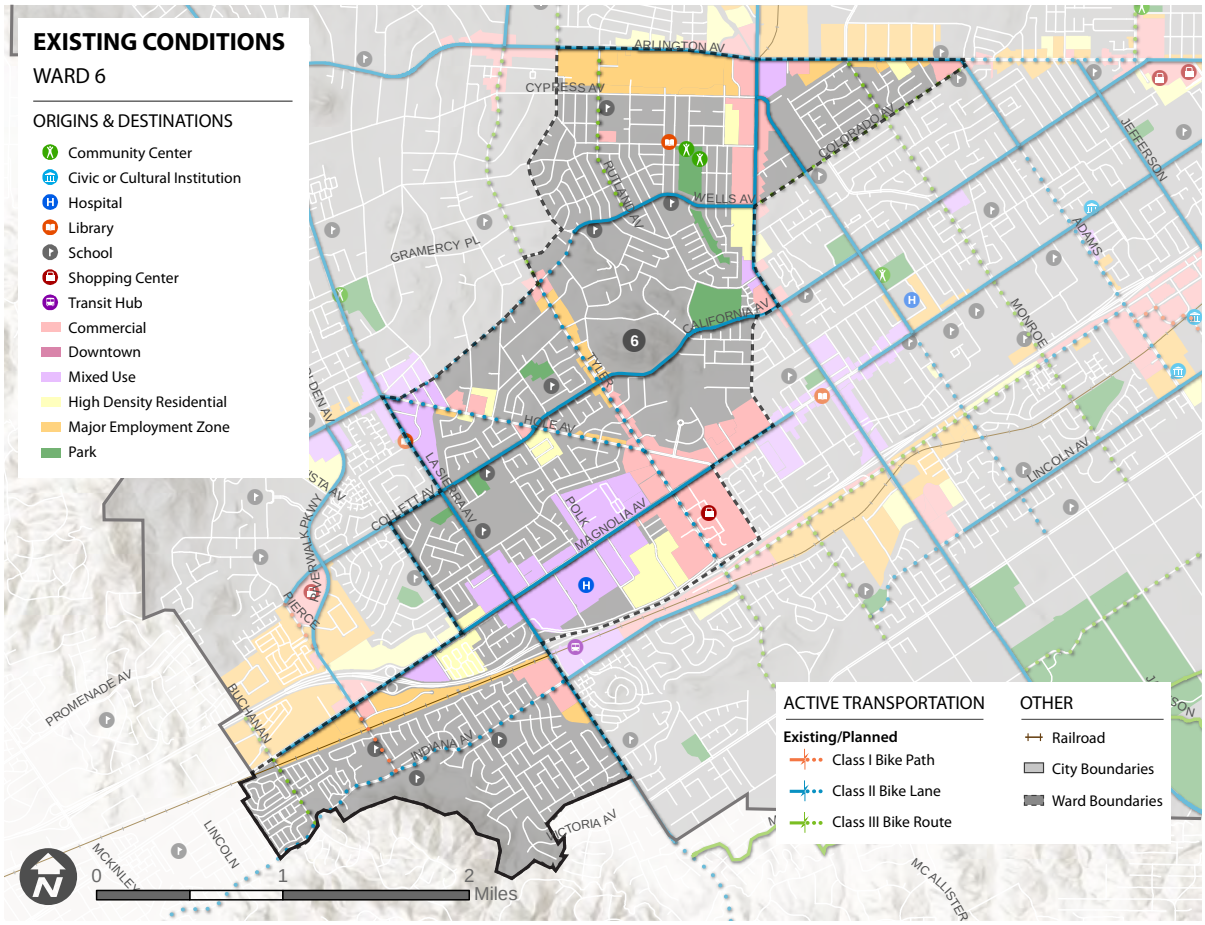


FIGURE 2-24 WARD 6 EXISTING CONDITIONS MAP

Ward 6 Bicycle- and Pedestrian-Involved Collisions

Ward 6 had 121 bicycle- and pedestrian-involved collisions between 2015 and 2018, (16% of citywide bicycle- and pedestrian-involved collisions). Fifteen of these collisions resulted in severe injury and two collisions were fatal, one at SR-91 and La Sierra Avenue and one at Van Buren Boulevard and Philbin Avenue.

Collisions are concentrated on the main arterials throughout the ward, such as Magnolia Avenue, La Sierra, Avenue, Van Buren Boulevard, and Tyler Street. The stretch of Magnolia Avenue between La Sierra Avenue and Harrison Street is particularly hazardous for bicyclists and pedestrians. There have been 29 bicycle- and pedestrian-involved collisions on this 1.6 mile section of road, 11 of which occurred at the intersection with Tyler Street.

Table 2-15 lists the four intersections with the highest number of bicycle- and pedestrian-involved collisions in Ward 6 and Table 2-16 lists the five streets with the highest number of collisions over the period of 2015-2018. Locations of fatal collisions are listed in Table 2-17. Figure 2-25 shows the locations of all bicycle- and pedestrian-involved collisions between 2015 and 2018 in Ward 6. The color of each hexagon in the map represents the number of collisions that occurred in that area. The location of fatal collisions and those resulting in severe injury are also identified.

TABLE 2-15 - WARD 6: INTERSECTIONS WITH THE MOST COLLISIONS

Intersection	Number of Collisions
Magnolia Ave & Tyler St	11
La Sierra Ave & Indiana Ave	7
La Sierra Ave & SR-91	5
Magnolia Ave & Banbury Dr	4

TABLE 2-16 - WARD 6: STREETS WITH THE MOST COLLISIONS

Street	Number of Collisions
Magnolia Ave	29
La Sierra Ave	21
Van Buren Blvd	12
Tyler St	9
Hole Ave	6
Indiana Ave	6

TABLE 2-17 - WARD 6: INTERSECTIONS WITH FATAL COLLISIONS

Intersection	Fatal Collisions
SR-91 & La Sierra Ave	1
Van Buren Blvd & Philbin Ave	1

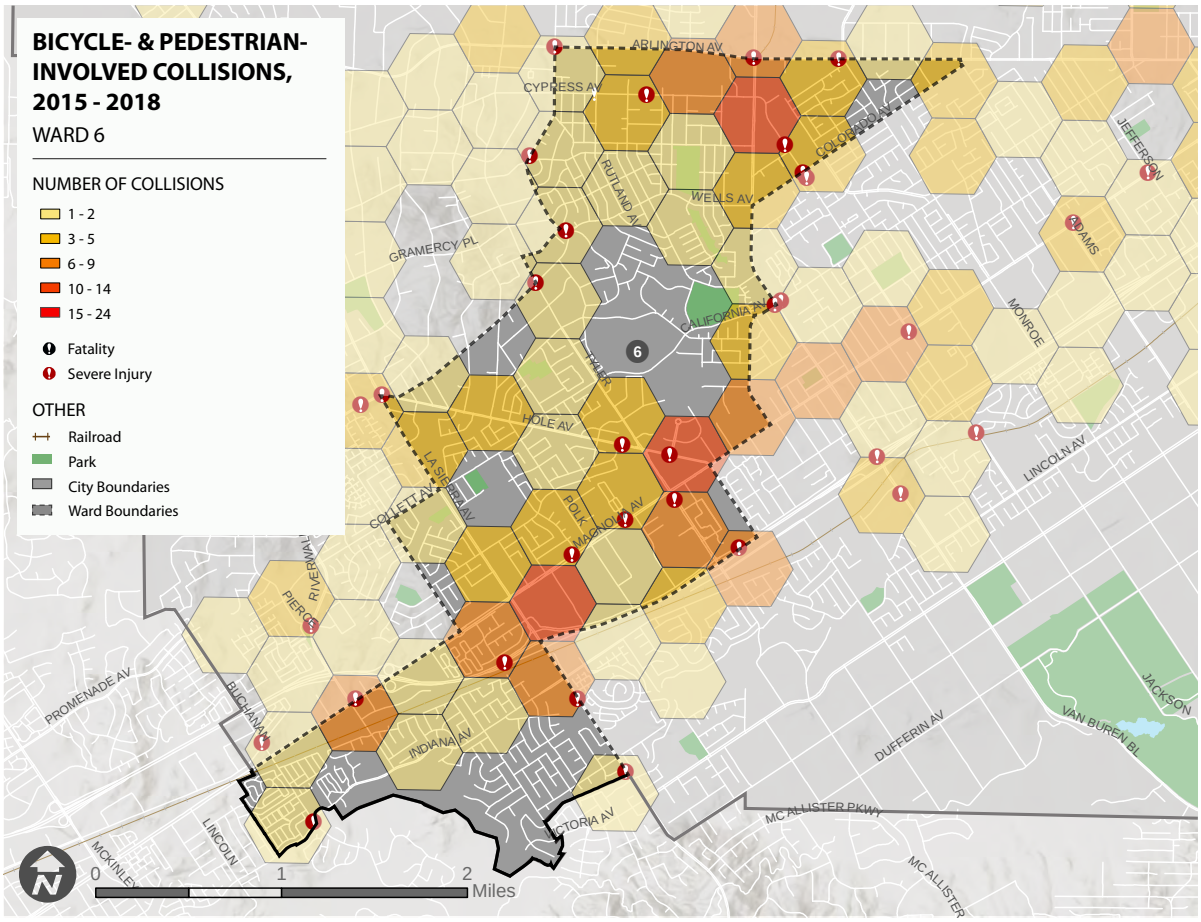


FIGURE 2-25 WARD 6 BICYCLE- AND PEDESTRIAN-INVOLVED COLLISIONS (2015 - 2018) MAP

Ward 7 Characteristics

Ward 7 is located on the western border of the City where it encompasses some of La Sierra Hills and is adjacent to the City of Norco. It is 10.6 square miles in size.

DEMOGRAPHICS

Ward 7 within the City of Riverside is home to approximately 67,365 people and is 66% of Hispanic or Latino origin and 34% of residents not of Hispanic or Latino origin. Ward 7 consists largely of working age individuals and young families, 27% of individuals being within the age range of 30-39 with approximately 90% of the Ward 7 population is 49 years of age and under. The education level in Ward 7 is made up mostly of High School graduates at 29% as well as "Some College" at 23%, while roughly 34% of the Ward 7 population has less than a High School education. The income distribution of Ward 7 is representative of middle-class working salaries with approximately 48% of households reportedly having an income of between $25,000-$75,000.

ORIGINS AND DESTINATIONS

Ward 7 is comprised almost entirely of single-family residential neighborhoods with some office and industrial uses adjacent to SR-91.

The residential development in this ward is irregular with varying lot sizes, coverages, and setbacks. Ward 7 contains several schools and institutions, including La Sierra University located on Riverwalk Parkway. Commercial amenities and employment zones are concentrated at Arlington Avenue and Tyler Street in the northern portion of the ward and along Riverwalk Parkway and Magnolia Avenue in the south.

ACTIVE TRANSPORTATION NETWORK

Class II bike lanes on La Sierra Avenue provide north-south connectivity through Ward 7. Bike lanes on Riverwalk Parkway and Wells Avenue connect La Sierra Avenue to the destinations in the southern portion of the ward. Bike lanes on Arlington Avenue provide some east-west connectivity in the north, but terminate at Tyler Street. Several planned bike lanes and bike routes will enhance the active transportation in the ward.

Figure 2-26 is a map of Ward 7's existing conditions, including origins and destinations and the active transportation network.

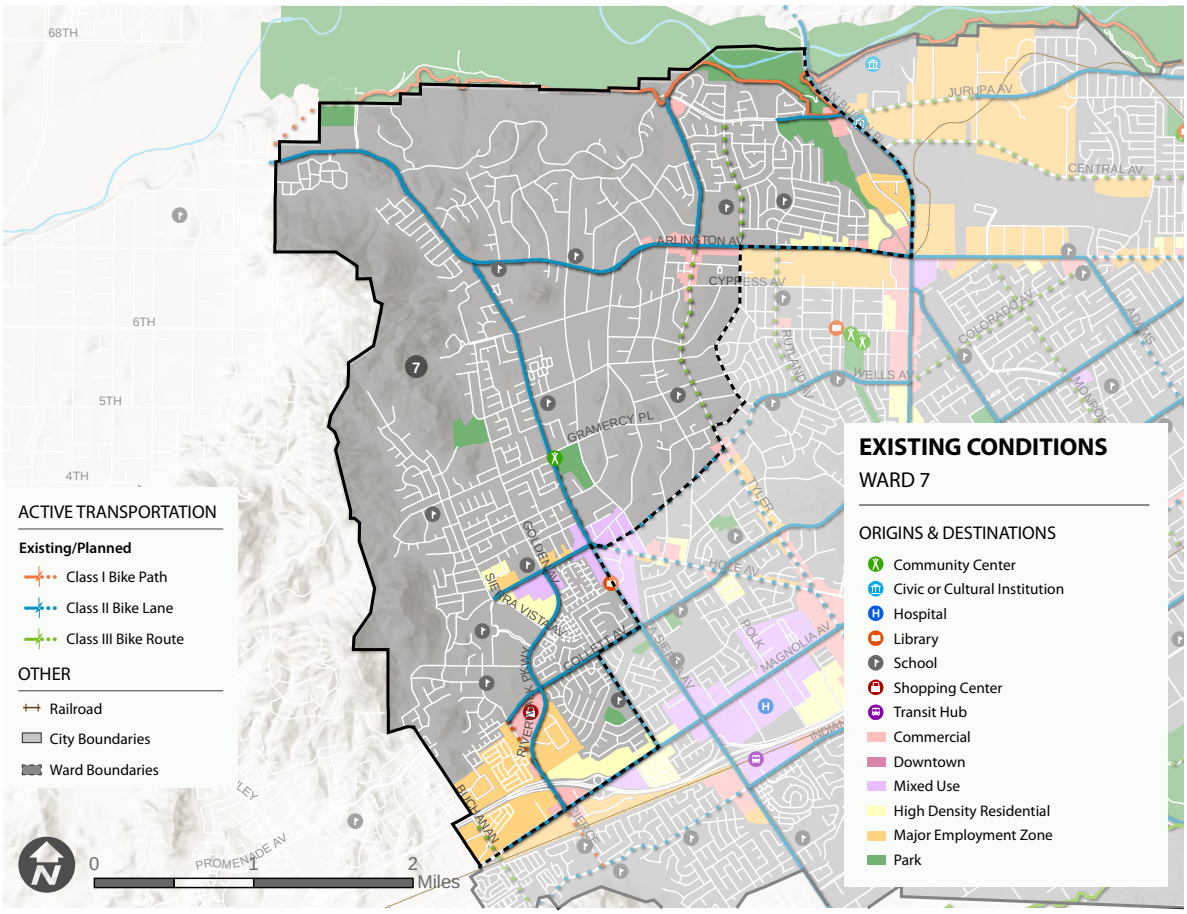


FIGURE 2-26 WARD 7 EXISTING CONDITIONS MAP

Ward 7 Bicycle- and Pedestrian-Involved Collisions

Ward 7 had 72 bicycle- and pedestrian-involved collisions between 2015 and 2018, (10% of citywide bicycle- and pedestrian-involved collisions). Four resulted in fatalities and 11 resulted in severe injury.

Collisions are concentrated on the eastern side of the ward and along Arlington Avenue.

Table 2-18 lists the four intersections with the highest number of bicycle- and pedestrian-involved collisions in Ward 7 and Table 2-19 lists the five streets with the highest number of collisions. Locations of fatal collisions are listed in Table 2-20. Figure 2-27 shows the locations of all bicycle- and pedestrian-involved collisions between 2015 and 2018 in Ward 7. The color of each hexagon in the map represents the number of collisions that occurred in that area. The location of fatal collisions and those resulting in severe injury are also identified.

TABLE 2-18 - WARD 7: INTERSECTIONS WITH THE MOST COLLISIONS

Intersection	Number of Collisions
Arlington Ave & Van Buren Blvd	5
Magnolia Ave & Pierce St	5
Arlington Ave & Lake St	3
La Sierra & Pierce st	3

TABLE 2-19 - WARD 7: STREETS WITH THE MOST COLLISIONS

Street	Number of Collisions
Arlington Ave	17
Pierce st	8
La Sierra Ave	6
Tyler St	5
Magnolia St	5

TABLE 2-20 - WARD 7: INTERSECTIONS WITH FATAL COLLISIONS

Intersection	Fatal Collisions
Gramercy Pl & La Sierra Ave	1
La Sierra Ave & Schuyler Ave	1
Pierce St & Collett Ave	1
Van Buren Blvd & Arlington Ave	1

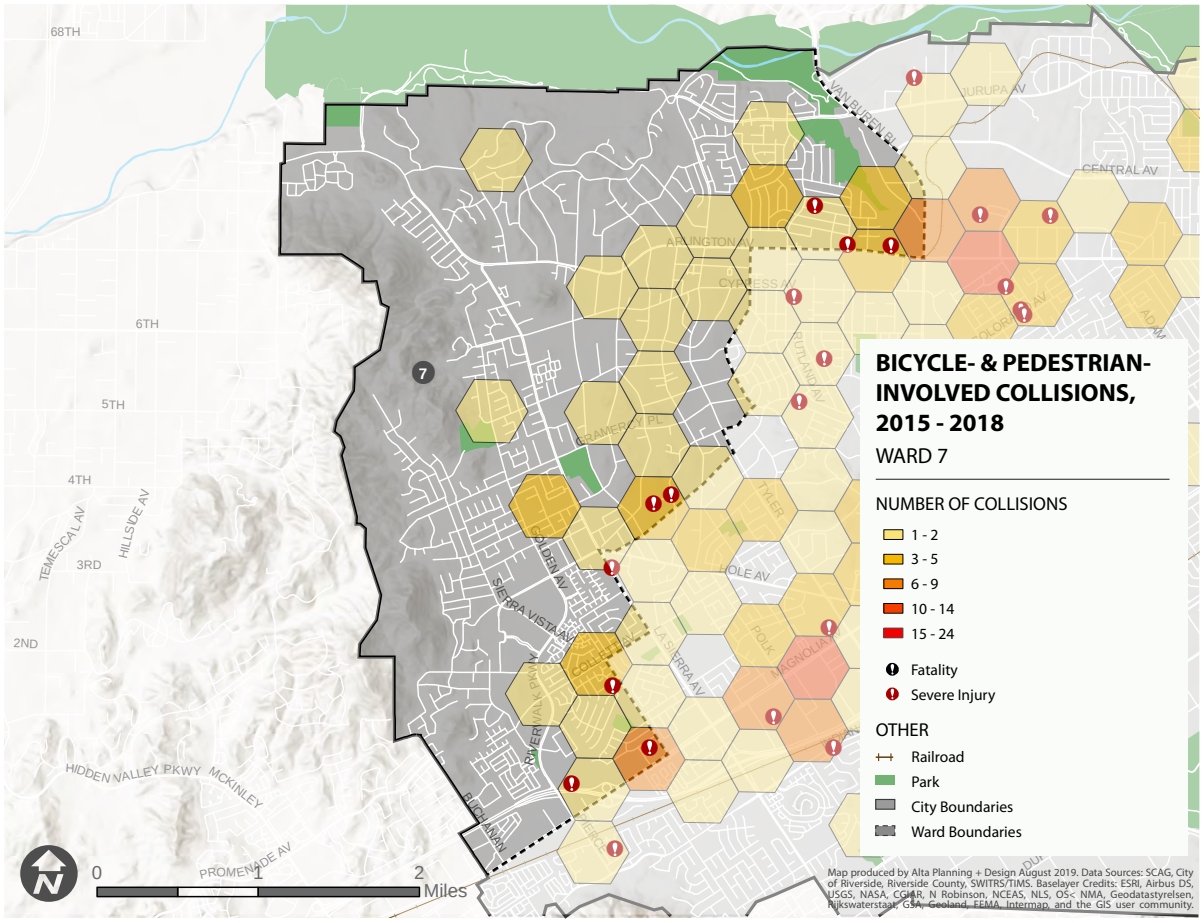


FIGURE 2-27 WARD 7 BICYCLE- AND PEDESTRIAN-INVOLVED COLLISIONS (2015 - 2018) MAP

Pedestrian Target Safeguarding Plan Zones

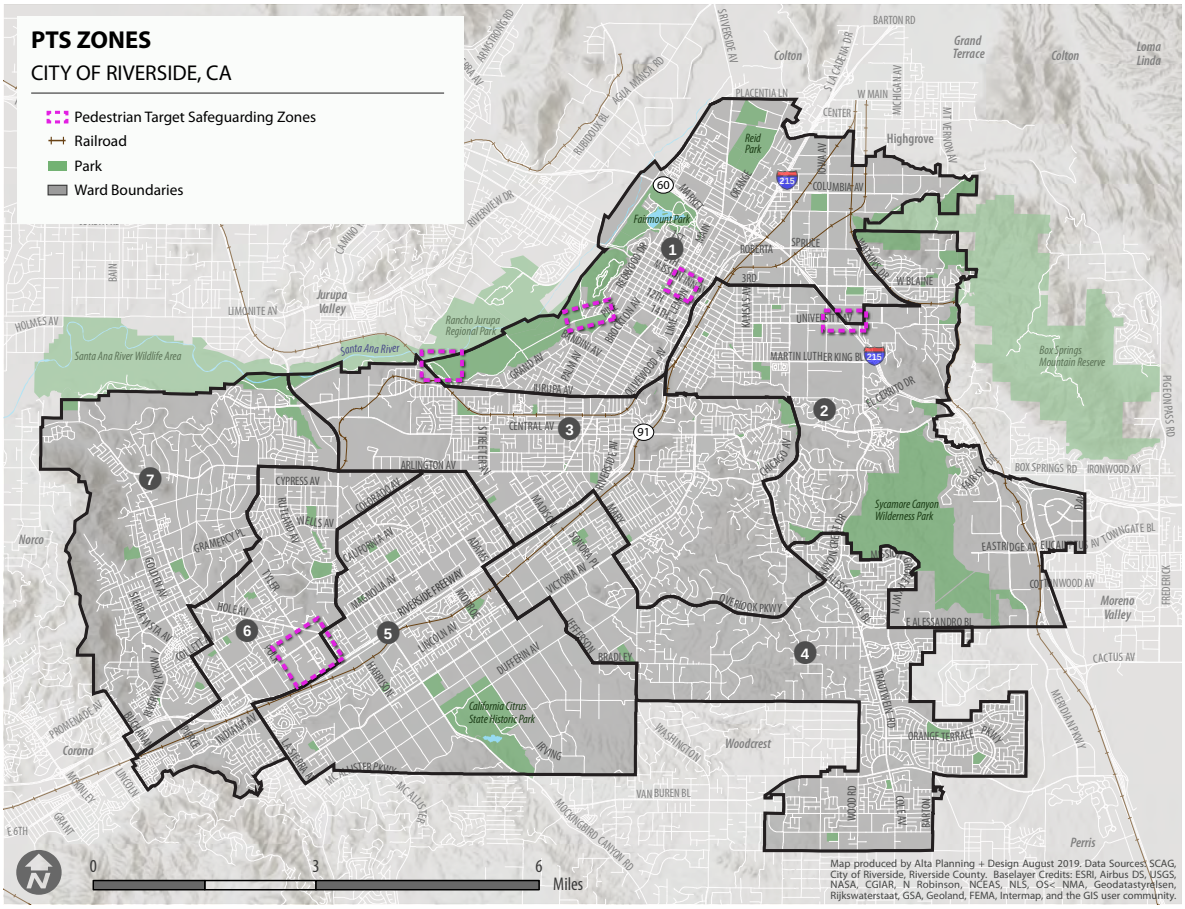


FIGURE 2-28 PEDESTRIAN TARGET SAFEGUARDING PLAN ZONES MAP

ZONE 1 - MAIN STREET PEDESTRIAN MALL

PTS Zone 1

DESTINATIONS

- Civic or Cultural Institution
- Library
- Park
- Main St Pedestrian Mall
- Transit Hub

BIKE- AND PEDESTRIAN-INVOLVED COLLISIONS, 2013-2018

- Complaint of Pain
- Other Visible Injury
- Severe Injury
- Fatality

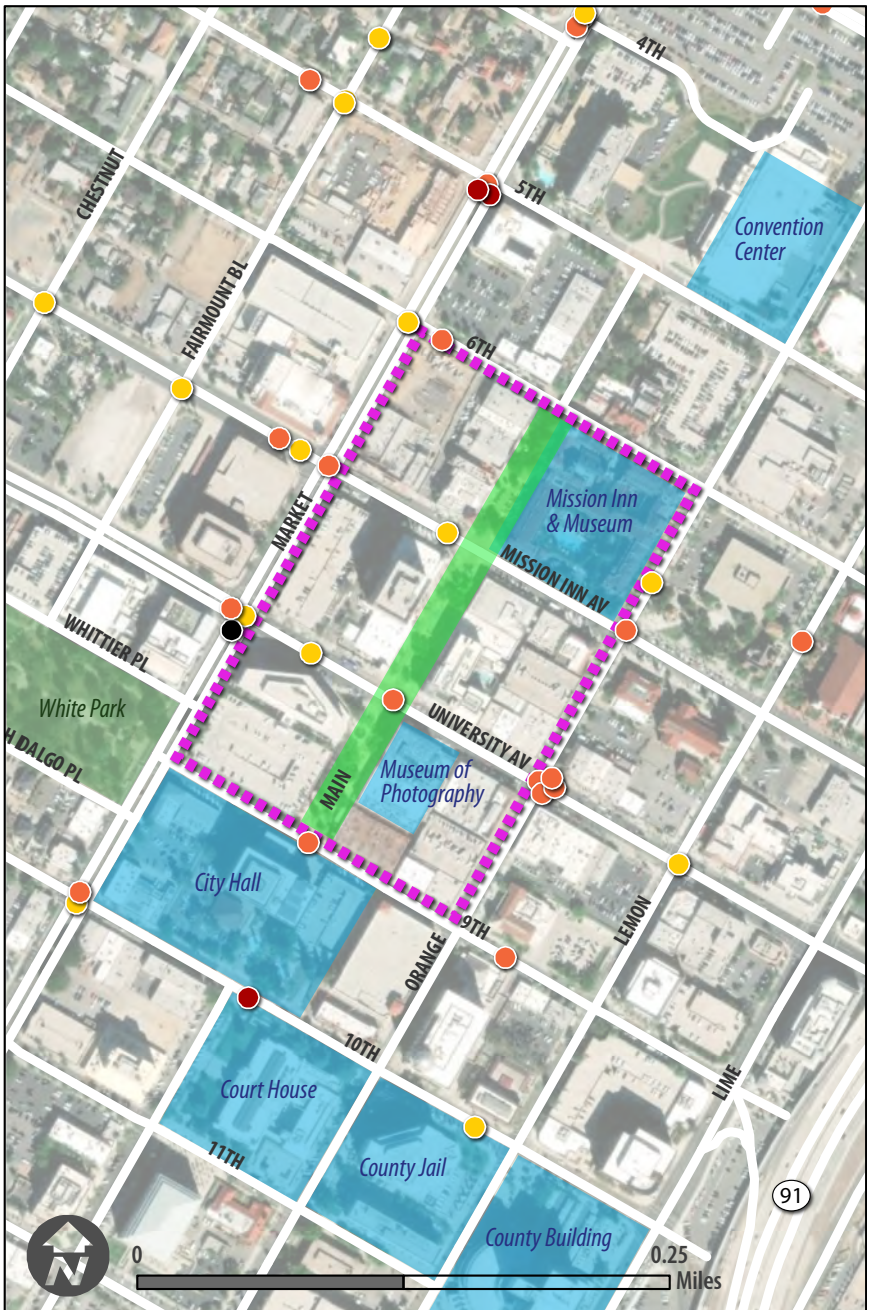


FIGURE 2-29 PTS ZONE 1 MAP

ZONE 2 - UNIVERSITY AVENUE

PTS Zone 2

DESTINATIONS

- Civic or Cultural Institution
- Library
- Park
- Shopping Center
- School

BIKE- AND PEDESTRIAN-INVOLVED COLLISIONS, 2013-2018

- Complaint of Pain
- Other Visible Injury
- Severe Injury
- Fatality

FIGURE 2-30 PTS ZONE 2 MAP

ZONE 3 - RYAN BONAMINIO PARK

PTS Zone 3

DESTINATIONS

- Civic or Cultural Institution
- Library
- Park
- Main St Pedestrian Mall
- Transit Hub

BIKE- AND PEDESTRIAN-INVOLVED COLLISIONS, 2013-2018

- Complaint of Pain
- Other Visible Injury
- Severe Injury
- Fatality

FIGURE 2-31 PTS ZONE 3 MAP

ZONE 4 - MARTHA MCLEAN-ANZA NARROWS PARK

PTS Zone 4

DESTINATIONS

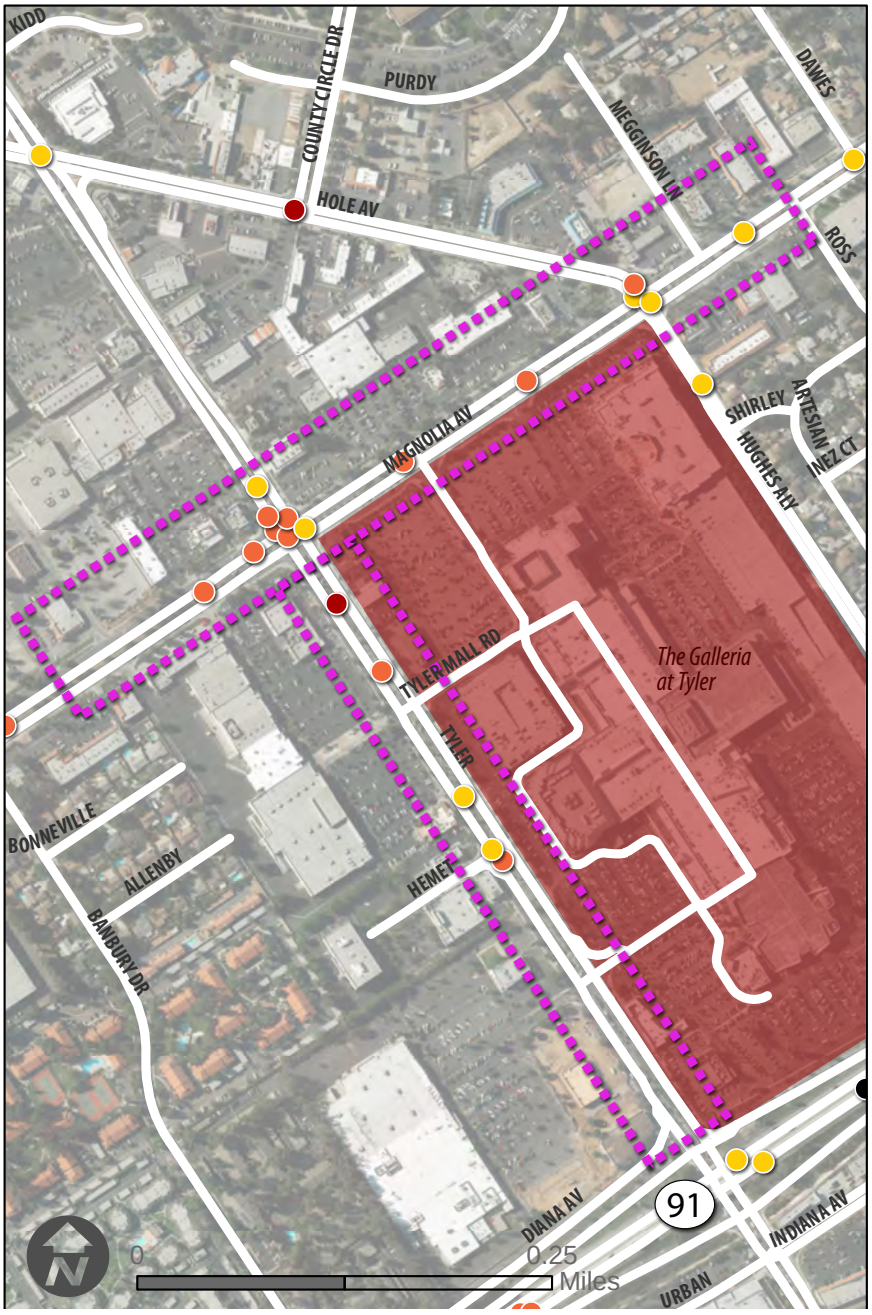
- Civic or Cultural Institution
- Library
- Park
- Main St Pedestrian Mall
- Transit Hub

BIKE- AND PEDESTRIAN-INVOLVED COLLISIONS, 2013-2018

- Complaint of Pain
- Other Visible Injury
- Severe Injury
- Fatality

FIGURE 2-32 PTS ZONE 4 MAP

ZONE 5 - MAGNOLIA AVENUE



PTS Zone 5

DESTINATIONS

- Civic or Cultural Institution
- Library
- Park
- Shopping Center
- Transit Hub

BIKE- AND PEDESTRIAN-INVOLVED COLLISIONS, 2013-2018

- Complaint of Pain
- Other Visible Injury
- Severe Injury
- Fatality

FIGURE 2-33 PTS ZONE 5 MAP

Summary of Existing Conditions

Overall, the City of Riverside has a diverse socioeconomic population and a robust infrastructure network. The seven wards that make up the City of Riverside are also very unique and reflect distinct characteristics that present a diverse palette of opportunities, constraints, and challenges in respect to improving the active transportation network.

As it stands today, the City of Riverside has a valuable existing active transportation network, consisting of Class I, II, III, and IV bicycle facilities. This sets the foundation for the Active Transportation Plan and helps identify underserved areas, connectivity gaps, as well as existing connections to destinations within the City. These connections should be strengthened not only at the City level but also at the ward level integrating into the overall Citywide network.

The community profile, collision data, as well as the existing infrastructure of Riverside provides valuable information along with community input to identify issues and areas for improvement for Riverside's streets. The ensuing chapters will discuss the community engagement that was conducted as part of the planning process all culminating with a list of prioritized project recommendations and potential funding opportunities.

Main Street Pedestrian Mall, Riverside CA

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Section 3: Comprehensive Community Engagement Strategy

The Riverside PACT was informed by and representative of community input was an integral component of the City's active transportation planning efforts, and following the PACT's kick-off in November 2019, the City made a concerted effort to engage a broad portion of the community. This community engagement strategy included a mix of traditional and innovative outreach techniques including community meetings, technical advisory committee workshops, Walk Shops, stakeholder interviews, tabling at community events, online surveys, and interactive input mapping. This mix of broad and targeted outreach allowed for both substantive discussions and quick chats with residents, helping to ensure that a variety of community members with different views and preferences were directly involved in the PACT's development.

In Person Outreach

This outreach highlighted below was further informed by a review of community input from previous City plans including the February 2020 Comprehensive Park, Recreation & Community Services Master Plan and the 2007 Bicycle Master Plan. Whether in person or online, the information collected throughout this process was recorded, cataloged and mapped for reference and as recommendations were developed and prioritized for the various components of the PACT.

TECHNICAL ADVISORY COMMITTEES (TAC)

The City convened a group of technical advisors comprised of local walking, biking, and equestrian advocates, public health and law enforcement agencies, University of California Riverside (UCR) Transportation Services, and City staff from departments such as Public Works, Planning, and Parks, Recreation, and Community Services. These advisors provided focused review, input, and cross-discipline collaboration for the PACT's development.

COMMUNITY WORKSHOPS

Interactive community workshops were hosted in order to obtain input from Riverside residents and stakeholders. These workshops focused on determining community preferences and priorities, and obtaining local-knowledge regarding desired on-street and off-street pedestrian, cyclist, and equestrian facilities, network gaps, and areas of concern to address in the PACT.

STAKEHOLDER GROUP MEETINGS

The project team attended various community stakeholder group meetings throughout the City to discuss the PACT, get direct feedback related to the group's interests, and encourage participation with the online community survey and interactive public input map.

NEIGHBORHOOD WALK SHOPS

In order to observe typical user behavior and better understand local conditions, the PACT project team conducted walking audits of the City's existing active transportation infrastructure at strategic locations in each Ward to inventory existing conditions, and identify deficiencies and barriers to walking and bicycling. Community members were encouraged to join the project team in these Walk Shops to provide context, and learn about active transportation infrastructure opportunities.

PEDESTRIAN TARGET SAFEGUARDING (PTS) INTERVIEWS

Given the nature of the PTSP's subject matter, the PACT team conducted a series of one-on-one interviews with City staff from various departments and law enforcement to determine threat scenarios and identify vulnerable areas of the 7 PTSP locations identified for safeguarding improvements where vehicles could harm pedestrians , as well as general trends and vulnerabilities that could be addressed throughout the City.

POP-UP OUTREACH

The PACT team conducted pop-up outreach at various community events and popular public gathering locations in the City, such as transit hubs and food halls to educate residents about the PACT effort and solicit survey responses.

Canyon Crest Drive Walk Shop

Digital Outreach

VIRTUAL WORKSHOPS

In order to continue PACT development despite social distancing requirements due to COVID-19, the City hosted virtual workshops with community members to share project progress, determine preferences for different types of on-street and off-street infrastructure, and prioritize proposed improvements. These workshops were promoted through emails, press releases, and newspaper ads. They were hosted via web conference, simulcast on Riverside TV, and community members were encouraged to share their comments through online comments or live call-in.

Photo Caption: PACT team at the Eastside Green n' Clean Halloween event.

ONLINE SURVEY

The PACT team developed an interactive online survey that asked respondents to document their usage and preferences for different types of active transportation infrastructure, typical travel behavior, and specific locations in their neighborhoods that could benefit from these improvements. Printed versions of this survey were also administered at in-person meetings and outreach events.

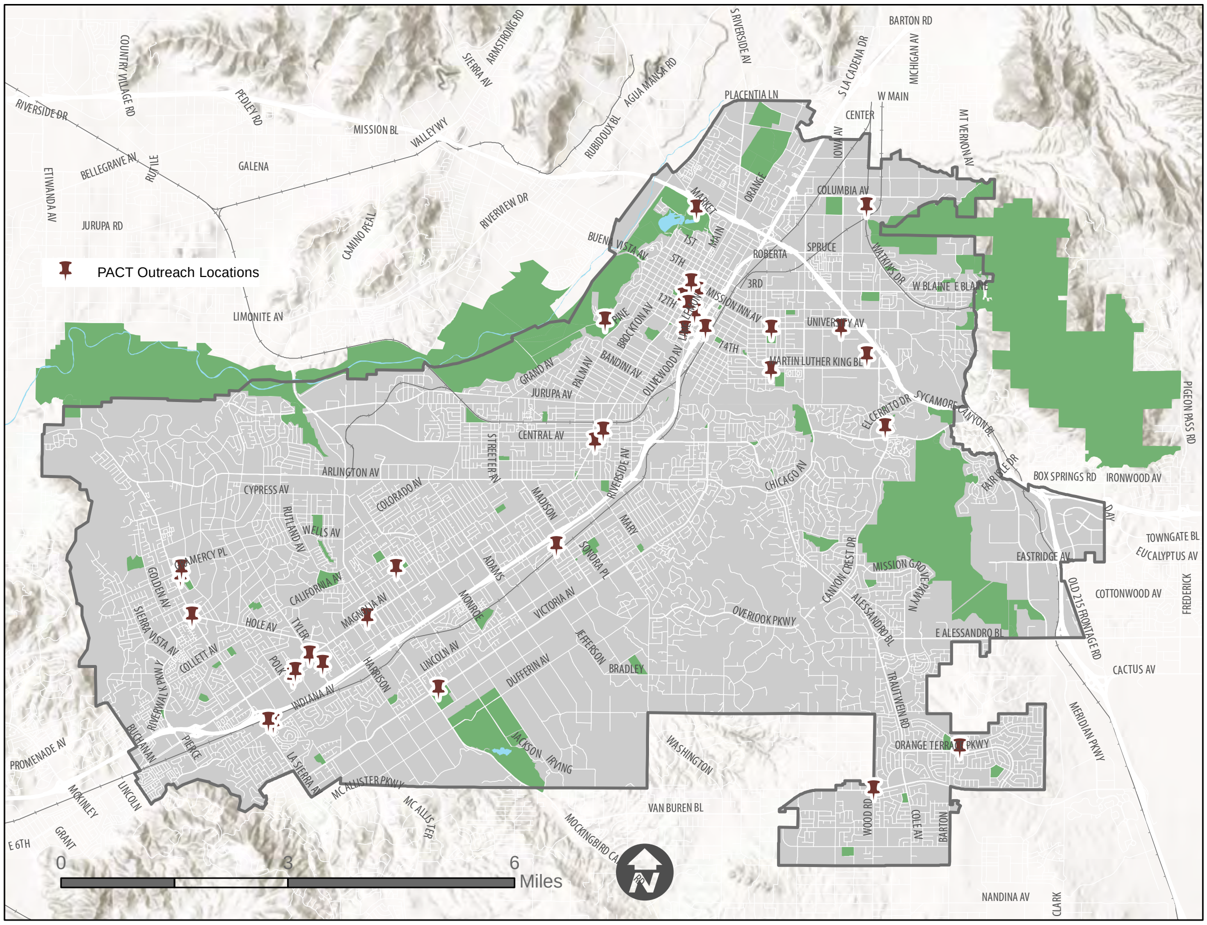
INTERACTIVE MAPPING

The PACT team created an interactive online input map that displayed existing and proposed trails and bicycle infrastructure throughout the City, and invited users to draw desired trail facilities, on-street facilities, identify gaps and other desired improvements, as well as submit general comments. These comments were visible to all other map users, allowing them to vote and add comments to others suggestions.

SOCIAL MEDIA

Leveraging the City's substantial social media presence on platforms such as Facebook, Instagram, and Peachjar, the PACT team posted meeting invites, project information, and links to the digital survey and public input map.

FIGURE 3-1 IN PERSON OUTREACH LOCATIONS



E-BLASTS

Project background, meeting/workshop invites, and contact information was shared to a broad list of community stakeholders through the City's email service.

CITY WEBPAGE

The City developed a custom-built PACT webpage featuring project background, timelines, the interactive map, and a link to the online survey.

Photo Caption: Resident filling out a survey at the Eastside Green n' Clean Halloween event.

In Person Outreach Summaries

EASTSIDE GREEN N' CLEAN HALLOWEEN

October 29, 2019

The project team engaged with about 35 residents at an Eastside community event, informing attendees about the PACT, active transportation in Riverside, and encouraging attendees to complete surveys. This diverse event included many Spanish speaking attendees, who were engaged by bilingual staff and translated project materials.

TAC MEETING #1

November 1, 2019

The first TAC meeting was attended by about 7 committee members, and focused on providing an overview of the PACT project and process, and how TAC members can support the effort by providing their input throughout the PACT's development, attending Walk Shops, and sharing information with their extended networks. Following this conversation, the project team and TAC discussed potential Walk Shops locations and specific characteristics of each site to observe during the visits.

Photo Caption: Walk Shop conducted along Magnolia Ave.

RESIDENTS FOR RESPONSIBLE REPRESENTATION

November 6, 2019

PACT team members met with about 30 members of the community group Residents for Responsible Representation, gave an overview presentation, distributed surveys, and engaged in conversation with residents regarding desired improvements primarily located in West End neighborhoods.

NEIGHBORHOOD WALK SHOPS

November 11-13, 2019

The PACT project team conducted 10 Walk Shops, at least one in each Ward, documenting existing conditions, travel behavior, and potential active transportation challenges. TAC members and the public were invited to join the PACT team to lend their neighborhood expertise. Walk Shop locations were determined with input from the TAC, and intake forms were developed for both project staff and community members for annotation. Walk Shops were conducted in and around the following locations: University Village, Market Street at White Park, the Mt Rubidoux Trail head, Canyon Crest Towne Center, MLK High School, the Galleria at Tyler, La Sierra Metrolink Station, La Sierra Ave & Hole Ave, Magnolia Ave and Van Buren Blvd, and Brockton Arcade.

TAC MEETING #2

November 12, 2019

About 12 TAC members convened for a second time, with representation from both City departments and community leaders. TAC members were updated on PACT progress and the ongoing Walk Shops. TAC members were then divided into groups focused on each of the Walk Shop locations, providing input and context. In addition to this discussion, the project team shared PACT fact sheets, digital surveys, and draft email language to distribute amongst TAC member's networks to further extend the reach of public outreach efforts.

Photo Caption: Citrus Heritage Run (Photo by Eric Reed/ Courtesy Citrus Heritage Run)

RIVERSIDE STRONG

November 19, 2019

The project team met with community advocacy group Riverside Strong, providing a brief PACT overview and directing members to the online survey.

MUJERES ACTIVAS EN LA SALUD

November 26, 2019

The project team met with community group Mujeres Activas en la Salud, providing a brief PACT presentation, fielding active transportation questions, and directing members to the online survey.

FESTIVAL OF LIGHTS BUS TOUR

November 29, 2019

PACT team members joined a City-sponsored shuttle that transported about 15 residents from the La Sierra Community Center to the Festival of Lights event in Downtown Riverside. During the rides to and from the festival, the project team discussed the PACT, discussed active transportation challenges and solutions, and collected survey responses. Many shuttle riders were Spanish speaking, and they were engaged by bilingual staff and translated project materials.

RIVERSIDE NEIGHBORHOOD PARTNERSHIP

December 2, 2019

TAC members attending the community group Riverside Neighborhood Partnership gave a brief overview of the PACT, fielded questions, and directed attendees to the online survey.

RIVERSIDE REINDEER RUN

December 8, 2019

PACT team members hosted a booth at this community event, engaging about 30 runners and spectators. Attendees were given a brief PACT overview, information sheets, and were asked to fill out the digital survey via on-site iPads.

GALLERIA AT TYLER CERTIFIED FARMERS MARKET

December 8, 2019

The PACT team attended the farmers market, and though attendance was limited by poor weather, spoke with about 10 attendees about the project, soliciting surveys, and handing out project information sheets.

FESTIVAL OF LIGHTS

December 11, 2019

The PACT team engaged about 50 Festival of Lights attendees as well as business owners and employees regarding Active Transportation in their community. Surveys were administered in person, and project information sheets were distributed to those focused on the evening's festivities.

CITRUS HERITAGE RUN

January 4, 2020

PACT team members hosted a booth at the Citrus Heritage Run, speaking with about 50 runners and spectators about the project and soliciting survey responses via on-site iPads.

UCR COMMUTER PIT STOP

January 7, 2020

PACT members hosted a "Commuter Pit Stop" booth in collaboration with UCR's Transportation Services department, and spoke with about 40 students and staff who shared insights about active transportation near UCR's campus. The Transportation Services department also shared a link to the online survey via social media.

Photo Caption: Riverside Food Lab (Photo by Cindy Yamanaka, The Press-Enterprise/SCNG).

CASA BLANCA COMMUNITY ACTION GROUP

January 8th, 2020

The project team attended community group Casa Blanca's monthly Community Action Group meeting, giving a brief presentation to about 20 members followed by a discussion about project goals and active transportation in the neighborhood. Attendees were encouraged to fill out project surveys and share printed PACT materials with their networks.

RIVERSIDE HEALTH COALITION MEETING

January 15, 2020

PACT project team members attended the Riverside Health Coalition's quarterly meeting, giving a presentation followed by a question and answer session to over 100 attendees. Attendees were encouraged to fill out project surveys and share printed PACT materials with their networks.

DOWNTOWN RIVERSIDE METROLINK STATION

January 17, 2020

The PACT team engaged with about 65 Metrolink commuters during the morning rush hours, speaking to them about project goals, soliciting survey responses, and handing out project information sheets.

RESIDENTS FOR RESPONSIBLE REPRESENTATION

January 18, 2020

The PACT team was invited back to the RRR's monthly meeting, updating about 40 group members on project progress, soliciting additional survey responses, and discussing West End active transportation and equestrian concerns.

MARTIN LUTHER KING JR. WALK-A-THON

January 20, 2020

Project team members spoke with about 40 event Walk-A-Thon attendees, and handed out information sheets to many more. Surveys were distributed, and questions were fielded about active transportation improvements in Riverside.

UCR/HUNTER PARK METROLINK STATION

January 21, 2020

The PACT team engaged with about 5 Metrolink commuters (poor weather kept many in their cars until their train's departure) during the morning rush hours, speaking to them about project goals, soliciting survey responses, and handing out project information sheets.

LA SIERRA METROLINK STATION

January 22, 2020

The PACT team engaged with about 15 Metrolink commuters during the morning rush hours, speaking to them about project goals, soliciting survey responses, and handing out project information sheets.

FOODLAB

January 22, 2020

The project team spoke with about 15 FoodLab visitors during the dinner rush hours, updating them about the PACT and encouraging them to fill out project surveys.

Photo Caption: Participants in the 27th annual Martin Luther King Walk-A-Thon arrive at the statue of Martin Luther King Jr. in downtown Riverside on Monday, Jan. 20, 2020. (Photo by Watchara Phomicinda, The Press-Enterprise/SCNG).

FOODLAB

January 23, 2020

The project team spoke with about 15 FoodLab visitors during the dinner rush hours, updating them about the PACT and encouraging them to fill out project surveys.

WARD 4 COMMUNITY MEETING

February 19, 2020

PACT team members gave a brief project overview to about 30 community members, and directed them to the online survey and public input map.

04/22/20 Live Presentation, Polling and Q&A Results

BLINDNESS SUPPORT SERVICES

February 21, 2020

The PACT team spoke with about 20 group members about the PACT, the experience of moving through Riverside as a pedestrian with limited or no eyesight, and obtained feedback on challenging locations and types of amenities that would improve their active transportation experience.

TMP - ATP VIRTUAL WORKSHOP

April 22, 23, 2020

Due to the COVID-19 Stay at Home Order, the PACT Virtual Workshop was held in a webinar (Zoom) presentation format which was aired across multiple platforms (YouTube Live, Facebook Live, and Riverside TV) along with interactive elements for live polling. The project team consisted of the presenters as well as individuals fielding live questions via text and through the Zoom portal. The presentation combined two components of the PACT, the Active Transportation Plan and the Trails Master Plan (TMP). Active Transportation Plan (ATP) was using this workshop as a way to share and gather feedback on preliminary bicycle and pedestrian recommendations that were developed. The Trails Master Plan was using the workshop to gather general feedback on what types of trails residents used and wanted as well as identified areas in the city where trails were desired. Below are

the numbers and type of involvement we received during both of the live presentation as well as the rebroadcast:

One of the more poignant takeaways was the lack of personal interaction that was allowed in the workshop format. Although we covered all the information well and were able to gather feedback via comments, questions and polling we still weren't able to have those one on one conversations with individuals.

Although we reached thousands of people, it isn't clear how long individuals were watching or participating. On the flip side, the amount of people we reached was much greater than a traditional in person community meeting.

04/23/20 Rebroadcast – Live Q&A

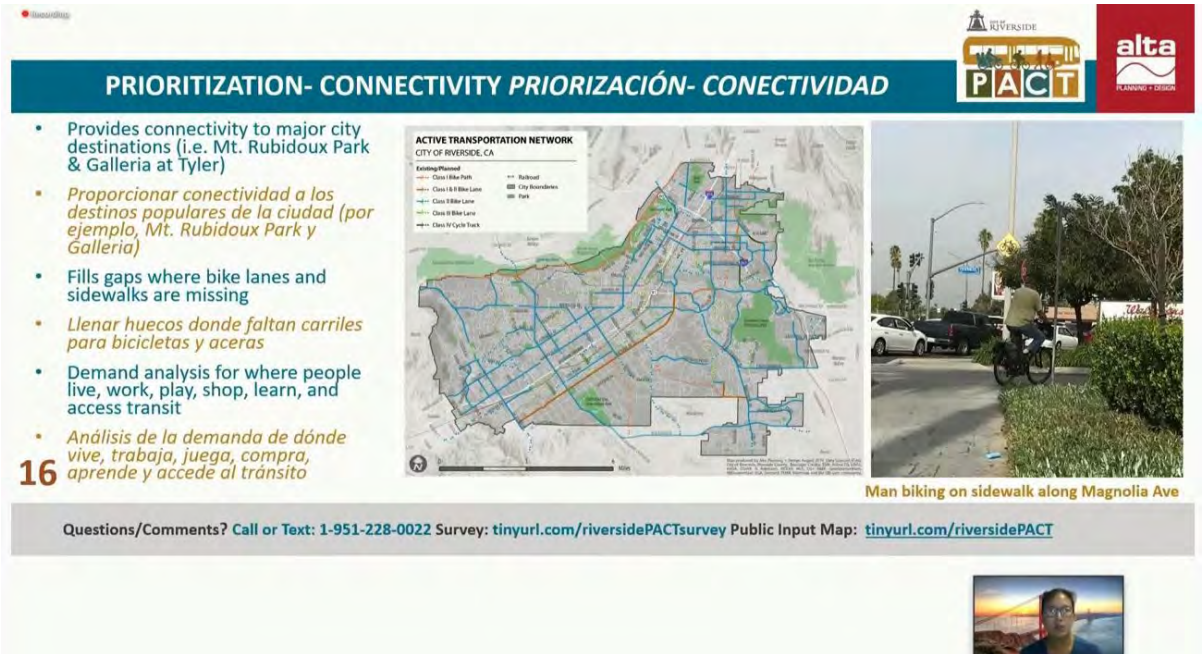


Photo Caption: ATP-TMP Virtual Workshop presentation.

We received useful feedback and questions during the both the live workshop as well as the rebroadcast, the polling results gave good insight into recommendation preferences for the Active Transportation Plan and provided the Trails Master Plan with priority areas for trail use/desires within the City. Comments/questions we received included:

- Make Van Buren Blvd more walkable,
- Develop more recommendations for the SE part of the City,
- Improve safety along the Santa Ana River Trail,
- Improve cross-town connectivity,
- Emphasis on Victoria Ave corridor,
- Lack of investment outside of the downtown area,
- Safety concerns while riding on-street bike lanes

POLLING RESULTS

Trails Master Plan:

Interest in trail improvement based on polling:

- La Sierra Hills – Want more trails
- Santa Ana River Trail – Most used trail
- Gage Canal & Victoria Ave – Most desirable trails
- Natural Surface Path & Paved Path – Most desirable trail experience

Active Transportation Plan

Highest prioritized project based on polling:

- Ward 1 –Blaine St & Iowa Ave/ University Ave
- Ward 2 – Chicago Ave & University Ave/ Victoria Ave
- Ward 3 – Van Buren Blvd & Arlington Ave/ Arlington Ave
- Ward 4 – Madison St & Lincoln Ave/ Victoria Blvd
- Ward 5 – Van Buren Blvd & Indiana Ave/ Victoria Ave
- Ward 6 – Van Buren Blvd & Jackson St/Van Buren Blvd
- Ward 7 – La Sierra Ave & Hole St /Tyler St

TMP - TAC

July 23, 2020

The purpose of the meeting was to hear from a group of passionate community members in a focused discussion on topics related to the development of the TMP. The project team led the TAC participants through a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis to gain new perspectives on some of the strength, weaknesses, opportunities, and threats related to trails in the city.

TAC MEETING #3

August 27, 2020

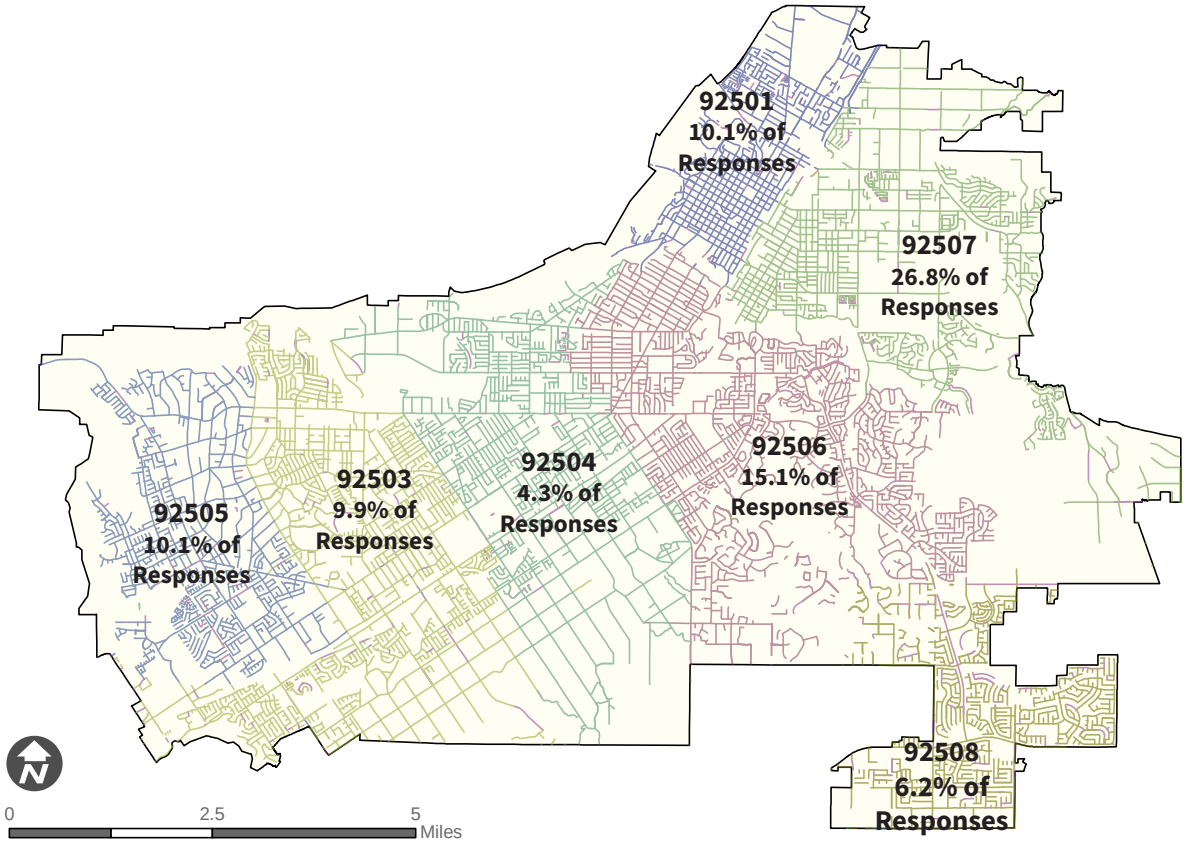
Alta staff conducted the third Technical Advisory Committee (TAC) in which the draft Active Transportation recommendations were presented for review and comment to a group of Riverside community members. Alta prepared a webinar presentation that reviewed the PACT project timeline and progress, reviewed the prioritization of recommendation projects, and reviewed each pedestrian and bicycle recommendation at the ward level.

Digital Outreach Summaries

ONLINE SURVEY

At in-person public outreach efforts, the PACT team administered a 22-question survey with printed copies and iPads, and those who expressed an interest in completing the survey at home were given project information sheets with links to the survey. The survey was also advertised digitally, through the City's project webpage, email notifications, social media posts,

FIGURE 3-2 SURVEY RESPONSES BY ZIP CODE



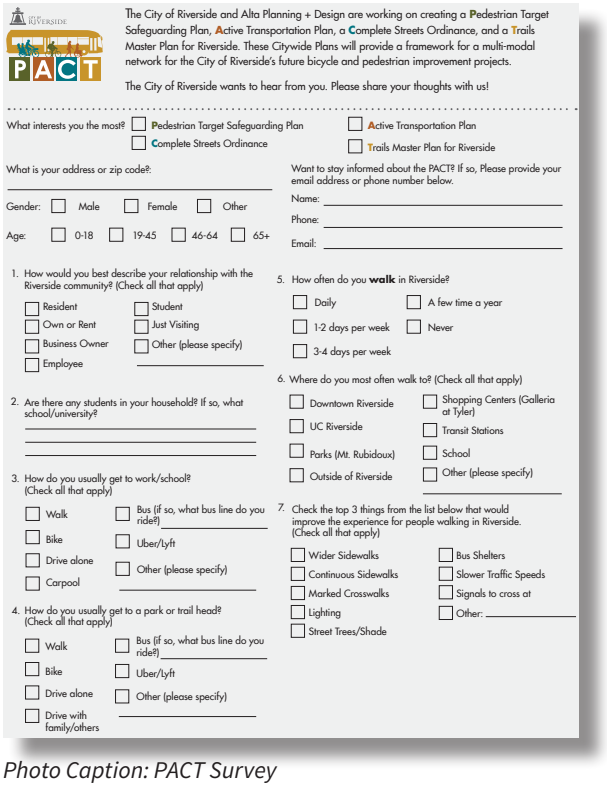
and through TAC member's personal and professional networks. The survey was open between October 2019 and April 2020, garnering over 320 responses, which informed the City's understanding of the public's current active transportation behavior and desired improvements. A complete catalogue of survey responses can be found in Appendix A.

Key Findings

The following question provided the most insight for community needs and desires when developing the recommendations for the Active Transportation Plan as well as the Pedestrian Target Safeguarding Plan.

Question 8 - How do you usually get to work/school?

Over 60-percent of responders drive alone to work, with the next highest response being walking to work at just over 25-percent. Biking as a mode of commuting came in at 19-percent.



PACT

The City of Riverside and Alta Planning + Design are working on creating a Pedestrian Target Safeguarding Plan, Active Transportation Plan, a Complete Streets Ordinance, and a Trails Master Plan for Riverside. These Citywide Plans will provide a framework for a multi-modal network for the City of Riverside's future bicycle and pedestrian improvement projects.

The City of Riverside wants to hear from you. Please share your thoughts with us!

What interests you the most? ☐ Pedestrian Target Safeguarding Plan ☐ Active Transportation Plan ☐ Complete Streets Ordinance ☐ Trails Master Plan for Riverside

What is your address or zip code?:

Want to stay informed about the PACT? If so, Please provide your email address or phone number below.

Name:

Phone:

Email:

Gender: ☐ Male ☐ Female ☐ Other

Age: ☐ 0-18 ☐ 19-45 ☐ 46-64 ☐ 65+

1. How would you best describe your relationship with the Riverside community? (Check all that apply)
☐ Resident ☐ Student ☐ Own or Rent ☐ Just Visiting ☐ Business Owner ☐ Other (please specify) ☐ Employee

2. Are there any students in your household? If so, what school/university?

3. How do you usually get to work/school? (Check all that apply)
☐ Walk ☐ Bus (if so, what bus line do you ride?) ☐ Bike ☐ Uber/Lyft ☐ Drive alone ☐ Other (please specify) ☐ Carpool

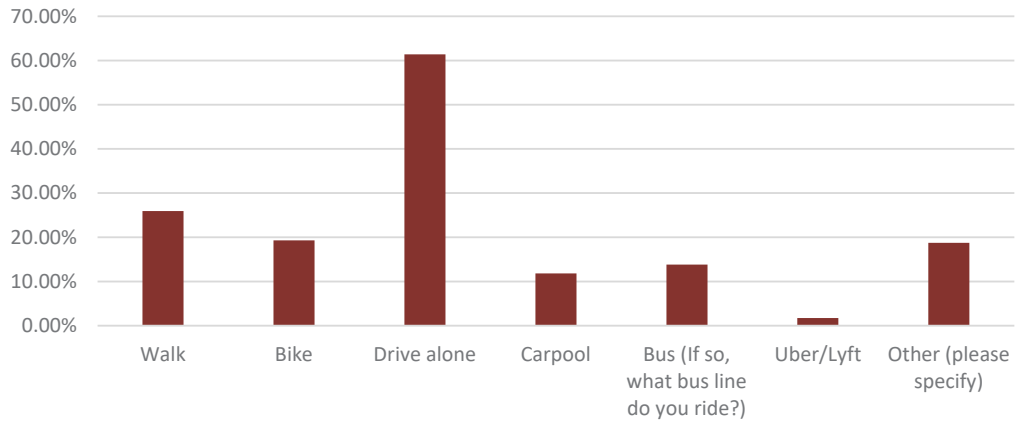
4. How do you usually get to a park or trail head? (Check all that apply)
☐ Walk ☐ Bus (if so, what bus line do you ride?) ☐ Bike ☐ Uber/Lyft ☐ Drive alone ☐ Other (please specify) ☐ Drive with family/others

5. How often do you **walk** in Riverside?
☐ Daily ☐ A few time a year ☐ 1-2 days per week ☐ Never ☐ 3-4 days per week

6. Where do you most often walk to? (Check all that apply)
☐ Downtown Riverside ☐ Shopping Centers (Galleria at Tyler) ☐ UC Riverside ☐ Transit Stations ☐ Parks (Mt. Rubidoux) ☐ School ☐ Outside of Riverside ☐ Other (please specify)

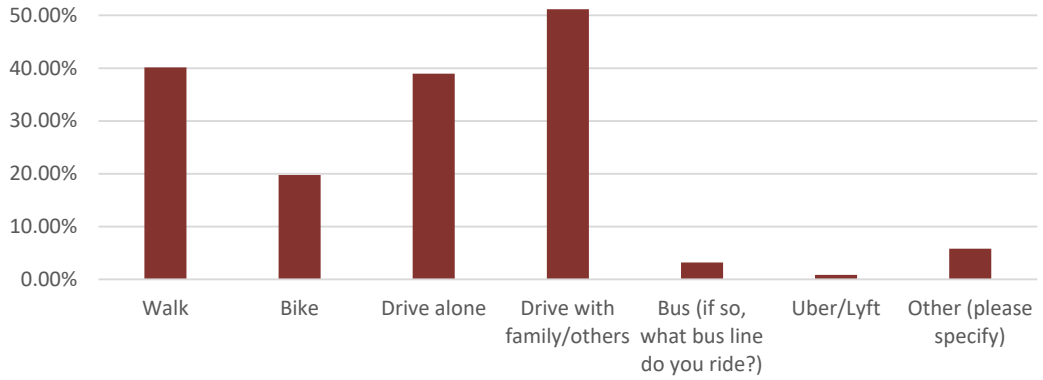
7. Check the top 3 things from the list below that would improve the experience for people walking in Riverside. (Check all that apply)
☐ Wider Sidewalks ☐ Bus Shelters ☐ Continuous Sidewalks ☐ Slower Traffic Speeds ☐ Marked Crosswalks ☐ Signals to cross at ☐ Lighting ☐ Other: ☐ Street Trees/Shade

Photo Caption: PACT Survey



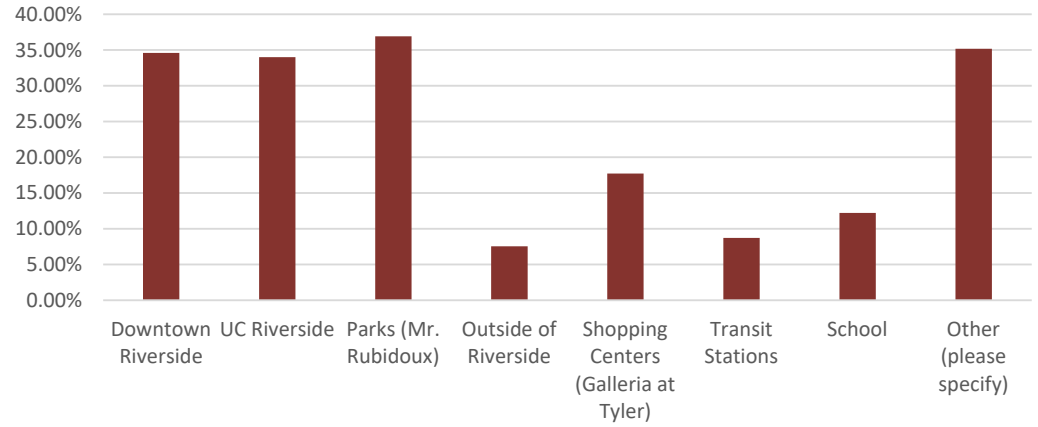
Question 9 - How do you usually get to a park or trail head?

Over 50-percent of responders get to a trail head by carpooling with the next two highest responses being walking and driving alone.



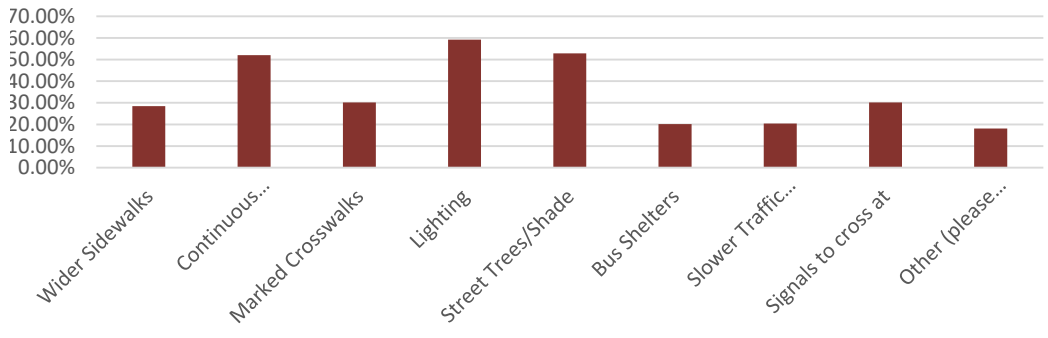
Question 11 - Where do you most often walk to?

The top three locations all garnered over 34 percent, those locations being Downtown Riverside, UC Riverside, and Parks.



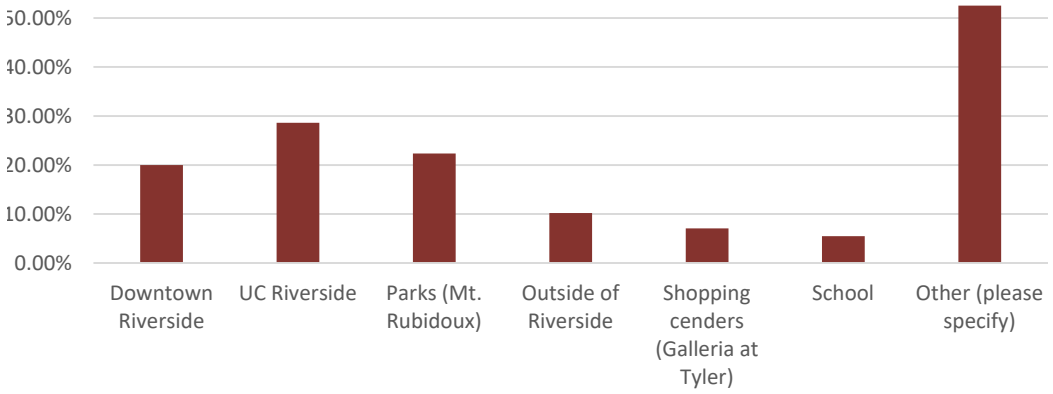
Question 12 - Top 3 walking experience improvements?

Three answers received more than 50-percent, these being continuous sidewalks, lighting, street trees/shade. Improved lighting had the most votes at nearly 60-percent .



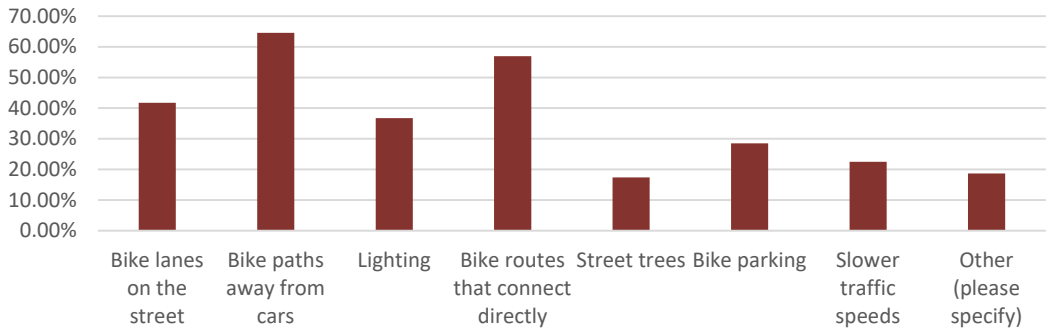
Question 14 - Most common biking destinations?

The top three location for biking destinations were the same as the walking destinations: Downtown Riverside, UC Riverside, and Parks. Each answer received at least 20-percent of votes.



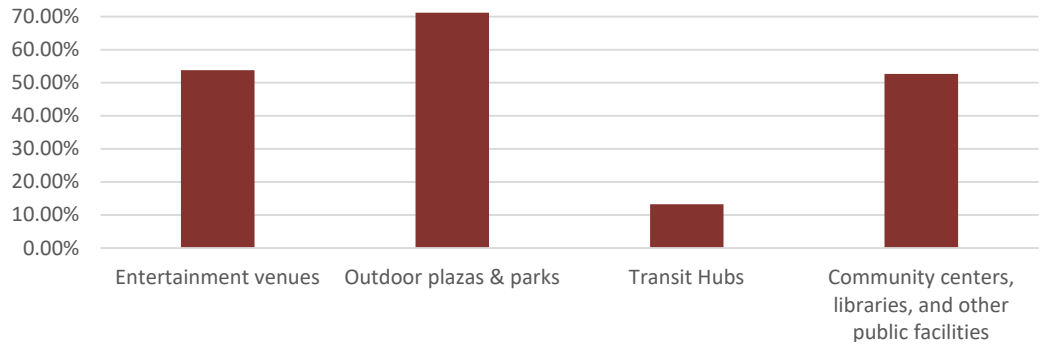
Question 15 - Top 3 biking experience improvements?

The highest percent of response was 65-percent for, bike paths away from cars, the next highest response with just over 55-percent was, bike routes that connect directly.



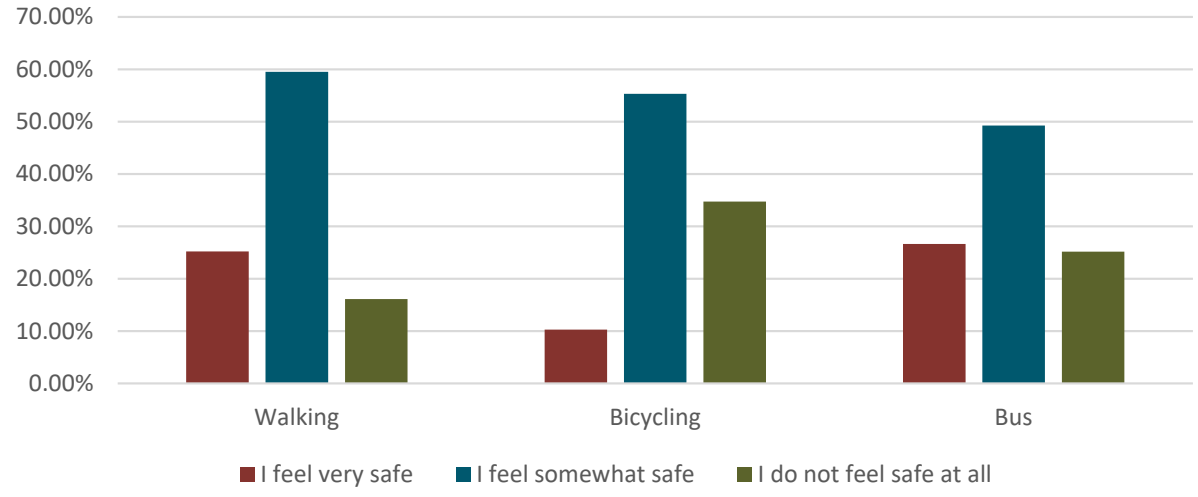
Question 17 - Outdoor public spaces most visited?

Two responses received over 50-percent (Entertainment venues and community centers/ public facilities), while one received just over 70-percent of votes (outdoor plazas and parks).



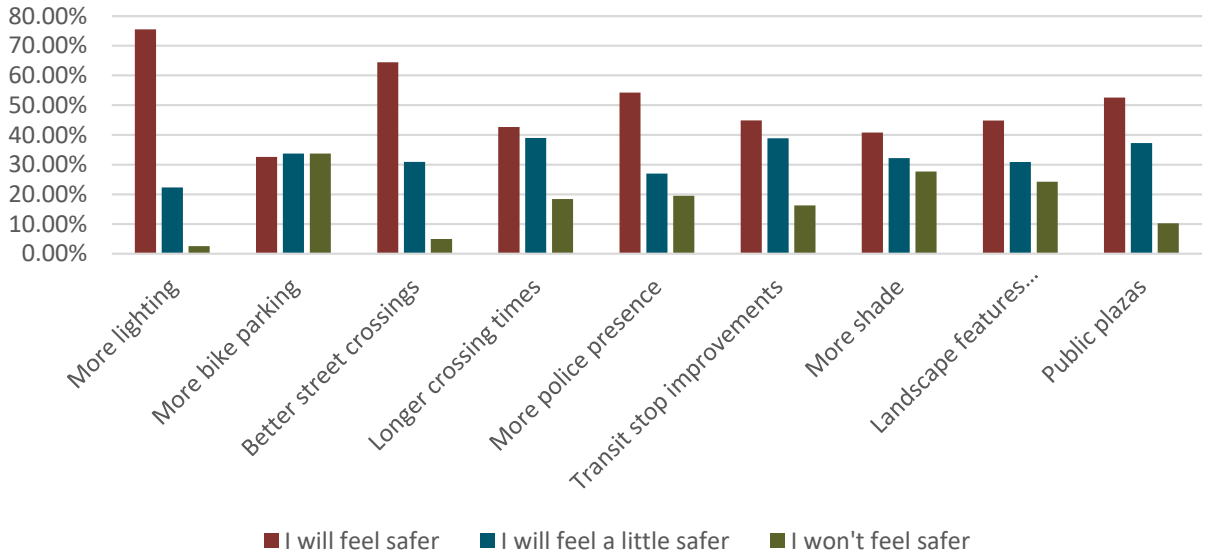
Question 18 - How safe you feel walking / biking / bus?

The answers for this question varied but the highest percentage of votes were "I feel somewhat safe" for each type of transportation option. The transportation option where responders felt least safe was while bicycling.



Question 20 - What would make public spaces safer?

The highest percentage response was "I will feel safer" with "More lighting", this combination received 75-percent of votes. The next highest was "I will feel safer" with "Better street crossings".



HIGHLIGHTS

- Most respondents drive alone to work/ school (61%), 26% walk, 20% bike
- Most people access trail heads by car - either alone or with others. Walking is the second most popular mode (38%). Biking is third (19%)
- 55% walk either daily or one or two times a week.
- Most popular walking destinations were parks, downtown, and UCR. Many respondents also indicated that they often go for walks in their neighborhood.
- Top 3 walking improvements: Lighting, street trees, and continuous sidewalks
- Over 50% or respondents never bike in the City. Of those that do, we see a few times a year / daily -- a split between commuters and folks going on recreational rides from time to time
- Of those that do ride their bikes, UC Riverside and City parks are the most popular destinations, with Downtown following after that. Many others indicated that they like to go for rides in their neighborhoods
- Top 3 biking improvements: bike paths away from cars, more and better connected on-street bike lanes. Written responses often expressed a desire for on-street bike lanes with physical barriers separating from vehicles.
- Most popular public spaces were University Village and the Main Street Pedestrian Mall; least popular was Arlington Business District
- Outdoor plazas and parks were most frequently visited venues
- Between walking, biking, and riding the bus, people felt least safe bicycling through the city; people felt most safe when walking.
- More lighting and better street crossings lead the field for improvements to public spaces that would make people feel safer

Photo Caption: Dark street and poorly marked bike striping along Iowa Ave.

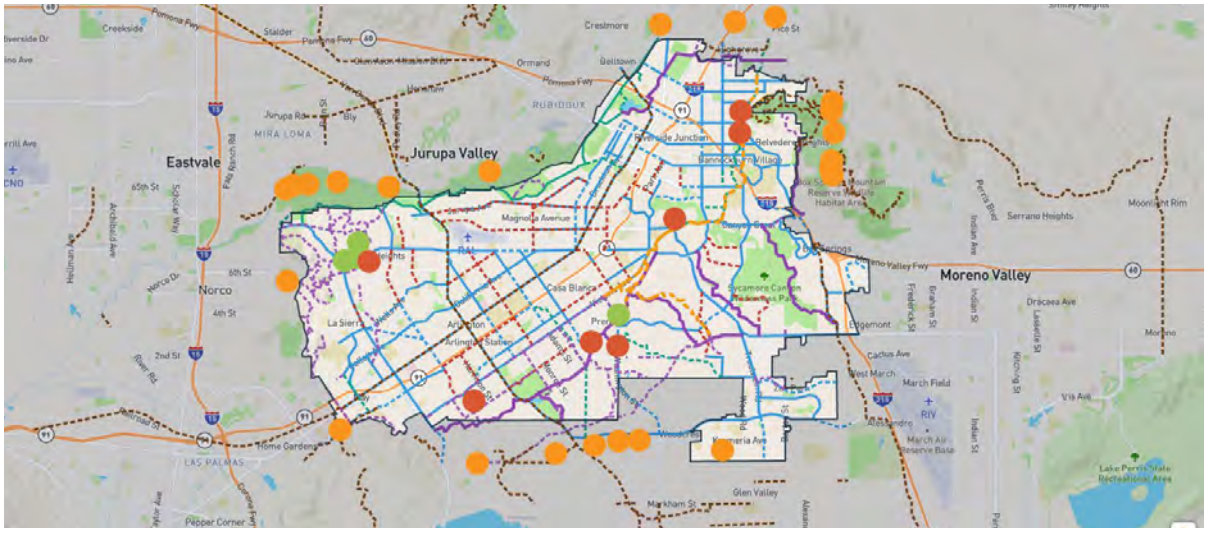


Photo Caption: PACT public input map

INTERACTIVE MAPPING

The PACT team created an interactive public input map, which featured existing and proposed on-street and off-street active transportation facilities and enabled residents to draw proposed new routes on the map, insert annotated markers at specific locations (e.g. identifying a safety concern or a network gap) and "upvote" other user's proposals and comments they agreed with. The map also featured a brief 4-question trails-focused survey. The map, which was available in English and Spanish, was open from March through April 2020, and received over 100 responses. This feedback helped shape the development of the active transportation network improvements in the PACT. A complete catalogue of survey responses can be found in Appendix B.

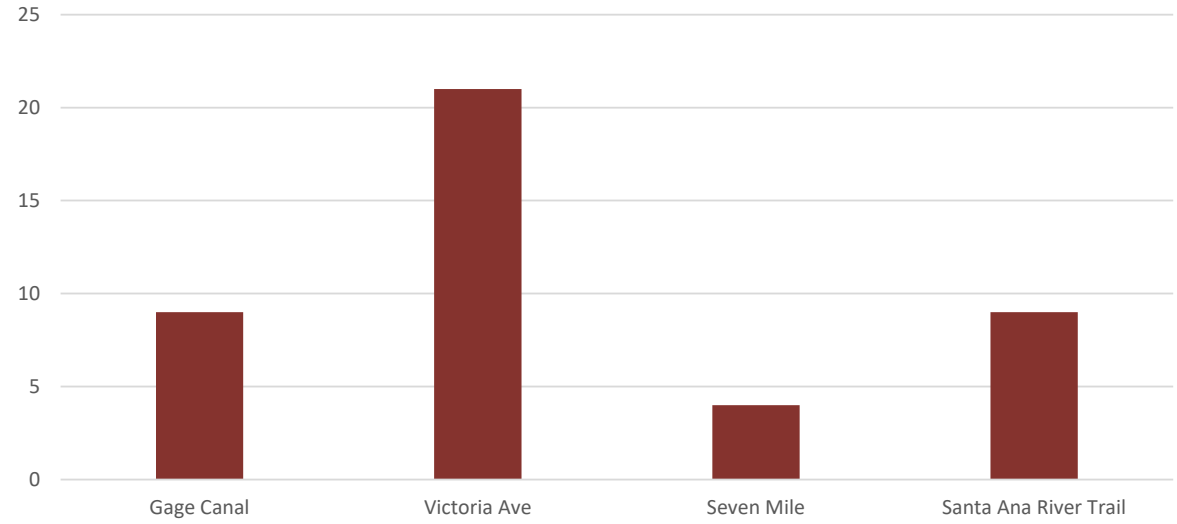
Photo Caption: Residents entering the Mt. Rubidoux trail head.

MAP SURVEY RESULTS

The following is a summary of the PACT public input map and survey results.

Question 1 - Which of the proposed trails would you like to see the most

Victoria Ave received the most votes for trails residents would like to be seen built the most with over 20 votes. The Gage Canal and Santa Ana River Trail both received nine votes.

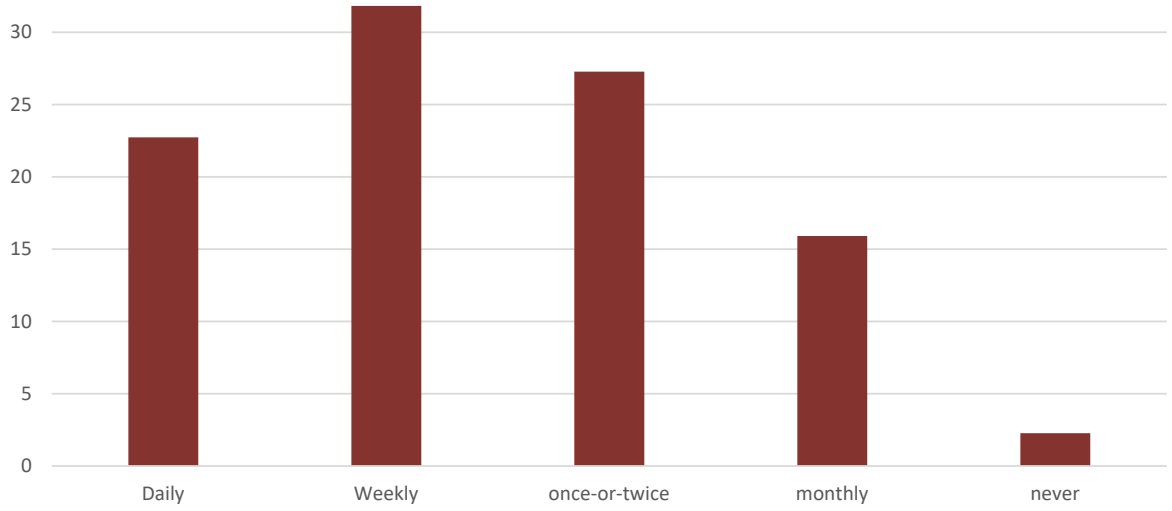


Question 2 - Is there a Gap in the trail network you'd like addressed?

Victoria Ave was received the most votes with five as being the trail with the most gaps along it as well as accessing the trail. Gage Canal received the second most votes with 4.

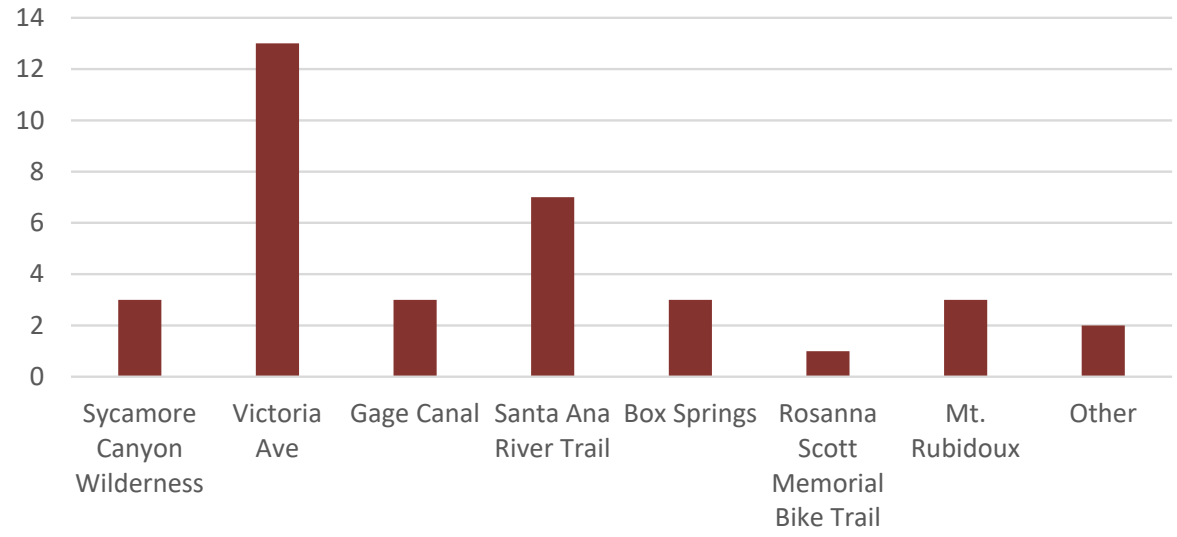
Question 3 - How often do you use Riverside's trail network?

Three answers received more than ten votes with "Weekly" use garnering the most votes with 14. The second highest answers were "Daily" and "Once or twice a week".



Question 4 - Which trail do you use most often?

Victoria Ave was voted as most used trail, receiving 13 votes, the next highest voted on trail was the Santa Ana River Trail with seven.



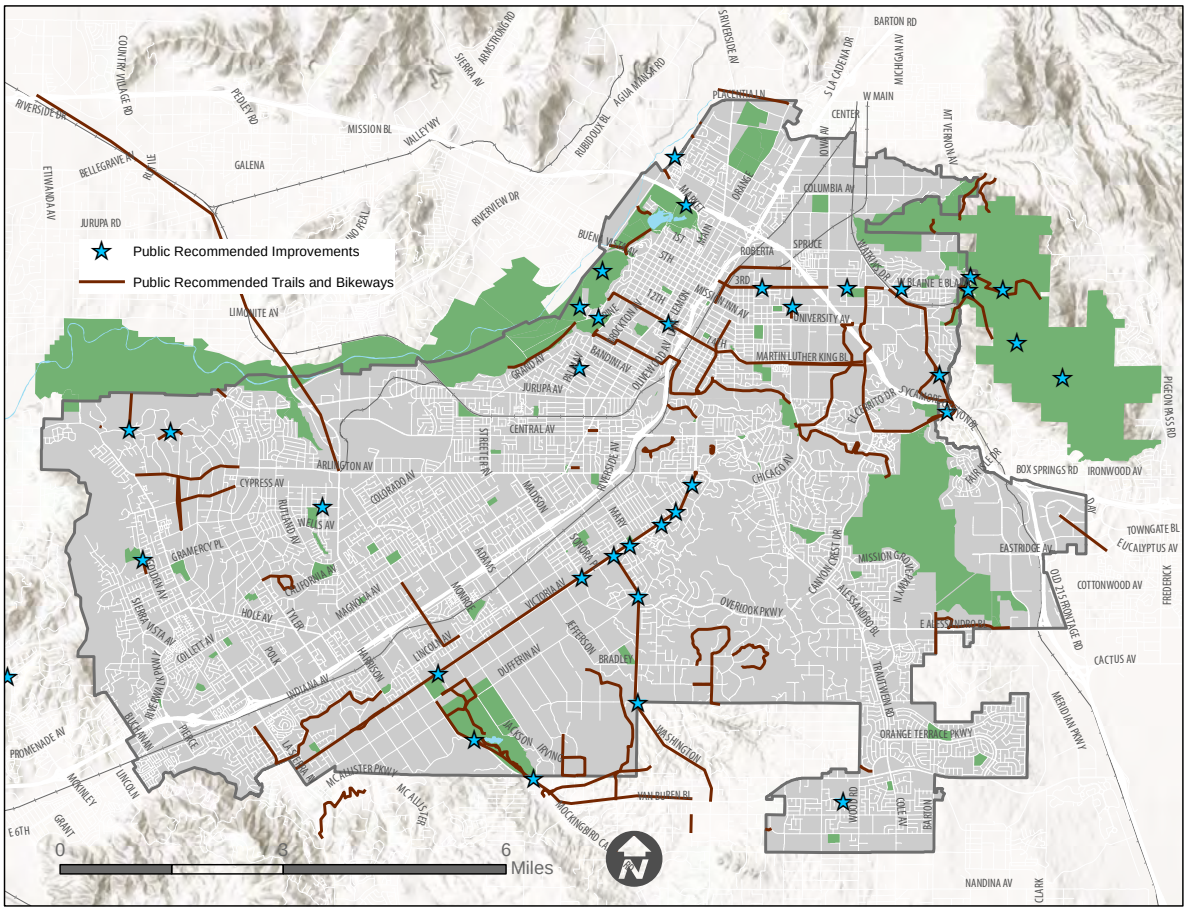
Trails Network Responses

- Most proposed trail facilities were concentrated in the Box Springs Park and along Victoria Ave.
- Equestrian facilities were requested in the La Sierra neighborhood that connects to the existing Mitchell Ave trail.
- Bike trails were suggested for the northwestern part of Box Springs Park.
- Hiking trails were requested in the Canyon Crest neighborhood.
- Gaps in the network were identified and requested that connect the University of California Riverside to Mt. Rubidoux.

On-Street Network Responses

- Pedestrian infrastructure improvements in war d 7 specifically along Cypress St.
- Bicycle infrastructure improvements along Victoria Ave and Washington St, both very active routes for bicyclists. Van Buren Blvd also had several comments regarding bicycle safety from vehicles.
- Many of the gaps that were highlighted were in reference to trail access and recreational facilities like improving connections to the Santa Ana River Trail.

FIGURE 3-3 PACT PUBLIC INPUT MAP WITH PUBLIC COMMENTS



Outreach Analysis

ON-STREET FACILITIES

General

- Respondents indicated that between walking, cycling, and riding the bus, they felt safest when walking in Riverside, and least safe when riding a bicycle.
- Parking is allowed along several streets in Riverside and it has been expressed by residents that this issue discourages people from riding their bikes due to safety concerns.

Pedestrian

- Aside from their neighborhoods, City parks, Downtown, and UCR were the most popular walking destinations for residents.
- The top 3 walking improvements raised in survey responses and conversations at outreach events were more lighting, additional street trees, and building additional sidewalks to address gaps in the network (primarily located in Ward 6 & 7).
- UCR is expected to grow to 35,000 students by 2035 (currently ~ 21,500)
- Students take courses at University Village Movie theater to get there from campus, walk under I-215
- Sidewalks on both sides of I-215 undercrossing on University Ave between Iowa and Canyon Crest will likely need to be expanded / have railing added - it's already at capacity
- Significant jaywalking along Iowa between Blaine and Linden - student housing to campus route

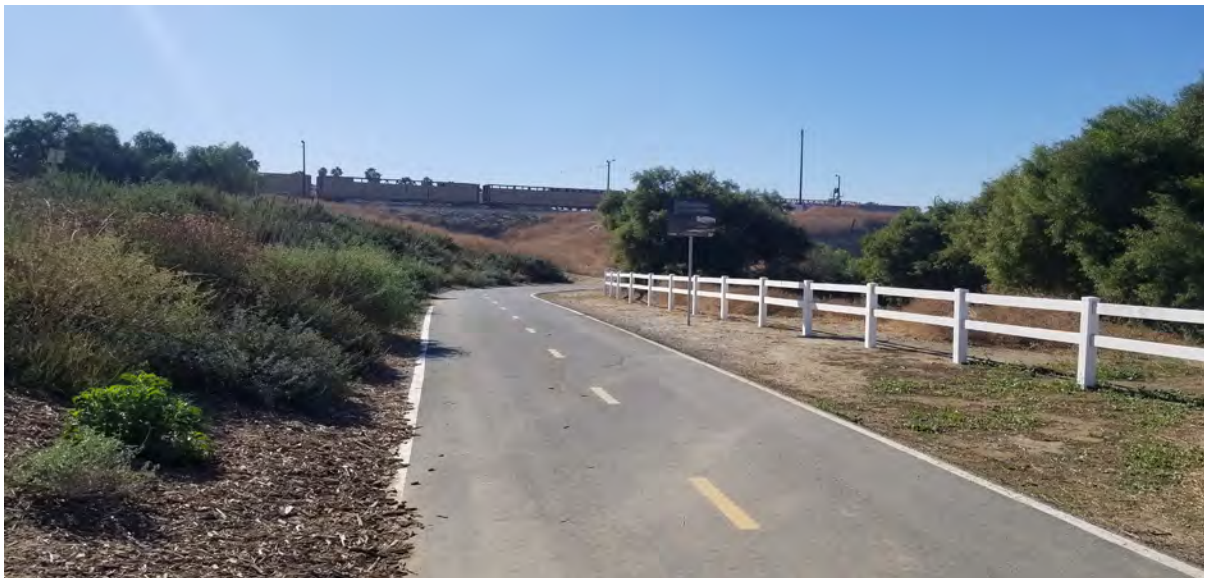


Photo Caption: Santa Ana River Trail..

- Van Buren Blvd was also highlighted as a corridor that should be improved for walkability.

Bicycling

- Many survey respondents expressed a desire for more Class I bike paths, and expanding the City's network of on-street Class II bike lanes.
- At outreach events, meetings, and in the survey residents expressed their desire for on-street facilities to feature physical barriers separating cyclists from vehicles (Class IV bikeways) on City streets with higher vehicular speeds or traffic.

TRAIL FACILITIES

- General
  - » Most people access trail heads by car - either alone or with others. Walking is the second most popular mode, biking is the third. [re-check when survey is closed]
  - » The La Sierra neighborhood has a desire for more trails.
  - » The most used trail is the Santa Ana River Trail and residents have a desire for more natural surface paths as well as paved path trails.
  - » Gage Canal and Victoria Ave were also identified as being important to the community and would like to see improved and built out more.
  - » Improving safety along the Santa Ana River Trail was also a key concern from residents.
- Hiking
  - » Need for better wayfinding and pedestrian amenities.
- Biking
  - » Improve amount of mountain biking facilities.
- Equestrian
  - » Wards 6 and 7 have large equestrian communities, and there is a desire for more access to nearby trails near the Hidden Valley Nature Center and the Santa Ana River Trail. Additional parking that can accommodate horse trailers near these trail heads is desired.
  - » Desire to extend the equestrian trail that runs parallel along Mitchell Ave at La Sierra Park north to the River Bottom area.

General / Maintenance / Amenities

- Residents noted concerns regarding potholes and debris in bike lanes.
- Desire for more ADA accessible drinking fountains for park users (and pets).
- More lighting and better street crossings lead the field for improvements to public spaces that would make people feel safer.

Section 4: Active Transportation Plan

Section 4.1: Active Transportation Plan Executive Summary


RIGHT LANE
MUST
TURN RIGHT
West
15

EXECUTIVE SUMMARY

INTRODUCTION

The City of Riverside Active Transportation Plan (AT Plan) integrates walking, bicycling, and other transportation modes into a single plan that includes policies, infrastructure recommendations, and supporting programs. It identifies context specific funding sources, prioritized infrastructure projects, and implementation strategies. The AT Plan is one component of the PACT, (Pedestrian Target Safeguarding Plan, Active Transportation Plan, a Complete Streets Ordinance, and a Trails Master Plan) for Riverside.

GOALS, OBJECTIVES, AND ACTIONS

Based on priorities identified through community outreach, research of best practices, and the input of stakeholders including City staff, the following goals and their corresponding objectives and actions were developed to guide the AT Plan:

1. Economic prosperity
2. Safety
3. Socially responsible
4. Health
5. Accessible
6. Environmental Stewardship

FACILITY TYPOLOGIES

This section identifies many of the facilities and features that contribute to a safe and comfortable environment for pedestrians and bicyclists.

Pedestrian Facilities:

- Sidewalks and Paths
- Crossing Facilities
- Curb Treatments
- Beacons and Signals
- Pedestrian Support Facilities
- Traffic Calming Measures

Bicycle Facilities

- Class I Shared Use Paths
- Class II Bicycle Lanes
- Class II Buffered Bicycle Lanes
- Class III Bicycle Routes
- Class III Bicycle Boulevard
- Class IV Separated Bikeways
- Previously Planned Facilities

NETWORK RECOMMENDATIONS

This section identifies bicycle and pedestrian infrastructure and supporting amenities the City plans to implement. It includes the evaluation and approach that will determine which facilities to use in specific locations.

Pedestrian infrastructure recommendations:

- Pedestrian Spot Improvements

- Pedestrian Crossing Typologies
  - A: Signalized Intersection
  - B: Major/Minor Street
  - C: Minor/Minor Street
  - D: Trail Crossing/Mid-Block Crossing
  - E: High-Volume Pedestrian Areas
  - F: Highway Interchanges and Freeway Crossings
- Pedestrian Corridor Improvements

Bicycle infrastructure recommendations based on:

- Class
- Ward
- Where parking is allowed

Programmatic Recommendations

- Safe Routes to School
- Safe Routes to Transit
- Shared Mobility Study
- Trails Master Plan Network
- Regional Connections
- Wayfinding
- Average Daily Traffic/Vehicle Miles Traveled Benefits

FUNDING STRATEGIES

This section identifies a variety of sources to fund bicycle and pedestrian infrastructure projects, programs, and studies.

- Local and Regional Programs
- Competitive Grant Programs
- Other State Funds

PROJECT PRIORITIZATION

Project prioritization criteria will guide a strategic approach to implementing projects that best align with community goals while maximizing limited funding.

Prioritized Bicycle Projects and Prioritized Pedestrian Projects

- Tier 1: High Priority Projects
- Tier 2: Priority Projects
- Tier 3: Other Projects

IMPLEMENTATION PLAN

With limited and competitive funding, project implementation needs to be feasible, fundable, and sustainable. Projects are sorted into four implementation categories based on the combined results of two evaluations: project priority and project feasibility. Each evaluation scores projects on specific criteria.

Implementation Categories

- Short term
- Long term
- Opportunity improvements
- Low priority

The City of Riverside has over 150 miles of bikeways throughout the City. The trail network, managed by the City's Parks, Recreation and Community Services Department (PRCSD), features a variety of paved and unpaved offerings catering to the City's walking, hiking, biking, and equestrian communities.

The City's trails system plays an important role in Riverside's identity, celebrating its abundant natural resources, providing easily accessible outdoor recreational opportunities to residents, connecting neighborhoods to parks and other community resources, and offering non-motorized commuters a network for getting to and from work, school, and daily errands.

FIGURE 4-1 PEDESTRIAN RECOMMENDATIONS

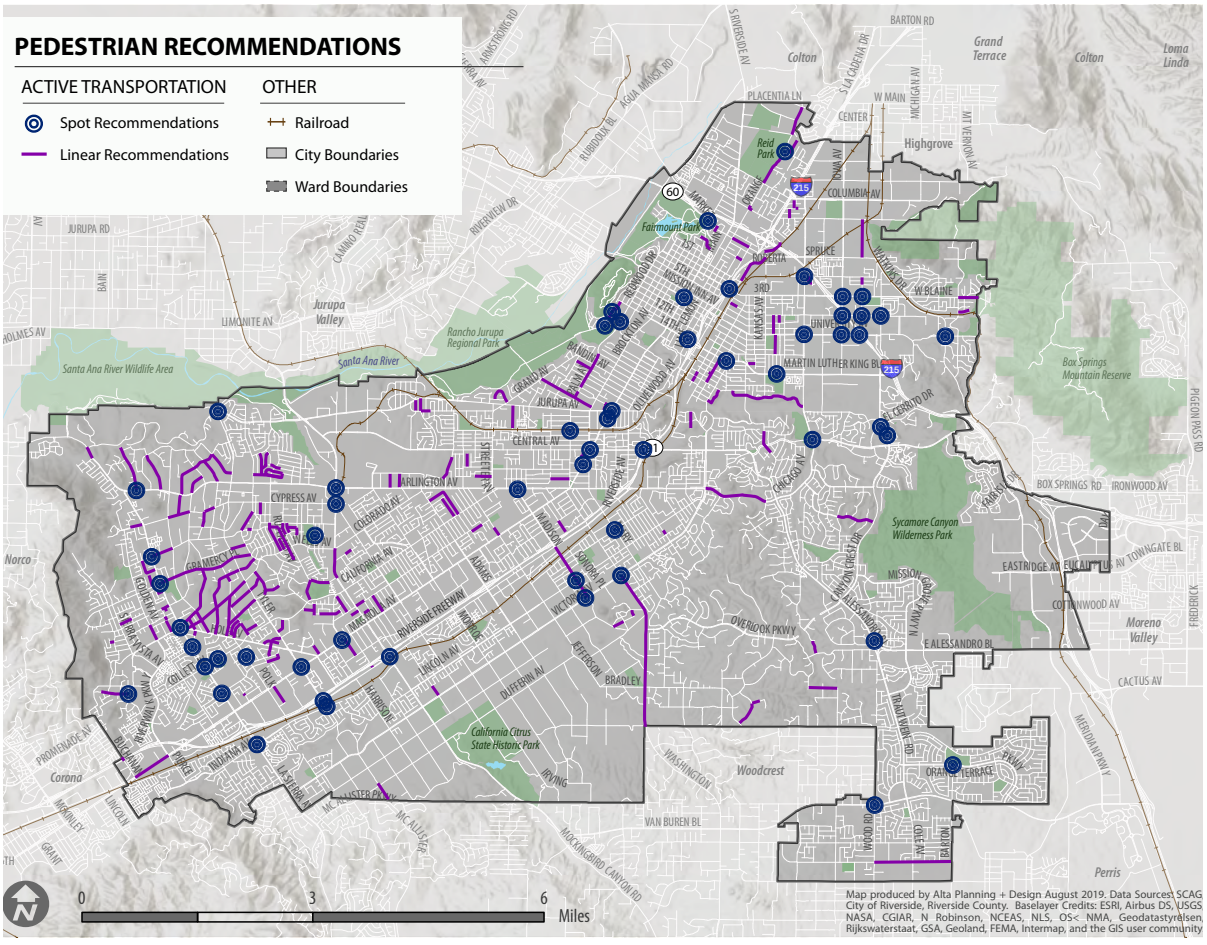
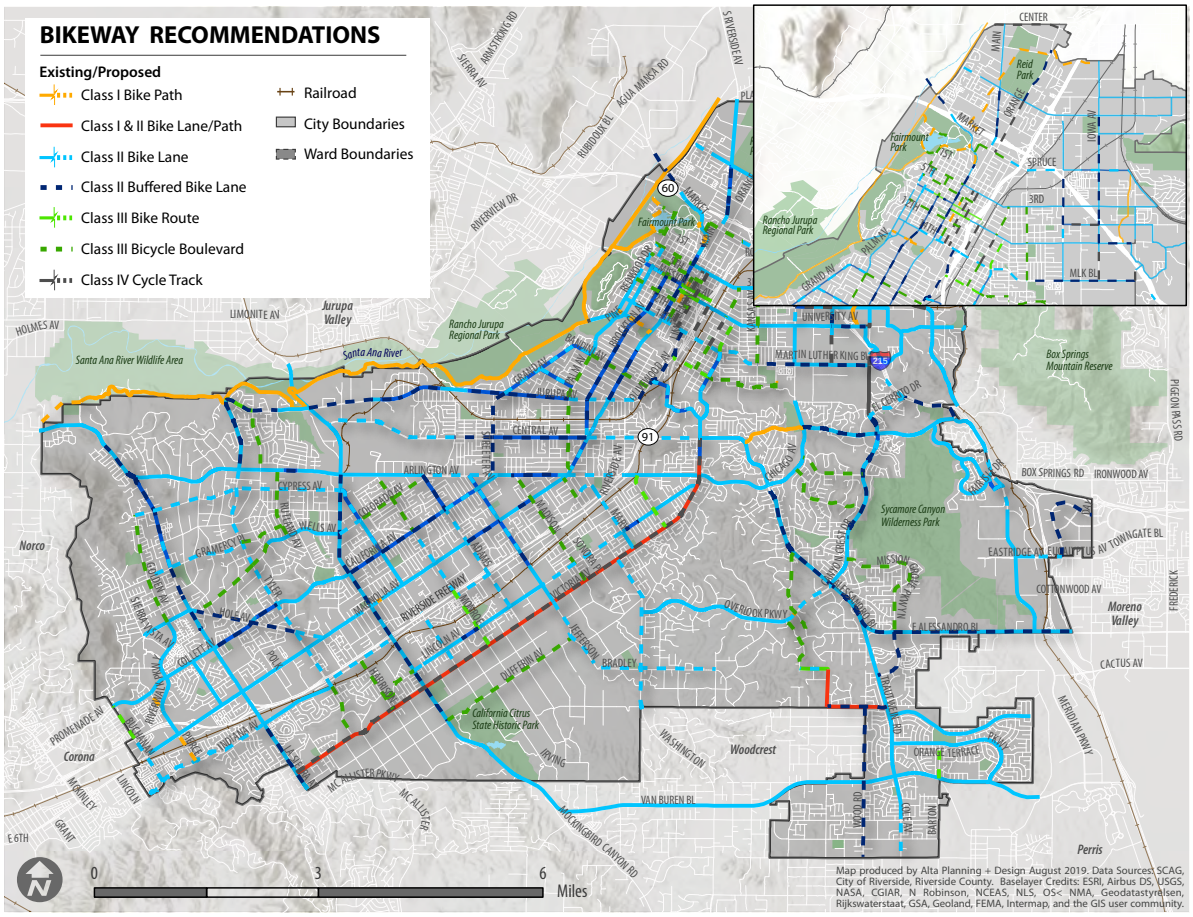


TABLE 4-1 BIKEWAY RECOMMENDATIONS MILEAGE

BIKEWAY CLASS	NAME	EXISTING (MILES)	PREVIOUSLY PLANNED (MILES)	RECOMMENDED (MILES)	UPGRADED (MILES)	TOTAL (MILES)
Class I	Shared Use Path	14.9	16.2	1.5	0.3	32.6
Class I & II	Bike Lane with Side Path	8.3	-	-	-	-
Class II	Bike Lane	122.3	48.0	40.5	2.2	210.8
Class IIB	Buffered Bike Lane	7.2	-	30.7	18.0	37.9
Class III	Bicycle Route	2.3	40.9	1.4	-	44.6
Class IIIB	Bicycle Boulevard	-	-	27.7	-	27.7
Class IV	Separated Bikeways	1.4	0.5	9.6	7.5	11.5
TOTAL		**156.4**	**105.6**	**111.4**	**28.0**	**365.0**

FIGURE 4-2 BIKEWAY RECOMMENDATIONS



Section 4.2: Introduction

The City of Riverside Active Transportation Plan (AT Plan) integrates walking, bicycling, and other transportation modes into a single plan that includes policies, infrastructure recommendations, and supporting programs, as well as identifies context specific funding sources, prioritized infrastructure projects, and implementation strategies. The AT Plan is one component of the PACT, (Pedestrian Target Safeguarding Plan, Active Transportation Plan, a Complete Streets Ordinance, and a Trails Master Plan) for Riverside. These Citywide Plans provide a framework for a multi-modal network for the City of Riverside's future bicycle and pedestrian improvement projects. Proposed plan recommendations are designed to increase safety, comfort, and accessibility for pedestrians and cyclists and ultimately expand utilization of these alternate modes of transportation. The AT Plan will guide current and future decision-makers toward a seamless and integrated active transportation network inclusive of all residents, needs, and destinations. The AT Plan's vision statement was developed in conjunction with and in support of the City of Riverside's mission [1].

1 *The City of Riverside is committed to providing high quality municipal services to ensure a safe, inclusive, and livable community.*

Vision & Goals

RIVERSIDE AT PLAN VISION STATEMENT: *RIVERSIDE WILL BE A MODEL COMMUNITY FOR MULTI-MODAL TRAVEL THAT PROVIDES SAFE AND COMFORTABLE CONNECTIONS TO COMMUNITY DESTINATIONS WHILE PROMOTING HEALTHY ACTIVE MOBILITY OPTIONS FOR ALL AGES AND ABILITIES.*

Sustainable Riverside: triple bottom line approach to sustainability.

The goals for the AT Plan were identified based on community input, the existing conditions analysis, and discussions with stakeholders and City staff. The goals are intertwined within each section of the AT Plan and drive all the recommendations.

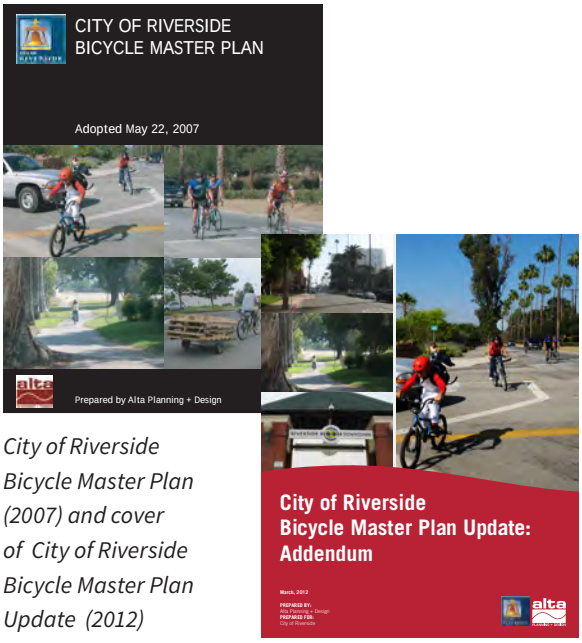
- Healthy - Promote citywide and regional transportation goals through investments in active transportation that create a culture of walking and biking.
- Economic Prosperity - Create an interconnected recreation and transportation network linking on-street facilities with existing trails, employment and commercial centers.
- Safety- Improve safety, reduce collisions, and create comfortable corridors for walking and biking in Riverside.
- Accessible - Enhance access to community destinations (parks, schools, work, libraries, shopping areas and community centers) and transit (Metrolink stations).
- Environmental Stewardship - Reduce Vehicle Miles Traveled (VMT) by developing an active transportation network that is a viable alternative to vehicle travel.
- Socially Responsible - Promote equitable and socially responsible investment across Riverside that bolsters community resilience.

Context and History

The Riverside Active Transportation Plan builds upon the foundation of the City's 2007 Bicycle Master Plan and 2012 Bicycle Master Plan Update: Addendum. In the past 10 years, new innovations in bicycle infrastructure design have been approved by the California Department of Transportation (Caltrans) and implemented throughout California. The Federal Highway Administration (FHWA) has developed new pedestrian measures tied to improving the safety of people walking and biking. Across the country, different campaigns and movements, such as Vision Zero, Complete Streets, and Safe Routes to School (SRTS) have gained momentum, focusing on implementing more safety improvements for all ages and abilities to bike and walk.

As part of the PACT planning process, a review of the policies, data, and recommendations for each of the following plans was performed to ensure foundational cohesiveness.

- City of Riverside General Plan (2007)
- City of Riverside Bicycle Master Plan (2007)
- University Neighborhood Plan (June 2008)
- Eastside Neighborhood Plan (June 2009)
- City of Riverside Bicycle Master Plan Update: Addendum (2012)



City of Riverside Bicycle Master Plan (2007) and cover of City of Riverside Bicycle Master Plan Update (2012)

- City of Riverside Restorative Growthprint - Climate Action Plan (RRG-CAP) (2014)
- Biking in Fresh Air: Consideration of Exposure to Traffic-Related Air Pollution in Bicycle Route Planning (2017)
- Riverside Transit Agency First and Last Mile Mobility Plan (2017)
- City of Riverside, California Downtown Specific Plan (Amended 2017)
- Western Riverside Council of Governments Active Transportation Plan (2018)
- Riverside County Comprehensive Trails Plan (2018)
- Marketplace District Plan (March 2019)
- City or Riverside traffic code, regulations, and policies (Version: Aug 1, 2019)
- Safe Routes to School Program

See Appendix C: Plan Policy Review for additional information.

What Was Heard

Community and stakeholder participation played a central role in shaping this plan. Participation included three technical advisory committee (TAC) meetings, over 30 community-wide public events, an interactive web map, and a community survey.

See Community Engagement Section of the PACT for additional information. During this planning process, community members expressed support for the following efforts illustrated in Table 4-2.

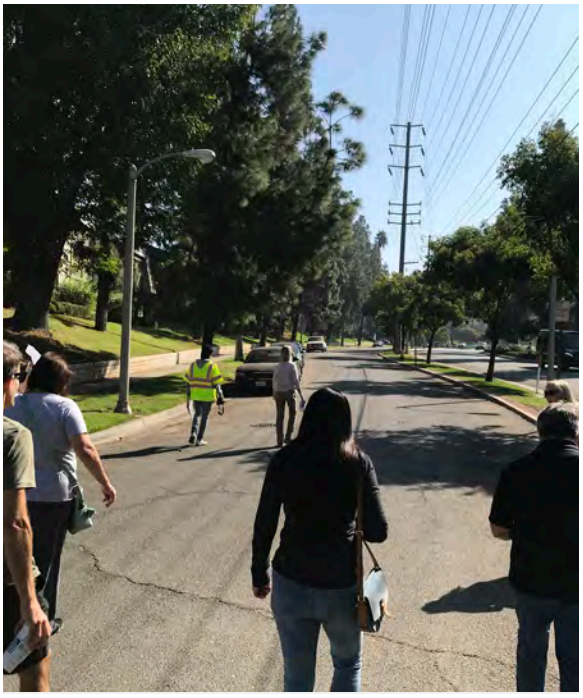


Photo Caption: Community Walk Audit in Canyon Crest neighborhood.

TABLE 4-2 PUBLIC INPUT GUIDING NETWORK RECOMMENDATIONS

WHAT WAS HEARD	WHAT'S PROPOSED
Imbalance of infrastructure conditions between Riverside wards.	**Make it Equitable** Provide improved access, facilities, and amenities to under invested areas of the City.
Upgrade sidewalks, crossing facilities, and bikeways to improve the walking and biking experience in Riverside.	**Make it Connected** Develop a comprehensive network of on-street and off-street facilities and shared use paths throughout Riverside, including through open spaces/parks, will connect to destinations and existing trails.
Address conflict areas between vehicles and bicyclists/ pedestrians.	**Make it Safer** Improve safety by reducing bicycle and pedestrian collisions through safe and comfortable facilities.
Concerns that commuting routes often require utilizing high volume, high speed arterial roadways.	**Make it Sustainable** Increase and improve facilities to job centers, education, retail, parks and libraries, schools, recreational centers, transit, and other neighborhood destinations.

Section 4.3: Goals, Objectives, and Actions

Goals, Objectives, and Actions

The AT Plan's goals reflect the priorities expressed by the community throughout the public outreach phase. Discussions with City departments, best practices across the nation, and input from community stakeholders have shaped the proposed strategies and policies intended to help the City achieve these goals.

Photo Caption: Cyclist waiting to cross Arlington Ave.

Goal 1: Economic Prosperity

CREATE AN INTERCONNECTED RECREATION AND TRANSPORTATION NETWORK LINKING ON-STREET FACILITIES WITH EXISTING TRAILS, EMPLOYMENT AND COMMERCIAL CENTERS.

Objective 1: Design a connected and comfortable bicycle network that serves people of all ages and abilities.

Action 1.1: Require review of the AT Plan as well as guidance from the National Association of City Transportation Officials (NACTO), Riverside Complete Streets Ordinance, and the most recent state and federal design guidelines when building on-street and off-street bicycle facilities.

Action 1.2: Build a connected network of bikeways for all ages and abilities, with a foundation of Class I to Class IV bicycle facilities.

Action 1.3: Continue to install bicycle detection markings, bicycle loop detection devices, or bicycle video detection devices at all intersections.

Objective 2: Continually evaluate opportunities to reconfigure roadways with excess vehicular capacity to accommodate bicycle facilities.

Action 2.1: Narrow lanes to meet the City's Complete Streets Ordinance of 11-foot and 10-foot lanes, in order to create or expand bicycle facilities.

Action 2.2: Configure roadways where bicycling and pedestrian barriers are removed, such as highways, with over-crossings to reduce out-of-way travel.

Goal 2: Safety

IMPROVE SAFETY, REDUCE COLLISIONS, AND CREATE COMFORTABLE CORRIDORS FOR WALKING AND BIKING IN RIVERSIDE.

Objective 1: Continue to improve pedestrian mobility and identify locations within the existing network to facilitate pedestrian travel.

Action 1.1: Install best-practice intersection treatments, such as crosswalks and crossings, corner radii, and traffic signals to reduce automobile-pedestrian conflicts.

Action 1.2: Where public right-of-way is available, install sidewalks on retrofitted or repaved roads where sidewalks did not exist.

Photo Caption: Residents walking from Mt. Rubidoux along Glenwood Dr.

Action 1.3: Update the City's toolkit of available traffic calming measures to reflect best practices annually.

Objective 2: Continue to identify intersections for improvements that facilitate pedestrian travel and meet Americans with Disabilities Act (ADA) requirements.

Action 2.1: Implement best practice facilities, including flashing beacons, bulb-outs, pedestrian-scale DarkSky Friendly lighting, and protected intersections, at high collision intersection within the City.

Action 2.2: Update annually the City's tool kit of available traffic calming measures to reflect best practices.

Goal 3: Socially Responsible

PROMOTE SOCIALLY RESPONSIBLE AND EQUITABLE INVESTMENT BETWEEN ALL SEVEN WARDS IN RIVERSIDE WHILE FOCUSING ON DISADVANTAGED COMMUNITIES.

Objective 1: Implement pedestrian friendly designs and facilities.

Action 1.1: Utilize Riverside CSO to provide pedestrian facilities such as street trees, benches, waste receptacles, and landscaping in the furniture zone where development occurs.

Action 1.2: Develop a strategy with Riverside Transit Authority (RTA) to provide more pedestrian amenities such as benches and covered waiting areas at transit stops with real-time transit information.

Objective 2: Address barriers so that vulnerable populations can take part in the improvements.

Action 2.1: Seek opportunities for acquisition of pedestrian and cyclist safety equipment (helmets, lights, bells etc.) for distribution at community and school events and presentations.

Action 2.2: Provide free basic bicycle maintenance training and bicycle tool lending at libraries to empower residents to fix bicycle issues for minimal cost.

Action 2.3: Provide bike parking, fix-it stations, and hydration stations at community destinations such as: transit centers, community centers, and parks.

Action 2.4: Utilizing the data methodology in the AT Plan, prioritize active transportation projects in disadvantaged communities and low-income neighborhoods to ensure that they consist of at least 20% of total projects by 2040.

Objective 3: Promote education, encouragement, and outreach to further support safety.

Action 3.1: Continue to develop effective safety programs for youths, adults, and seniors that educate pedestrians and drivers of their rights and responsibilities.

Action 3.2: Continue to promote the City's 311 services to encourage residents to report sidewalk and road hazards within the City.

Goal 4: Health

PROMOTE CITYWIDE AND REGIONAL TRANSPORTATION GOALS THROUGH INVESTMENTS IN ACTIVE TRANSPORTATION THAT CREATE A CULTURE OF WALKING AND BIKING.

Objective 1: Leverage community resources to increase interest in bicycling and raise the bicycling mode share.

Action 1.1: Continue to support and participate in Bike to Work, National Bicycle Safety Month and other bike promotion events.

Action 1.2: Integrate bicycling encouragement programs into existing municipal programs and events where possible.

Action 1.3: Encourage businesses to apply for Bicycle Friendly Business status with the League of American Bicyclists.

Action 1.4: Apply for and achieve League of American Bicyclists Bicycle Friendly Community Silver status after implementation of priority projects and programs recommended in this plan.

Action 1.5: Coordinate implementation of the AT Plan with implementation and creation of a Safe Routes to School (SRTS) Plan so that children are encouraged to bike and walk to school.

Objective 2: Promote an active lifestyle that includes biking and walking.

Action 2.1: Fund programs that incorporate biking and walking into curriculum at district schools. Apply for an Office of Traffic Safety grant or other funding or resources for educational activities.

Action 2.2: Provide more opportunities for outdoor recreation via parks, "recreation-friendly streets," and joint-use agreements with school facilities.

Action 2.3: Maintain and update the City's bicycle map annually for public use.

Action 2.4: Establish a bicycle-friendly business program to encourage biking and walking by employees and customers.

Photo Caption: Residents waiting for the bus along University Ave.

Goal 5: Accessible

ENHANCE ACCESS TO COMMUNITY DESTINATIONS (PARKS, SCHOOLS, WORK, LIBRARIES, SHOPPING AREAS, SENIOR CENTERS AND COMMUNITY CENTERS) AND TRANSIT.

Objective 1: Increase access to jobs, retail, parks, libraries, schools, recreational centers, transit, and other neighborhood destinations.

Photo Caption: RTA bus stop at the Galleria at Tyler Mall.

Action 1.1: Implement the recommended active transportation network to safely and comfortably connect residential neighborhoods with destinations like employment centers, grocery stores, community centers, schools, bus stops, and shopping areas.

Action 1.2: Increase bicycle parking at neighborhood destinations such as schools, medical centers, grocery stores, and government offices utilizing City and County General funds as well as Developer Impact Fees.

Action 1.3: Evaluate impacted streets during pavement resurfacing to determine if pedestrian or bicycle facilities can be provided (e.g. bike lanes, wider curb lanes or shoulders) on an ongoing basis.

Action 1.4: Follow CSO guidance for pedestrain/bike provision when developing priority lists for overlay and construction projects, maintenance, and traffic control plans.

Action 1.5: Install wayfinding signage at identified locations to help guide bicyclists and pedestrians to key City amenities.

Action 1.6: Allocate benches, shade, Dark Sky Friendly lighting, and hydration amenities in areas with high volumes of people walking and biking.

Goal 6: Environmental Stewardship

REDUCE VEHICLE MILES TRAVELED (VMT) BY DEVELOPING AN ACTIVE TRANSPORTATION NETWORK THAT IS A VIABLE ALTERNATIVE TO VEHICLE TRAVEL.

Objective 1: Reduce air pollution, asthma rates, and greenhouse gas emissions.

Action 1.1: Build an active transportation network that encourages residents to choose modes of transportation other than driving by providing safe and accessible bikeways, robust pedestrian networks, and first/last mile access to transit.

Action 1.2: Achieve a 5% reduction in vehicle miles traveled annually as residents, workers, and visitors meet daily transportation needs, and using transit in lieu of driving by building 10 miles of bike facilities.

Action1.3: Require future land use plans to comply with the goals and recommendations identified in the Active Transportation Plan.

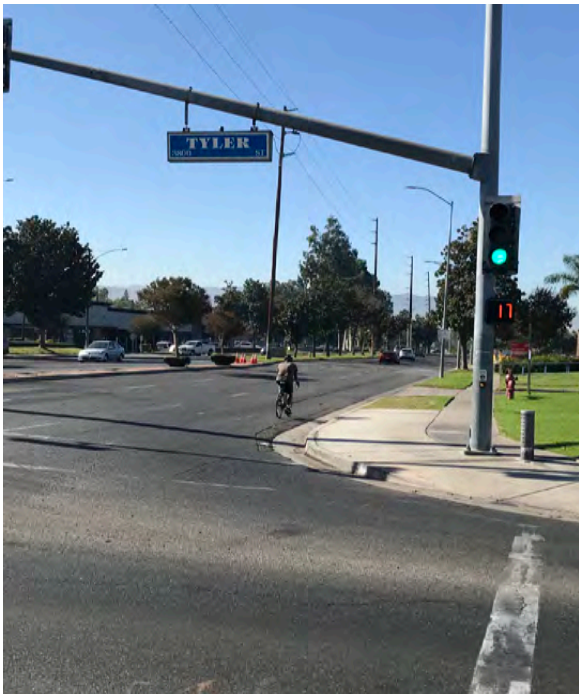


Photo Caption: Bicyclist riding along Magnolia Ave with no bike lane.

Section 4.4:
Facility Typologies

Types of Pedestrian Facilities

THERE ARE MANY FEATURES THAT CONTRIBUTE TO A CONVENIENT AND COMFORTABLE WALKING ENVIRONMENT. SIGNIFICANT INVESTMENTS AND COMMITMENTS TO FUTURE IMPROVEMENTS HAVE BEEN MADE THAT CONTINUE TO ENHANCE THE PEDESTRIAN EXPERIENCE IN RIVERSIDE.

Pedestrian support facilities improve the comfort of the walking environment.

SIDEWALKS & PATHS

Sidewalks form the backbone of pedestrian transportation networks. Most streets in the community have sidewalks or pathways on at least one side of the street. Some parts of the City do not have a continuous network of sidewalks, particularly in segments of Wards 6 and 7. These include low-density developments or areas previously built out while under County jurisdiction and subsequently annexed into the City.

Photo Caption: Typical sidewalk condition along Indiana Ave.

CROSSING FACILITIES

Crosswalks serve as an extension of the sidewalk and provide guidance for pedestrians who are crossing roadways by defining their path of travel. Crossings at intersections are not required to be marked, however, marked crosswalks are installed to channelize pedestrians and may help to enhance driver awareness of potential pedestrian activity and motorist yield compliance. Markings can be standard parallel lines or the "continental" high visibility pattern, which enhances visibility of the crossing and is considered best practice.

Photo Caption: Marked crosswalk across Van Buren Blvd.

CURB TREATMENTS

Curb ramps assist people with making the transition from the street to the sidewalk or vice versa. A sidewalk without a curb ramp is an accessibility barrier to someone in a wheelchair or pushing a stroller, forcing them back to a driveway and out into the street for access. Many of the City's older roadways have curb ramps; however, most feature the "diagonal" approach as opposed to the recommended "perpendicular" approach of placing curb ramps in both directions of travel.

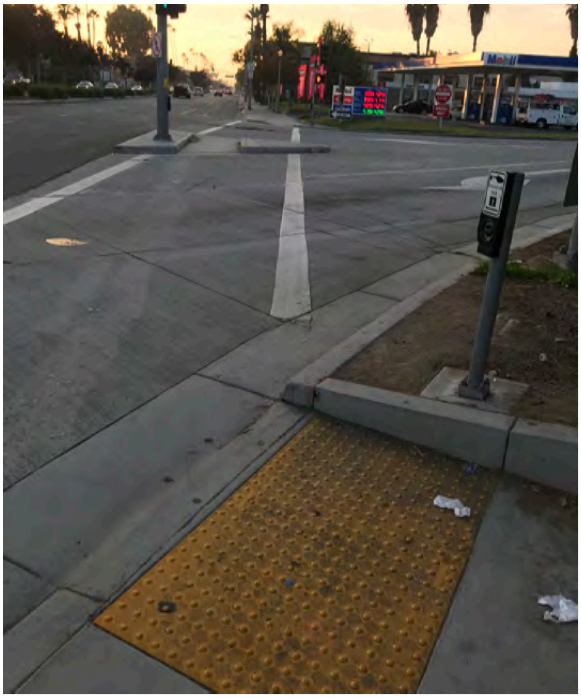


Photo Caption: Curb ramp with ADA truncated domes along University Ave.

BEACONS & SIGNALS

Pedestrian hybrid beacons sometimes known as a HAWK signal, are used to enforce motorists yielding to pedestrians at uncontrolled crosswalk locations. The beacon, when activated by a person wishing to cross, flashes yellow before displaying a solid red signal to motorists, requiring them to stop. The WALK symbol is then displayed signifying that the pedestrian may begin to cross the road. When the WALK phase is complete the beacon flashes yellow before returning to a dark inactive state. Riverside has installed HAWK signals at a number of high pedestrian activity uncontrolled crossings including at the corner of Market Street and 6th Street.

Photo Caption: HAWK signal and crossing along Brockton Ave.

Rectangular Rapid Flashing Beacons or RRFBs increase visibility of uncontrolled or mid block crosswalks with bright LED lights activated by a pedestrian push button.

PEDESTRIAN SUPPORT FACILITIES

Pedestrian support facilities improve the comfort of the walking environment. Examples include pedestrian-scale lighting on sidewalks and paths, bus stop amenities (e.g., shade structures and benches), enclosure and landscaping (e.g., trees and planters), trash receptacles, and others. People are less likely to walk to destinations or use public transit without amenities that could provide needed comfort to the walking experience.

Photo Caption: Pedestrian walking environment along Magnolia Ave.

The quality of pedestrian facilities across the City varies greatly. Most of the City is equipped with sidewalks or side paths adjacent to streets, though there are some exceptions. The Public Works Department has compiled a list of missing sidewalks throughout the City and identified significant gaps in the "West End" and other gaps along Central Avenue and Washington Street. Existing sidewalk facilities in Wards 1, 2, and 4 are largely better quality in terms of connectivity than those in Wards 3, 6, and 7 which have tend to have a greater number of missing or disconnected sidewalks.

Photo Caption: Missing sidewalks along Bushnell Ave.

Photo Caption: Missing sidewalks along Washington St.

TRAFFIC CALMING

Traffic calming measures such as traffic circles, curb extensions, chicanes, speed feedback signs encourage drivers to travel at a speed appropriate for the surrounding land uses and users. At various intersections and mid block locations, curb extensions would increase the visibility of pedestrians, shorten crossing distances, and reduce vehicle speeds. Further, at select major intersections in areas with high volumes of foot traffic, traffic circles may be considered to give people crossing the street priority and to reduce conflicts with turning vehicles.

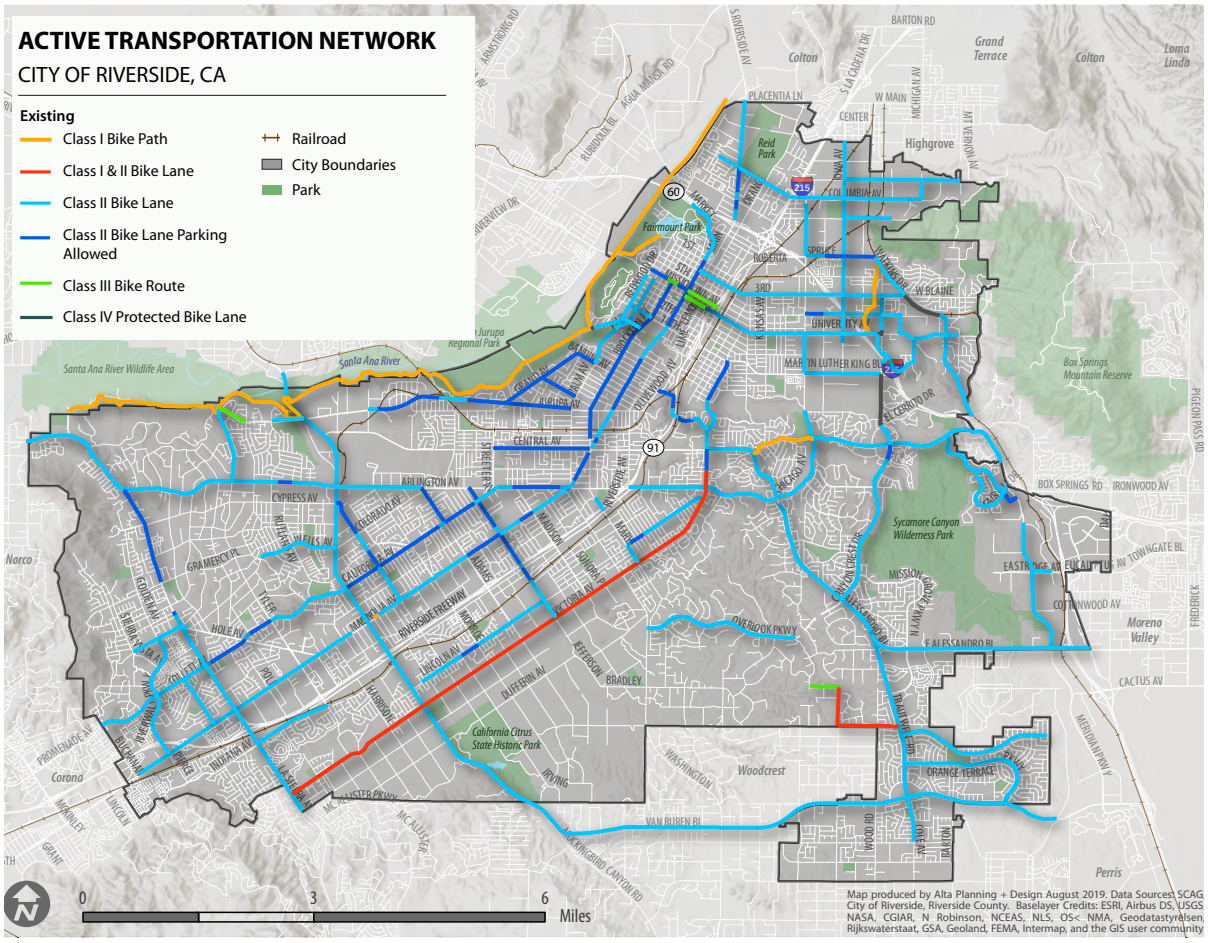
Photo Caption: Curb extension located in Santa Monica, CA.

Photo Caption: Chicanes located on residential roadway in Seattle, WA.

Types of Bicycle Facilities

AS OF 2020, THE CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) DESIGNATES FOUR CLASSES OF BICYCLE FACILITIES: CLASS I SHARED USE PATHS, CLASS II BICYCLE LANES, CLASS III BICYCLE ROUTES, AND CLASS IV SEPARATED BIKEWAYS. THE CITY'S CURRENT BICYCLE NETWORK HAS APPROXIMATELY 156 MILES OF BIKEWAYS, AS SHOWN IN FIGURE 4-3. DESCRIPTIONS OF EACH BIKEWAY CLASSIFICATION ARE INCLUDED IN THE FOLLOWING SECTION.

FIGURE 4-3 EXISTING BIKEWAYS MAP



CLASS I SHARED USE PATHS

Class I shared use paths are paved trails completely separated from the street. They allow two-way travel by people bicycling and walking and are often considered the most comfortable facilities for children and inexperienced riders as there are few potential conflicts between cyclists and motorists.

There are currently over 14 miles of Class I shared use paths in Riverside.

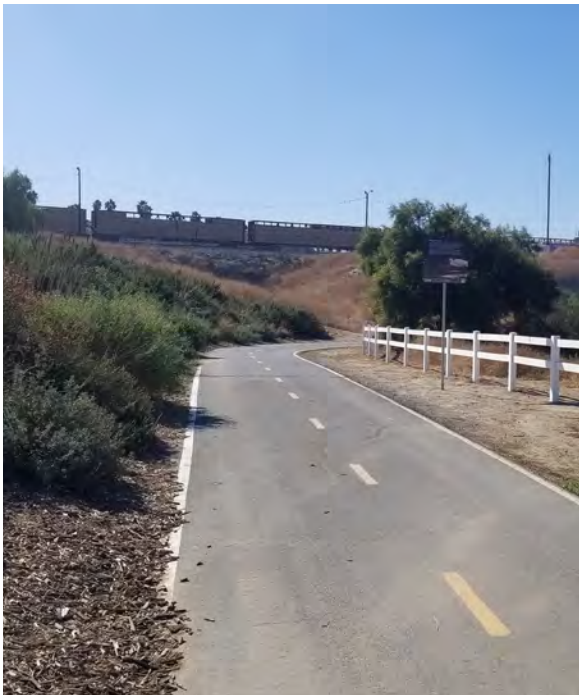


Photo Caption: Santa Ana River Trail

CLASS II BICYCLE LANES

Class II bicycle lanes are striped preferential lanes on the roadway for one-way bicycle travel. Some bicycle lanes include a striped buffer on one or both sides to increase separation from the traffic lane or from parked cars where people may open doors into the bicycle lane (buffered bicycle lanes are referred to in this Plan as “Class IIB”).

There are currently 122 miles of Class II bicycle lanes and approximately 7 miles of buffered bicycle lanes in Riverside.

Photo Caption: Class II Bicycle Lane located on Market St.

CLASS III BICYCLE ROUTES

Class III bicycle routes are signed routes where people bicycling share a travel lane with people driving. Because they are shared facilities, bicycle routes are primarily used on select low-speed streets. Some Class III bicycle routes include shared lane markings or "sharrows" that recommend proper bicycle positioning in the center of the travel lane and alert drivers that bicyclists may be present.

There are currently over 2 miles of Class III bicycle routes in the City.

Photo Caption: Class III Bicycle Route on Mission Inn Ave

CLASS III BICYCLE BOULEVARD

Other bicycle routes include more robust traffic calming features to promote bicyclist comfort and are known as "bicycle boulevards" (referred to in this Plan as "Class IIIB"). The Riverside Fire Department will be included in discussions about new or altered features on bicycle boulevards to ensure that access for emergency responders is maintained.

There are currently no Class III bicycle boulevards in the City.

Photo Caption: Class III Bicycle Boulevard with green Shared Lane Markings in Vancouver, BC.

Photo Caption: Class IV Separated Bikeway along Canyon Crest Dr.

Photo Caption: Class IV Separated Bikeway in Seattle, WA.

CLASS IV SEPARATED BIKEWAYS

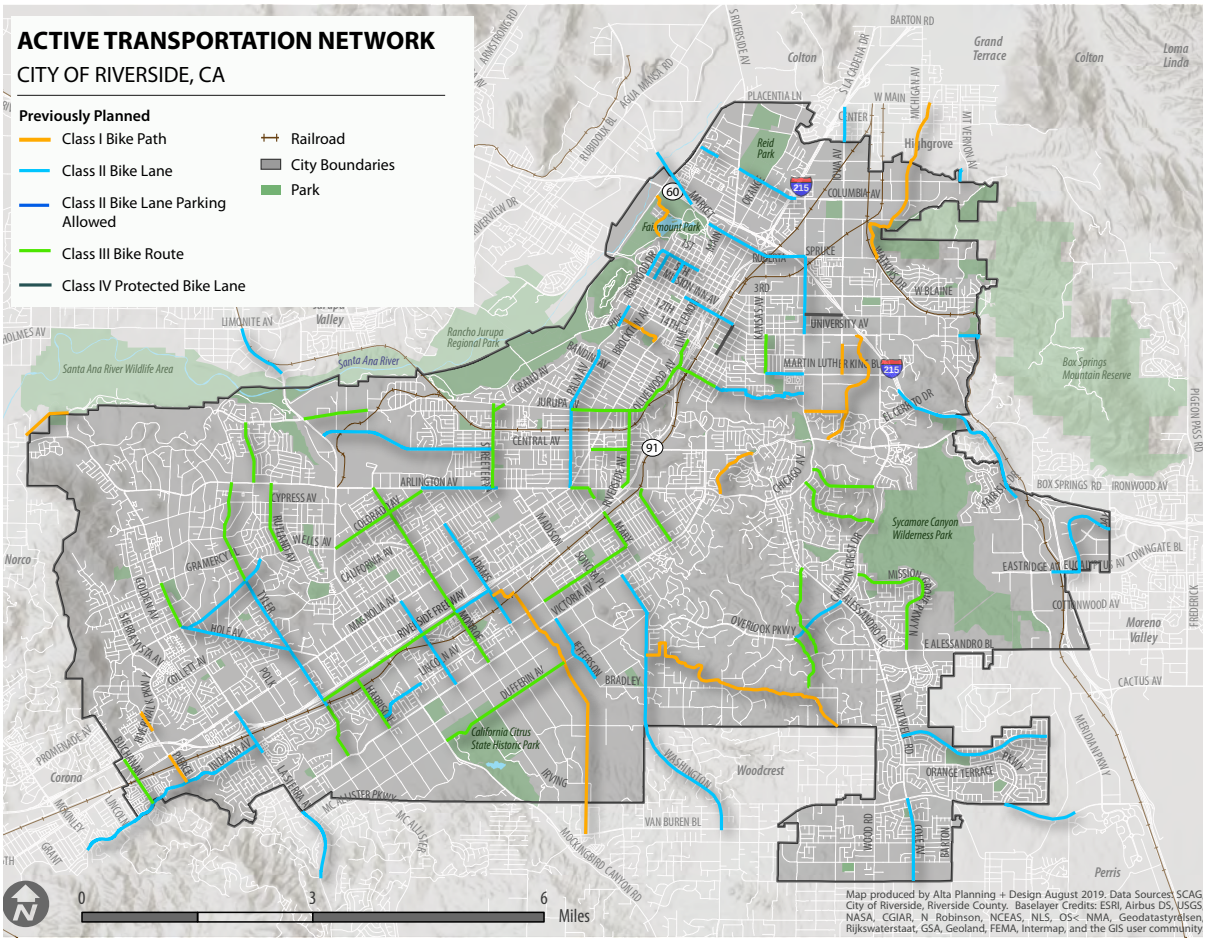
Class IV separated bikeways are on-street bicycle facilities that are physically separated from motor vehicle traffic by a vertical element or barrier, such as a curb, bollards, or vehicle parking aisle. They can allow for one- or two-way travel on one or both sides of the roadway.

Currently just over one mile of Class IV separated bikeway exists in Riverside.

PREVIOUSLY PLANNED FACILITIES

While Riverside's existing bikeway network covers over 150 miles, previous planning efforts have offered visions for a more comprehensive and connected network spanning more than an additional 105 total miles. Figure 4-4 shows the locations and types of bicycle facilities that have been recommended as part of the 2012 Bicycle Master Plan Addendum. This Plan builds on those recommendations and provides an updated vision of Riverside's active transportation network.

FIGURE 4-4 PREVIOUSLY PLANNED BIKEWAYS MAP



Section 4.5:
Needs Assessment


NO OUTLET
NO PARKING ENTIRE BLOCK
NO ACCESS MOUNT RUBIDOUX
4625 & 4638 Glenwood Dr.
Residents Only
No Entry
No Trail Access Beyond this Point

Active Transportation Needs Assessment

THE ACTIVE TRANSPORTATION NEEDS ANALYZED IN THIS SECTION FOCUS ON FOUR MAJOR COMPONENTS:

- **HEALTH + EQUITY**
- **CONNECTIVITY**
- **SAFETY**
- **PUBLIC INPUT**

Riverside currently has several high CalEnviroScreen scores throughout each of the seven wards as well as areas of extremely low household income levels within each ward.

HEALTH + EQUITY

The allocation of public resources for transportation infrastructure projects is important for all communities to provide safe, efficient and accessible modes of travel. In disadvantaged communities which may rely more heavily on walking, cycling, and public transportation, equitable allocation of resources is critical. Within Riverside, prioritizing walking and biking within disadvantaged communities acknowledges that active transportation options provide economic, social, and health benefits.

Photo Caption: City employees walking along the Main St Pedestrian Mall in front of City Hall

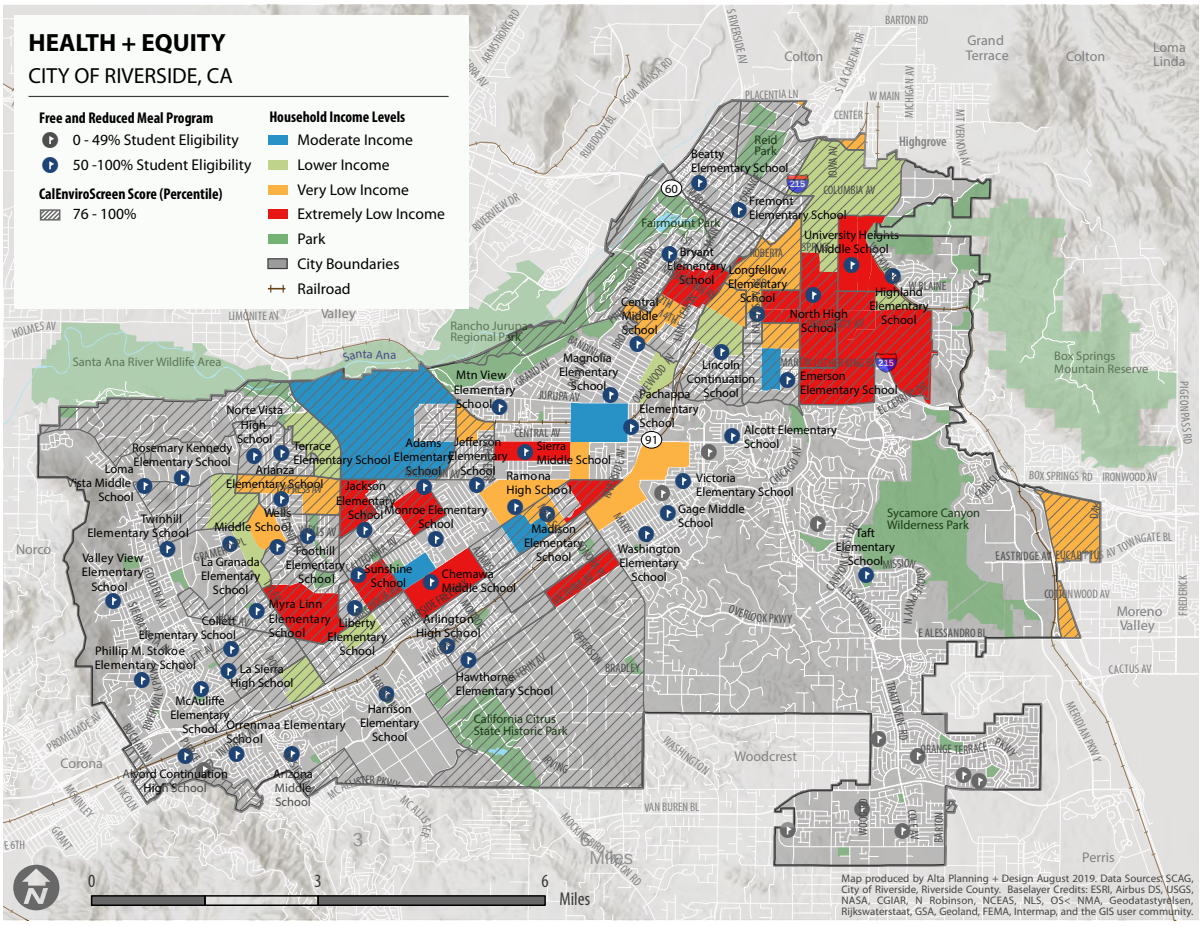
This analysis uses the California Communities Environmental Health Screening Tool (CalEnviroScreen) to identify California communities by census tract that are disproportionately burdened by, and vulnerable to, multiple sources of pollution. Communities that are most affected by many sources of pollution and that are often especially vulnerable to pollution's effects have a higher score (76%-100%) than communities that are less vulnerable.

This analysis also uses the Department of Housing and Community Development (HUD) criteria for Area Median Income limits by block group using moderate, lower, very low, and extremely low-income thresholds.

Lastly this analysis includes data on schools where students (over 50%) are eligible for Free and Reduced-Price Meals as well as schools that are currently participating in the meal program.

As shown in Figure 4-5, Riverside currently has several high CalEnviroScreen scores throughout each of the seven wards as well as areas of extremely low household income limits in all seven wards.

FIGURE 4-5 HEALTH AND EQUITY MAP

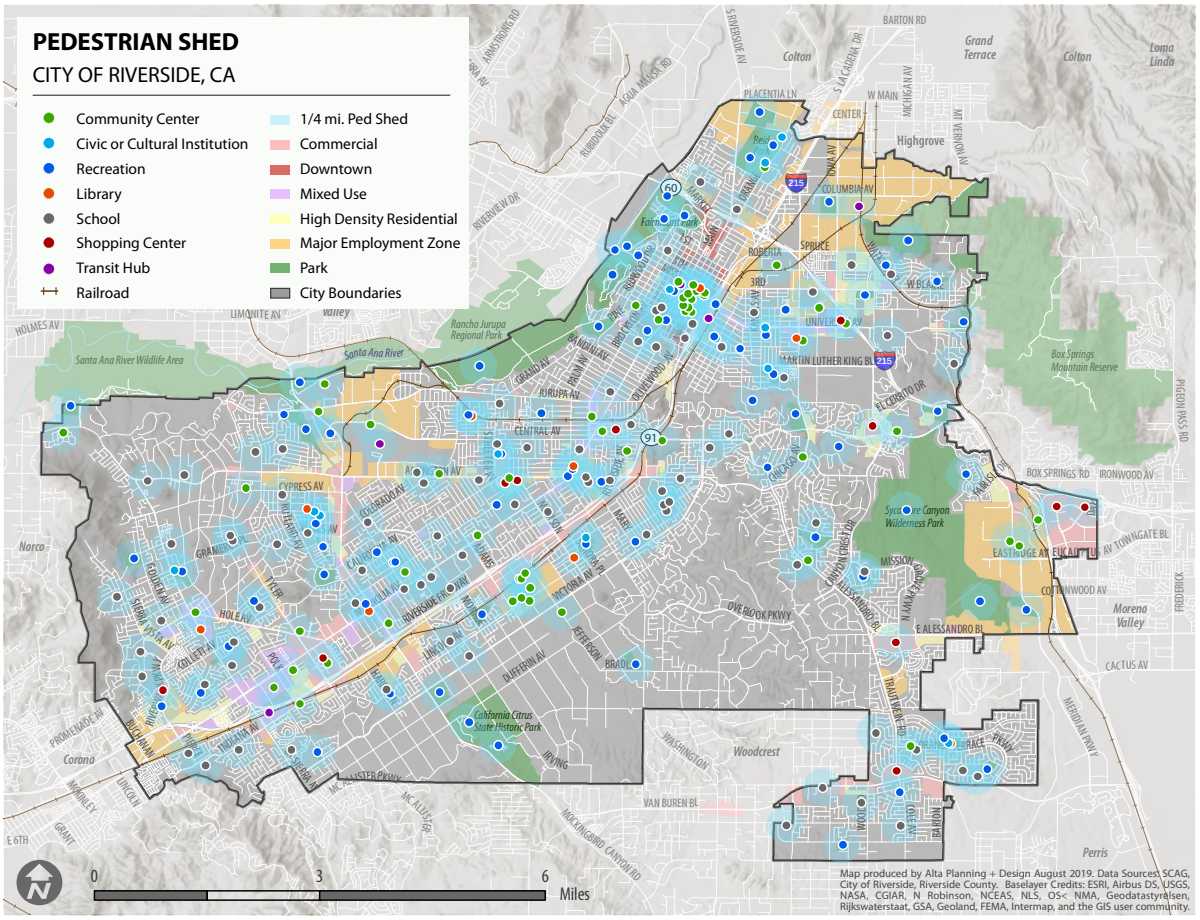


A key strategy to creating a pedestrian and bicycle-friendly environment is designing streets that are safe and comfortable for people to use.

CONNECTIVITY

Creating a connected and comfortable active transportation network helps people reach their walking destinations most efficiently and safely. This data set analyzed how to improve residents' walking and biking access to key neighborhood-serving destinations including schools, libraries, community centers, retail, public parks and transit connections.

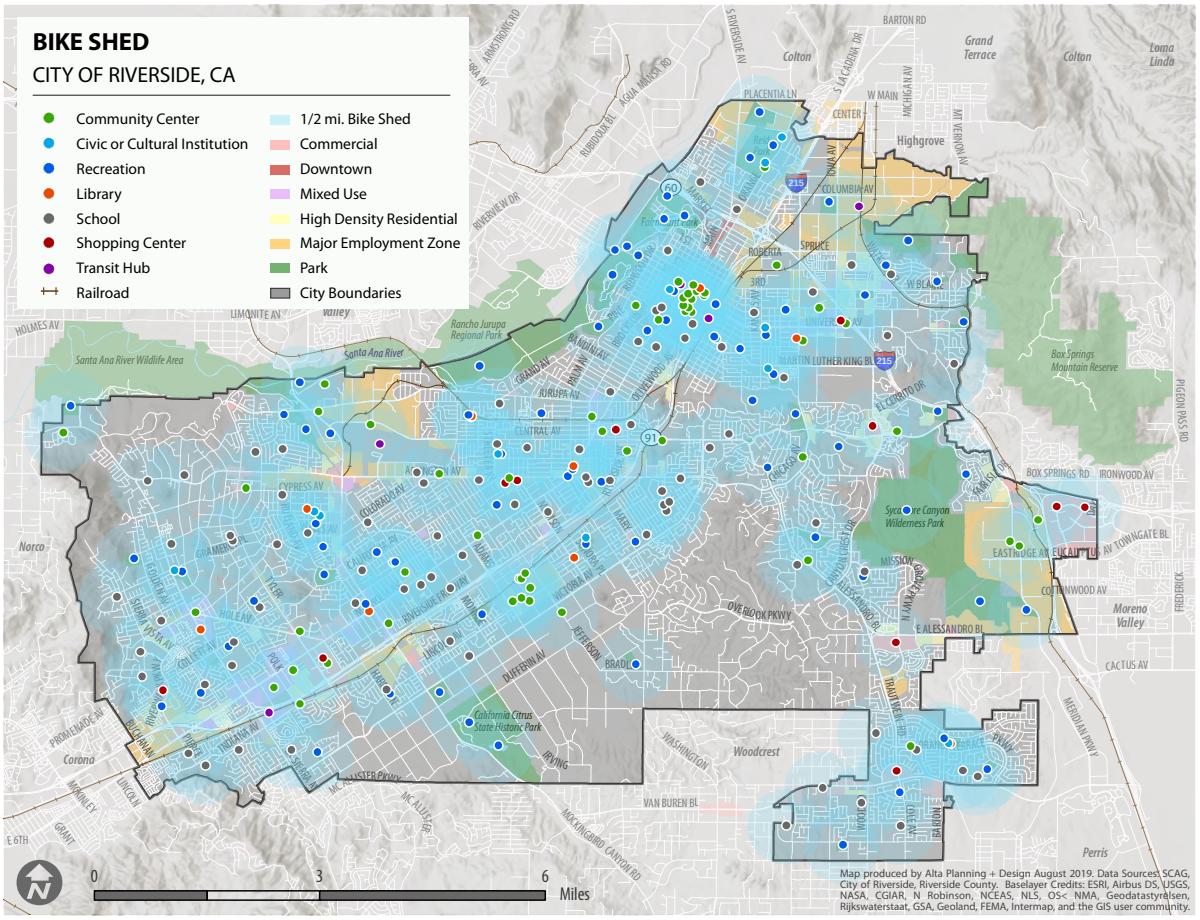
FIGURE 4-6 WALK SHED



A pedestrian shed of a quarter mile (.25 mi) was developed by determining the distance that could be covered by someone walking for five minutes at a typical pace, and a bike shed of a half mile (.5mi) was developed by determining the distance that could be covered by someone biking for 10 minutes at typical pace, displayed by drawing a half-mile circle around a destination. A five-minute walk and a ten-minute bike ride are considered to be a reasonable trip to reach a destination or to connect with other modes.

Figure 6 identifies the walk sheds for several community destinations and Figure 4-7 identifies the bicycle sheds for the same community destinations.

FIGURE 4-7 BICYCLE RIDE SHED



SAFETY

A key strategy to creating a pedestrian and bicycle-friendly environment is designing streets that are safe and comfortable for people to use.

Historical bicycle and pedestrian collision data was collected from the Riverside Police Department between 2015 - 2019 and locations with more than one bike or pedestrian involved during that time frame were evaluated.

There were 101 intersections where two or more pedestrian collisions have occurred. More than 30 intersections identified had at least three pedestrian collisions. The three intersections with the highest number of collisions are Tyler St/Magnolia Ave, University Ave/Iowa Ave, and Blaine St and Iowa Ave each having had at least ten pedestrian collisions. Van Buren Blvd, La Sierra Ave, and University Ave are other streets with a high number of recorded pedestrian involved collisions. The top 40 intersections can be found in Appendix A.

There were 66 intersections where two or more bike collisions have occurred. More than 20 intersections identified had at least three bike collisions. The two intersections with the highest number of collisions are Arlington Ave/Van Buren Blvd and Van Buren Blvd/Magnolia Ave each having had five bike collisions. Main St, La Sierra Ave, and Arlington Ave are other streets with a high number of recorded bicycle involved collisions. The top 40 intersections can be found in Appendix B.

Photo Caption: Intersection of Tyler St and Magnolia Ave

Photo Caption: Intersection of La Sierra Ave and Hole Ave

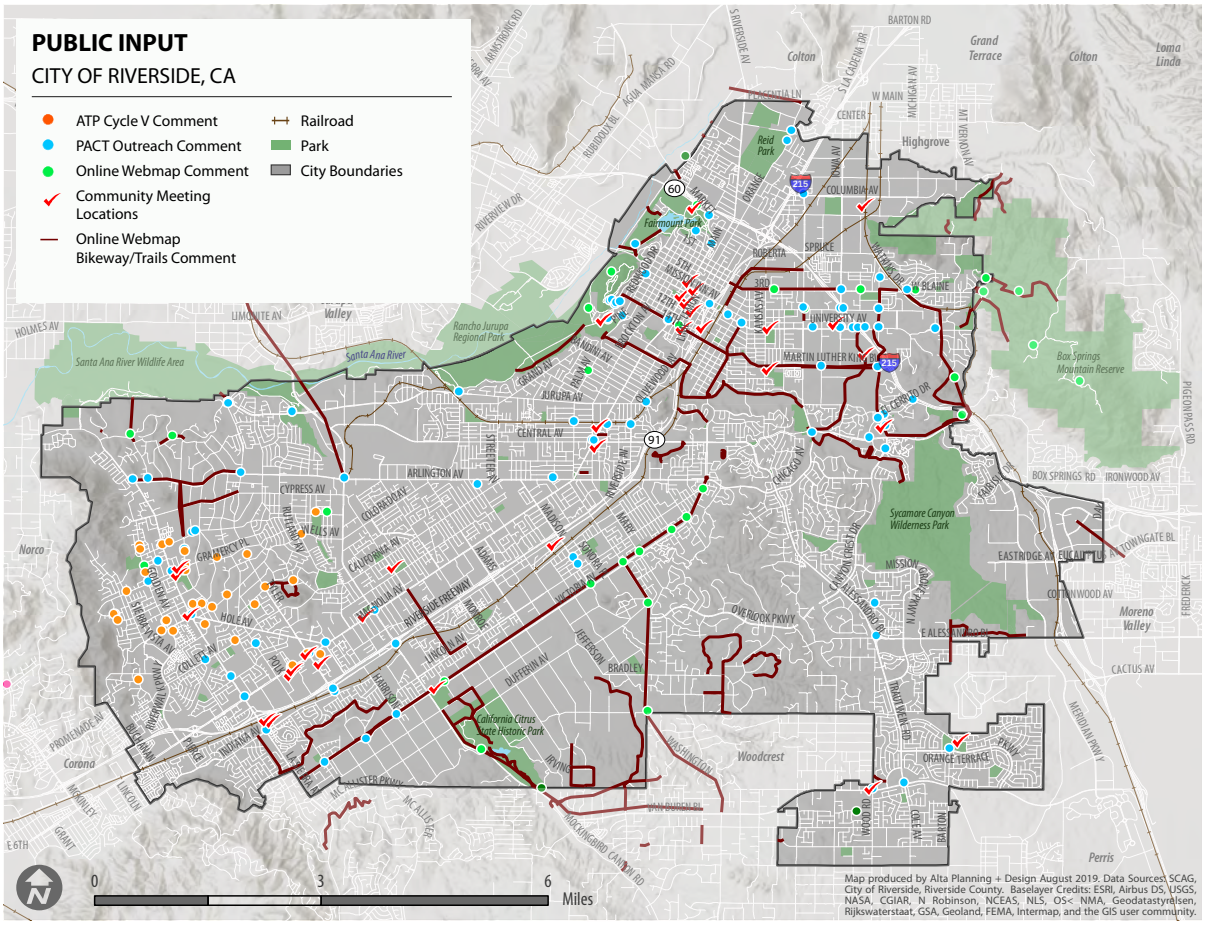
PUBLIC INPUT

Riverside residents and visitors helped identify barriers to walking in their neighborhoods through survey results, Online mapping, walk audit comments, public meetings, and outreach events. See Community Engagement of the PACT for all community engagement that was conducted.

Residents identified walking and biking issues which included missing sidewalks, missing/challenging intersection crossings, parking in bike lanes, and lack of lighting.

Figure 4-8 highlights the areas where barriers for biking and walking were identified as well as the locations of each of the community meetings/events that were attended.

FIGURE 4-8 PUBLIC INPUT MAP



BICYCLE LEVEL OF TRAFFIC STRESS

For cyclists, the Level of Traffic Stress (LTS) is the perceived sense of discomfort associated with riding in or next to high speed vehicular traffic. Studies have shown that traffic stress is one of the greatest deterrents to bicycling. The less stressful and therefore more comfortable a bicycle facility is, the wider its appeal to a broader segment of the population. A bicycle network will attract a large portion of the population if it is designed to reduce stress associated with potential motor vehicle conflicts and if it connects people bicycling with where they want to go.

Bikeways are considered low stress if they are on low volume roadways with slow speeds (e.g., a shared, low-traffic neighborhood street) or if greater degrees of physical separation are placed between the bikeway and traffic lane on roadways with higher traffic volumes and speeds (e.g., a separated bikeway on a major street).

A rating given to a road segment or crossing, the LTS indicates the amount of traffic stress use of a particular facility imposes on bicyclists. The analysis, based on methods developed by the Mineta Transportation Institute, considers posted speed, number of travel lanes, presence of a bicycle facility and land use context to calculate a bicyclist's comfort level.

The combination of these criteria creates four levels of traffic stress for the existing roadway network. However, this Plan introduced a fifth level (LTS 1.5) to differentiate between streets without specific bike improvements which nevertheless remain low-speed and low-stress for most people on bikes, versus streets with specific improvements and facilities to create a low-stress experience for riders (LTS 1). The principle of the scale remains the same: the lower the number, the lower the stress and the higher the level of comfort for people on bicycles. LTS 1 and 2 roads are typically the roadways that appeal to the "Interested, but Concerned" cyclists. For this analysis, levels of traffic stress range from 1 to 4:

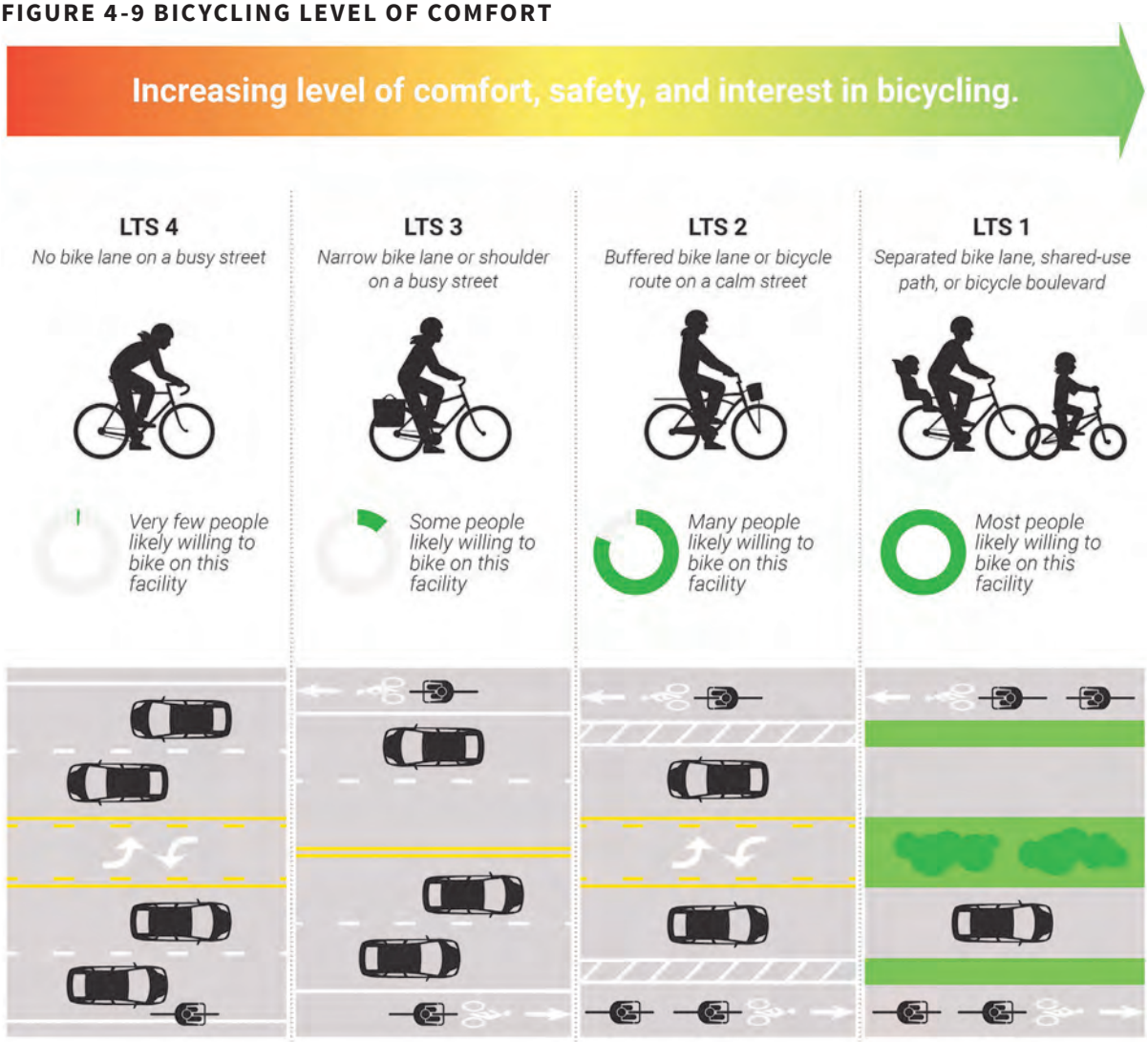
- **LTS 1**: Most Comfortable: Strong separation from traffic and improvements for people on bikes. Simple crossings. Suitable for children.
- **LTS 1.5**: Streets with low speeds and low traffic volumes, but does not feature a bicycle facility.
- **LTS 2**: Physical separation from higher speed and multi-lane traffic. A level of traffic stress that most adults can tolerate, particularly those sometimes classified as "interested but concerned."

- **LTS 3**: Involves interaction with moderate speed or multi-lane traffic, or close proximity to higher speed traffic. A level of traffic stress acceptable to those classified as "enthused and confident."
- **LTS 4**: Least Comfortable: Involves interaction with higher speed traffic or close proximity to high speed traffic. A level of stress acceptable only to those classified as "strong and fearless."

BICYCLING COMFORT LEVELS

Research indicates that the majority of people in the United States would bicycle if dedicated bicycle facilities were provided. However, only a small percentage of Americans (1-3 percent) are willing to ride if no facilities are provided. This research into how people perceive bicycling as a transportation choice has indicated that most people fall into one of four categories, illustrated in Figure 4-9.

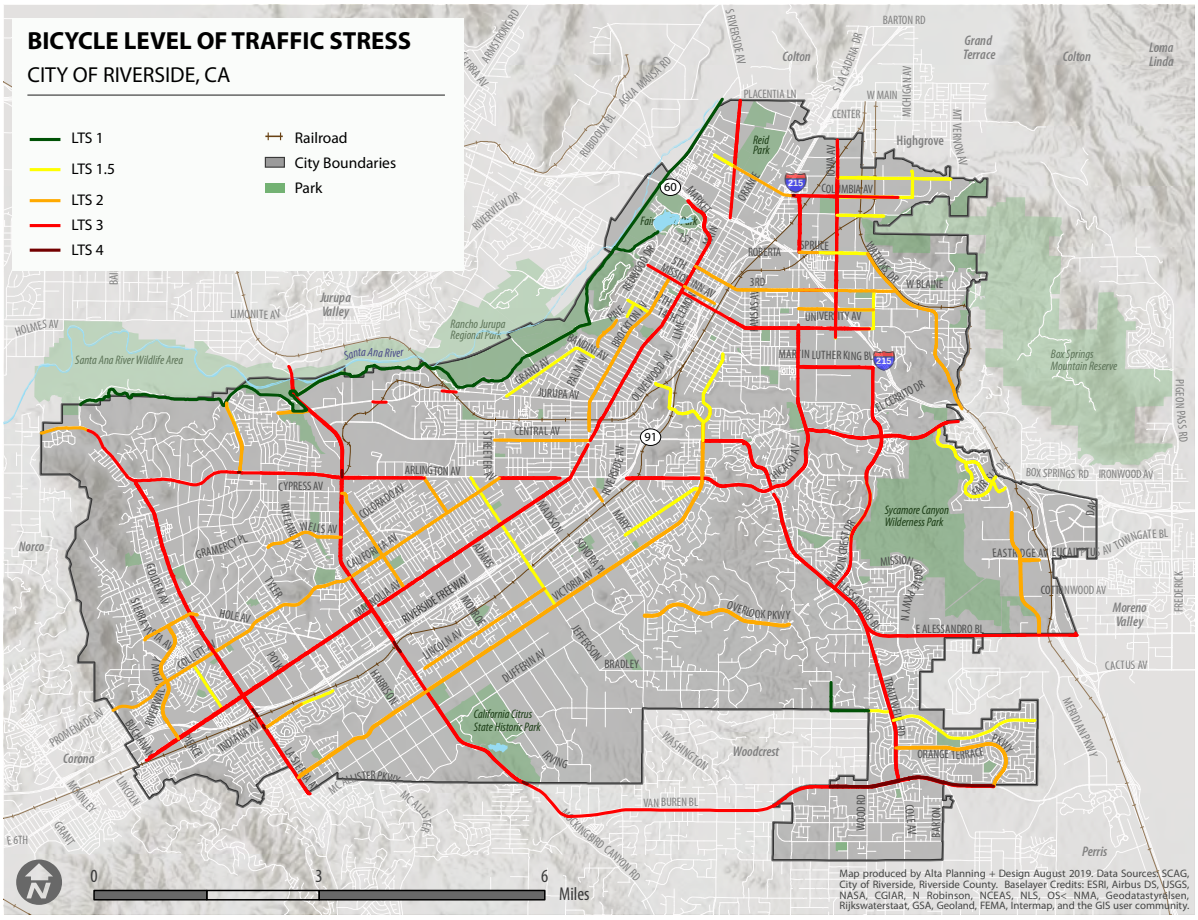
FIGURE 4-9 BICYCLING LEVEL OF COMFORT



For Riverside neighborhood streets that carry relatively little vehicular traffic and have slower vehicle speeds are considered LTS 1 and are considered suitable for people of all ages and abilities. Class I facilities, like the Santa Ana River Trail, are also considered LTS 1. Collector and arterial streets without separated bicycle facilities, such as Indiana Ave, are considered LTS 3 or 4, and are only suitable for somewhat confident or highly confident adult riders.

Figure 4-10 illustrates the Bicycle Level of Traffic Stress analysis for the City of Riverside.

FIGURE 4-10 BICYCLE LEVEL OF TRAFFIC STRESS



ACTIVE TRANSPORTATION NETWORK PLANNING PROCESS

Developing the pedestrian and bicycle network recommendations was a multi-step approach emphasizing collaboration with stakeholders and community members. A combination of the existing conditions analysis, previously adopted plans, studies, community feedback, and active transportation best practices informed these recommendations, as shown in Figure 4-11.

Key themes from the public input guided our overall recommendations seen in Table 4-2. Throughout the development of the plan, Various outlets allowed the public to voice their opinions about new or improved bicycle and pedestrian facilities. These outlets included: Walk Audit, the Online public input map, and the Virtual Workshop. Roadways and areas that were mentioned multiple times across different outreach methods were examined as high priority for inclusion in the recommended projects.

Photo Caption: Walk audit conducted with residents near Mt. Rubidoux Park.

Photo Caption: UC Riverside students walking to and from campus.

FIGURE 4-11 NETWORK DEVELOPMENT PROCESS

Community feedback was collected in a variety of different formats and strategies. A survey was created and administered at all community events and meetings that were attended. A public web map was developed to collect comments and network recommendations from the community.

The team conducted 10 walk audits with community members and attended 33 public meetings. Each of these strategies was crucial to build rapport, inform, and garner first hand knowledge from the community.

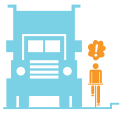
Data collection and fieldwork were key factors in reviewing the existing conditions. Existing bicycle facilities data was reviewed and an on the ground inventory was conducted to verify data during several site visits. Previously proposed bike facilities were reviewed for feasibility and other existing conditions data including community destinations, barriers to travel, and transit stops were identified.

The needs analysis for Riverside included examining several data factors. The City's equitable target areas were reviewed including areas designated as disadvantaged and low income. High vehicle pedestrian and bike collision roadways were reviewed. A live work play analysis was conducted to highlight the areas of activity within the City. All of these factors helped identify roadways in the City that require improvements.

4

SUPPLY ANALYSIS

Roadway Connectivity Gaps



Level of Traffic Stress Analysis

Land Use & New Development

Capital Projects

The supply analysis included reviewing: missing connections in the existing active transportation network, the level of traffic stress a bicyclist feels while riding on Riverside roadways, trip generator land uses as well as new development projects, and any future capital improvement projects. These factors highlighted significant areas to consider when developing recommendations for the active transportation network.

5

SYSTEM DEVELOPMENT

Prioritize Access

Revise Previously Proposed

Prioritize Gaps

Connect Existing Facilities

Identify Parallel Routes

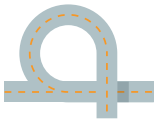
Address Barriers

The development of the network recommendations involved a systematic multi-step approach. The first prioritizing element was improving access for neighborhoods and wards. The previously planned facilities were then reviewed for viability. Gaps in the active transportation network were then identified and connecting new facilities to existing facilities was a key strategy during the process. Creating routes that overcome identified barriers was another priority when developing the network recommendations.

6

DESIGN DEVELOPMENT

User Needs



Built Form

- Speed Limit
- Traffic Volume
- Curb Cuts
- Functional Class
- Truck Traffic
- Number Of Travel Lanes

Roadway Characteristics

Once the recommendations were developed, the physical design of each of the recommendations was reviewed. It is crucial that the proposed recommendations fit the existing right-of way as well as roadway characteristics including traffic volume, number of lanes, and speed limit which are taken into consideration during design.

7 FEASIBILITY

Political Will

Funding

Health & Equity Impact

Feasibility

Each recommendation is then reviewed and analyzed regarding how and through which means it will be constructed. The proposed projects must not only add value to the community by addressing community needs but also be viable and deliverable from a funding perspective. The combination of funding opportunities and impact to the community contribute to the feasibility of each recommended project.

8 PROPOSED PLAN

Short Term

Medium Term

Long Term

The recommendations that are proposed within the plan will not be built or funded all at one time thus developing a strategy for phasing projects becomes important. A three-phase approach will be utilized to categorize proposed projects, Phase 1 - Short Term (5 years), Phase 2 - Medium Term (5-10 years), Phase 3 – Long Term (10+ years). Phase 1 - Short Term projects are ones that have political will, are fundable, require less inter-agency coordination, and are lower cost such as signing and striping projects. Phase 2 - Medium Term and Phase 3 – Long Term are extrapolated from there by complexity.

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Section 4.6: Network Recommendations


UC RIVERSIDE
AMY S. HARRIS

Pedestrian Recommendations

A NUMBER OF FACTORS ARE INVOLVED IN CREATING A MORE WALKABLE CITY, SUCH AS ADDRESSING COMFORT AND SAFETY OF STREETS AND CREATING A MORE VISUALLY APPEALING ENVIRONMENT. THE EXPERIENCE OF WALKING IS MUCH DIFFERENT THAN BIKING AND MORE GRANULAR. MISSING OR POORLY MAINTAINED SIDEWALKS AS WELL AS A DIFFICULT INTERSECTION CROSSING CAN GREATLY HAMPER THE WALKING EXPERIENCE.

This section outlines a number of priority areas and intersections that will be the focus of the pedestrian improvements for the City of Riverside. The following sections present the toolbox of strategies for these priority areas and intersections as well as the methodology for intersection typology identification.

This Plan recommends improving 51 intersections for pedestrian crossing as well as creating over 25 miles of new and enhanced sidewalk. The recommendations will improve the comfort of pedestrians and may create safer conditions for pedestrians along roadways and at intersections.

PEDESTRIAN SPOT IMPROVEMENTS

Typically located at intersections, spot improvements include one or more pedestrian infrastructure enhancements that fall within the following categories:

- Crossing Improvement
- Signal Improvement
- Transit Stop Improvement
- Walking Environment Improvement
- Sidewalk Improvement
- Lighting Improvement

PEDESTRIAN CROSSING TYPOLOGIES

In addition to the 51 locations mentioned, additional intersections were identified as proposed priority projects. To ensure equity among all wards, one priority project was identified per ward. Additionally, some improvement descriptions are more expansive than others as these were direct comments from the community. The following pages describe the variety of intersection types, common challenges, strategies for improvement, and examples of identified improvements.

Improvements at intersections of arterial roadways with cars moving at faster speeds differ from improvements on lower volume, local streets. These typologies are broken down by the characteristics of the intersection and include the appropriate infrastructure improvements for each. The typologies include:

- **Typology A:** Signalized intersection
- **Typology B:** Major street/minor street
- **Typology C:** Minor street/minor street
- **Typology D:** Trail Crossings/Mid block crossings
- **Typology E:** High-volume pedestrian areas
- **Typology F:** Highway interchanges and freeway crossings

The following pedestrian recommendation locations were identified through several data sets and analyses including, health and equity, connectivity, collision, and public input data points detailed in the Active Transportation Needs Analysis section on page 4-36. The data was reviewed as a collective with no single data set taking priority over another, with the objective of yielding an equitable distribution of recommendations amongst each ward within the City.

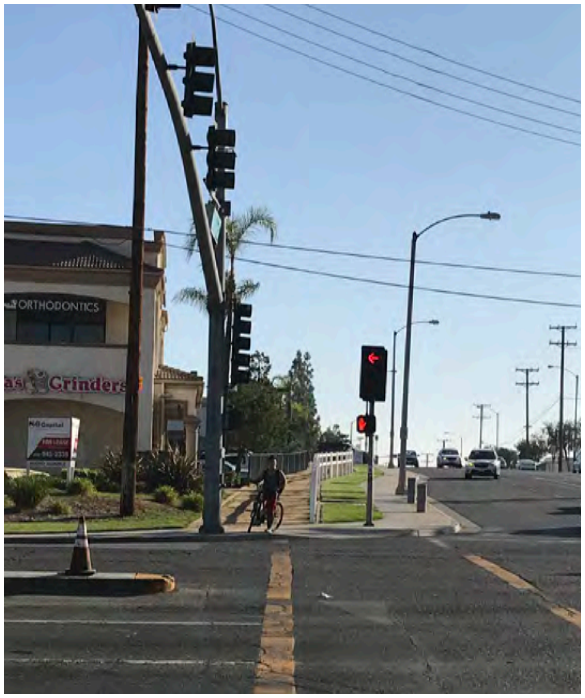

Photo Caption: Spot improvement identified at the intersection of Wood Rd and Van Buren Blvd

Photo Caption: Spot improvement identified intersection of La Sierra Ave and Indiana Ave

Photo Caption: Intersection of Brockton Ave, Magnolia Ave and Central Ave.

TYPOLOGY A. SIGNALIZED INTERSECTION

Common Challenges

- High vehicle speeds
- High vehicle volumes
- Free right-turn lanes
- Left-turn pedestrian conflicts
- Cars stop too close to the crosswalk
- Failure to yield to pedestrians

Tools

- Curb extensions
- No right on red
- Crosswalks and curb ramps
- High visibility crosswalks
- Slip lane removal
- Leading pedestrian intervals
- Conflict markings
- Signage and lighting
- Traffic circles
- Pedestrian Scramble
- Roundabout
- Flashing yellow arrows
- Advance limit lines
- Diagonal crosswalks

Identified Spot Improvements

- Blaine St and Iowa Ave
- Chicago Ave and University Ave
- Jurupa Ave and Magnolia Ave
- Iowa Ave and W Linden St
- Chicago Ave and Central Ave
- Madison St and Arlington Ave
- Central Ave and Magnolia Ave
- Wood Rd and Van Buren Blvd
- Indiana Ave and La Sierra Ave
- Van Buren Blvd and Arlington Ave
- Magnolia Ave and Van Buren Blvd
- Magnolia Ave and Tyler St

Photo Caption: Intersection of El Cerrito Blvd and Canyon Crest Dr.

TYPOLOGY B. MAJOR STREET/MINOR STREET

Common Challenges

- Failure to yield to pedestrians
- Unmarked crosswalks
- Lighting
- High vehicle speeds
- High vehicle volumes
- Long blocks without controlled crossings
- Left-turn pedestrian conflicts
- Cars stop too close to the crosswalk

Tools

- Curb extensions
- Signage and lighting
- Crosswalks and curb ramps
- Pedestrian crossing beacons at uncontrolled crossings
- Conflict markings and advance stop/yield pavement markings
- Traffic circles
- Flashing yellow arrows
- Advance limit lines
- Diagonal crosswalks

Identified Spot Improvements

- Rustin Ave and Blaine St
- 14th St and Victoria Ave
- Magnolia Ave and Elizabeth St
- Fairmount Blvd and Market St
- 14th and Olivewood Ave
- University Ave at entrance to University Village
- El Cerrito and Canyon Crest DR
- Rustin Ave and W Linden St
- La Sierra Ave and Collett Ave
- La Sierra Ave and Cochran
- Van Buren Blvd and Jackson St
- Campbell Ave and La Sierra Ave
- Grammercy Pl and La Sierra Ave
- La Sierra Ave and Minnier Ave
- Washington St and Victoria Ave

Photo Caption: Tequesquite Ave and Palm Ave

TYPOLOGY C. MINOR STREET/MINOR STREET

Common Challenges

- Failure to yield to pedestrians
- Unmarked crosswalks
- Parking too close to the corner (visibility)
- Incomplete stops (rolling stops)

Tools

- Curb extensions
- Signage and lighting
- Crosswalks and curb ramps
- Pedestrian crossing beacons at uncontrolled crossings
- Conflict markings and advance stop/yield pavement markings
- Red curb
- Flashing yellow arrows
- Advance limit lines
- Diagonal crosswalks
- LED Flashing Stop Signs
- Speed Feedback Signs

Identified Spot Improvements

- Western Ave and Arlington Ave
- W Linden St and Canyon Crest Dr
- Third St and Vine St
- Palm Ave and 14th St
- Watkins Dr and W Big Springs Rd
- Palm Ave and Dewey Ave
- Madison St and Lincoln Ave
- Collett Ave and Newby Dr
- Cass St and Polk St
- Knoefler and Ambs Dr
- Gramercy Pl and Corwin
- Marguerita St and Mary St
- Madison St and Victoria Ave

Photo Caption: Jurupa Ave and Tyler St at trail head to Santa Ana River Trail.

TYPOLOGY D. TRAIL AND MIDBLOCK CROSSINGS

Common challenges

- Uncontrolled crossings
- Vehicles have priority at unmarked crossings
- Lack of driver awareness
- Unmarked crosswalks

Tools

- Curb extensions
- Signage and lighting
- Crosswalks and curb ramps
- Pedestrian crossing beacons
- Wayfinding signs

Identified Spot Improvements

- Mt. Rubidoux Trail head and Glenwood Dr.
- Santa Ana River Trail Head - Tyler St. and Jurupa Ave.
- Reid Park Ruth H Lewis Center and Orange St.
- Magnolia Ave between Brockton Ave and Nelson St.
- Barton St and Orange Terrace Pkwy
- Trautwein Rd and Alessandro Blvd

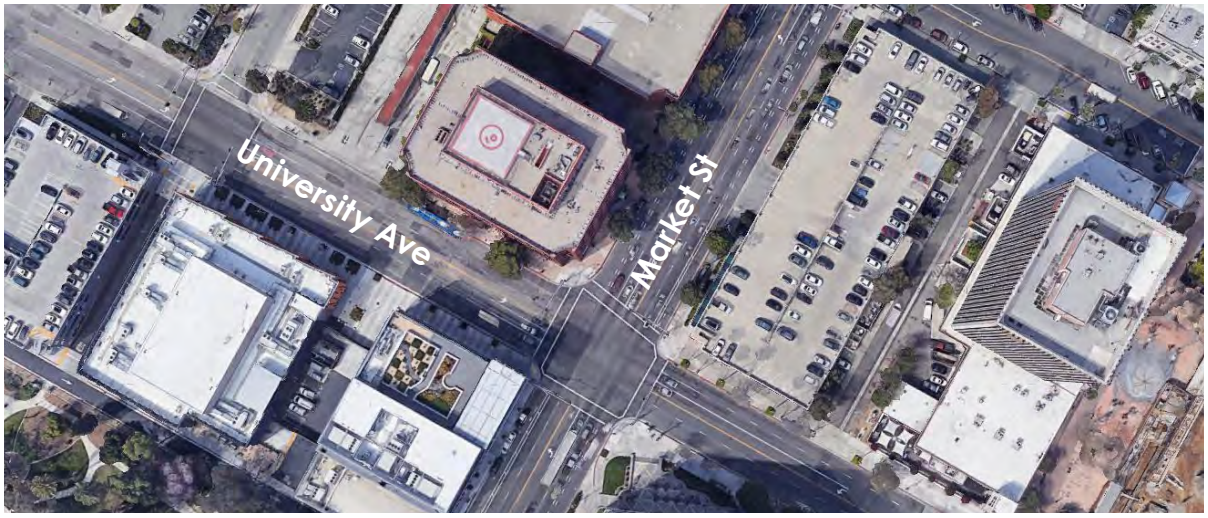

Photo Caption: Market St and University Ave.

TYPOLOGY E. HIGH VOLUME PEDESTRIAN AREAS

Common Challenges

- Impatient, distracted and aggressive drivers
- Limited sidewalk space
- Competing curbside uses (loading zones, shared mobility, transit stops)
- Limited pedestrian queuing space

Tools

- Curb extensions
- Crossing guards or traffic control
- High-visibility crosswalks
- Leading pedestrian intervals
- Pedestrian-only signal phase
- Extended crossing time
- Pedestrian Scramble

Identified Spot Improvements

- University Ave and Market St

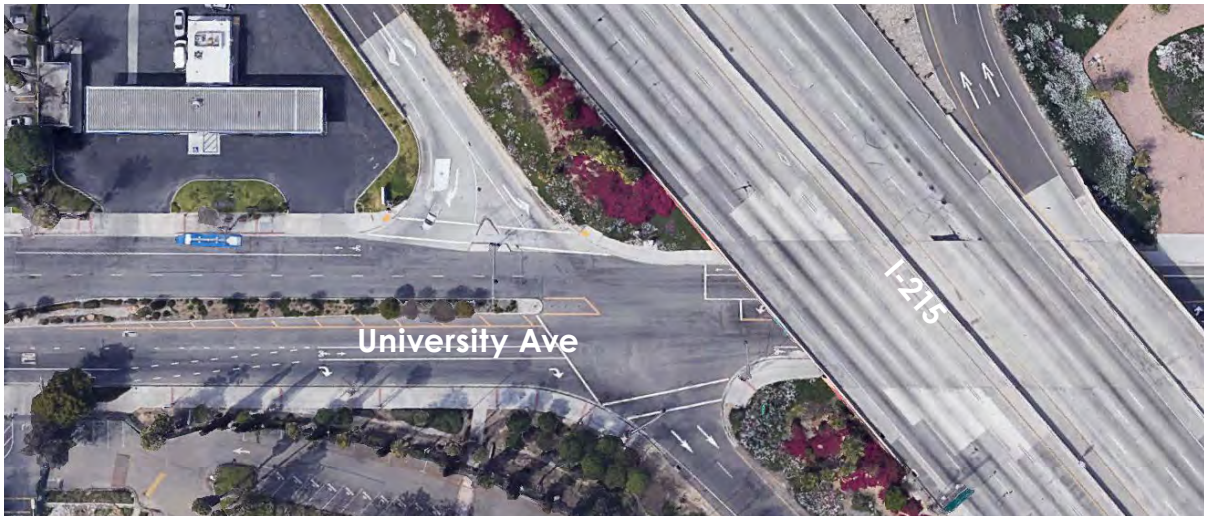

Photo Caption: University Ave and I-215.

TYPOLOGY F. FREEWAY INTERCHANGES

Common Challenges

- High vehicle speeds
- High vehicle volumes
- Drivers not expecting pedestrians
- Missing sidewalks
- Unmarked crossings
- Lighting
- Limited alternative routes

Tools

- Marked crosswalks
- Signs
- Pavement markings
- Sidewalks
- Lighting
- Slip lane removal
- On ramp lane removal

Identified Spot Improvements

- University Ave and I-215 interchange
- Van Buren Blvd and Indiana Ave
- Central Ave and SR-91 interchange
- Tyler St and Indiana Ave - North
- Tyler St and Indiana Ave - South
- Third St. and I-215

PEDESTRIAN CORRIDOR IMPROVEMENTS

A sidewalk network is critical to pedestrian accessibility and safety by allowing adequate space for pedestrian movement alongside roadways. In collaboration with the Technical Advisory Committee, resident input and City staff, Riverside wards were analyzed for their accessibility to nearby destinations, including schools, trails, parks, places of worship, and commercial centers.

Riverside has a robust system of well-maintained and consistent sidewalks.

However, there are a few areas within the City that lack sidewalks and good pedestrian connections and that could benefit from more frequent maintenance. These areas are predominantly located within wards 6 and 7 in the La Sierra and Arlington neighborhoods.

Recommended pedestrian projects Citywide are shown below in Figure 4-12. Recommended pedestrian projects at the ward level are shown on the following pages in Figures 4-13 to 4-19 and Tables 4-3 to 4-16.

FIGURE 4-12 PEDESTRIAN RECOMMENDATIONS

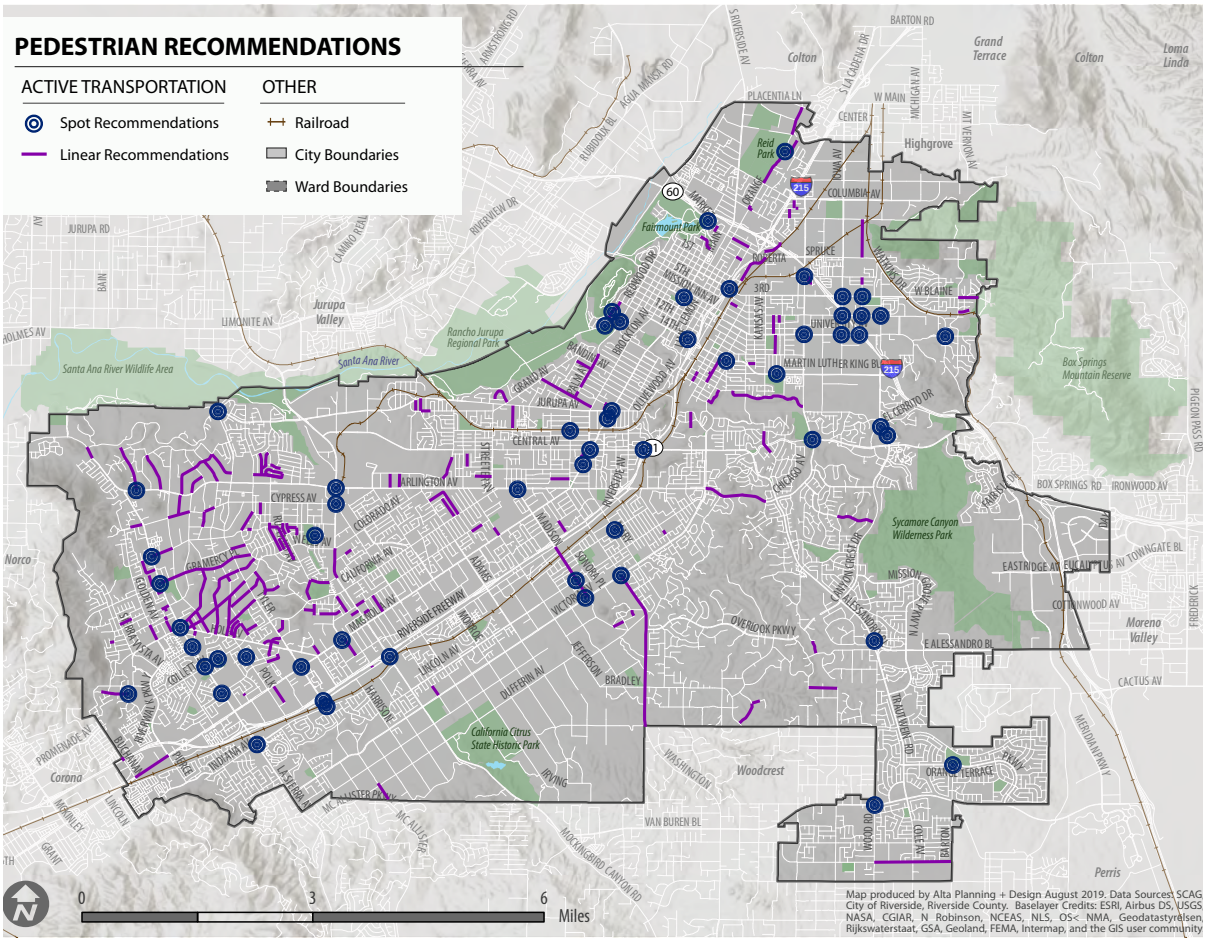

FIGURE 4-13 PEDESTRIAN RECOMMENDATIONS WARD1

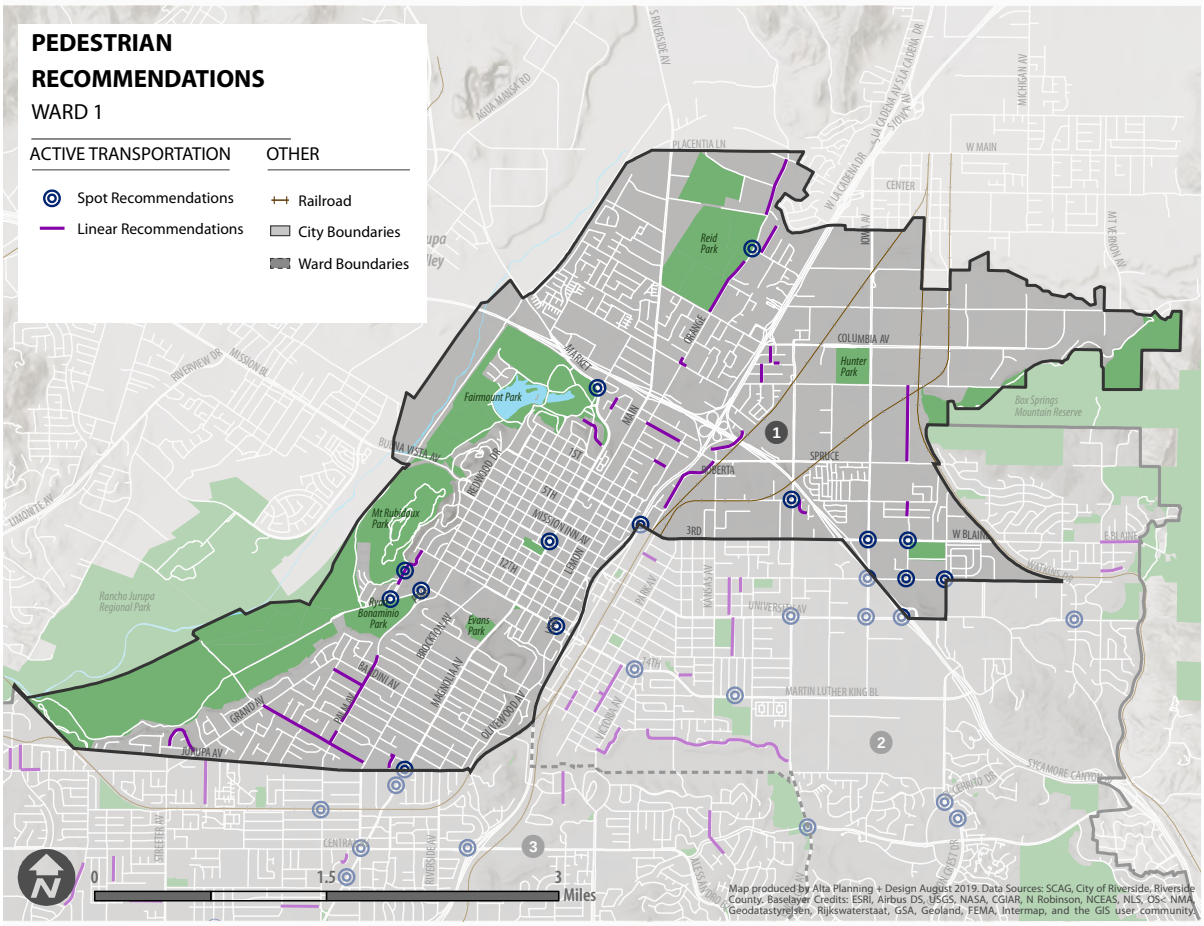

TABLE 4-3 PEDESTRIAN SPOT RECOMMENDATIONS WARD 1

CORRIDOR	CROSS STREET	IMPROVEMENT
14th St	Olivewood Ave	Intersection Typology B
Blaine St	Iowa Ave	Intersection Typology A
Chicago Ave	Massachusetts Ave	Install Traffic Signal. Intersection Typology B
Fairmount Blvd	Market St	Intersection Typology B add crosswalks
Mt Rubidoux Trail Head	Glenwood Dr	Intersection Typology D. Install mid block crossing on Glenwood Dr at trail head
Palm Ave	14th St	Intersection Typology C
Reid Park Ruth H Lewis Center	Orange St	Intersection Typology D. Install mid block crossing on Orange St at park entrance
Rustin Ave	Blaine St	Intersection Typology B
Tequesquite Ave	Glenwood Dr	Intersection Typology C
University Ave	Market St	Intersection Typology E

TABLE 4-4 PEDESTRIAN CORRIDOR RECOMMENDATIONS WARD 1

CORRIDOR	IMPROVEMENT
E La Cadena	Install sidewalk from 1st St to Down St.
Glenwood Dr	Install sidewalk on Glenwood Dr around S curve to 14th St.
Kemp St	Install sidewalk on both sides of the street from Chase Rd to dead end.
Laurel Ave	Install sidewalk along the east side of Laurel Ave from Marlborough to Columbia. Sidewalk existing on west side of street.
Lecil St	Install sidewalk south of Massachusetts Ave.
Linwood Pl	Install sidewalk west of Palm Ave to Tower Rd.
Birch St	Install sidewalk from Jurupa Ave to Maplewood Dr.
Milton St	Install where gaps exist. Sidewalk exists on south side of street.
Northbend St	Install sidewalk on both sides of the street from Spruce St to Market St.
Old Mill Rd	Install sidewalk on both sides of the Old Mill Rd.
Orange St	Install sidewalk at the corner of Strong St which serves at a school crossing for students on their routes to and from Fremont Elementary School.
Orange St	Install sidewalk from Garner Rd to Center St.
Orange St	Install sidewalk from Columbia Ave to Chase Rd. There is existing sidewalk on the west side of Orange St.
Palm Ave	Install sidewalk from Beechwood Pl to Brentwood Ave.
Palm Ave	Install sidewalk from Maplewood Pl to Rubidoux Ave.
Poplar St	Install sidewalk on the south side of the street. North side was improved with sidewalk from Mulberry St to Lime St.
Ridge Rd	Install sidewalk on Ridge St west of Market St. Sidewalk existing on east side of street.
Rubidoux Ave	Install missing sidewalk segments along Rubidoux Ave, between Grand Ave and Brockton Ave.
Rustin Ave	Install sidewalk on both sides of the street from Massachusetts Ave to Blaine St.
Rustin Ave	Install sidewalks and curb ramps on Rustin St between Spruce St and Marlborough Ave.
Spruce St	Install sidewalk on north side of Spruce between Orange St & Mulberry St. Sidewalk existing on south side of street.

FIGURE 4-14 PEDESTRIAN RECOMMENDATIONS WARD 2

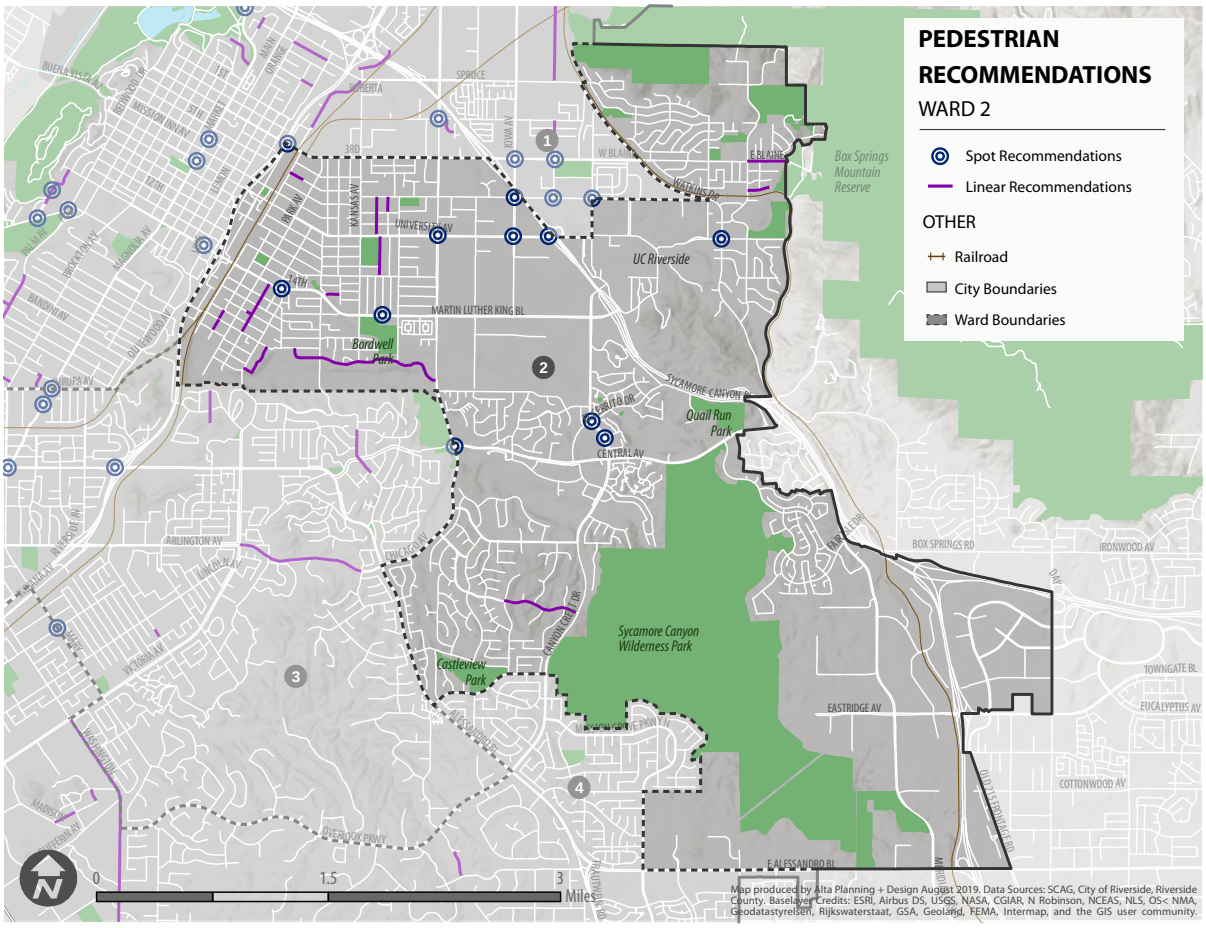

TABLE 4-5 PEDESTRIAN SPOT RECOMMENDATIONS WARD 2

CORRIDOR	CROSS STREET	IMPROVEMENT
14th St	Victoria Ave	Intersection Typology B
Canyon Crest Dr	Via Pueblo	Install crossing, Intersection Typology B
Chicago Ave	University Ave	Intersection Typology A
El Cerrito Dr	Canyon Crest Dr	Intersection Typology B
Iowa Ave	W Linden St	Intersection Typology A
MLK Blvd	Douglass Ave	Improve mid block crossing, Intersection Typology D
Rustin Ave	W Linden St	Intersection Typology B
Third St	Vine St	Intersection Typology C
University Ave	I-215 interchange	Intersection Typology F
University Ave	Iowa Ave	Intersection Typology A
University Ave	South entrance to University Village	Intersection Typology B, pedestrian scramble
W Linden St	Canyon Crest Dr	Intersection Typology C
Watkins Dr	W Big Springs Rd	Intersection Typology C

TABLE 4-6 PEDESTRIAN CORRIDOR RECOMMENDATIONS WARD 2

CORRIDOR	IMPROVEMENT
5th St	Install sidewalk on both sides of the street between Commerce St and Park Ave.
Campus View Dr	Install sidewalk on both sides of the street.
Georgia St	Install sidewalk on the north side of the street east of Eucalyptus Ave.
Dwight Ave	Install sidewalk on both sides of the street from W Linden St to Loma Vista St.
E Blaine St	Install curb, gutter, and sidewalk from Mt Vernon Ave to dead end.
Grove Ave	Install sidewalk between 14th St and Cridge St.
Howard Ave	Install sidewalk to complete gap. Curb, curb ramp, and gutter from Denton St to Date St.
Jerome St	Install sidewalk from Wayman St north to dead end.
Prospect Ave	Install sidewalk, curb, and gutter west of Grove Ave.
Ransom Rd	Install sidewalk to eliminate gap(s) on the south side of Ransom, between Claridge Dr & Canyon Crest Dr.
Somerset Dr	Install sidewalk on both sides of the street where gaps exist. Right of way issues.

FIGURE 4-15 PEDESTRIAN RECOMMENDATIONS WARD 3

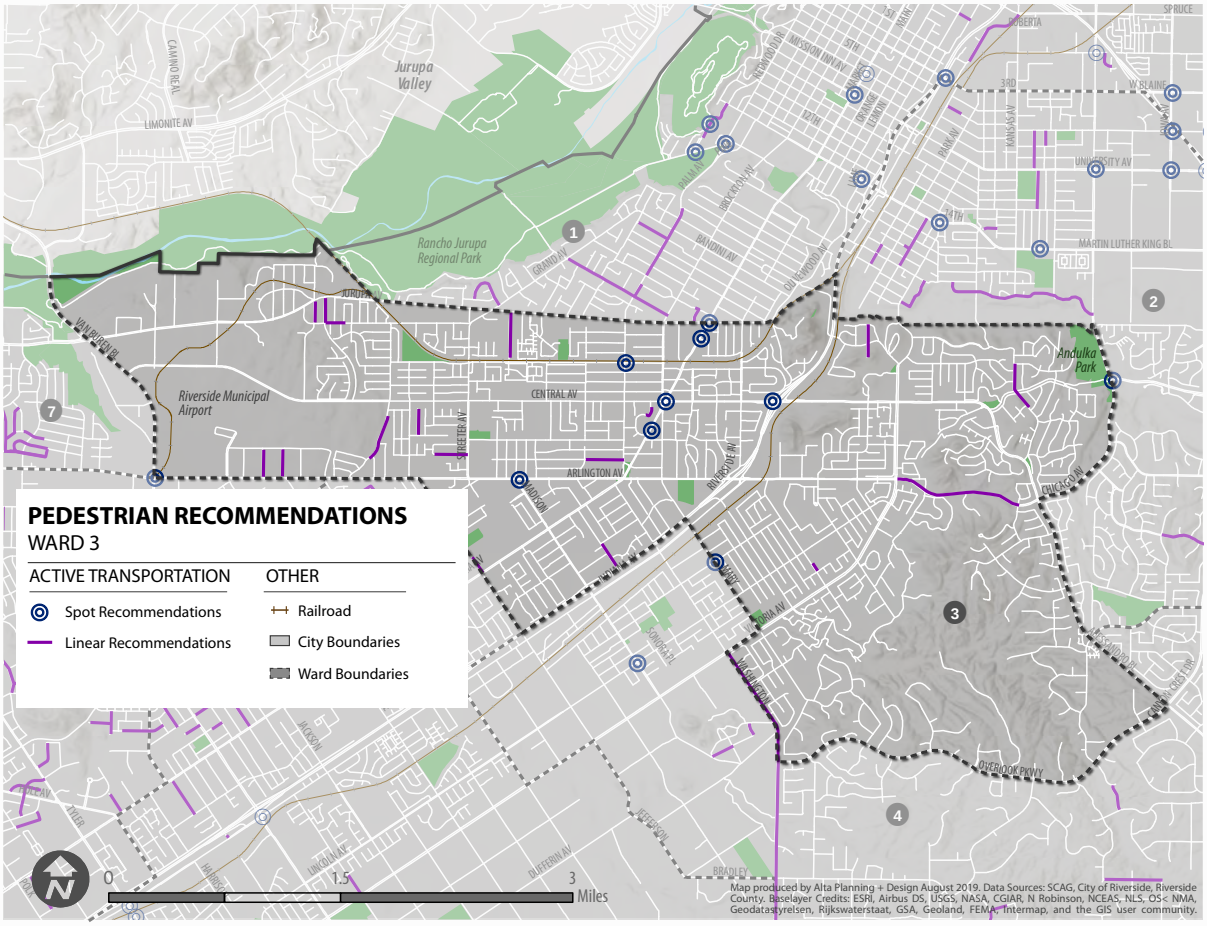

TABLE 4-7 PEDESTRIAN SPOT RECOMMENDATIONS WARD 3

CORRIDOR	CROSS STREET	IMPROVEMENT
Central Ave	Magnolia Ave	Intersection Typology A
Central Ave	SR-91 Interchange	Intersection Typology F
Chicago Ave	Central Ave	Intersection Typology A
Jurupa Ave	Magnolia Ave	Intersection Typology A
Madison St	Arlington Ave	Intersection Typology A
Magnolia Ave	Between Brockton Ave and Nelson St	Improve mid block crossing, Intersection Typology D
Magnolia Ave	Elizabeth St	Intersection Typology B
Palm Ave	Dewey Ave	Intersection Typology C and improve railroad crossing

TABLE 4-8 PEDESTRIAN CORRIDOR RECOMMENDATIONS WARD 3

CORRIDOR	IMPROVEMENT
School Circle	Install sidewalk on both sides of the street to Central Ave, students go to and from Riverside Adult School on Magnolia.
Arlington Ave	Install sidewalks and curb ramps along south side between Sunset Ranch Dr & Hawarden Dr. Serves as route to school for Poly High and Victoria Elementary Schools.
Douglass Ave	Install sidewalk on east side of street. Sidewalk existing on west side of street.
Eileen St	Install sidewalk between California Ave & Carmelia Dr.
Essex St	Install sidewalk on west side of street from Jurupa Ave to Mountain View Ave.
Fremont St	Install sidewalk and curb ramps both sides of the street from Jurupa Ave to Mountain View St.
Granada Ave	Install sidewalk and curb ramps on the both sides of the street west of Streeter Ave.
Hallwood St	Install sidewalk and curb ramps both sides of Hallwood St.
Hillside Ave	Install curb, gutter, and sidewalk to close gap from Arbor Dr to Portola Way.
Hoover St	Install sidewalk on both sides of the street from Orchard St south to dead end.
Maude St	Install sidewalk, curb, and gutter to be installed between Foster Dr and Victoria Ave.
Mountain View St	Install sidewalks and curb ramps along both sides of Mountain View St between Essex St & the N/W corner of Vera St.
Murray St	Install sidewalk from Arlington Ave to dead end.
Prince Albert Dr	Install missing sidewalk from Carlton Pl to Chicago Ave.
Stearns St	Install curb, gutter, and sidewalk on both sides of the street from Jurupa Ave and Dewey Ave.
Weaver St	Install sidewalk, curb, curb ramps, and gutter on both sides of the street.

FIGURE 4-16 PEDESTRIAN RECOMMENDATIONS WARD 4

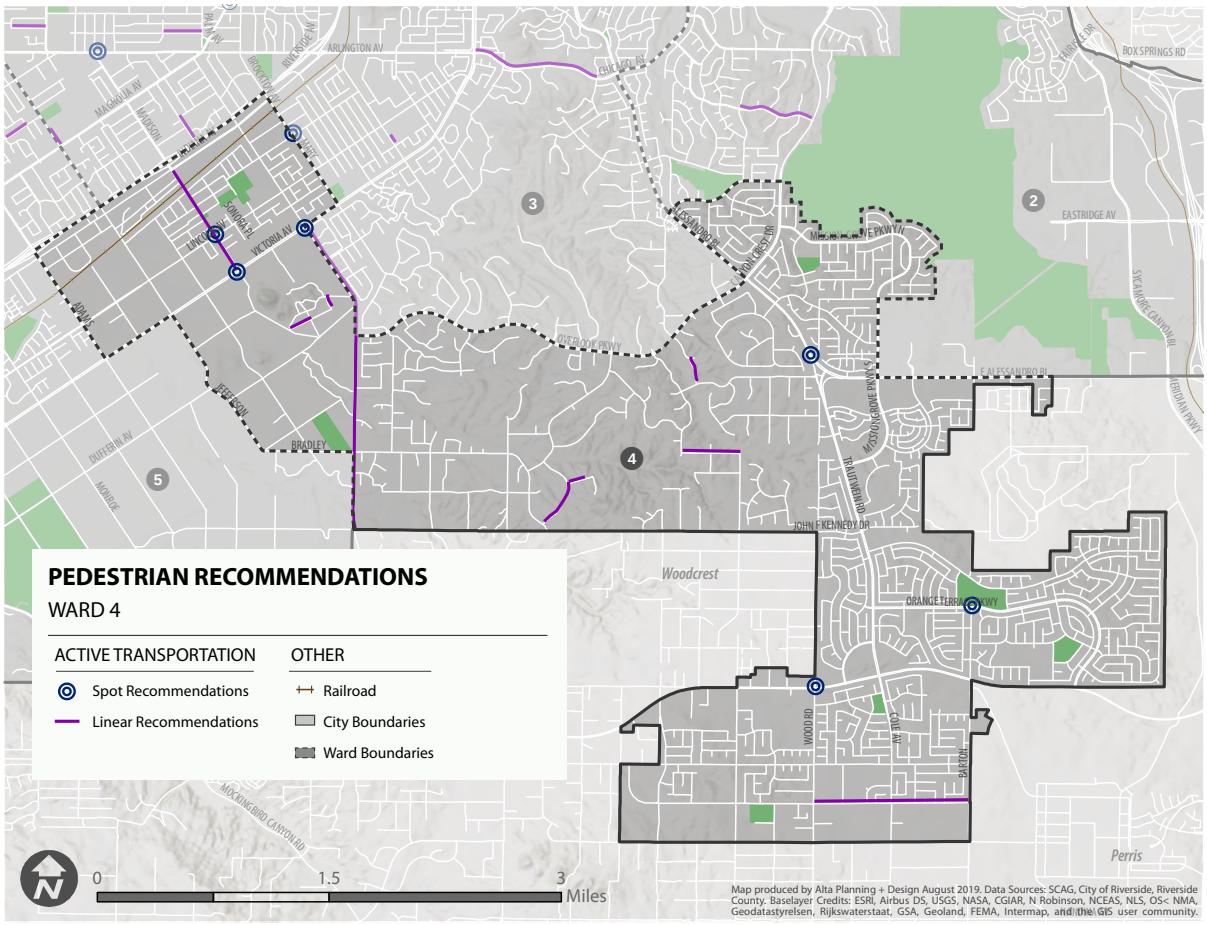

TABLE 4-9 PEDESTRIAN SPOT RECOMMENDATIONS WARD 4

CORRIDOR	CROSS STREET	IMPROVEMENT
Barton St	Orange Terrace Pkwy	Install mid block crossing across Orange Terrace Pkwy, Intersection Typology D
Madison St	Lincoln Ave	Intersection Typology C
Madison St	Victoria Ave	Intersection Typology C. Improve Crossings.
Mary St	Marguerita Ave	Intersection Typology C
Trautwein Rd	Alessandro Blvd	Intersection Typology B
Washington St	Victoria Ave	Intersection Typology B. Improve Crossings.
Wood Rd	Van Buren Blvd	Intersection Typology A

TABLE 4-10 PEDESTRIAN CORRIDOR RECOMMENDATIONS WARD 4

CORRIDOR	IMPROVEMENT
Cactus Ave	Install sidewalk from Crystal View Terrace to Dauchy Ave
Choi Dr	Install sidewalk on the East side of Choi Dr.
Corinthian Way	Install sidewalk on both sides of the street from Via Vista Dr to Berry Rd.
Glenhaven Ave	Install sidewalk between Elsinore Rd and Stratford Way.
Lurin Ave	Install sidewalk, curb ramps, curb and gutter on both sides of the street where gaps exist from Wood Rd to Barson St.
Madison St	Expand sidewalk width when possible from Indiana Ave to Lincoln Ave.
Norwood Ave	Install sidewalk on both sides of street between College Ave and La Sierra Ave.
Onata Ave	Install sidewalk along west side.
Pruitt Pl	Install sidewalk on both sides of street.
Pitcairn St	Install sidewalk on both sides of the street to close the gap.
Pontoosuc Ave	Install sidewalk on both sides of the street west of Prenda Ave.
Washington St	Install sidewalk from Victoria Ave to Washington Blvd.

FIGURE 4-17 PEDESTRIAN RECOMMENDATIONS WARD 5

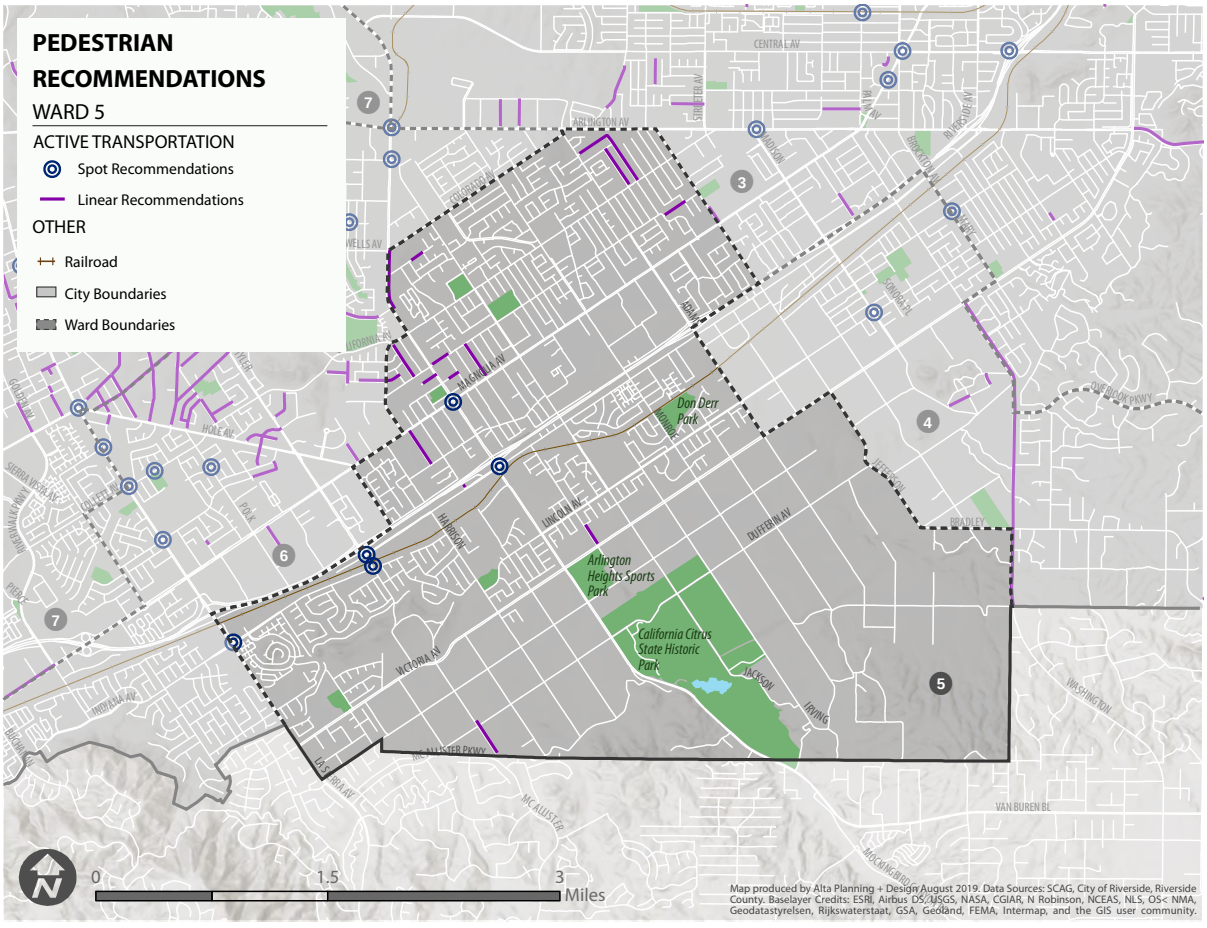

TABLE 4-11 PEDESTRIAN SPOT RECOMMENDATIONS WARD 5

CORRIDOR	CROSS STREET	IMPROVEMENT
Indiana Ave	La Sierra Ave	Intersection Typology A
Magnolia Ave	Van Buren Blvd	Intersection Typology A
Tyler St	Indiana Ave N of Tracks	Intersection Typology F
Tyler St	Indiana Ave S of Tracks	Intersection Typology F
Van Buren Blvd	Indiana Ave	Intersection Typology F

TABLE 4-12 PEDESTRIAN CORRIDOR RECOMMENDATIONS WARD 5

CORRIDOR	IMPROVEMENT
Canterbury Rd	Install sidewalk on both sides of the street from Verbena Dr toe California Ave.
Duncan Ave	Install sidewalk on north side of street from Turnbill Rd to Pershing Dr curb and gutter needed.
Everest Ave	Install sidewalk from Garfield St to Magnolia Ave. Serves as route to and from school for Liberty Elementary and Chemawa Middle School students.
Garfield St	Install sidewalk to be constructed on the south side between Canterbury Rd and Via San Jose. Sidewalk existing on the north side.
Garfield St	Install sidewalk between Van Buren Blvd and McKenzie St.
Gibson St	Install sidewalk from Jonquil Pl to Victoria Ave.
Hayes St	Install sidewalk on both sides of the street between Van Buren Blvd and Castleman St.
Jefferson St	Install sidewalk on the west side of the street from Magnolia Ave north to close the gap. There is existing sidewalk on the east side.
Mason St	Install sidewalk to close gap between Van Buren Blvd to westerly terminus. Serves as route to and from school for Liberty Elementary School students.
McAllister St	Install sidewalk from Dufferin Ave to dead end. School bus drop off area.
Muir Ave	Install sidewalk west side between Magnolia and Primrose.
Myers St	Install sidewalk from Indiana Ave to dead end.
Sequoia St	Install sidewalk on both sides of the street.
Van Buren Blvd	Install sidewalk along the east side from Colorado Ave to Challen Ave.
Verbena Dr	Install sidewalk on both sides of the street from Adams St to Canterbury Rd.

FIGURE 4-18 PEDESTRIAN RECOMMENDATIONS WARD 6

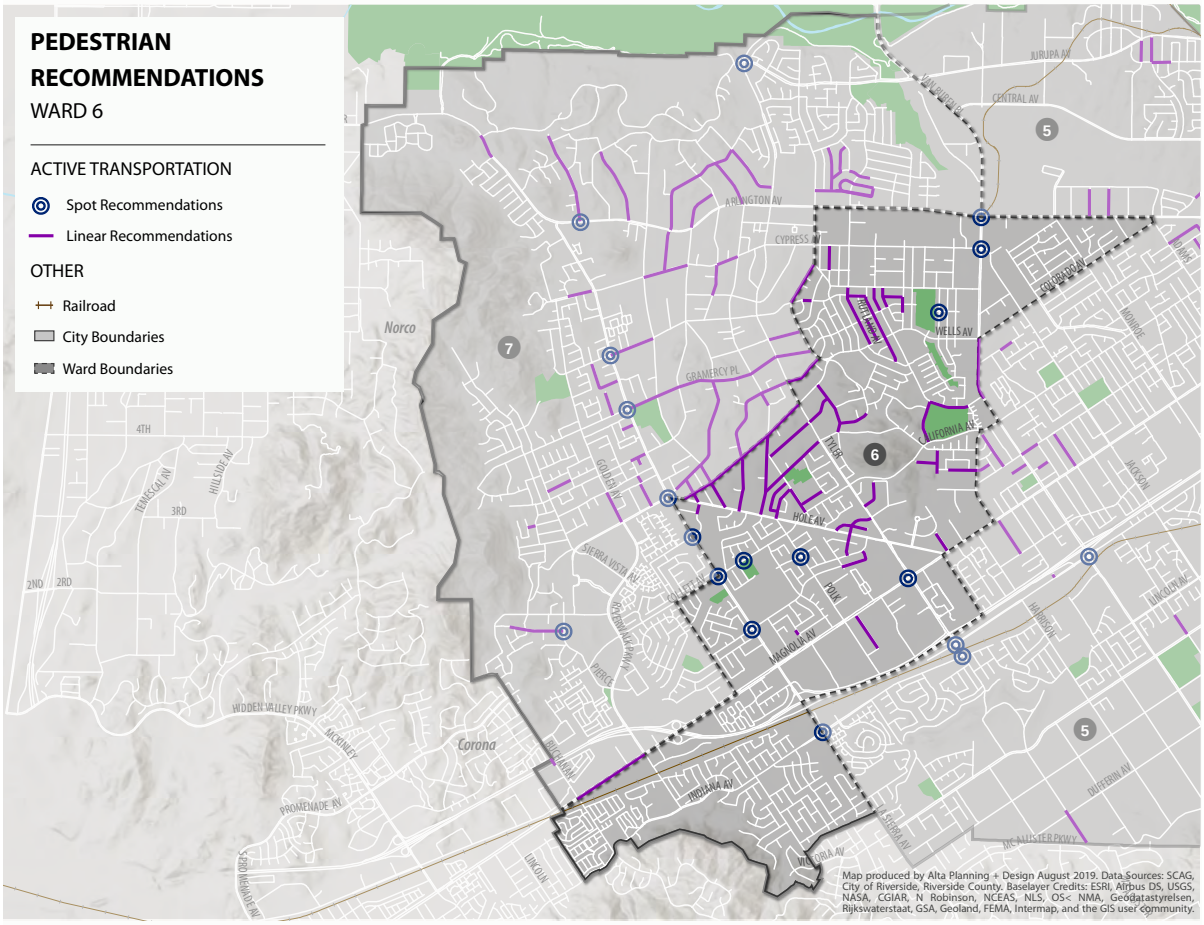

TABLE 4-13 PEDESTRIAN SPOT RECOMMENDATIONS WARD 6

CORRIDOR	CROSS STREET	IMPROVEMENT
Cass St	Polk St	Intersection Typology C
Collett Ave	Newby Dr	Intersection Typology C. Upgrade intersection
La Sierra Ave	Cochran Ave	Intersection Typology B. High visibility crosswalk
La Sierra Ave	Collett Ave	Intersection Typology B. High visibility crosswalk
Magnolia Ave	Tyler St	Intersection Typology A.
Van Buren Blvd	Jackson St	Intersection Typology B

TABLE 4-14 PEDESTRIAN CORRIDOR RECOMMENDATIONS WARD 6

CORRIDOR	IMPROVEMENT
Bee Jay St	Install sidewalk and curb ramps on the east side of the street to close gap between Cypress Ave and Trey Ave.
Bingham Ave	Install sidewalk from Mobley Ave to Hole Ave.
Bonita Ave	Install sidewalk from Tyler St to Hole Ave. Existing curb and gutter.
Branigan Way	Install sidewalk and curb ramps on south side of the street. Serves as route to and from school for Myra Linn Elementary School students.
Buchanan St	Install sidewalk on east side over SR 91 overpass (west side).
Burge St	Install curb, gutter, and sidewalk from Magnolia Ave to Starlight Ct.
Calmhill Dr	Install sidewalk on the east side between California Ave & Challen Ave.
Campbell Ave	Install sidewalk between Ellen St and Picker St. ROW acquisition may be required for sidewalk installation.
	Install sidewalk between Ivanhoe Ave and Crest Ave. ROW acquisition may be required for sidewalk installation.
	Install sidewalk on north side from La Sierra Ave to Mitchell Ave. ROW acquisition may be required for sidewalk installation.
Challen Ave	Install sidewalk on north side from Van Buren Blvd heading west to link up to existing sidewalk east of Curan Dr.
Cochran Ave	Install sidewalk on both sides of street between Pendleton St and Mobley Ave
Cook Ave	Install sidewalk, curb and gutter required, street widening may be required on both sides of the street from Jones Ave to Tyler St.
Crest Ave	Install sidewalks on west side of the street between Campbell Ave to Babb Ave.
Eddystone St	Install sidewalk from Tomlinson Ave to Crest Ave. ROW acquisition may be required for sidewalk installation.
Ellen St	Install sidewalk and curb ramps on the east side of the street from Philbin Ave to Gramercy St.
Challen Ave	Install sidewalk from Philbin Ave to Gramercy St.
Ivanhoe Ave	Install sidewalk from Campbell Ave to Foothill Ave.
Jones Ave	Install sidewalk from Hole Ave to Wells Ave.
Kent Ave	Install sidewalks and curb ramps on both sides of the street from Gramercy Pl to Wells Ave.
Megginson Ln	Install sidewalk on the south side of the street.
Minnier Ave	Install sidewalk between Hole Ave and Whitford Ave.
Mobley Ave	Install sidewalk from Bingham Ave to California Ave.
Mull Ave	Install sidewalk from Tomlinson Ave to Mobley Ave. ROW acquisition may be required for sidewalk installation.
Nye Ave	Install sidewalk between Magnolia & White Oak. ROW acquisition may be required for sidewalk installation.
Picker St	Install sidewalk on west side between Gramercy Pl and Larry Way.
Rutland Ave	Install sidewalk from Wells Ave to Philbin Ave.
Selkirk Ave	Install sidewalk from Tyler St to Mariposa Ave.
Selma Ave	Install sidewalk on both sides of street.

TABLE 4-14 PEDESTRIAN CORRIDOR RECOMMENDATIONS WARD 6

CORRIDOR	IMPROVEMENT
Sharon Ave	Install sidewalk along street. Existing curb and gutter on both side of street.
Tomlinson Ave	Install sidewalks on both sides of the street from Wells Ave to Cook Ave. ROW acquisition may be required for sidewalk installation.
	Install sidewalks on both sides of the street from Selma Ave to westerly terminus. ROW acquisition may be required for sidewalk installation.
Wagner Way	Install sidewalk on both sides of the street north of Hole Ave.
Wolfe Ave	Install sidewalks between Mobley Ave and Young St. ROW acquisition may be required for sidewalk installation.
Doane Ave	Install sidewalk from Bushnell Ave to Hole Ave. ROW acquisition may be required for sidewalk installation.
Magnolia Ave	Install sidewalk from Buchannon St to Pierce St.
Mitchell Ave	Install curb, gutter and curb ramps from Bushnell Ave to Hole Ave.
Wells Ave	Install sidewalks between Hole Ave and Tyler St. ROW acquisition may be required for sidewalk installation.

FIGURE 4-19 PEDESTRIAN RECOMMENDATIONS WARD 7

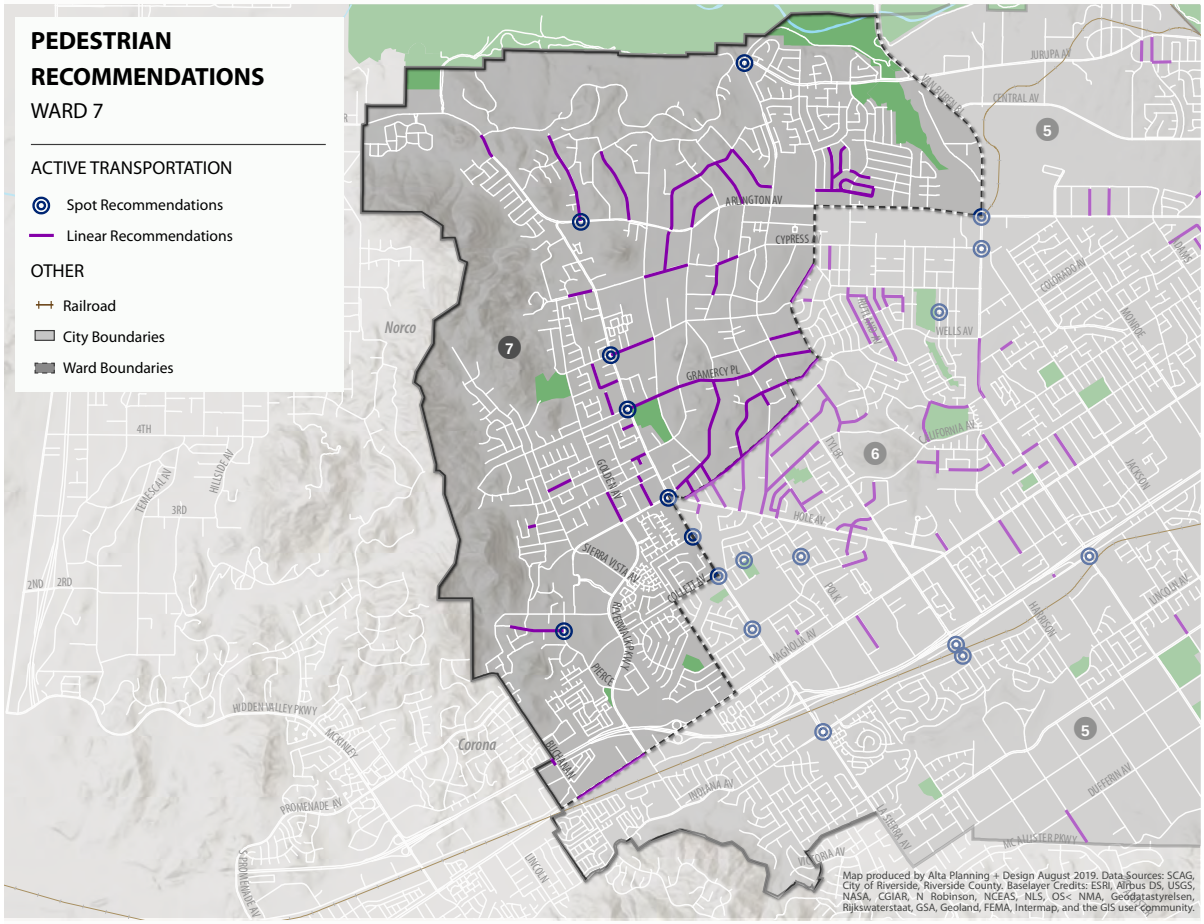

TABLE 4-15 PEDESTRIAN SPOT RECOMMENDATIONS WARD 7

CORRIDOR	CROSS STREET	IMPROVEMENT
Campbell Ave	La Sierra Ave	Intersection Typology B. High visibility crosswalk
Gramercy Pl	La Sierra Ave	Intersection Typology B
Knoefler Dr	Ambs Dr	Intersection Typology C and install sidewalks along Knoefler Dr
La Sierra Ave	Minnier Ave	Typology B. High visibility crosswalk
La Sierra Ave	Pierce St and Hole St	Upgrade intersection. Bushnell pedestrian plaza with removable bollards and historic signage. Typology A
Tyler St	Jurupa Ave	Intersection Typology D. Upgrade crossing for SART access
Western Ave	Arlington Ave	Intersection Typology C

TABLE 4-16 PEDESTRIAN CORRIDOR RECOMMENDATIONS WARD 7

CORRIDOR	IMPROVEMENT
Adair Ave	Install sidewalk and curb ramps from Randolph St to Jo Jo Wy
Bristol St	Install sidewalk on the south side to close the gap from La Salle St to La Sierra Ave.
Bruce Ave	Install sidewalk between Mia Ave and Adair Ave.
	Install sidewalk between Rutland Ave and Lake St.
Bushnell Ave	Install sidewalks between Hole Ave and Gramercy Ave.
Chadbourne Ave	Install sidewalk on both sides of the street.
Cleta Dr	Install sidewalk on both sides from Campbell Ave to Thrush Dr. ROW acquisition may be required for sidewalk installation.
Cypress Ave	Install missing sidewalk from Golden Terrace Dr to La Sierra Ave on north side of street.
	Install sidewalk on both sides of the street between Mitchell Ave and Norwood Ave.
	Install sidewalk on both sides of the street between Chadbourne Ave and Jones Ave.
Doverwood Dr	Install sidewalk from Butler Ave and College Ave.
Arlington Ave	Install sidewalk along both sides of street north of Fairhaven Dr to City limit.
Flower St	Install sidewalk, curb ramps, curb and gutter between Sierra Vista Ave and Carob Way.
Gaylord St	Install sidewalks from Tyler St to Stover Ave.
Golden Ave	Install sidewalk between Mountain Ave and Pierce St.
Gramercy Pl	Install sidewalk between La Sierra Ave and Tyler St.
Hedrick Ave	Install sidewalk, curb ramps, curb and gutter on both sides of the street from Hole Ave to Crest Ave.
Jo Jo Wy	Install sidewalk between Crest Ave and Rutland Ave.
Jones Ave	Install sidewalk from Arlington Ave to Stover Ave.
	Install sidewalk from Hendrick Ave to Alder Creek Ln.
Keller Ave	Install sidewalk, curb, curb ramps, and gutter where missing to close gap from Tyler St to Crest Ave.
Knoefler Dr	Install sidewalk and curb ramps on both sides of the street from west of Ambs Dr to western terminus.
Lessie Ln	Install sidewalks between Bruce Ave and Mia Ave.
Norwood Ave	Install sidewalk, curb, curb ramps, and gutter between Chadbourne Ave and Arlington Ave.
Penny Dr	Install sidewalks on both sides of the street from Lake St to Jo Jo Way. Serves as route and from school for Terrace Elementary School students.

TABLE 4-16 PEDESTRIAN CORRIDOR RECOMMENDATIONS WARD 7

CORRIDOR	IMPROVEMENT
Rose Ave	Install sidewalk from Doverwood Dr to Mountain Ave.
	Install sidewalk from Gramercy Pl to northerly terminus.
	Install sidewalk from Mountain Ave to Pierce St.
Stover Ave	Install sidewalk on both sides from Cypress Ave and Arlington Ave.
	Install sidewalk, curb, curb ramps, and gutter between Arlington Ave and Garlord St.
Sandy Ln	Install curb, gutter & sidewalks on both sides of the street where gaps exist from Arlington Ave to Valley Drive.
Western Ave	Install sidewalk, curb, curb ramps, and gutter along both sides where gaps exist.
Doane Ave	Install sidewalk from Bushnell Ave to Hole Ave. ROW acquisition may be required for sidewalk installation.
Magnolia Ave	Install sidewalk on both sides from Buchanan St to Pierce St.
Mitchell Ave	Install sidewalk from Bushnell Ave to Hole Ave.
Thrush Dr	Install sidewalk on both sides from Cleta Dr to La Sierra Ave. ROW acquisition may be required for sidewalk installation.
Wells Ave	Install sidewalks, street widening and curb and gutter on both sides between Hole Ave and Tyler St.

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Recommended Bicycle Network

THE NEEDS OF PEOPLE BICYCLING WITHIN RIVERSIDE ARE VARIED AND DEPENDENT ON CYCLIST'S LEVEL OF EXPERIENCE, COMFORT, AND TRANSPORTATION NEEDS. TO BETTER UNDERSTAND THESE NEEDS, THIS SECTION EXAMINES A BICYCLE LEVEL OF TRAFFIC STRESS ANALYSIS TO IDENTIFY LOCATIONS WITH EXISTING BIKE FACILITIES THAT MAY PROMOTE OR IMPEDE CYCLISTS FROM RIDING ON RIVERSIDE STREETS. THIS SECTION ALSO IDENTIFIES KEY FINDINGS FROM THE DEMAND/EXISTING CONDITIONS ANALYSIS AS WELL AS PUBLIC INPUT.

Research indicates that the majority of people in the United States would bicycle if dedicated bicycle facilities were provided.

GOALS FOR THE BICYCLE NETWORK INCLUDE:

1. *Make it comfortable for all users*
2. *Fill in Network gaps*
3. *Connect to local destinations*
4. *Improve intersection crossings*

PROPOSED BICYCLE NETWORK

Built on the analysis previously stated on page 4-36 as well as the comprehensive community outreach process, the proposed bicycle network aims to create a comfortable and links network that connects people to places.

At full build out, the Plan recommends building 111 miles of new bikeways , bringing the total bike network to 365 miles, including just over 9 miles of Class IV Separated Bikeways. Table 17 displays the existing and recommended bikeway mileage. In addition, the table shows the number of existing bikeways that will be upgraded to more comfortable and separated bikeways.

A full list of the proposed bikeway segments organized by facility class can be found in Table 4-18 to 4-24. Figure 4-20 shows the recommended bikeway projects Citywide. Recommended bikeway projects at the ward level are shown in Figures 4-21 to 4-27.

TABLE 4-17 BIKEWAY RECOMMENDATIONS MILEAGE

BIKEWAY CLASS	NAME	EXISTING (MILES)	PREVIOUSLY PLANNED (MILES)	RECOMMENDED (MILES)	UPGRADED (MILES)	TOTAL (MILES)
Class I	Shared Use Path	14.9	16.2	1.5	0.3	32.6
Class I & II	Bike Lane with Side Path	8.3	-	-	-	-
Class II	Bike Lane	122.3	48.0	40.5	2.2	210.8
Class IIB	Buffered Bike Lane	7.2	-	30.7	18.0	37.9
Class III	Bicycle Route	2.3	40.9	1.4	-	44.6
Class IIIB	Bicycle Boulevard	-	-	27.7	-	27.7
Class IV	Separated Bikeways	1.4	0.5	9.6	7.5	11.5
TOTAL		**156.4**	**105.6**	**111.4**	**28.0**	**365.0**

FIGURE 4-20 BIKEWAY RECOMMENDATIONS

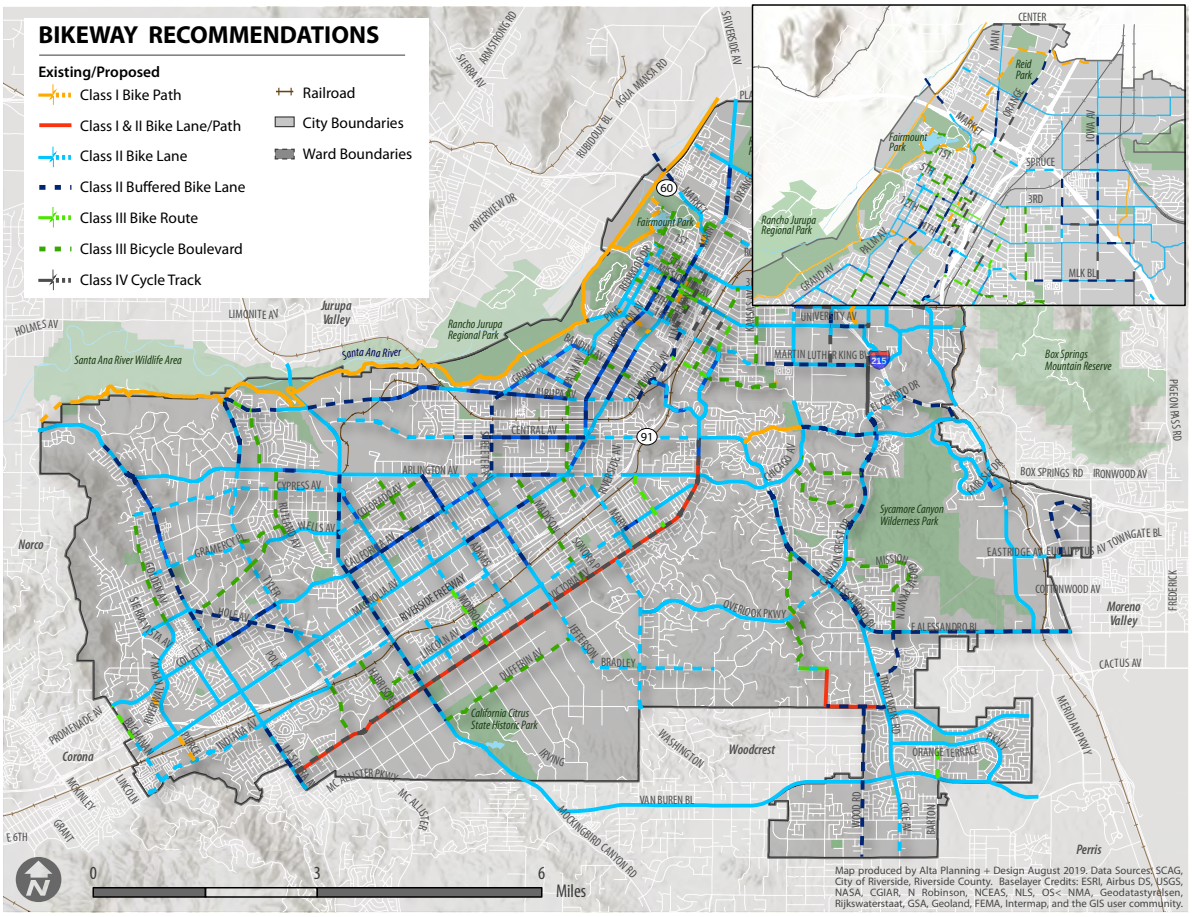


FIGURE 4-21 RECOMMENDED BIKEWAYS WARD 1

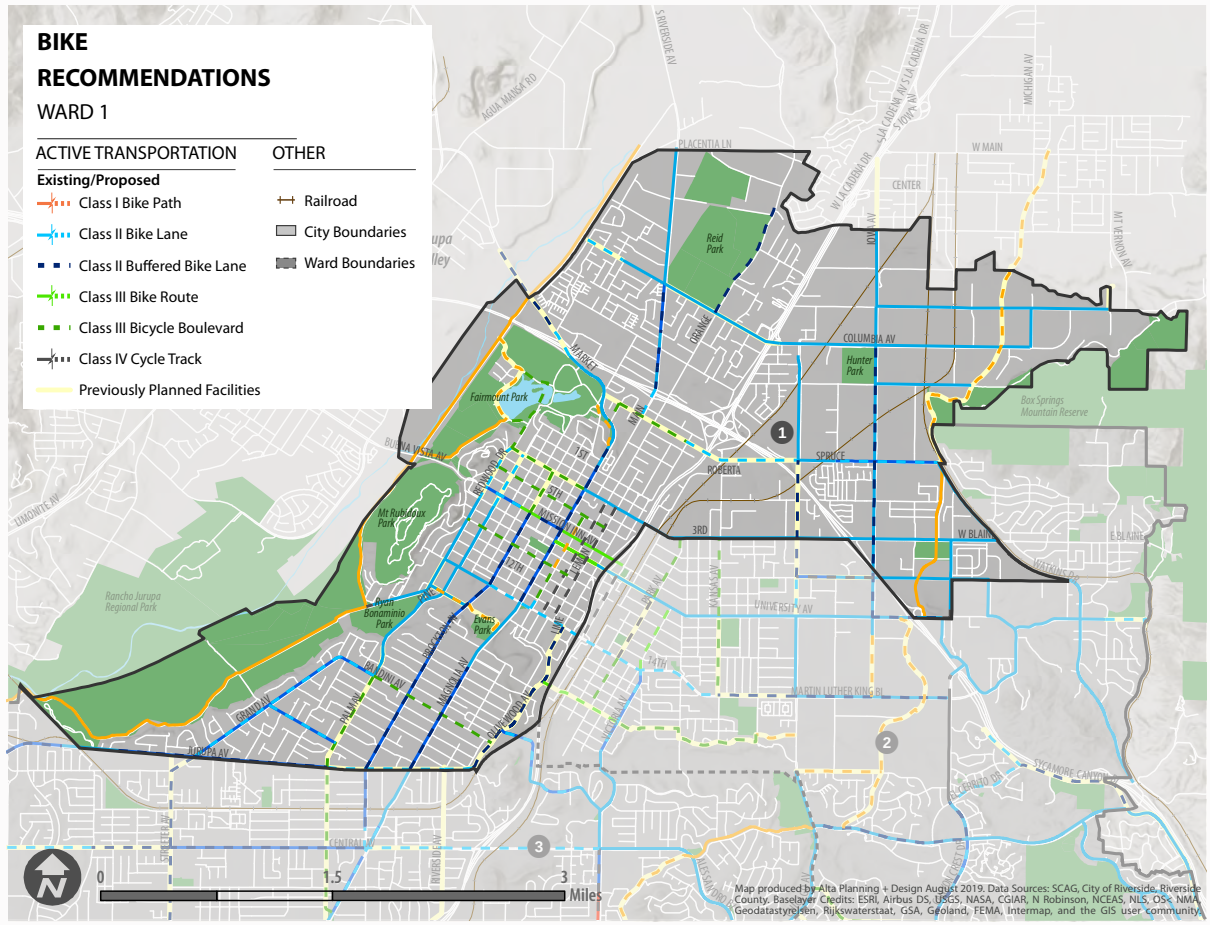
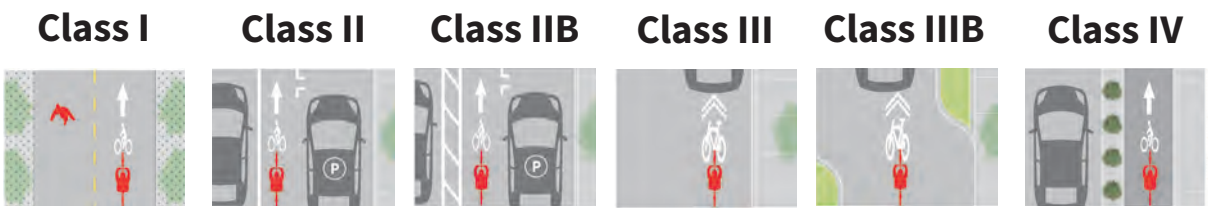


TABLE 4-18 RECOMMENDED BIKEWAYS WARD 1

CORRIDOR	FROM	TO	FACILITY TYPE	LENGTH (MILES)
14th St	Brockton Ave	SR-91 Fwy WB Offramp	II	0.7
10th St	Lemon St	Redwood Dr	IIIB	0.8
3rd St	Market St	Redwood Ave	IIIB	0.6
5th St	Lemon St	Redwood Dr	IIIB	0.8
Bandini Ave	Olivewood Ave	Palm Ave	IIIB	0.9
Brockton Av	Mission Inn Ave	3rd St	IIIB	0.3
Chicago Av	University Ave	W Blaine St	II	0.5
Chicago Av	W Linden St	Spruce St	IIB	0.8
Columbia Av	American Dr	Salmon River Rd	II	0.3
Dexter Dr	Redwood DR	SART entrance	IIIB	0.1
Iowa Ave	Columbia Ave	I-215 Overpass	IIB	1.4
Jurupa Ave	Riverside Ave	Palm Ave	II	0.8
Lemon St	14th St	3rd St	IV	0.8

TABLE 4-18 RECOMMENDED BIKEWAYS WARD 1

CORRIDOR	FROM	TO	FACILITY TYPE	LENGTH (MILES)
Main St Pedestrian Mall	10th St	6th St	I	0.3
Main St	14th St	13th St	II	0.1
Main St	Oakley Ave	Spruce St	II	0.2
Main St	Strong St	Spruce St	IIB	0.3
Main St	13th St	10th St	IIIB	0.2
Main St	6th St	5th St	IIIB	0.2
Market St	Ridge Rd	Locust St	I	0.3
Market St	Rivera St	Santa Ana River Trail	II	0.6
Market St	1st St	Ridge Rd	II	0.2
N Orange St	Colombia Ave	Burl Dr	IIB	0.8
Northbend St	Spruce St	Market St	IIIB	0.1
Olivewood Ave	14th St	Jurupa Ave	IIB	1.1
Orange St	14th St	3rd St	IV	0.8
Palm Av	Bandini Ave	Jurupa Ave	IIIB	1.6
Pine St	University Ave	3rd St	II	0.4
Redwood Dr	University Ave	3rd St	II	0.4
Redwood Dr	3rd St	Field Ln	IIIB	0.7
Spruce St	Chicago Ave	Mulberry Ave	II	0.8
Spruce St	Mulberry Ave	Norhtbend St	IIIB	0.5
			Total	**18.4**



Diagrams for illustrative purposes only

FIGURE 4-22 RECOMMENDED BIKEWAYS WARD 2

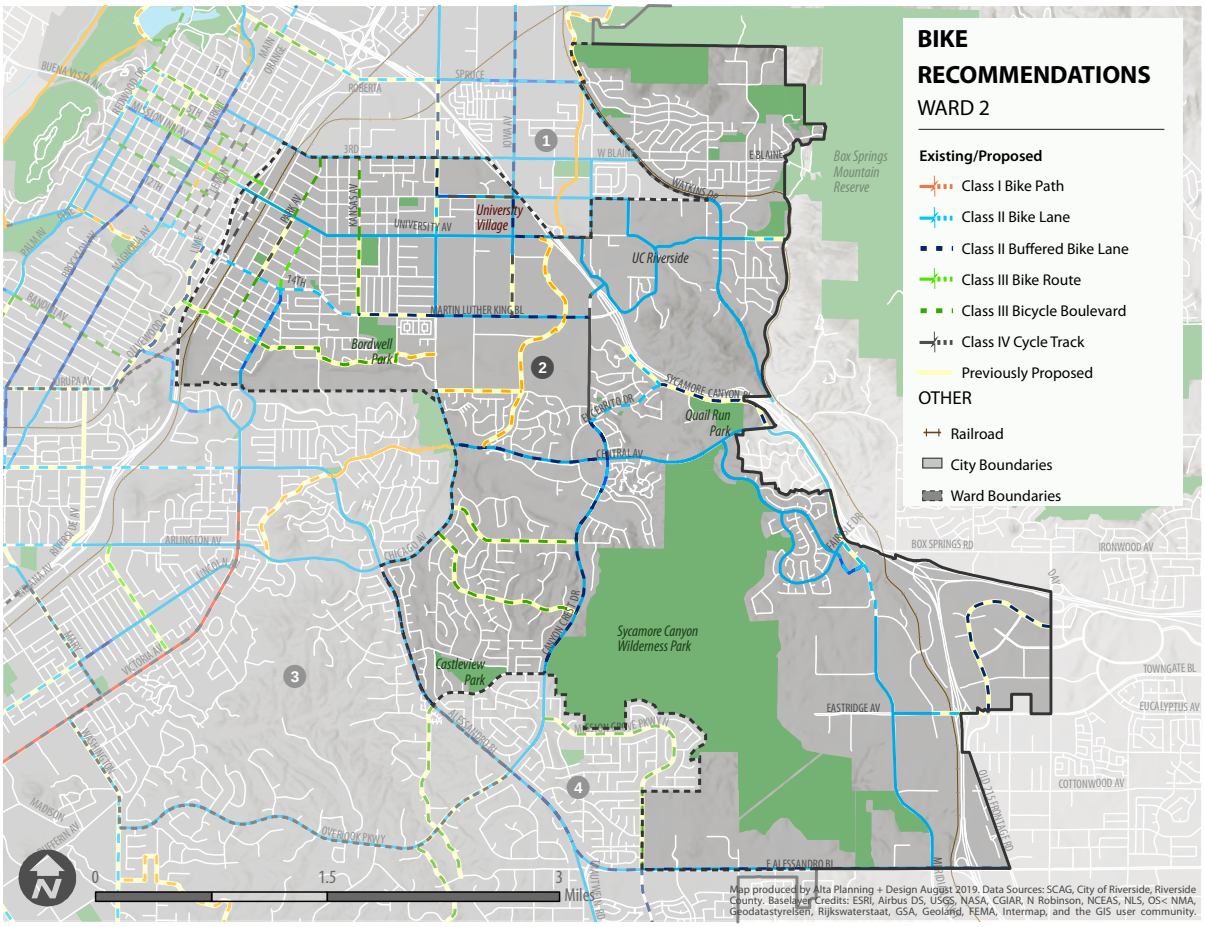
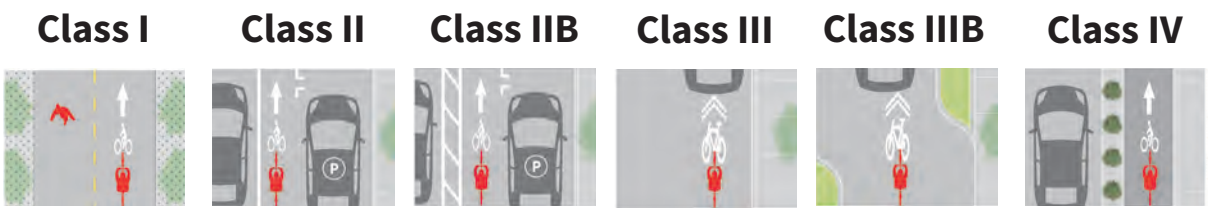


TABLE 4-19 RECOMMENDED BIKEWAYS WARD 2

CORRIDOR	FROM	TO	FACILITY TYPE	LENGTH (MILES)
14th St	SR-91 Fwy WB Offramp	Kansas Ave	II	1.0
Alessandro Blvd	Chicago Ave	Via Vista Dr	IIB	0.9
E Alessandro Blvd	Mission Grove Pkwy N	Old 215 Frontage Rd	IIB	2.4
Canyon Crest Dr	Via Vista Dr	El Cerrito Dr	IIB	1.8
Canyon Crest Dr	Martin Luther King Blvd	UC Riverside Parking Lot 30 Driveway	IV	0.2
Canyon Springs Pkwy	Eastridge	Day St	IIB	1.3
Carlton Pl	Somerset Dr	Sedgwick Ave	IIIB	0.4
Central Ave	Canyon Crest Dr	Chicago Ave	IIB	1.0
Chicago Av	University Ave	W Linden St	II	0.3
Chicago Av	3rd St	W Linden St	IIB	0.2
Country Club Dr	Chicago Ave	Canyon Crest Dr	IIIB	0.9
Cridge St	Olivewood Ave	Victoria Ave	III	0.5

TABLE 4-19 RECOMMENDED BIKEWAYS WARD 2

CORRIDOR	FROM	TO	FACILITY TYPE	LENGTH (MILES)
Cridge St	Victoria Ave	Somerset Dr	IIIB	0.1
Eastridge Ave	Sycamore Canyon Blvd	I-215	II	0.2
El Cerrito Dr	Sycamore Canyon Blvd	Canyon Crest Dr	II	0.5
Eucalyptus Ave	I-215	Valley Springs Pkwy	II	0.2
Iowa Ave	University Ave	I-215 Overpass	IIB	0.3
Kansas St	University Ave	3rd St	IIIB	1.0
Martin Luther King Blvd	Canyon Crest Dr	Chicago Ave	IIB	1.0
Martin Luther King Blvd	Kansas Ave	Chicago Ave	IIB	0.5
Mission Grove Pkwy N	E Alessandro Blvd	Cottonwood Ave	IIB	0.5
Park Ave	Cridge St	14th St	IIIB	0.4
Park Ave	University Ave	3rd St	IIIB	0.4
Prince Albert Dr	Sedgwick Ave	Ottawa Ave	IIIB	0.5
Ransom Rd	Chicago Ave	Canyon Crest Dr	IIIB	1.2
Sedgwick Ave	Carlton Pl	Prince Albert Dr	IIIB	0.1
Sycamore Canyon Blvd	Box Springs Blvd	Lochmoor Dr	II	0.4
Sycamore Canyon Blvd	Lochmoor St	City Limits	II	0.5
Sycamore Canyon Blvd	El Cerrito Dr	N University Dr	II	0.3
Sycamore Canyon Blvd	Central Ave	El Cerrito Dr	IIB	0.8
University Ave	Iowa Ave	W Campus Dr	IIB	0.5
Victoria Ave	14th St	University Ave	III	0.5
Vine St	14th St	Mission Inn Ave	IV	0.5
S of Lot 4731 Chicago Ave	Chicago Ave	Ottawa Ave	I	0.3
			Total	**21.6**



Diagrams for illustrative purposes only

FIGURE 4-23 RECOMMENDED BIKEWAYS WARD 3

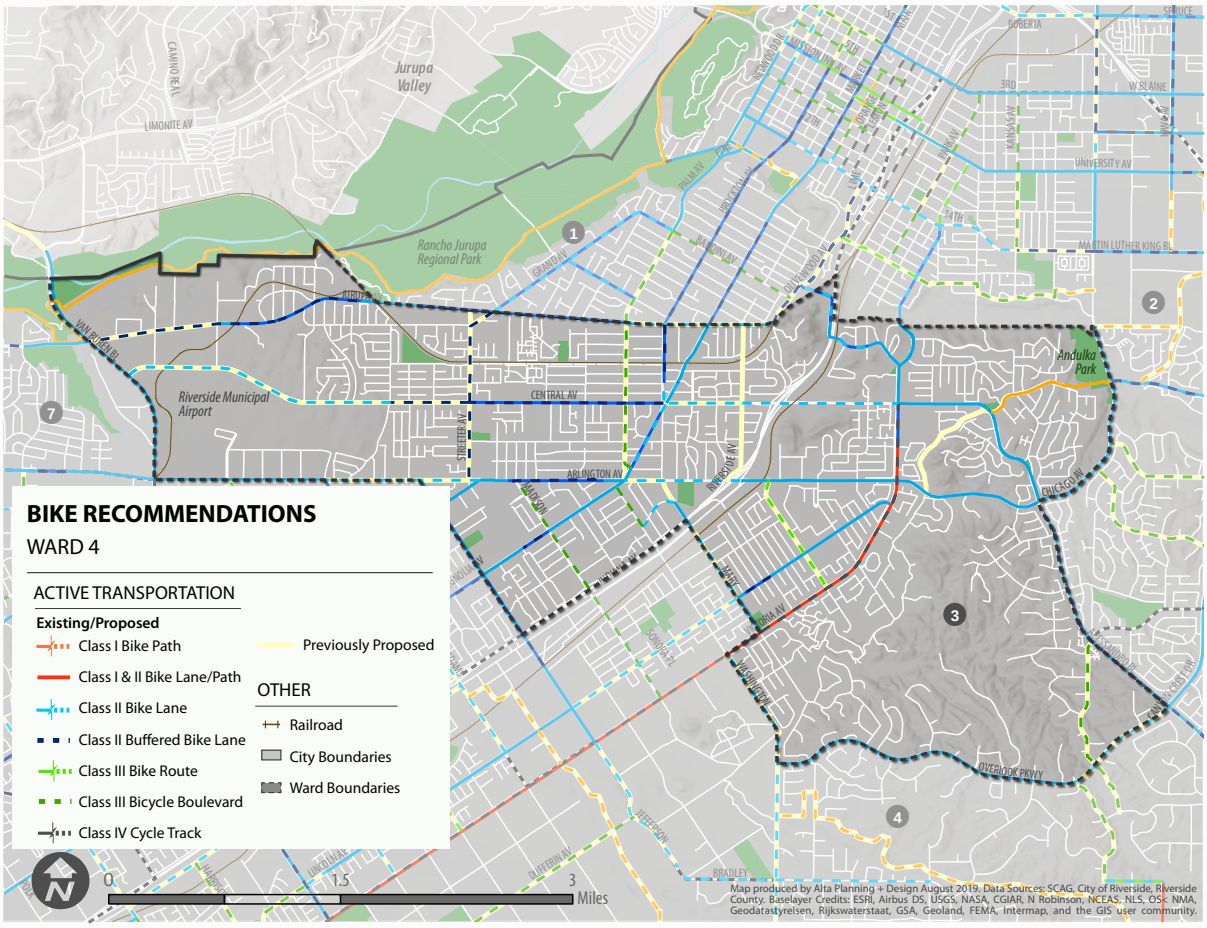
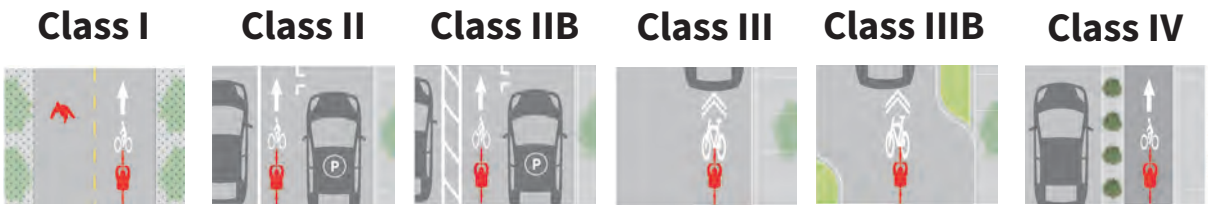


TABLE 4-20 RECOMMENDED BIKEWAYS WARD 3

CORRIDOR	FROM	TO	FACILITY TYPE	LENGTH (MILES)
Alessandro Blvd	Chicago Ave	Canyon Crest Dr	IIB	1.5
Arlington Av	Adams St	Streeter Ave	II	1.0
Arlington Ave	Indiana Ave	Magnolia Ave	II	0.5
Brockton Ave	Magnolia Ave	Beatty Dr	II	0.2
Central Av	Van Buren Blvd	Hillside Ave	II	1.8
Central Av	Hillside Ave	Streeter Ave	IIB	0.5
Central Ave	Victoria Ave	Brockton Ave	II	1.5
Jurupa Ave	Olivewood Ave	Palm Ave	II	0.9
Jurupa Ave	Van Buren Blvd	Columbus St	IIB	1.3
Madison St	Arlington Ave	SR-91	IIIB	0.9
Magnolia Ave	Brockton Ave	Central Ave	II	0.8
Mary St	Lincoln Ave	Indiana Ave	II	0.5
Maude	Victoria Ave	Arlington Ave	IIIB	0.8

TABLE 4-20 RECOMMENDED BIKEWAYS WARD 3

CORRIDOR	FROM	TO	FACILITY TYPE	LENGTH (MILES)
Nixon Dr	Brockton Ave	Washington	II	0.3
Palm Av	Tibbetts St	Jurupa Ave	IIIB	1.0
Overlook Pkwy	Crystal View Terrace	Alessandro Blvd	II	0.8
Streeter	Arlington Ave	Jurupa Ave	IIB	1.2
Via Vista Dr	Alessandro Blvd	Overlook Pkwy	IIIB	0.8
Victoria Ave	Washington St	Central Ave	IV	2.1
Washington St	Nixon Dr	Magnolia Ave	IIIB	0.3
			Total	**18.7**



Diagrams for illustrative purposes only

FIGURE 4-24 RECOMMENDED BIKEWAYS WARD 4

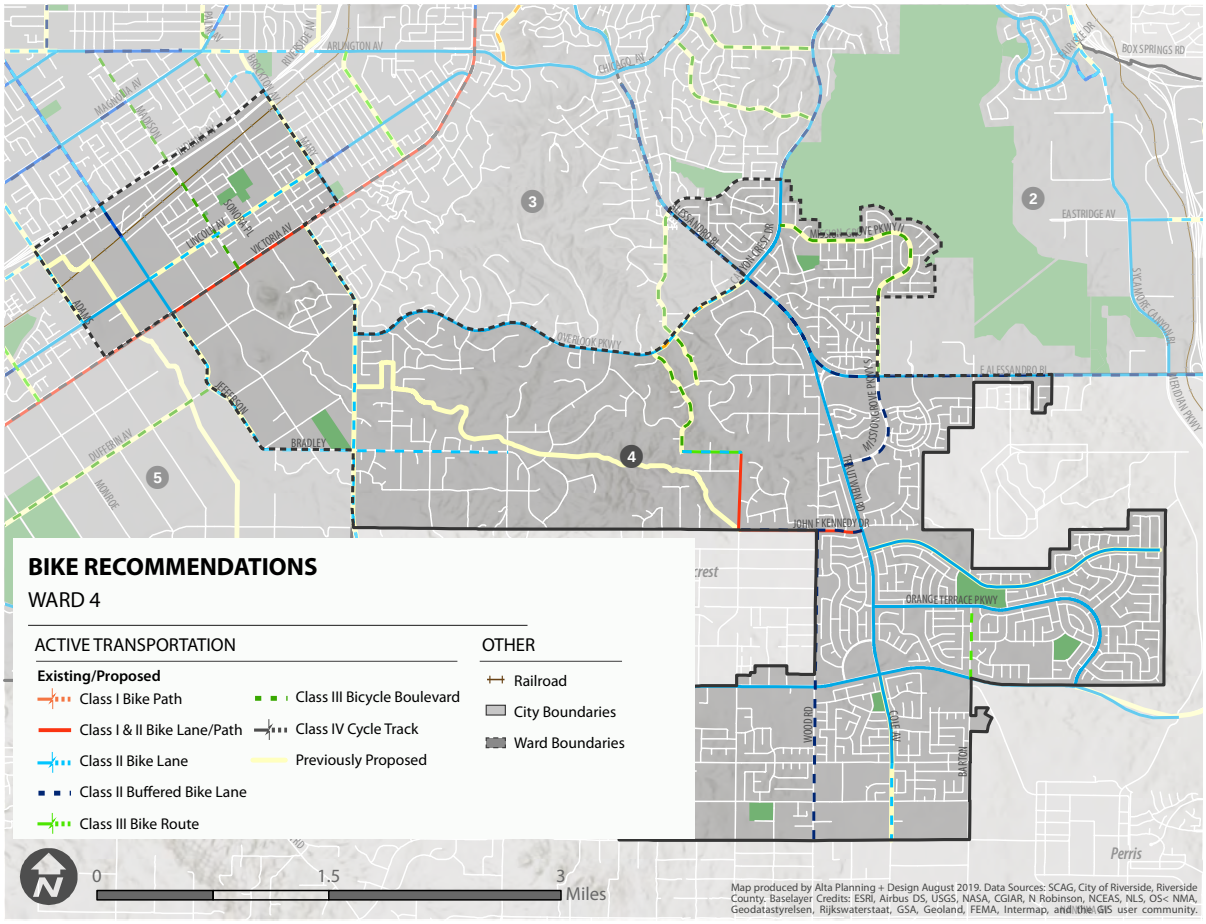


TABLE 4-21 RECOMMENDED BIKEWAYS WARD 4

CORRIDOR	FROM	TO	FACILITY TYPE	LENGTH (MILES)
Adams St	Indiana Ave	Lincoln Ave	II	0.6
Alessandro Blvd	Via Vista Dr	Alexander St	IIB	2.9
Barton Rd	Van Buren Blvd	Orange Terrace Pkwy	III	0.5
Bradley St	Jefferson St	Harbart Dr	II	1.6
Cactus Ave	Crystal View Terrace	Dauchy Ave	II	0.3
Cole Av	Lurin Ave	Krameria St	II	0.5
Corinthian Way	Via Vista Dr	Berry Rd	IIIB	0.2
Crystal View Terrace	Overlook Pkwy	Cactus Ave	IIIB	0.8
Jefferson St	Victoria Ave	Bradley St	II	1.1
Madison St	Indiana Ave	Victoria Ave	IIIB	0.8
Mary St	Lincoln Ave	Indiana Ave	II	0.5
Mission Grove Pkwy	Canyon Crest Dr	E Alessandro Blvd	IIIB	1.9
Mission Grove Pkwy S	Trautwein Rd	Alessandro Blvd	IIB	0.8

TABLE 4-21 RECOMMENDED BIKEWAYS WARD 4

CORRIDOR	FROM	TO	FACILITY TYPE	LENGTH (MILES)
Overlook Pkwy	Easterly Terminus	Via Vista Dr	I	0.1
Overlook Pkwy	Dead end	Dead end w/ Sandtrack Rd	I	0.1
Overlook Pkwy	Crystal View Terrace	Alessandro Blvd	II	0.8
Via Vista Dr	Overlook Pkwy	Corinthian Way	IIIB	0.2
Victoria Ave	Adams Ave	Mary St	IV	1.8
Washington St	Victoria Ave	City Limits	II	2.6
Wood St	John F Kennedy Dr	Krameria St	IIB	2.0
			Total	**20.1**

Class I **Class II** **Class IIB** **Class III** **Class IIIB** **Class IV**

Diagrams for illustrative purposes only

FIGURE 4-25 RECOMMENDED BIKEWAYS WARD 5

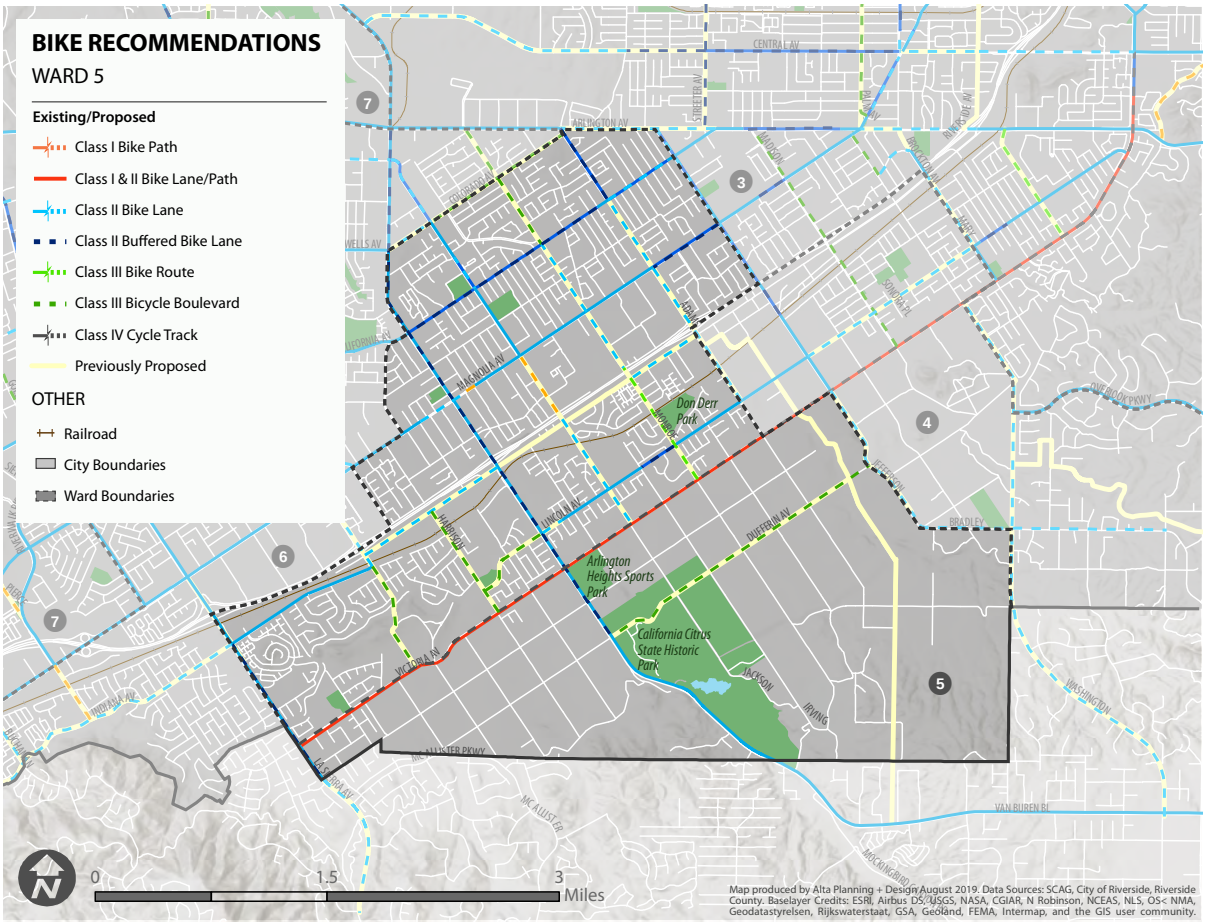
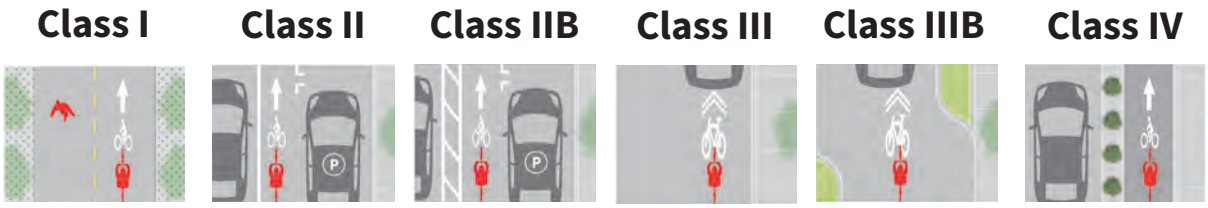


TABLE 4-22 RECOMMENDED BIKEWAYS WARD 5

CORRIDOR	FROM	TO	FACILITY TYPE	LENGTH (MILES)
Adams St	Lincoln St	California St	II	1.6
Arlington Ave	Jefferson St	Adams St	II	0.6
Bradley St	Jefferson St	Washington St	II	0.6
Colorado Ave	Van Buren Blvd	Jackson St	II	0.3
Colorado Ave	Jackson St	Adams Ave	IIIB	1.0
Dufferin Ave	Van Buren Blvd	Jefferson St	IIIB	2.0
Harrison St	Indiana Ave	Victoria Ave	IIIB	0.8
Indiana Av	Monroe St	Adams St	II	0.5
Indiana Ave	Tyler St	Van Buren Blvd	II	1.0
Jackson St	Diana Ave	Magnolia Ave	I	0.4
Jackson St	Victoria Ave	Diana Ave	II	0.9
Jefferson St	Victoria Ave	Bradley St	II	1.1
La Sierra Ave	Indiana Ave	City Limits	IIB	1.0

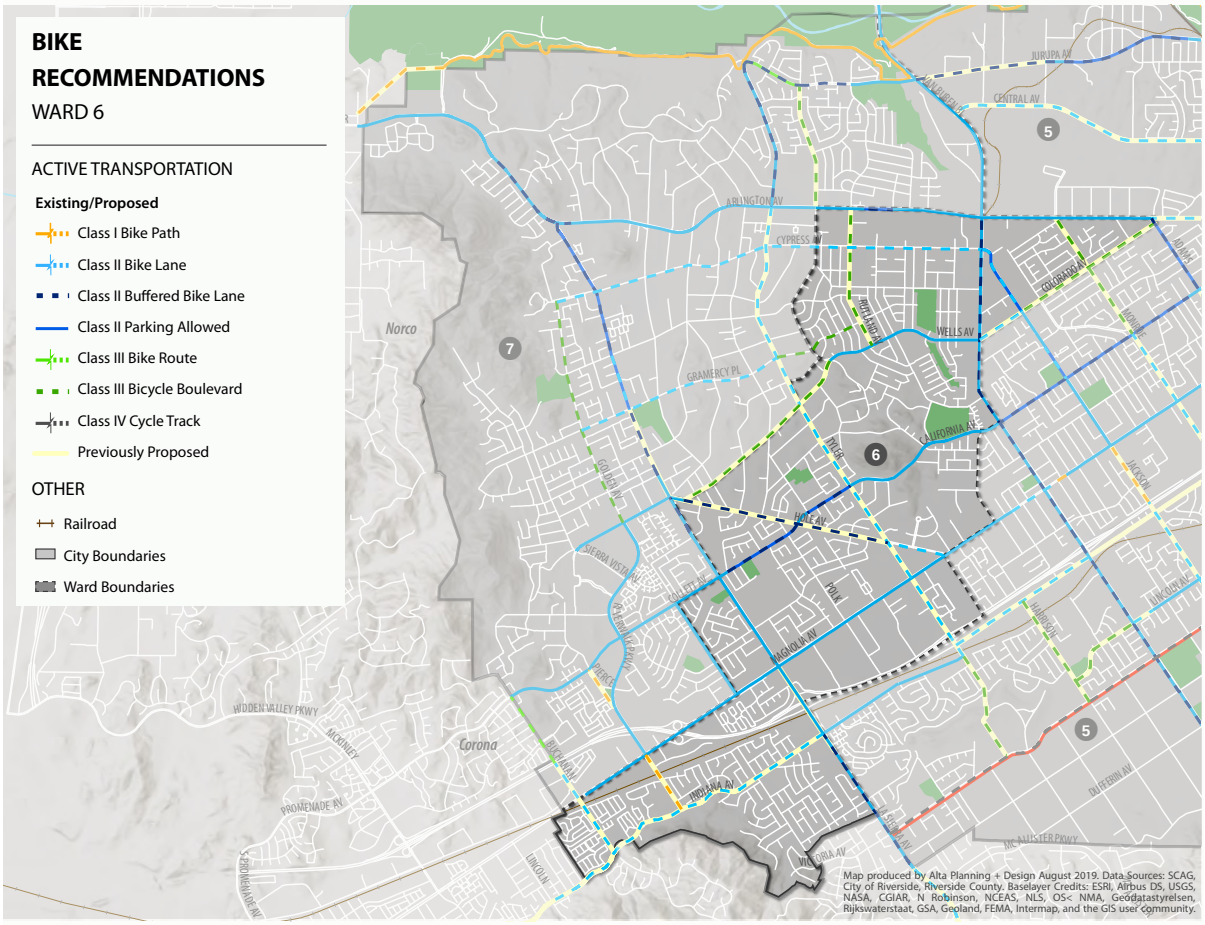
TABLE 4-22 RECOMMENDED BIKEWAYS WARD 5

CORRIDOR	FROM	TO	FACILITY TYPE	LENGTH (MILES)
Lincoln Av	Van Buren Blvd	Antares Dr	II	0.2
Lincoln Av	Harrison St	Van Buren Blvd	IIIB	0.6
Magnolia Ave	Meyers St	McKenzie St	II	0.4
Monroe St	California St	Diana Ave	II	1.0
Monroe St	California St	Colorado Ave	IIIB	0.5
Tyler St	Indiana Ave	SR-91	II	0.1
Tyler St	Indiana Ave	Victoria Ave	IIIB	0.7
Van Buren Blvd	Victoria Ave	Colorado Ave	IIB	2.9
Victoria Ave	La Sierra Ave	Jefferson St	IV	4.1
Washington St	Hermosa Dr	Bradley St	II	0.5
			Total	**22.8**



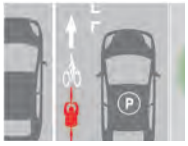
Diagrams for illustrative purposes only

FIGURE 4-26 RECOMMENDED BIKEWAYS WARD 6



Class I

Class II



Class IIB

Class III

Class IIIB

Class IV

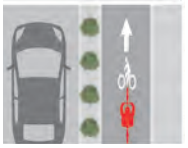
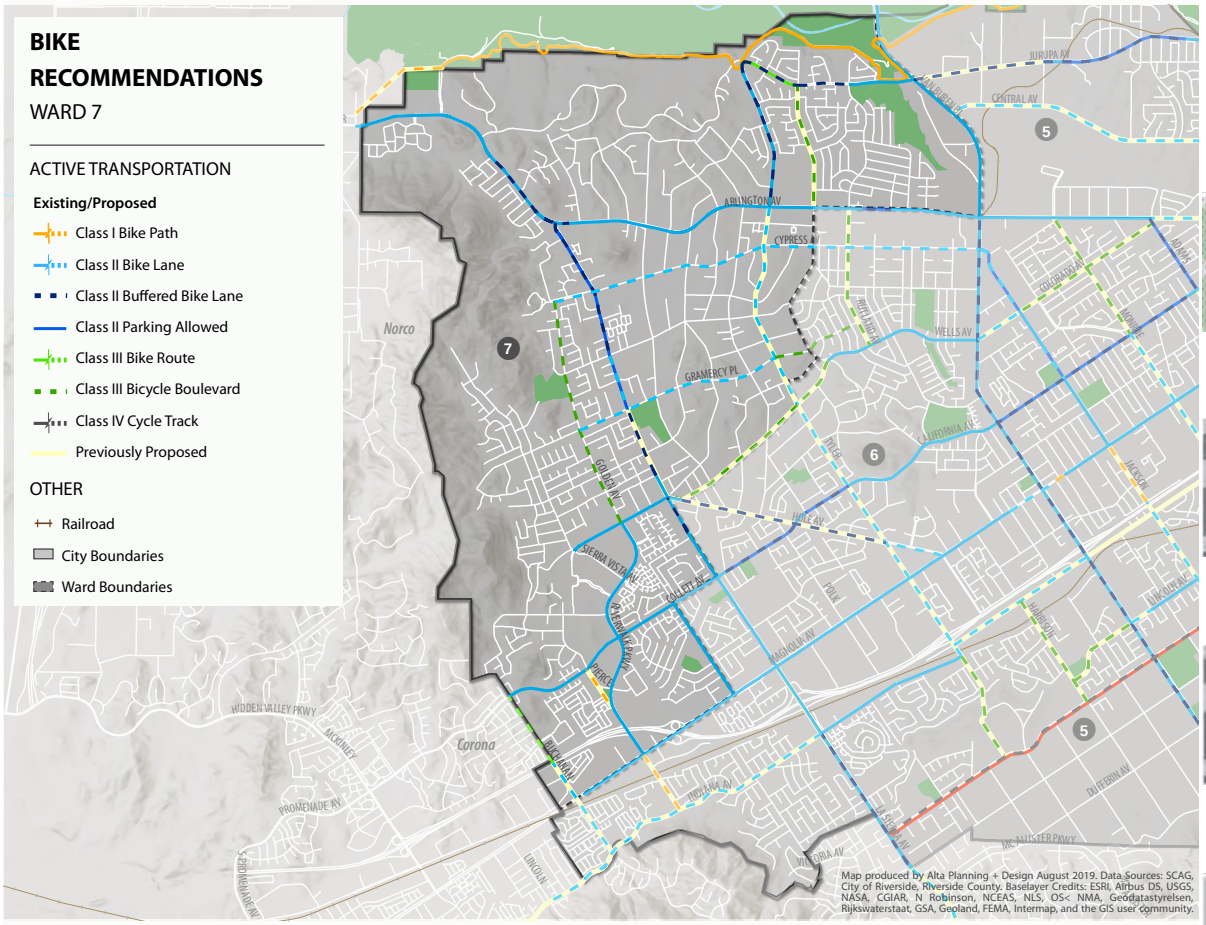


TABLE 4-23 RECOMMENDED BIKEWAYS WARD 6

CORRIDOR	FROM	TO	FACILITY TYPE	LENGTH (MILES)
Arlington Ave	Logan Ct	Ben Loman Way	IIB	0.2
Buchannan Ave	Indiana Ave	Magnolia Ave	II	0.4
Colorado Ave	Van Buren Blvd	Jackson St	II	0.3
Colorado Ave	Jackson St	Adams Ave	IIIB	1.0
Cypress Ave	Crest Ave	Van Buren Blvd	II	1.1
Gramercy Pl	Crest Ave	Rutland Ave	IIIB	0.4
Hole Av	Wells Ave	Tyler St	IIB	1.4
Hole Ave	Tyler St	Magnolia Ave	II	0.4
Indiana Av	La Sierra Ave	City Limits	II	1.9
La Sierra Ave	Schulyer Ave	Pierce St	IIB	0.3
La Sierra Ave	Indiana Ave	City Limits	II	1.0
Monroe St	Colorado Ave	Arlington Ave	IIIB	0.4
Rutland Ave	Wells Ave	Arlington Ave	IIIB	0.9
Tyler St	SR-91	Hedrick Ave	II	2.0
Van Buren Blvd	California Ave	Jurupa Ave	IIB	3.7
Wells Av	Crest Ave	Hole Ave	IIIB	1.3
			Total	**16.7**

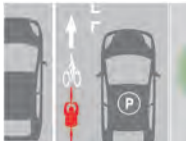
Diagrams for illustrative purposes only

FIGURE 4-27 RECOMMENDED BIKEWAYS WARD 7



Class I

Class II



Class IIB

Class III

Class IIIB

Class IV

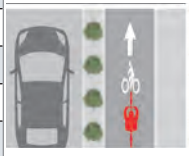


TABLE 4-24 RECOMMENDED BIKEWAYS WARD 7

CORRIDOR	FROM	TO	FACILITY TYPE	LENGTH (MILES)
Arlington Ave	Logan Ct	Ben Loman Way	IIB	0.2
Arlington Ave	Western Ave	Fairhaven Dr	IIB	0.7
Buchannan Ave	SR-91	Magnolia Ave	II	0.3
Buchannan Ave	Collet Ave	SR-91 Overpass	III	0.5
Cypress Ave	Golden Ave	Crest Ave	II	1.7
Golden Ave	Pierce St	Cypress Ave	IIIB	1.5
Gramercy Pl	Tyler St	Crest Ave	IIIB	0.2
Gramercy Pl	Golden Ave	Tyler St	II	1.4
Jurupa Ave	Crest Ave	Rutland Ave	II	0.3
Jurupa Ave	Crest Ave	Tyler St	IIB	0.4
La Sierra Ave	Hole Ave	Gramercy Pl	II	0.3
La Sierra Ave	Schulyer Ave	Pierce St	IIB	0.3
Tyler St	Wells Ave	Arlington Ave	II	1.2
Tyler St	Arlington Ave	Jurupa Ave	IIB	1.0
Wells Av	Hole Ave	Tyler St	IIIB	1.0
			Total	**11.0**

Diagrams for illustrative purposes only

BIKEWAY RECOMMENDATIONS WHERE PARKING IS ALLOWED

There are several corridors throughout the City of Riverside where parking is allowed within the same space as existing bike facilities, which results in conflict areas for bicyclists and vehicles. This issue proves to be very problematic and can push bicyclists into the roadway potentially creating a challenging riding condition. As such, bike lane designs that involve parking within the bike lane is no longer favored or recommended. The planning team conducted a thorough search where these issues exist and prepared separate recommendations for each segment.

Three types of solutions were identified to address the road segments which allowed parking, they include:

- **Restripe** to accommodate both vehicle parking and a bicycle facility clearly delineating each mode from the other, a road diet may be required.
- **Remove parking** to accommodate the existing bike facility. Availability of parking, right of way widths, and level of traffic stress were key factors in this solution.
- **Restrict parking** to certain times of day allowing for bike accessibility during day hours (e.g. 7am- 6pm) and allow residents to park in spaces at night. The City will need to identify the most appropriate times to implement this strategy.

The following recommendations are best practices for repaving and restriping for a shared parking and bike facility configuration. It is understood that the ideal configuration that is presented may not always be the most viable solution for each stakeholder group. It may result in the removal of a bike facility if a shared configuration is not feasible.

Figure 4-28 and Table 4-25 provide a description and location of these recommendations.

Photo Caption: Cars parked in bike lane along Central Ave (Google).

Photo Caption: Cars parked in bike lane along Mission Ave (Google).

FIGURE 4-28 BIKEWAY RECOMMENDATIONS WHERE PARKING IS ALLOWED

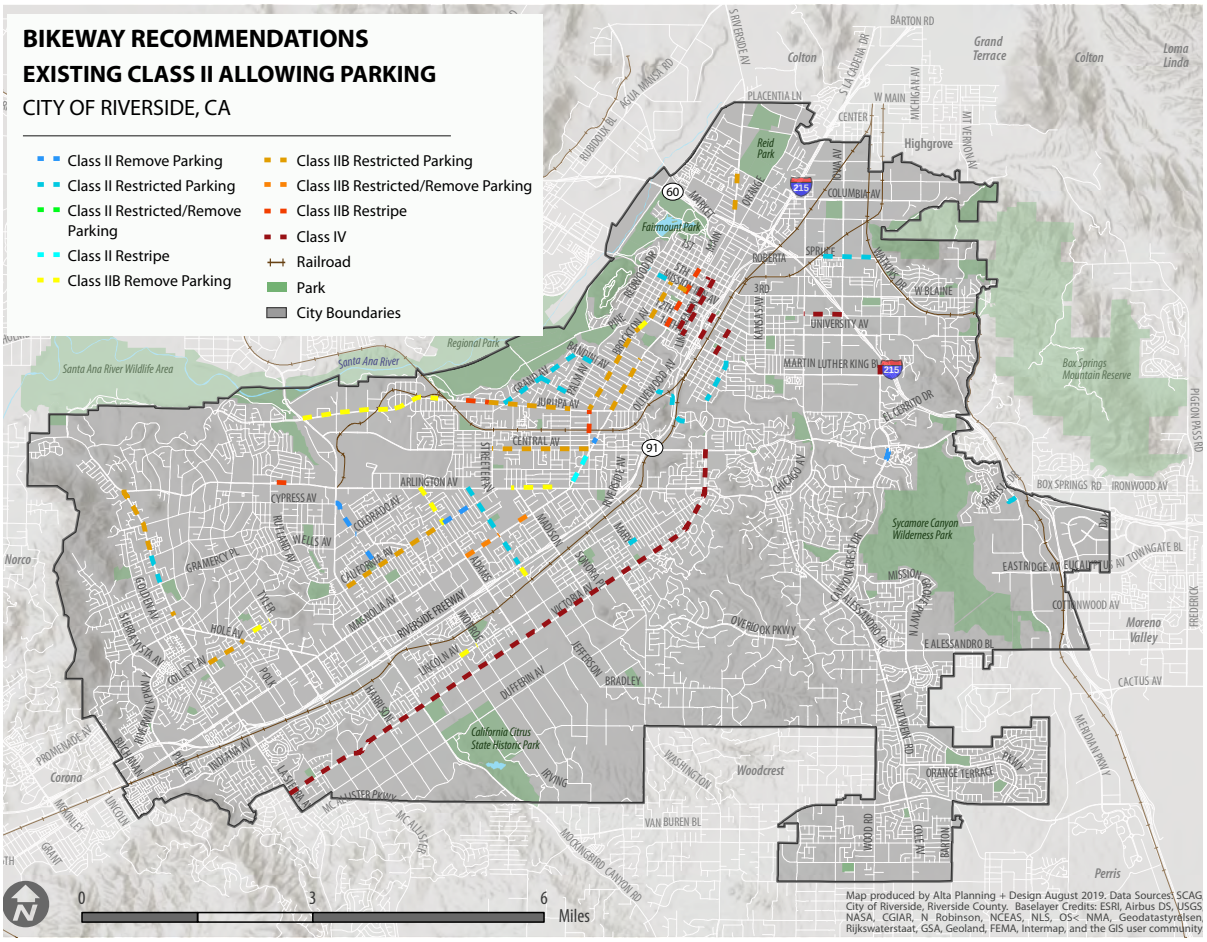


TABLE 4-25 BIKEWAY RECOMMENDATIONS WHERE PARKING IS ALLOWED

CORRIDOR	FROM	TO	FACILITY TYPE	ACTION	LENGTH (MILES)
Arlington Av	Ben Lomand Way	Logan Ct	II	Restripe to separate bike lane from parking lane. 8' parking lane, 5' bike lane and 2' buffer, 12' travel lane.	0.18
California Av	Adams St	Via San Luis	II	Consider removal of parking along segment. Houses don't front the street, side street parking available.	0.46
Canyon Crest Dr	Via Zapata	Central Ave	II	Consider removal of parking along segment. Apartment parking available on site along segment.	0.19
Collett Ave	Draxel Ave	Hole Ave	II	Candidate for restricted parking.	0.55
Grand Ave	Jurupa	Palm Ave	II	Candidate for restricted parking.	1.39

TABLE 4-25 BIKEWAY RECOMMENDATIONS WHERE PARKING IS ALLOWED

CORRIDOR	FROM	TO	FACILITY TYPE	ACTION	LENGTH (MILES)
Jackson St	Colorado Ave	Van Buren Blvd	II	Candidate for restricted parking.	0.50
Jackson St	Delano Dr	California Ave	II	Candidate for restricted parking.	0.25
Jefferson St	Arlington	The Aspens Driveway	II	Candidate for restricted parking, pick up and drop off. Upgrade bike lane striping - green lane and conflict striping.	0.62
Jefferson St	Magnolia	SR91 Under-pass	II	Candidate for restricted parking, pick up and drop off. Upgrade bike lane striping - green lane and conflict striping.	0.46
La Sierra Av	Gramercy Pl	Campbell Ave	II	Candidate for restricted parking. Upgrade bike lane striping - green lane and conflict striping.	0.37
La Sierra Av	Doverwood Dr	Mountain Ave	II	Candidate for restricted parking. Upgrade bike lane striping - green lane and conflict striping.	0.05
Lochmoor Dr	Sycamore Can-yon Blvd	Vista Imperio Apartments Driveway	II	Candidate for restricted parking, or consider removal of bike facility.	0.22
Magnolia Av	Sunnyside Dr	Beatty Dr	II	Consider removal of parking along segment. Upgrade to a 6' bike lane with 2' buffer and 12' travel lanes.	0.07
Magnolia Av	Tibbetts	Brockton Ave	II	Restripe center turn lane to turn pockets to accommodate 7' parking lane, 5' bike lane and 12' and 11' travel lanes.	0.40
Mission Inn Ave	Locust St	Redwood Dr	II	Candidate for restricted parking. Upgrade bike lane striping - green lane and conflict striping.	0.26
Panorama Rd	Hallwood Ave	Rockhill Way	II	Candidate for restricted parking.	0.20
Panorama Rd	Olivewood Ave	The Hills drive-way	II	Candidate for restricted parking. Upgrade bike lane striping - green lane and conflict striping.	0.38
Rubidoux Ave	Palm Ave	Grand Ave	II	Candidate for restricted parking. Upgrade bike lane striping - green lane and conflict striping.	0.50
Spruce St	Atlanta Ave	Watkins Dr	II	Candidate for restricted parking along segment.	0.66
Victoria Ave	Woodbine St	14th St	II	Candidate for restricted parking. Upgrade bike lane striping - green lane and conflict striping.	0.58
Adams St	California Ave	Arlington Ave	IIB	Candidate for restricted parking along segment. Restripe to accommodate 5' bike lane and a 2' buffer.	0.58

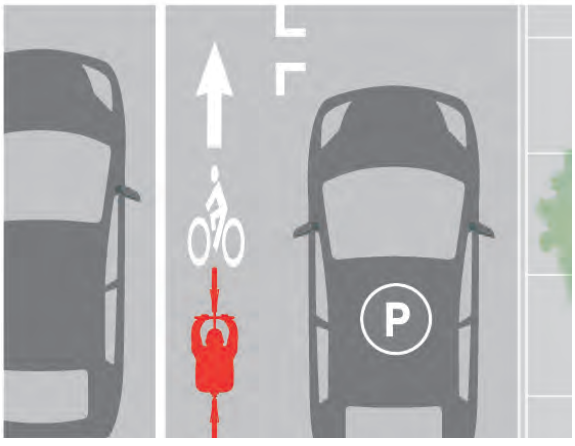
TABLE 4-25 BIKEWAY RECOMMENDATIONS WHERE PARKING IS ALLOWED

CORRIDOR	FROM	TO	FACILITY TYPE	ACTION	LENGTH (MILES)
Arlington Av	Barcelona Way	El Padra St	IIB	Restripe to accommodate 6' bike lane and a 2' buffer. Keep restricted parking times.	0.63
Brockton Av	Beatty Dr	Jurupa	IIB	Restripe to separate bike lane from parking lane. 7' parking lane, 6' bike lane and 1' buffer, 12' travel lane.	0.37
Brockton Av	Jurupa Ave	Tequesquite	IIB	Candidate for restricted parking along segment to allow for peak period parking.	1.24
Brockton Av	Tequesquite Ave	14th St	IIB	Remove signs that allow parking. Restripe to accommodate 5' bike lane and a 2' buffer.	0.20
Brockton Av	14th St	Mission Inn Ave	IIB	Candidate for restricted parking along segment to allow for peak period parking.	0.53
California Av	Van Buren Blvd	Mescale Rd	IIB	Candidate for restricted parking along segment to allow for peak period parking.	1.46
California Av	Mobley Ave	Tyler St	IIB	Consider removal of parking along segment. Upgrade to a 6' bike lane with 2' buffer, reduce lane size to 12'.	0.33
Central Ave	Brockton Av	Streeter Ave	IIB	Candidate for restricted parking along segment to allow for peak period parking.	1.25
Jefferson St	Indiana Ave	Railroad tracks	IIB	Keep restricted parking along segment to allow for peak period parking. Consider removal of bike facility.	0.20
Jurupa Ave	Rio Rancho Way	Deerfield Rd	IIB	Restripe to accommodate 7' parking lane, 6' bike lane and 3' buffer, 11' travel lanes.	0.30
Jurupa Ave	Deerfield Rd	Palm Ave	IIB	Candidate for restricted parking.	1.06
Jurupa Ave	Columbus St	Florence St	IIB	Remove parking along segment. Industrial area with fast speeds	0.60
La Sierra Av	Campbell Ave	Arlington Ave	IIB	Candidate for restricted parking along segment to allow for peak period parking.	0.94
Lincoln Av	Irving St	Monroe St	IIB	Candidate for restricted parking along segment to allow for peak period parking.	0.26
Lincoln Av	Bautista St	Jane St	IIB	Remove signs that allow parking. All homes are corner lot and have on-street parking on side streets.	0.21
Magnolia Av	Adams St	Jefferson St	IIB	Candidate for restricted parking on the north side of the street. Consider removal of parking on the south side of the street.	0.51

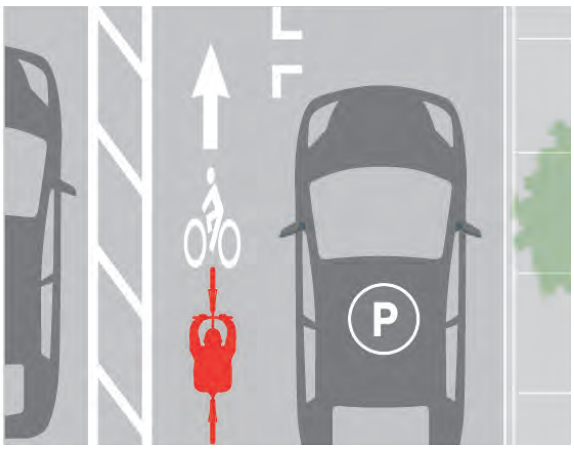
TABLE 4-25 BIKEWAY RECOMMENDATIONS WHERE PARKING IS ALLOWED

CORRIDOR	FROM	TO	FACILITY TYPE	ACTION	LENGTH (MILES)
Magnolia Av	Jurupa	Ramona Dr	IIB	Keep restricted parking along segment to allow for peak period parking.	0.76
Magnolia Av	Cortez St	Madison St	IIB	Keep restricted parking on the north side of the street. Consider removal of parking on the south side of the street.	0.20
Main St	North Freemont ES driveway	Strong St	IIB	Candidate for restricted parking along segment to allow for peak period parking.	0.13
Main St	Lofton Pl	Columbia Ave	IIB	Candidate for restricted parking along segment to allow for peak period parking.	0.32
Market St	14th St	1st St	IIB	Restripe to separate bike lane from parking lane with the parking lane on the outside. 8' parking lane, 6' bike lane, 1' buffer between parking and bike lane. High parking turnover	0.99
Mission Inn Ave	Market	Chestnut St	IIB	Candidate for restricted parking along segment to allow for peak period parking.	0.16
TOTAL					**21.5**

Class II Bike Lane



Class IIB Buffered Bike Lane



Diagrams for illustrative purposes only

Programmatic Recommendations

SAFE ROUTES TO SCHOOL RECOMMENDATIONS

SRTS programs foster collaboration between parents, school staff, school districts, and local agencies to identify and remedy deterrents and impediments to walking and cycling as well as safety concerns along routes to/from school in an effort to enhance safety and promote student walking and cycling. A crucial role of the City in the SRTS program includes the maintenance and upgrade of infrastructure on public streets along routes to/from public and private schools to create safe and inviting pedestrian and cyclist environments and work in partnership with the Riverside Police Department to deter and enforce unsafe behaviors.

Riverside County Department of Public Health Injury Prevention Services received Safe Routes to School Cycle 1 funds to provide pedestrian and bicycle education and encouragement activities at specific schools in the City of Riverside. The following are the SRTS recommendations for Riverside.

1. Expand the number of Safe Routes to School site assessments so that every school in Riverside receives a traffic safety assessment with a goal of performing assessments at each public school every five years.
2. Partner with local organizations such as Inland Empire Biking Alliance or the Riverside County Department of Public Health Injury Prevention Department to deliver education and encouragement programs at Riverside schools.
3. Partner with school districts in Riverside and County Health to organize and fund events such as International Walk and Roll to School day.
4. Reduce the speed limit to 15mph on Local roadways, in school zones that experience high speeds per speed count data.
5. Use targeted traffic enforcement in school zones.
6. Continue to implement bicycle and pedestrian recommendations developed from school site assessments.
7. Create maps which show marked school pedestrian crossings, RRFB devices, and bike lanes in close proximity to schools for parents and students to know the easiest and most comfortable way to get to school without driving.

RESOURCES

Riverside County Department of Public Health's Injury Prevention Department coordinates and receives funding for Safe Routes to School programs: https://www.rivcoips.org/Safe-Routes-to-School

Additional resources can be found on the Safe Routes Partnership website:

https://www.saferoutespartnership.org/

Photo Caption: A "Walking School Bus" initiative offers kids a fun and safe way to get to school.

Photo Caption: Student Valet program at Twinhill Elementary School in Riverside, CA

SAFE ROUTES TO TRANSIT RECOMMENDATIONS

Closing the first/last mile gap around Metrolink stations and RTA transit stops can expand the number of trips that can be made using transit, encouraging more people to use those services for both commuting and service trips. Currently, neither the Santa Ana River Trail nor the Victoria Ave Trail connect to any Metrolink stations and two of the three stations (Hunter Park and La Sierra) are not well connected for bicyclists and pedestrians.

The proposed improvements will enhance access to all three Metrolink stations. The La Sierra Station has proposed a suite of intersection improvements at La Sierra Ave and Indiana Ave with improvements to the on-street bicycle facilities along La Sierra Ave including adding a buffer to the existing Class II. The proposed Class IV facility along Vine St will improve on-street connections and enhance bicycle connectivity to the Downtown Metrolink Station. This proposed facility will provide greater comfort and accessibility from the two arterials (14th St and University Ave) from which the station is accessed. The Hunter Park Metrolink s=Station will also benefit from on-street improvements. Sidewalks are proposed along Rustin Ave connecting pedestrians to the station, along with an upgraded Class II facility with buffer along Iowa Ave, which is proposed as the main north to south bike connection in this area.

Photo Caption: Riverside - La Sierra Metrolink Station.

Photo Caption: Riverside -Downtown Metrolink Station.

SHARED MOBILITY STUDY

Mobility options in many cities have changed drastically in recent years with the rise of bike share programs, transportation network companies (TNCs) such as Lyft and Uber, micro transit, and autonomous vehicles. Shared mobility, micro-mobility, and on-demand mobility are likely to continue being part of our transportation landscape, and often align with our goals of reducing household transportation costs and improving access.

Although called "bikeways," such facilities are frequently used not just by people riding bikes, but also by other small-wheeled devices such as mobility scooters, skateboards, roller skates, and more. Further, bikeways may continue to be used by new modes such as e-scooters. California Vehicle Code also requires pedestrians use bike lanes if the sidewalk is unavailable.

Riverside previously participated in a docked bike share system, which ended in 2020. A separate, more detailed shared mobility service study can help the City evaluate potential new systems for bikes and/or scooters. The study could build shared objectives around increased shared mobility services, and plan for data sharing and operational requirements for any additional shared mobility operators. This study can ensure that any future shared mobility services operate within a framework of equity, affordability, and broad geographic distribution.

Photo Caption: People riding scooter rentals in Venice, CA.

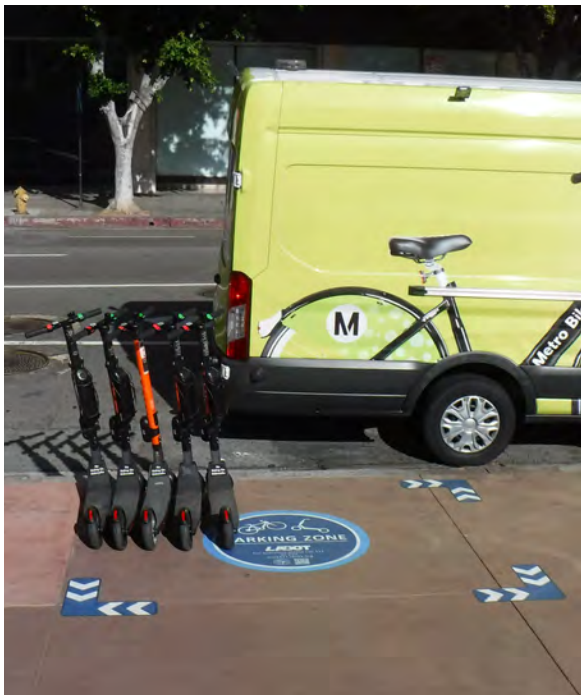


Photo Caption: Scooter drop zone in Downtown Los Angeles, CA.

TRAILS MASTER PLAN NETWORK

The existing trail heads, trail crossings, and proposed primary trails within the City of Riverside were reviewed when developing the bike and pedestrian recommendations as shown in Figure 4-29. One of the goals of this Plan is to create on-street connections from bike facilities to trail facilities for a truly connected transportation and recreation network. The major trail networks within the City include:

- Santa Ana River Trail
- Victoria Ave
- Gage Canal
- La Sierra Hills

Each of these areas/trails within the City were analyzed for trail connectivity and trail access from the proposed on-street network.

Trails Master Plan available for trails related information and recommendations.

Photo Caption: Victoria Ave walking path and Class II bike lane.

SANTA ANA RIVER TRAIL

- 3 - Class II Bike Lane Connections
- 1 - Pedestrian Improvement

VICTORIA AVE

- 3 - Class II Bike Lanes
- 3 - Class III Bike Boulevard Connections

GAGE CANAL

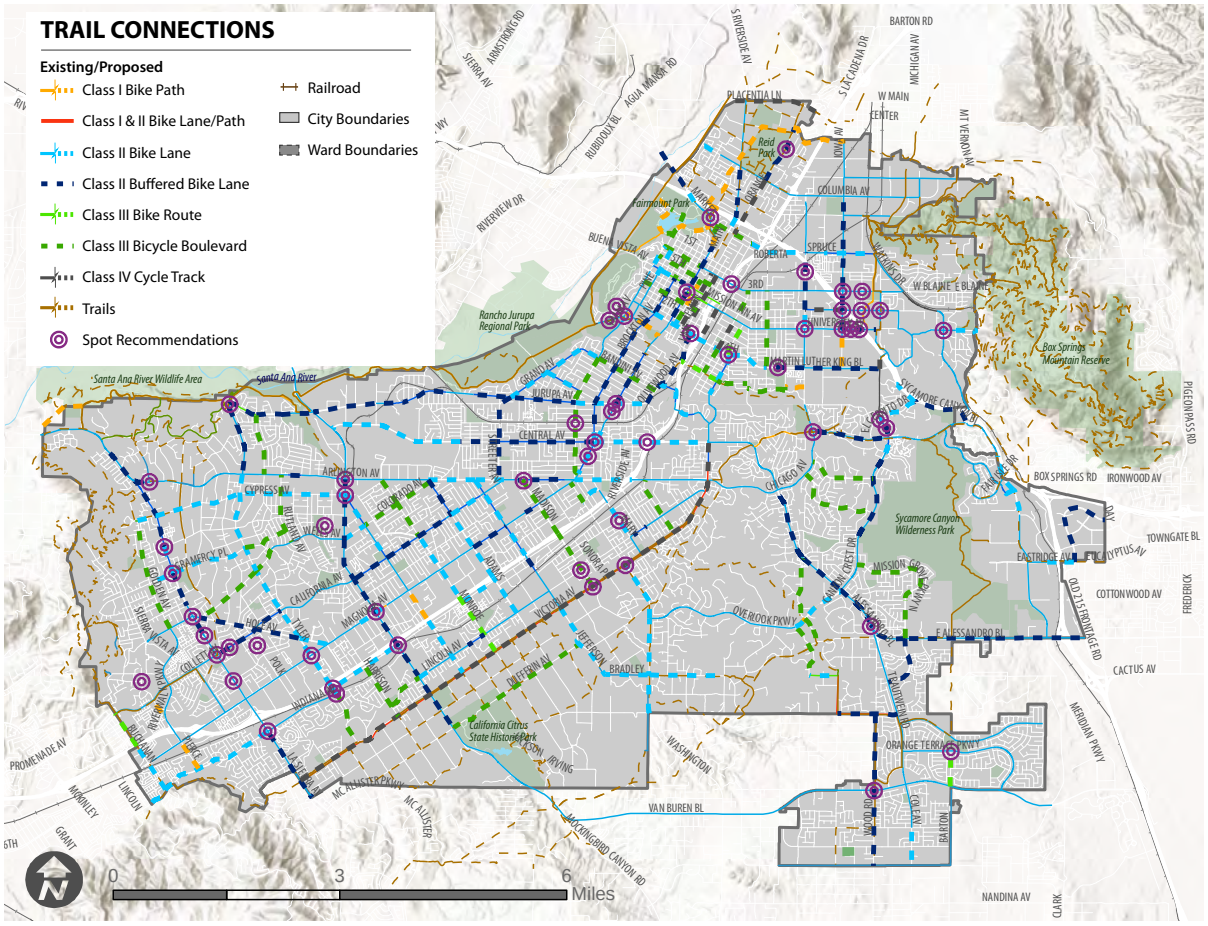
- 3 - Class II Bike Lanes and
- 1 - Class IV Protected Bike Lane
- 1 - Pedestrian Improvement

LA SIERRA HILLS

- 2 - Class II Bike Lanes
- 1 - Class III Bike Boulevard Connections
- 1 - Pedestrian Improvement

Photo Caption: Gage Canal crossing at Washington St

FIGURE 4-29 TRAIL CONNECTIVITY



REGIONAL CONNECTIONS

Ensuring connection of recommended bikeway improvements to regional trails, destinations, and transit are goals of this Plan. Previous regional planning efforts have identified the regional corridors and priority projects for the Western Riverside region. Many of these corridors and trails are on-street and coincide with the existing bicycle network, however, a number do not. For the bicycle facilities that currently exist on a regional corridor, the strategy focused on the upgrade of facilities when possible to upgrade the facility when possible, such as adding buffers to Class II facilities (e.g. La Sierra Ave) and improving and creating new connections to these corridors. Along Arlington Ave which serves as major east west corridor through Riverside, recommendations include eight proposed bikeway connections as well as several proposed upgraded segments along the corridor. Other regional corridors and trails include:

- La Sierra Ave
- Van Buren Blvd
- Magnolia Ave
- Arlington Ave
- Box Springs Blvd
- Santa Ana River Trail

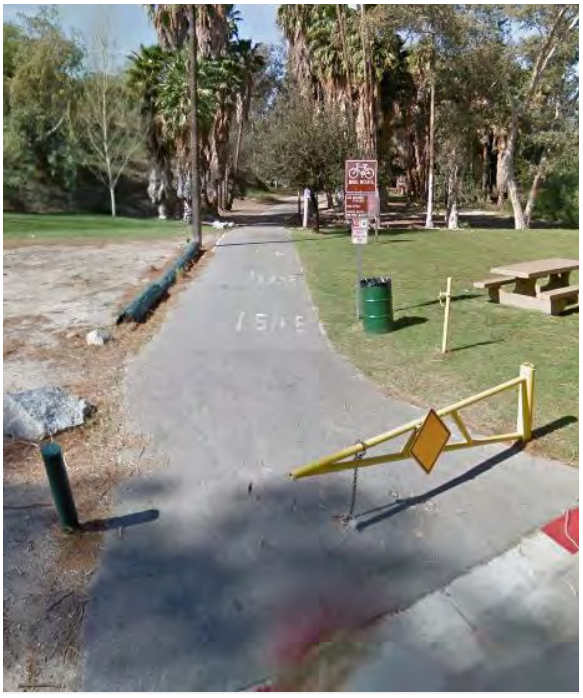


Photo Caption: Santa Ana River Trail access at Fairmont Park.

Photo Caption: Class IV bike facility along Magnolia Ave.

WAYFINDING

A bicycle network wayfindng system and guide cyclists consists of comprehensive signing and/or pavement markings to guide people to key destinations. Wayfinding signs direct bicyclists along the existing bicycle network and to important community destinations such as libraries, schools, parks, shopping districts, and civic buildings. Wayfinding is an important tool which assists cyclists in easily and efficiently navigating throughout Riverside. Signs along the bicycle network should indicate the direction of travel, the locations of major destinations, and the time/distance to these destinations along the network. Riverside currently has one wayfinding guided 5.16 mile Downtown Bicycle Loop, but does not have a consistent wayfinding sign program implemented throughout the remainder of the City's bicycle network.

This program could serve both wayfinding and safety purposes by helping users to:

- Become familiar with the network
- Identify the best routes to destination
- Understand timing and distances to their destinations

Wayfinding Recommendation: Develop a Comprehensive Wayfinding Program

The City of Riverside can develop and implement a comprehensive wayfinding program for bicyclists, integrating this program with Metrolink stations, downtown wayfinding or branding initiatives, and signage along the Santa Ana River Trail and other regional trail systems. The City should develop a wayfinding plan in order to involve the community in the creation of a design unique to Riverside which will identify:

Photo Caption: Existing signage for the Downtown Bike Loop.

- Sign locations
- Sign type - what information should be included and design features
- Key destinations to be highlighted on each sign
- Approximate distance and/or travel time to each destination
- Landscaping
- Public art

Photo Caption: Example of pavement marking bicycle wayfinding.

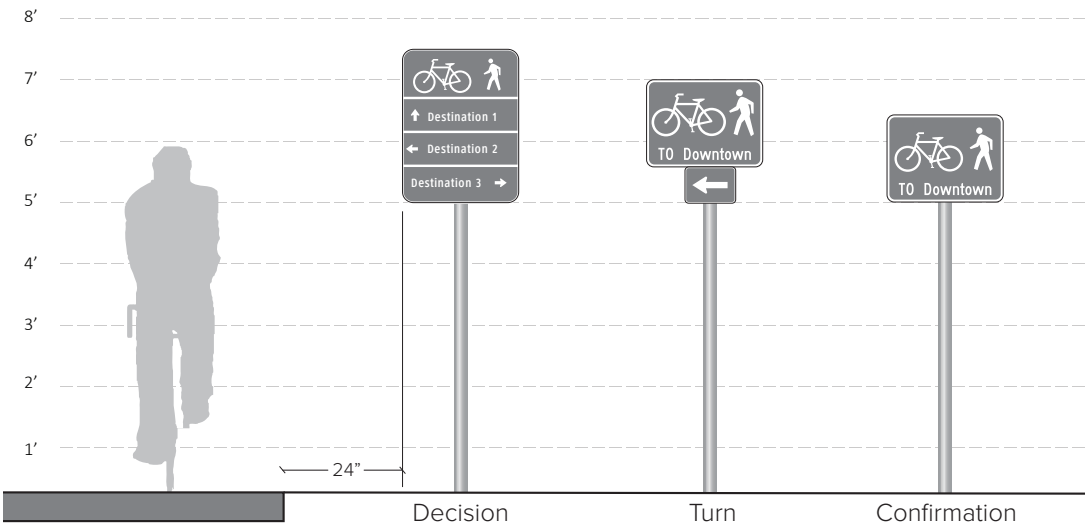


Photo Caption: Typical navigational signage.

AVERAGE DAILY TRAFFIC/VEHICLE MILES TRAVELED BENEFITS

Fossil-fuel driven transportation generates the largest share of greenhouse gas (GHG) emissions of any economic sector in the United States, amounting to almost 30% of all GHG emissions and surpassing those generated from electricity production and industry.[1]

Biking and walking cause no direct air or water pollution, require minimal land use impacts, and emit negligible noise and light pollution. Bicyclists and pedestrians occupy less space than cars and help reduce demand for road space and parking, freeing up land for public space, buildings, food production, and housing. Replacing driving trips with biking or walking trips reduces emissions associated with mobility, translating into less carbon dioxide, nitrogen oxides, hydrocarbons, and other pollutants in the air.

Implementation of this Plan not only reduces our contribution to climate change, but will also enhance our resilience to it. Creating viable alternatives to private vehicles reduces pressure on road infrastructure and provides options for people to remain mobile when other transportation modes are disrupted by climate events. It will also improve the health of residents who are vulnerable to asthma or other chronic respiratory diseases associated with air pollution.

Photo Caption: Bike commuters in Los Angeles, CA.

1 United States Environmental Protection Agency. *Sources of Greenhouse Gas Emissions*. Accessed May 28, 2019, https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions.

Section 4.7:
Funding Strategies

Funding Strategies

A VARIETY OF SOURCES EXIST TO FUND BICYCLE AND PEDESTRIAN INFRASTRUCTURE PROJECTS, PROGRAMS, AND STUDIES. LOCAL AND REGIONAL FUNDING SOURCES THAT CAN BE USED FOR CONSTRUCTION OR MAINTENANCE OF BICYCLE OR PEDESTRIAN IMPROVEMENTS, ALONG WITH COMPETITIVE GRANT PROGRAMS, ARE DESCRIBED BELOW.

Photo Caption: Resident walking in downtown Riverside.

Local and Regional Funding Sources

BEYOND Framework Fund Program

The BEYOND launched in 2015 to support member agency efforts to improve quality of life in Western Riverside County. Over the two rounds of the Program, $4.1 Million has been awarded to member jurisdictions to support 83 projects. Each of these projects corresponds to at least one of the goals outlined by WRCOG's Economic Development & Sustainability Framework. These goals help steer a project's efforts to enhance local issues as they relate to the economy, education, health, energy & environment, transportation, and water initiatives.

Funds are programmed by the Western Riverside Council of Governments (WRCOG).

RIVERSIDE COUNTY COMMUNITY IMPROVEMENT DESIGNATION (CID) FUNDS

Each member of the Board of Supervisors has an approved CID allocation to be spent during any given fiscal year. CID funds are intended to augment the efforts of community organizations, non-profits, and government agencies to benefit residents, neighborhoods, and communities in Riverside County. Awards can be used to support programs, capital projects, and fundraising events or activities. The final and annual written reports shall include a brief narrative regarding the project, balance sheet and documentation of expenditures. The County shall require the recipient to return any funds not spent or documented per the signed agreement.

Funds are programmed by Riverside County Board of Supervisors.

MEASURE A

Measure A provides Riverside County's first half-cent sales tax for transportation improvements. This Measure is a proactive response to growing congestion by spelling out a list of transportation projects to address the problem. Funds go back to each of three geographic areas within Riverside County: Western Riverside County, Coachella Valley, and Palo Verde Valley, in proportion to the sales taxes they contribute. Each of the three geographic areas has its own transportation program.

Funds are programmed by the Riverside County Transportation Commission.

TRANSPORTATION UNIFORM MITIGATION FEE REGIONAL ARTERIAL ROADS (TUMF)

TUMF regional arterial funds are used for roadway improvement projects and Community Environmental Transportation Acceptability Process projects. To date, approximately $135 million has been programmed for TUMF regional arterial projects.

Funds are programmed by the Riverside County Transportation Commission.

TDA ARTICLE 3 BICYCLE AND PEDESTRIAN FACILITIES PROGRAM

Each year, 2% of the Local Transportation Fund (LTF) revenue is made available for bicycle and pedestrian facility projects under TDA Article 3, also known as SB 821. Eligible projects include sidewalks, access ramps, bicycle facilities, and bicycle plan development. A Call for Projects is issued biennially in February, and funds are allocated each June. In June 2019, RCTC awarded approximately $3.9 million to pedestrian and bicycle projects in Riverside County. RCTC will release its next call for projects in February 2021 for an estimated $3.5 million in available funding.

SUSTAINABILITY PLANNING GRANT PROGRAM

Projects are recommended by the Riverside County Transportation Commission. This grant is intended to support SCAG member jurisdictions in planning and non-infrastructure projects that promote safety and encourage people to walk and bicycle and to seed active transportation concepts that provide a preliminary step for future applicants. Active transportation projects including bicycle, pedestrian and Safe Routes to School Plans are limited to a maximum of $200,000 in funding.

Funds are programmed by the Southern California Association of Governments (SCAG).

Competitive Grant Programs

CALIFORNIA ACTIVE TRANSPORTATION PROGRAM (ATP)

California's Active Transportation Program funds infrastructure and programmatic projects that support the program goals of shifting vehicular trips to walking and bicycling, reducing greenhouse gas emissions, and improving public health. Competitive application cycles occur every one to two years, typically in the spring or early summer. Eligible projects include the construction of bicycling and walking facilities, new or expanded programmatic activities, or projects that include a combination of infrastructure and non-infrastructure components. Typically, no local match is required, though extra points are awarded to applicants who do identify matching funds.

Funds are programmed by the California Transportation Commission (CTC).

SUSTAINABLE TRANSPORTATION PLANNING GRANTS

Caltrans Sustainable Transportation Planning Grants are available to communities for planning, study, and design work to identify and evaluate projects, including conducting outreach or implementing pilot projects. Communities are typically required to provide an 11.47 percent local match, but staff time or in-kind donations are eligible to be used for the match provided the required documentation is submitted.

Funds are programmed by Caltrans.

HIGHWAY SAFETY IMPROVEMENT PROGRAM

Caltrans offers Highway Safety Improvement Program (HSIP) grants every one to two years. Projects on any publicly owned road or active transportation facility are eligible, including bicycle and pedestrian improvements. HSIP focuses on projects that explicitly address documented safety challenges through proven countermeasures, are implementation-ready, and demonstrate cost-effectiveness.

Funds are programmed by Caltrans.

SOLUTIONS FOR CONGESTED CORRIDORS PROGRAM

Funded by SB1, the Congested Corridors Program strives to reduce congestion in highly-traveled and congested corridors through performance improvements that balance transportation improvements, community impacts, and environmental benefits. This program can fund a wide array of improvements, including bicycle and pedestrian facilities. Eligible projects must be detailed in an approved corridor-focused planning document. These projects must include aspects that benefit all modes of transportation using an array of strategies that can change travel behavior, dedicate ROW for bikes and transit, and reduce vehicle miles traveled.

Funds are programmed by Caltrans.

OFFICE OF TRAFFIC SAFETY

Under the Fixing America's Surface Transportation (FAST) Act, five percent of Section 405 funds are dedicated to addressing non-motorized safety. These funds may be used for law enforcement training related to pedestrian and bicycle safety, enforcement campaigns, equipment projects for non-federally funded roadways and public education and awareness campaigns.

Funds are programmed by the California Office of Traffic Safety.

AFFORDABLE HOUSING AND SUSTAINABLE COMMUNITIES PROGRAM (AHSC)

The AHSC program funds land-use, housing, transportation, and land preservation projects that support infill and compact development that reduces greenhouse gas emissions. Projects must fall within one of three project area types: transit-oriented development, integrated connectivity project, or rural innovation project areas. Fundable activities include affordable housing developments, sustainable transportation infrastructure, transportation-related amenities, and program costs.

Funds are programmed by the Strategic Growth Council and implemented by the Department of Housing and Community Development.

URBAN GREENING GRANTS

Urban Greening Grants support the development of green infrastructure projects that reduce Greenhouse Gas (GHG) emissions and provide multiple benefits. Projects must include one of three criteria, most relevant: reduce commute vehicle miles traveled by constructing bicycle paths, bicycle lanes, or pedestrian facilities that provide safe routes for travel between residences, workplaces, commercial centers, and schools. Eligible projects include green streets and alleyways and non-motorized urban trails that provide safe routes for travel between residences, workplaces, commercial centers, and schools.

Funds are programmed by the CA Natural Resource Agency.

TRANSFORMATIVE CLIMATE COMMUNITIES PROGRAM (TCC)

The TCC Program funds development and infrastructure projects that achieve major environmental, health, and economic benefits in California's most disadvantaged communities. TCC empowers the communities most impacted by pollution to choose their own goals, strategies, and projects to reduce greenhouse gas emissions and local air pollution – all with data-driven milestones and measurable outcomes.

Funds are programmed by California's Cap-and-Trade Program.

Other State Funds

SENATE BILL 1: LOCAL PARTNERSHIP PROGRAM

This program provides local and regional agencies that have passed sales tax measures, developer fees, or other transportation-imposed fees to fund road maintenance and rehabilitation, sound walls, and other transportation improvement projects. Jurisdictions with these taxes or fees are then eligible for a formulaic annual distribution of no less than $100,000. These jurisdictions are also eligible for a competitive grant program. Local Partnership Program funds can be used for a wide variety of transportation purposes, including roadway rehabilitation and construction, transit capital and infrastructure, bicycle and pedestrian improvements, and green infrastructure.

Funds are programmed by CTC.

SENATE BILL 1: ROAD MAINTENANCE AND REHABILITATION PROGRAM

Senate Bill 1 created the Road Maintenance and Rehabilitation Program (RMRP) to address deferred maintenance on state highways and local road systems. Program funds can be spent on both design and construction efforts. On-street active transportation-related maintenance projects are eligible if program maintenance and other thresholds are met.

Funds are allocated to eligible jurisdictions and programmed by CTC.

SAFE ROUTES TO SCHOOL

The goal of this program is to empower communities to make walking and bicycling to school a safe and routine activity once again. Funding is available for a wide variety of programs and projects, from building safer street crossings to establishing programs that encourage children and their parents to walk and bicycle safely to school. Infrastructure and non-infrastructure projects are eligible within 2 miles of a grade school or middle school.

Funds are programmed by the California Department of Transportation (Caltrans).

REGIONAL SURFACE TRANSPORTATION PROGRAM

This program was originally established by California State Statute to support ongoing construction and maintenance of highways and bridges in California. However, this program can also fund bicycle transportation and pedestrian walkways on any public road as long as the bicycle facilities are used primarily for transportation purposes as opposed to recreational use.

Funds are programmed by the California Department of Transportation (Caltrans).

TABLE 4-26 ACTIVE TRANSPORTATION FUNDING

FUNDING SOURCE	ON-STREET BIKEWAYS	PEDESTRIAN INFRASTRUCTURE	SAFE ROUTES TO SCHOOL	BICYCLE PROGRAMS	PEDESTRIAN PROGRAMS	STUDIES
LOCAL AND REGIONAL PROGRAMS						
BEYOND Framework Fund Program	x	x	x	x	x	x
Riverside County Community Improvement Designation (CID) Funds			x	x	x	x
Measure A	x	x	x			
Transportation Uniform Mitigation Fee Regional Arterial Roads (TUMF)	x	x				
TDA Article 3 Bicycle and Pedestrian Facilities Program	x	x				x
Sustainability Planning Grant Program	x	x	x			x
COMPETITIVE GRANT PROGRAMS						
California Active Transportation Program (ATP)	x	x	x	x	x	
Sustainable Transportation Planning Grants						x
Highway Safety Improvement Program	x	x	x			
Solutions for Congested Corridors Program	x	x				
Office of Traffic Safety (OTS)	x	x		x	x	
Affordable Housing and Sustainable Communities Program (AHSC)	x	x		x	x	
Transformative Climate Communities Program (TCC)	x	x				x
Urban Greening Grants	x	x	x			
OTHER STATE FUNDS						
Senate Bill 1: Local Partnership Program	x	x				
Senate Bill 1: Road Maintenance and Rehabilitation Program	x	x				
Safe Routes to School	x	x				x
Safe Routes to Parks	x	x	x			x
Regional Surface Transportation Program	x	x				

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Section 4.8:
Project Prioritization


GUNS·AMMO
ACCESSORIES

Project Prioritization

BECAUSE FUNDING IS LIMITED, THE CITY APPLIES A STRATEGIC APPROACH TO IMPLEMENTING PROJECTS IN A WAY THAT IS ALIGNED WITH COMMUNITY PRIORITIES. A PRIORITIZATION FRAMEWORK ALLOWS RIVERSIDE TO IDENTIFY PRIORITY PROJECTS AND PHASE IMPLEMENTATION OVER MANY YEARS. SOME PROJECTS CAN ALSO BE IMPLEMENTED AS PART OF ROUTINE ROADWAY MAINTENANCE PROGRAMS OR AS PART OF DEVELOPMENT CONDITIONS.

PROJECTS ARE PRIORITIZED WITH CONSIDERATION OF SEVERAL KEY FACTORS INCLUDING SAFETY, USE, PROGRAM AND PLAN GOALS, AS WELL AS COMMUNITY INPUT.

Table 4-27 outlines the prioritization methodology used to evaluate bicycle network projects and pedestrian projects, which is consistent with bicycle project prioritization, yet calibrated for the walking environment. These criteria derive from the plan's goals of supporting health and equity, making Riverside's streets safer for everyone, and connecting people to the places they want to go both locally and regionally. Furthermore, this prioritization plan is aligned with the State's Active Transportation Program grant criteria, which is the primary source of state funding the City pursues for pedestrian and bicycle infrastructure.

For each criterion, projects received an individual score as well as a composite score based on the sum of all five factors evaluated. Total scores falling within the top third are considered high priority projects; total scores falling in the middle third are considered medium priority; and scores falling in the lowest third tier are considered lower priority projects.

The prioritization list acts as a guide to implementation for the City. When funding sources become available, the City will take all available opportunities to propose the most competitive projects. Should opportunities arise to complete projects on lower tiers of the prioritization list prior to those on higher priority tiers, they may be taken. For example, if a new development is required to provide a public benefit along these corridors, proposed bikeways or sidewalks can be considered as an option. If the City plans to repave a corridor that has a recommended bikeway or pedestrian project in this Plan, the City will explore ways to install facilities as the street is repaved.

Projects were given one of three priorities:

- Tier 1: High Priority Projects. These are projects that the City will actively seek funding for and dedicate resources to planning and implementation in the immediate years. Timelines for outreach, and identification of funding sources will be a high priority and immediate next step. The Tier 1 projects that are lower-scale and cost should be considered for immediate implementation in the coming fiscal years.
- Tier 2: Priority Projects. These are projects that the City will maintain as potential projects, in the event that funding sources (such as developer impact fees or applicable grant funding opportunities arise) become available. The City's repaving plan will also take these projects into account as street repaving plans are implemented. These projects may be combined with Tier 1 projects to strengthen the network and gap closure portions of grant applications, and to complement other projects.
- Tier 3: Other Projects. These are projects that the City will pursue longer-term.

Figure 4-30 shows the recommended bicycle projects throughout the City based on prioritization results. The following tables list Tier 1, 2, and 3 projects among the recommended bikeways.

TABLE 4-27 PROJECT PRIORITIZATION CRITERIA

CRITERIA	MEASURE	POINTS
Connectivity	Project connects to major destinations, close gaps in the existing bicycle network/sidewalk network, and serves demand for active transportation trips based on proximity to where people live, work, play, shop, learn, and access transit.	0 – 10
Health + Equity	Project is located within a disadvantaged community, as defined by CalEnviroScreen 3.0, Riverside Unified School District Free and Reduced Meal Program, and/or household income thresholds (Department of Housing and Community Development ACS 5-year estimates).	0 – 6
Safety	Project is located in areas with high pedestrian and/or cyclist activity such as public schools, parks, libraries, community and senior centers increasing the potential for collisions or street with high levels of traffic stress, and thereby, addresses safety barriers.	0 – 6
Community-Identified Need	Project was identified as needing improvement by community members through one or more community engagement efforts.	0 – 6
Regional Goals	Project improves and builds upon the regional network identified in the Riverside County Bike Master Plan and/or WRCOG Active Transportation Plan.	0 – 2
	Maximum Possible Points	30

Prioritized Bicycle Projects

Figure 4-30 displays the recommended bicycle projects throughout Riverside based on prioritization score. The following tables summarized the recommended bikeway projects by Tier.

FIGURE 4-30 PRIORITIZED BICYCLE PROJECTS

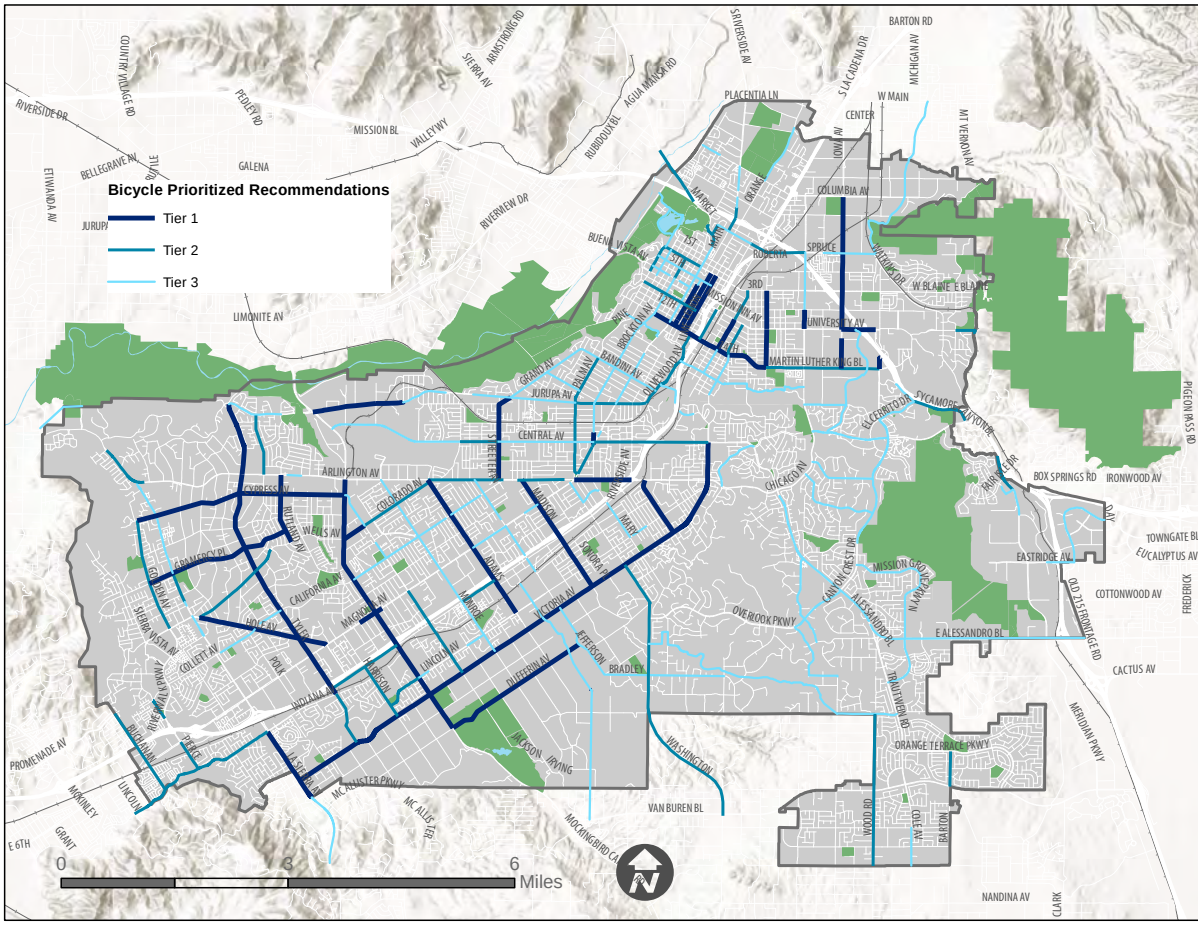


TABLE 4-28 RECOMMENDED BICYCLE PROJECTS: TIER 1

CORRIDOR	FROM	TO	FACILITY TYPE	LENGTH (MILES)	WARD
14th St	Kansas Ave	Brockton Ave	II	1.7	2
Adams St	Lincoln St	California St	II	1.6	5
Arlington Ave	Indiana Ave	Magnolia Ave	II	0.5	3
Brockton Ave	Magnolia Ave	Beatty Dr	II	0.2	3
Chicago Av	W Linden St	Spruce St	IIB	0.8	1,2
Colorado Ave	Van Buren Blvd	Monticello Ave	II	0.3	6
Cypress Ave	Golden Ave	Van Buren Blvd	II	2.8	6,7
Dufferin Ave	Van Buren Blvd	Jefferson St	IIIB	2.0	5
Gramercy Pl	Tyler St	Rutland Ave	IIIB	0.6	6,7
Gramercy Pl	Golden Ave	Tyler St	II	1.4	7
Hole Av	Wells Ave	Tyler St	IIB	1.4	6
Hole Ave	Tyler St	Magnolia Ave	II	0.4	6
Iowa Ave	University Ave	Columbia Ave	IIB	1.8	1,2
Jurupa Ave	Crest Ave	Columbus St	IIB	1.7	3
Kansas St	University Ave	3rd St	IIIB	1.0	2
La Sierra Ave	Indiana Ave	City Limits	IIB	1.1	5
Lemon St	14th St	3rd St	IV	0.8	1
Madison St	Arlington Ave	Victoria Ave	IIIB	1.7	3,4
Magnolia Ave	Meyers St	McKenzie St	II	0.42	5
Main St Pedestrian Mall	10th St	6th St	I	0.31	1
Main St	14th St	13th St	II	0.08	1
Main St	13th St	10th St	IIIB	0.23	1
Maude	Victoria Ave	Arlington Ave	IIIB	0.81	3
Orange St	14th St	3rd St	IV	0.83	1
Rutland Ave	Wells Ave	Arlington Ave	IIIB	0.92	6
Streeter	Arlington Ave	Jurupa Ave	IIB	1.17	3
Tyler St	Wells Ave	Arlington Ave	II	1.4	7
Tyler St	Indiana Ave	Wells Ave	II	1.9	5,6
Tyler St	Arlington Ave	Jurupa Ave	IIB	1.0	7
University Ave	Iowa Ave	W Campus Dr	IIB	0.5	2
Van Buren Blvd	Victoria Ave	Jurupa Ave	IIB	3.7	5,6,7
Victoria Ave	La Sierra Ave	Central Ave	IV	7.3	3,4,5

TABLE 4-29 RECOMMENDED BICYCLE PROJECTS: TIER 2

CORRIDOR	FROM	TO	FACILITY TYPE	LENGTH (MILES)	WARD
10th St	Lemon St	Redwood Dr	IIIB	0.8	1
3rd St	Market St	Redwood Ave	IIIB	0.6	1
Arlington Av	Adams St	Streeter Ave	II	1.0	3
Arlington Ave	Western Ave	Fairhaven Dr	IIB	0.7	7
Barton Rd	Van Buren Blvd	Orange Terrace Pkwy	III	0.5	4
Brockton Av	Mission Inn Ave	3rd St	IIIB	0.3	1
Buchannan Ave	SR-91	Indiana Ave	II	0.7	6, 7
Buchannan Ave	Collet Ave	SR-91 Overpass	III	0.5	7
Central Av	Hillside Ave	Streeter Ave	IIB	0.5	3
Central Ave	Victoria Ave	Brockton Ave	II	1.5	3
Colorado Ave	Jackson St	Adams Ave	IIIB	1.0	5, 6
Golden Ave	Pierce St	Cypress Ave	IIIB	1.5	7
Harrison St	Indiana Ave	Victoria Ave	IIIB	0.8	5
Indiana Av	Hillview Dr	La Sierra Ave	II	1.9	6
Indiana Av	Monroe St	Adams St	II	0.5	5
Indiana Ave	Tyler St	Van Buren Blvd	II	1.0	5
Jackson St	Diana Ave	Magnolia Ave	I	0.4	5
Jackson St	Victoria Ave	Diana Ave	II	0.9	5
Jurupa Ave	Riverside Ave	Palm Ave	II	0.8	1,3
La Sierra Ave	Hole Ave	Gramercy Pl	II	0.3	6,7
Lincoln Av	Harrison St	Van Buren Blvd	IIIB	0.6	5
Magnolia Ave	Brockton Ave	Central Ave	II	0.8	3
Main St	Oakley Ave	Spruce St	II	0.2	1
Main St	Strong St	Spruce St	IIB	0.3	1
Market St	Ridge Rd	Locust St	I	0.3	1
Market St	Rivera St	Santa Ana River Trail	II	0.6	1

TABLE 4-29 RECOMMENDED BICYCLE PROJECTS: TIER 2

CORRIDOR	FROM	TO	FACILITY TYPE	LENGTH (MILES)	WARD
Market St	SR-60	Rivera St	II	0.2	1
Martin Luther King Blvd	Canyon Crest Dr	Kansas Ave	IIB	1.0	2
Martin Luther King Blvd	Kansas Ave	Chicago Ave	IIB	0.5	2
Northbend St	Spruce St	Market St	IIIB	0.1	1
Olivewood Ave	14th St	Jurupa Ave	IIB	1.1	1
Palm Av	Tibbets St	Bandini Ave	IIIB	1.6	1,3
Park Ave	University Ave	3rd St	IIIB	0.4	2
Redwood Dr	University Ave	3rd St	II	0.4	1
Spruce St	Chicago Ave	Mulberry Ave	II	0.8	1
Sycamore Canyon Blvd	Lochmoor St	City Limits	II	0.5	2
Sycamore Canyon Blvd	Central Ave	El Cerrito Dr	IIB	0.8	2
Tyler St	Indiana Ave	Victoria Ave	IIIB	0.7	5
Victoria Ave	14th St	University Ave	III	0.5	2
Vine St	14th St	Mission Inn Ave	IV	0.5	2
Washington St	Victoria Ave	City Limits	II	2.6	4
Wells Av	Hole Ave	Tyler St	IIIB	1.0	6,7
Wood St	John F Kennedy Dr	Krameria St	IIB	2.0	4

TABLE 4-30 RECOMMENDED BICYCLE PROJECTS: TIER 3

CORRIDOR	FROM	TO	FACILITY TYPE	LENGTH (MILES)	WARD
5th St	Lemon St	Redwood Dr	IIIB	0.8	1
Alessandro Blvd	Chicago Ave	I-215	IIB	5.0	2,3,4
Bandini Ave	Olivewood Ave	Palm Ave	IIIB	0.9	1
Bradley St	Jefferson St	Harbart Dr	II	1.7	4
Cactus Ave	Crystal View Terrace	Dauchy Ave	II	0.3	4
Canyon Crest Dr	Via Vista Dr	El Cerrito Dr	IIB	1.8	2
Canyon Crest Dr	Martin Luther King Blvd	UC Riverside Parking Lot 30 Driveway	IV	0.2	2
Canyon Springs Pkwy/Valley Springs Pkwy	Eucalyptus Ave	Day St	IIB	1.3	2
Prince Albert Dr	Sedgwick Ave	Ottawa Ave	IIIB	0.5	2
Central Av	Van Buren Blvd	Hillside Ave	II	1.8	3
Central Ave	Canyon Crest Dr	Chicago Ave	IIB	1.0	2,3
Chicago Av	Spruce St	W Linden St	II	0.3	1,2
Cole Av	Lurin Ave	Krameria St	II	0.5	4
Columbia Av	American Dr	Salmon River Rd	II	0.3	1
Country Club Dr	Chicago Ave	Canyon Crest Dr	IIIB	0.9	2
Crystal View Terrace	Overlook Pkwy	Cactus Ave	IIIB	0.8	4
Dexter Dr	Redwood Dr	SART Trail Head	IIIB	0.1	1
Eastridge Ave/ Eucalyptus Ave	Sycamore Canyon Blvd	Valley Springs Pkwy	II	0.4	2
El Cerrito Dr	Sycamore Canyon Blvd	Canyon Crest Dr	II	0.5	2
Jefferson St	Victoria Ave	Gage Canal	II	1.0	4
Jurupa Ave	Crest Ave	Rutland Ave	II	0.3	7
Jurupa Ave	Crest Ave	Tyler St	IIB	0.4	7
La Sierra Ave	Schulyer Ave	Pierce St	IIB	0.3	6,7
Lincoln Av	Van Buren Blvd	Antares Dr	II	0.2	5
Main St	6th St	5th St	IIIB	0.2	1

TABLE 4-30 RECOMMENDED BICYCLE PROJECTS: TIER 3

CORRIDOR	FROM	TO	FACILITY TYPE	LENGTH (MILES)	WARD
Market St	1st St	Ridge Rd	II	0.2	1
Mary St	Lincoln Ave	Indiana Ave	II	0.5	3,4
Mission Grove Pkwy	Canyon Crest Dr	E Alessandro Blvd	IIIB	1.9	2,4
Mission Grove Pkwy S	Trautwein Rd	Alessandro Blvd	IIB	0.8	4
Monroe	California St	Diana Ave	II	1.0	5
Monroe St	California St	Arlington Ave	IIIB	0.9	5,6
N Orange St	Colombia Ave	Riverside Canal	IIB	0.8	1
Nixon Dr	Brockton Ave	Washington St	II	0.3	3
Overlook Pkwy	Easterly Terminus	Via Vista Dr	I	0.1	4
Overlook Pkwy	Dead end	Dead end w/ Sandtrack Rd	I	0.1	4
Overlook Pkwy	Crystal View Terrace	Alessandro Blvd	II	0.8	4
Park Ave	Cridge St	14th St	IIIB	0.4	2
Pine St	University Ave	3rd St	II	0.4	1
Ransom Rd	Chicago Ave	Canyon Crest Dr	IIIB	1.2	2
Redwood Dr	3rd St	Field Ln	IIIB	0.7	1
Spruce St	Mulberry Ave	Norhtbend St	IIIB	0.5	1
Sycamore Canyon Blvd	Box Springs Blvd	Lochmoor Dr	II	0.4	2
Sycamore Canyon Blvd	El Cerrito Dr	N University Dr	II	0.3	2
Via Vista Dr/ Corinthian Way	Alessandro Blvd	Berry Rd	IIIB	1.2	3,4
Washington St	Nixon Dr	Magnolia Ave	IIIB	0.3	3
S of Lot 4731 Chicago Ave	Chicago Ave	Ottawa Ave	I	0.3	2

Prioritized Pedestrian Projects

Figure 4-31 displays the recommended pedestrian projects throughout Riverside based on prioritization score. The following tables summarized the recommended pedestrian projects by Tier.

FIGURE 4-31 PRIORITIZED PEDESTRIAN PROJECTS

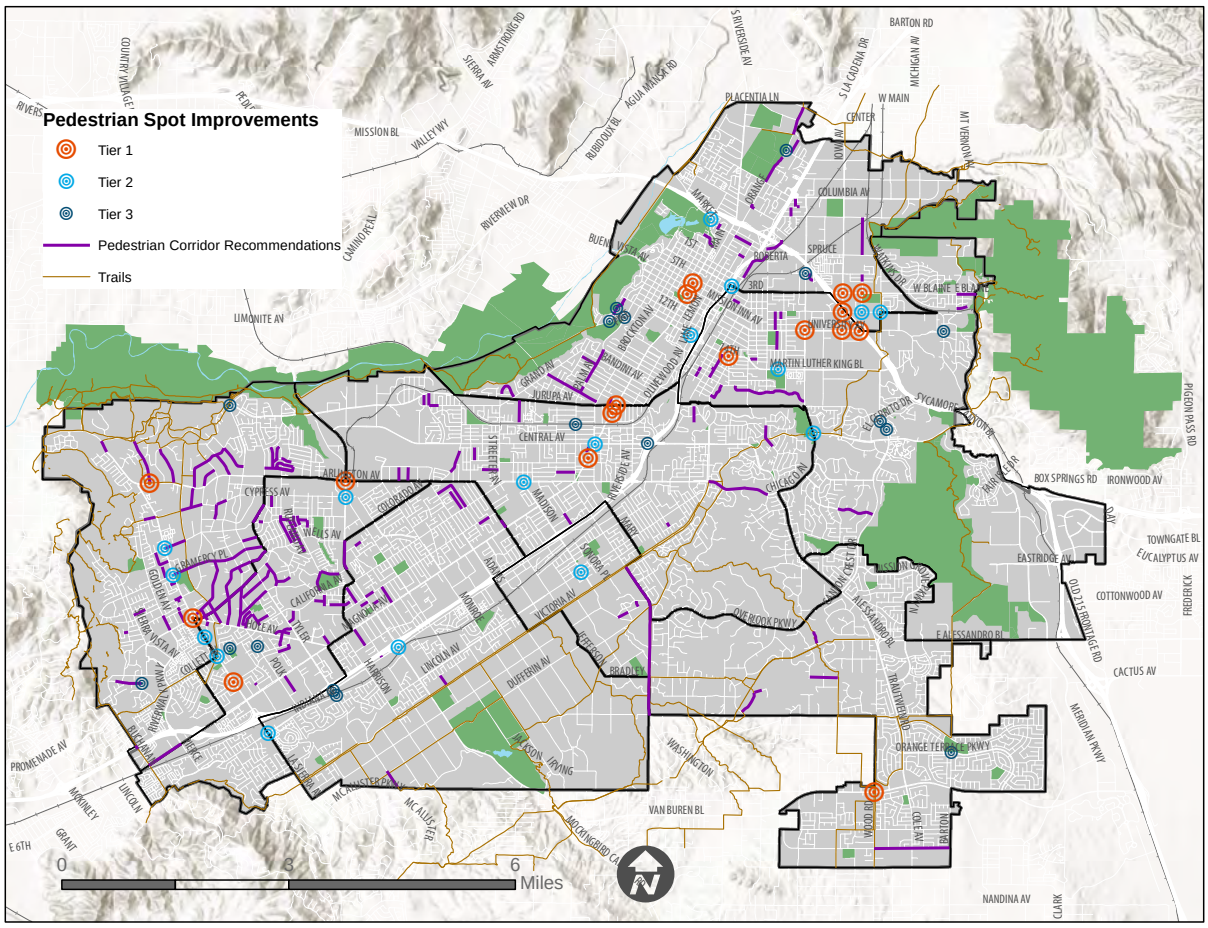


TABLE 4-31 PRIORITIZED PEDESTRIAN PROJECTS: TIER 1

CORRIDOR	CROSS STREET	IMPROVEMENT	WARD
Rustin Ave	Blaine St	Intersection Typology B	1
University Ave	Market St	Intersection Typology E	1
Blaine St	Iowa Ave	Intersection Typology A	1
Chicago Ave	University Ave	Intersection Typology A	2
Iowa Ave	W Linden St	Intersection Typology A	2
Magnolia Ave	Between Brockton Ave and Nelson St	Improve mid block crossing, Intersection Typology D	3
Western Ave	Arlington Ave	Intersection Typology C	7
University Ave	South entrance to University Village	Intersection Typology B, pedestrian scramble	2
14th St	Victoria Ave	Intersection Typology B	2
Jurupa Ave	Magnolia Ave	Intersection Typology A	3
University Ave	I-215 interchange	Intersection Typology F	2
Magnolia Ave	Elizabeth St	Intersection Typology B	3
La Sierra Ave	Pierce St and Hole St	Upgrade intersection. Bushnell pedestrian plaza with removable bollards and historic signage. Typology A	7
Wood Rd	Van Buren Blvd	Intersection Typology A	4
La Sierra Ave	Cochran Ave	Intersection Typology B. High visibility crosswalk	6
Van Buren Blvd	Arlington Ave	Intersection Typology A	3

TABLE 4-32 PRIORITIZED PEDESTRIAN PROJECTS: TIER 2

CORRIDOR	CROSS STREET	IMPROVEMENT	WARD
Rustin Ave	W Linden St	Intersection Typology B	2
Madison St	Arlington Ave	Intersection Typology A	3
14th St	Olivewood Ave	Intersection Typology B	1
W Linden St	Canyon Crest Dr	Intersection Typology C	2
MLK Blvd	Douglass Ave	Improve mid block crossing, Intersection Typology D	2
Third St	Vine St	Intersection Typology C	2
Central Ave	Magnolia Ave	Intersection Typology A	3
Van Buren Blvd	Jackson St	Intersection Typology B	6
Indiana Ave	La Sierra Ave	Intersection Typology A	5
Madison St	Lincoln Ave	Intersection Typology C	4
Chicago Ave	Central Ave	Intersection Typology A	3
Van Buren Blvd	Indiana Ave	Intersection Typology F	5
Gramercy Pl	La Sierra Ave	Intersection Typology B	7
Fairmount Blvd	Market St	Intersection Typology B add crosswalks	1
La Sierra Ave	Collett Ave	Intersection Typology B. High visibility crosswalk	6
La Sierra Ave	Minnier	Typology B. High visibility crosswalk	7
Campbell Ave	La Sierra Ave	Intersection Typology B. High visibility crosswalk	7

TABLE 4-33 PRIORITIZED PEDESTRIAN PROJECTS: TIER 3

CORRIDOR	CROSS STREET	IMPROVEMENT	WARD
Collett Ave	Newby Dr	Intersection Typology C. Upgrade intersection	6
Canyon Crest Dr	Via Pueblo	Install crossing, Intersection Typology B	2
Cass St	Polk St	Intersection Typology C	6
Tequesquite Ave	Glenwood Dr	Intersection Typology C	1
Watkins Dr	W Big Springs Rd	Intersection Typology C	2
El Cerrito Dr	Canyon Crest Dr	Intersection Typology B	2
Central Ave	SR-91 Interchange	Intersection Typology F	3
Mt Rubidoux Trail Head	Glenwood Dr	Intersection Typology D. Install mid block crossing on Glenwood Dr at trail head	1
Chicago Ave	Massachusetts Ave	Install Traffic Signal. Intersection Typology B	1
Tyler St	Jurupa Ave	Intersection Typology D. Upgrade crossing for SART Trail Head.	7
Reid Park Ruth H Lewis Center	Orange St	Intersection Typology D. Install mid block crossing on Orange St at park entrance	1
Knoefler Dr	Ambs Dr	Intersection Typology C and install sidewalks along Knoefler Dr	7
Tyler St	Indiana Ave N of Tracks	Intersection Typology F	5
Palm Ave	14th St	Intersection Typology C	1
Palm Ave	Dewey Ave	Intersection Typology C and improve railroad crossing	3
Tyler St	Indiana Ave S of Tracks	Intersection Typology F	5
Barton St	Orange Terrace Pkwy	Install mid block crossing across Orange Terrace Pkwy, Intersection Typology D	4

Section 4.9: Implementation Plan


NO

Implementation Plan

WITH LIMITED AND COMPETITIVE FUNDING OPTIONS, IMPLEMENTING OVER 110 MILES OF BIKEWAYS AND OVER 50 PEDESTRIAN SPOT IMPROVEMENT PROJECTS MUST BE PRIORITIZED IN A THOUGHTFUL AND FEASIBLE MANNER. THE FOLLOWING EVALUATION STRATEGY REFLECTS A SYSTEMATIC APPROACH TO DETERMINE EACH PROJECT'S COMMUNITY BENEFIT IN A MANNER THAT IS FEASIBLE, FUNDABLE, AND SUSTAINABLE. PROJECTS ARE SORTED INTO FOUR IMPLEMENTATION CATEGORIES BASED ON THE COMBINED RESULTS OF TWO EVALUATIONS: PROJECT PRIORITY AND PROJECT FEASIBILITY. EACH EVALUATION SCORES PROJECTS ON SPECIFIC CRITERIA.

PROJECT FEASIBILITY

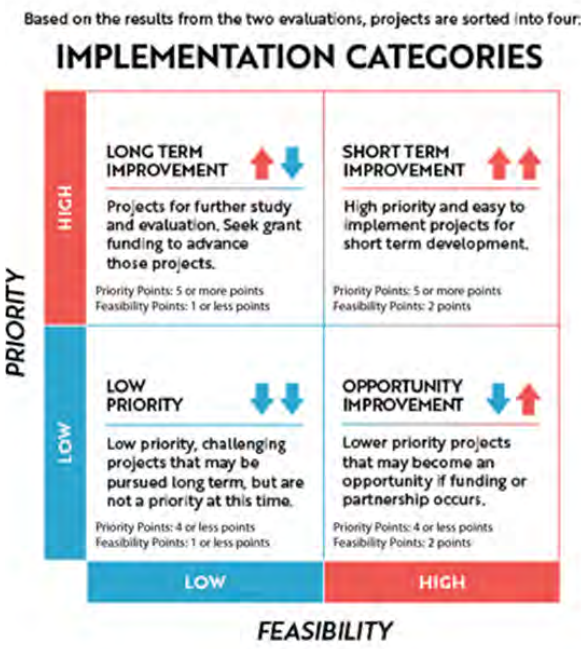
The project feasibility evaluation categorizes projects based on their complexity and high-level costs. In general, projects that only require signage and striping changes are considered highly feasible. Projects that require interagency coordination, hardscape changes, right-of-way acquisition or potential road diets (including parking removal) are considered low-feasibility projects. A feasibility breakdown is below:

- Cost - Projects that only require signage and striping (Class II, Class IIB, Class III, Class IIIB, and some pedestrian crossing improvements) score one point
- Complexity - Projects that will not require interagency coordination (i.e., Caltrans rights-of-way) or will not require a potential road diet score one point

Projects earning two points are considered highly feasible. Projects with zero or one point are considered low-feasibility projects.

IMPLEMENTATION CATEGORIES

Based on the aforementioned evaluations, projects are then placed into four categories: Long term improvements, short term improvements, low priority improvements, and opportunity improvements. Projects are listed by a combined point total within each category. See the graphic to the right:



Short term improvement projects are rated high priority and high feasibility, and represent projects that could be pursued for implementation within the first three to five years.

Long term improvement projects are rated high priority and low feasibility. They may require more study or analysis than short term projects, more significant interagency coordination, and/or additional funding for construction.

Opportunity improvements are those projects rated lower priority and high feasibility and may be pursued when nearby development or an overlapping project creates an opportunity to include these easy to implement projects or if appropriate for applicable grant funding opportunities.

Low priority improvements are those projects rated lower priority and low feasibility. They represent challenging projects that may not add significant value for a greater portion of the community walking or bicycling network on their own, but are part of a long-term vision for active transportation.

PROJECT CONSIDERATIONS

While some of the projects outlined within this Plan may be implemented more quickly, other projects require further community involvement, additional study of trade-offs, or multi-jurisdictional coordination. These pieces require additional time and resources that add complexity to the project.

PROJECT STUDIES AND PHASING

Some of the projects outlined in the Plan require additional study to evaluate trade-offs. For example, some of the proposed bikeways would require the removal of parking or of travel lanes. For many of these projects, the City will study how changing the roadway design impacts local residents and through traffic. Both Orange St and Lemon St have proposed Class IV facilities that would require the removal of existing travel lanes or parking. For other projects like Victoria Ave, project phasing (or sequencing) is also a consideration, due to the length of the project and connection to existing facilities.

INTERAGENCY COORDINATION

Specific proposed projects require the City of Riverside to coordinate with other agencies and stakeholders to coordinate design, implementation, and funding. For example, creating a Class I on the Pedestrian Mall will require coordination with Riverside Downtown Partnership. Likewise, the proposed additions to Victoria Ave will require coordination with community groups like Victoria Avenue Forever. Improvements at and along SR-91 highway crossings and interchanges will require coordination with Caltrans.

Bicycle Projects

Prioritized bicycle projects can be seen in Table 4-34.

TABLE 4-34 PRIORITIZED BICYCLE PROJECTS WITH PLANNING-LEVEL COSTS

CORRIDOR	FROM	TO	RECOMMENDED FACILITY	LENGTH (MILES)	IMPLEMENTATION CATEGORY	ESTIMATED TOTAL PROJECT COST	WARD
14th St	Chicago Ave	Brockton Ave	II	1.68	Short Term	$3,885,000	2
Adams St	Lincoln St	California St	II	1.56	Long Term	$602,837	5
Arlington Ave	Indiana Ave	Magnolia Ave	II	0.51	Short Term	$1,174,689	3
Brockton Ave	Magnolia Ave	Beatty Dr	II	0.16	Short Term	$62,605	3
Chicago Av	W Linden St	Spruce St	IIB	0.75	Opportunity	$290,250	1,2
Colorado Ave	Van Buren Blvd	Monticello Ave	II	0.33	Long Term	$759,999	6
Cypress Ave	Golden Ave	Van Buren Blvd	II	2.80	Long Term	$2,859,106	6,7
Dufferin Ave	Van Buren Blvd	Jefferson St	IIIB	2.02	Short Term	$4,672,260	5
Gramercy Pl	Tyler St	Rutland Ave	IIIB	0.61	Short Term	$1,399,719	6,7
Gramercy Pl	Golden Ave	Tyler St	II	1.37	Long Term	$1,394,676	7
Hole Av	Wells Ave	Tyler St	IIB	1.35	Short Term	$2,022,849	6
Hole Ave	Tyler St	Magnolia Ave	II	0.37	Short Term	$864,065	6
Iowa Ave	University Ave	Colombia Ave	IIB	1.76	Long Term	$2,634,476	1,2
Jurupa Ave	Van Buren Blvd	Columbus St	IIB	1.21	Long Term	$1,820,501	3
Kansas St	University Ave	3rd St	IIIB	1.01	Opportunity	$1,516,086	2
La Sierra Ave	Cleveland Ave	Indiana Ave	IIB	1.05	Short Term	$2,428,650	5

Planning level cost estimates using 2020 unit cost assumptions

TABLE 4-34 PRIORITIZED BICYCLE PROJECTS WITH PLANNING-LEVEL COSTS

CORRIDOR	FROM	TO	RECOMMENDED FACILITY	LENGTH (MILES)	IMPLEMENTATION CATEGORY	ESTIMATED TOTAL PROJECT COST	WARD
Lemon St	14th St	3rd St	IV	0.83	Long Term	$1,912,658	1
Madison St	Arlington Ave	Victoria Ave	IIIB	1.69	Opportunity	$2,532,356	3,4
Magnolia Ave	Meyers St	McKenzie St	II	0.42	Short Term	$14,747	5
Main St	10th St	6th St	I	0.31	Short Term	$120,93	1
Main St	14th St	13th St	II	0.08	Short Term	$30,555	1
Main St	13th St	10th St	IIIB	0.23	Short Term	$521,947	1
Maude	Victoria Ave	Arlington Ave	IIIB	0.81	Short Term	$1,215,000	3
Orange St	14th St	3rd St	IV	0.83	Long Term	$29,187	1
Rutland Ave	Wells Ave	Arlington Ave	IIIB	0.92	Opportunity	$121,680	6
Streeter	Arlington Ave	Jurupa Ave	IIB	1.17	Short Term	$1,752,162	3
Tyler St	Wells Ave	Arlington Ave	II	1.35	Long Term	$3,126,658	7
Tyler St	Indiana Ave	Wells Ave	II	1.94	Long Term	$1,979,468	5,6
Tyler St	Arlington Ave	Jurupa Ave	IIB	0.97	Opportunity	$2,242,315	7
University Ave	Iowa Ave	W Campus Dr	IIB	0.46	Opportunity	$682,713	2
Van Buren Blvd	Victoria Ave	Jurupa Ave	IIB	3.73	Opportunity	$8,631,186	5,6,7
Victoria Ave	La Sierra Ave	Central Ave	IV	7.31	Long Term	$16,897,911	3,4,5

Planning level cost estimates using 2020 unit cost assumptions

Pedestrian Projects

Prioritized pedestrian projects can be seen in Table 4-35

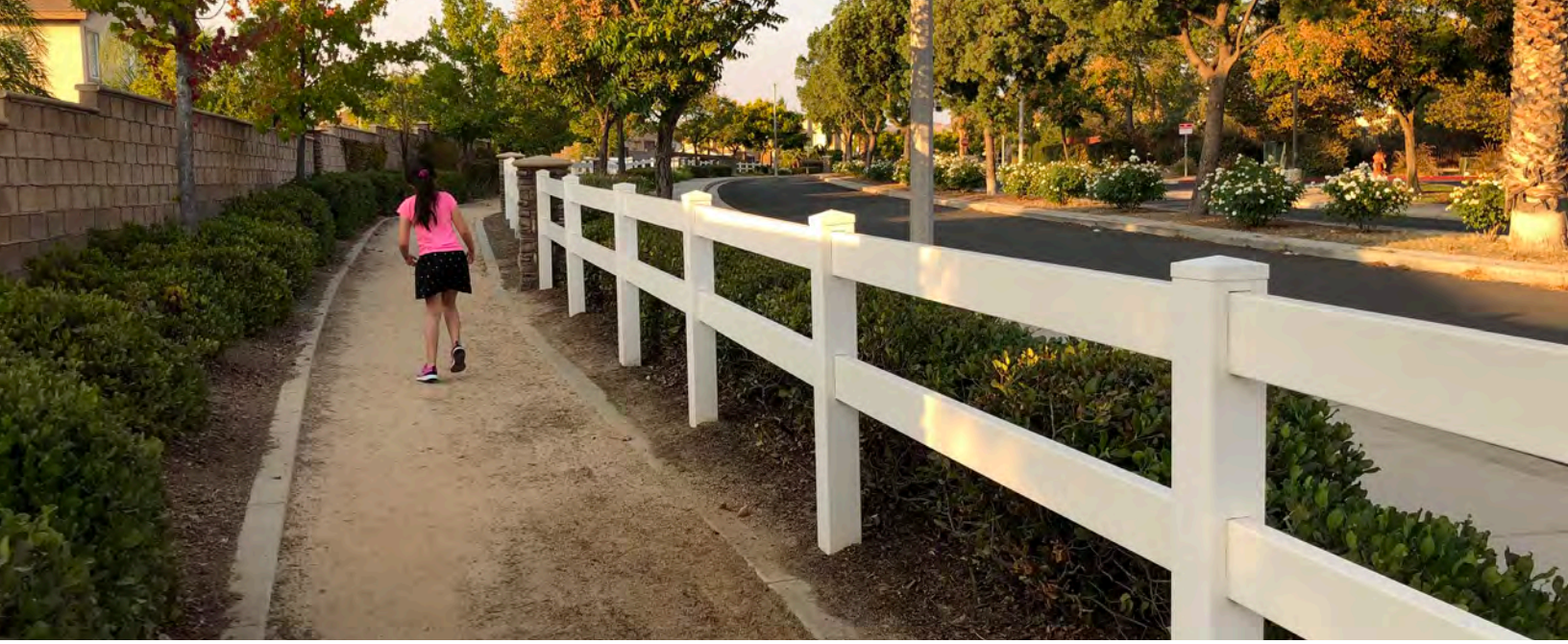
TABLE 4-35 PRIORITIZED PEDESTRIAN PROJECTS WITH PLANNING-LEVEL COSTS

LOCATION	CROSS STREET	IMPROVEMENT	IMPLEMENTATION CATEGORY	ESTIMATED TOTAL PROJECT COST	WARD
University Ave	Market St	Intersection Typology E	Long Term	$626,000	1
Iowa Ave	W Linden St	Intersection Typology A	Long Term	$610,000	2
Jurupa Ave	Magnolia Ave	Intersection Typology A	Opportunity	$85,000	3
Wood Rd	Van Buren Blvd	Intersection Typology A	Long Term	$447,000	4
Indiana Ave	La Sierra Ave	Intersection Typology A	Long Term	$590,000	5
La Sierra Ave	Pierce St and Hole St	Upgrade intersection. Bushnell pedestrian plaza with removable bollards and historic signage. Typology A	Long Term	$650,000	6
Western Ave	Arlington Ave	Intersection Typology C	Opportunity	$205,250	7

Section 5:
Trails Master Plan

Section 5.1:
Executive Summary

Mt. Rubidoux, Glenwood Dr. Trailhead



Bountiful Street Roadside Trail

The City of Riverside boasts over 31 miles of multipurpose trails distributed throughout the community and available for all levels of ability. This trails network, managed by the City's Parks, Recreation and Community Services Department (PRCSD), features a variety of paved and unpaved offerings catering to the City's walking, hiking, biking, and equestrian communities.

Though traditionally understood as a network of facilities traversing scenic hillsides, many of Riverside's existing and planned multi-purpose trails are street-adjacent, contributing to the City's overall active transportation network. The City's trails system plays an important role in Riverside's identity, celebrating its abundant natural resources, providing easily accessible outdoor recreational opportunities to residents, connecting neighborhoods to parks and other community resources, and offering non-motorized commuters a network for getting to and from work, school, and daily errands.

Riverside's trails network is beloved by residents, and stakeholder interviews, public workshops, and surveys conducted in support of the 2019 Comprehensive Park, Recreation & Community Services Master Plan indicate that trails were the most requested amenity by stakeholders. The Plan places trails in the highest-tier of park needs and identifies them as capable of delivering the "maximum community impact". This support underscores the importance of providing more opportunities for trail use, improving the community's quality of life by providing health and wellness benefits as well as environmental benefits associated with reduced vehicular use.

Trails Master Plan

OVERVIEW

This Trails Master Plan (TMP) serves as an update to the Multi-Purpose Recreational Trails Master Plan and Trails Standards document adopted by Council in January 1996, with slight modifications and updates included in the 2003 Parks and Recreation Master Plan Update. In the intervening years since the publication of these documents, the City has grown by nearly 100,000 additional residents, accompanied by new residential buildings, warehouses, commercial developments and retail centers. This update contextualizes the spatial impacts and usage demands of growth throughout the City, creating a plan that meets current needs and goals so that residents and visitors alike can enjoy safe, enjoyable, and convenient access to trails.

Note that this plan only covers unpaved trails. Paved trails, such as Class I shared use paths, are covered under the Active Transportation Plan.

Additionally, internal park trails are not included in the Trails Master Plan. The City will continue to implement internal park trails on a case-by-case basis to add to the recreational opportunities in our parks, but they do not serve to connect to other points of interest or contribute to larger connectivity between open space and recreation opportunities in the city.

Developed in coordination with City staff, a Technical Advisory Committee (TAC) comprised of residents and stakeholders, and a focused public outreach and input process, this TMP update provides the City, residents, trails advocates, and developers with a single, comprehensive reference point representing the most current vision for Riverside's trail network, design, maintenance, and funding. In addition to updating trail design guidelines and standards, the TMP proposes and prioritizes new trails and gap closures, addresses integration of trail facilities with the City's on-street active transportation network, and identifies potential funding sources.

PLANNING PROCESS

This TMP was developed as part of the Riverside PACT (Pedestrian Target Safeguarding Plan, Active Transportation Plan, Complete Streets Ordinance, and Trail Master Plan) planning process, an integrated citywide planning effort addressing on-street and off-street active transportation

in a holistic manner, and informed by a robust public engagement process. Public outreach efforts undertaken as part of the PACT process in all 7 Wards included 25 in-person presentations with community groups, surveying the public on preferences and priorities at existing events, a virtual community workshop, and an interactive online public input map that enabled residents to draw-in proposed trails, identify gaps, and prioritize trail projects. The project team also reviewed previous planning documents such as the 2019 Comprehensive Park, Recreation & Community Services Master Plan, 2007 General Plan, Riverside County's 2018 Comprehensive Trails Plan, conducted interviews with City staff, analyzed and identified proposed trail alignments utilizing Geographic Information Systems (GIS), and field work.

NETWORK RECOMMENDATIONS SUMMARY

The network of proposed trails identified in this Plan were developed by evaluating opportunities and constraints at the network level. This included locating and closing gaps in the City's existing trails network, identifying key locations for trails such as underserved areas in the City, park space and residential neighborhoods, and connections to existing trails in neighboring jurisdictions. Trail planning was also informed by community ranking, TAC input, and the feasibility of implementation. In addition to proposing new trails, alignments of previously proposed trails were verified, and some have been re-aligned to better accommodate existing conditions and development patterns, while others have been removed from consideration.

As identified in the 1996 Trails Master Plan and reinforced in the 2003 Park and Recreation Master Plan Update, the City's previous trail planning approach focused on a network of primary trails encompassing Riverside, complemented by a secondary network of trails offering shorter-trip recreational opportunities and/or locations within the City, as opposed to its perimeter. Subsequent land development following the 1996 TMP's publication has resulted in the need to realign some previously proposed trail segments, obviated the need for others, and created new population centers in the City in need of trails. Previous trail planning documents also did not include a prioritized list of trails, further complicating construction of new facilities.

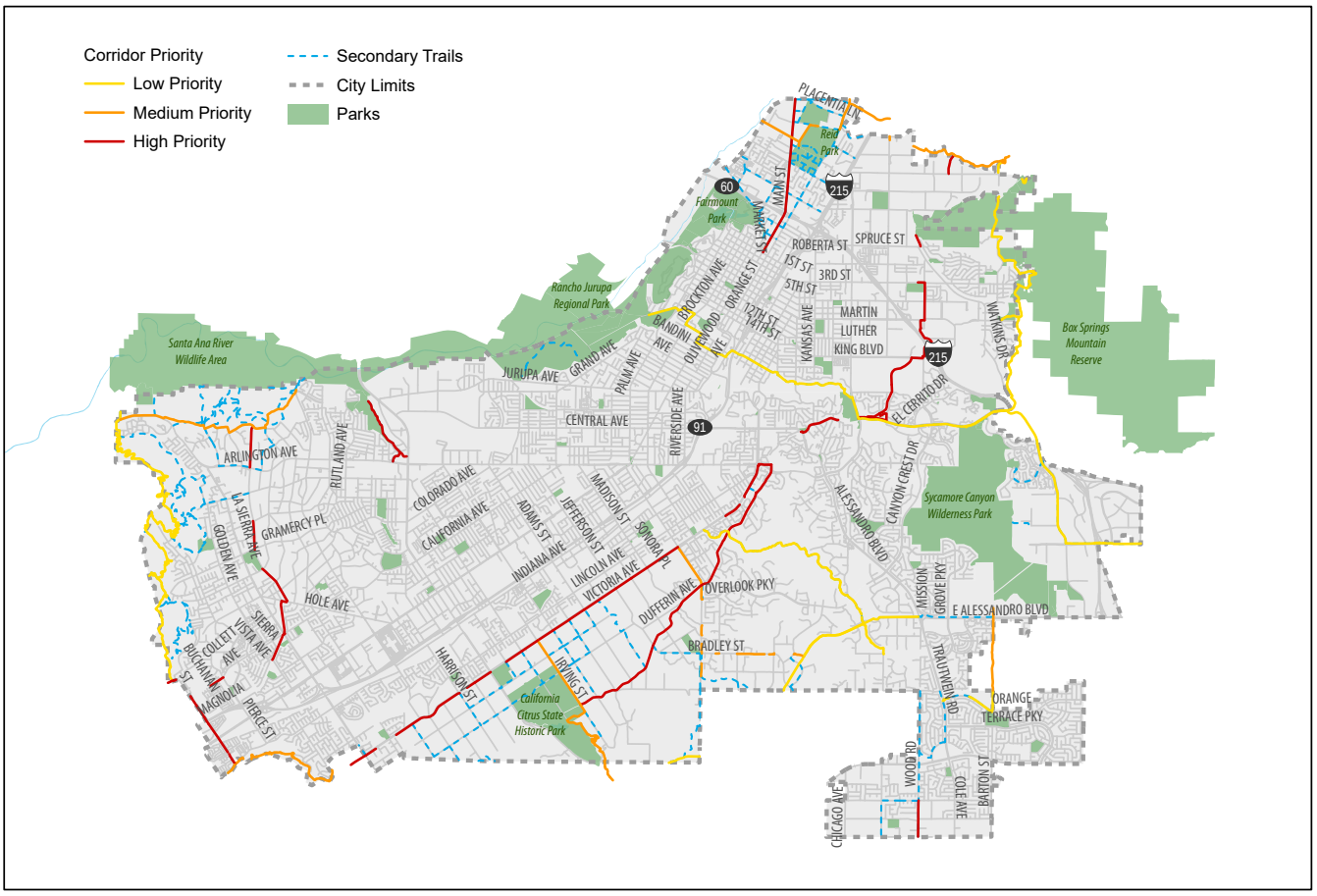
This TMP update addresses both of these concerns, providing an updated network of proposed trails comprised of a primary and secondary network, with the primary network prioritized by factors such as connectivity, equity, feasibility, and public support.

Table 5-1 and Figure 5-1 summarize the top-ranked proposed trails.

TABLE 5-1 : TOP-RANKED PROPOSED TRAILS

TRAIL CORRIDOR	RANK
Main Street	18
Hole Lake	9.50
Mitchell	9.00
Wood	8.00
Mitchell to Buchanan	8.00
Gage Canal	7.35
Victoria Ave	7.33
Buchanan	6.40

FIGURE 5-1 : TOP-RANKED PROPOSED TRAILS



DESIGN GUIDELINES SUMMARY

This TMP update includes cross section illustrations and updated trail design standards based upon national best practices for a variety of conditions, uses, and available easements encountered in Riverside. These design guidelines include considerations for trails that cross vehicular roadways, the needs of different types of trail users, and material selection. The TMP design guidelines cover mainly unpaved trails, whereas paved Class I bike paths are covered under the PACT in the Active Transportation Plan (ATP). This section also provides guidance on content, graphic design, and construction of a signage and wayfinding program for the trails network.

IMPLEMENTATION PLAN SUMMARY

This section presents a framework for implementation, including short- and long-term trail network goals, a prioritized project list, and an associated phasing strategy.

The prioritized project list was arrived at utilizing an evaluation matrix including a variety of considerations such as public support, feasibility, connectivity, and equitable distribution. Complementing this prioritization exercise, a project phrasing strategy was developed to address immediate needs or critical network gaps and develop a comprehensive strategy in light of limited trail-building funds.

This section also identifies standard operations and management considerations such as operating hours, public safety, and protocols for detours or closures. Both routine and remedial trail maintenance standards are provided for the breadth of trail types included in this Plan, and are accompanied by their approximate costs. Potential funding opportunities from state, federal, and private sources are also listed in this section, along with potentially fruitful partnerships such as adopt-a-trail programs. Finally, the implementation section describes land acquisition strategies such as easements and rights-of-first-refusal that the City may exercise in order to acquire underutilized land for trail development.

Wood Road Multipurpose Trail

Section 5.2: Introduction

Riverwalk Trail along Riverwalk Parkway

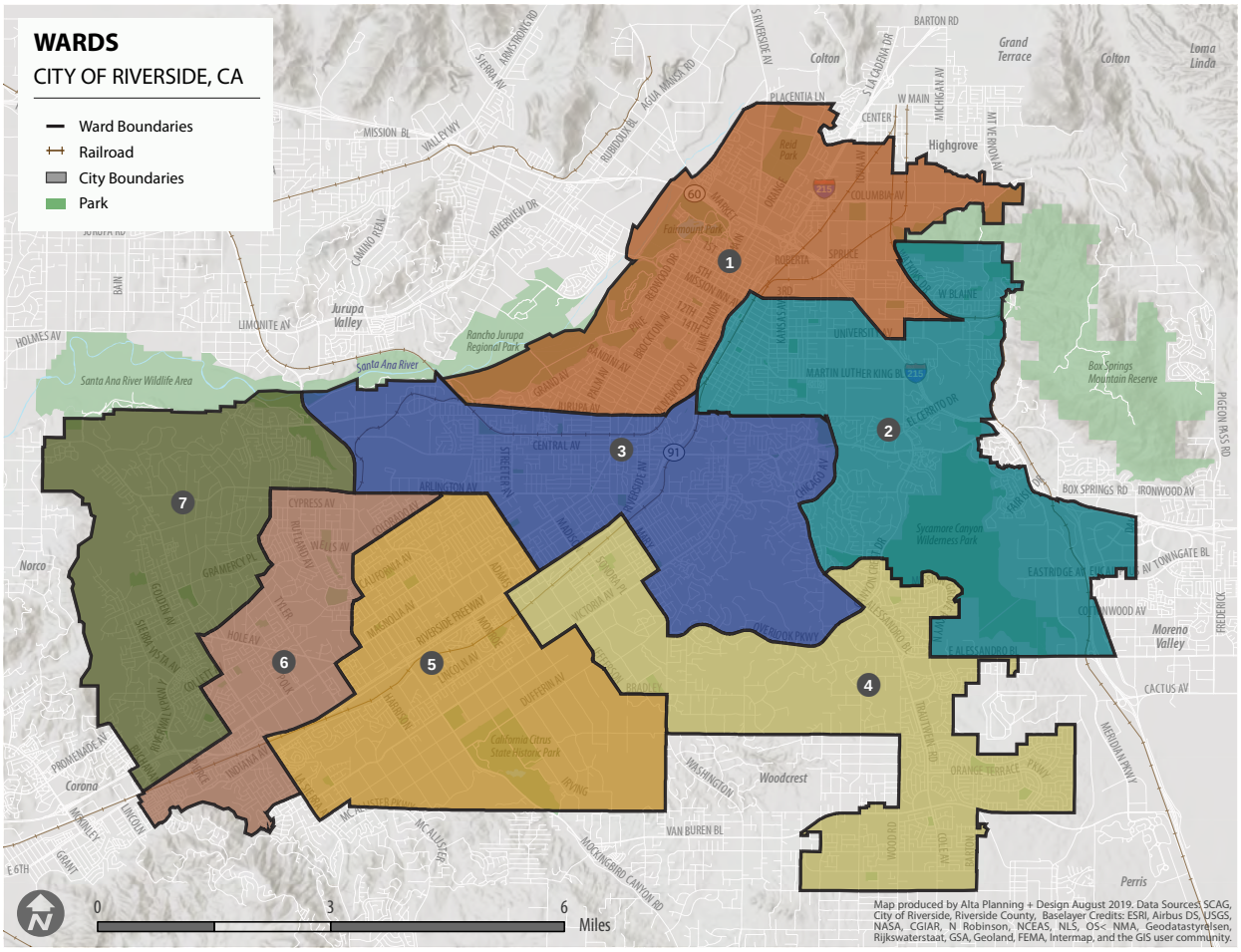
Project Area Overview

The City of Riverside is located within Riverside County in Southern California, which lies east of Orange County, north of San Diego and Imperial Counties, and south of San Bernardino and Los Angeles Counties.

The City of Riverside encompasses 82 square miles and is made up of seven wards, each of which are made up of approximately 1/7th of the City's 317,000-person population Figure 5-2.

There are currently 31 miles of multi-purpose trails within Riverside. This trails network, managed by the City's Parks, Recreation and Community Services Department (PRCSD), features a variety of paved and unpaved facilities that serve Riverside's walking, hiking, biking, and equestrian communities.

FIGURE 5-2 :CITY OF RIVERSIDE WARDS



Vision, Goals, and Objectives

The TMP updates and refines the 1996 Trails Master Plan, with a focus on facilitating implementation by providing clear guidance to City agencies and private developers.

PLAN GOALS

The TMP's three primary goals are:

- Establish a comprehensive suite of updated trail design and maintenance guidelines that are accessible by a variety of user types, and connect to major destinations throughout the city.
- Develop a prioritized list of proposed trail facilities, accompanied by recommendations for funding and implementation.
- Provide clear standards and guidance for property owners and developers.

PLAN OBJECTIVES

- Provide an analysis of current trail segments, catalogue the City's inventory of existing trails and trail classifications, and verify trail status;
- Analyze system gaps, determine property ownership and approaches for property acquisition, where necessary;
- Develop sustainable trail design guidelines which refine current standards and are compatible with adjacent trail networks;
- Examine key policy issues related to trails such as land use, easements, liability, unsanctioned use, and illegal motorized trail use;
- Develop a plan for trail implementation and phasing;
- Define the City's role in trail management and implementation and identify opportunities for other agencies to assume responsibility of the trail network;
- Identify potential trail partnerships and recommend immediate and long-term funding models;
- Provide a framework of recommendations that will serve as a blueprint for future trails planning, maintenance, and development;
- Base recommendations on input from stakeholders, other trail agencies and local trail users.

Existing Plans and Context

In addition to the 1996 Trails Master Plan, a number of City and County plans establish visions and propose trails in Riverside. These plans have been reviewed, and relevant elements have been incorporated into this Plan update to further the City's goal of delivering a comprehensive trails network throughout Riverside that connects to regional trail networks. A list of the reviewed plans is provided below. For brief summaries of the plans, see "Appendix I: Existing Plans and Context".

TABLE 5-2 : REVIEWED PLANS

PLAN TITLE	YEAR
Sycamore Canyon Specific Plan	1991
Mission Grove Specific Plan	1996
Rancho La Sierra Specific Plan	1996
Trails Master Plan	1996
La Sierra University Specific Plan	1997
Sycamore Canyon Wilderness Park Stephens' Kangaroo Rat Management Plan and Updated Conceptual Development Plan	1999
Downtown Specific Plan	2002
City of Riverside Park and Recreation Master Plan Update	2003
Bicycle Master Plan	2007
General Plan	2007
Bicycle Master Plan	2012
Riverside County Box Springs Mountain Reserve Comprehensive Trails Master Plan	2015
Downtown Specific Plan	2017
Riverside County Comprehensive Trails Plan	2018
Comprehensive Parks, Recreation, and Community Services Master Plan	2020
Northside Specific Plan	2020

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Section 5.3: Design Guidelines

Choi Drive Roadside Trail

Best Practices

TRAIL PLANNING AND DESIGN POLICIES AND STANDARDS

The Riverside County Regional Park and Open Space District's Comprehensive Trails Plan (2018) outlines a number of trail planning and design policies and standards for the region. In addition, the City of Riverside has several existing design standards and guidelines related to urban trail planning, as identified in its 2013 Bicycle Master Plan. Many of the standards are pulled from the Caltrans Highway Design Manual and the Federal Highway Administration (FHWA) Manual on Uniform Traffic Control Devices (MUTCD).

The planning and design best practices detailed in this plan are adapted from a variety of existing trails plans and serve as a guide for trail implementation by developers, private property owners, and agencies in the City of Riverside.

TRAIL PLANNING BEST PRACTICES

Successful trails serve a variety of users, connect to other trails and the greater active transportation network, and incorporate wayfinding best practices to provide a comfortable user experience. Depending on available right-of-way and budget, trail areas can provide amenities to make the trail experience more enjoyable for all users. Successful trails also have clear management structures and funding mechanisms in place to ensure the trails are adequately managed and maintained once constructed. For additional information, see "Appendix H: Planning and Design Best Practices"

TRAIL DESIGN BEST PRACTICES

Trails can be constructed with either hard (asphalt or concrete) or soft surface (compacted native soil or decomposed granite) materials depending on the land context of the trail and anticipated use. The trails in the City's Trails Master Plan are primarily soft surface. Of the potential soft surface materials, stabilized decomposed granite is specified for trails with high activity and equestrian use. For additional information, see "Appendix H: Planning and Design Best Practices"

TRAIL TYPE AND SHARING THE TRAIL

Trail managers sometimes must balance the often-political decision of selecting the appropriate trail use or uses on a given piece of property. In an optimal setting, managers could selectively place trail uses in strategic locations to reduce user conflict and protect the environment, while creating a high-quality experience for all user types. This is rarely the case, and decisions made

by trail administrators and managers can sometimes result in users feeling not represented in trail systems. Selecting where trails should be located is no easy task, but it must be done to reduce user conflict. The location of a trail or trail system will also help determine the appropriate uses. Trails located in environmentally sensitive lands should consider the environmental impacts of trail users for both environmental degradation and wildlife behavior.

USER CONFLICT AND ETIQUETTE

The design of multipurpose trails must consider user types and potential conflicts. For example, bicyclists traveling at high speeds may conflict with pedestrian or equestrian users. Equestrians traveling along a constrained path may come into conflict with other trail users as well.

User conflict reduction policies aim to ensure that conflict is mitigated before it raises to the point of being an issue between user groups or management. A number of policies and programs can be adopted to ensure that the risk of conflict can be reduced. These policies can be geared towards reducing conflicts between groups, provide education on appropriate use, and assist with self-regulation of trails. While policies geared towards reducing conflict can be put in place and signs implemented to the same effort, trails can often generate more demand than supply and this can frequently impact user experience (City of Des Moines, 2011, p. 192).

It is recommended that the City of Riverside adopt user policies for recreational areas such as Sycamore Canyon and Mt. Rubidoux. User policies should align with City municipal code 9.08.030 regarding equines in parks, which states that animals are prohibited in parks with the exception of equine animals being led or ridden under control upon a bridle path or trail authorized and provided for such purpose, and equine or other animals which are hitched or fastened at a place expressly authorized and designated for such purpose.

User policies should also align with City municipal code 9.08.060 regarding the use of bicycles within parks, which states that no person shall operate any bicycle in or upon any park, playground, trail, open space area or other area of the City under the control of the Park and Recreation Department in willful or wanton disregard for the safety of persons of property.

Policies regarding electric bikes (eBikes) on trails should closely follow the framework set by the State of California act to amend sections of the vehicle code in 2015 (CA State AB1096). The state defined electric bicycles as a bicycle equipped with fully operable pedals and an electric motor of less than 750 watts. Along with this, three classes of eBikes were defined including:

- Class 1 - A Class 1 eBike, or low-speed pedal-assisted electric bicycles, is equipped with a motor that provides assistance only when the rider is pedaling and that stops providing assistance when the bicycle reaches 20 mph. These e-bikes are legal on any trail that a regular bike is allowed to operate unless restrictions are posted otherwise at a specific trail.
- Class 2 - Class 2 eBikes, or low-speed throttle-assisted electric bicycle, are equipped with motors that can exclusively propel the bicycle, but that cannot provide assistance when the bike reaches 20 mph. These e-bikes are legal on any trail that a regular bike is allowed to operate unless restrictions are posted otherwise at a specific trail.
- Class 3 - A Class 3 eBike, or speed pedal-assisted electric bicycle, is equipped with a motor that provides assistance only when the rider is pedaling and stops providing assistance when the bicycle reaches 28 mph. Operators of Class 3 e-bikes must be 16 or older and wear a helmet. Class 3 e-bikes are only allowed on trails with an adjacent Class I bike path, which are described as “urban trails” in the following sections of this document.

Along with eBikes, electric scooters are a fast growing mode of transportation. Electric scooters are compatible with trail use as their top speeds are in line with Class 1 & 2 eBikes. In the future, city-wide regulations for electric scooters may be adopted and will be used to govern this type of use on trails along with shared scooter parking at trail staging areas.

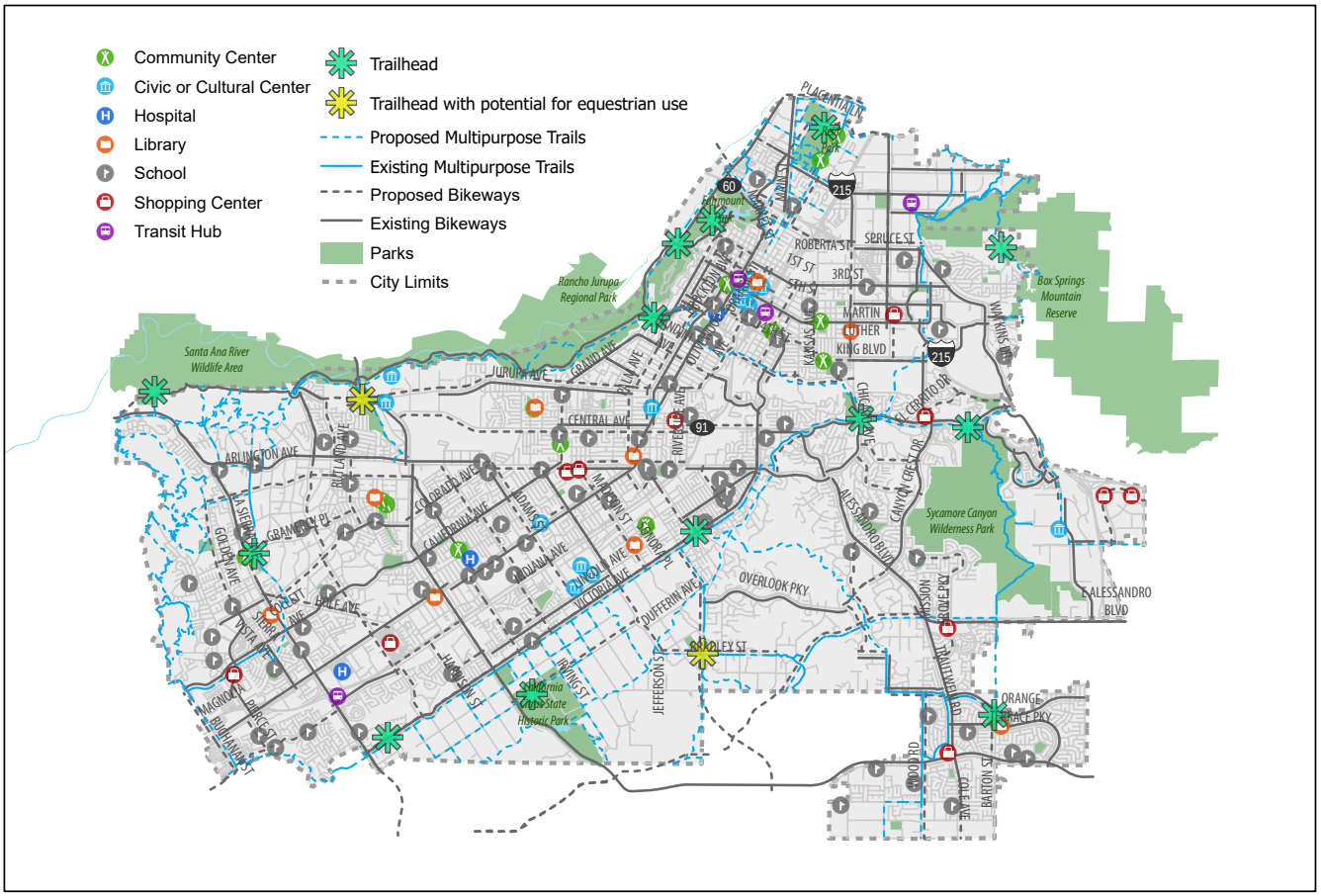
First/Last Mile Considerations

Whenever possible, it is important that the City of Riverside's trail network connects to its greater on-street active transportation network.

Figure 5-3 shows the overlaps and connections between existing and proposed on-street bicycle facilities, intersections between the trail and bikeway networks, and the greater Riverside trail network.

Strong connectivity between the two networks allows residents to use them as first/last mile routes to and from community destinations, including schools, shopping centers, and transit hubs.

FIGURE 5-3 : TRAILS, ON-STREET FACILITIES, AND DESTINATIONS



City Park Trail Connections

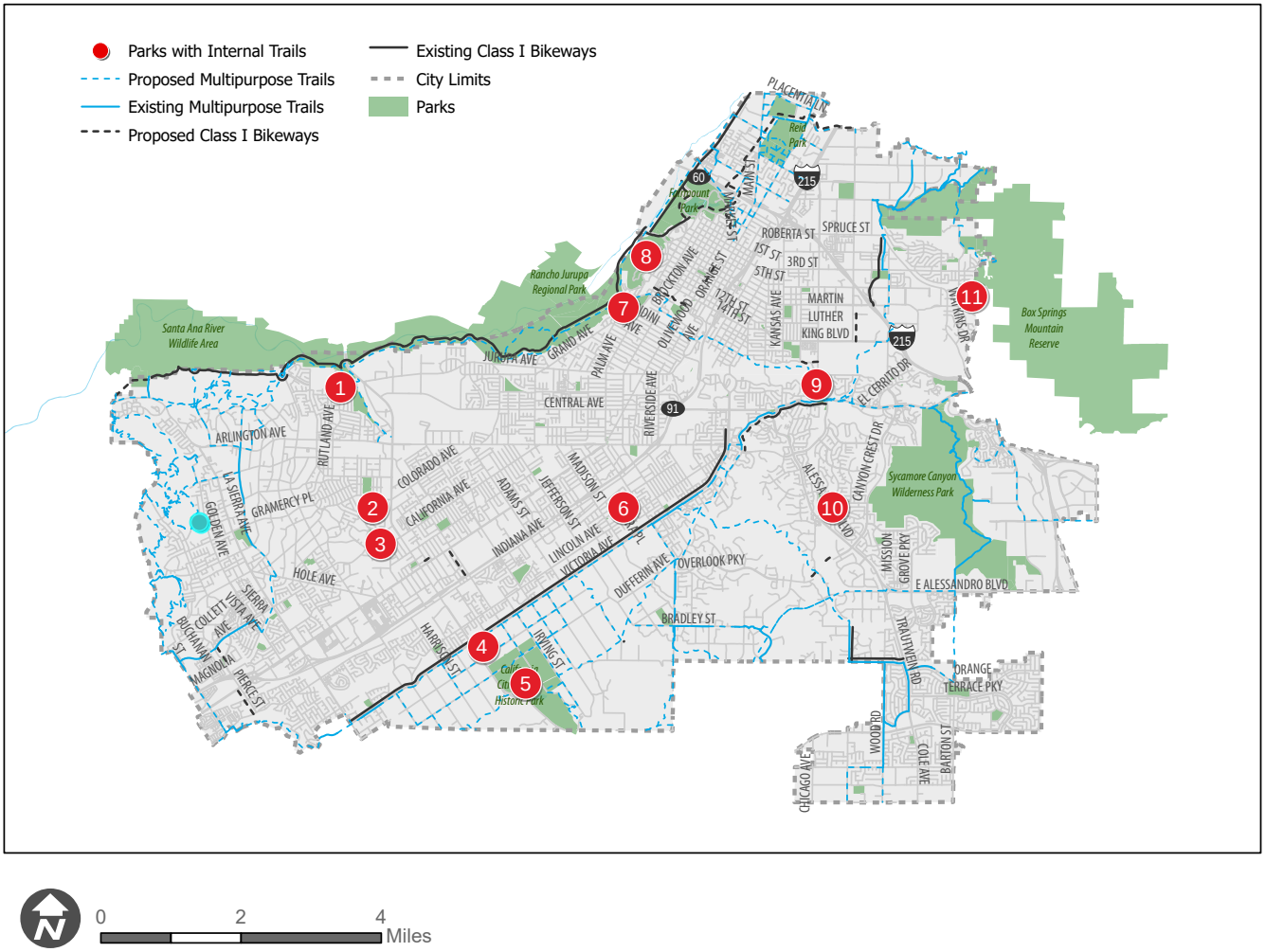
A number of parks in throughout Riverside have internal circulatory trails in addition to concrete walkways. Typically constructed of decomposed granite, these internal trails act as recreational and fitness resources for park users.

Many of the parks marked in Figure 5-4 are positioned along the TMP's existing or proposed multipurpose trail alignments. Internal park trails in these locations allow for trail users to connect to the city-wide trail system.

Park Number Key:

1. Rutland Park
2. El Dorado Open Space
3. Challen Park
4. Arlington Heights Sports Park
5. California Citrus State Historic Park
6. Villegas Park
7. Ryan Bonaminio Park
8. Mount Rubidoux Park
9. Andulka Park
10. Castleview Park
11. Islander Park

FIGURE 5-4 : PARKS WITH INTERNAL TRAILS



Equestrian Presence

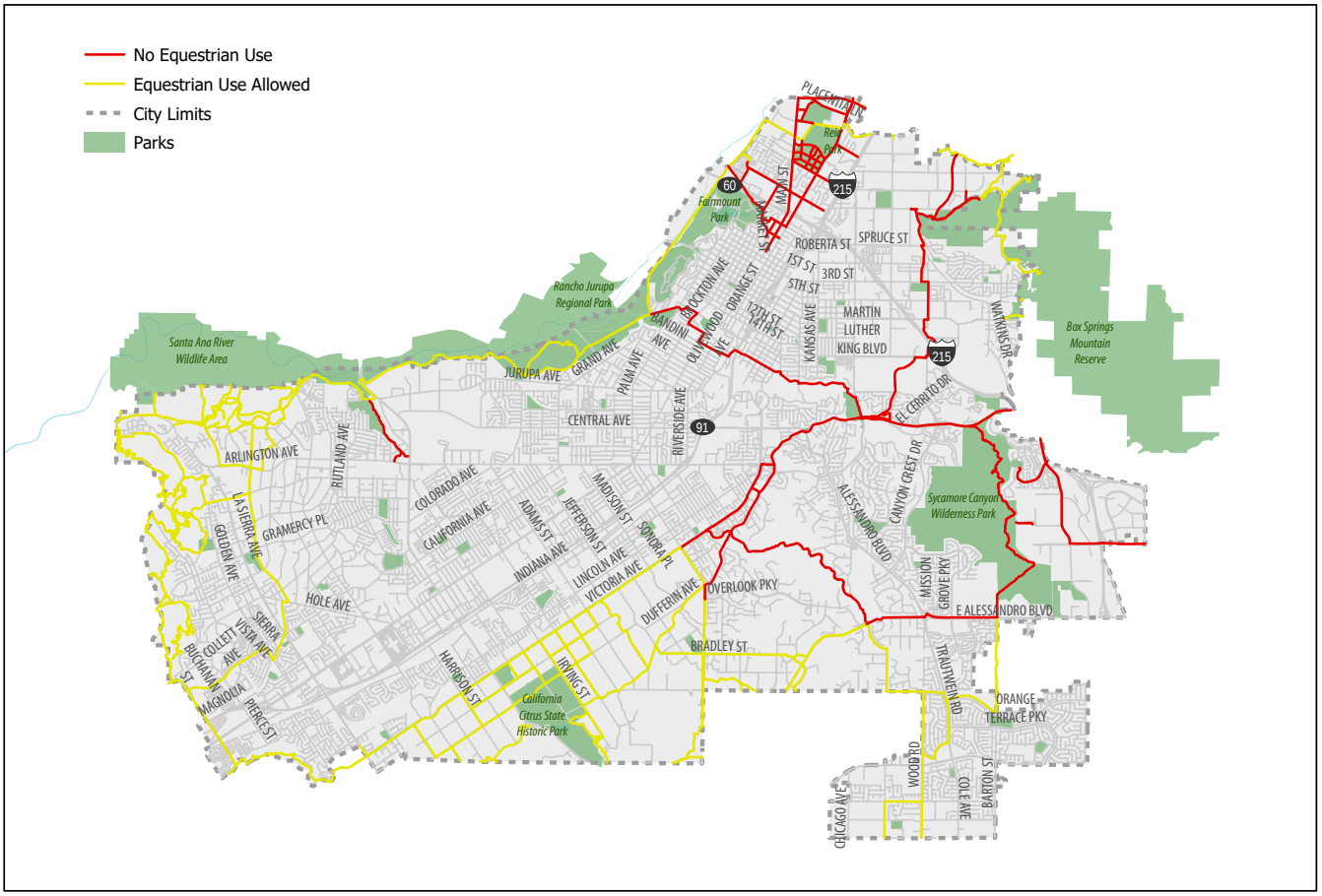
Due to the equestrian presence in Riverside, the Trails Master Plan identifies existing and proposed trail segments that do and do not allow for equestrian access.

Equestrian access to trails is possible if those trails fall within an equestrian-zoned area that allows for horse-keeping (i.e. RA-5, RC, and Residential Livestock Overlay Zone).

In addition, the Riverside, California Code of Ordinances details equestrian access within city parks. Equines are not allowed within city parks unless:

- they are being led or ridden under control upon a bridle path or trail authorized and provided for such purpose;
- they are hitched or fastened at a place expressly authorized and designated for such purpose.

FIGURE 5-5 : EQUESTRIAN TRAILS



Trailheads

The development of informative and easily identifiable trailheads will enhance the experience of the trail user and act as a linkage between the community and the surrounding open spaces via the trails system.

AMENITIES AT TRAILHEADS

The trailheads as proposed in this Plan support the trails system framework by their location in, or near the major open spaces that surround the City; specifically, Norco Hills, the Santa Ana River, Box Springs Mountain, Sycamore Canyon, Arlington Heights, and its surrounding citrus groves. Trailheads can also be located within smaller parks that are adjacent to the existing and proposed trails system. Trailheads are intended to serve the regional population as well as the local residents.

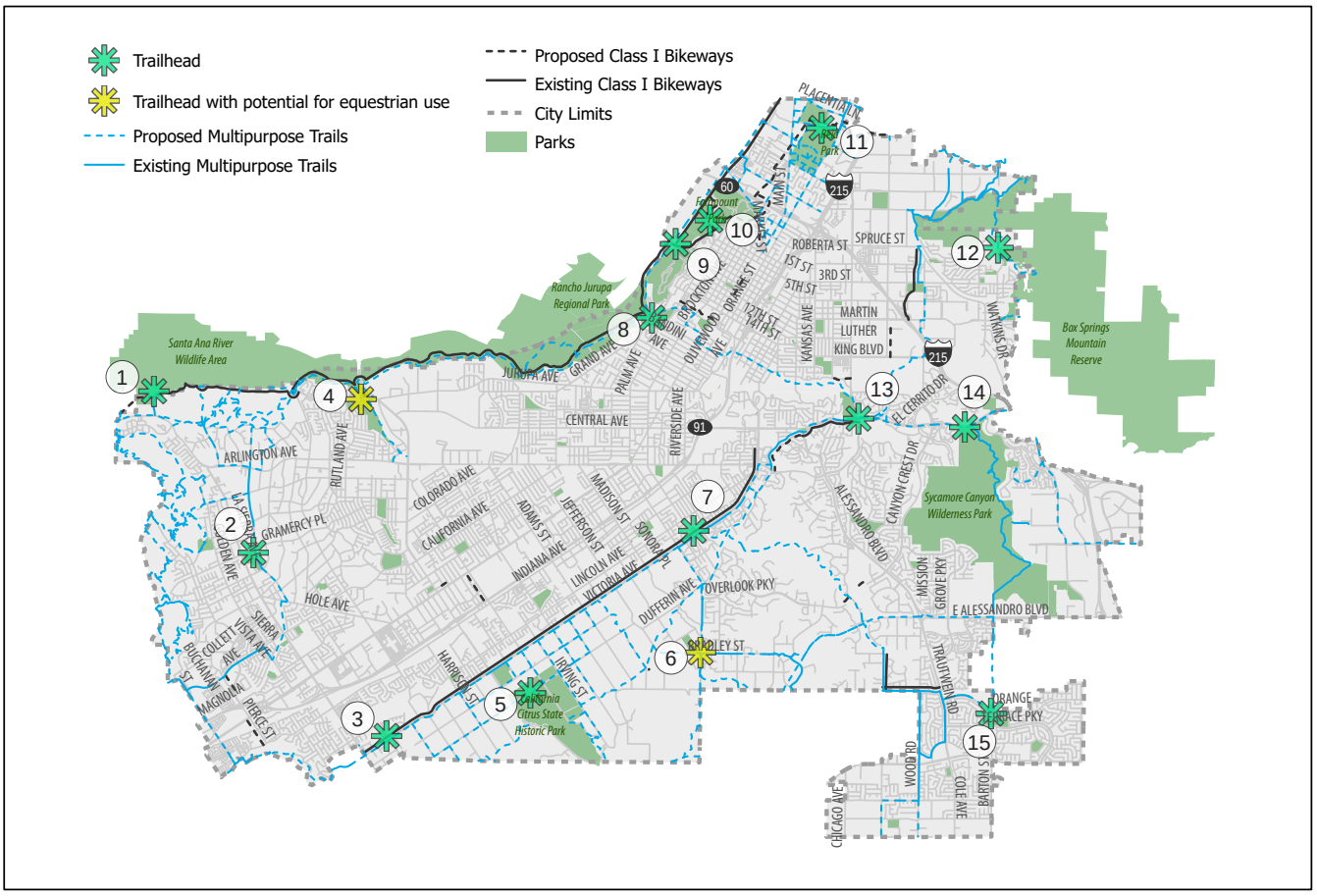
Amenities at trailheads would include the following:

- Identification and directional signs
- Marked parking stalls
- Drinking water
- Shade
- Seating
- Trash receptacles
- Restrooms (where feasible)

Many of the trailhead locations designated in Figure 5-6 are built out and do not have available space to fit equestrian amenities. However, a couple future park site locations have been identified where equestrian parking and amenities should be considered during future Park Master Plan development at each location. Additional amenities to be found at trailheads with potential for equestrian use include the following:

- Hitching posts
- Water facilities for horses
- Up to six pull-through stalls to accommodate vehicles with trailers

FIGURE 5-6 : PROPOSED TRAILHEADS



Park Number Key:

1. Santa Ana River Wildlife Area
2. La Sierra Park
3. Victoria-Cross
4. Hole Lake
5. California Citrus State Historic Park
6. Golden Star Park
7. Washington Park
8. Ryan Bonaminio Park
9. Mount Rubidoux Park
10. Fairmount Park
11. Reid Park
12. Box Springs Mountain Reserve
13. Andulka Park
14. Sycamore Canyon Wilderness Park
15. Orange Terrace Park

Street Network Interface

Trail intersections with roadways require special design considerations. As trails approach the street network, several design tools can be used to improve user comfort and safety when crossing. These include preventing vehicles from entering the trail, using design interventions to alert trail users of upcoming road crossings, and implementing intersection safety improvements.

MOTOR VEHICLE SEPARATION

At trail and roadway intersections, vertical curb cuts can be used to discourage motor vehicle access. “No Motor Vehicles” signage (MUTCD R5-4) can be used to reinforce access rules. Trails can be split into two sections separated by low landscaping to preserve visibility and emergency access.

TRANSITION AREAS

Optical Speed Bars / Pavement Markings

On paved trails, optical speed bars and other pavement markings can be used to increase user awareness of an upcoming change in the trail environment and alert users to decrease their speed. Speed bars are 2-foot wide pavement markings that are progressively spaced more closely together to visually narrow the trail and increase awareness of the upcoming change.

Additional pavement markings can include high-visibility crosswalks and colored concrete crosswalks.

Path Materials

On both paved and unpaved trails, path materials can be used to alert users of an upcoming change in the physical environment. This may include a change in path materials, such as transitioning from asphalt or natural surface pathway to a contrasting material.

Signage

Signage can also be used to alert users of upcoming roadway crossings. Signage should be included at both grade-separated and at-grade intersections.

GRADE-SEPARATED INTERSECTIONS

Riparian trails, rail trails, or other trails with infrequent connections to the street network make it difficult for trail users to orient themselves. Simple street signage on overcrossing or undercrossing structures can help trail users determine their location within the street network.

AT-GRADE INTERSECTIONS

Several tools can be used to improve safety of at-grade trail intersections. These include MUTCD-standard signage, enhanced lighting

and high-visibility crosswalks, pedestrian signals such as Rectangular Rapid Flashing Beacons (RRFBs) and Pedestrian Hybrid Beacons (PHBs), and curb extensions.

TRAIL ENTRIES

Trail entries at crossings should employ design elements that discourage motor vehicle access on trails. A split path entry design may be used to prevent the crossing point from appearing like a driveway. Very tight curb returns can make it very difficult for motorists to turn onto the trail. If bollards are needed they must be spaced at a minimum of five feet apart to allow for easy passage by cyclists, bicycle trailers, adult tricycles, and wheelchair users.

CA MUTCD-standard signage for at-grade trail crossings

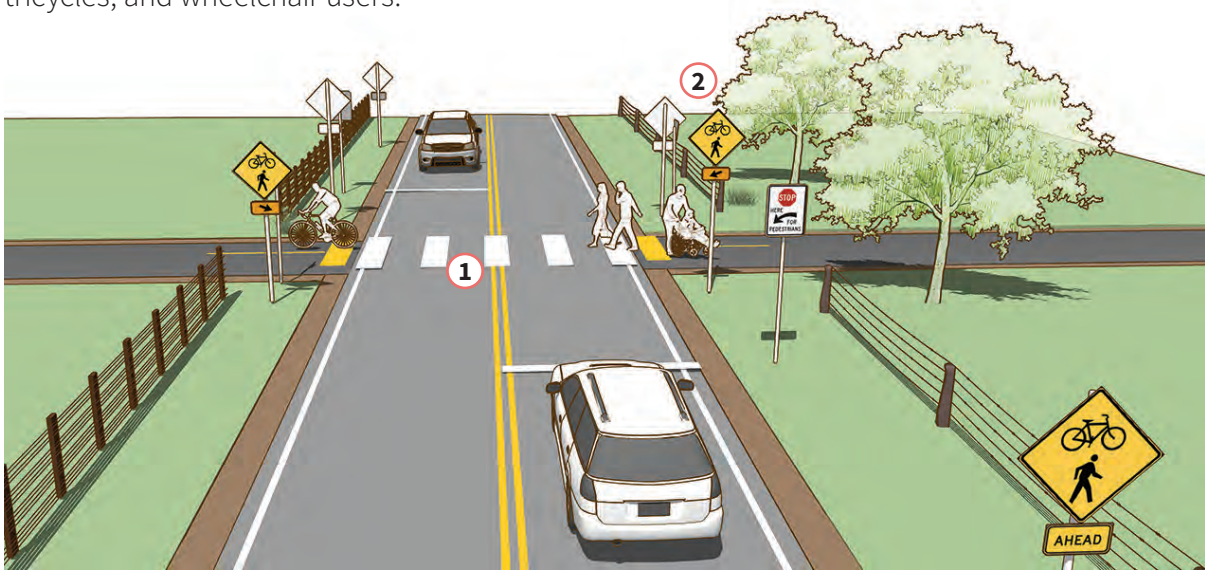


FIGURE 5-7 : MID-BLOCK TRAIL CROSSING

Design Features

1. **Crosswalk.** Appropriate high visibility crosswalk markings should be installed.

2. **Warning Signs.** A Bicycle/Pedestrian warning sign (W11-15) with Downward Arrow plaque (W16-7P) at the crossing, on both sides. Signs are used to warn users of the crossing location.

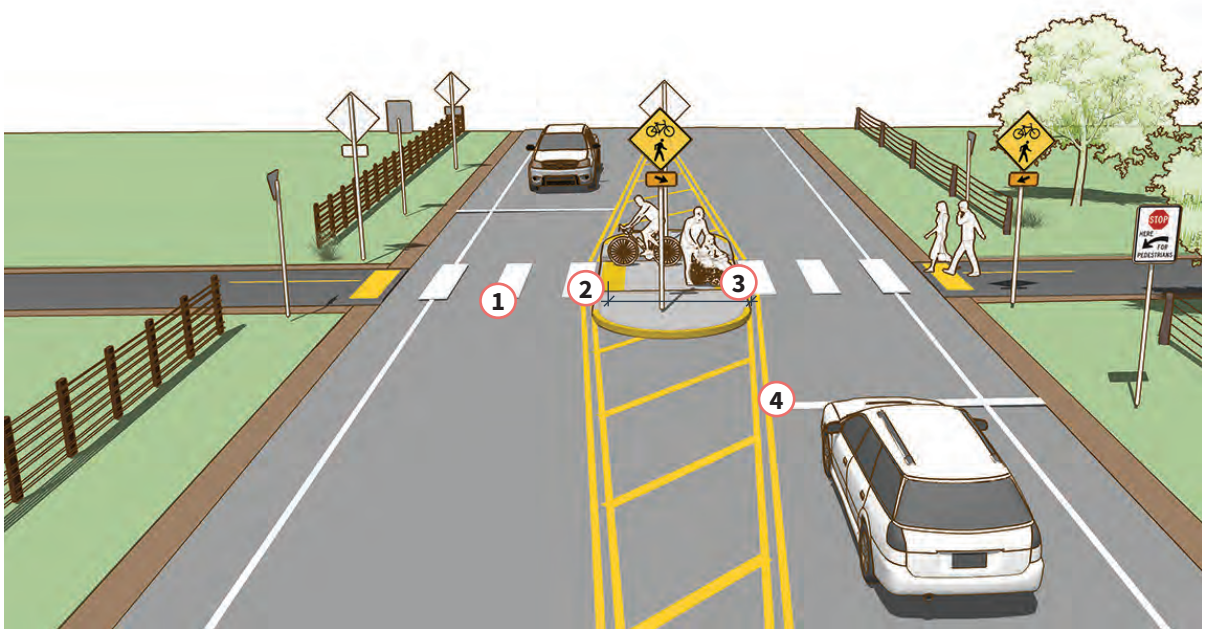


FIGURE 5-8 : MID-BLOCK TRAIL CROSSING WITH REFUGE ISLAND

Design features

1. **Crosswalk.** Median islands should be paired with a Marked Crosswalk and Advanced Yield Line crossing treatment package.
2. **Refuge Area.** The bicycle waiting area should be at least 8 ft deep to allow for a variety of bicycle types.
3. **Safety Island.** A median safety island should allow path users to cross one lane of traffic at a time. It should be the same width as the crosswalk.
4. **Horizontal Deflection.** To promote yielding to bicyclists the median safety island should be designed to require horizontal deflection of the motor vehicle travel lanes.

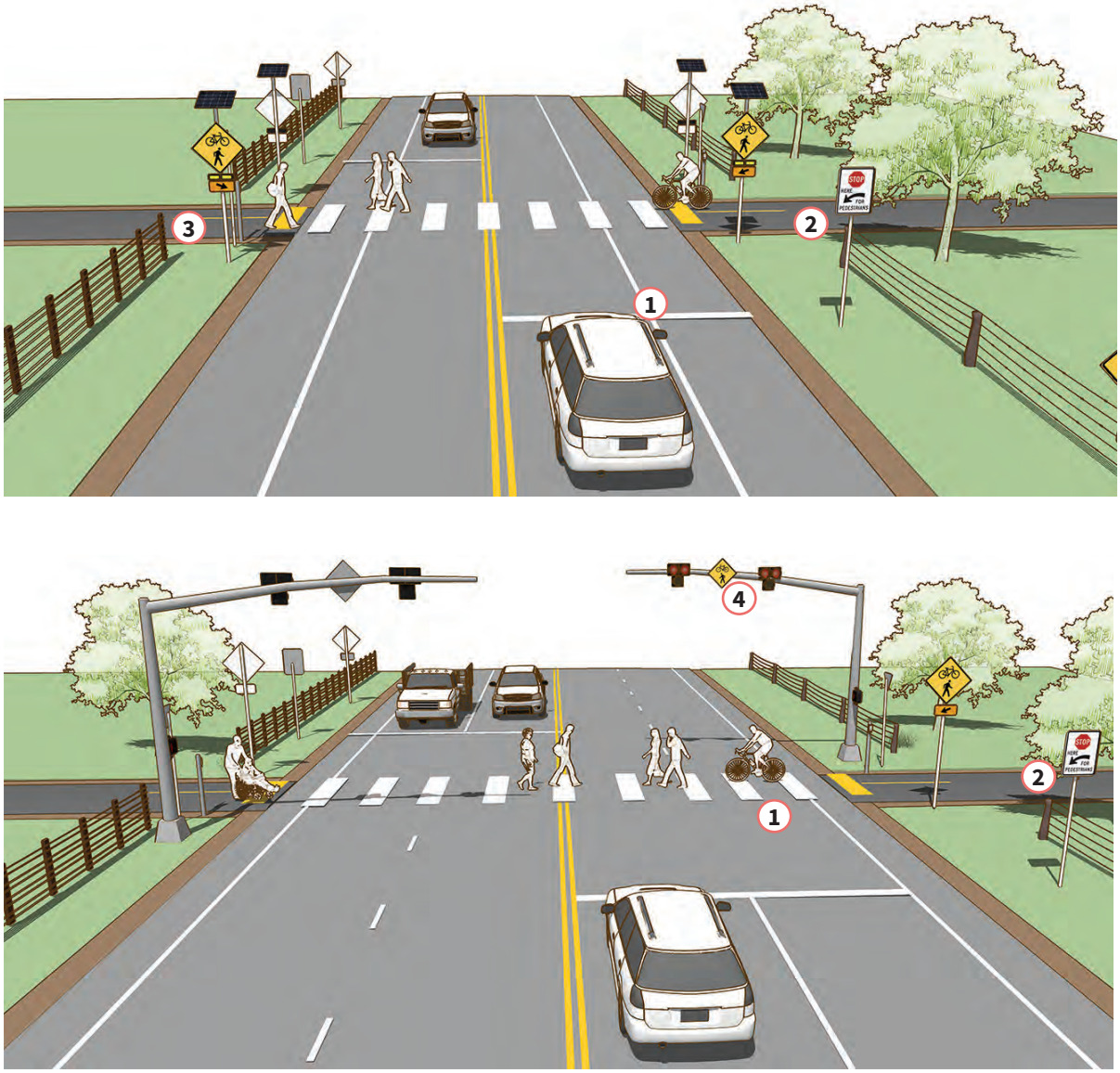


FIGURE 5-9 : FLASHING BEACONS AND HYBRID BEACONS

Design features

1. **Crosswalk.** A marked Crosswalk and Advanced Stop Bar crossing treatment package should be paired with the full traffic signal.
2. **Stop Sign.** A stop line and STOP HERE ON RED sign should be used.
3. **Rectangular Rapid Flashing Beacon (RRFB).** Where yield compliance is low, rectangular rapid flashing beacons can be used to draw attention to crossing path users and signal their intent to cross.
4. **Pedestrian Hybrid Beacon (PHB).** On multi-lane streets with high volumes and few gaps for crossing, a pedestrian hybrid beacon may be used to increase yielding rates.

DRIVEWAYS AND MINOR ROADS

Similar to larger intersections, driveways and small roads present additional areas of conflict when crossing a trail. When designing these trail crossings consideration must be given to the size of the driveway or road, as well as the speed of the adjacent roadway, and available space.

For large and frequently used driveways and minor roads, a bend-out design may be implemented where space allows. This design treatment widens the physical separation between the trail and adjacent roadway as it moves towards the driveway.

The trail separation should vary according to the adjacent road speed limit and available space, with larger separation given to higher speed roads, detailed in Table 5-3. This design treatment provides space for right-turning vehicles to yield to trail users.

For small driveways and where space does not allow for a bend-out design, special consideration should be given to sight lines and visibility of trail users. To avoid the encroachment of vehicles exiting driveways into the trail crossing, landscaping and other furnishings or trail elements should not be placed within 15 ft of a driveway edge, detailed in Figure 5-10.

FIGURE 5-10 : SIGHT DISTANCE TRIANGLES

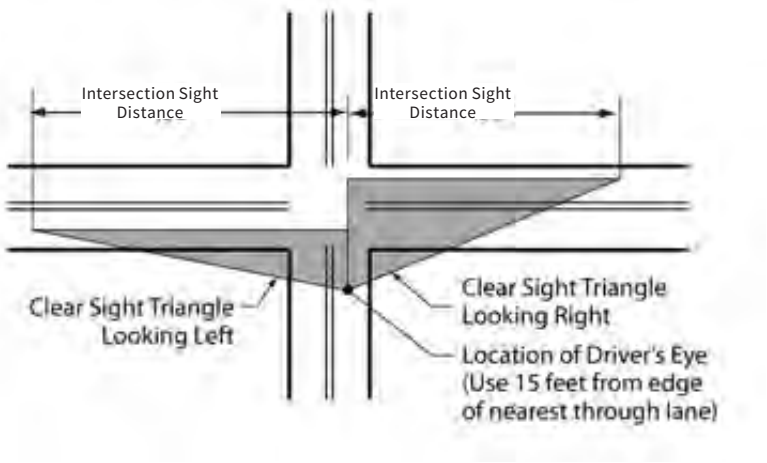


TABLE 5-3 : TRAIL SEPARATION AT CROSSINGS

ADJACENT ROAD SPEED (MPH)	RECOMMENDED PHYSICAL SEPARATION (FT)
<25 MPH	6.5’
35-45 MPH	6.5’ - 16.5’
≥55 MPH	16.5’ - 24’

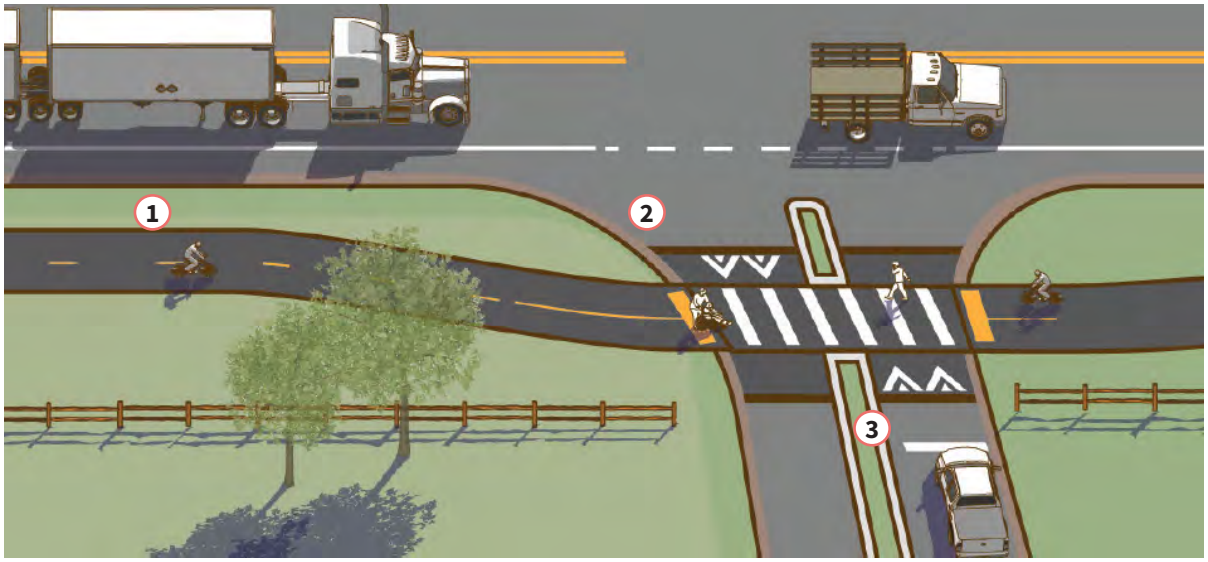


FIGURE 5-11 : BEND-OUT TRAIL CROSSING

Design features

1. **Sight Distance.** The trail approach to the driveway intersection should provide enough stopping sight distance to allow drivers to stop before entering the crossing area.
2. **Physical Separation.** A physical separation should be used between the adjacent roadway and trail ranging between 5 ft and 24 ft.
3. **Raised Median Island.** At major driveways and minor road intersections, provide a raised median island for additional safety and trail user comfort.

Trail Design Guidelines

The following pages illustrate typical cross-sections of trail types found within the City of Riverside, as well as their relevant design guidelines related to surface material, width, slope, and other elements.

SIDEPATH TRAILS

Sidepath trails are roadway-adjacent multipurpose trails. These generally run either parallel to or replace sidewalks on one side of the street, and are constructed from a firm, stabilized decomposed granite surface that is accessible and comfortable for equestrian use, walking, jogging, and bicycling.

URBAN TRAILS

Urban trails are defined by the presence of an off-street walking path that is adjacent to a Class I bike path.

OPEN SPACE TRAILS

Open Space trails are located away from roadways and generally are in less developed areas of the city. Open Space trails are frequently constructed with compacted soil or natural surface, but can be constructed with decomposed granite on fire road trails.

Open space trail design is dependent on many factors, such as environmental and built context, running and adjacent slopes, remoteness, and anticipated levels and types of use. While these factors must be evaluated on a case-by-case basis, the guiding principles, detailed in Table 5-4, can help determine the most appropriate trail for a given location.

Design guidelines for these trails are on the following pages. The overall locations of these various trail types are illustrated in Figure 5-12.

These trail types include those that serve people of all ages and abilities, including pedestrians and hikers, bicyclists, and equestrians. It is noted that design guidelines for paved Class I bike paths can be found in the City's Active Transportation Plan. Paved Class I trails should reference the 2020 City of Riverside Standard Drawings for Construction, Standard Drawing #111.

Design guidelines are primarily used to provide guidance to developers and to jurisdictions for new trail construction and future maintenance purposes. Where conditions do not exactly match those detailed in the Trails Master Plan, trails should be designed according to the most similar detail provided.

However, it is recognized that in certain situations due to physical constraints, it may not be feasible for the trails to be implemented according to the standards described in the Trails Master Plan. In such cases, variation from these standards may be allowed on a case-by-case basis

TABLE 5-4 : OPEN SPACE TRAIL GUIDING PRINCIPLES

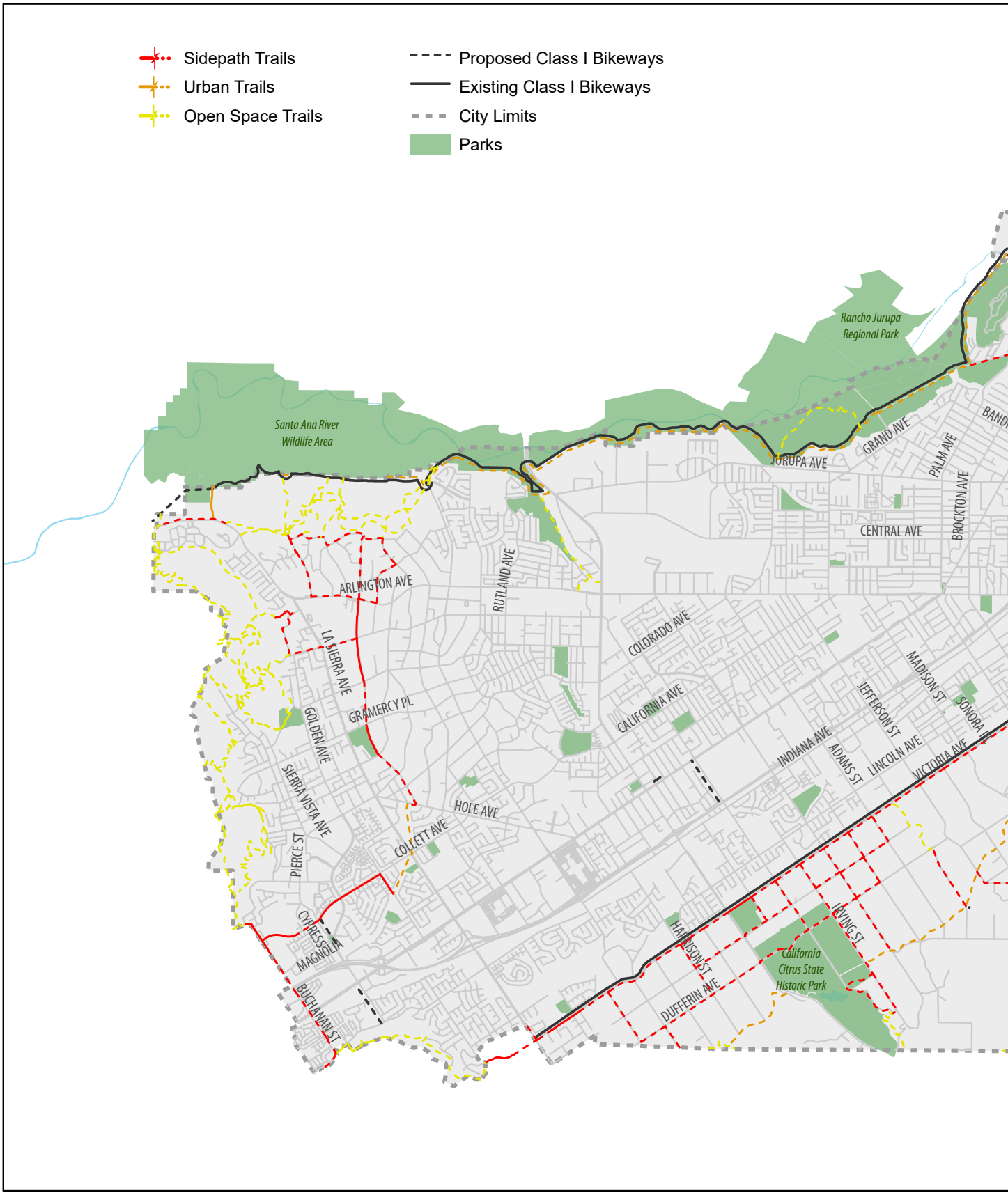
	FRONT COUNTRY	MID COUNTRY	BACK COUNTRY
Level of Use	Continuous use	Heavy on weekends/ holidays, with periodic gaps in heavy use	Overall low use
Types of Users	ADA, young children, elderly, all users	General public, but challenging, with limited accessible areas	Experienced and highly mobile
Distance from Vehicular Access, Parking, Developed Trailheads, and Roadways	0 - 500 feet	500 feet - 0.5 miles	> 0.5 miles
Environmental Context	Generally disturbed, or sufficient right of way to buffer sensitive areas from the trail	Generally disturbed, or sufficient right of way to buffer sensitive areas from the trail	Sensitive areas where trail impact must be minimized
Slope	Average ≤ 5%	Average up to 10%	Average up to 10%, with steeper sections

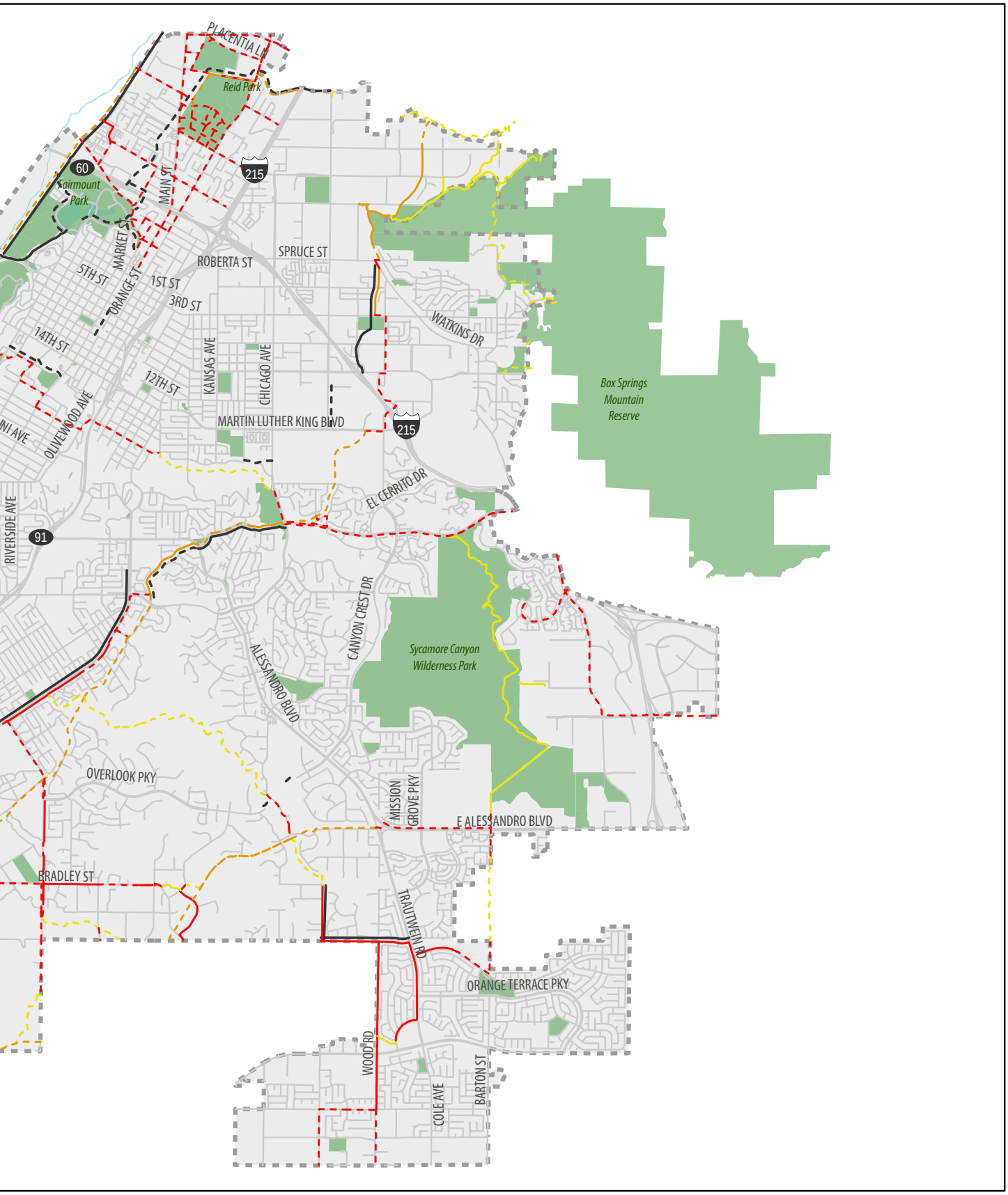
subject to approval by the City's Parks and Recreation Commission, based upon staff review and recommendations. The Parks and Recreation Commission may choose to delegate this responsibility to a Trails Technical Advisory Committee.

For specific design details, see "Appendix F: Trail Design and Construction Details and Specifications", which provides information needed to implement typical trails in Riverside. The City's adopted trail grading construction specifications and standard details are available on the City's website at https://riversideca.gov/park_rec/planning-projects/trails.

The City supplements these construction standards with the California State Parks Trails Handbook and the United States Department of Agriculture (USDA) United States Forest Service (USFS) Trail Construction and Maintenance Notebook and Standard Plans and Specifications, which provide standards for less frequently used trail improvements such as steps, puncheons, armored trail tread, among many other elements. Both the State and USFS standards are incorporated by reference into the City's Trails Master Plan. For the design standards described above, see "Appendix F: Trail Design and Construction Details and Specifications". When multiple construction standards conflict, the more stringent standard requiring materials larger in size, greater in number and/or strength, and/or configured in a particular manner to provide better public health, safety and welfare will take precedence.

FIGURE 5-12 : TRAIL TYPES




PLACENTIA LN
Reid Park
60
Fairmount Park
MAIN ST
215
MARKET ST
ORANGE ST
5TH ST
1ST ST
3RD ST
ROBERTA ST
SPRUCE ST
WATKINS DR
14TH ST
12TH ST
KANSAS AVE
CHICAGO AVE
OLIVEWOOD AVE
MARTIN LUTHER KING BLVD
215
Box Springs Mountain Reserve
EL CERRITO DR
RIVERSIDE AVE
91
CANYON CREST DR
Sycamore Canyon Wilderness Park
ALESSANDRO BLVD
OVERLOOK PKY
MISSION GROVE PKY
E ALESSANDRO BLVD
BRADLEY ST
TRAUTWEIN RD
ORANGE TERRACE PKY
WOOD RD
COLE AVE
BARTON ST

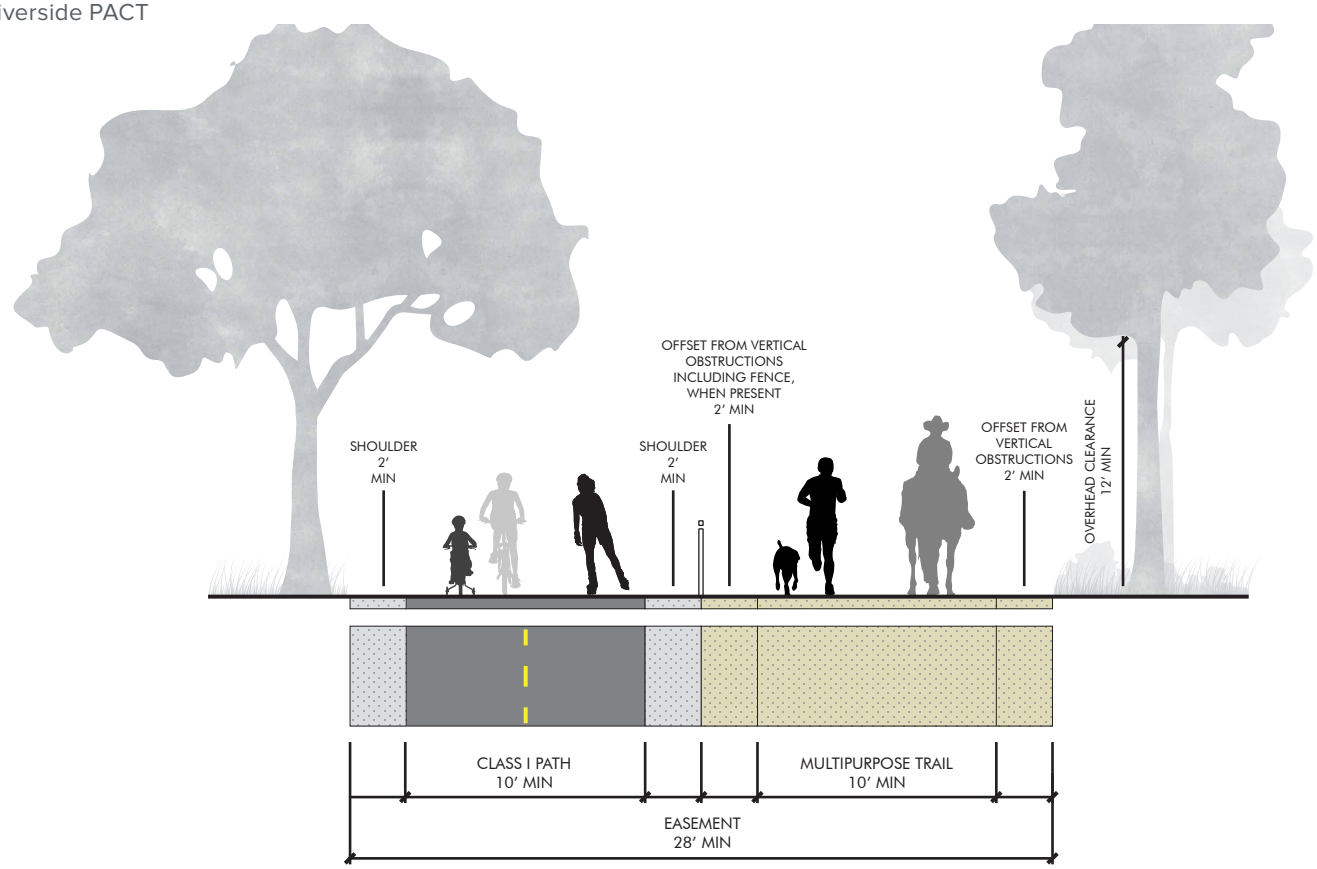


FIGURE 5-13 TYPICAL SECTION: URBAN (TRAIL WITH CLASS I SHARED USE PATH)

Minimum Overall Width: 28'; an additional 5' buffer is required between trail and roadway when roadway is present. If the trail does not abut vertical obstructions, the minimum overall width can be reduced to 24'.

Class I Path Surface: Asphalt Concrete or Portland Cement/Aggregate Mixture per City of Riverside Public Works Standard Drawing 111.

Class I Path Width: 10' Min.

Class I Path/Trail Separation: 2' Min. Paved or All-Weather Surface.

Multipurpose Trail Surface: Stabilized Decomposed Granite or Compacted Native Soil

Multipurpose Trail Width: 10' Min.

Fencing: As required per fencing standards and guidelines, page 48.

Maximum Running Slope: 12%; Slope to match roadway where present.

Cross Slope: Class I Path: 2% Max., Multipurpose Trail: 2% Min., 5% Max.

Use Type: Multipurpose trail open to all non-motorized modes. Class I path open to modes authorized by City Municipal Code.

ADA Compliance: Access to trailheads and facilities at trailheads shall be ADA compliant. Trails themselves shall be constructed for ADA compliance as site conditions allow.

Note: Class I trails shall follow Caltrans HDM Chapter 1000 guidelines.

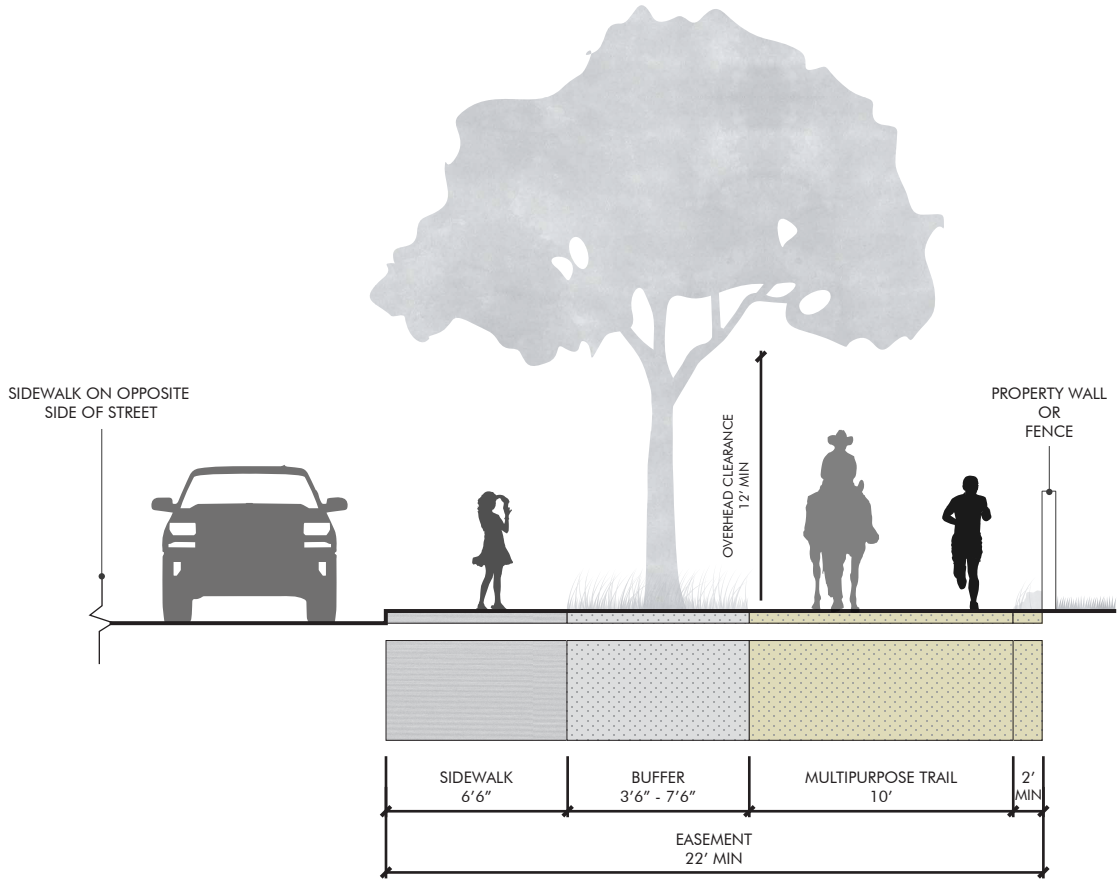


FIGURE 5-14 TYPICAL SECTION: SIDEPATH (MAJOR STREET TREATMENT)

Minimum Overall Width: 22'

Multipurpose Trail Surface: Stabilized Decomposed Granite

Multipurpose Trail Width: 10'

Property/Trail Separation: 2' flat shoulder at residential front yard fence, 3' bench when trail is at toe of manufactured slope, 4' when next to walls/ fences at the top of a manufactured slope, and 3' when next to any fence/wall over 4' in height.

Sidewalk/Trail Separation: 3'6" - 7'6"

Sidewalk Width: 6'6"

Maximum Running Slope: Slope to match roadway

Cross Slope: 2% if roadway grade is < 5%, 5% Max.

Use Type: Open to all non-motorized modes. Some Segments are designated non-equestrian.

ADA Compliance: Trails shall comply with ADA-for-trails guidelines wherever possible, contingent upon existing roadway grades.

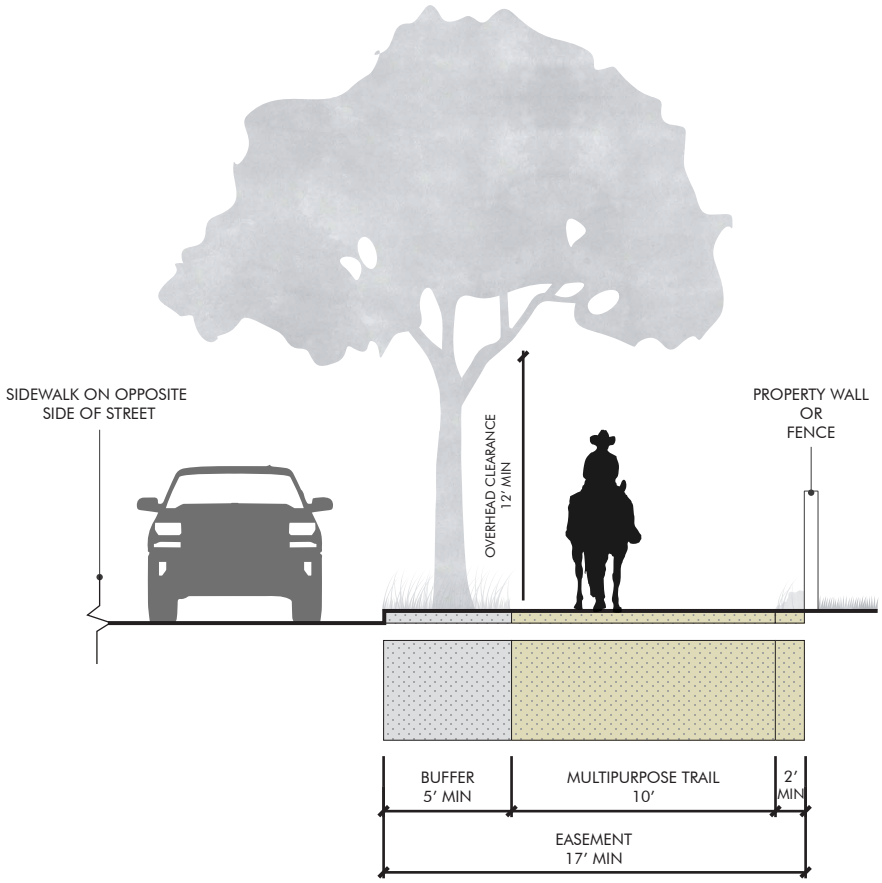


FIGURE 5-15 TYPICAL SECTION: SIDEPATH (SECONDARY/COLLECTOR STREET TREATMENT)

Minimum Overall Width: 17'

Multipurpose Trail Surface: Stabilized Decomposed Granite

Multipurpose Trail Width: 10' unless otherwise approved by City.

Property/Trail Separation: 2' flat shoulder at residential front yard fence, 3' bench when trail is at toe of manufactured slope, 4' when next to walls/ fences at the top of a manufactured slope, and 3' when next to any fence/wall over 4' in height.

Road/Trail Separation: 5' Min.; 8' Min. in Greenbelt

Fencing: As required. See fencing standards and guidelines, page 48.

Maximum Running Slope: Slope to match roadway

Cross Slope: 2% if roadway grade is < 5%, 5% Max.

Use Type: Open to all non-motorized modes. Some Segments are designated non-equestrian.

ADA Compliance: Trails shall comply with ADA-for-trails guidelines wherever possible, contingent upon existing roadway grades.

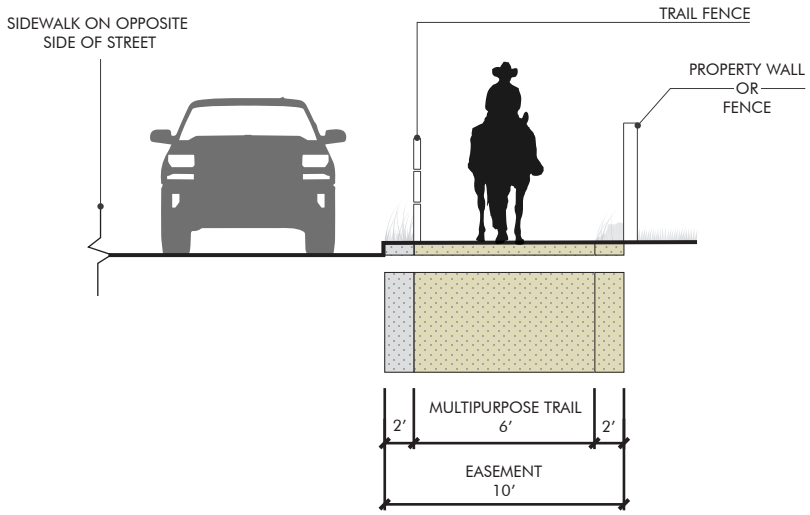


FIGURE 5-16 TYPICAL SECTION: SIDEPATH (MINOR STREET TREATMENT)

Minimum Overall Width: 10'

Trail Surface: Stabilized Decomposed Granite

Trail Width: 6'

Road/Trail Separation: 2'

Property/Trail Separation: 2'

Maximum Running Slope: Slope to match roadway

Cross Slope: 2% if roadway grade is < 5%, 5% Max.

Use Type: Open to all non-motorized modes. Some Segments are designated non equestrian.

ADA Compliance: Trails shall comply with ADA-for-trails guidelines wherever possible, contingent upon existing roadway grades.

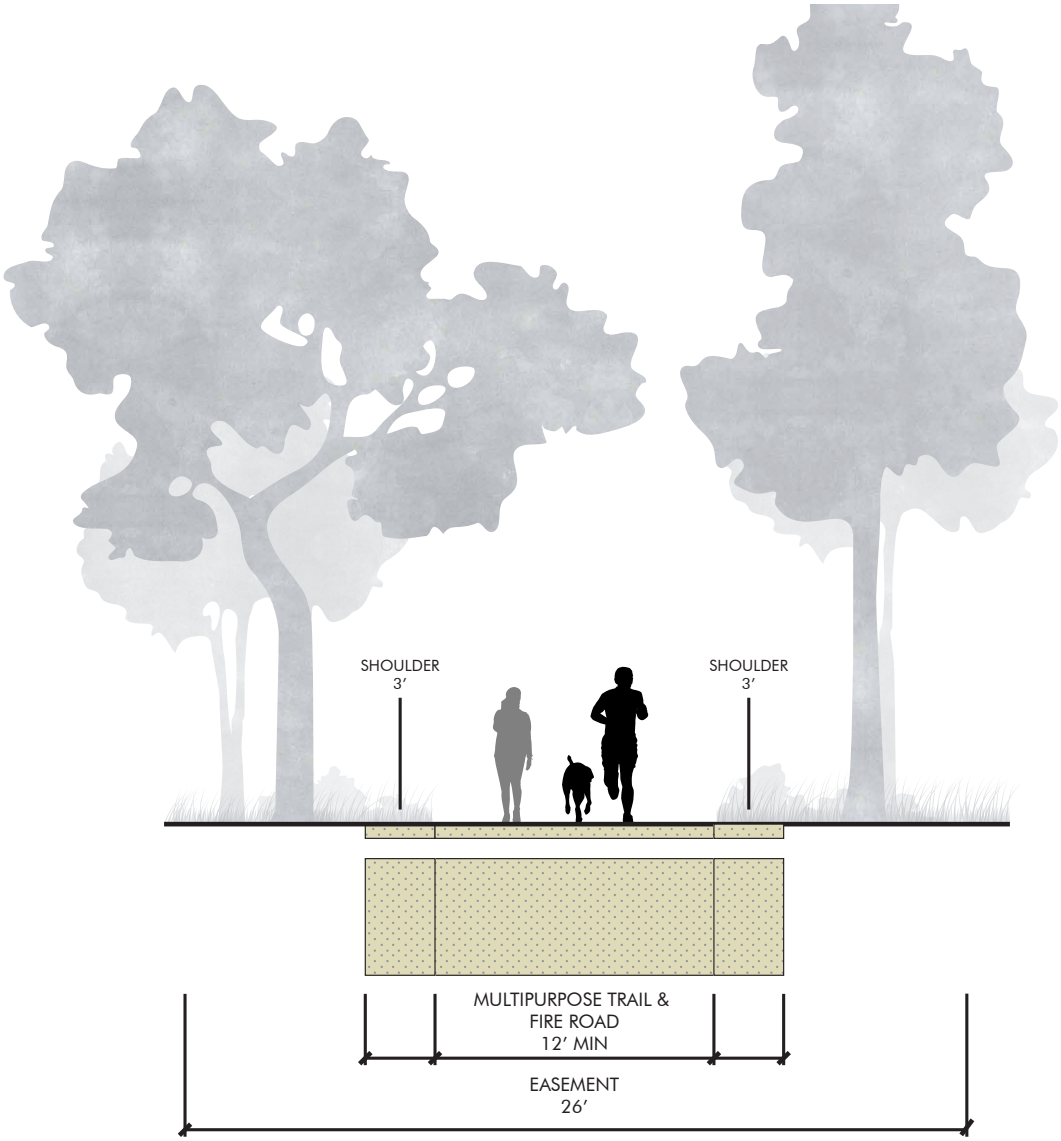


FIGURE 5-17 TYPICAL SECTION: OPEN SPACE (FIRE ROAD)

Trail Surface:	Stabilized Decomposed Granite - Prepared subgrade per geotechnical engineer's recommendation.
Trail Width:	12' minimum, but may be wider if specified by Fire Department.
Typical Applications:	Open spaces adjacent to development.
Maximum Running Slope:	8%
Cross Slope:	2% Min., 5% Max.
Use Type:	Use types may be limited on a case by case basis per environmental or safety constraints.
ADA Compliance:	Access to trailheads and facilities at trailheads shall be ADA compliant. Trails themselves shall be constructed for ADA compliance as site conditions allow.

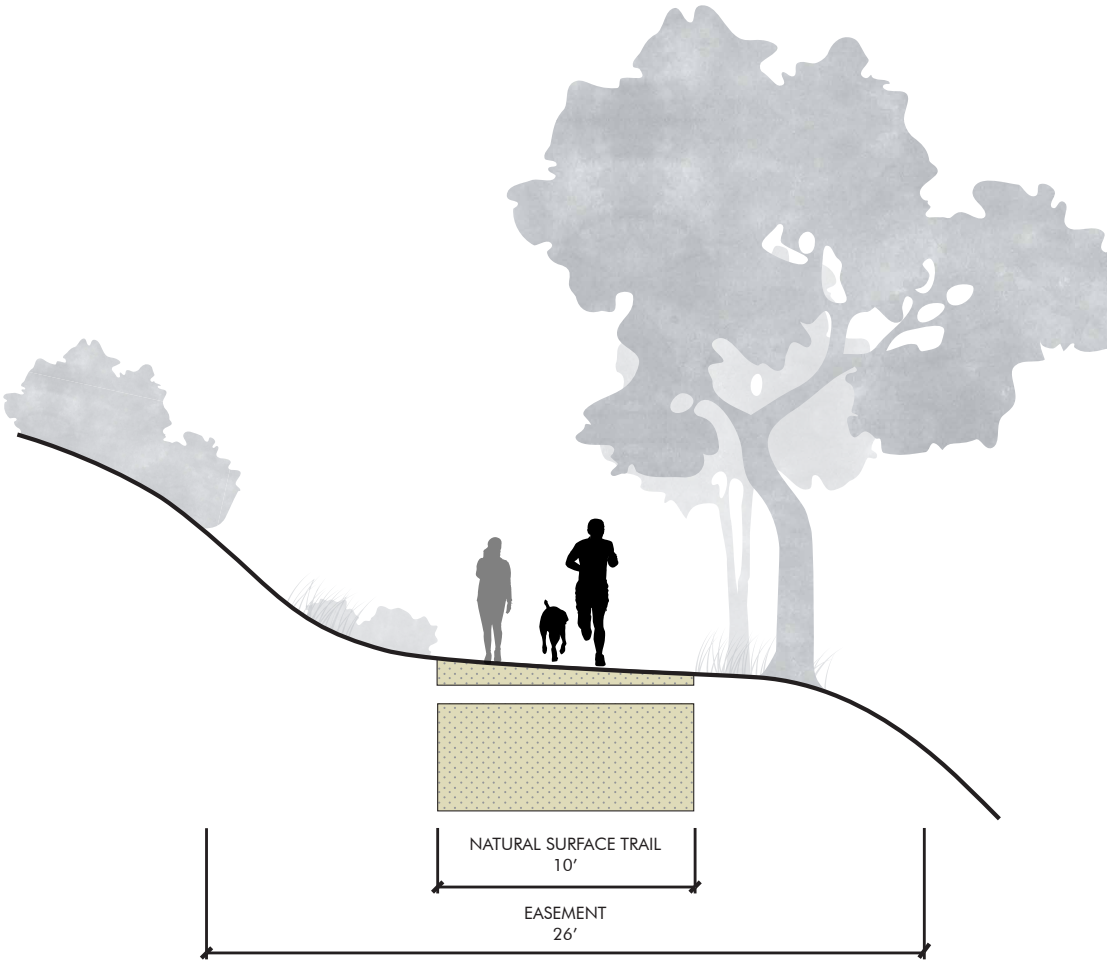


FIGURE 5-18 TYPICAL SECTION: OPEN SPACE (FRONT COUNTRY)

Trail Surface:	Natural Surface/Compacted Soil
Trail Width:	10'
Typical Applications:	Parks and open space areas with high levels of use and close adjacency to development. Primary trail loops.
Maximum Running Slope:	12%
Cross Slope:	2% Min., 10% Max.
Use Type:	Use types may be limited on a case by case basis per environmental or safety constraints.
ADA Compliance:	Access to trailheads and facilities at trailheads shall be ADA compliant. Trails themselves shall be constructed for ADA compliance as site conditions allow.
Note:	Use full bench construction when trails are cut into hillsides.

FIGURE 5-19 TYPICAL SECTION: OPEN SPACE (MID-COUNTRY)

Trail Surface:	Natural Surface/Compacted Soil
Trail Width:	8’
Typical Applications:	Secondary trail loops. Open space areas with high levels of use.
Maximum Running Slope:	15%
Cross Slope:	5% Min., 10% Max.
Use Type:	Use types may be limited on a case by case basis per environmental or safety constraints.
ADA Compliance:	Access to trailheads and facilities at trailheads shall be ADA compliant. Trails themselves shall be constructed for ADA compliance as site conditions allow.
Note:	Use full bench construction when trails are cut into hillsides.

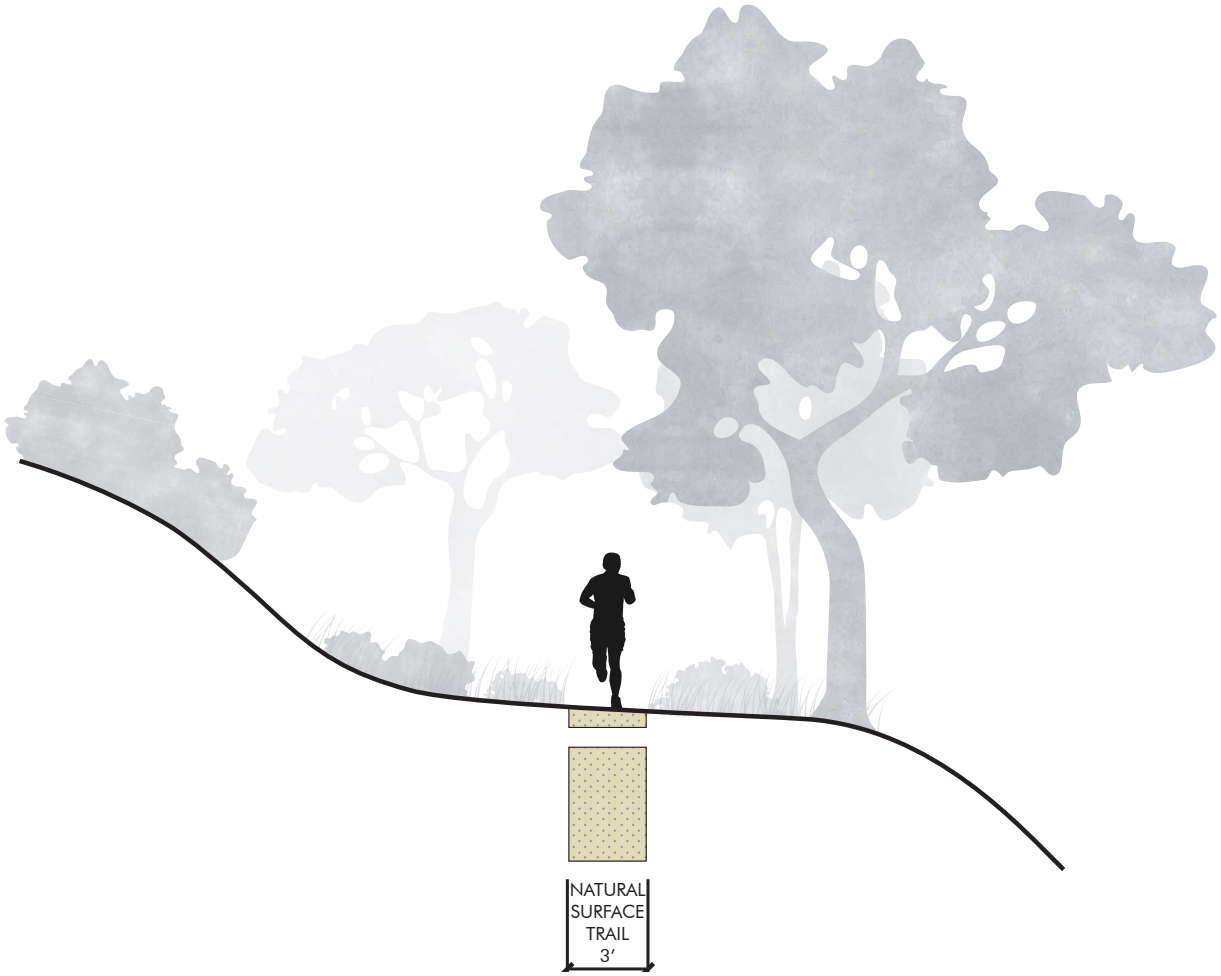


FIGURE 5-20 TYPICAL SECTION: OPEN SPACE (BACK-COUNTRY)

Trail Surface:	Natural Surface/Compacted Soil
Trail Width:	3’
Typical Applications:	Open space areas with lower levels of use and/or environmental constraints.
Maximum Running Slope:	20% (for stretches of 100’ or less)
Cross Slope:	5% Min., 10% Max.
Use Type:	Use types may be limited on a case by case basis per environmental or safety constraints.
ADA Compliance:	Access to trailheads and facilities at trailheads shall be ADA compliant. Trails themselves shall be constructed for ADA compliance as site conditions allow.
Note:	Use full bench construction when trails are cut into hillsides.

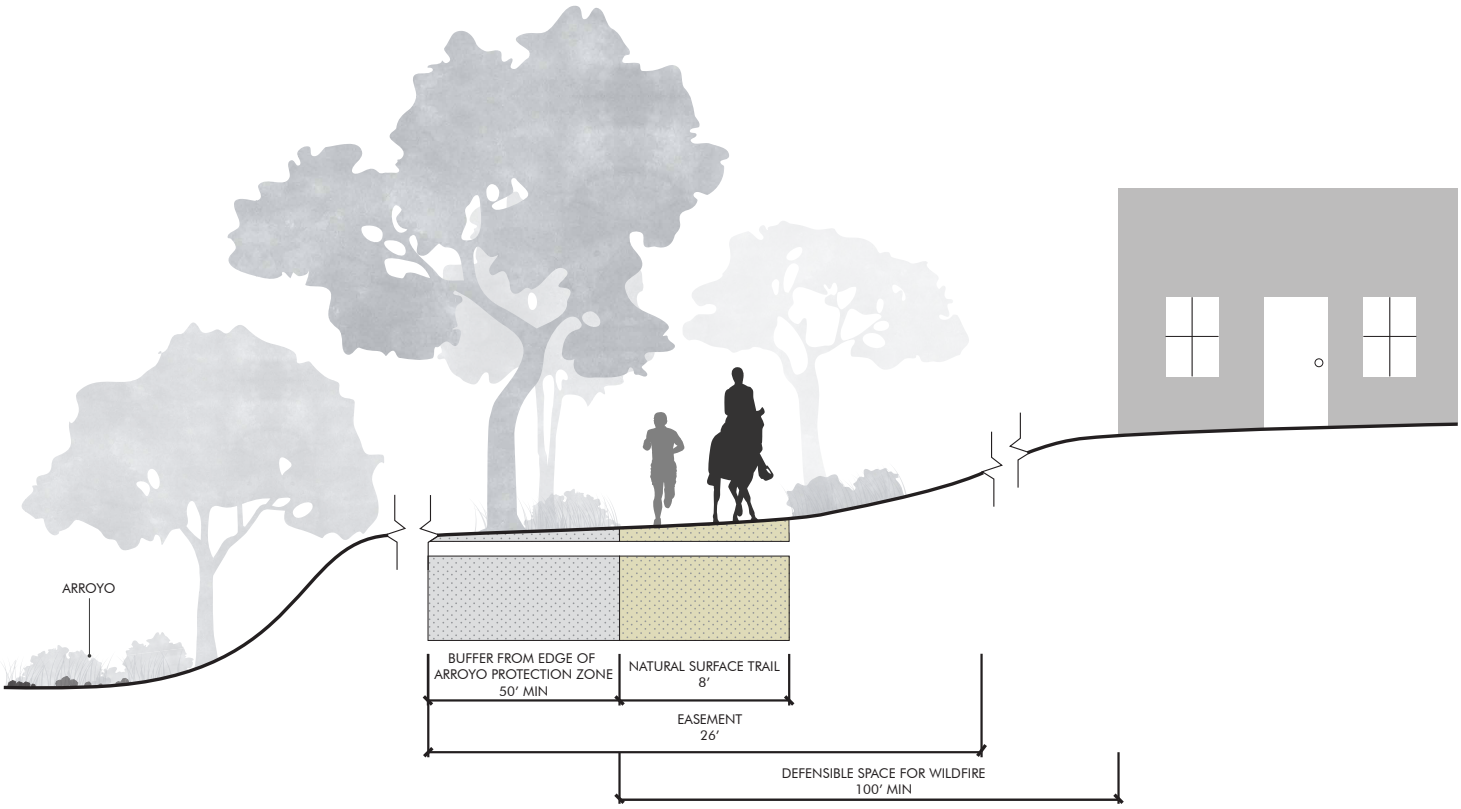


FIGURE 5-21 TYPICAL SECTION: OPEN SPACE (ARROYO)

Trail Surface:	Natural Surface/Compacted Soil
Trail Width:	8'
Maximum Running Slope:	Route should be selected in order to not exceed 15%.
Cross Slope:	5% Min., 10% Max.
Use Type:	Use types may be limited on a case by case basis per environmental or safety constraints.
ADA Compliance:	Access to trailheads and facilities at trailheads shall be ADA compliant. Trails themselves shall be constructed for ADA compliance as site conditions allow.
Note:	Use full bench construction when trails are cut into hillsides.

* The City of Riverside's minimum Grading Standards (Municipal Code 17.28) precludes grading or development within 50 feet of the mapped edge of certain waterways and their tributaries.

** See following pages for additional arroyo trail development concerns.

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Trail Fencing

TRAIL FENCING PLACEMENT

Urban trails require fences to help establish rights of way, protect privacy, call attention to roadside trails, and protect trail users from potential hazards.

Fencing is required in locations where there is less than a 5-foot horizontal separation from adjacent roadways, and when adjacent to sensitive environmental areas such as habitat restoration or conservation areas. In areas where elevation changes adjacent to a trail would require a guardrail, the same fencing style used along the rest of the trail should be used and modified as necessary to meet the requirements of guardrails as specified in the California Building Code. Fencing is to be installed when a trail runs along the top of a 3:1 or greater slope.

Fencing is also required as a trail approaches intersections and crossing, to help discourage cross cutting of the intersection by trail users, prevent vehicular intrusion, and improve trail visibility. Unless other barriers are present (furnishings, landscape, boulders, etc), this fencing must extend a minimum of 30 feet in each direction from the crossing.

Where equestrian and paved bicycle paths run in parallel, a fence should be provided between the paved and non-paved portions of the trail when the separation between the two trails is less than eight feet.

EQUESTRIAN FENCING

Where trails allow equestrian use, a fence must be used between the roadway and the trail when the horizontal separation from the roadway is less than 10 feet. Equestrian fencing must be 54 inches in height. All other fence design guidelines should apply.

TRAIL FENCE DESIGN GUIDELINES

A consistent style of fencing shall be used along roadside trails to ensure design continuity. Trail fence construction shall be Trex composite lumber (composed of recycled plastic and recycled wood fiber or similar materials) or city-approved equivalent. A simple post and rail design, where rail boards can be easily bolted or screwed to posts, is to be used for ease of installation and maintenance. Fence posts are to be oriented toward the outside of the trail, with fence rails oriented toward the inside of the trail (see sample construction detail in “Appendix F: Trail Design and Construction Details and Specifications” Fences are to be designed to withstand a live load of at least 20 pounds per linear foot applied either horizontally or vertically downward at the top rail. Fence materials shall have a fire rating equal or better than ‘Trex Seclusions’ (Class B in the ASTM E84

Standard Test Method for Surface Burning Characteristics of Building Materials). Dark colors such as brown or dark gray are to be used to help the fence elements blend better with the landscape and obscure graffiti and overall wear-and-tear.

In addition to utilizing dark colors for fencing materials to conceal potential graffiti, anti-graffiti coatings should be applied. Anti-graffiti coatings create a non-stick surface that repels graffiti from paint and permanent markers. Removal of graffiti from surfaces with anti-graffiti coatings can be accomplished through pressure washing or hand-wiping without the need for abrasive cleaning and repainting.

Fencing fasteners shall be non-protruding on the side of the fence facing trail users. Fences shall terminate at posts, without protruding rails. Fences shall be two rail unless serving as a guardrail, in which case, must be modified to meet the California Building Code.

POST AND CABLE (OPEN SPACE TRAILS)

In areas where a trail passes through open space or other areas where a visually 'lighter' fence option is preferred, a post and cable design shall be used. Fence posts shall be 4"x4" galvanized steel. Cable shall be 9/16" type 316 stain steel (see sample post and cable fence construction detail in "Appendix F: Trail Design and Construction Details and Specifications"."

A 2-rail fence showing posts oriented toward the outside of the trail and rails facing towards the trail. Five Coves Wetlands, Anaheim, CA

A post and cable fence along multi-use trail

Arroyo Trails

The proposed trail network includes 4 miles of trails along arroyos in the City of Riverside. While part of the proposed trail network, there are certain challenges related to developing trails along these waterways.

Arroyos are important natural resources for many plant and animal species. They are also provide a number of environmental services, including flood and erosion control.

Where possible, trails should be built outside the arroyo protection zone established by the City. Where this is not possible due to existing adjacent development, trails should be routed to create the least environmental impact and along the most sustainable and low impact alignment.

Alternative routes were explored that formed indirect connections outside of the arroyo protection zone. The alternative trails were routed to on-street conditions, and proved more intrusive to adjacent neighborhoods. Additionally, the alternatives presented a missed opportunity for environmental education related to the arroyos that are so important to the identity of the City.

ENVIRONMENTAL CHALLENGES

It is critical that any trails built adjacent to arroyos are compatible with the existing riparian habitat. Because of the sensitive nature of the surrounding habitat, the City or property owner/developer if conditioned to do so as part of their project approval, will likely need to consult with multiple different federal, state, and county agencies to obtain relevant approvals and permits to build. These include the US Army Corps of Engineers (USACE), California Department of Fish and Wildlife, and the California Natural Resources Agency.

FLOOD AND EROSION CONTROL

Arroyos naturally help to prevent flooding and soil erosion along their banks. However, activities such as vegetation clearing, grading, and other development may alter the flow of water, resulting in increased erosion. When crossing a waterway, building a free-standing bridge would have less of an environmental impact than installing a culvert for a road crossing.

LEAST BELLS VIREO HABITAT

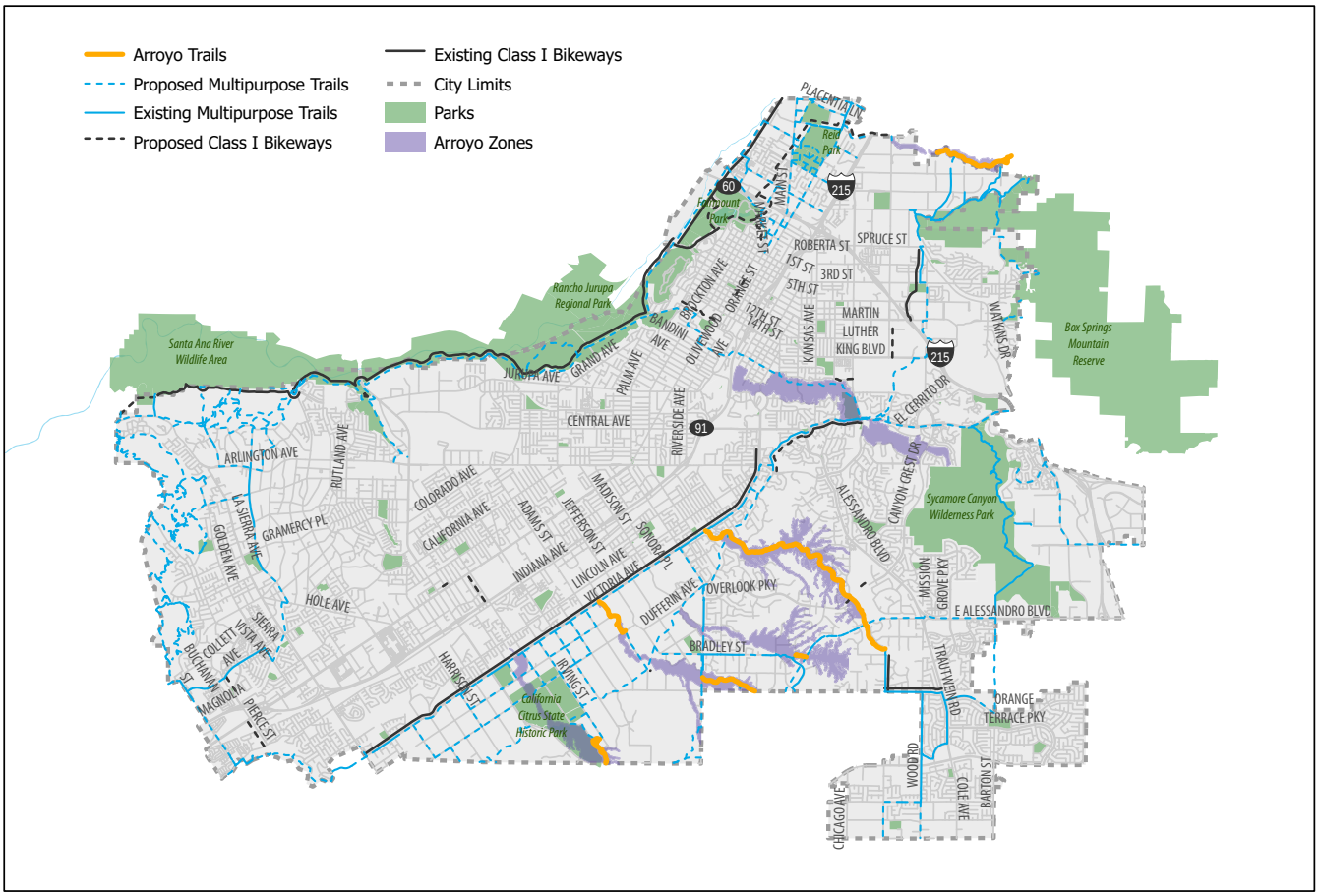
The City of Riverside is home to the Least Bell's Vireo, an endangered bird species native to California.

When building trails along arroyos, it is important to include a minimum 50' vegetation buffer between the waterway and the trail to minimize impacts to the riparian habitat (Municipal Code 17.28). This buffer is the wildlife environment that allows the Least Bell's Vireo to survive.

PROPERTY CHALLENGES

The aforementioned buffer is also important for protecting adjacent properties. In

FIGURE 5-22 : ARROYO TRAILS



addition, the State of California suggests that properties have a 100-foot buffer of "defensible space" between their buildings and the vegetation buffer for protection from wildfires.

IMPLEMENTATION AND FUNDING

Arroyo trails, more so than other trails in this document, will likely require full Environmental Impact Reports (EIRs) to comply with the California Environmental Quality Act (CEQA). This will create additional funding challenges, and will likely impose mitigation measures on the final trail design. The CEQA process will also require alternative alignments to be studied.

Funding for arroyo trails may be more widely available than other trail types, as arroyo trails can function more as park space, can help protect wildlife corridors, connect residents with nature, and may provide opportunities to clean water from adjacent properties prior to entering the arroyo.

Section 5.4: Network Recommendations

Santa Ana River Trail at Martha McLean Anza Narrows Park

Opportunities and Constraints

OVERVIEW

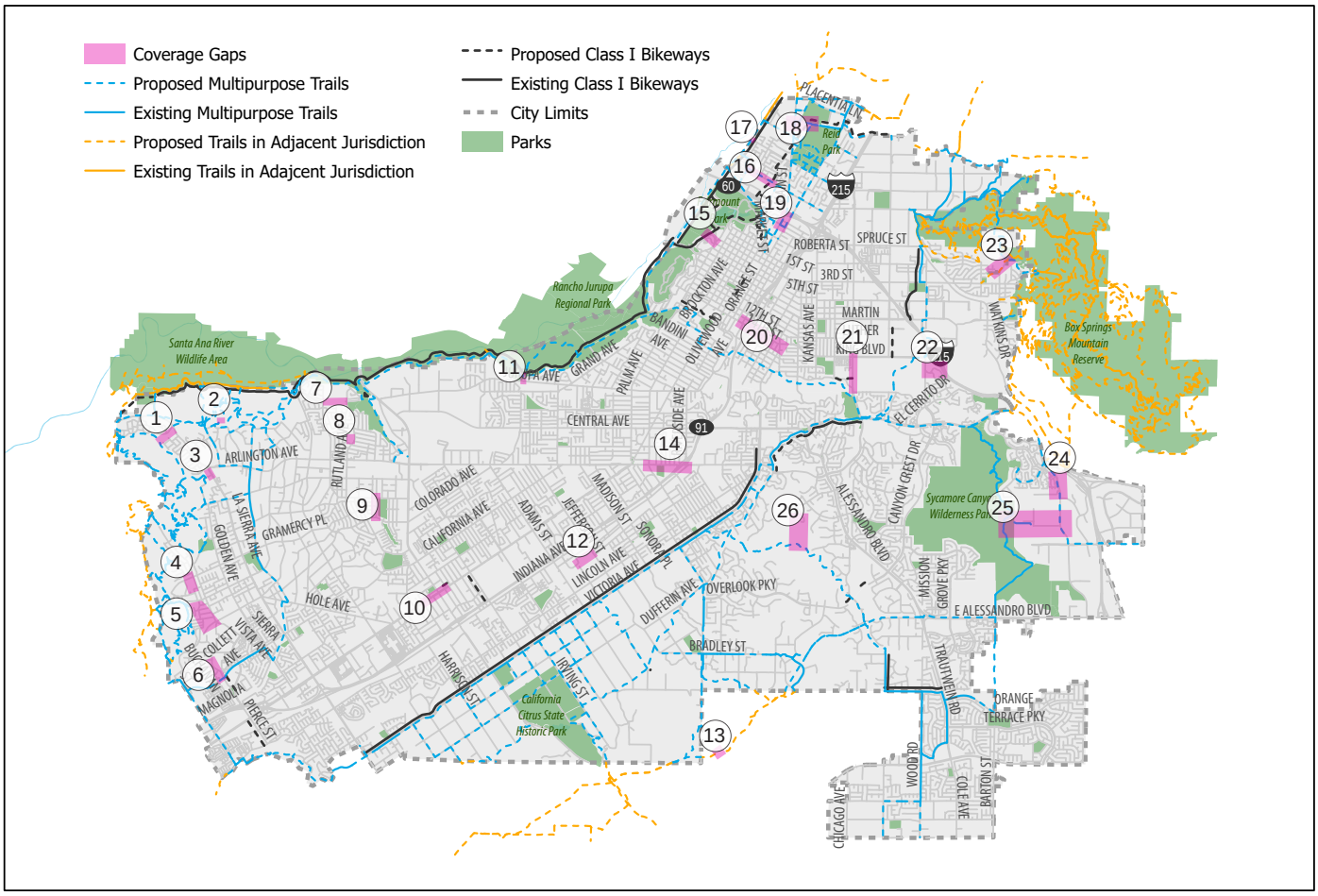
In total, the project team identified 26 areas throughout the city where there are gaps in the existing and proposed trails network. These coverage gaps are illustrated and described in Figure 5-23. The Trails Master Plan provides an opportunity to address these gaps, improving access and connectivity for the City of Riverside's many residents.

In addition, the project team identified several opportunities and constraints that guide the development of the City's trail network. These opportunities and constraints are described in the following pages.

CITYWIDE TRAIL SYSTEM GAPS, OPPORTUNITIES, CONSTRAINTS

1. Trail alignment does not enter into adjacent neighborhood. Trail is located near on-street bicycle facility but does not connect due to lack of existing trail.
2. Trail alignments do not connect to each other.
3. Trail alignment approaches on-street bicycle facility but does not connect due to lack of existing trail facilities.
4. School is not connected to any trail or bike facilities.
5. Trail enters neighborhood but no proposed alignments connect through to on-street bicycle facilities.
6. School is not connected to any trail or bike facilities.
7. On-street bicycle facilities do not connect due to stretch of land that is undeveloped/ under construction.
8. School is not connected to any trail or bike facilities.
9. Public library is not connected to any trail or bike facilities.
10. Elevated bike lane facility ends on the East side here and does not connect through this area. It picks back up as a Class II on the West side.
11. Trail approaches on-street bicycle facility but does not connect due to lack of facility.
12. Proposed and existing bicycle facilities do not connect due to the presence train tracks.
13. Trail alignments do not connect to each other due to missing segment along neighborhood roadway.
14. Existing Class II bicycle facility on the East side ends near the highway and no facilities connect West to the proposed bicycle facility.
15. Existing and proposed bicycle facilities do not connect due to lack of trail facilities.
16. Trail alignment does not connect to nearby school or existing bicycle facility.
17. Proposed bike facility does not connect to trail alignment due to lack of access points caused by residential property boundaries.

FIGURE 5-23 : CITYWIDE TRAIL GAPS, OPPORTUNITIES, AND CONSTRAINTS



18. Trail facility does not connect to existing bicycle facility due to stretch of undeveloped roadway.
19. Existing Class II bicycle facility does not connect to proposed facility due to lack of facility.
20. On-street bike facilities do not connect due to lack of existing facilities.
21. On-street bike facilities do not connect due to lack of existing facilities.
22. On-street bike facilities do not connect due to lack of existing facilities.
23. Trail alignment does not connect in to neighborhood due to lack of existing facilities.
24. On-street bicycle facilities do not connect due to lack of existing facilities.
25. Trail segment from proposed parking lot does not connect all the way to trail network. Also, trail alignments do not connect to nearby bicycle facilities due to lack of facilities.
26. Trail alignment does not connect in to neighborhood due to lack of existing facilities.

OPPORTUNITIES

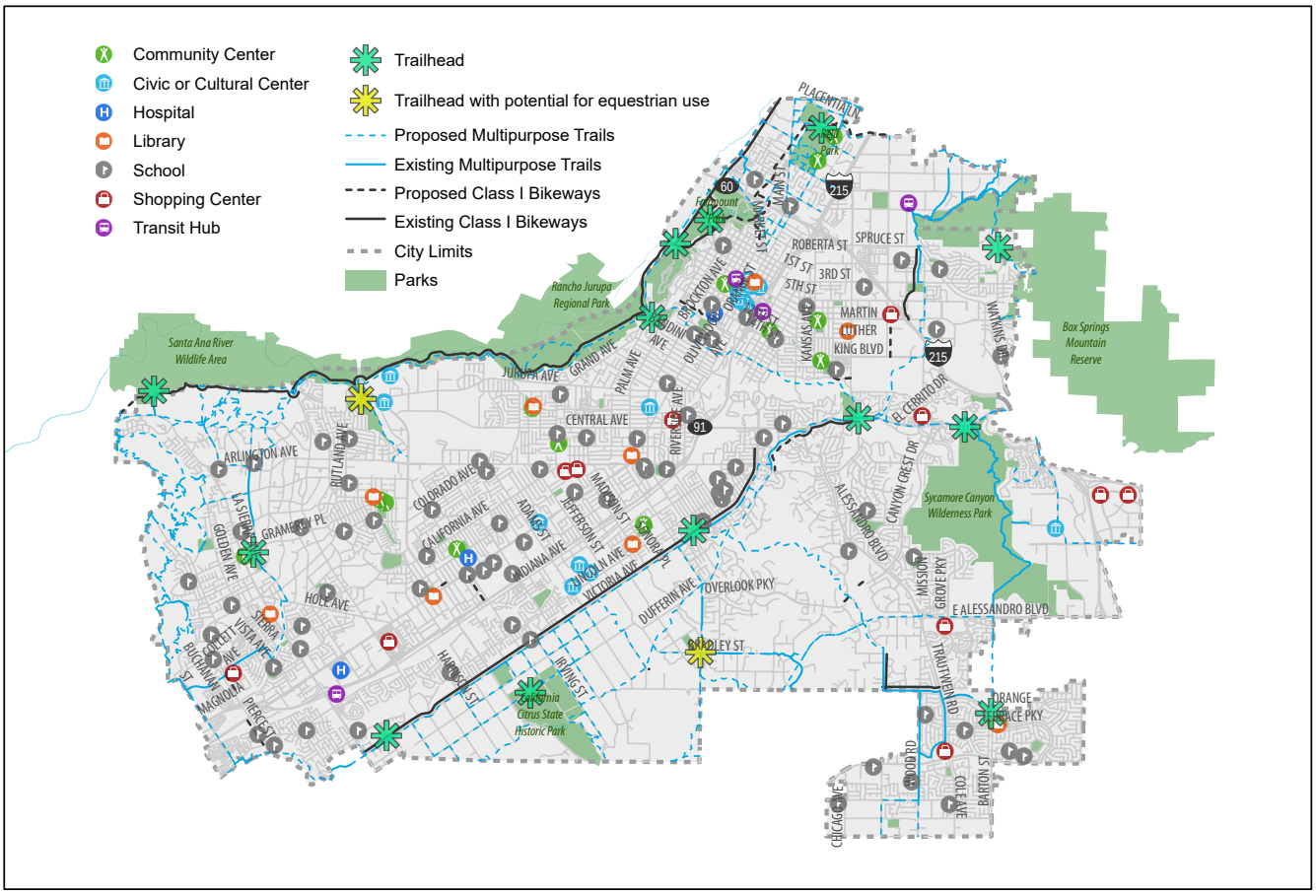
Connections to Trails

The City of Riverside boasts 23 miles of multi-modal trails within its existing network. The proposed trails in this Plan provide an opportunity to create new connections to the City's existing trails network, including regionally significant trails like the Santa Ana River Trail.

Connections to Destinations

The proposed trails included in this Plan also provide connections to the City's many destinations, including schools, parks, commercial shopping centers, and transit hubs. Figure 5-24 shows proposed trails and the destinations they connect to.

FIGURE 5-24 : COMMUNITY DESTINATIONS



CONSTRAINTS

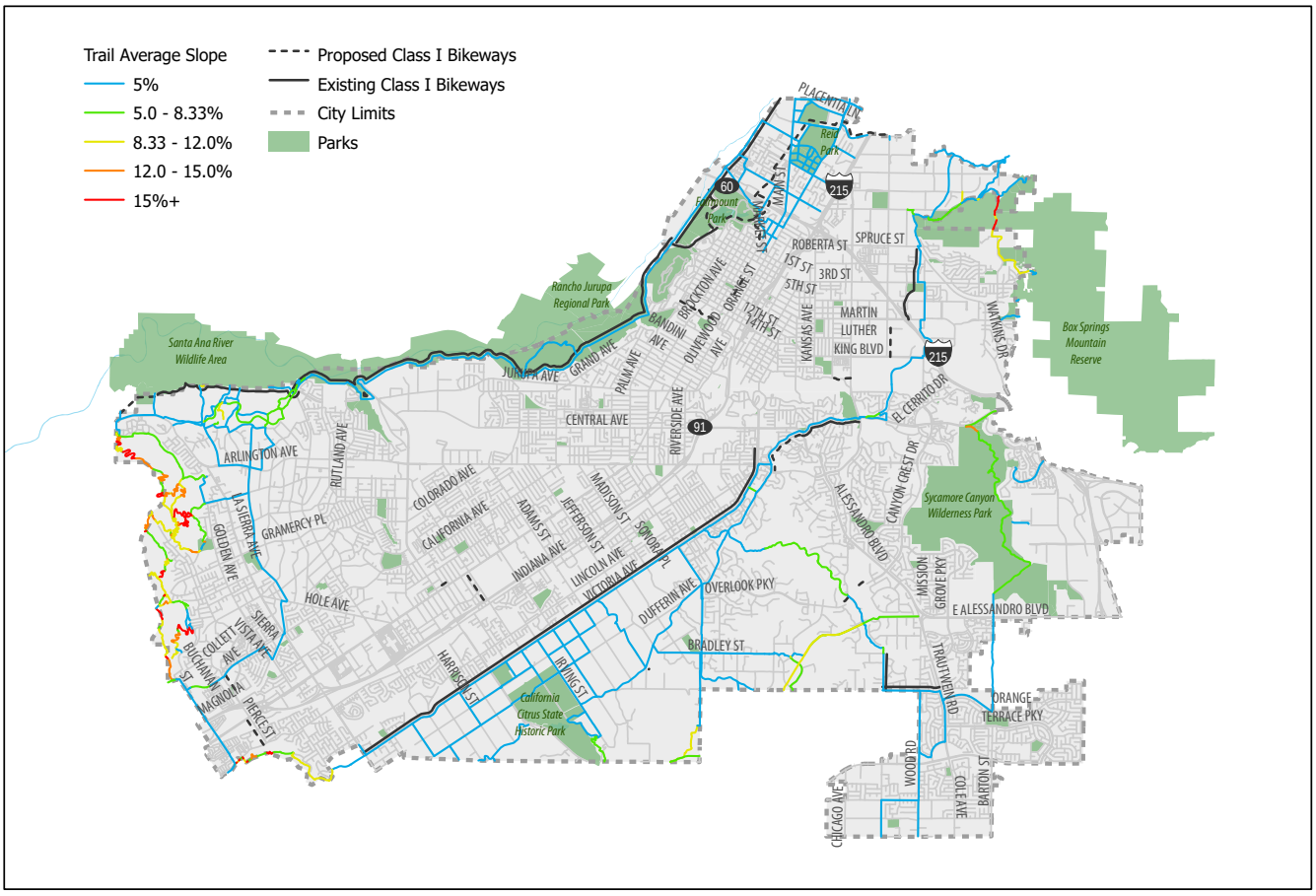
Geographic Constraints

There are some topographic constraints that impact trail alignments within the City of Riverside. The project team conducted a slope analysis to identify the number of trail segments that have an average slope greater than 15% and stretches with slopes that are higher. The identified trails were realigned to minimize fall-line orientation and reduce overall steepness. Longer switchbacks were integrated into the alignments to bring the average slopes under 15%. Due to site conditions, 25 out of 116 segments retain average slopes above 15% and will require more detailed alignment, cross-slope, and drainage design before implementation.

Programmatic Constraints

Beyond topography, constraints are primarily limited to property ownership and access to easements. Trail alignments proposed in this plan do not create new private property conflicts.

FIGURE 5-25 : TRAIL AVERAGE SLOPE



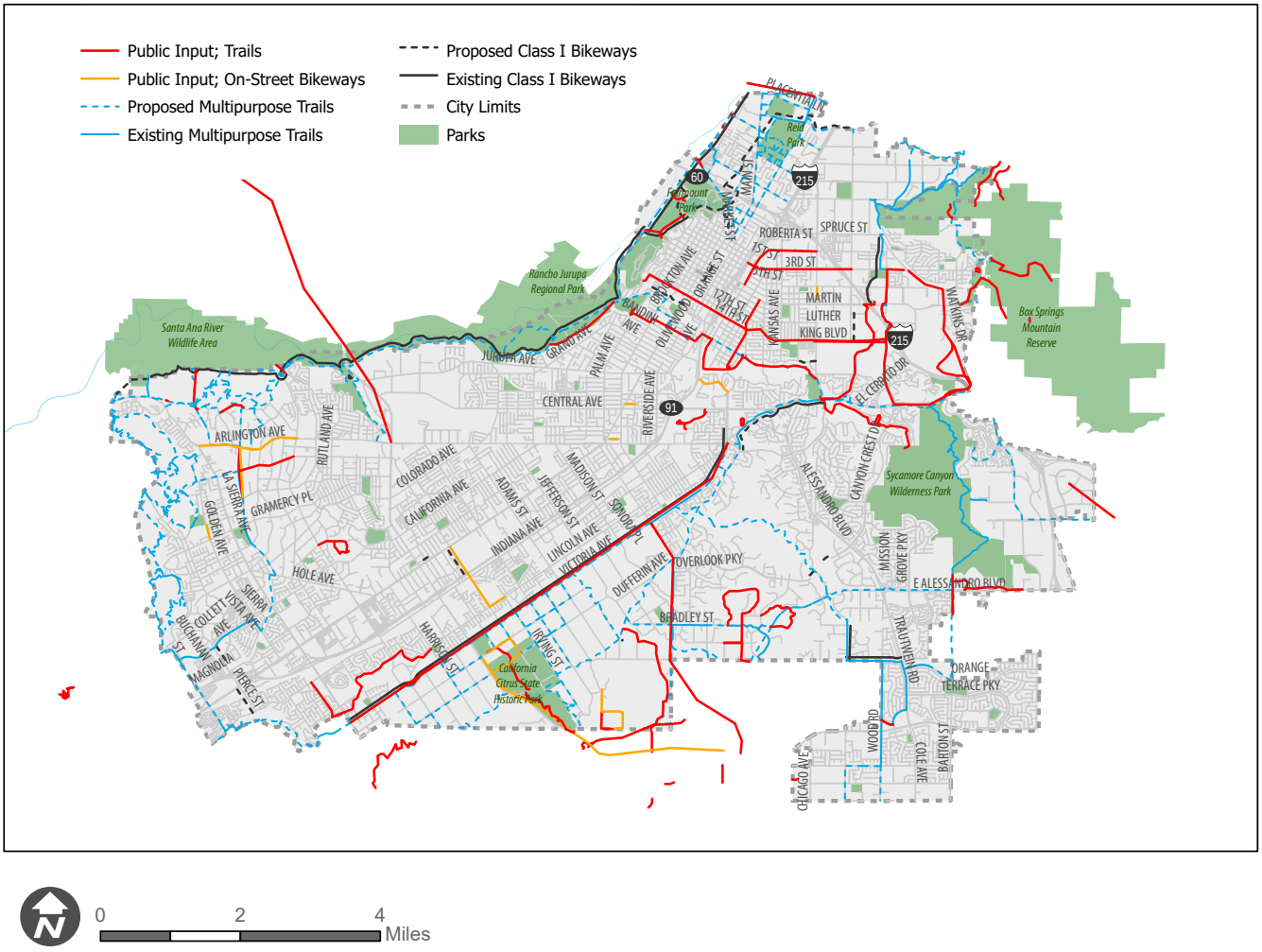
Public Input

The Riverside TMP included a public outreach strategy that went beyond that described as part of the overall PACT community engagement process.

This included utilizing the PACT online interactive public input map to capture community preferences on priority trails and corridors. The results of the online public input map are shown in Figure 5-26.

The red lines detail trail alignments that were drawn in by community members. Some community members drew lines that highlighted alignments as areas of interest, while others proposed new trail alignments in areas of the city that currently lack existing trails. Of the 74 alignments shown on the public input map, 62 relate specifically to trails. General public comments were also received related to desired trail connections, improvements, and overall priority. These comments were mapped according to topic, and are shown in Figure 5-27.

FIGURE 5-26 : PUBLIC INPUT MAP



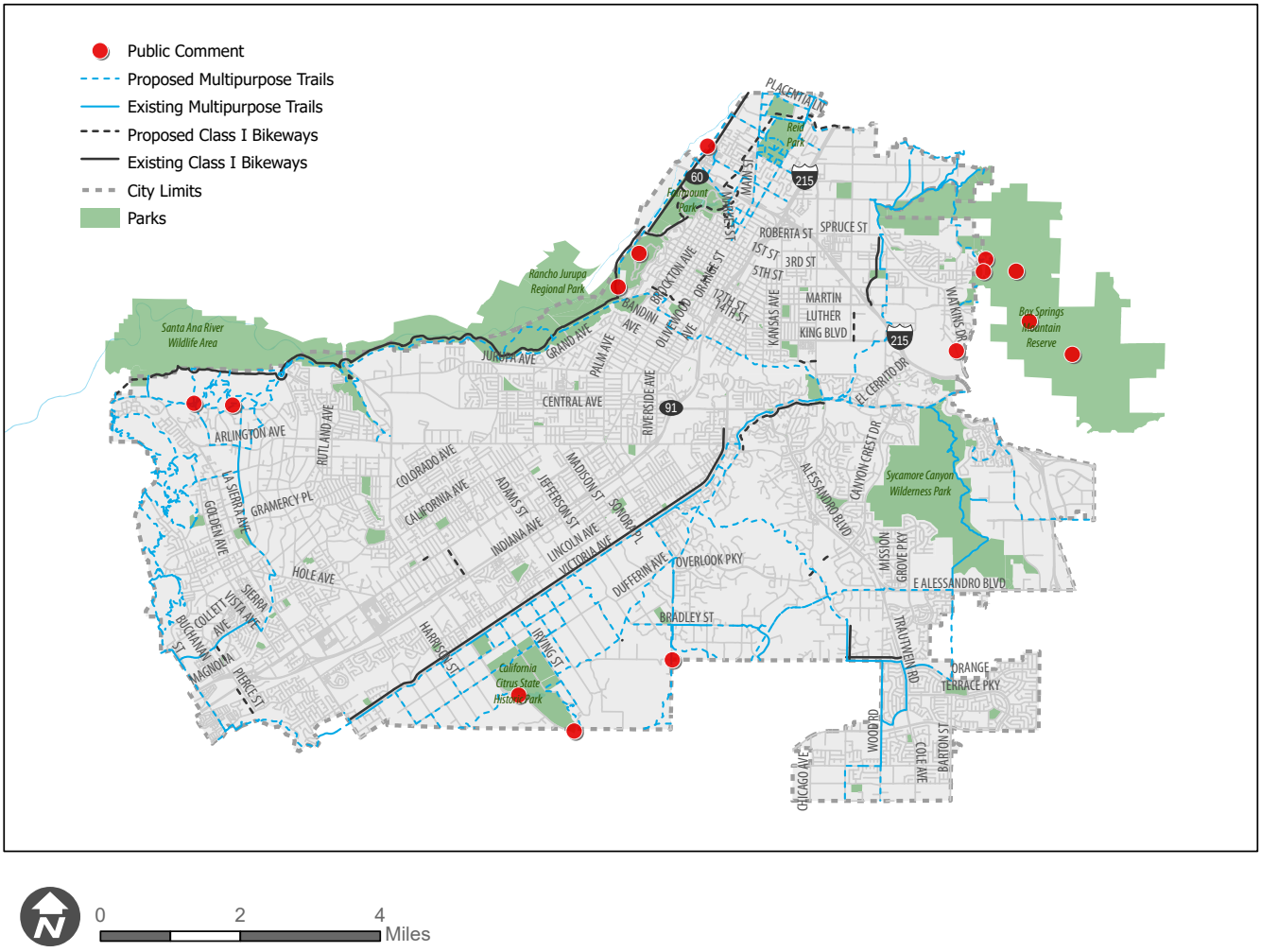
Technical Advisory Committee (TAC)

On July 23rd, 2020, the TMP project team held the first of two TAC meetings. The purpose of the meeting was to hear from a group of passionate community members in a focused discussion on topics related to the development of the TMP.

The project team led the TAC participants through a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis to gain new perspectives on some of the strength, weaknesses, opportunities, and threats related to trails in the city. The committee expressed a need for bike trails along roads that are separated from vehicular traffic, as well as the need for more bike facilities at trailheads. Committee members also provided their insight on opportunities within the city to focus trail development.

The committee expressed desire to have trails along arroyos, but recognized that some areas may not be buildable due to environmental regulations. Members

FIGURE 5-27 : GEOGRAPHIC DISTRIBUTION OF COMMUNITY COMMENTS



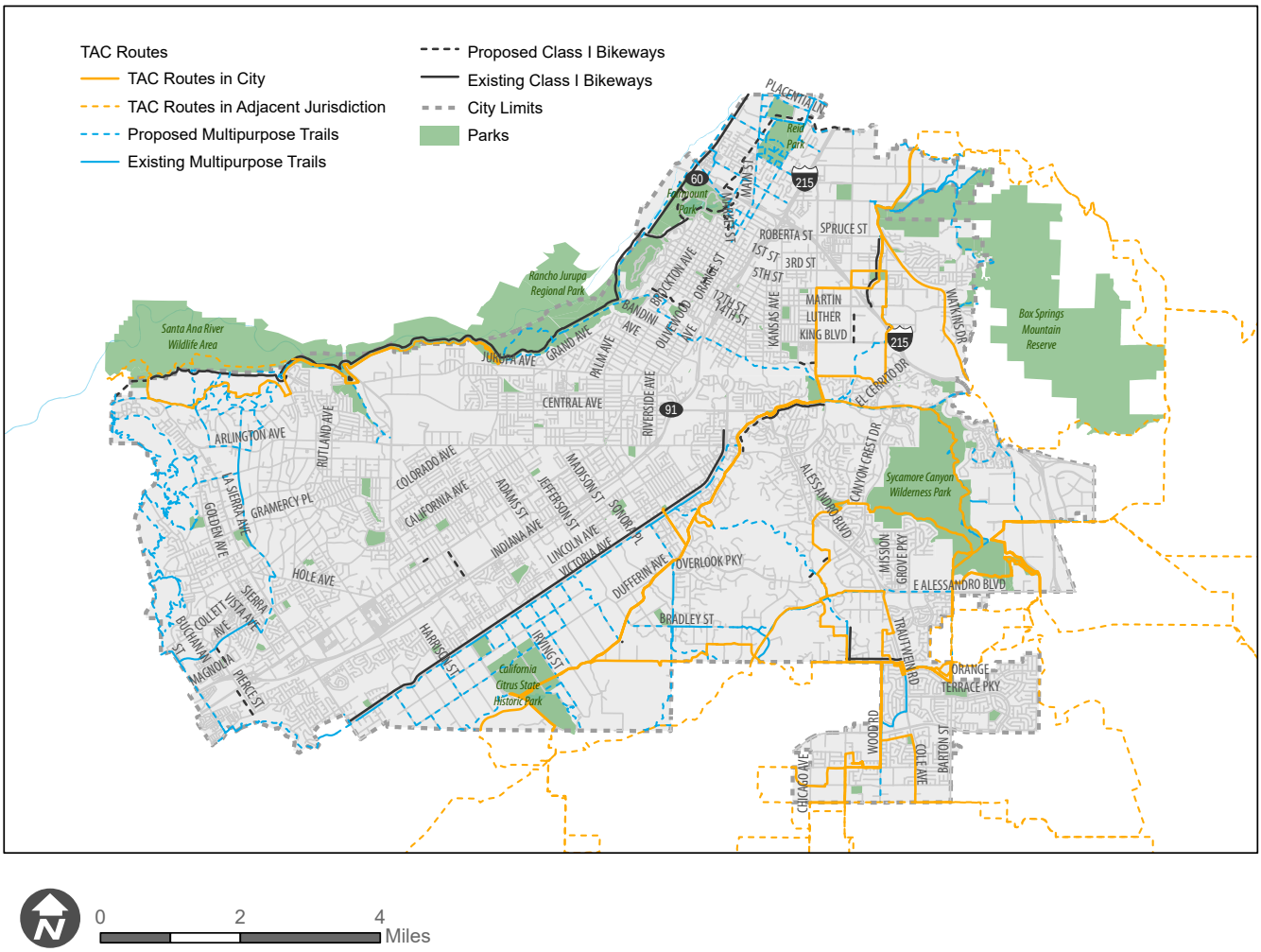
suggested that in the future, the City could prevent development directly along the arroyos to allow adequate setbacks, which could be used to develop trails.

The TAC also provided feedback on a trail network prioritization process that considers equity, connectivity, feasibility, and public support. Committee members voiced that connectivity should be a high priority because it is crucial for reducing vehicle miles traveled (VMT) and transportation impacts. The committee also expressed the importance of equity in the prioritization process to distribute community assets to economically depressed areas of the city.

The TAC voiced support for the establishment of a trails advocacy group within the City of Riverside that could identify funding opportunities and new trail opportunities, and raise support for trails within the community (see Section 5: Implementation Framework).

The TAC also provided recommendations for potential new trail connections, shown in Figure 5-28.

FIGURE 5-28 : TAC-IDENTIFIED ALIGNMENTS



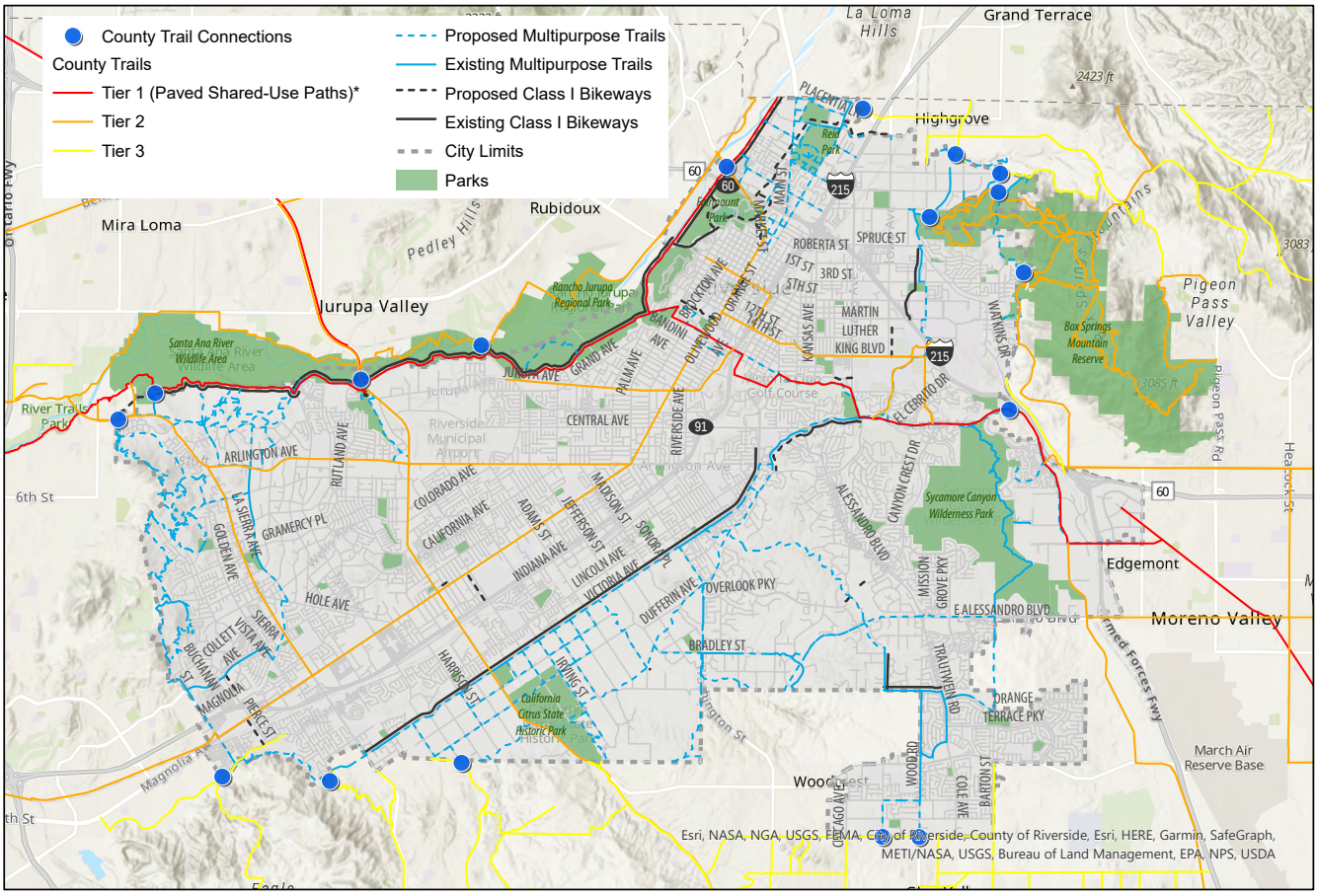
CONNECTIONS TO ADJACENT TRAILS

The proposed network includes several connections to trails in adjacent jurisdictions. Figure 5-29 shows the locations of these connections. Efforts should be made to coordinate any City trail which approaches one of these connection points with the neighboring jurisdiction, in order to provide a seamless trail experience for users, and to find opportunities to pursue joint funding for CEQA, design, and construction.

7-MILE TRAIL

The 7-Mile Trail extends outside of the City of Riverside into County jurisdiction, however, the trail's alignment was not included in the Riverside County Comprehensive Trails Plan. The development of 7-Mile trail is not a priority for the County, but it is possible that easements will be required from developers along the alignment.

FIGURE 5-29 : CONNECTIONS TO ADJACENT JURISDICTIONS



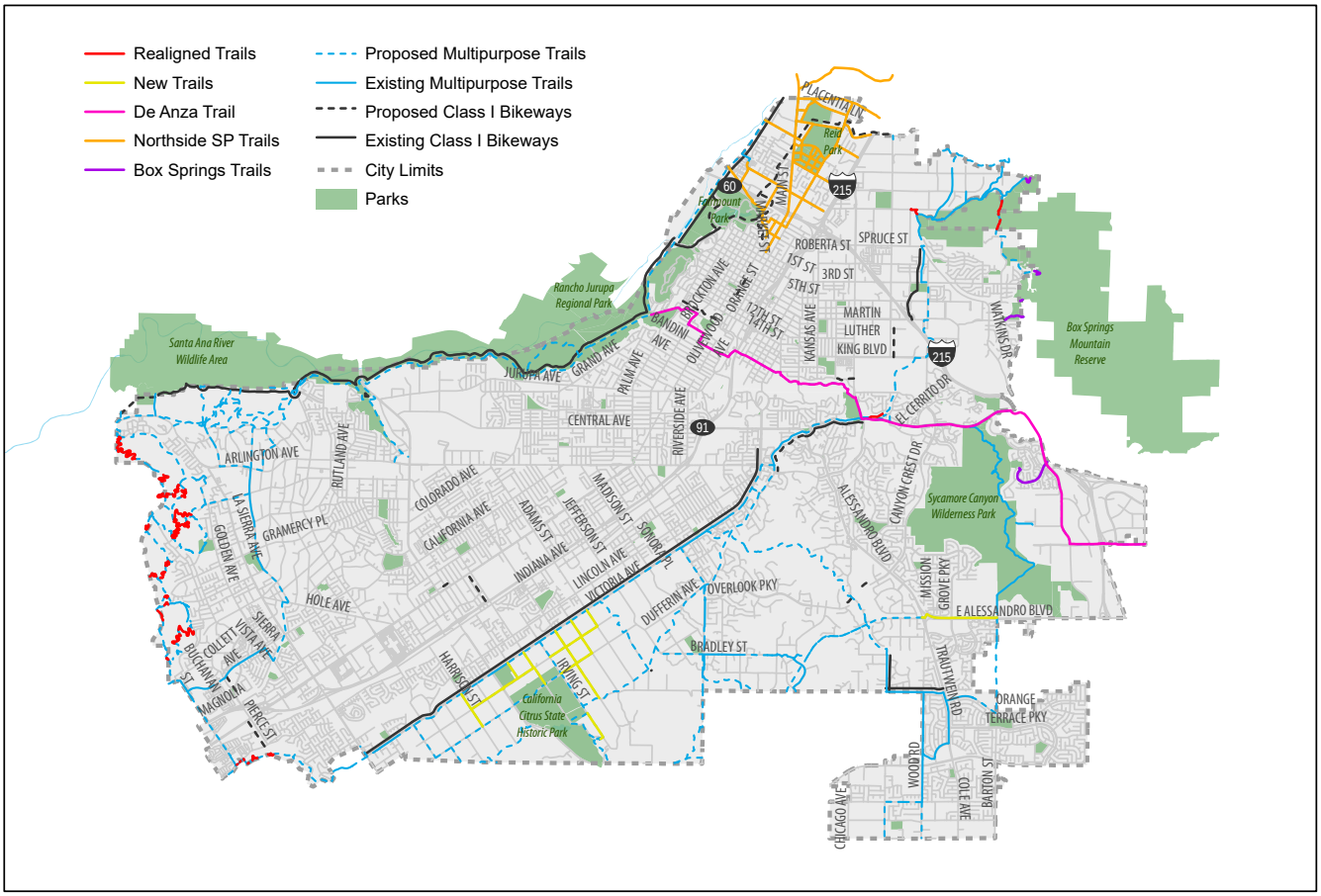
*County Tier 1 trails are typically paved bikeways, not multi-purpose unpaved trails.

NEW AND MODIFIED TRAILS

In order to avoid significant new property conflicts, new trails (beyond those adopted in the 1996 Trails Master Plan) have only been recommended within the public right-of-way or on publicly-owned property. Trails have also been included from the Box Springs Trails Master Plan (2015) and the Northside Specific Plan (2020). New roadside trails have been proposed in the agricultural areas surrounding the Citrus State Historic Park, which will help maintain that area's rural character while also providing access to that park space.

Trail alignments that were realigned due to topography are also included. A slope analysis was conducted that showed a number of trail segments with an average slope greater than 15% and with stretches where maximum slope reached much higher. These identified trails were subsequently realigned to bring the average slope below 15%. Specific trail changes are detailed below and shown in Figure 5-30.

FIGURE 5-30 : NEW AND MODIFIED TRAILS



Greenbelt roadside trails

- Harrison St. from Victoria Ave. to Dufferin Ave.
- Cleveland Ave. from Harrison St. to Gibson St.
- Gibson St. from Victoria Ave. to Cleveland Ave.
- Jackson St. from Victoria Ave. to Dufferin Ave.
- Cleveland Ave. from Irving St. to Adams St.
- Monroe St. from Victoria Ave. to Hermosa Dr.
- Gratton St. from Victoria Ave. to Dufferin Ave.
- Adams St. from Victoria Ave. to Cleveland Ave.
- Irving St. from Jackson St. to Unnamed Rd. (approximately .5 miles North from Jackson)

Gage Canal

The entire Gage Canal Trail corridor has been moved into the primary trail network.

A portion of the Gage Canal Trail is going to be under design during this trails plan update. These segments have been indicated as existing, with the assumption that they will be complete in the near future.

A connection has been made to Riverside-Hunter Park/UCR Metrolink Station per the CNRA Urban Greening Grant that is funding the above design segments.

Mitchell Ave

A new corridor connecting Mitchell to Bradbury has been categorized as part of the primary network. Mitchell has also been upgraded to the primary network.

De Anza Trail

As part of the National Trails System Act of 1968, the Juan Bautista de Anza trail was recognized by the National Park Service as a national historic trail. The historic trade route is not intended to be built exactly as it was, but rather the general path through the city has been identified, and is routed mainly along streets.

The development of this trail will involve the implementation of educational signage and markers along trails, bike lanes, and sidewalks to illustrate the historic route. When feasible, the trail will be constructed along the De Anza route, however, in areas already developed and/or with other constraints, a sidewalk or only signage may be used to demarcate the route in lieu of the trail.

Northside Specific Plan

Trails have been added per the Northside Specific Plan which was approved by the City Council on November 17, 2020.

A route from the specific plan has been categorized as part of the primary network, which connects the Santa Ana River Trail to the Primary East-West Corridor along the city's northern edge.

Box Springs

The Box Springs TMP trails have been added to the city data, and where applicable, overrides previous city routes.

The “C” trail connection has been included as a primary corridor, and extended to the existing trailhead.

Status of the Sugarloaf trail has changed from proposed to existing per the Box Springs TMP.

The north-south corridor through Box Springs has been promoted to the primary network, and generally maintains the city’s original alignment, as it was more accurate to existing trails than the TMP alignment.

The following trails were downgraded from primary to secondary, as they do not form part of the core primary loop or connect to significant park space: West & Grove Community Drive in the southeast corner of the city, and various minor connections citywide.

Proposed Network

This map highlights the primary existing and primary proposed trail corridors that provide long-range connectivity throughout the city and beyond and form a continuous citywide trail network. Secondary trails provide connections to the primary network, or serve as a self-contained trail experience.

While primary and secondary corridor designations had previously been assigned to most trail alignments, this analysis aimed to organize Riverside's hundreds of trail segments into a group of buildable projects.

Trail segments designated as "primary" were distributed, then "secondary" segments and segments in adjacent jurisdictions were added to create clear and complete connections. Segments that were previously deemed as primary trails but lacked potential to connect to nearby primary corridors were omitted from this selection. The result of this analysis yielded the following corridors.

FIGURE 5-31 : TRAIL CORRIDORS

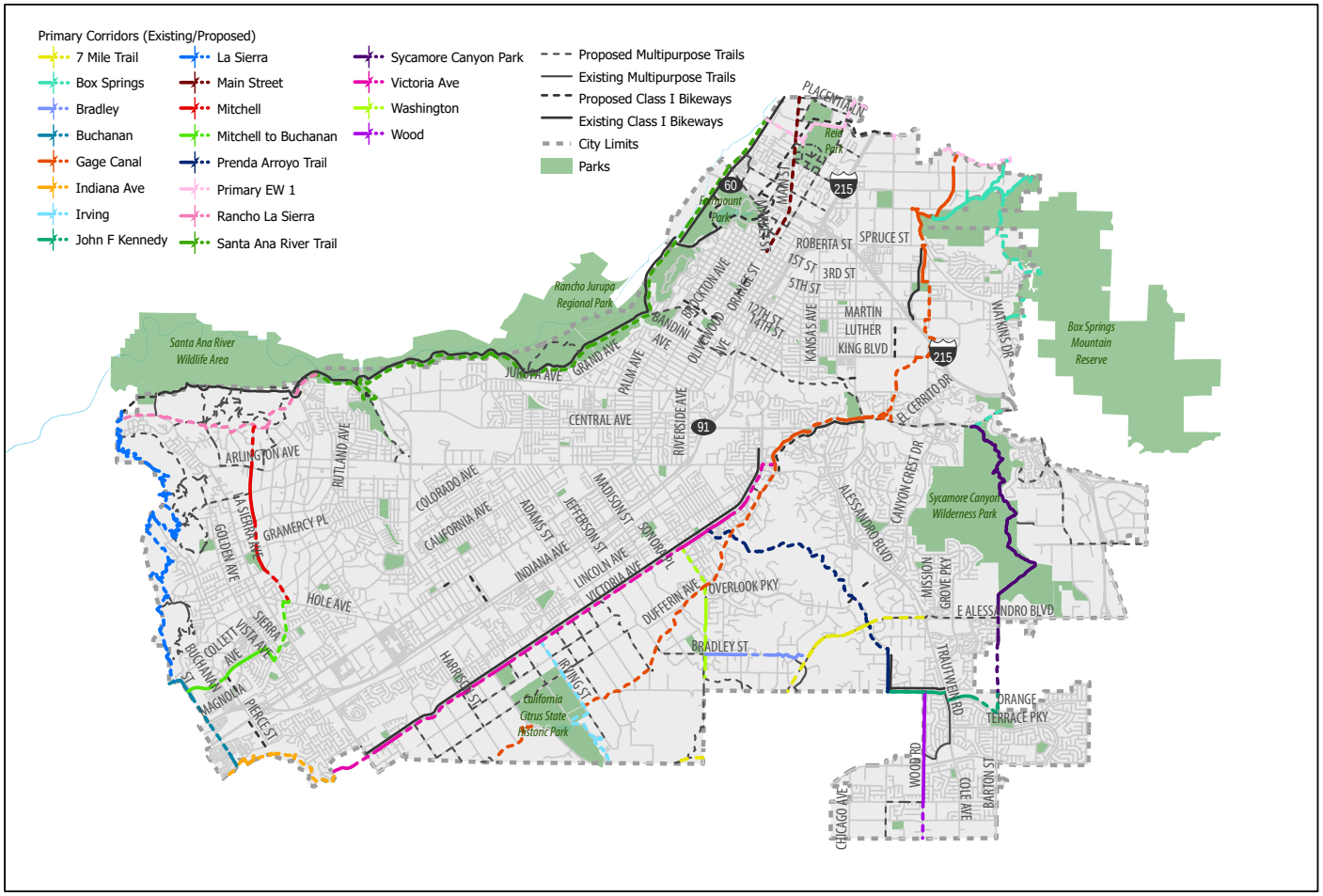


TABLE 5-5 : TRAIL CORRIDORS

Name	Existing Length	Proposed Length	Location	Description
7-Mile Trail	0 ft.	43,228 ft.	Southeast	Trail runs SW-NE and is within both Riverside City and County. Will require a joint management approach.
Box Springs	3,953 ft.	5,005 ft.	North East adjacent to Box Springs Mountain Reserve	Trail runs North-South along the base of the base of hills
Bradley	5,134 ft.	11,941 ft.	South between Washington St. and Allesandro Blvd.	Trail follows street before transitioning through an arroyo and an off-street
Buchanan	1,856 ft.	6,400 ft.	South West	Trail follows street.
Gage Canal	7,996 ft.	58,083 ft.	South from California Citrus State Historic Park - North past Box Springs Mountain Reserve.	Trail follows canal when it is day lit and supplements with a series of smaller on/off street alignments in between.
Indiana Ave	820 ft.	12,495 ft.	South West	Trail follows street before transitioning into an undeveloped hilly area between two neighborhoods.
Irving	0 ft.	15,440 ft.	South - along California Citrus State Historic Park	Trail follows street.
John F Kennedy	5,698 ft.	8,281 ft.	South East	Trail follows street.
La Sierra	0 ft.	43,202 ft.	West	Trail located in hilly area.
Main Street	0 ft.	11,555 ft.	North	Trail follows street.

TRAIL CORRIDORS, CONT'D

Name	Existing Length	Proposed Length	Location	Description
Mitchell to Buchanan	6,656 ft.	6,117 ft.	East	Trail follows street East before transitioning into channelized stream North to Mitchell Ave.
Mitchell	5,434 ft.	8,049 ft.	East	Trail follows street.
Prenda Arroyo Trail	2,647 ft.	21,000 ft.	South	Trail follows the Prenda arroyo until Dauchy Ave where it cuts South towards John F Kennedy Dr.
EW 1	1,569 ft.	18,223 ft.	North East	Trail follows street before transitioning to a natural surface off street path.
Rancho La Sierra	1,715 ft.	15,610 ft.	North West	Trail follows off street path for the majority of the alignment up to the Santa Ana River Trail. Some segments follow roadway where it passes across the North end of a neighborhood.
Santa Ana River Trail	0 ft.	51,448 ft.	North	Proposed trail adjacent to Santa Ana River Class I paved bicycle path.
Sycamore Canyon Park	8,528 ft.	12,495 ft.	East - Travels South to meet up with John F Kennedy Dr.	Hilly nature trail, many user-generated mountain bike trails in the area.
Victoria Ave	10,027 ft.	29,695 ft.	South West - North East to Gage Canal	Trail follows street.
Washington	3,320 ft.	6,739 ft.	South - Victoria Ave South to Bradley	Trail follows street.
Wood	7,925 ft.	2,621 ft.	South - John F Kennedy South to city limits.	Trail follows street.

Section 5.5: Implementation Plan

Bountiful Street Roadside Trail

Prioritization Process

OVERVIEW

The 207 miles of proposed trails developed for this TMP Update present a complete and ambitious vision for a comprehensive, citywide trails system. As funding to develop new trails is limited and competitive, and must be balanced with maintenance and other parks and recreation funds, a prioritization approach is provided to help guide the city in the gradual implementation of a citywide trail network as funds are available over many years.

PRIORITIZATION CRITERIA

For this prioritization process, trails have been grouped into larger trail corridors, some of which span much of the city, and are in varying stages of completion. This helps the city identify which overall trail corridors should take precedence, avoids a segmented development process that leaves the city with many disconnected trails, and allows the city to develop segments within a larger trail corridor as individual projects, conditions for adjacent development, or as elements of other parks and public works projects.

Trail corridors have been evaluated according to a prioritization process that measures equity, connectivity, feasibility, and public support. Connectivity and Equity in particular were highlighted by TAC members as among the most important prioritization criteria.

For each criterion, trail corridors received a composite score based on the sum of all factors evaluated. Trail corridors are then ranked from highest to lowest priority. However, the prioritization list acts as a guide to implementation for the City, not as an absolute directive for the order of trail development. When funding sources become available, the City will take all available opportunities to propose the most competitive projects. Should opportunities arise to complete projects on lower-ranked corridors, they will be taken. For example, if a new development is required to provide a new trail or trail easement, or a roadway is reconstructed and allows for a roadside trail, the City will explore ways to install facilities as part of these other projects.

Each of the criteria are detailed on the following pages, along with Table 5-6 summarizing the data that is used in the evaluation.

TABLE 5-6 : PRIORITIZATION CRITERIA

CRITERIA	MEASURE	POINTS
Connectivity	Project connects to major destinations, close gaps in the existing bicycle network/sidewalk network, and serves demand for active transportation trips based on proximity to where people live, work, play, shop, learn, and access transit.	0 – 10
Health + Equity	Project is located within a disadvantaged community, as defined by CalEnviroScreen 3.0, Riverside Unified School District Free and Reduced Meal Program, and/or household income thresholds (Department of Housing and Community Development ACS 5-year estimates).	0 – 6
Safety	Project is located along a high collision corridor or street with high levels of traffic stress, and thereby, addresses safety barriers.	0 – 6
Community-Identified Need	Project was identified as needing improvement by community members through one or more community engagement efforts.	0 – 6
Regional Goals	Project improves and builds upon the regional network identified in the Riverside County Bike Master Plan and/or WRCOG Active Transportation Plan.	0 – 2
Maximum Possible Points		30

FIGURE 5-32 : DISADVANTAGED COMMUNITIES PER CALENVIROSCREEN

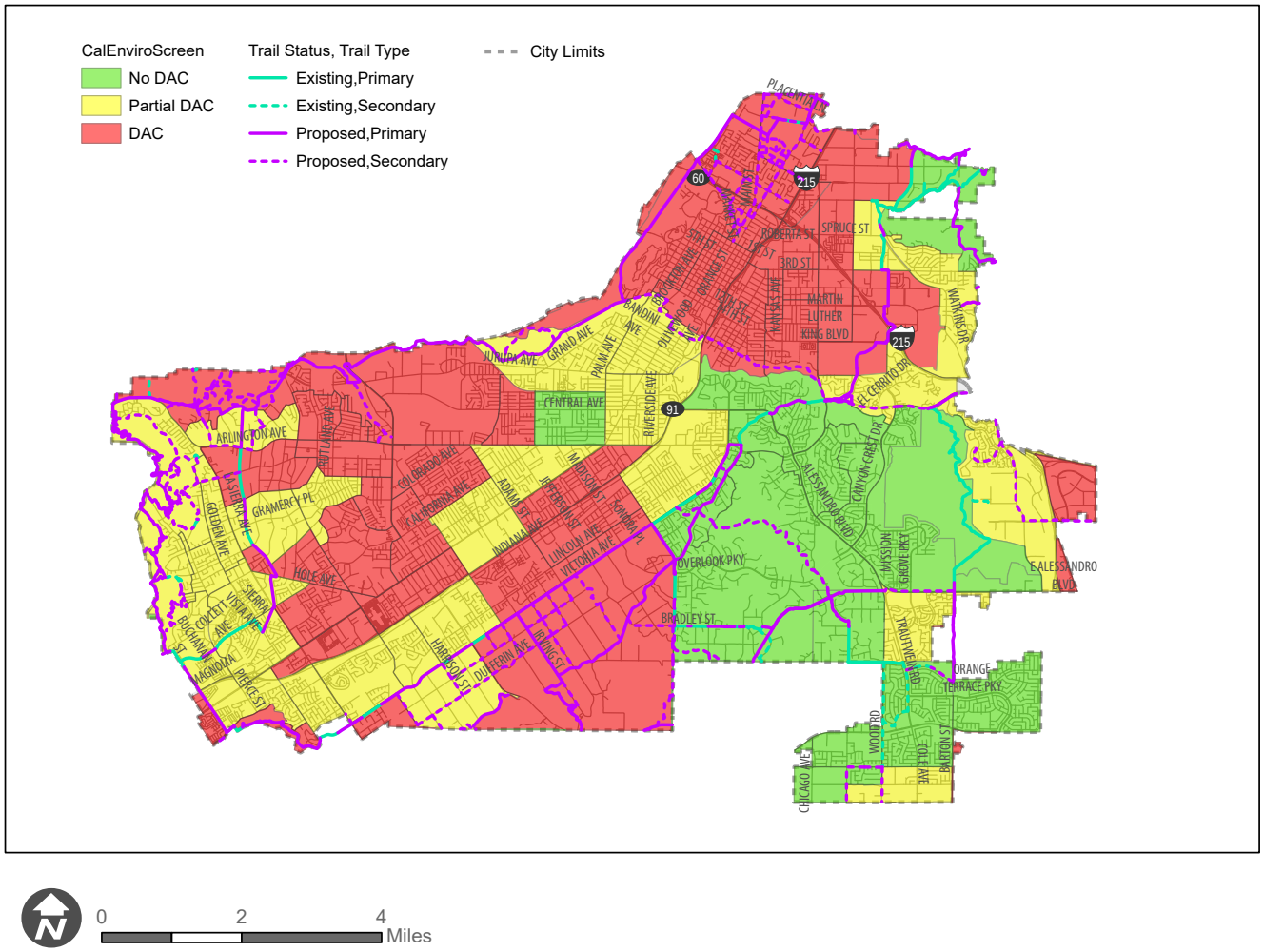
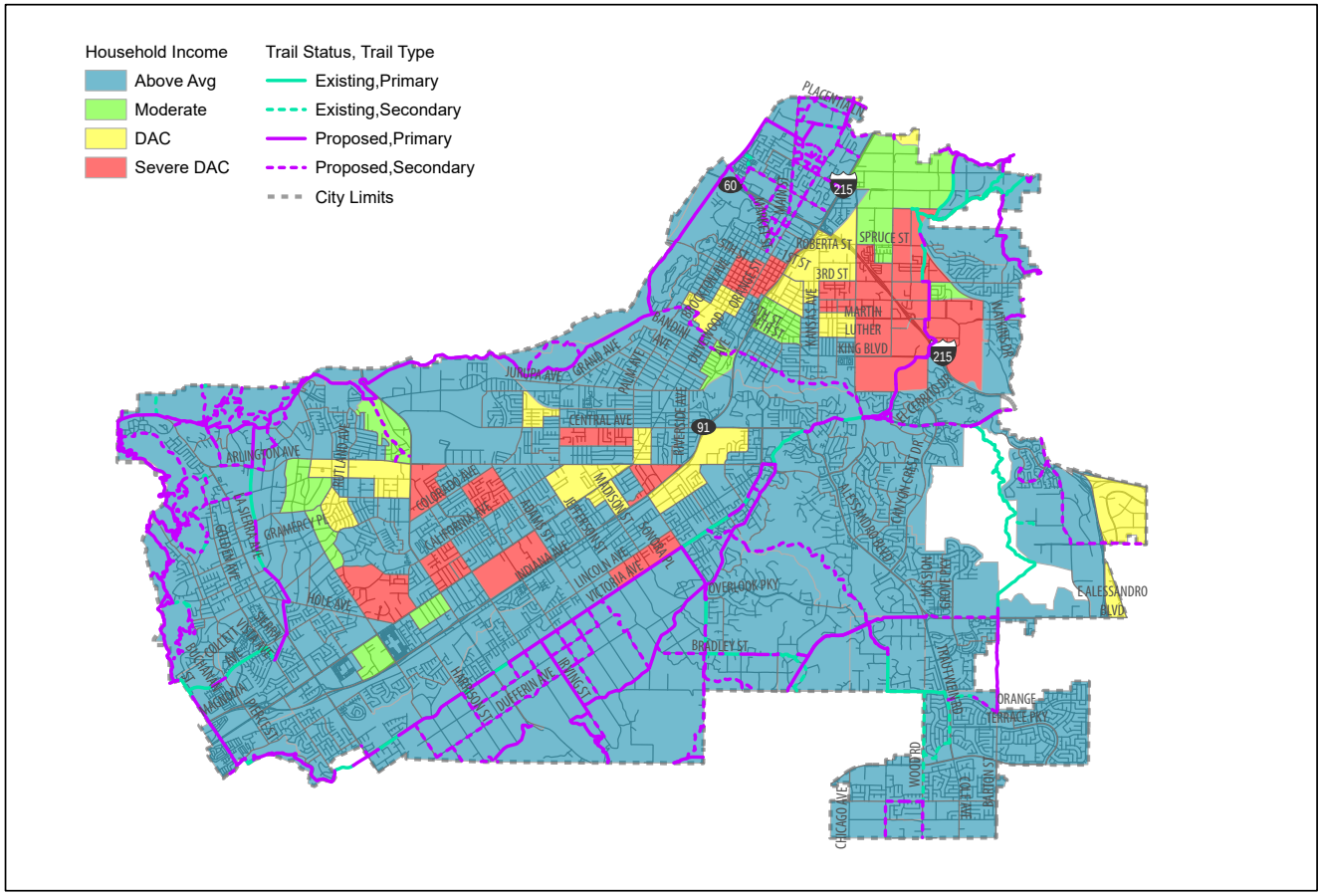


FIGURE 5-33 : DISADVANTAGED COMMUNITIES PER MEDIAN HOUSEHOLD INCOME



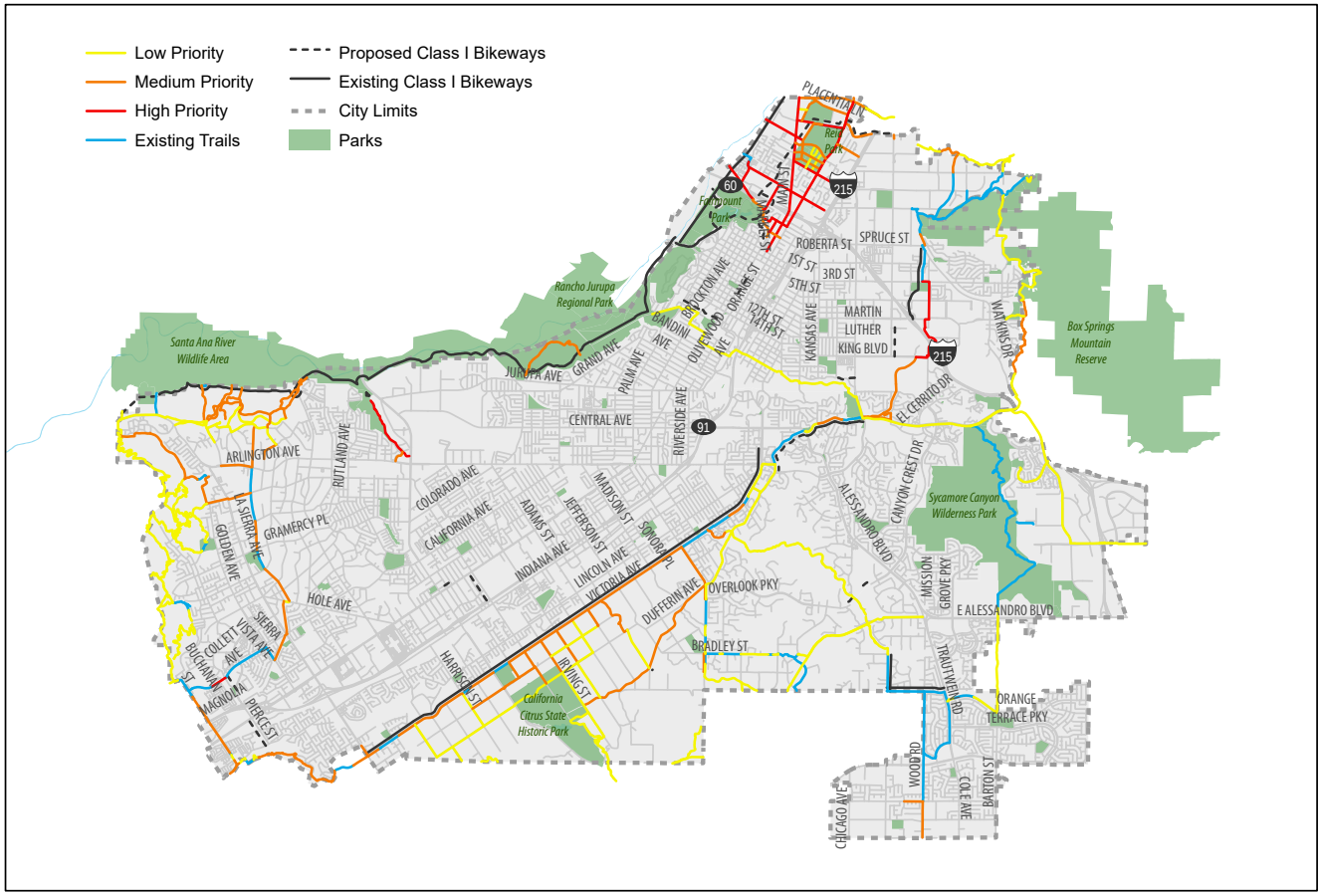
Connectivity

Trails that provide access to destinations and other active transportation facilities are measured here. Particular emphasis is given to connectivity, as it can help trails become part of a functional transportation network, reduce Vehicle Miles Traveled (VMT) and ultimately influence local transportation patterns. It can also expand the ability for trails to be funded by both transportation and recreational sources.

Equity

This is a measure of both a geographical distribution of trails, as well as trails in areas classified as Disadvantaged Communities by CalEnviroScreen. The aim of this equitable distribution of trails is to spread trails throughout the city, helping people access trails without traveling long distances, while also emphasizing trail development in communities that face undue economic and environmental burdens.

FIGURE 5-34 : COMPOSITE PRIORITY RANKING PER TRAIL SEGMENT



Safety

Safety factors in the history of collisions between people riding bicycles and walking with motor vehicles. Trails, allowing an off-street option for riding bicycles and walking, can help reduce these collisions, and allow trails to serve as transportation options.

Community-Identified Need

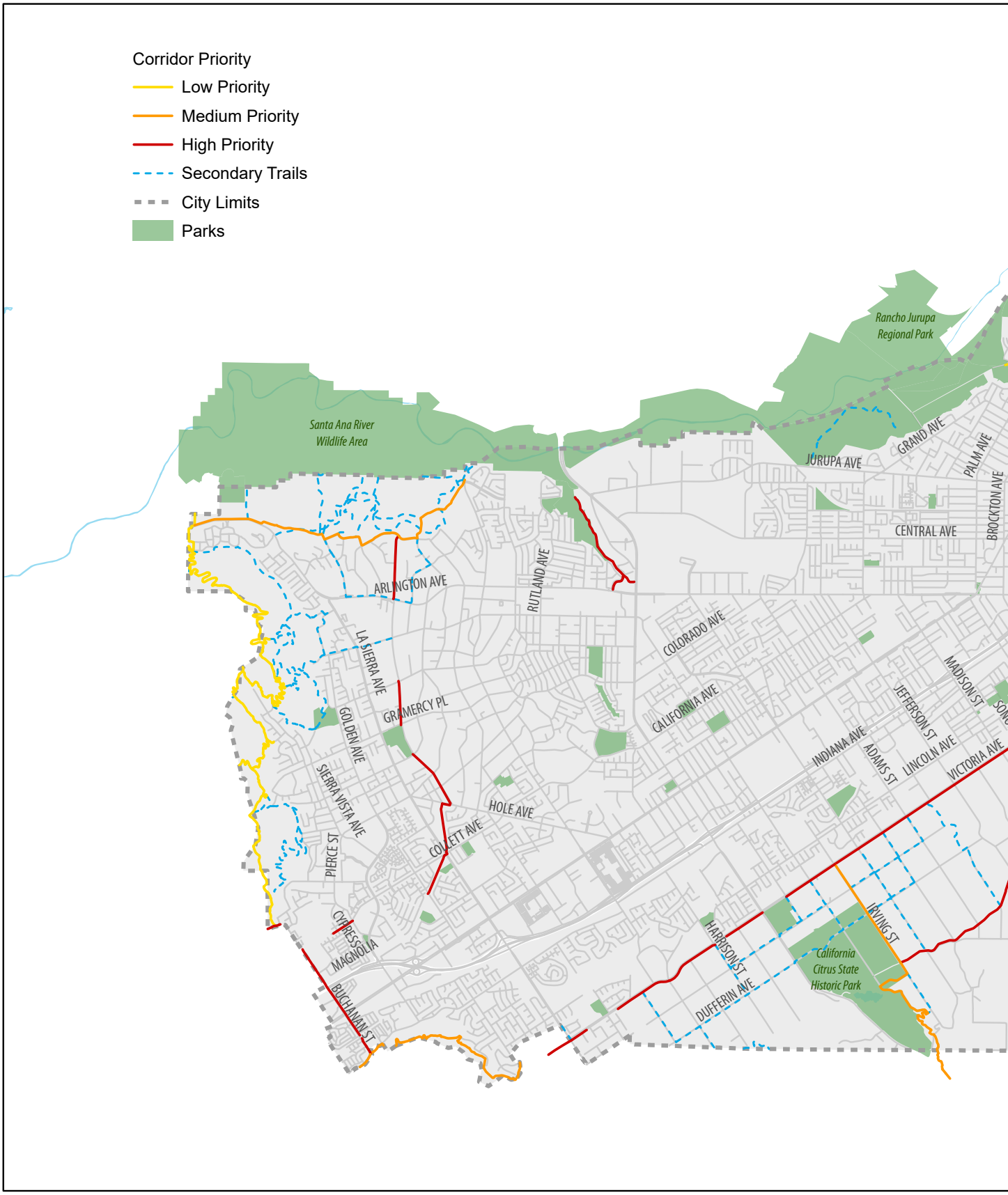
Trails having received specific public support, through outreach, the technical advisory committee, or through other recent planning efforts with dedicated outreach.

Regional Goals

Scoring ranks trails according to connectivity to regional trails and bikeways, within and adjacent to the city.

Maps showing these criteria individually are available in “Appendix J: Network Prioritization”

FIGURE 5-35 : TRAIL CORRIDOR COMPOSITE PRIORITIZATION SCORE



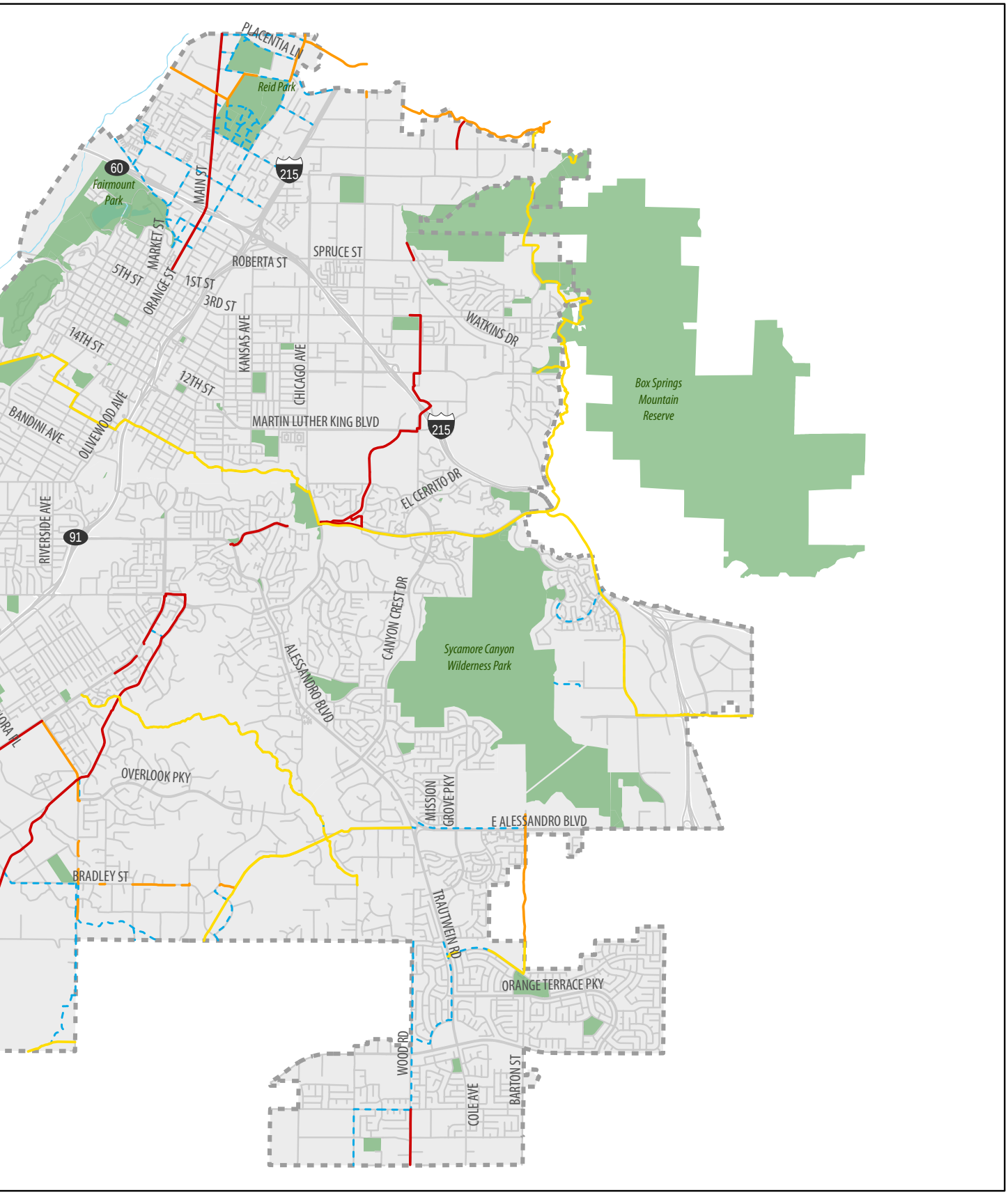

PLACENTIA LN
Reid Park
60
Fairmount Park
MAIN ST
215
MARKET ST
ORANGE ST
5TH ST
1ST ST
3RD ST
ROBERTA ST
SPRUCE ST
14TH ST
12TH ST
KANSAS AVE
CHICAGO AVE
WATKINS DR
Box Springs Mountain Reserve
BANDINI AVE
OLIVEWOOD AVE
MARTIN LUTHER KING BLVD
215
EL CERRITO DR
RIVERSIDE AVE
91
CANYON CREST DR
Sycamore Canyon Wilderness Park
ALESSANDRO BLVD
OVERLOOK PKY
MISSION GROVE PKY
E ALESSANDRO BLVD
BRADLEY ST
TRAUTMAN RD
ORANGE TERRACE PKY
WOOD RD
COLE AVE
BARTON ST

TABLE 5-7 : TOP-RANKED CORRIDORS

TRAIL CORRIDOR	RANK
Main Street	18
Hole Lake	9.50
Mitchell	9.00
Wood	8.00
Mitchell to Buchanan	8.00
Gage Canal	7.35
Victoria Ave	7.33
Buchanan	6.40
Primary EW 1	6.38
Indiana Ave	5.92
Washington	5.50
Rancho La Sierra	5.00
Irving	4.20
Sycamore Canyon Park	4.00
Bradley	4.00
7 Mile Trail	3.83
John F Kennedy	3.75
La Sierra	3.22
Box Springs	3.10
Primary NS 1	3.00
Prenda Arroyo Trail	2.76
De Anza	1.00

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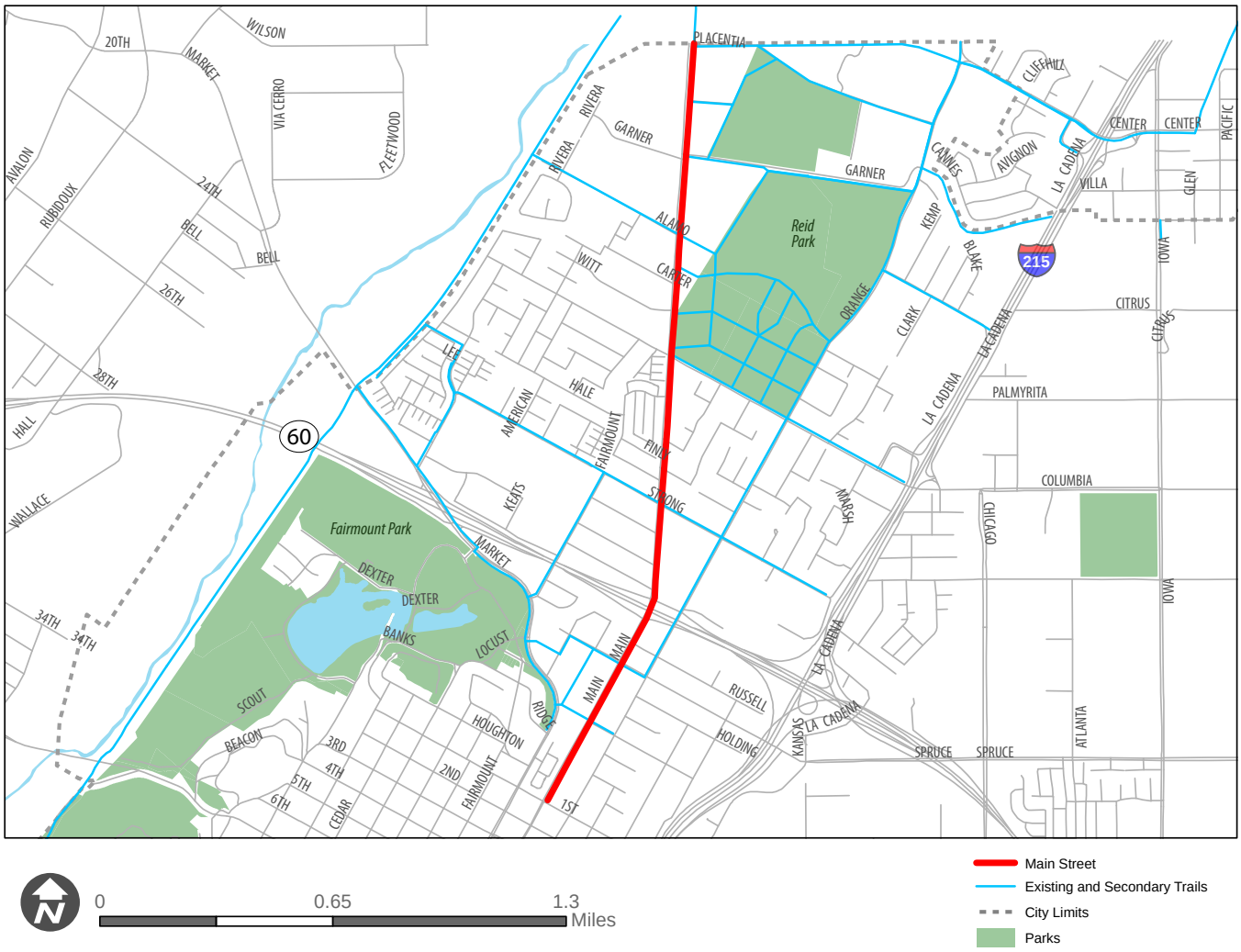
FIGURE 5-36 : MAIN STREET TRAIL CORRIDOR

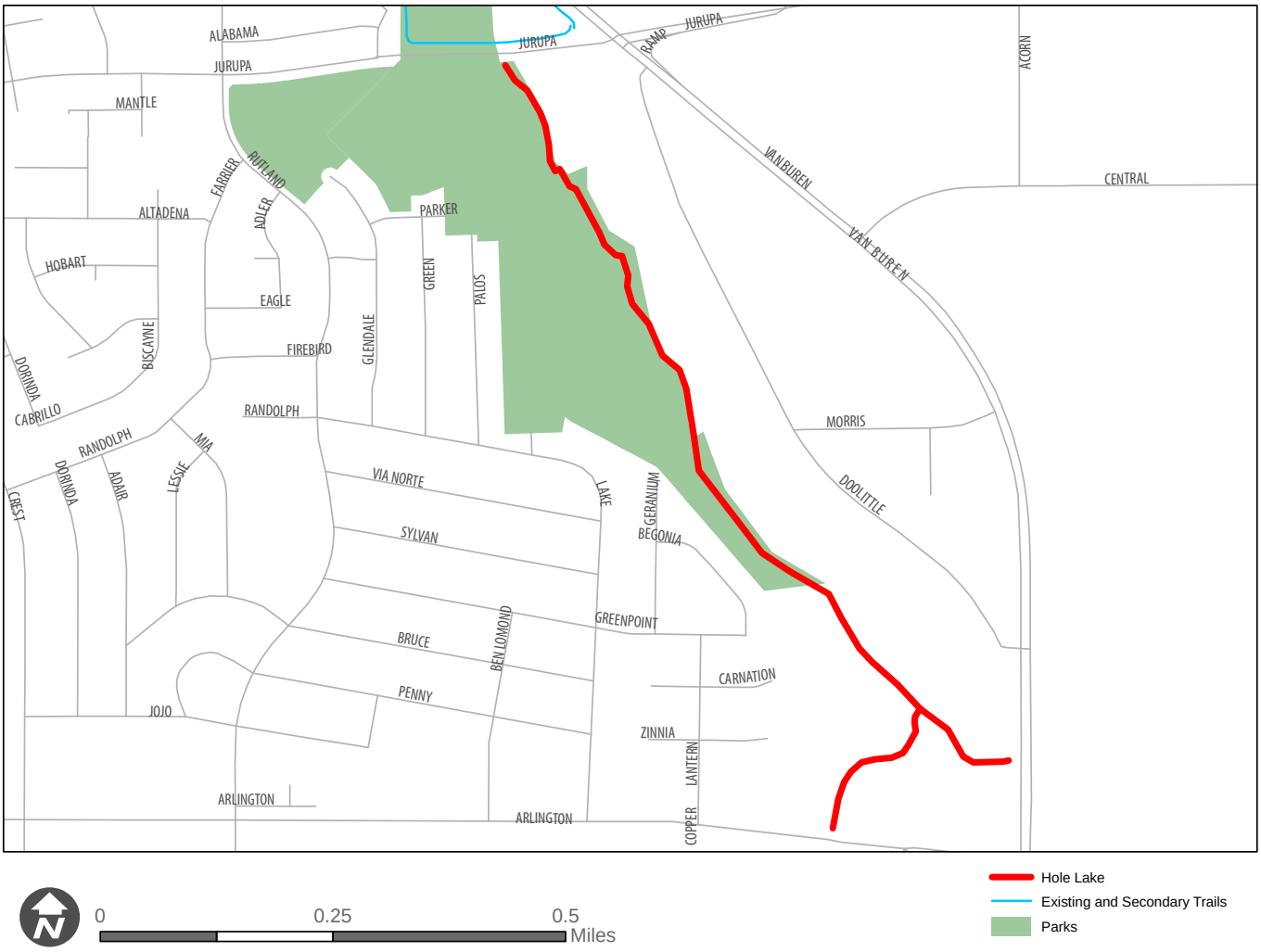


CATEGORY	DATA
Existing Length	0 miles
Proposed Additional Length	2.19 miles
Number of Parcels Intersected	0
Length of Trail on Private Parcels	0 miles
Length of Trail on Undisturbed Land	0 miles
Estimated Cost	$2,278,699

Main Street

Included as part of the Northside Specific Plan , this segment is a roadside trail in the Northside area of Riverside. As the trail follows a two plus mile stretch of Main Street it intersects a number of major cross streets. The trail also navigates over a highway overpass, which adds an additional spatial constraint.

FIGURE 5-37 : HOLE LAKE TRAIL CORRIDOR

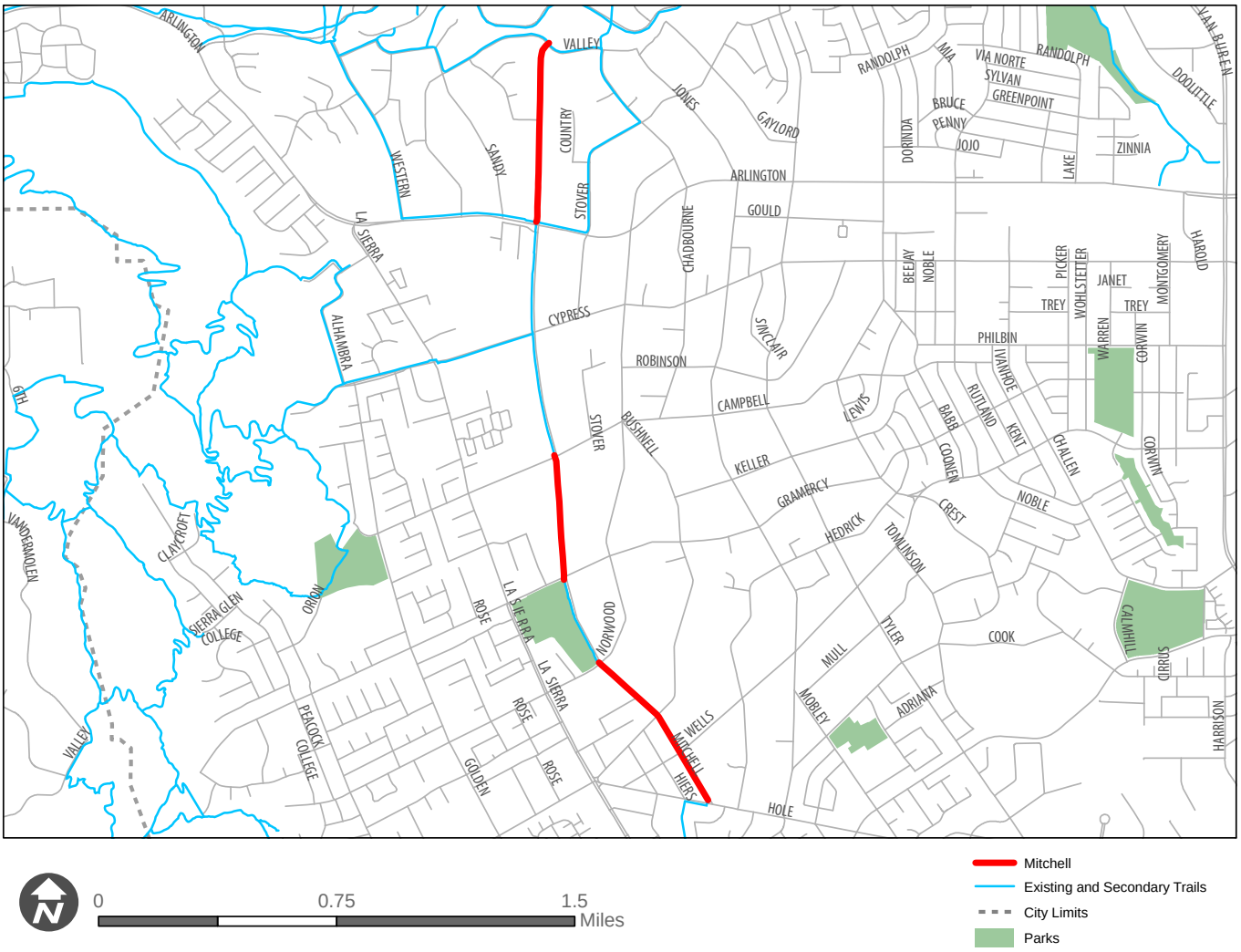


CATEGORY	DATA
Existing Length	0 miles
Proposed Additional Length	1.16 miles
Number of Parcels Intersected	2
Length of Trail on Private Parcels	0.25 miles
Approximate Easement	10,280 ft²
Length of Trail on Undisturbed Land	0 miles
Estimated Cost	$1,363,386

Hole Lake

This segment is aligned next to a drainage channel, the majority of which has a natural bottom. Located at the southern portion of the segment, the trail splits and crosses over the channel. This will require additional design consideration to bridge the channel. Additionally, the segment would require the acquisition of two private property parcels.

FIGURE 5-38 : MITCHELL AVE TRAIL CORRIDOR



CATEGORY	DATA
Existing Length	1.03 miles
Proposed Additional Length	1.52 miles
Number of Parcels Intersected	0
Length of Trail on Private Parcels	0 miles
Length of Trail on Undisturbed Land	0 miles
Estimated Cost	$1,585,653

Mitchell

Located in western Riverside, the Mitchell Ave trail corridor provides a North-South connection for residents accessing the SART. As the roadside trail alignment along Mitchell Ave intersects multiple large roadways, safety of trail users must be strongly considered.

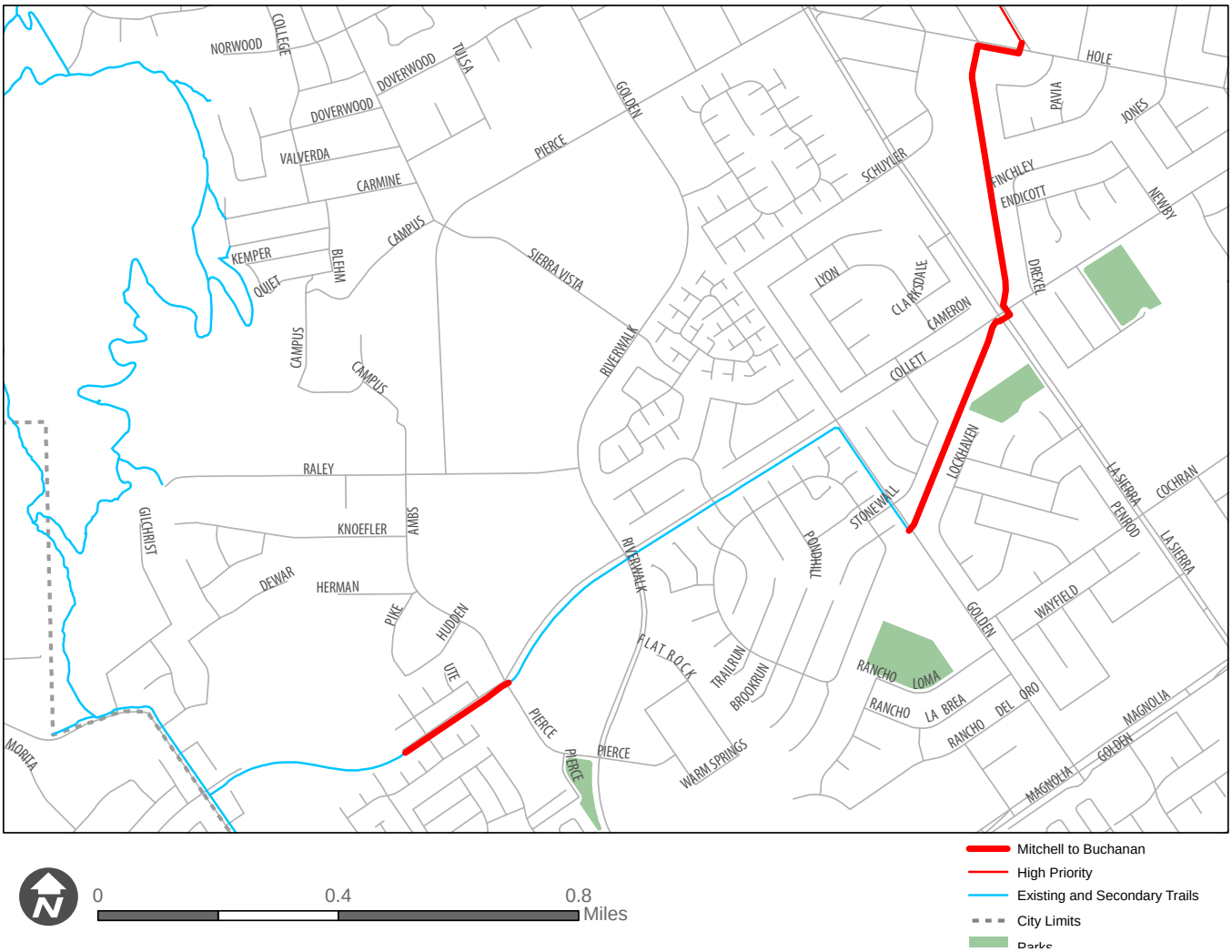
FIGURE 5-39 : WOOD RD TRAIL CORRIDOR

CATEGORY	DATA
Existing Length	1.50 miles
Proposed Additional Length	0.50 miles
Number of Parcels Intersected	0
Length of Trail on Private Parcels	0 miles
Length of Trail on Undisturbed Land	0 miles
Estimated Cost	$516,337

Wood

Located in the South-East corner of the City, the remaining proposed trail connect in the Wood Rd. corridor creates a strong direct connection to trails in the adjacent jurisdiction. There are no significant barriers to the feasibility of this segment.

FIGURE 5-40 : MITCHELL AVE TO BUCHANAN ST TRAIL CORRIDOR

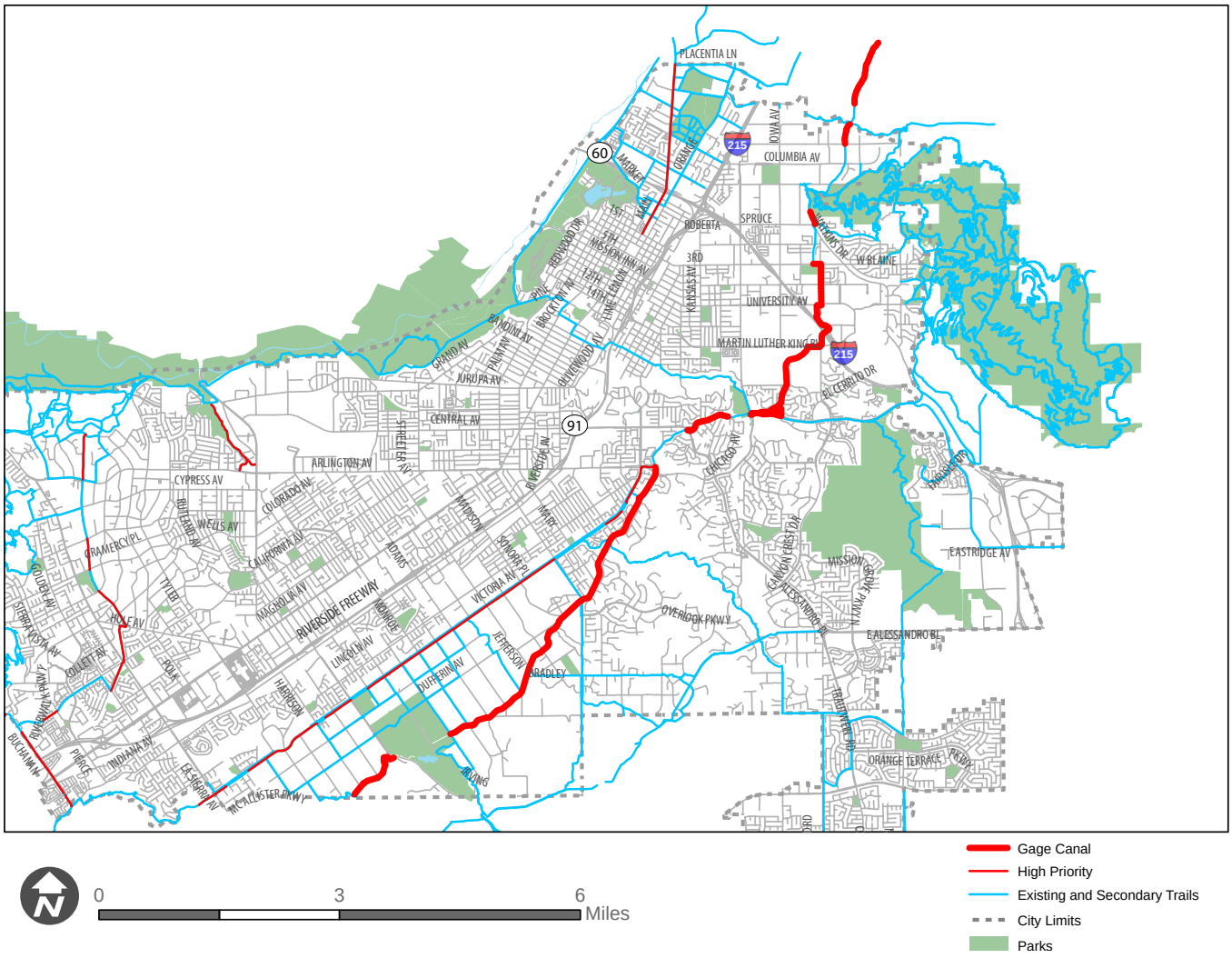


CATEGORY	DATA
Existing Length	1.26 miles
Proposed Additional Length	1.16 miles
Number of Parcels Intersected	0
Length of Trail on Private Parcels	0 miles
Length of Trail on Undisturbed Land	0 miles
Estimated Cost	$1,205,049

Mitchell to Buchanan

This segment forms a connection through the residential area in western Riverside, connecting the Mitchell Ave. and Buchanan St. trail corridors. A large portion of the proposed segment is located along a channelized waterway. The alignment here also crosses a major road intersection which will require additional detail to ensure safe crossing for trail users.

FIGURE 5-41 : GAGE CANAL TRAIL CORRIDOR

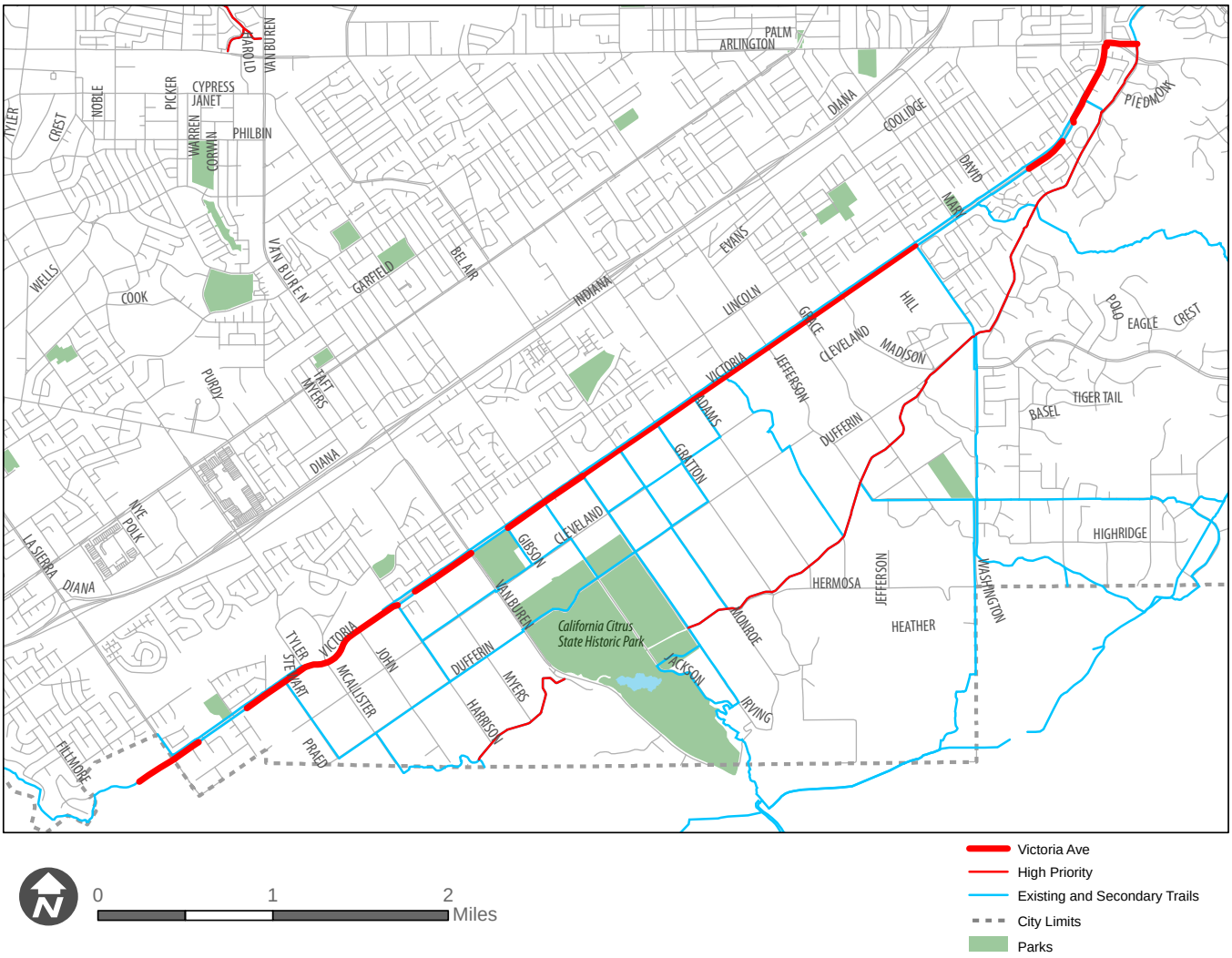


CATEGORY	DATA
Existing Length	3.21 miles
Proposed Additional Length	10.49 miles
Number of Parcels Intersected	0
Length of Trail on UCR Property	0.89 miles
Length of Trail on Undisturbed Land	0 miles
Estimated Cost	$10,909,072

Gage Canal

The Gage Canal corridor creates a continuous 13 mile long trail connection across Riverside. Sections of the proposed Gage Canal trail cross roadways and will require the design of midblock crossings. Additionally, a section of the proposed alignment creates a connection that cuts through the University of California, Riverside campus. This will require additional coordination with the University to receive approval for that portion of the trail.

FIGURE 5-42 : VICTORIA AVE TRAIL CORRIDOR

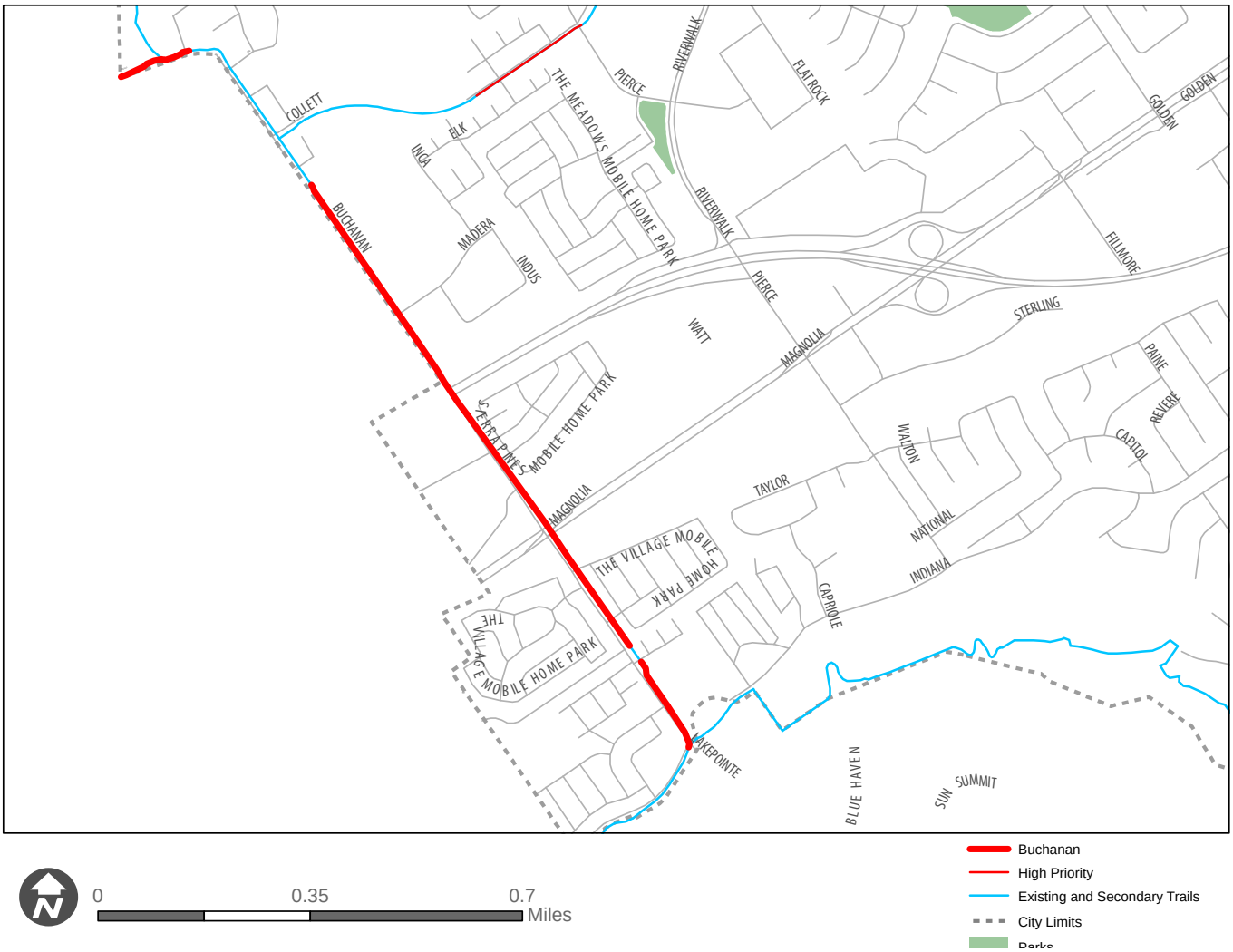


CATEGORY	DATA
Existing Length	1.64 miles
Proposed Additional Length	5.62 miles
Number of Parcels Intersected	0
Length of Trail on Private Parcels	0 miles
Length of Trail on Undisturbed Land	0 miles
Estimated Cost	$5,849,915

Victoria Ave

The trail corridor improvements proposed on the South side of Victoria Ave. will provide connections for residents to Citrus State Historic Park and the Gage Canal trail corridor. Some privately owned parcels are close to the roadway causing constrained conditions for a trail. The alignment along Victoria Ave crosses a number of larger streets, and additional consideration is needed to create a safe environment for trail users as it intersects driveways from the neighboring residential properties.

FIGURE 5-43 : BUCHANAN ST TRAIL CORRIDOR



CATEGORY	DATA
Existing Length	0.35 miles
Proposed Additional Length	1.21 miles
Number of Parcels Intersected	0
Length of Trail on Private Parcels	0 miles
Length of Trail on Undisturbed Land	0 miles
Estimated Cost	$1,260,997

Buchanan

The Buchanan trail corridor creates a connection to the proposed recreational hillside trails located on the west end of Riverside. The trail corridor also forms a connection over towards the Victoria Ave. trail corridor. The roadside alignment of the proposed Buchanan trail corridor crosses multiple larger roads. The alignment crosses a highway overpass and railroad which creates a constrained condition.

Implementation Framework

There are a number of steps required for implementing a citywide trail system. The following framework outlines the necessary components for trail development, operations, and maintenance. The framework is provided based on the practices of numerous external agencies, including cities, counties, regional and other plans of greater scale. The primary steps involved with trail development are shown in Table 5-8.

All of these steps have associated costs, which vary depending on the scope of the study, the length of the proposed trail, and the presence of right-of-way or acquisition issues, as well as environmental and other constraints.

Construction costs for decomposed granite trails are approximately $200 per linear foot. This cost is typically significantly lower for natural surface trails, which can be as low as $40 or $10 per linear foot, respectively, dependent on required grading and structures.

For properties where one new single family residence is being constructed, the owner is required to dedicate a trail easement if the Trails Master Plan indicates a trail is planned at that location. The city will provide the needed documents to dedicate the easement.

All other development projects require the property owner to prepare all the necessary documents to dedicate the trail easement and construct trail improvements if the Trails Master Plan indicates a trail is planned at that location.

TABLE 5-8 : IMPLEMENTATION FRAMEWORK

TASK	COMPONENTS
Planning	Concepts, coordination, technical leadership, regional/ county corridor integration, feasibility study
Environmental Review	Initial study, Negative Declaration/Negative Declaration with Mitigation Measures/Environmental Impact Report (EIR), Mitigation Monitoring
Permitting, Design and Construc-tion	Engineering and landscaping plan, acquisition, permitting, construction, inspection
Management and Maintenance	Trail operations and maintenance
Promotion	Marketing and event planning
Enforcement	Public safety; Ranger programs

CITY OF RIVERSIDE TRAIL COMMITTEE

The City of Riverside should consider forming a long-term standing trail committee to manage future trail implementation in the city. The committee could establish a formal schedule to hear and review trail-related matters. The City may also choose to have the committee provide input on requests for variances from the Trails Master Plan that may be requested by property owners and developers. In addition, the committee could be tasked with identifying opportunities to develop new trails and partnering with other organizations to identify and pursue funding opportunities, organize and manage volunteers, and promote the trails and trail-related programs to the public.

Operations and Maintenance

Creating a comprehensive trails system within the City of Riverside requires a robust operations and maintenance plan. This includes designating staff to manage trail planning, coordination, and maintenance, and creating trail maintenance standards that outline required maintenance tasks and schedules.

OPERATIONS

Trail operations refers to different trail elements and standards such as user rules and regulations, hours of operation, public safety and security, and trail closure and detour protocols. The City of Riverside's PRCSD maintains the City's park and recreation facilities. According to the City's Comprehensive Park, Recreation & Community Services Master Plan (2020), trails are considered to have a high community impact facility need, meaning it is important that they are well-maintained.

MAINTENANCE

Maintenance can be routine or remedial, and may vary depending on trail configuration, land context, and amenities. Trails that experience higher use will likely require higher levels of maintenance than those in lower demand areas. Similarly, trails that include trailheads and amenities, like seating, landscaping, and other elements, will also require additional maintenance work.

Routine maintenance refers to day-to-day tasks such as litter removal, debris removal, weed and dust removal, and vegetation trimming. Natural surface trails may require some additional tasks, such as minor re-grading. Some routine maintenance tasks can be completed on a seasonal basis.

Remedial maintenance refers to repairing, replacing, or restoring major components that have been destroyed, damaged, or significantly deteriorated.

Property owners of lots adjacent to or fronting on any portion of a trail between a street line and their property are responsible for keeping that area in safe condition for public use (City of Riverside Municipal Code Chapter 13.10-Maintenance and Repair of Sidewalks and Trails).

Table 5-9 outlines typical maintenance tasks and their suggested frequency.

Maintenance Costs

Typical trail maintenance costs vary greatly, depending on the length of the trail, the type of materials used, the level of amenities involved, and the intensity of use. Average per-mile maintenance costs for trails and Class I facilities across the United States range from approximately $8,500 per mile per year (Santa Ana River Trail) to well over $100,000 (American River Parkway, Sacramento, CA; Katy Trail, Dallas, TX). National average costs per task are outlined in Table 5-10.

TABLE 5-9 : TRAIL MAINTENANCE TASKS

TASK	SUGGESTED FREQUENCY
Trash disposal	Daily
Restroom maintenance	Daily
Litter pick-up	Weekly
Landscaping	Weekly
Sweeping and debris removal	Weekly; after rain events
Trail surface, sign, and fencing inspection	Monthly; after rain events
Culvert inspection	After rain events
Sign repair/replacement	1-3 years; as needed
Trail surface repair	1-3 years; as needed
Vegetation trimming	Bi-annually; as needed
Re-grading	As needed
Gates and fencing repair	As needed
Culvert clean-out	As needed
Site furnishing repair/ replacement	As needed

TABLE 5-10 : ESTIMATED MAINTENANCE COSTS PER MILE (NATIONAL AVERAGES)

TASK	AVERAGE COST
Restroom maintenance	$500 - $1,000
Litter pick-up	$8,000
Landscaping	$5,000 - $8,000
Sweeping and debris removal	$1,200 - $2,500
Sign repair/replacement	$200 - $800
Trail surface repair	$5,000 - $10,000
Vegetation trimming	$15,000
Re-grading	$50,000
Gates and fencing repair	$500 - $1,500
Culvert clean-out	$400 - $800
Site furnishing repair/ replacement	$500-$2000

Funding Sources

There are a variety of funding sources available for trail planning. These include federal, state, and regional and local sources, as well as private sources such as nonprofit and foundation grants.

EXISTING & POTENTIAL CITY FUNDING MECHANISMS

Impact Fees and Conditions

Securing access to private lands and accumulating funds for capital improvements, operations, and maintenance of trails is a persistent challenge in trail building, and municipalities often utilize development impact fees and conditions for approval as tools for securing such access and funding.

Developers are typically required to pay impact fees prior to issuance of a building permit. The range of development fees varies widely throughout the United States, though they are typically assessed on a per-unit basis for residential, and a per-square-foot basis for non-residential projects.

Impact fees specifically allocated to trails building and maintenance are relatively rare. More often than not, they are rolled into a parks/recreation fee, with some communities specifying a percentage of these fees that should be applied to trails. In addition to impact fees, some municipalities utilize conditions for approval - often requiring consultation with planning staff - to ensure public trails and design guidelines found in a Trails Master Plan are included in approved development plans.

Riverside currently assesses a $78 per acre Trail Development Fee for all private development, except that any single family lot in excess of one gross acre shall be charged $78 per lot, which must be paid prior to the issuance of a building permit. The City may want to update this assessment fee and approach to align it with trail building, operations, and maintenance plans identified in this Plan.

Municipal Bonds

Municipal bonds are largely used for capital projects, including recreational trails and trail elements. The bonds are loans that governments borrow to pay for capital projects over a given period of time.

Capital Improvement Plan (CIP)

CIPs are a short term budgetary process where local jurisdictions identify and prioritize projects. Generally, these plans are geared towards infrastructure improvements rather than maintenance. These plans aim to identify and collate the projects over the next few years.

User Fees

Many parks and trails require users to pay for the use of the facility. In larger parks, there is generally an entry gate which enables the park to collect entry fees. Some parks and trails do not collect user fees, but allow for the local volunteer group to place a donation box at trailheads to raise funds for trail capital projects. User fees would be regulated by City, and can be directed specifically to maintenance funds.

Adopt-A-Trail (AAT)

The City of Riverside could implement an AAT program to garner volunteer support and funding for ongoing trail maintenance and operations. The program could be modeled after the Riverside County Regional Park & Open-Space District's existing AAT program, the City Public Works Department's Adopt-A-Street Program, and/or the City's Adopt-A-Park program.

STATE

Active Transportation Program (ATP), California Transportation Commission and Caltrans

ATP combines federal and state funding to encourage increased use of active modes of transportation throughout the state. The funding is distributed through both a statewide competition and regional pools and can be used both for infrastructure and non-infrastructure projects.

Recreational Trails Program (RTP), administered by California Department of Parks and Recreation (CDPR)

RTP provides federal funds annually to all levels of government for recreational trails and trails-related projects, and in California is administered by CDPR. Applicants must match at least 12% of the total project cost.

Parks and Water Bond Act of 2018 (Proposition 68)

Proposition 68, also known as the "Parks, Environment, and Water Bond Act of 2018" from the California Natural Resources Agency, funds a variety of trail-related projects through its Trail, Statewide Park. Regional Park, and Per Capita Programs.

FEDERAL

Transportation Investment Generating Economic Recovery (TIGER)

U.S. Department of Transportation TIGER is a yearly discretionary grant program that funds innovative, multimodal, and multi-jurisdictional transportation projects that promise significant economic and environmental benefits to an entire metropolitan area, region, or nation. However, this grant does not fund planning, preparation, or design of capital projects.

Community Development Block Grant Program (CDBG) U.S. Department of Housing and Urban Development (HUD)

CDBG is a grant program that can be used for a variety of different projects, including trail construction. The CDBG Entitlement Program provides annual grants to municipalities of at least 50,000 people and counties, and the Section 108 Loan Guarantee Program provides loan guarantees for local government or third-party developers.

Smart Growth Program, Environmental Protection Agency

The Smart Growth Program provides communities with grants and technical assistance to expand economic opportunity while protecting human health and the environment.

Rivers, Trails and Conservation Assistance (RTCA) Program, National Park Service (NPS)

RTCA, a community assistance arm of the NPS, provides technical assistance to a variety of agencies and organizations in order to preserve open space and develop trails. RTCA's funds can be used for developing plans, engaging the public, and identifying other sources of funding for conservation and outdoor recreation projects. Applications are due annually by June 30th.

Land and Water Conservation Fund (LWCF) Grants, National Park Service (NPS)

LWCF is a matching grant program for states and local governments for the acquisition, planning, and development of public outdoor recreation areas and facilities. Since 1949, 75% of funds have gone to locally sponsored projects to provide close-to-home recreation opportunities.

On August 4, 2020, the Great American Outdoors Act was signed into law, permanently funding the LWCF. The legislation provides up to $1.9 billion per year for five years to fund maintenance for infrastructure and facilities in national parks, forests, and outdoor recreation areas. In addition, the legislation designates $900 million per year for the LWCF.

PRIVATE

Community Grant Program, PeopleForBikes

A coalition of bicycle suppliers and retailers, PeopleForBikes provides funding for the design and construction of important and influential bicycle infrastructure projects that leverage federal funding and build momentum for bicycling in communities across the U.S. These projects include bike trails, end-of-trip facilities, bridges, etc. An applicant may request up to $10,000 and

funding should be less than 50% of project budget. Leverage and funding partnerships are important to this program. There are one to two grant cycles per year.

Plan4Health Coalitions, American Planning Association (APA) and American Public Health Association (APHA)

Plan4Health Coalitions funds projects that build local capacity in addressing population health goals and promoting the inclusion of health in non-traditional sectors such as transportation. Each proposal must address inactivity, unhealthy diets and/or health equity. The average funding amount is $150,000, and no more than two awards granted in a single state.

Partnerships

Several agencies and organizations throughout Riverside County play a role in managing and maintaining the countywide trail network. These agencies and organizations provide funding and support for trail planning, construction, and maintenance, well as trail promotion and natural resource education.

In addition, several of these agencies and organizations own land throughout the County of Riverside, and therefore have a key role and interest in developing a comprehensive, high-quality trail network in the City of Riverside and beyond.

The City of Riverside should consider partnering with these entities for assistance and support with trail planning, implementation, maintenance, and promotion/marketing.

PUBLIC

Federal + State

Potential federal and state partner agencies include:

- National Park Service (NPS)
- Bureau of Land Management (BLM)
- US Fish and Wildlife Service

- US Forest Services (USFS)
- California Department of Parks and Recreation
- California Department of Fish and Wildlife

These agencies are the primary sources of governmental grant funding for trail development and maintenance.

Regional + Local

Several regional and local entities are involved in trail planning, development, and advocacy. Potential regional and local partners include:

- March Joint Powers Authority (JPA)
- Riverside-Corona Resource Conservation District
- Riverside County Habitat Conservation Agency (RCHCA)
- Riverside County Health Coalition (RCHC)
- Riverside County Regional Park & Open Space District (RCRPOSD)
- Riverside County Transportation Commission
- Riverside County Transportation Department
- Riverside Economic Development Agency
- Southern California Association of Governments (SCAG)
- Western Riverside Council of Governments (WRCOG)
- Western Riverside County Regional Conservation Authority (RCA)
- University of California, Riverside

PRIVATE

Private organizations range from trail-specific organizations and environmental groups to business chambers and organizations. All could be potential partners in trail development, maintenance, and programming. These organizations include:

- Greater Riverside Chamber of Commerce
- Center for Natural Lands Management (CNLM)
- Inland Empire Waterkeeper
- Riverside County Parks Foundation
- Sierra Group
- Friends of Hidden Valley Preserve
- Friends of Riverside Hills
- Inland Valley Mountain Bike Association
- Riverside County Trails
- Riverside Community Health Foundation

Land Acquisition

Some of the proposed trails identified in this Plan will require the City of Riverside to acquire new land. Many agencies acquire land and all rights contained therein through fee simple land purchases, which involves the outright purchase of the land and all rights to it.

Sometimes, agencies will acquire the land rights to a piece of land for a particular purpose, such as protecting it from land development or using it for a given purpose. This is referred to as less-than-fee simple acquisition, or easement purchases. Agencies often acquire land rights from private sector or private entities for trails to close gaps within trail networks.

Another land acquisition strategy is the option to ask a landowner for "right of first refusal," where an entity is given the right to make an offer on the land without a guarantee of the right to sell.

Finally, land undergoing development is sometimes required to be used for a trail because of zoning and development regulations. Developers or owners of property, where the Trails Master Plan indicates that a trail is planned, are required to dedicate a trail easement, and for projects larger than one single family residence, are required to construct trail improvements.

Section 6: Pedestrian Target Safeguarding

Section 6.1:
Executive Summary


NO
SKATEBOARDING
NO
BICYCLE RIDING
VIOLATORS

Executive Summary

PRINCIPLES OF DESIGNING SAFER PUBLIC SPACES

The Pedestrian Target Safeguarding Plan (Plan) provides building perimeter and public space security design solutions intended to protect against threats resulting from unauthorized vehicles entering public spaces.

Based on stakeholder interviews the Plan identifies and provides design recommendations for six high priority areas within the City of Riverside including:

- Main Street Pedestrian Mall
- Ryan Bonaminio Park
- University Village
- Riverside Convention Center
- Martha McLean- anza Narrows Park
- Special Event Street Closure Program

OBJECTIVES

The overall objective of the Plan is to complete the following tasks:

- Identify six sites, which are representative of various locations throughout the City, for this Plan's assessment based on high levels of pedestrian activity and high risk for accidental/intentional vehicular collisions.
- Identify historic areas of concern.
- Identify what Pedestrian Safeguarding means to City staff and what is intended from the recommendations and this Plan.
- Identify prioritized locations where public safety should be addressed based on vulnerability and risk.

The approach of this Plan factors in the following considerations and safety methods typically employed:

- Where are special event sites and/or areas with frequent daily use by pedestrians?
- What is the frequency of use? How is a space being used?
- Where might accidental incidents occur related to public space?
- Where can intentional attacks occur as a result of barrier deficiencies?
- What is the density of the surrounding built environment?

GOALS

Based on a series of interviews with City staff and public safety officials in Riverside, the design team developed the following goals to guide the Plan development.

- Provide security in the context of streetscape enhancement and public realm beautification.
- Work within the framework of street furniture elements that currently exist in the City of Riverside.
- Produce a coherent strategy for deploying specific types of streetscape and security elements that also improve lighting, attractiveness of space, and function of public gathering when possible.
- Provide perimeter security in a manner that does not impede the City's commerce and vitality, excessively restrict or impede operational use of sidewalks or pedestrian and vehicular mobility, nor impact the health of existing trees.
- Identify an implementation strategy that can be efficiently coordinated in the most cost effective manner.

BEST PRACTICES

The Plan addresses the need to provide design solutions that will promote vibrant public spaces and support a variety of pedestrian experiences while seamlessly integrating security into existing and future development.

Crime Prevention Through Environmental Design CPTED strategies provided guidance when analyzing priority areas and developing recommendations. These strategies recommend using natural, visually pleasing passive surveillance elements to deter crime and the fear of crime.

Assessment of Soft Targets

Soft target areas are typically easily accessible and exposed, accommodate a high density of people, and frequently hold events. The Plan identifies vulnerable sites where protective measures should be strategically implemented and security should be increased.

Mitigation Plan

Hostile vehicle mitigation measures, such as vehicle barriers around a perimeter, can protect outdoor venues. The City should evaluate a site layout, and consider possible vehicle approach scenarios to determine mitigation measures that can reduce the vulnerability to both intentional and accidental vehicle ramming.

Vehicle Barrier Standards

Vehicle barrier standards must be understood to guide selection and procurement of an anti-ram vehicle barrier based on the specification of vehicle weight, impact speed and dynamic penetration distance.

Vehicle Barrier Design Elements

Vehicle barriers should be utilized in situations where site configuration is vulnerable and pedestrian activity is high. The placement of barriers should consider function, budget, design aesthetics, and proximity to other elements. Barrier systems can vary widely to provide a range of security from visual deterrents, engineered solutions that calculate weight and resistance, to the most robust and reliable anti-ram barriers.

Barriers can be permanent or temporary and passive or active. They should be strategically chosen to fit the needs of the location.

Accommodate Pedestrian and Vehicle Access

Circulation patterns of the site should be monitored under normal conditions and during large gathering events. Barrier placement should not impede desired travel patterns and should facilitate the funneling of pedestrians out of harm's way. Barrier selection and layout should allow for maintenance and emergency vehicle access.

PEDESTRIAN SAFEGUARDING DESIGN GUIDELINES

Street furnishings such as bollards, boulders, light poles, benches, and public art can act as pedestrian safeguarding elements. The Plan provides guidance on placement of safeguarding elements with respect to ADA compliance and best practices.

The guidelines provide installation and design parameters for pedestrian safeguarding standards in public spaces.

SECURITY ZONES

It is important to understand the best approach to support and facilitate movement of pedestrians and maintenance and emergency vehicles while maintaining a safe and secure public space. Security zone types and the functions and design elements associated within each should be identified. Examples of security zones include curb lanes (or furnishing zones) and sidewalks.

STREETSCAPE SECURITY ELEMENTS

The goal is to achieve a well-designed, secure and aesthetically pleasing street design by incorporating streetscape security elements into existing streetscape conditions. Appropriate elements should be selected based on recommended dimensions and placement with consideration given to existing underground systems, utilities and street trees. A variety of elements to select from and utilize allows for flexibility in creating a safe and comfortable pedestrian space, including the following:

- Street furniture (includes hardened benches, waste receptacles, etc)
- Benches
- Bollards
- Seat bollards
- Retractable bollard
- Gate arms
- Fences and walls
- Planters
- Precast concrete or stone seat planter
- Street trees
- Deciduous or evergreen plantings
- Street light standards
- Pedestrian light standards
- Heavy objects (boulders, art, etc.)

Section 6.2: Principles of Designing Safer Public Space

Riverside-La Sierra Metrolink Station

Introduction

DESIGNING FOR PEDESTRIAN SAFEGUARDING

The Pedestrian Target Safeguarding Plan addresses increasingly varied strategies that potentially impact the character of the City of Riverside. The City of Riverside can have both good urban design and good security related to public spaces. As money is invested to make Riverside's streets and public spaces safer, it can also be invested in making them more beautiful. The City's goal is to seamlessly integrate building perimeter security into consistent, coherent, and welcoming streetscapes that are celebrated by the residents, businesses, and community of Riverside.

The Plan provides design solutions for public space security intended to protect against threats resulting from unauthorized vehicles entering public spaces. The Plan focuses exclusively on perimeters of public spaces designed to protect visitors, residents, and property from threats generated by unauthorized vehicles. It does not address other kinds of security measures, such as building hardening, operational procedures, or surveillance. To develop the appropriate security response the design team interviewed stakeholders from key agencies to determine the high priority areas and the magnitude of potential security threats. The responses guided the basis for further analysis and subsequent recommendations.

In conjunction with determining the most appropriate design interventions for each area, the required strength of the barrier system must also be determined. Some barriers must be designed to stop larger vehicles at high rates of speed, while others might be designed for smaller cars at lower speeds. Barriers of lesser strength may be used for protection at lower costs as more of a deterrent and vehicle approach angle. More robust protection will be required when an approach is unimpeded, allowing vehicles direct access at higher speeds.

The Plan includes six high priority areas within the City of Riverside including:

- Riverside Convention Center
- Main Street Pedestrian Mall
- Ryan Bonaminio Park
- University Village
- Martha McLean-anza Narrows Park
- Special Event Street Closure Program

Design recommendations for these areas include an array of streetscape elements that incorporate security components, such as walls and fences, planters, bollards, and hardened street furniture (e.g. light posts and seating).

Best Practices

"proper design and effective use of the built environment can lead to a reduction in the fear and incidence of crime and an improvement in the quality of life." [1]

The Plan recognizes that a vibrant downtown and public space must provide space for a variety of pedestrian experiences. Therefore, the Plan incorporated a thorough review of the Municipal Zoning Code, other specific plans adopted in the City of Riverside, as well as streetscape manuals of the City of Riverside, as a framework for identifying streetscape elements that seamlessly integrate security with existing and future development and potential City-led trails or park projects. Additionally, there are two unique areas in downtown Riverside, which warrant custom designed solutions due to their civic importance and special events status.

1 International CPTED Association."https://www.cpted.net/

Photo Caption: Festival of Lights photo from The Press Enterprise

CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

Crime Prevention Through Environmental Design (CPTED) strategies are a guiding best practice related to public space design. CPTED strategies include the physical design, social management, and law enforcement directives that seek to positively influence human behavior as people interact with their environment. One of the key goals of CPTED is to reduce opportunities for crime that may be inherent to the design of an existing public space.

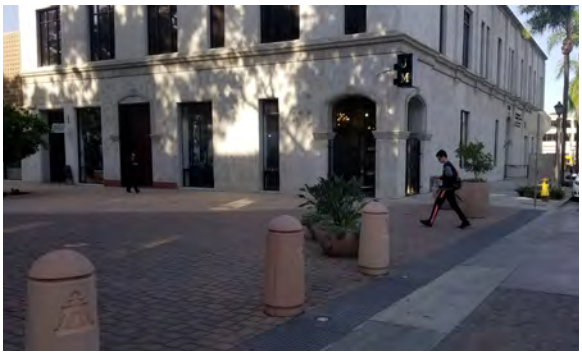
Four specific CPTED principles provided guidance during the design process for this Plan. Each of these strategies is important to consider when analyzing each priority area and when developing recommendations for protection, aesthetics, and accessibility of a space.

Natural Surveillance

The design and placement of physical features in a way that maximizes visibility, and creates unobstructed views of surrounding areas. Natural surveillance avoids the creation of building entrapment areas and prioritizes unobstructed doors and windows, transparent building materials, pedestrian-friendly sidewalks and streets, and good night time lighting.

Natural Access Control

Design concept that ensures entrances are clearly defined, visible, and well lit. People are physically guided through a space by the strategic design of streets, sidewalks, building entrances, landscaping, and neighborhood gateways. Design elements are very useful tools that clearly indicate public routes and discourage access to private areas and structural elements.



Territorial Reinforcement

Physical design can also create or extend a sphere of influence. Territorial reinforcement is the use of physical features that express ownership such as bollards, fencing, pavement treatments, signage, and landscaping.

Maintenance

Maintenance allows for the continued use of a space for its intended purpose. Deterioration and blight indicate less control by the intended users of a site and a level of disorder. Proper maintenance encourages visibility and limits inoperative lighting, and serves as an expression of ownership.

ASSESSMENT OF SOFT TARGETS

Soft Targets and Crowded Places (ST-CPs), such as entertainment venues, transportation hubs, outdoor parks and plazas, are destinations that are easily accessible to the public where they congregate in large crowds with limited security or protective measures in place making them vulnerable to attack. Limited security measures include a lack of recognizable security professionals controlling access to a venue as well as electronic means of monitoring and recording an area such as closed-circuit television cameras (CCTV). Protective measures would include the use of barriers that would prevent unauthorized access to an area and channel people and vehicles to designated access points with a security screening process.

Soft target areas are typically:

- Easily accessible and exposed
- Accommodate a high density of people
- Where frequent events are held

Photo Caption: Rhythm of Riverside Summer Nights Concert Series in Fairmount Park from Riversideca.gov

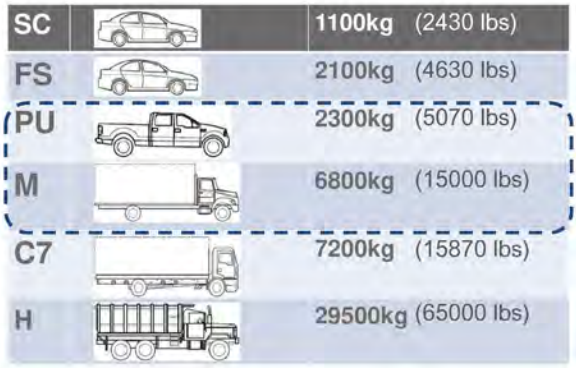
MITIGATION MEASURES

Attacks involving intentional vehicle ramming of soft-target, densely populated outdoor areas have become increasingly common (See Table 6-1). These events have predominately occurred at public parks and pathways, shopping districts and outdoor events where large crowds of people have congregated in an open, easily accessible setting. These events have propelled both public and private sector decision makers to implement hostile vehicle mitigation measures to protect these outdoor venues by means of installing vehicle barriers around the perimeter of a gathering space (i.e., plaza, outdoor theater, etc.), along the street side of heavily trafficked sidewalks and other vulnerable areas.

Implemention of a mitigation plan involves an initial assessment that evaluates the existing or proposed site layout considering possible vehicle approach scenarios, and determines mitigation measures to reduce the vulnerability to both intentional and accidental vehicle ramming. Vulnerabilities lie where vehicles can obtain high speeds through a direct (straight) path of travel to impact densely populated areas. Mitigation can be achieved by providing obstacles to limit a direct approach (curved roadways, lane dividers and/or curbs) and/or implementing rated or non-rated barriers to stop or deter vehicle access.

Year	Attacks	% Attacks	Fatalities	FPA
2014	11	8.8	62	5.6
2015	19	15.2	13	0.7
2016	11	8.8	102	9.3
2017	36	28.8	63	1.8
2018	35	28.0	61	1.7
2019	13	10.4	19	1.5
Total/Averages	**125**	**100**	**320**	**2.6**

Table 1. Vehicle Ramming Attacks/Incidents Fall in 2019, Mineta Transportation Institute - San Jose State University, Nov 26 2019)



ASTM-F2656 highlights the impact of different types of vehicles based on weight.

VEHICLE BARRIER STANDARDS

Risk associated with an intentional vehicle impact can be expressed in terms of barrier crash ratings, also termed anti-ram. There are a number of industry standards for determining the barrier capacity with respect to a vehicle impact, the most common of which is ASTM-F2656 ***Standard Test method for Vehicle Crash Testing of Perimeter Barriers*** (See Figure 6-1 at right). This standard is used for the selection and procurement of an anti-ram vehicle barrier based on the specification of vehicle weight, impact speed, and dynamic penetration distance (i.e., distance past the impact point that a vehicle is stopped). Other similar standards include ISO - IWA 14-1:2013 Vehicle security barriers - Part 1: Performance requirement, vehicle impact test method and performance rating, and BSI – PAS 68 impact test specifications for vehicle security barrier systems.

Crash-ratings are dependent on the vehicle type: Small Passenger Cars (2430-lb), Pickup Trucks (5070-lb), or Medium-duty Trucks (15,000 lb). Of these vehicle sizes, a pickup truck is the most commonly used for design of barriers domestically, including government, airports and other facilities, unless their target attractiveness and asset value warrants a larger vehicle. Once the vehicle size is determined the impact speed and dynamic penetration distance is specified for procurement of an anti-ram rated barrier.

There are also vehicle barrier standards and selection guides developed by the U.S. Department of Transportation and affiliated research groups that are used for accidental events, however, their objective is to redirect a vehicle with the aim of protecting the driver, rather than render the vehicle inoperable and stop them at a specific distance from an intended target. In the context of an intentional event, these guidelines generally do not provide a barrier design with the needed protection and should only be used

with the knowledge of their limitations.

VEHICLE BARRIER DESIGN ELEMENTS

The most effective approach for mitigating a hostile vehicle threat is to configure the site to prevent a direct path of travel to densely populated areas. Where the site design cannot accommodate redirecting roadways or relocating public access away from vulnerable areas, vehicle barriers may be considered. The placement of barriers should be coordinated with other physical security measures such as signage that makes it clear where vehicles and pedestrians should and should not be, as well as vehicle and pedestrian access points with active access controls. Barrier placement and design should also consider the aesthetics and function of an area, including pedestrian paths of travel. Most importantly, a clear zone along the line of barriers that provides significant distance between large crowds and vehicles should be implemented to protect bystanders from crash debris as well as facilitate detection, intervention, and response by the security force.

Barrier selection is highly dependent on the given site vulnerability, risk of an attack occurring, and existing conditions that would affect the installation and performance of the barrier. When considering barrier types, budget constraints may limit the best of

The comparison of images above highlights how the simple addition of bollards can act as a visual and effective physical barrier against vehicle penetration.

intentions. Anti-ram barriers are much more costly than non-rated elements (i.e., street furniture, bushes, boulders, etc.). Therefore, highly vulnerable areas with frequent, large-crowd events may warrant anti-ram barriers while less vulnerable areas with a lighter population density may warrant a more cost-effective approach of installing 'robust' non-rated barriers that would serve as an effective deterrent. As a part of this Plan process, recommendations for barrier design include both the visual aesthetic and effectiveness in stopping vehicle penetration. At right are some examples of design solutions for specific public space areas.

Barriers, whether they be anti-ram or a deterrent system, discussed in the next section, should always be spaced close

enough such that a vehicle cannot drive between them. The industry standard of practice is a 4-foot clear distance, however, the wheelbase distance of the design vehicle type (i.e., compact, sedan, light-duty truck, etc.), can range from 4 to 6 feet. Additionally, the bumper height should be considered to prevent a vehicle from vaulting over a barrier. Minimum barrier heights are typically 30 inches for a sedan and 36 inches for a truck.

Deterrent, Engineered & Anti-Ram

The appearance of a robust security presence, both operational and fixed, serves as a powerful visual deterrence to a potential attacker. This can be accomplished by means of stationing police vehicles at heavily populated perimeter zones as well as the placement of engineered barriers or other vehicle deterrents. Means to deter vehicles without using rated barriers include boulders, planters, benches, or non-rated bollards.

While these solutions are not technically rated, they do have capacity to stop or slow a vehicle. Additionally, engineered solutions that rely on the calculated barrier weight and frictional resistance, such as jersey barriers and water-filled barriers, have some capacity to stop a vehicle, but are more commonly used to defend against an accidental vehicle ramming.

The most robust and reliable barrier is an anti-ram barrier, such as bollards, heavily reinforced concrete knee-walls and planters, and cable and steel post systems with substantial foundations. These systems are specifically designed with the strength and stiffness to stop a vehicle traveling at speeds of up to 50 mph with validation by crash testing.

Permanent & Temporary

Barriers can be permanent or temporary. Permanent barriers are ideally designed and installed to fit within the context of

Wall Street, NY: An example of how bollards can serve as public art, lighting, and contribute to both security and streetscape character.

National Museum of American Indian, Washington DC: Grade and retaining walls can be used to create public seating and provide physical separation for vehicle travel lanes and pedestrian spaces.

the setting, not disrupt or conflict with the pedestrian and vehicle paths of travel, while remaining substantially anchored and robust to resist a vehicle impact. Temporary barriers typically serve a more transient purpose, with selection priorities based on ease of installation, weight, and factors other than aesthetic appeal. Additionally, crash resistance of temporary barriers is often much less than more permanent solutions, as demontrated by jersey and water-filled barriers.

Temporary barrier products that offer substantial resistance, include the Meridian Archer 1200 and Ameristar Surface Guard products. Both products were specifically designed as modular, unanchored, rapid deployment systems for roadway closure during mass gatherings. When selecting a temporary barrier product, there are many factors that should be considered, including the following:

- Crash Rating
- Weight
- Installation Time
- Storage Space
- Specialized Equipment for Transport & Installation
- Cost

Temporary barrier: Jersey barrier

Temporary barrier: Water filled barrier

Passive & Active

There are two types of barriers, passive and active. Passive barriers are always in a fixed state of deployment with non-moving parts. These include (see images at right):

- Bollards
- Kneewalls
- Planters
- Cables
- Jersey Barriers

Passive anti-ram rated barriers typically require substantial foundations that often times conflict with underground utilities, therefore, a civil survey should be performed

Temporary barrier: Meridian Archer 1200

Temporary barrier: Ameristar Surface Guard

Examples of passive barriers including kneewalls, planters, and public seating integrated into low retaining walls

prior to final design and placement. Alternatively, there are 'shallow mount' bollards and other rated barriers with foundations that extend no more than 12 inches into the subgrade and can be cast within an existing sidewalk.

Active barriers are those that retract or raise to allow the passage of a vehicle along a roadway, such as wedge and plate barriers that rotate up out of the ground and when retracted are flush with the roadway surface. Other types of active barriers include lift-out or retractable bollards, overhead drop arm with cable and dead man, and sliding or swing crash gates. There are several factors to be considered in the selection of active barriers, including:

- Crash Rating
- Control Mechanism (manual hydraulic, pneumatic or electro-mechanical)
- Failure Mode (aised or closed)
- Cycle Time (rate of operation)
- Safety & Security
- Durability, Maintenance and Environmental Resistance
- Maintenance
- Cost

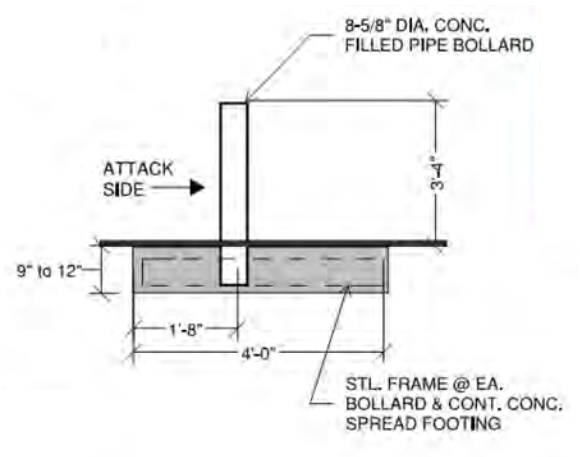


Image above shows a shallow mount foundation

Example of active barrier: "pop up" or retractable bollards shown above

Examples of active barrier: surface plate shown above

ACCOMMODATE PEDESTRIAN AND VEHICLE ACCESS

One of the most important considerations in the layout of permanent vehicle barriers is an understanding of how a specific area functions, both under normal (i.e. daily) conditions as well as during large gathering events. Barriers should be placed such that they do not impede paths of travel for pedestrians, bicyclists and permitted vehicles, and facilitate the funneling of pedestrians out of harm's way. For example, often barriers are positioned along roadways directly adjacent to curbs, which can impede the ability of a passenger to exit a parked vehicle.

Barrier selection and layout should consider allowance for maintenance and emergency vehicle access, as well as event set-up and break-down. In these instances, specific points of access should be coordinated with emergency responders with provisions for active barrier control by them. Manually removable barriers are also an option, however, they are heavy and would ideally be equipped with a tamper-proof locking device, use of which may impact emergency response time.

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Section 6.3:
Design Guidelines


Now Serving Breakfast

PEDESTRIAN SAFEGUARDING

a). Street furnishings shall be placed within the furnishing zone. Street furnishings such as bollards, boulders, light poles, benches, and public art can act as pedestrian safeguarding elements.

i. The location of fixed objects, such as utility poles, light fixtures, and other street furniture should not impinge on or restrict the adjacent walkway and shall maintain a minimum 5 foot clear path of pedestrian travel.

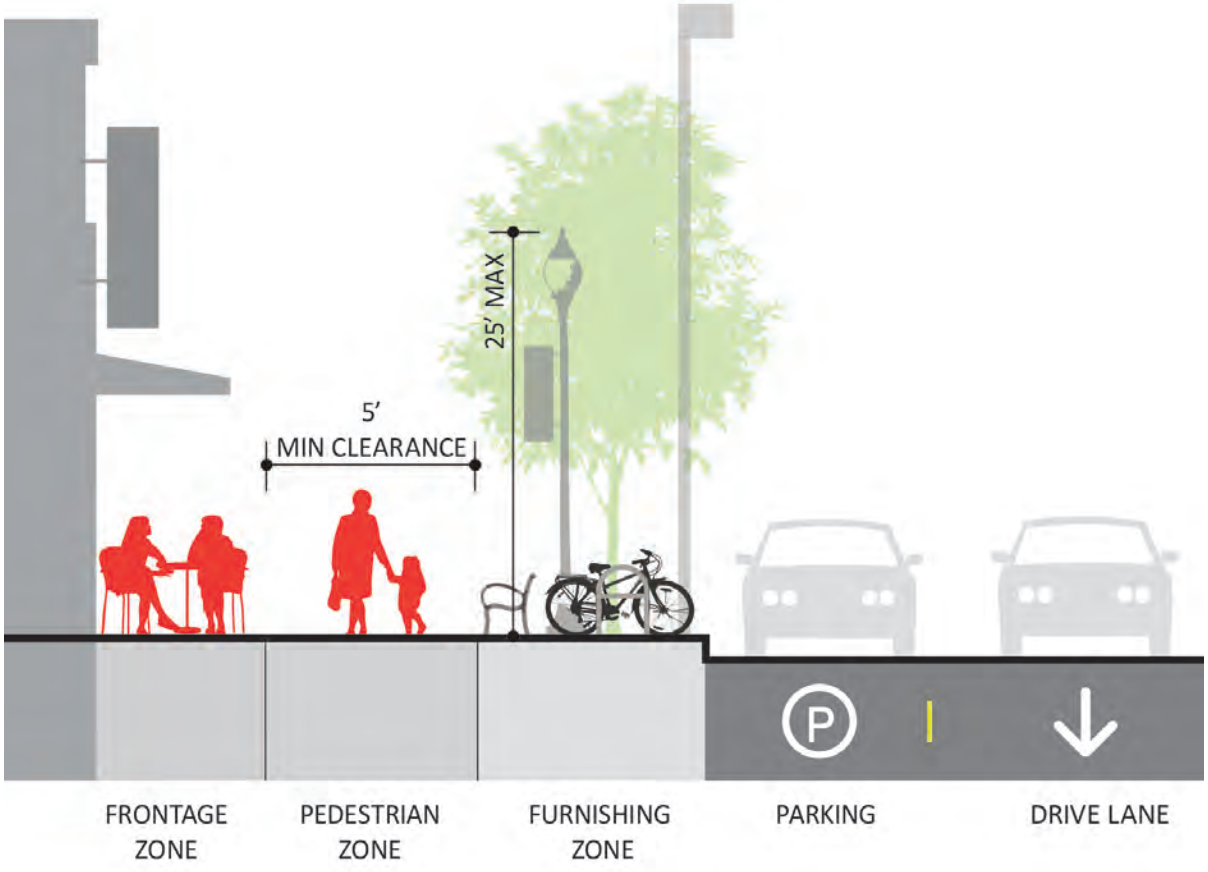
ii. Walkways or pedestrian zones must be clear of fixed objects in coordination with ADA accessibility guidelines.

iii. Install pedestrian-scale lighting (typically lamps less than 25 feet high), with an average illumination level of 10 Lux (1.0 FC) to increase comfort and safety in the furnishing zone adjacent to the pedestrian zone. The uniformity ratio should be designed for 3:1.

b). Street furnishings along streets can serve as deterrents to accidental vehicle intrusions to sidewalks.

i. Streets furnishings including light standards, seating, waste receptacles, and wayfinding signage can act as pedestrian safeguarding elements. These street furnishings shall be placed a maximum of 4 feet on center.

ii. Street furnishings can be clustered to conserve space. The objective is to create a rhythm of spacing to avoid any gaps larger than 4 feet.



1. Public Space Standards

a) All new projects that include a public space such as a plaza or other active park amenities (excluding passive park features, such as open space, preserves, habitat, etc.) in excess of 2,500 square feet or 200 linear feet abutting a public right of way shall include pedestrian safeguarding design.

   i. There shall be no more than 4 feet of space between any of the street furnishing elements

   ii. Project shall incorporate two layers of linear street furnishings in linear alignments along the public space adjacent to roadways.

   iii. No pedestrian safeguarding element shall be less than 33 inches in height.

   iv. With the exception of light poles, no pedestrian safeguarding element shall exceed 40 inches in height.

b) Projects with a 0 foot lot line setback may provide required short-term bike parking within the sidewalk area in front of the project as long as a permit has been obtained from the Public Works Director/ Department.

   i. The rack element should keep the bike upright, supporting the frame in two places and allowing one or both wheels to be secured.

   ii. Install racks with sufficient space between adjacent parked bicycles to enable easy locking of bicycles.

   iii. Empty racks should not pose a tripping hazard for visually impaired pedestrians. Position racks out of the walkway's clear zone.

c) Consider opportunities to include seating and/or art elements within the sidewalk area. Projects seeking to include such amenities shall utilize the Public Works Encroachment Process. Information regarding the process can be found at: https://riversideca.gov/PWSurvey/forms/EncroachmentPermit.pdf

2. Security Zones

a) Curb Lane (or Furnishing Zone): The curb lane is the portion of the right-of-way between the sidewalk and the curb.

   i. Streetscape security components should be placed at least 2 feet from the edge of the curb to allow for the opening of car doors and to facilitate passenger vehicle pick-ups and drop-offs.

   ii. Protect street trees. Before a final design solution can be implemented, a survey will be required to determine the location of underground structures and utilities, and an evaluation will be conducted to determine the impact of nearby trees and root systems. The type of structural system must be carefully considered and alternative structural systems and installation techniques investigated, such as core drilling for pile footing, when determining the final design and location of the security components. Care must be taken to protect existing trees for both aesthetic and security reasons.

   iii. Locate security elements at curb with consideration to health of street trees. If damage occurs to existing street trees, new street trees are recommended throughout.

b) Sidewalk: The sidewalk zone is located between the building or site and the curb or parking lane. In this context, the sidewalk serves as the common space for pedestrian interaction, movement, and activity. It is therefore important to allow for and to promote active public use of the sidewalk.

   i. To the greatest extent possible, sidewalks should be left open and accessible to pedestrian movement. Generally, streetscape security elements should be excluded from this zone.

   ii. Use bollards, planters, or bench furnishings to secure intersections and access to building pedestrian entrances.

   iii. Use careful consideration to allow free and easy pedestrian movement, including handicap and wheelchair access to the sidewalk and building entrances.

   iv. Ensure the design accommodates emergency vehicles and maintenance equipment such as utility trucks and motorized cleaners, and allows easy access to bus stops.

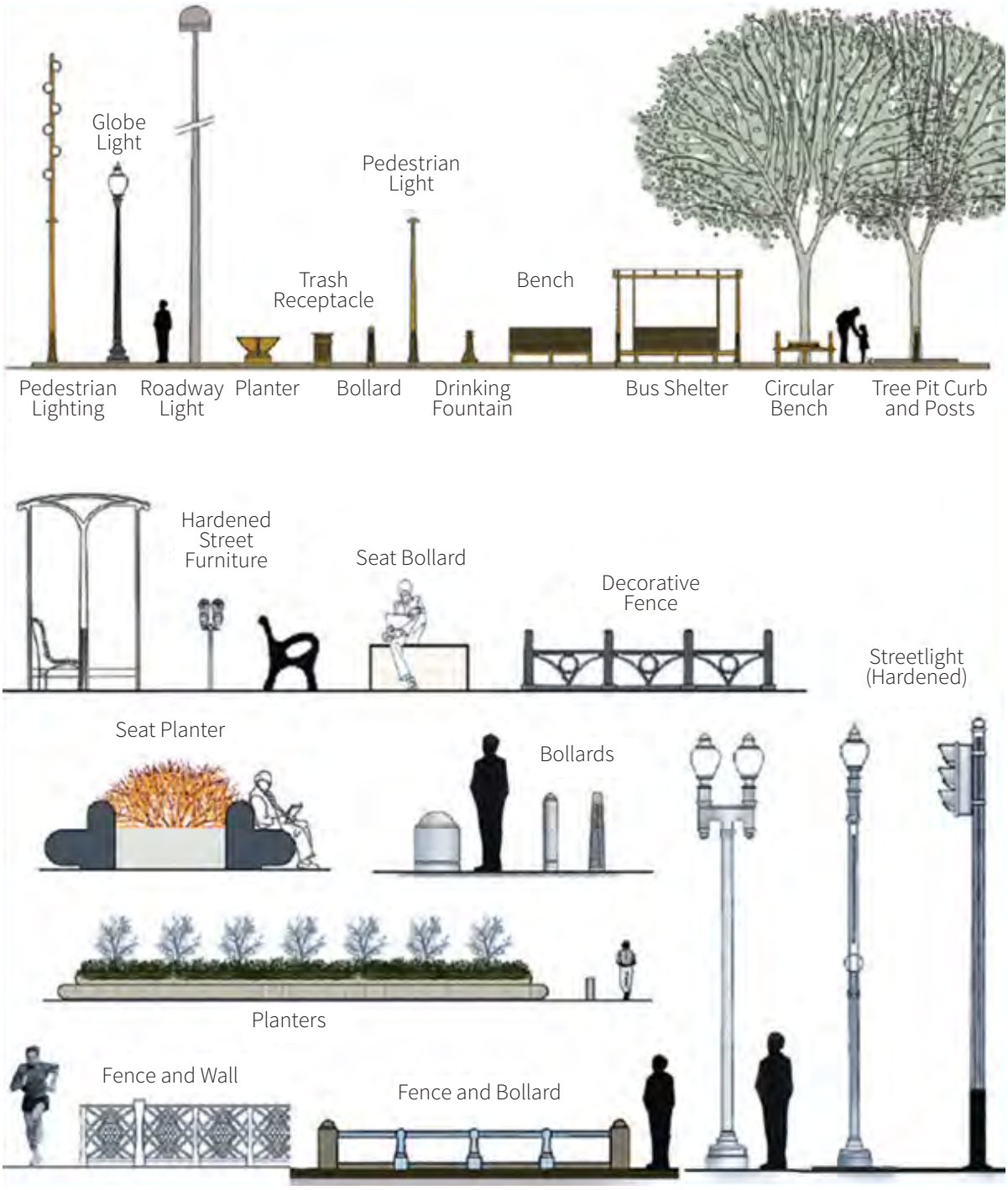
3. Streetscape Security Elements

a) Considerations

   i. Incorporate site perimeter security seamlessly into a well-designed and aesthetically pleasing streetscape. A broad palette of security elements, to arrange and incorporate, allows for more flexibility in the design solution for perimeter security.

   ii. Some of the street furnishings may require “hardening” to ensure they function as both amenities and as structural barriers.

   iii. Proposed security elements should meet the City standards of any required engineering or testing to ensure they satisfy security requirements.



Streetscape elements suitable for hardening as security elements.

iv. Locate underground systems. Some security elements may require substantial below-grade structural systems that will compete with the location of underground structures, utilities, and tree roots. In some cases, the feasibility of installing streetscape components for security will be affected by these underground conditions and will significantly influence the location of the security elements, and the cost of installation.

v. Implement traffic calming measures deemed appropriate by Public Works Department to reduce vehicular travel speeds along corridors adjacent to sites identified as vulnerable.

vi. Secured vehicle entrances require removable or retractable bollards, gates, or plate barriers. These elements must be able to accommodate highly repetitive usage.

vii. Monotonous repetition of a single element should be avoided. When a continuous line of bollards approaches 50 feet, they should be interspersed with other streetscape elements, such as hardened benches, planters or trees.

viii. Landscape materials can soften and naturalize the appearance of many types of constructed barriers, improving appearance and compatibility with the surrounding streetscape.

b). Street furniture (includes hardened benches, waste receptacles, etc).

c). Benches

i. Dimensions (2 feet 6 inches high, 2 feet wide, 7 feet long). Bench is sized specifically for pedestrian safeguarding.

d). Bollards

i. Recommended at entries and corners to maintain the free movement of pedestrians. A bollard is a vehicle barrier consisting of a cylinder, usually made of steel and filled with concrete placed on end in a deep concrete footing in the ground to prevent vehicles from passing, but allowing the entrance of pedestrians and bicycles.

ii. Use removable bollards (and/or gate arms) for emergency vehicle and service entrances.

iii. A typical fixed anti-ram bollard consists of a ½-inch thick steel pipe, 8 inches in diameter projecting about 30 inches above grade and buried about 48 inches in a continuous strip foundation.

iv. In no case shall bollards exceed a height of 38 inches.

v. Note: Commonly used decorative bollards without deep foundations do not have anti-ram capacity, though they may provide some deterrence value by making the building look more protected than it is.

e). Seat bollards provide additional outdoor seating options which can include a bench with reinforced hidden bollards or a larger concrete bollard that serves as a seating surface.

f). Retractable Bollard (3 feet high, 8 inches in diameter, at 42 inches clearance between bollards).in diameter, at 42 inches clear between bollards).

g). Bollard system guidelines are:

i. Space between 36 and 48 inches depending on the kind of traffic expected with consideration to the needs of pedestrians, persons with

strollers, wheelchair users, and the elderly.

ii. In long barrier systems, the bollards should be interspersed with other streetscape elements such as hardened benches, light poles, or decorative planters.

iii. Keep clear of ADA access ramps and the corner quadrants at intersections.

iv. Arrange in a linear fashion in which the center of the bollards is parallel to the center line of existing streets.

v. If underground utilities make the installation of conventional bollard foundations too difficult, a possible solution is to use bollards with a wide shallow base and a system of beams below the pavement to provide resistance against overturning.

h). Gate Arms (as per manufacturer's specification).

i). Fences and Walls

i. Decorative metal fence: (minimum 2 feet 6 inches high, length may vary).

ii. Fence and Wall (see page 6-28).

iii. Fence and bollard: Can be engineered as an anti-ram system. A typical solution is to use cable restraints to stop the vehicle: these can be placed at bumper height within the fence, hidden in planting. The cable needs to be held in place using bollards and anchored to the ground at the ends.

iv. Plinth Wall (Low retaining wall): Dimensions: (minimum 2 feet 3 inches high, 2 feet wide, length may vary).

j) Planters

i. Well-designed planters can form an effective vehicle barrier. Engineered planters need considerable reinforcing and below-grade depth to be effective and become fixed elements in the landscape design.

ii. Rectangular planters should be no more than 2 feet wide, and circular planters should be no more than 3 feet wide. The horizontal dimension of rectangular planters should not exceed 6 feet.

iii. Landscaping within planters should be kept below 2-1/2 feet, except when special use requirements call for increased foliage. In addition, planters should not have enough vegetation to hide a package 6 inches thick, such as a briefcase.

iv. Planters should contain live landscaping at all times and be regularly cleaned of trash and debris.

v. Planters should not be used in high pedestrian traffic areas as determined by City staff. In these locations, bollards or other less obtrusive objects are appropriate.

vi. Planter design, location, and maintenance should create viable conditions for healthy plants. These include adequate water or irrigation, appropriate soil mixture, and selection of plants appropriate to be grown in planters. Seasonal characteristics and ultimate size of plant material shape the choices.

k) Pre-Cast Concrete or Stone Seat Planter

i. Dimensions: (2 feet 6 inches high, 9 feet 6 inches wide, 24 feet long)

ii. 42 inches between planters

Pedestrian Target Safeguarding streetscape elements depicted in the above images are for illustrative purposes only. The actual design and layout should be approved by an engineer to ensure safety protocols are met.

l) Street Trees (as a security element)
    i. Size: minimum 8 inch caliper
    ii. Spacing: minimum 20 feet on-center, maximum 40 feet on-center
    iii. Tree enclosures are to be installed on the inside of the tree planting bed

m) Deciduous or Evergreen Plantings
    i. Size 3 foot balled and burlapped (BB), full to ground

n) Street Light Standards
    i. 40 feet on-center

o) Pedestrian Light Standards
    i. 20 feet on-center

p) Heavy Objects (boulders, art, etc.)
    i. Heavy objects, such as large sculptural objects, massive boulders, earthen berms or concrete forms with unassailable slopes, and dense planting and trees can be used in a similar way to bollards to prevent vehicles from passing, while allowing the passage of pedestrians and bicycles. To ensure that such barriers can effectively reduce the threat level, engineering design and/or evaluation is necessary.

Section 7: Complete Streets Ordinance

Section 7.1: Purpose

Section 7.1. Purpose

The Complete Streets Ordinance provides guidance on street character, connectivity, access for all users, development of continuous pedestrian paths and trails/recreation opportunities, and the inclusion of public gathering spaces equitably placed throughout the City.

The Complete Streets Ordinance (referred to as the CSO hereafter) references the Pedestrian Safeguarding Recommendations, Active Transportation Plan, and Trails Master Plan for specific project location recommendations.

Development standards identified in the CSO shall supersede any other City of Riverside development standards identified through the municipal code, an adopted specific plan, or any other guidance. Additionally, City staff should align discretionary decisions with objectives outlined in this section.

Projects shall meet the purpose and intent of the development standards within the CSO and shall address the design and compatibility of the project in relation to surrounding street and public right-of-way (ROW) conditions as they relate to the extents of the project and its adjacent ROW.

The City has developed the following development standards to direct the future implementation of complete streets improvements in the City of Riverside. The five objectives below highlight the purpose of the CSO.

1. **PROVIDE SAFE, EQUITABLE, AND COMPREHENSIVE MULTI-MODAL TRANSPORTATION OPTIONS FOR ALL USERS**
2. **BALANCE ROADWAY NEEDS**
3. **ENCOURAGE HEALTHY, ACTIVE LIFESTYLE**
4. **CREATE A CONNECTED NETWORK THROUGHOUT THE CITY OF RIVERSIDE FOR PEDESTRIANS, BICYCLISTS, AND RECREATIONAL USERS**
5. **INTRODUCE EQUITABLE OPPORTUNITIES FOR OPEN SPACE INTO THE PUBLIC ROW**

In consideration of the fact that the City of Riverside has a substantial number of policies that support Complete Streets, specific policies from the General Plan are highlighted below:

- Policy CCM-2.9- Design all street improvement projects in a comprehensive fashion to include consideration of street trees, pedestrian walkways, bicycle lanes, pathways, signing, lighting, noise and air quality.
- Policy CCM-2.10- Emphasize the landscaping of parkways and boulevards.
- Policy CCM-6.1- Encourage reduction of vehicle miles, reduce total number of daily peak hour vehicular trips.
- Policy CCM-8.4- Give priority for sidewalk and curb construction to areas near schools with pedestrian traffic.
- CCM-9.6: Enhance and encourage the provision of attractive and appropriate transit amenities, including shaded bus stops, to facilitate the use of public transportation.
- Policy CCM-10.3- Provide properly designed pedestrian facilities for disabled and elderly.
- Policy CCM-10.4- Identify and seek to eliminate hazards to safe, efficient bike and pedestrian movements citywide.
- Policy CCM-10.5- Promote health benefits of using a bicycle or walking as a means of transportation.
- Policy CCM-10.6- Encourage pedestrian travel through the creation of sidewalks and street crossings.
- Policy CCM-10.10- Evaluate needs of bicycle traffic in the planning, design, construction and operations of all roadway projects funded by the City.
- Policy CCM-10.12-Encourage bicycling as a commute mode to school, work, etc.

In addition to these general plan policies, see Appendix A: Plan Policy Review for a complete review conducted on the following plans and municipal code to identify policies supporting Complete Streets.

- City of Riverside General Plan (2007)
- City of Riverside Bicycle Master Plan (2007)
- University Neighborhood Plan (June 2008)
- Eastside Neighborhood Plan (June 2009)
- City of Riverside Bicycle Master Plan Update: Addendum (2012)
- City of Riverside Restorative Growthprint - Climate Action Plan (RRG-CAP) (2014)
- Biking in Fresh Air: Consideration of Exposure to Traffic-Related Air Pollution in Bicycle Route Planning (2017)
- Riverside Transit Agency First and Last Mile Mobility Plan (2017)
- City of Riverside, California Downtown Specific Plan (Amended 2017)
- Western Riverside Council of Governments Active Transportation Plan (2018)
- Riverside County Comprehensive Trails Plan (2018)
- Marketplace District Plan (March 2019)
- City of Riverside traffic code, regulations, and policies (Version: Aug 1, 2019)

Note: Requirements using the term “shall” are mandatory with little to no discretion involved. Other criteria will require site specific analysis.

Section 7.2: Application

Section 7.2. Application

The development standards in this document are intended to guide private developers and City staff when implementing or updating a roadway design in response to a private development project or a publicly led project. While some standards, such as lane widths, will be more universally applied throughout the roadway system, others such as mid-block crossings or bus boarding area improvements, will be implemented in very site-specific situations. Elements such as parklets, bike corrals, and seating are often determined by site specific conditions but will require oversight and maintenance by the property owner, a non-profit association, or business organization.

The development standards identified in the CSO apply to public projects and any project meeting the threshold identified in Section 2A. Private Development. These projects are not eligible for in-lieu payment of transportation, local park, or trail development impact fee. The City reserves the right to require an applicant to prepare additional traffic analysis based on:

- Presence of an existing or potential safety problem.
- Location of the development in an environmentally or otherwise sensitive area, or in an area that is likely to generate public controversy.
- Presence of a nearby substandard intersection or street.
- Need for a focused study for access/operational issues.
- Designation of the project as having truck intensive uses. Truck intensive uses include heavy industrial, warehousing or as determined by the Traffic Engineering Division.
- Request from an affected agency, such as Caltrans or adjacent City; if the request is deemed reasonable and appropriate by the CIty of Riverside's staff.

APPLICATION OF VEHICLE WAYS DEVELOPMENT STANDARDS

A. PRIVATE DEVELOPMENT:

1. Projects generating more than 110 daily vehicle trips or exceeding the following development quantities:
    a) 11 single family housing units
    b) 16 multi-family, condominiums, or townhouse housing units
    c) 10,000 sq. ft. of office or mixed use
    d) 15,000 sq. ft. of light industrial
    e) 63,000 sq. ft. of warehousing
    f) 79,000 sq. ft. of high cube transload and short-term storage warehouse
2. All private streets, private drives, or public streets shall meet requirements of Section 3A: Vehicle Ways Development Standards and refer to Section 4: Complete Streets Roadway Cross Section Options.
3. All new development shall meet requirements of Section 3D Pedestrian Zones Development Standards.

B. PUBLIC PROJECTS:

1. Whenever the City undertakes a project involving the planning, construction, reconstruction, repaving, or resurfacing of a public right-of-way, such project shall consider inclusion, to the maximum extent practical and feasible, improvements as described in Section 3A Vehicle Ways Development Standards.

APPLICATION OF ALL OTHER DEVELOPMENT STANDARDS

A. PRIVATE DEVELOPMENT:

1. If determined necessary by City staff, new development projects shall install improvements based on number of residential units or square footage and land use.

B. PUBLIC PROJECTS:

1. Whenever the City undertakes a project involving the planning, construction, reconstruction, repaving/ resurfacing of a public ROW, the project shall consider installation of improvements to the maximum extent practical and feasible.

Section 7.3: Development Standards

Section 7.3. Development Standards

This section is intended to guide private developers and City staff when improvements to existing streets are undertaken or new streets are designed and constructed. In some situations, it may not be practical or feasible to implement the full extent of a particular regulation or guideline, and some or all of a street segment may continue to be non-conforming. In this case, City staff should pursue those improvements that best align with the CSO objectives in Section 1 of this document.

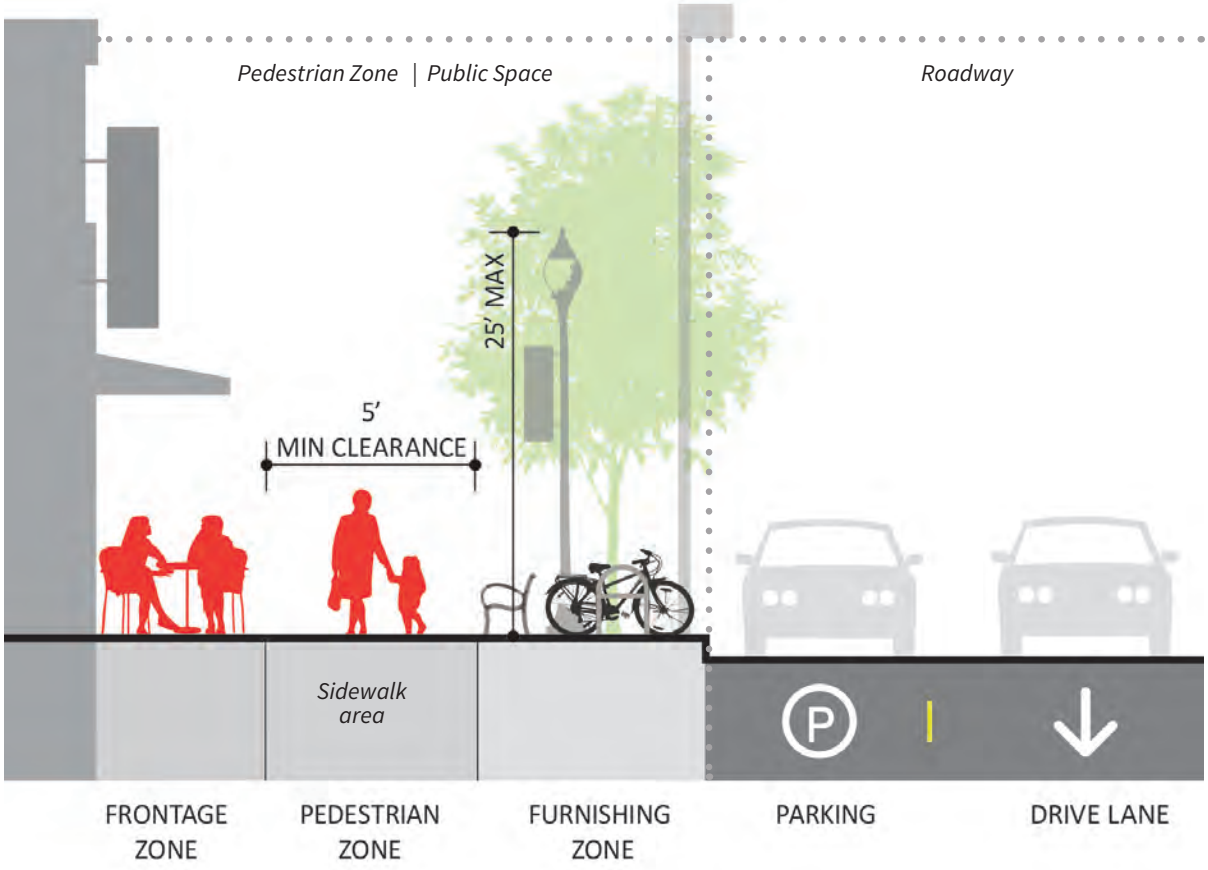
Vehicular travel speed plays a major role in determining the extent to which a pedestrian or cyclist feels safe and comfortable. In situations where pedestrians or bicyclists may be present, particularly at locations where a high number of vulnerable users such as children or the elderly are anticipated, physical treatments such as those included in this section can be introduced into the roadway to reduce travel speeds. The selected treatments will vary depending upon whether the roadway is classified according to the General Plan as a local, collector, or arterial street and will be further influenced by the types of land uses that are located nearby. For instance, the presence of a school will likely warrant a more intensive selection of treatments, whereas a stretch of roadway where there are relatively no adjacent land uses may suggest an application with a much more limited palette of treatments.

This section is organized into five parts:

A. Vehicle Ways
B. Bikeways
C. Intersection Treatments
D. Pedestrian Zone
E. Pedestrian Safeguarding

These Development Standards apply to all public streets, private streets, and private driveways.

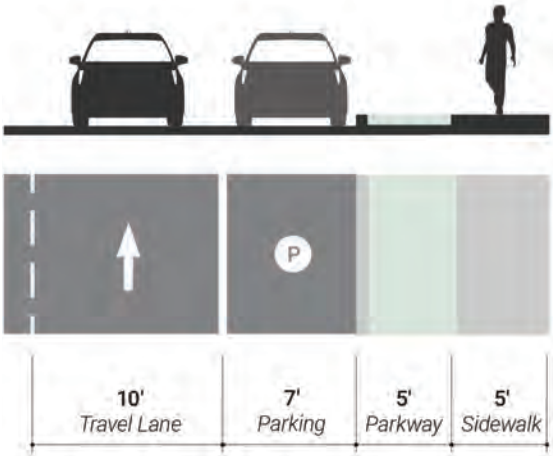
Vehicle ways and bikeways specifically address travel lane standards related to parking and bicycle use. Intersection treatments include signal timing and crosswalk design standards. Pedestrian zone (see figure below) includes development standards that address the pedestrian path, landscaping, and street furnishings. Pedestrian Safeguarding standards address security considerations and requirements for public spaces.



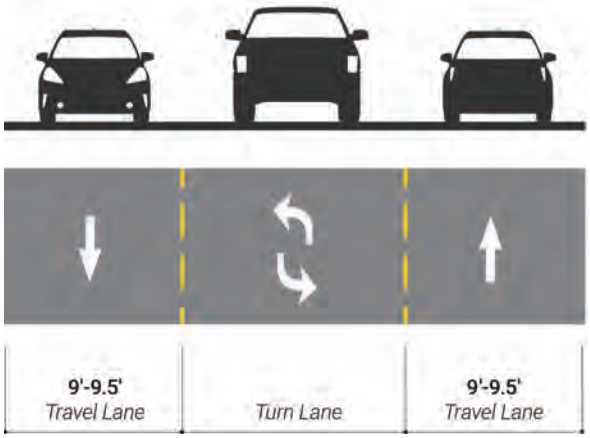
A. VEHICLE WAYS

1. Vehicle Lane Widths

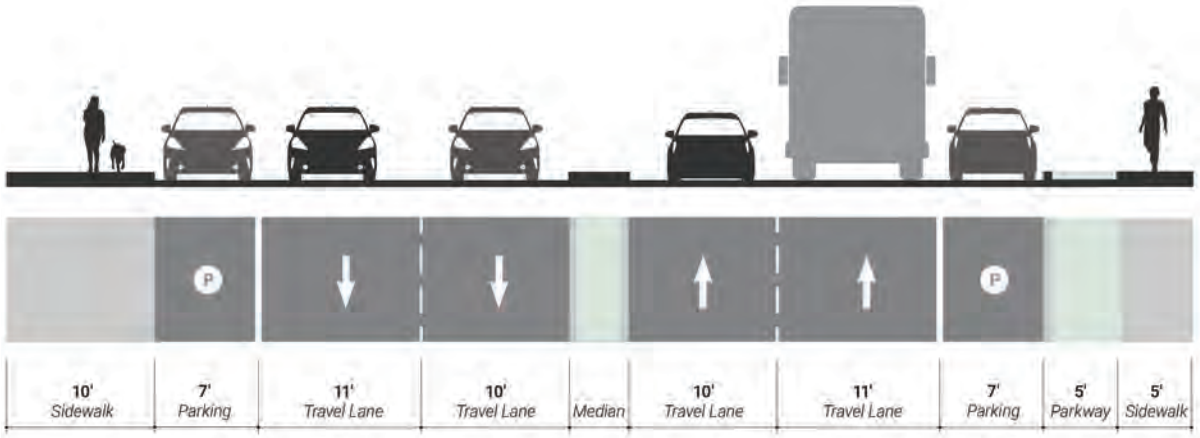
a) Travel lanes shall be 10 feet in width.



b) Narrower travel lanes (minimum 9 feet) can be effective as through lanes in conjunction with a turn lane if appropriate based on speed limit and traffic volumes.

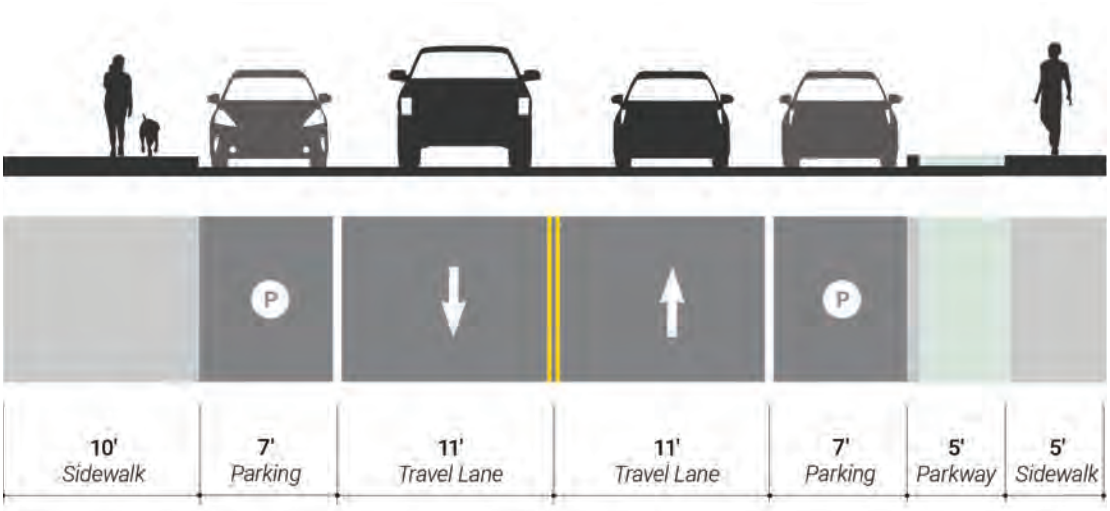


c) Curb or outside lanes on designated high truck volume roadways and/or bus routes shall be a minimum of 11 feet in width.



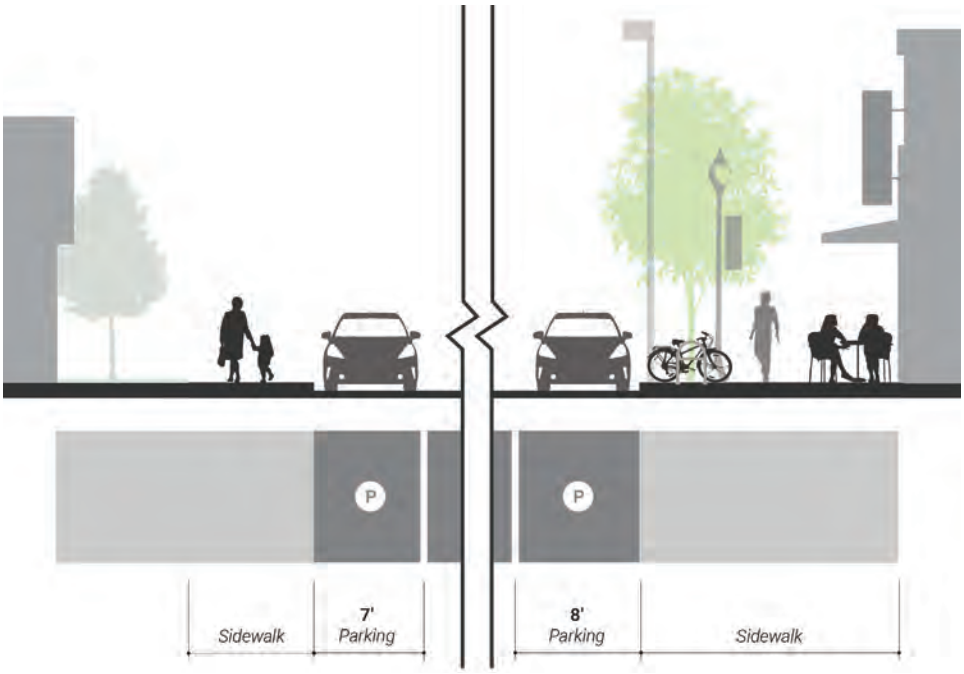
d) Lanes adjacent to lanes in the opposing direction may be up to 11 feet in width.

e) Lane width up to 11 feet may also be necessary for receiving lanes at turning locations with tight curves.



2. On-Street Parking

a) Parking lanes shall be 7' except in locations with high parking turnover where an 8' parking lane shall be permitted.



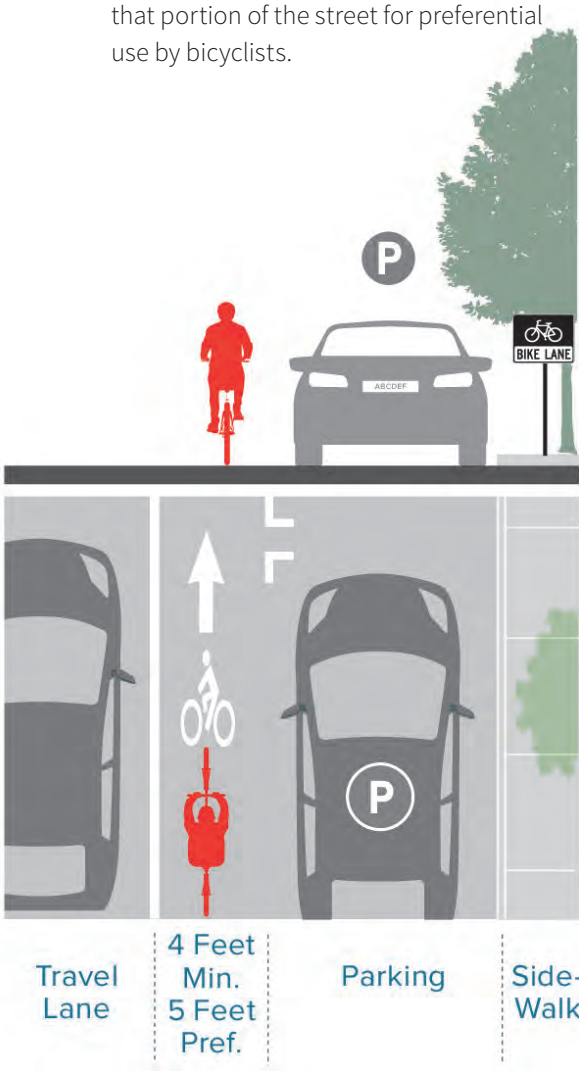
B. BIKEWAYS

See the Active Transportation Plan for specific bikeway recommendation locations. All requirements for bikeways must meet and reference the California MUTCD manual.

1. Bicycle Lane (Class II)

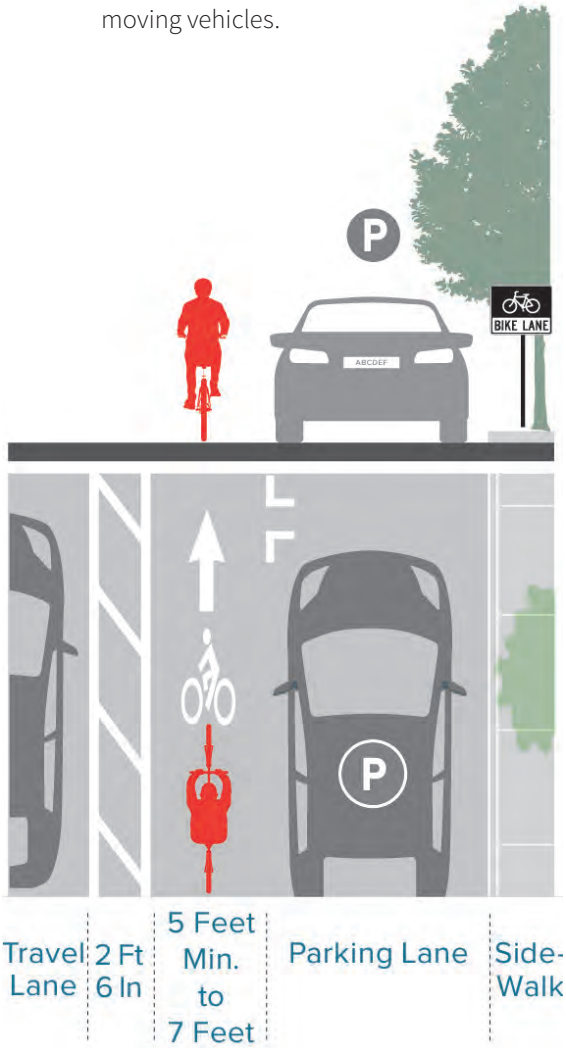
a) Bike lane shall be a minimum of 5 feet wide when located on the driver's side of a parking lane. Wherever possible, increase bike lane to 6 feet and minimize the parking lane width.

b) Bicycle lane word and/or symbol and arrow markings (MUTCD Figure 9C-3) shall be used to define the bike lane and designate that portion of the street for preferential use by bicyclists.



2. Buffered Bicycle Lane (Buffered Class II)

a) Bike lane shall be a minimum of 5 feet wide. Provide a minimum striped buffer of 2 feet 6 inches between the travel lane and the bicycle lane. In this situation the parked car remains alongside the curb and the bicyclist continues to ride alongside of the vehicle lane but a painted buffer has been installed to provide for a bit more physical distance between the bicyclist and the moving vehicles.



b) **Separated Bicycle Lane (Class IV)**

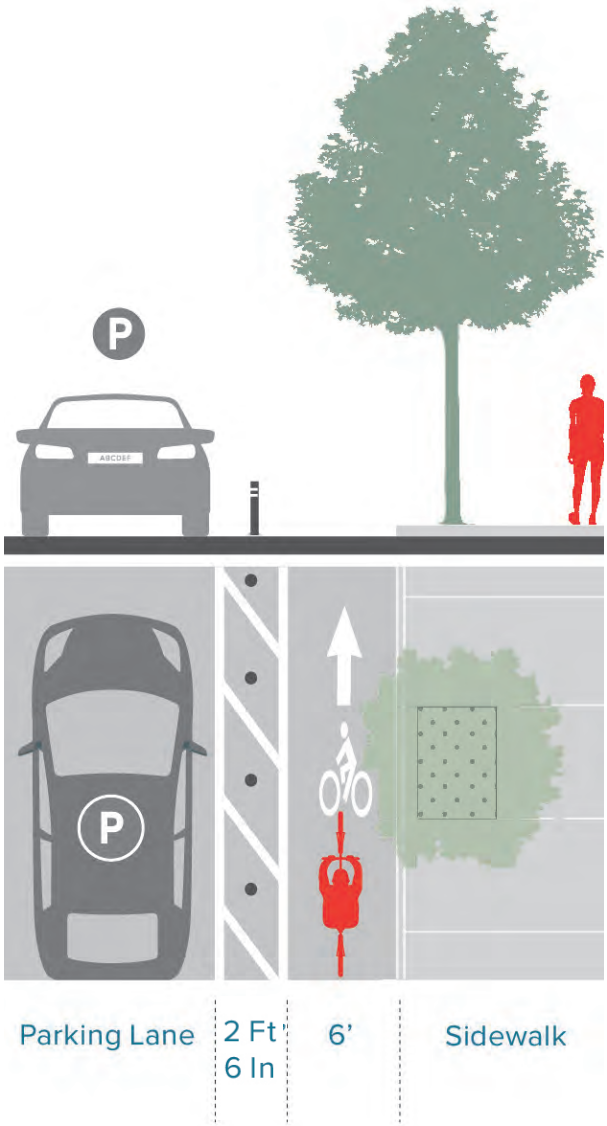
c) When placed adjacent to a curb or other vertical surface, the bicycle lane width shall be no less than 6 feet.

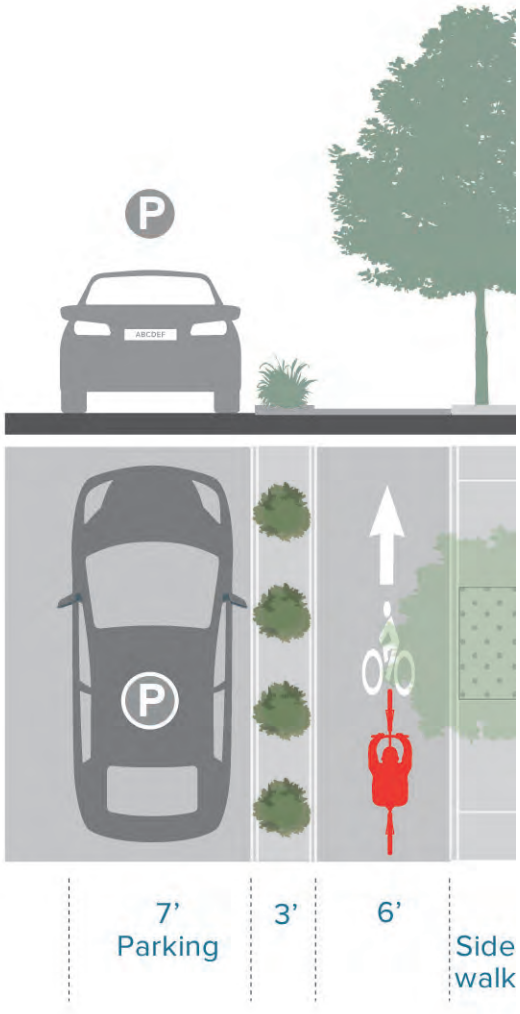
d) A minimum physical separation of 2 feet 6 inches shall be maintained between the bicycle lane and the parking lane. The separation space should be used to locate bollards, planters, signs or other forms of physical protection.

e) Bicycle lane word, symbol, and/or arrow markings (MUTCD Figure 9C-3) shall be placed at the beginning of the lane and at periodic intervals along the facility based on engineering judgment.

f) Diagonal crosshatch markings should be placed in the neutral area for special emphasis. See MUTCD Section 3B.24.

g) Raised medians or other barriers can also provide physical separation between the bicyclist and vehicle way or parking lane.





Chapter 1000 of the Caltrans HIghway Design Manual establishes a classification system that differentiates bikeways into four types or facilities, Class I, II, III, and IV. The bikeway classifications are presented in order of least to most protected.

SHARED LANE

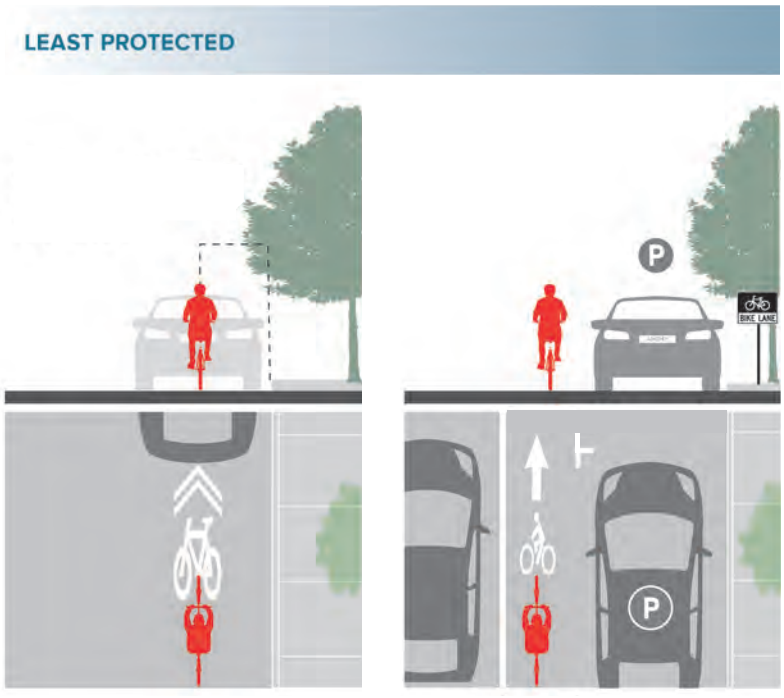
CLASS III

Class III shared bicycle lane is often referred to as a sharrow, bicycle route and does not provide for a dedicated bicycle space within the roadway. The bicyclist shares a travel lane with a vehicle. Class III bikeways typically include markings within the roadway area to let motorists know that bicyclists may be present.

BIKE LANE

CLASS II

Class II bicycle lane continues to be the most predominant bikeway type and is commonly installed between the far-right vehicle lane and either the curb or a parking lane.



BUFFERED BIKE LANE

BUFFERED CLASS II

Class II buffered bike lane is a hybrid between the Class II and Class IV. In this situation the parked car remains alongside the curb and the bicyclist continues to ride alongside of the vehicle lane but a painted buffer has been installed to provide for a bit more physical distance between the bicyclist and the moving vehicles.

SEPARATED BIKEWAY

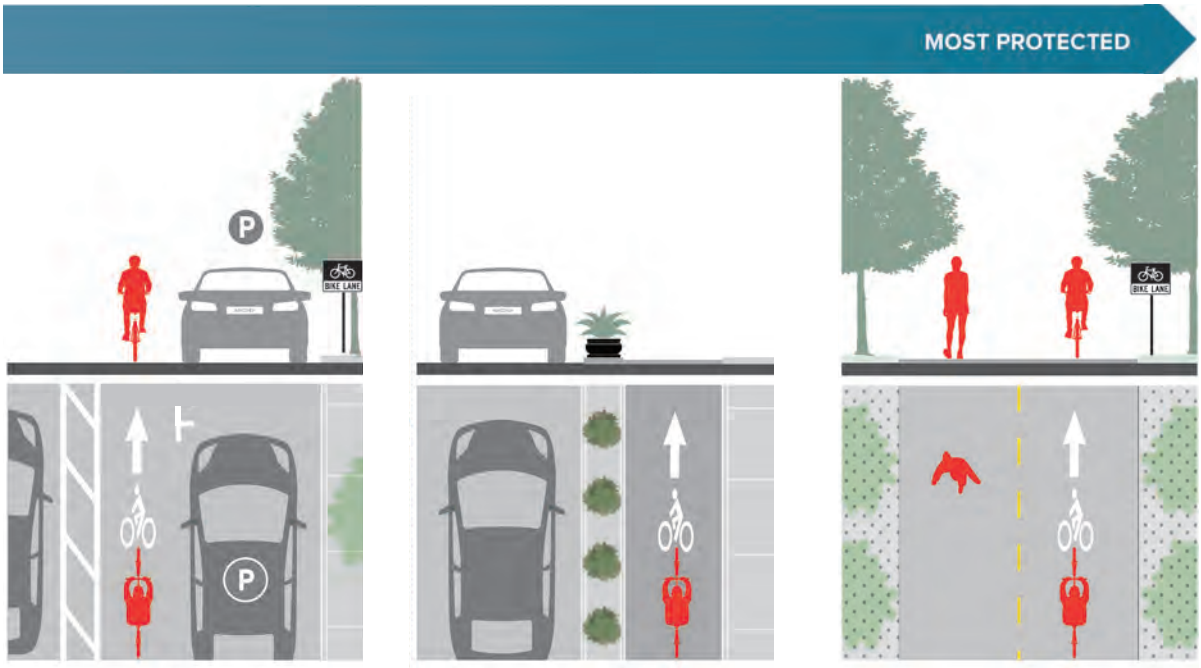
CLASS IV

Class IV separated bikeway was recently added in response to the growing interest in protected bicycle lanes whereby a buffer and/or physical separator is located between the bicycle lane and the adjacent vehicle lane. Parking lanes and striped buffer can serve as a separator wherein other raised physical features such as planters or other vertical elements also serve to offer protection.

SHARED USE PATH

CLASS I

Class I shared use path is typically referred to as a bicycle path and this facility is often physically separated from the roadway area by grade as well as vertical elements.



C. INTERSECTION TREATMENTS

1. Signal Timing at Signalized Intersections

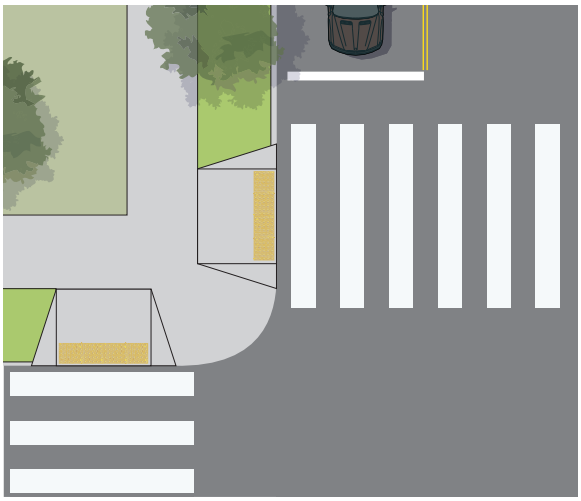
a) If determined necessary by City staff, new development projects shall install a lead pedestrian interval (LPI) of 3-7 seconds, depending on the overall crossing distance (as determined by Dept. of Public Works).

2. Crosswalks

a) If determined necessary by City staff, new development projects shall install continental style (or zebra/ladder) crosswalks of the nearest signalized intersections using high visibility markings.

i. Crosswalks shall be 10 - 15 feet wide and include distinct, 2 foot white painted strips. (In School zones the strips shall be yellow.)

ii. Place an advanced stop bar perpendicular to the travel lane in advance of the crosswalk to increase pedestrian safety.



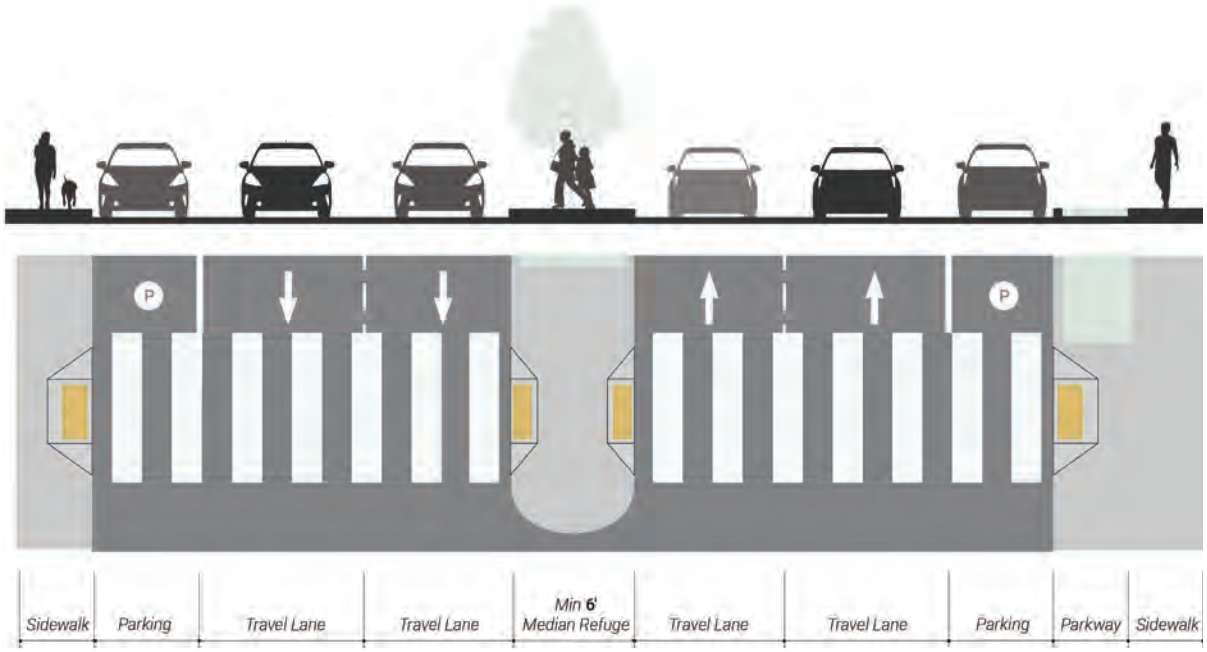
b) If determined necessary by City staff, new development projects shall install high visibility crosswalk markings at the nearest non-signalized intersection where a school, park or other high-intensity use is present.

3. Median Refuge

a) If determined necessary by City staff, install a median refuge along multi-lane roadways where there are pedestrian crossings and high volumes of traffic accounting for more than 12,000 vehicles per day.

i. Median refuge islands should be a minimum of 6 feet wide. A preferred design includes an 8 foot wide median refuge to enhance pedestrian comfort and to be of adequate length to allow a number of pedestrians to stand and wait for gaps in traffic before crossing the second half of a street.

ii. Detectable warning strips complying with the requirements of the Americans with Disabilities Act shall be installed.



4. Curb Extensions

a) Where appropriate and as approved in project specific water quality management plan, install curb extensions on streets, to increase visibility, reduce the crossing distance, reduce the speed of turning movements, and allow for enhancements such as seating or greenery.

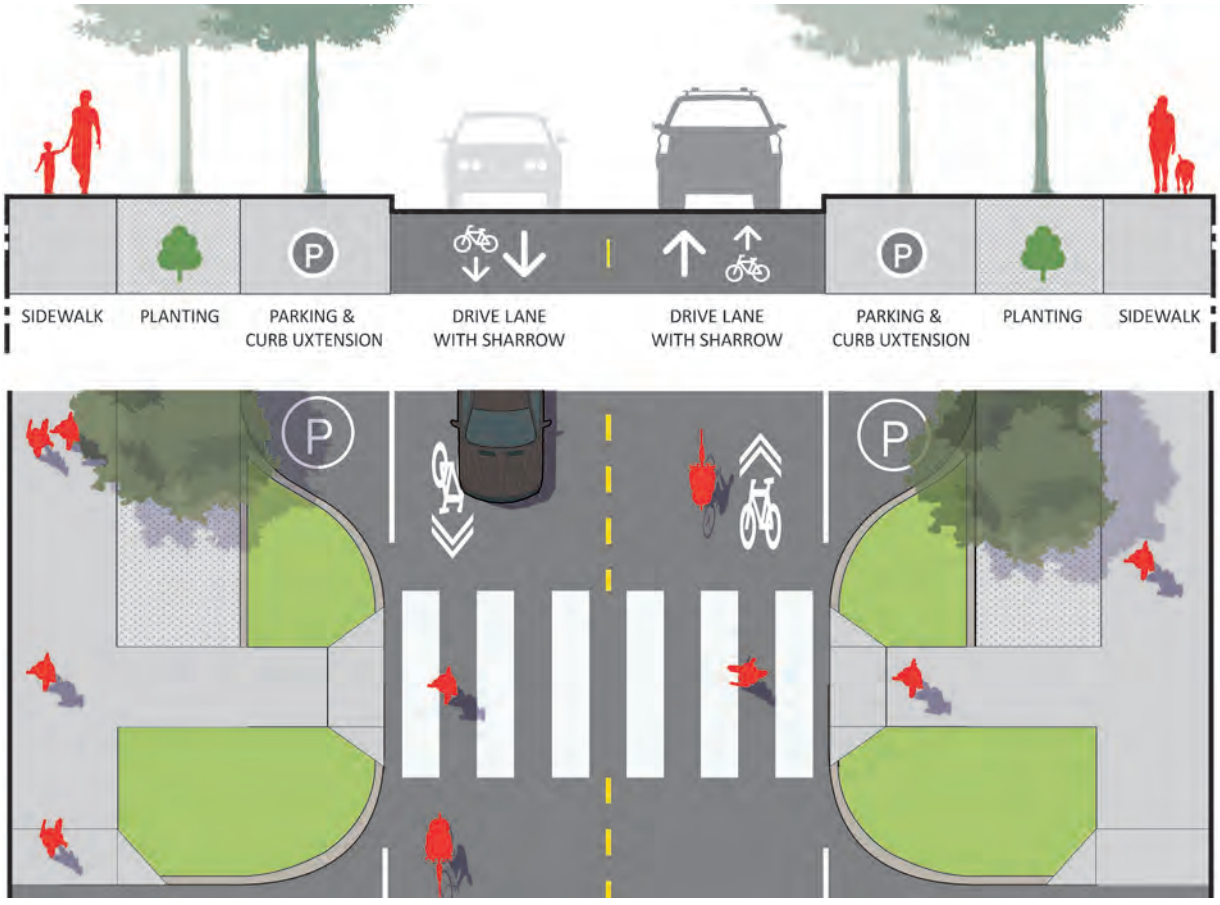
b) Curb extensions shall include bi-directional access ramps on all approaches where feasible.

c) Where deemed appropriate and approved, install curb install curb extensions, or neckdowns at the entry to local or minor streets.

d) Include stormwater management features within the curb extension to absorb rainwater and reduce the impervious surface area of a street.

i. Use low plantings in bioretention facilities in curb extensions near intersections to maintain sight distance; plants should grow no higher than 24 inches above the sidewalk grade. The curb return from bump-out edge to original curb line should be designed to enable street sweeping along the curb edge, typically angled between 30 and 60 degrees relative to the curb line and with a minimum radius of 10 degrees. Steeper return angles will usually require hand-sweeping.

ii. Where application of a curb extension adversely impacts drainage, curb extensions may be designed as edge islands with a 1–2-foot gap from the curb or a trench drain.

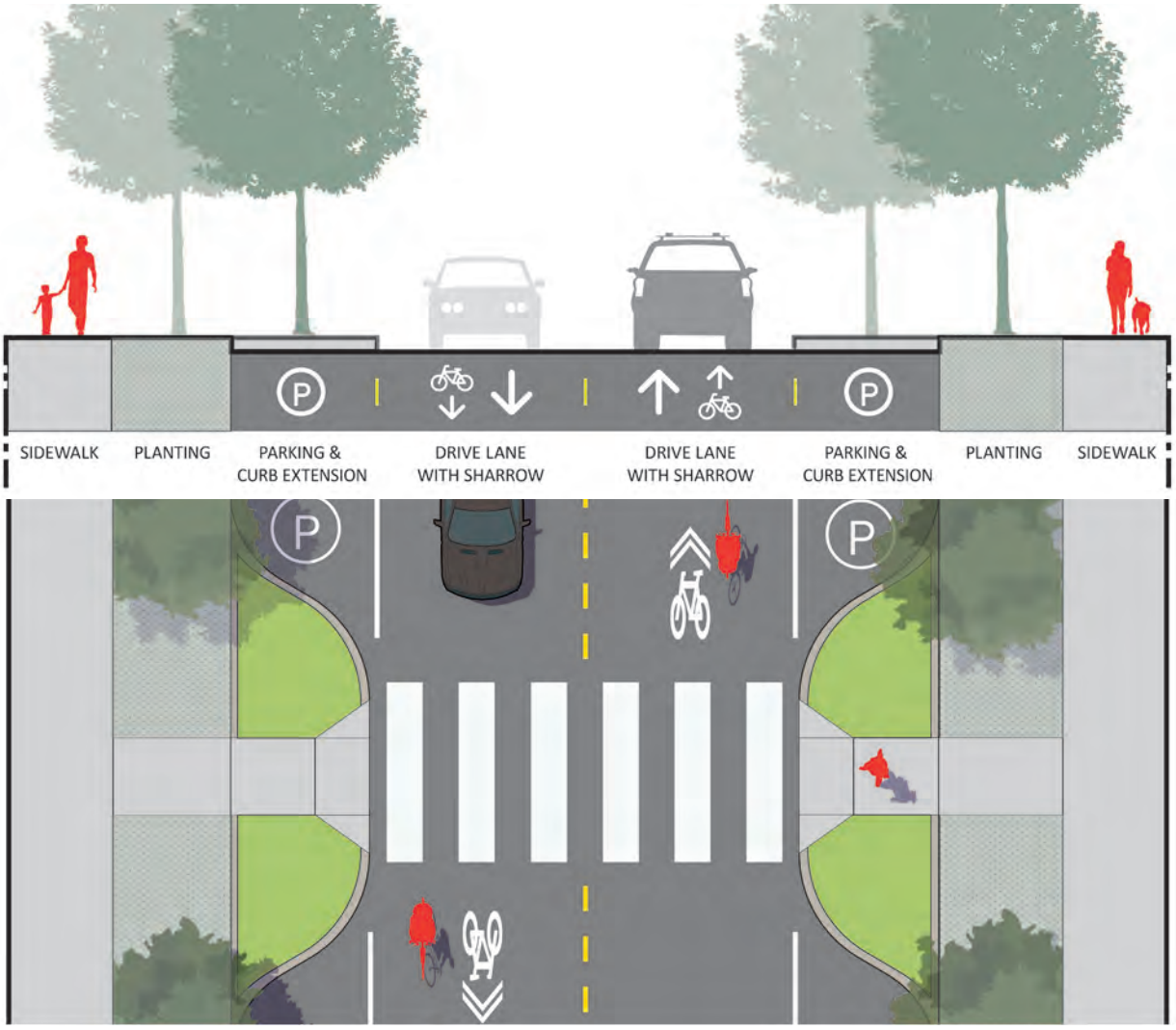


D. STREET DESIGN FEATURES

1. Mid-Block Curb Extensions

a) Where appropriate and as approved in project specific water quality management plan, install mid-block curb extensions, known as pinch points or chokers, to facilitate mid-block pedestrian crossings.

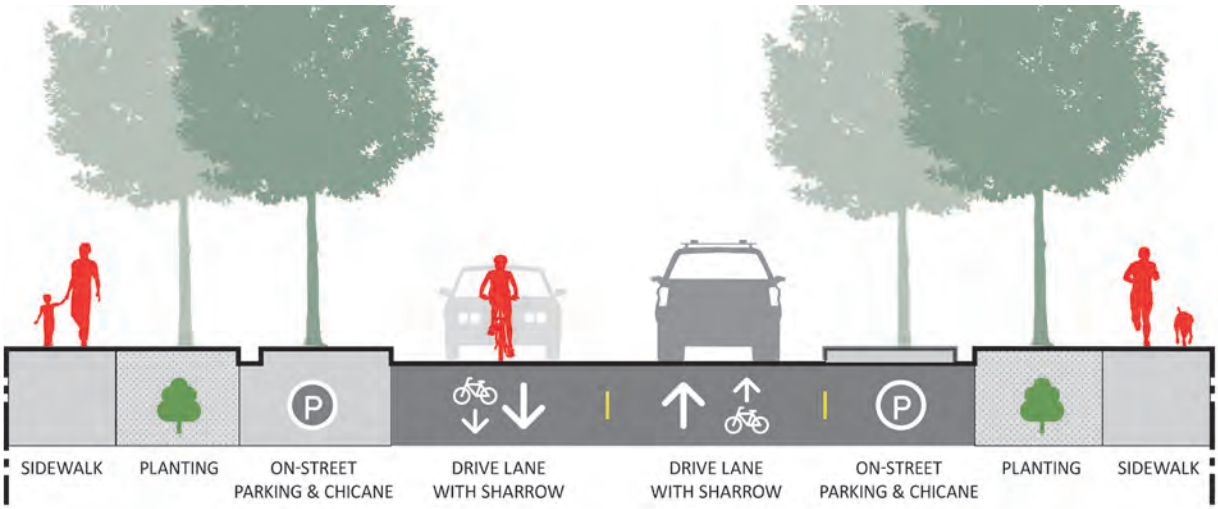
i. Where traffic volumes exceed 2,000–3,000 vehicles per day, install a marked crosswalk and other enhanced treatments such as a median refuge, and/or Rectangular Rapid Flashing Beacon (RRFB).

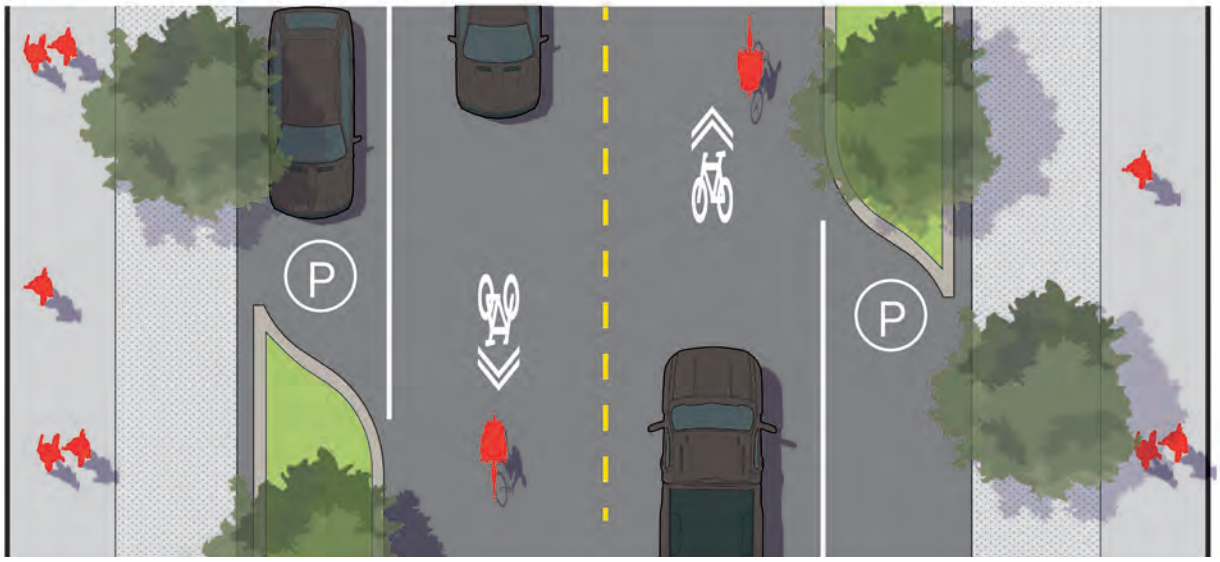


2. Chicanes

a) Where deemed appropriate and approved, install an offset curb extension, or chicane, on a local, low traffic volume street to slow vehicles speeds and create a safer, more comfortable pedestrian environment.

i. Chicanes should be designed using a return angle of 45 degrees, or a more gradual taper and transition, resulting in an S-shaped roadway.





3. Bulb-Outs

a) Install bulb-outs in the parking or curb lane at certain intervals as a means to introduce street trees in locations where sidewalk width is not sufficient to accommodate a street tree and still maintain a comfortable walking environment.

4. Parklets

a) Consider the installation of a parklet per City Council Resolution No. 21322. Reference this resolution for additional information on the parklet application process.

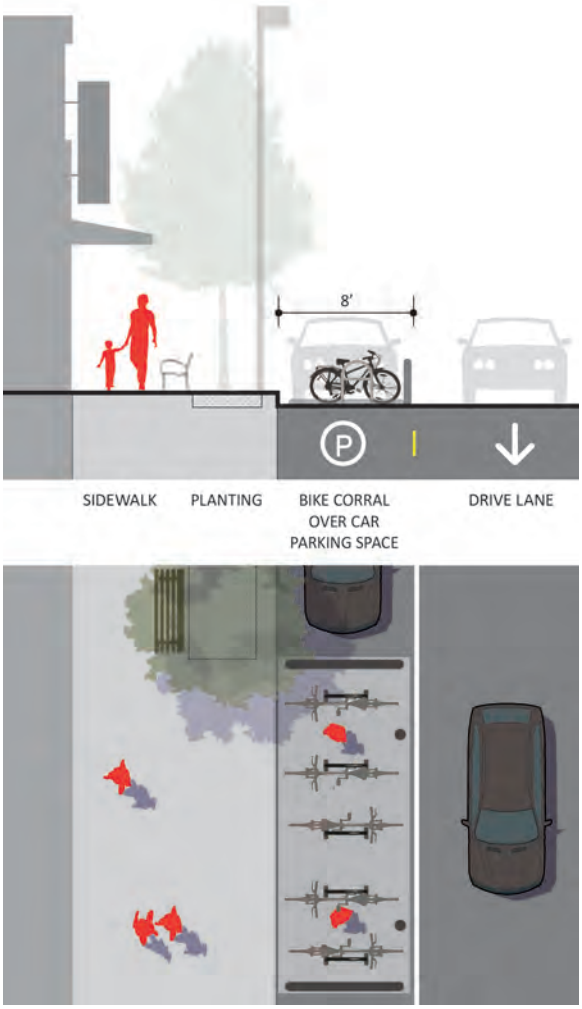
b) Parklets are encouraged in downtown Riverside, near mixed use centers, transit centers, or locations where the property owners or residents see a need to expand the seating capacity or public space and where impacts to on-street parking are determined to be acceptable.

5. On-Street Bike Parking Corral

a) A development project may satisfy their off-site bicycle parking requirement, subject to approval by the Public Works Department, by installing either of the following:

i. Convert one or two on-street motor vehicle parking spaces into on-street bicycle parking in commercial areas where demand for bicycle parking is high.

ii. Locate the bike parking in no-parking zones near intersections and crosswalks.



E. PEDESTRIAN ZONE

1. Streets and Driveways

a) All new development shall provide a minimum of one pedestrian and one bicycle connection to the existing City network as a part of the project.

b) Private streets and driveways shall be coordinated and connected to the public street system and provide a continuous pedestrian path.

2. Passage during Construction

a) Any construction project shall provide a temporary sidewalk that affords a safe and convenient passage or clearly directs users to an equivalent nearby detour. The temporary sidewalk shall provide:

i. A clear path, free of obstruction, a minimum of 5 feet in width.

ii. A durable walking surface capable of supporting all imposed loads and in no case shall the design live loads be less than 150 pounds per square foot.

iii. Mirrors at all blind corners.

iv. Exception: Where a 5 foot clearance is not possible, the sidewalk, or pathway shall be kept open to the extent required by the Department of Transportation as well as comply with applicable provisions of the ADA Accessibility Guidelines for Buildings and Facilities and/or the ADA Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way, as applicable.

b) Sidewalk sheds shall be installed and maintained to protect all sidewalks, walkways, and pathways within the property line of a site, and all public sidewalks that abut the property as follows:

i. Below a scaffold, mast climber or chute.

ii. When a structure or facade higher than 40 feet is to be constructed, altered, maintained, or repaired.

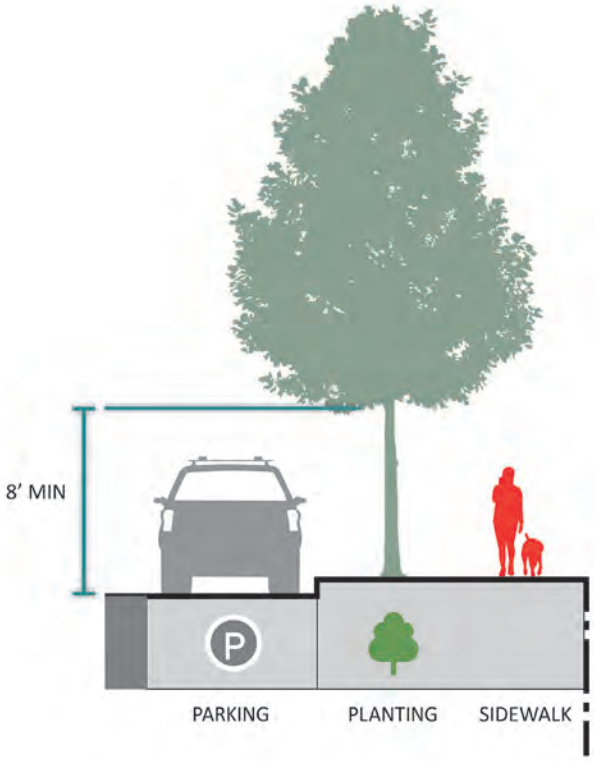
iii. When a structure higher than 25 feet is to be demolished.

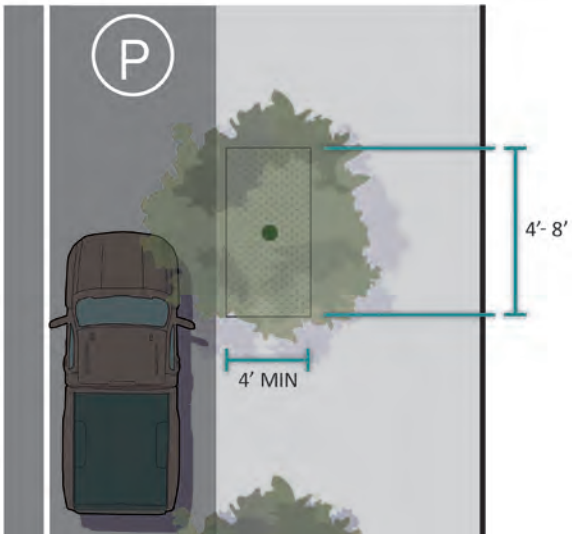
iv. The decking of the sidewalk shed shall extend the full length of the area plus an additional 5 feet beyond the length. The decking must extend the full width of the protected sidewalk, walkway or pathway.

3. Street Trees

a) All development projects shall provide street trees to establish a shaded environment and give character to the street. Street trees shall conform to the following conditions:

i. The number of trees required for each public street, private street and private drive frontage shall be calculated at the average rate of one canopy tree for every 30 feet of frontage. Tree spacing will depend upon a number of key factors and should be tailored to the chosen species, standard (or desired) tree pit size, fixed property lines, setback from curb, and integration with utilities, street lights and other furniture with consideration to impacts to sight distance.





ii. The City's Urban Forestry Management Plan shall be consulted for any tree work and removal based on their Urban Forestry Manual Policy and guidelines when designating species for a new City street.

iii. 3 inches of organic mulch shall be placed in the tree well but mulch should be kept clear of the root crown to avoid root rot.

iv. The tree well shall be 4 feet x 4 feet at a minimum and where feasible should be extended to 4 feet x 6 feet or even 4 feet x 8 feet.

v. A root barrier shall be installed in all improved right-of-way plantings.

vi. Root barrier products shall be installed along all hardscapes and installed as per the manufacturer's instructions.

vii. Root barriers shall be a minimum of 24 inches deep.

viii. The top of the root barrier shall be ½ inch above the finished soil grade or level with the sidewalk, whichever is lower, when installation is complete.

ix. All new tree plantings in the right-of-way shall include a deep root irrigation system.

x. Refer to the Public Works Landscape Specifications and Guidelines document for additional requirements and procedures.

xi. When trees are adjacent to a bikeway, ensure branches do not impede bicyclists; branches that overhang the bikeway or street should hang no lower than 8 feet above bikeway or street surface.

4. Landscaped Parkway Areas

a) Landscaped areas within the sidewalk area are governed by the Public Works Landscape Specifications and Guidelines document. In low-density areas with landscaped parkway areas the following shall also apply where appropriate and as approved in project specific water quality management plan:

i. Plant materials shall be drought tolerant or drought resistant.

ii. Low growing, turf-substitute groundcover plants are preferred.

iii. Plant materials must be lower than 24 inches in height at full maturity.

iv. Plant materials must not be noxious or invasive.

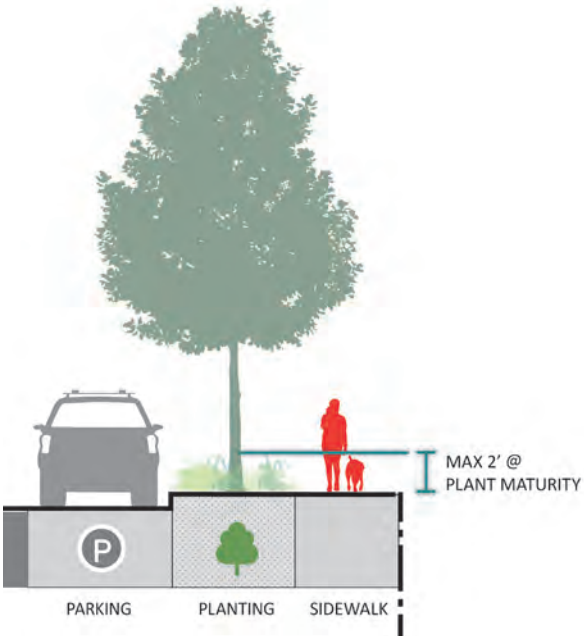
v. Plant materials should not have exposed, rigid spines or thorns.

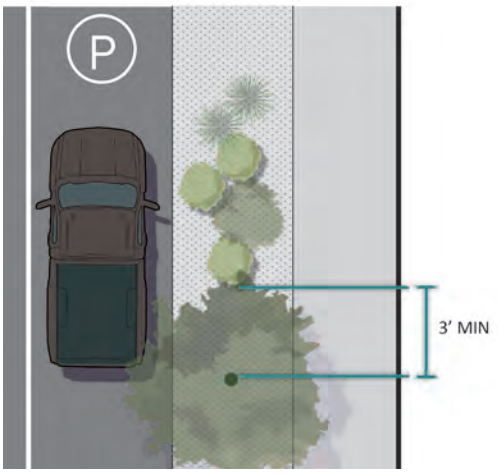
vi. 3 inches of an organic mulch should be applied to any exposed dirt areas within the parkway. Mulch should be pulled several inches away from the root crown to avoid root rot.

vii. Where suitable, provide an appropriate inlet to capture runoff and distribute stormwater to support bioretention performance. This may be a curb cut or depression, or a catch basin that circulates water through connected tree boxes using capillary action.

viii. The property owner shall be responsible for the installation and maintenance of all abutting landscaped parkway improvements.

ix. In cases where parkway improvements are deemed a nuisance or safety hazard to the public, the City reserves the right to remove any offending landscape materials and to restore the parkway area using City forces.





5. Setback Area

a) Development projects shall provide for a minimum 5-foot landscaped parkway and minimum 5-foot non-contiguous sidewalk for very low density to low density residential land use per the General Plan 2025.

b) For land uses with a 0-foot setback requirement, to the greatest extent possible a 10-foot sidewalk should be provided.

c) Development projects shall provide for a minimum 5-foot landscaped parkway and minimum 5-foot non-contiguous sidewalk for medium density residential, medium high density residential, high density residential, very high density residential land uses per the General Plan 2025.

d) Any development project seeking to increase the front yard setback beyond the required setback distance shall:

   i. Designate the additional area as a pedestrian amenity such as a plaza or public seating area.

   ii. The width of the increased setback area shall not exceed 30% of the width of the project's total public or private street frontage where deemed appropriate by the City.

6. Bus Boarding Areas

a) All new development projects of a minimum of 25 units or 25,000 square feet and located within one half mile of a transit stop shall coordinate with the Riverside Transit Agency (RTA) to install and/or upgrade one bus stop to include:

   i. Install an 11 foot wide concrete pad in travel lane at bus stop to support weight of buses and reduce wear and tear on pavement.

   ii. Provide a minimum of 10 feet of sidewalk/platform clear zone for loading onto transit vehicles.

   iii. Install pedestrian scaled, LED lighting at selected bus boarding area(s) per RTA standards.

   iv. Integrate lighting into bus shelters, existing street poles, and canopy columns to avoid clutter within sidewalk area per RTA standards.

   v. Provide seating per RTA standards.

b) Design of the bus boarding area shall include:

   i. A clear path from the boarding area to the required 5 foot x 8 foot ADA pad at the bus door entrance.

   ii. Tactile cues/elements at bus stop pole and bus boarding locations.

   iii. Low maintenance color selections and quick dry materials.

   iv. Seating with intermediate armrests to serve disabled passengers and discourage non-transit related uses.

   v. Folding seats and lean bars in lieu of seating with armrests when space is limited.

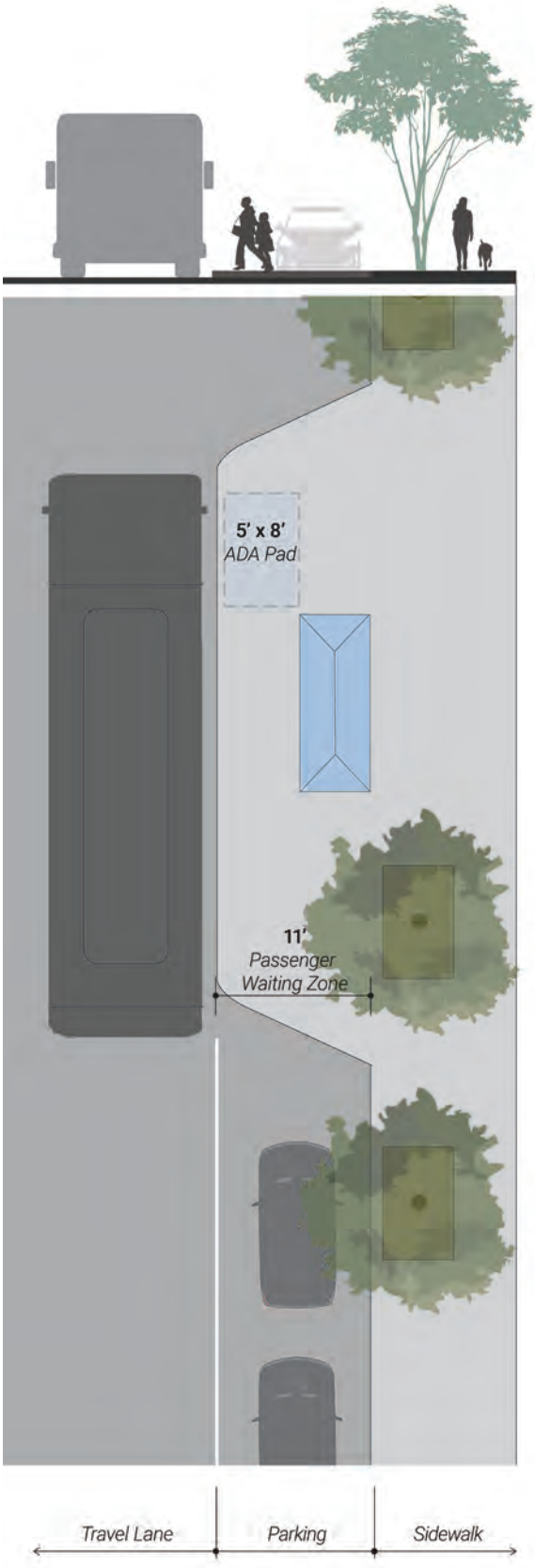
c) Design of the seating shall include shelter and shade:

   i. Shelters shall be placed at the left or right edge of the walkway - and a clear path of travel shall be maintained in the public ROW.

   ii. Maintain an ADA clear zone within sheltered seating area.

d) Provide trash and recycling receptacles per RTA standards to keep the transit area clean.

e) Bolt down receptacles to avoid removal. If possible, avoid placing bins in direct sunlight to minimize odors.



F. PEDESTRIAN SAFEGUARDING

a) Street furnishings shall be placed within the furnishing zone. Street furnishings such as bollards, boulders, light poles, benches, and public art can act as pedestrian safeguarding elements

   i. The location of fixed objects, such as utility poles, light fixtures, and other street furniture should not impinge on or restrict the adjacent walkway and shall maintain a minimum 5 foot clear path of pedestrian travel.

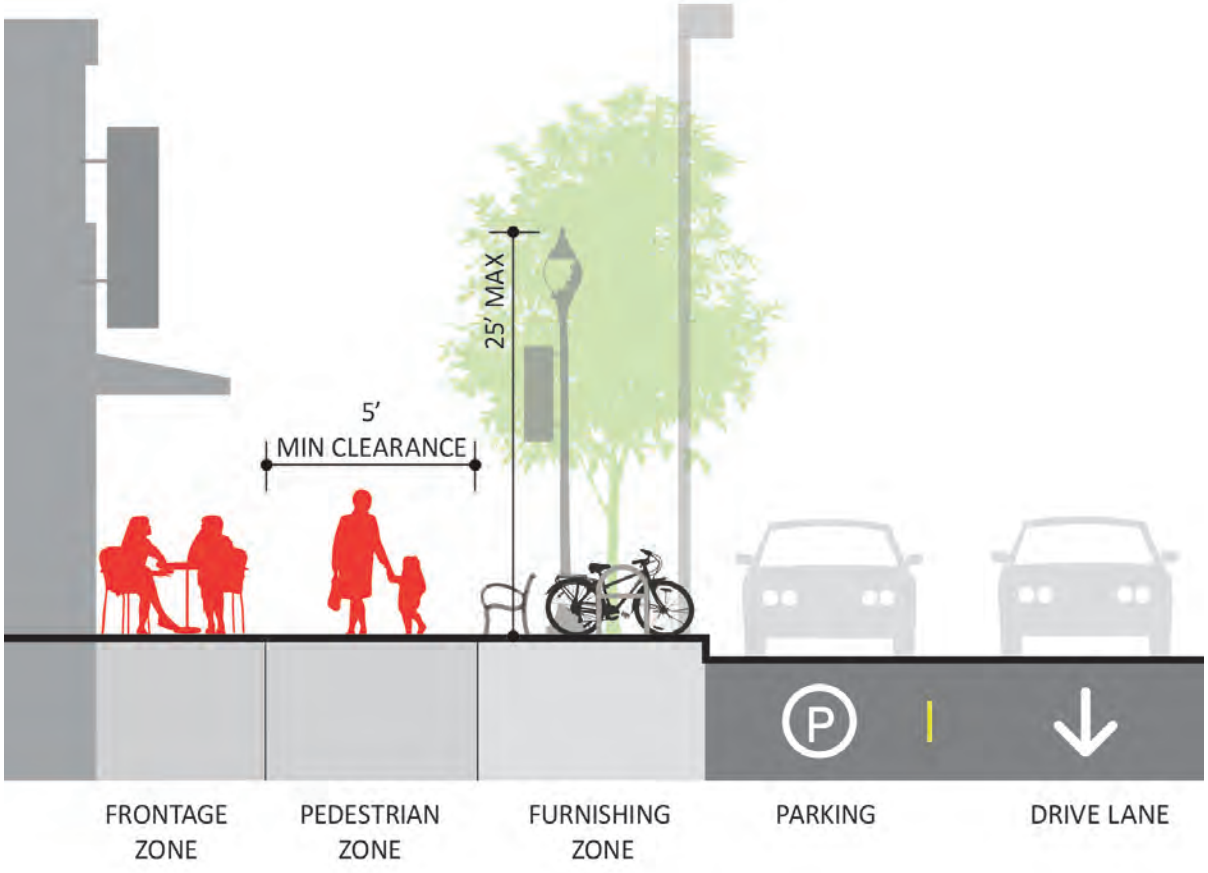
   ii. Walkways or pedestrian zones must be clear of fixed objects in coordination with ADA accessibility guidelines.

   iii. Install pedestrian-scale lighting (typically lamps less than 25 feet high), with an average illumination level of 10 Lux (1.0 FC) to increase comfort and safety in the furnishing zone adjacent to the pedestrian zone. The uniformity ratio should be designed for 3:1.

b) Street furnishings along streets should serve as deterrents to accidental vehicle intrusions to sidewalks.

   i. Streets furnishings including light standards, seating, waste receptacles, and wayfinding signage should act as pedestrian safeguarding elements. These street furnishings shall be placed a maximum of 4 feet on center.

   ii. Street furnishings should be clustered to conserve space. The objective is to create a rhythm of spacing to avoid any gaps larger than 4 feet.



1. Public Space Standards

a) All new projects that include a public space such as a plaza or park in excess of 2,500 square feet or 200 linear feet abutting a public right-of-way shall include pedestrian safeguarding design.

   i. There shall be no more than 4 feet of space between any of the street furnishing elements

   ii. Project shall incorporate two layers of linear street furnishings in linear alignments along the public space adjacent to roadways.

   iii. No pedestrian safeguarding element shall be less than 33 inches in height.

   iv. With the exception of light poles, no pedestrian safeguarding element shall exceed 40 inches in height.

b) Projects with a 0 foot lot line setback may provide required short-term bike parking within the sidewalk area in front of the project as long as a permit has been obtained from the Public Works Director/ Department.

   i. The rack element should keep the bike upright, supporting the frame in two places and allowing one or both wheels to be secured.

   ii. Install racks with sufficient space between adjacent parked bicycles to enable easy locking of bicycles.

   iii. Empty racks should not pose a tripping hazard for visually impaired pedestrians. Position racks out of the walkway's clear zone.

c) Consider opportunities to include seating and/or art elements within the sidewalk area. Projects seeking to include such amenities shall utilize the Public Works Encroachment Process. Information regarding the process can be found at: https://riversideca.gov/PWSurvey/forms/EncroachmentPermit.pdf

2. Security Zones

a) Curb Lane (or Furnishing Zone): The curb lane is the portion of the right-of-way between the sidewalk and the curb.

   i. Streetscape security components should be placed at least 2 feet from the edge of the curb to allow for the opening of car doors and to facilitate passenger vehicle pick-ups and drop-offs.

   ii. Protect street trees. Before a final design solution can be implemented, a survey will be required to determine the location of underground structures and utilities, and an evaluation will be conducted to determine the impact of nearby trees and root systems. The type of structural system must be carefully considered and alternative structural systems and installation techniques investigated, such as core drilling for pile footing, when determining the final design and location of the security components. Care must be taken to protect existing trees for both aesthetic and security reasons.

   iii. Locate security elements at curb with consideration to health of street trees. If damage occurs to existing street trees, new street trees are recommended throughout.

b) Sidewalk: The sidewalk zone is located between the building or site and the curb or parking lane. In this context, the sidewalk serves as the common space for

pedestrian interaction, movement, and activity. It is therefore important to allow for and to promote active public use of the sidewalk.

i. To the greatest extent possible, sidewalks should be left open and accessible to pedestrian movement. Generally, streetscape security elements should be excluded from this zone.

ii. Use bollards, planters, or bench furnishings to secure intersections and access to building pedestrian entrances.

iii. Use careful consideration to allow free and easy pedestrian movement, including handicap and wheelchair access to the sidewalk and building entrances.

iv. Ensure the design accommodates emergency vehicles and maintenance equipment such as utility trucks and motorized cleaners, and allows easy access to bus stops.

3. Streetscape Security Elements

a) Considerations

i. Incorporate site perimeter security seamlessly into a well-designed and aesthetically pleasing streetscape. A broad palette of security elements, to arrange and incorporate, allows for more flexibility in the design solution for perimeter security.

ii. Some of the street furnishings may require "hardening" to ensure they function as both amenities and as structural barriers. See the Riverside PACT Pedestrian Target Safeguarding document for additional information.

iii. Proposed security elements should meet the City standards of any required engineering or testing to ensure they satisfy security requirements.

iv. Locate underground systems. Some security elements may require substantial below-grade structural systems that will compete with the location of underground structures, utilities, and tree roots. In some cases, the feasibility of installing streetscape components for security will be affected by these underground conditions and will significantly influence the location of the security elements, and the cost of installation.

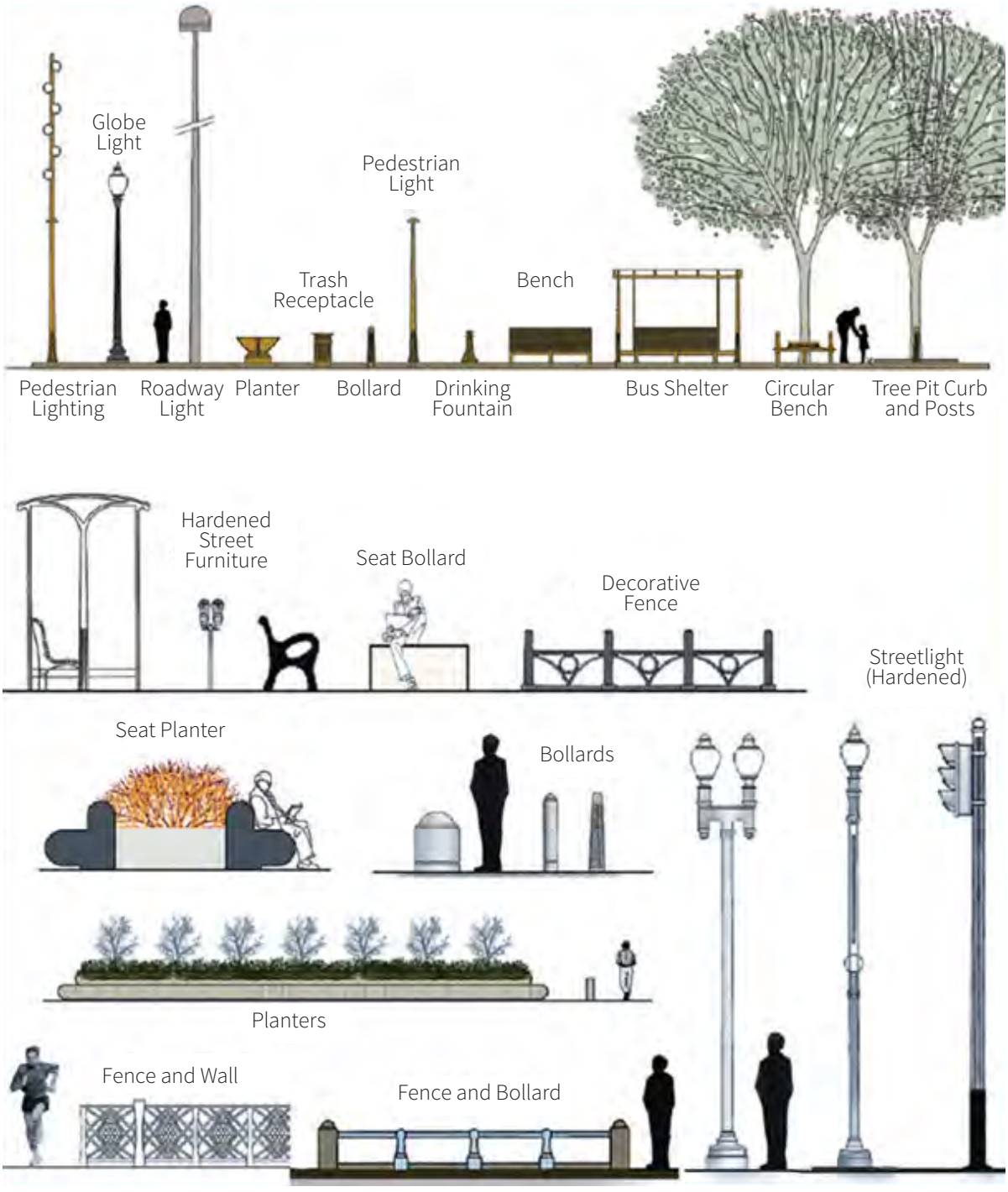
v. Implement traffic calming measures deemed appropriate by Public Works Department to reduce vehicular travel speeds along corridors adjacent to sites identified as vulnerable.

vi. Secured vehicle entrances require removable or retractable bollards, gates, or plate barriers. These elements must be able to accommodate highly repetitive usage.

vii. Monotonous repetition of a single element should be avoided. When a continuous line of bollards approaches 50 feet, they should be interspersed with other streetscape elements, such as hardened benches, planters or trees.

viii. Landscape materials can soften and naturalize the appearance of many types of constructed barriers, improving appearance and compatibility with the surrounding streetscape.

b) Street furniture (includes hardened benches, waste receptacles, etc).



Streetscape elements suitable for hardening as security elements. See the Riverside PACT Pedestrian Target Safeguarding document for additional information.

c) Benches

   i. Dimensions (2 feet 6 inches high, 2 feet wide, 7 feet long). Bench is sized specifically for pedestrian safeguarding.

d) Bollards

   i. Recommended at entries and corners to maintain the free movement of pedestrians. A bollard is a vehicle barrier consisting of a cylinder, usually made of steel and filled with concrete placed on end in a deep concrete footing in the ground to prevent vehicles from passing, but allowing the entrance of pedestrians and bicycles.

   ii. Use removable bollards (and/or gate arms) for emergency vehicle and service entrances.

   iii. A typical fixed anti-ram bollard consists of a ½-inch thick steel pipe, 8 inches in diameter projecting about 30 inches above grade and buried about 48 inches in a continuous strip foundation.

   iv. In no case shall bollards exceed a height of 38 inches.

   v. Note: Commonly used decorative bollards without deep foundations do not have anti-ram capacity, though they may provide some deterrence value by making the building look more protected than it is.

e) Seat bollards provide additional outdoor seating options which can include a bench with reinforced hidden bollards or a larger concrete bollard that serves as a seating surface.

f) Retractable Bollard (3 feet high, 8 inches in diameter, at 42 inches clearance between bollards).

g) Bollard system guidelines are:

   i. Space between 36 and 48 inches depending on the kind of traffic expected with consideration to the needs of pedestrians, persons with strollers, wheelchair users, and the elderly.

   ii. In long barrier systems, the bollards should be interspersed with other streetscape elements such as hardened benches, light poles, or decorative planters.

   iii. Keep clear of ADA access ramps and the corner quadrants at intersections.

   iv. Arrange in a linear fashion in which the center of the bollards is parallel to the center line of existing streets.

   v. If underground utilities make the installation of conventional bollard foundations too difficult, a possible solution is to use bollards with a wide shallow base and a system of beams below the pavement to provide resistance against overturning.

h) Gate Arms (as per manufacturer's specification).

i) Fences and Walls

   i. Decorative metal fence: (minimum 2 feet 6 inches high, length may vary).

   ii. Fence and Wall (see page 7-36).

   iii. Fence and bollard: Can be engineered as an anti-ram system. A typical solution is to use cable restraints to stop the vehicle: these can be placed at bumper height within the fence, hidden in planting. The cable needs to be held in place using bollards and anchored to the ground at the ends.

   iv. Plinth Wall (Low retaining wall): Dimensions: (minimum 2 feet 3 inches high, 2 feet wide, length may vary).

j) Planters
   i. Well-designed planters can form an effective vehicle barrier. Engineered planters need considerable reinforcing and below-grade depth to be effective and become fixed elements in the landscape design.
   ii. Rectangular planters should be no more than 2 feet wide, and circular planters should be no more than 3 feet wide. The horizontal dimension of rectangular planters should not exceed 6 feet.
   iii. Landscaping within planters should be kept below 2-1/2 feet, except when special use requirements call for increased foliage. In addition, planters should not have enough vegetation to hide a package 6 inches thick, such as a briefcase.
   iv. Planters should contain live landscaping at all times and be regularly cleaned of trash and debris.
   v. Planters should not be used in high pedestrian traffic areas as determined by City staff. In these locations, bollards or other less obtrusive objects are appropriate.
   vi. Planter design, location, and maintenance should create viable conditions for healthy plants. These include adequate water or irrigation, appropriate soil mixture, and selection of plants appropriate to be grown in planters. Seasonal characteristics and ultimate size of plant material shape the choices.

k) Pre-Cast Concrete or Stone Seat Planter
   i. Dimensions: (2 feet 6 inches high, 9 feet 6 inches wide, 24 feet long)
   ii. 42 inches between planters

l) Street Trees (as a security element)
   i. Size: minimum 8 inch caliper
   ii. Spacing: minimum 20 feet on-center, maximum 40 feet on-center
   iii. Tree enclosures are to be installed on the inside of the tree planting bed

m) Deciduous or Evergreen Plantings
   i. Size 3 foot BB, full to ground

n) Street Light Standards
   i. 40 feet on-center

o) Pedestrian Light Standards
   i. 20 feet on-center

p) Heavy Objects (boulders, art, etc.)
   i. Heavy objects, such as large sculptural objects, massive boulders, earthen berms or concrete forms with unassailable slopes, and dense planting and trees can be used in a similar way to bollards to prevent vehicles from passing, while allowing the passage of pedestrians and bicycles. To ensure that such barriers can effectively reduce the threat level, engineering design and/or evaluation is necessary.

Pedestrian Target Safeguarding streetscape elements depicted in the above images are for illustrative purposes only. The actual design and layout should be approved by an engineer to ensure safety protocols are met.

Section 7.4: Complete Street Roadway Cross Section Options

Section 7.4. Complete Street Roadway Cross Section Options

The proposed street cross-sections include recommended modifications to the roadway of the four primary arterial types that are prevalent within the City of Riverside including the 88, 100, 110, and 120 foot arterials. The proposed modifications make suggestions for potential improvements to the roadway area and do not consider any changes in the placement of the curb or the sidewalk dimension at this time.

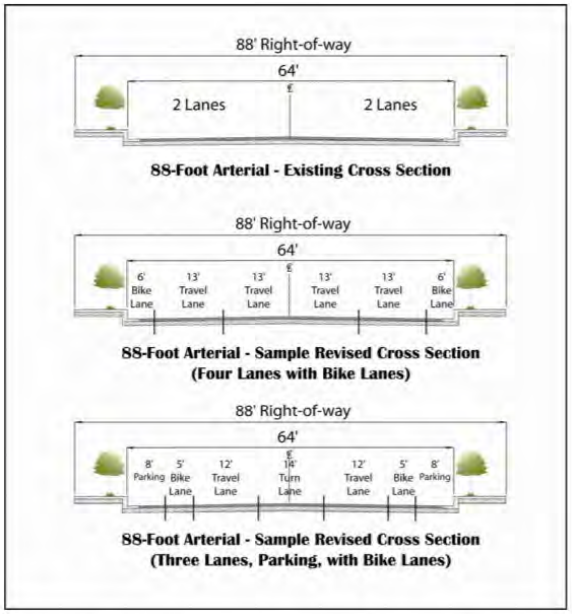
88 FOOT ARTERIAL

The 88 Foot Arterial represents a roadway with two lanes in each direction. The typical cross-section also includes a parking lane and 6 foot sidewalks (or 5 foot sidewalk if on property line). The majority of streets designated with this type are primarily found within the original City limits and includes such streets as California Avenue, Central Avenue, and portions of Riverside Avenue, Lincoln Avenue and Third Street. Each of the streets noted above are currently proposed to receive Class II Bicycle Lane as described in the City's Master Plan of Trails and Bikeways. Many of these same streets are also included on the Transit Facilities Figure CCM-5 and serve local bus lines.

Based on the variety of mobility users that frequent this type of corridor and the City's intentions to support Complete Streets design policies, the 88 foot arterial may be suitable for a modification that would shift some of the roadway space currently allocated for vehicles to provide a buffered bicycle lane.

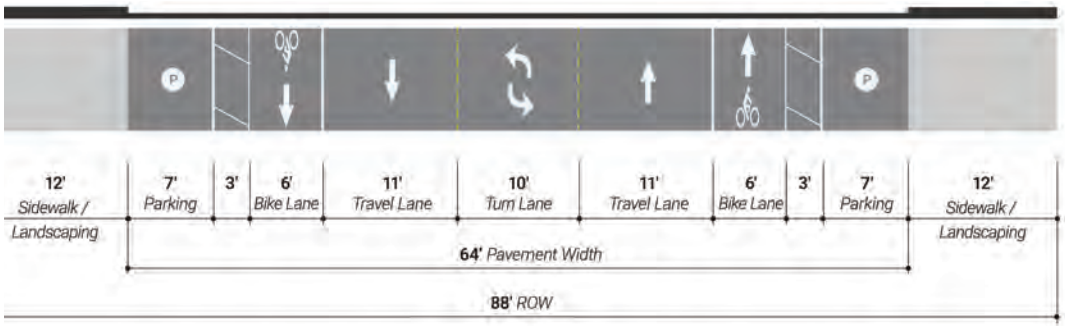
The proposed re-distribution of roadway space would reduce vehicle lanes from four to three lanes which would maintain a single lane in each direction while allowing for a continuous center turn lane. A buffered bicycle lane would typically include a 6 foot bicycle lane with a 3 foot painted buffer between the parked car. If the City desires this lane can be inverted with the parking lane to provide a protected bicycle lane.

This concept was previously explored in the City's Bicycle Plan. That plan also put forth an example that would retain the four lanes but replace the parking lane with a bicycle lane. The illustration below demonstrates the original street cross sections concepts from the Bicycle Plan. The approaches put forth here build on these ideas, but include further reductions in lane widths that have become more accepted in the years since the City's Bicycle Plan was completed.

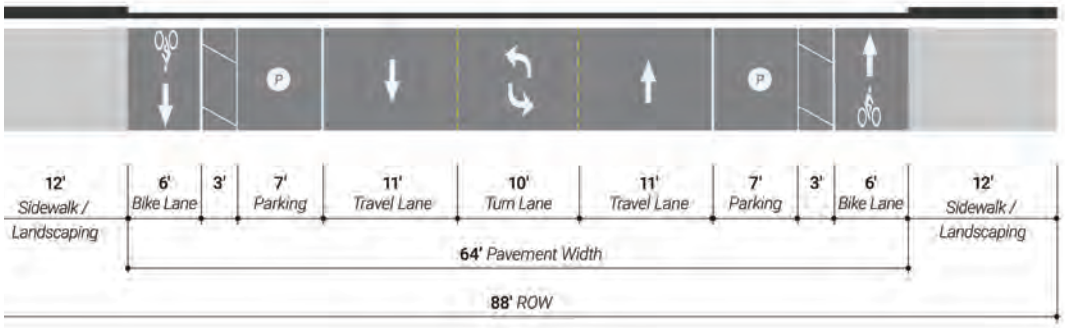


Sample Modifications to the Circulation Element Arterial Cross Section from City of Riverside Bicycle Master Plan.

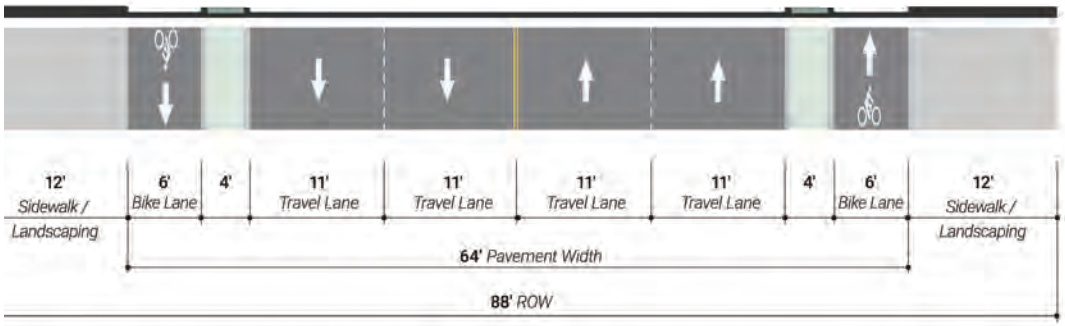
Note: Cross sections will be updated per the general plan update.



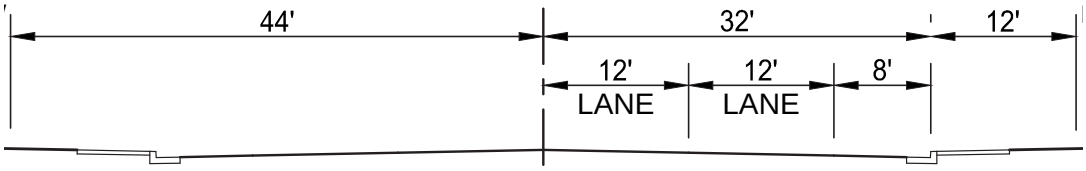
88' Arterial Lane Reduction with Bicycle Lane



88' Arterial Lane Reduction with Protected Bicycle Lane



88' Arterial with Buffered Bicycle Lane



88' Arterial - 2020 City of Riverside Std Drawings

100 FOOT ARTERIAL

The 100 Foot Arterial represents a roadway with two lanes in each direction. The typical cross-section also includes a parking lane and 10 foot sidewalks.

Within the older, more urban portions of the City this 100 Foot Arterial include streets such as University Avenue, Mission Inn Avenue, Main Street, and portions of Columbia Avenue. Select segments of these streets are also proposed to receive Class II Bicycle Lane and the proposed cross-section reflects how the bicycle lane can be accommodated within the current cross-section. In these instances the existing travel lanes can easily be narrowed from 14 feet and 12 feet to 10 foot and 11 foot lanes respectively to achieve a savings of 5 feet. By reducing the parking lane to 7 feet from 8 feet, another 1 foot can be obtained to provide a 6 foot bicycle lane.

Some portions of these streets are also included on Figure CCM-5 Transit Facilities. In locations where bus stops are present, the City could consider the addition of bus boarding pads that essentially extend the sidewalk out to meet the travel lane. This offers additional waiting area for transit riders and reduces the amount of time that a bus spends pulling into and out of traffic. It also reduces the potential conflict between a bicyclist and the bus since the bus would no longer need to cross the bicycle lane. The bicycle lane would ramp up to meet the bus pad and bicyclists would yield to transit riders when they are boarding or alighting from the bus.

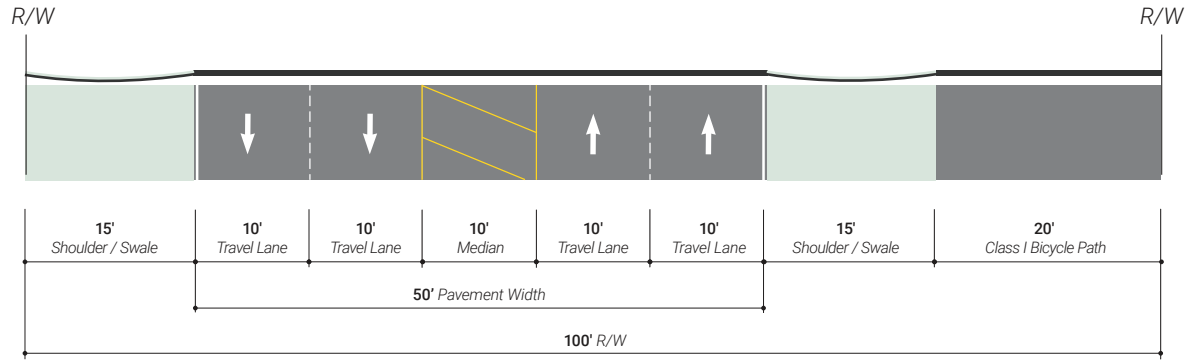
Additional opportunities to support complete streets include tree well bulb-outs that could be placed at regular intervals in the parking lane. Due to the relatively limited sidewalk dimension on this street type, the addition of tree well bulb-outs would offer increased opportunity to provide shade and habitat along these corridors increasing the overall comfort of walking or bicycling on the streets, while reducing the ambient temperature of the immediate area. Bulb-outs can also play a role in reducing vehicle speeds as they narrow the perceived roadway width.

Bicycle Path

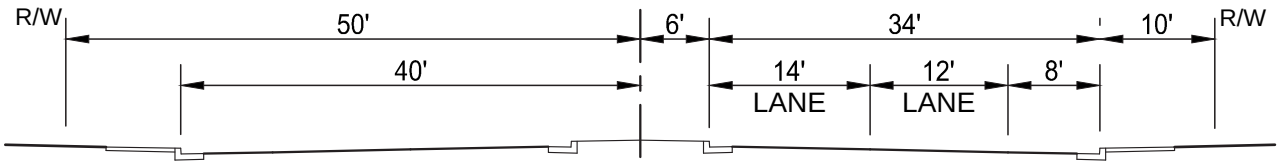
In the more rural, southern areas of the City there are some streets that have the 100 Foot Arterial street classification including Mockingbird Canyon Road, Nandina, Markham, El Sobrante and Cajaico Road. Sections of some of these streets are also included within the Riverside Country Trails system. In particular, Cajaico Road is identified for a Class I Bike Path and a couple of short sections of Markham and Nandina are listed as part of the Community Trail network.

100' Arterial with Bicycle Lane

-



100' Arterial with Class I Bicycle Path



100' Arterial - 2020 City of Riverside Std Drawings

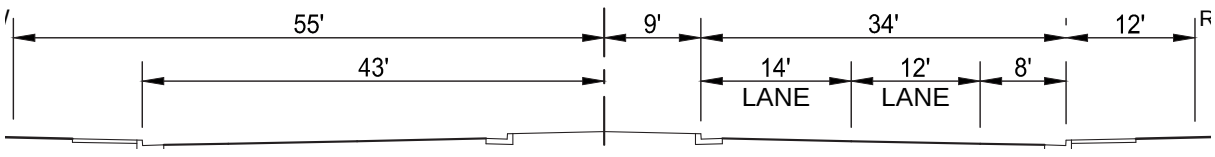
110 FOOT ARTERIAL

The 110 foot arterial represents a roadway with two lanes in each direction. The typical cross-section also includes an 18 foot median, a parking lane and 12 foot sidewalks. The majority of streets designated of this type are found within the original city limits, including Martin Luther King Boulevard (MLK), Alessandro Boulevard, Chicago Avenue and portions of Central Avenue, Tyler Street, Adams Street, and Washington Street. Most of these streets are currently proposed to receive Class II Bicycle Lane as described in the City's Master Plan of Trails and Bikeways. Several of the streets, most notably Tyler Street, Alessandro Boulevard, and MLK Boulevard, are also included on Figure CCM-5/Transit Facilities.

Based upon the City's intentions to support Complete Streets, the 110 foot arterial may be considered dependent on traffic volumes and other roadway characteristics for a modification that would shift some of the roadway space currently allocated for vehicles to provide a Class II bicycle lane. The illustration here provides an example of how the new layout would be accomplished.

In locations where bus stops are present the City could consider the addition of bus boarding pads that essentially extend the sidewalk out to meet the travel lane. This offers additional waiting area for transit riders and reduces the amount of time that a bus spends pulling into and out of traffic. It also reduces the potential conflict between a bicyclist and the bus since the bus would no longer need to cross the bicycle lane. The bicycle lane would ramp up to meet the bus pad and bicyclists would yield to transit riders when they are boarding or alighting from the bus. Additional opportunities to support complete streets can include tree well bulb-outs that could be placed at some regular intervals in the parking lane.

110' Arterial with Bicycle Lane



110' Arterial - 2020 City of Riverside Std Drawings

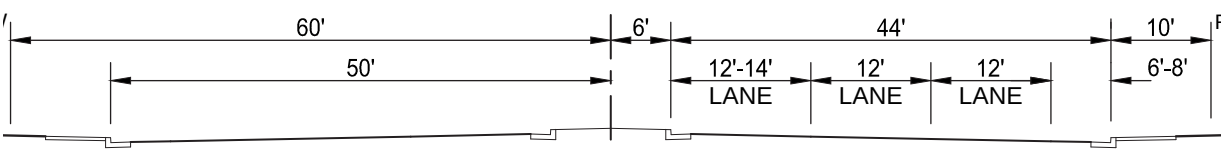
120 FOOT ARTERIAL

The 120 foot arterial represents a roadway with three lanes in each direction, a 12 foot median and a 10 foot sidewalk area. The typical cross-section also includes a curb lane that varies between 6 foot to 8 foot in width. In many instances, this curb lane has already been used to incorporate a bicycle lane.

The majority of 120' Arterial streets are representative of the City's most prominent streets including Market Street/Magnolia Avenue, Van Buren Boulevard, and Arlington Avenue/Alessandro Bouldevard. Note that some streets / portions have only 2 lanes in each direction.

As with many of the other arterial types, the existing travel lane widths on this arterial are particularly generous and therefore by slightly trimming the lane widths, the three lanes can be maintained while accommodating both a bicycle lane and a parking lane where on-street parking is needed and recommended. This is beneficial for a number of reasons. One, the introduction of a parking lane would eliminate vehicles from stopping in the bicycle lane. Secondly, the reduction in lane width may reduce travel speeds on the street, which provides for an overall safer experience for all users. Lastly, the additional distance between the vehicle lane and the sidewalk area may create a more comfortable walking area. The parking space could also be interspersed with landscaping bulb-outs that would further improve the overall design and comfort level of the street for a wide variety of users. The landscaping bulb-outs can provide for additional habitat and stormflows that could be directed into the landscape areas and therefore increase opportunities for stormwater retention where determined appropriate by the Public Works Department.

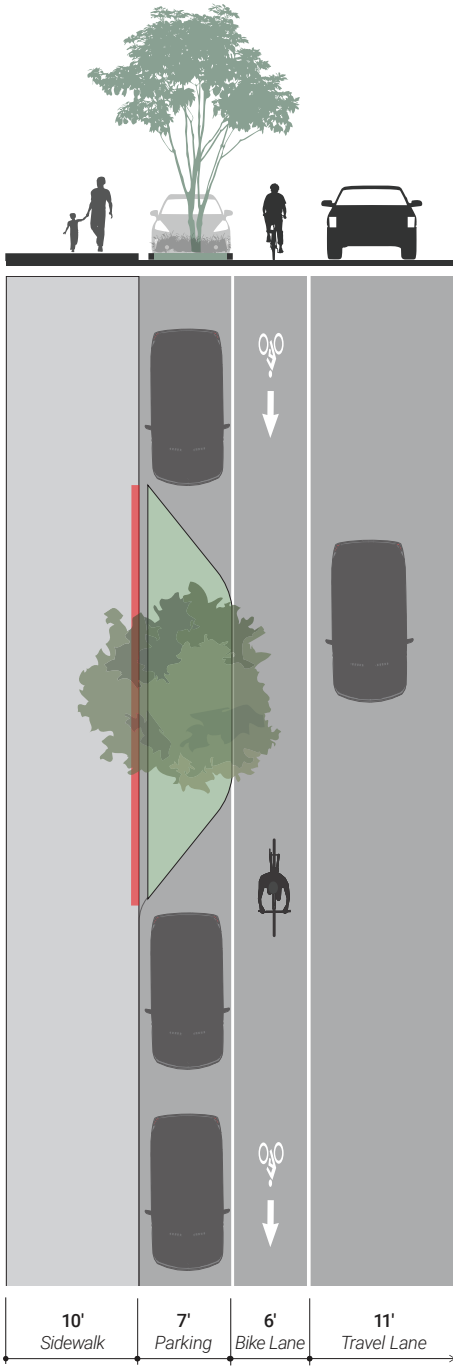
120' Arterial with Bicycle Lane



120' Arterial - 2020 City of Riverside Std Drawings

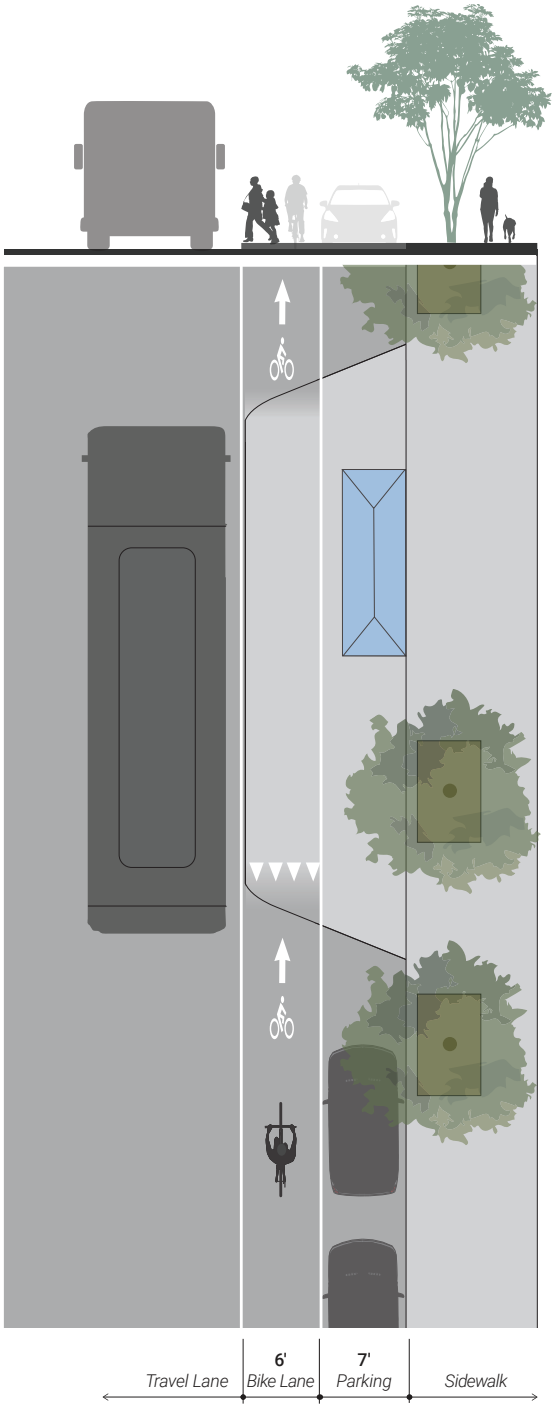
BUS PAD AND LANDSCAPE EXTENSIONS

Additional opportunities to support complete streets include tree well bulb-outs that could be placed at regular intervals in the parking lane where determined appropriate by the Public Works Department. Due to the relatively limited sidewalk dimension on this street type the addition of tree well bulb-outs would offer increased opportunity to provide shade and habitat along these corridors thereby increasing the overall comfort of walking or bicycling on the streets while also reducing the ambient temperature of the immediate area. Bulb-outs can also play a role in reducing vehicle speeds as they narrow the perceived roadway width.



Landscaping Bulb-Outs

In locations where bus stops are present the City could contemplate the addition of bus boarding pads that essentially extend the sidewalk out to meet the travel lane. This offers additional waiting area for transit riders and reduces the amount of time that a bus spends pulling into and out of traffic. It also reduces the potential conflict between a bicyclist and the bus since the bus would no longer need to cross the bicycle lane. The bicycle lane would ramp up to meet the bus pad and bicyclists would yield to transit riders when they are boarding or alighting from the bus.



Bus Pad Extension

Section 7.5:
Trails Standards

Section 7.5. Trails Standards

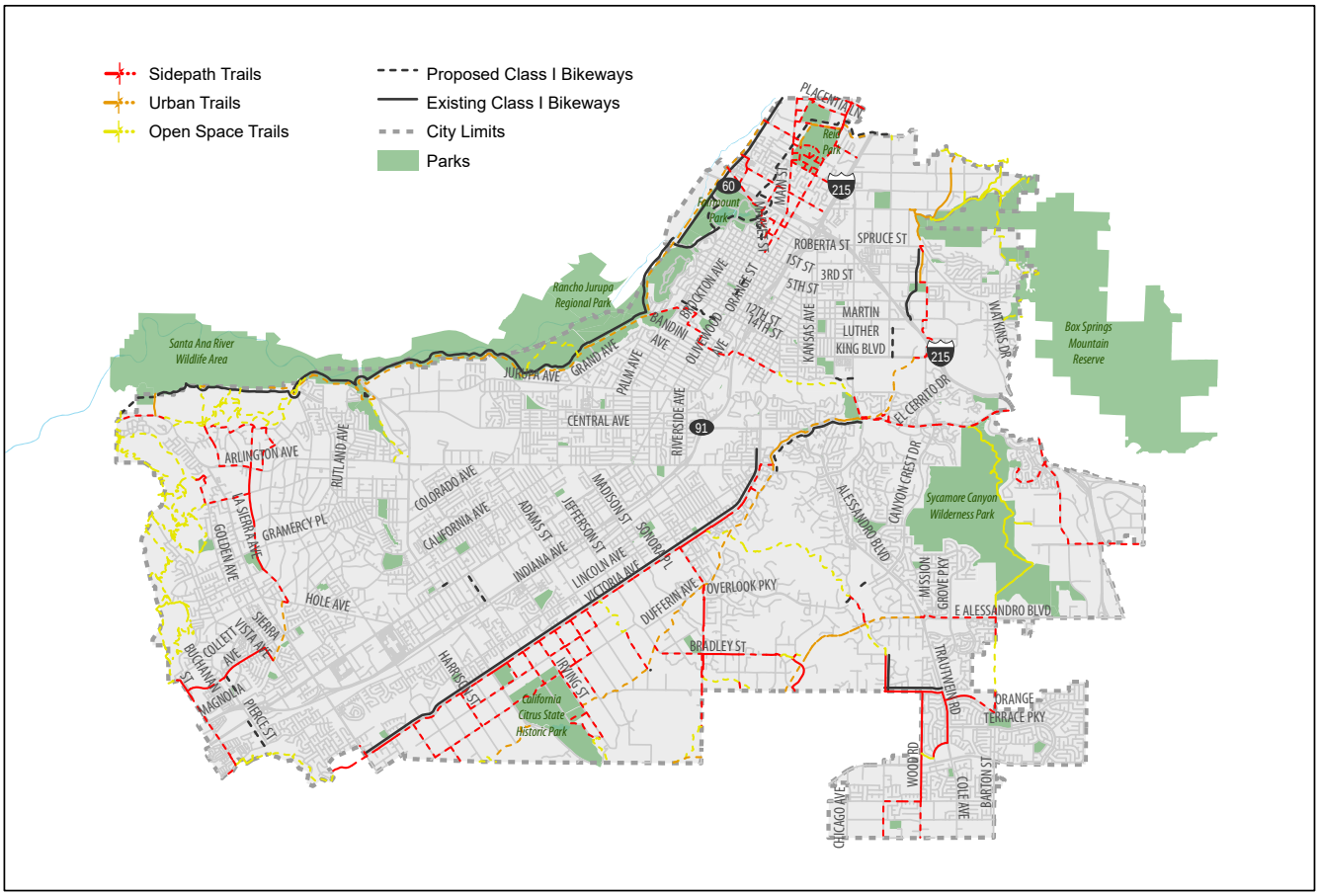
Several trails throughout the City are designated as roadway-adjacent multi-purpose trails. These generally run either parallel to or replace sidewalks on one side of the street, and are constructed from a firm, stabilized decomposed granite surface that is accessible and comfortable for equestrian use, walking, jogging, and bicycling. Design standards for these trails are on the following pages.

TRAILS

The overall location of roadway-adjacent trails are illustrated in Figure 7-1.

This section illustrates typical cross-sections of urban trail types found within the City of Riverside, as well as their relevant design guidelines related to surface material, width, slope, and other elements. These trail types include those that serve people of all ages and abilities, including pedestrians and hikers, bicyclists, and equestrians.

FIGURE 7-1 : TRAILS TYPES



TRAIL TYPES

For more information regarding trails standards, or to learn about open space and natural trail standards reference the Riverside PACT Trails Master Plan.

Design guidelines are primarily used to provide guidance to developers and to jurisdictions for new trail construction and future maintenance purposes. It is recognized that in certain situations due to physical constraints, it may not be feasible for the trails to be implemented according to the standards described. In such cases, variation from these standards may be allowed on a case-by-case basis subject to approval by the City's Parks and Recreation Commission, based upon staff review and recommendations. The Parks and Recreation Commission may choose to delegate this responsibility to a Trails Technical Advisory Committee.

Private, public, and school development shall install and maintain master planned trails within or adjacent to the proposed development, as well as connector trails within development.

For specific design details, refer to the trail grading and construction standards (Riverside PACT Trails Master Plan "Appendix 1: Trail Design Details"), which provide information needed to implement typical trails in Riverside. The City's adopted trail grading construction specifications and standard details are available on the City's website at https://riversideca.gov/park_rec/planning-projects/trails.

URBAN (TRAIL WITH CLASS I) SECTION

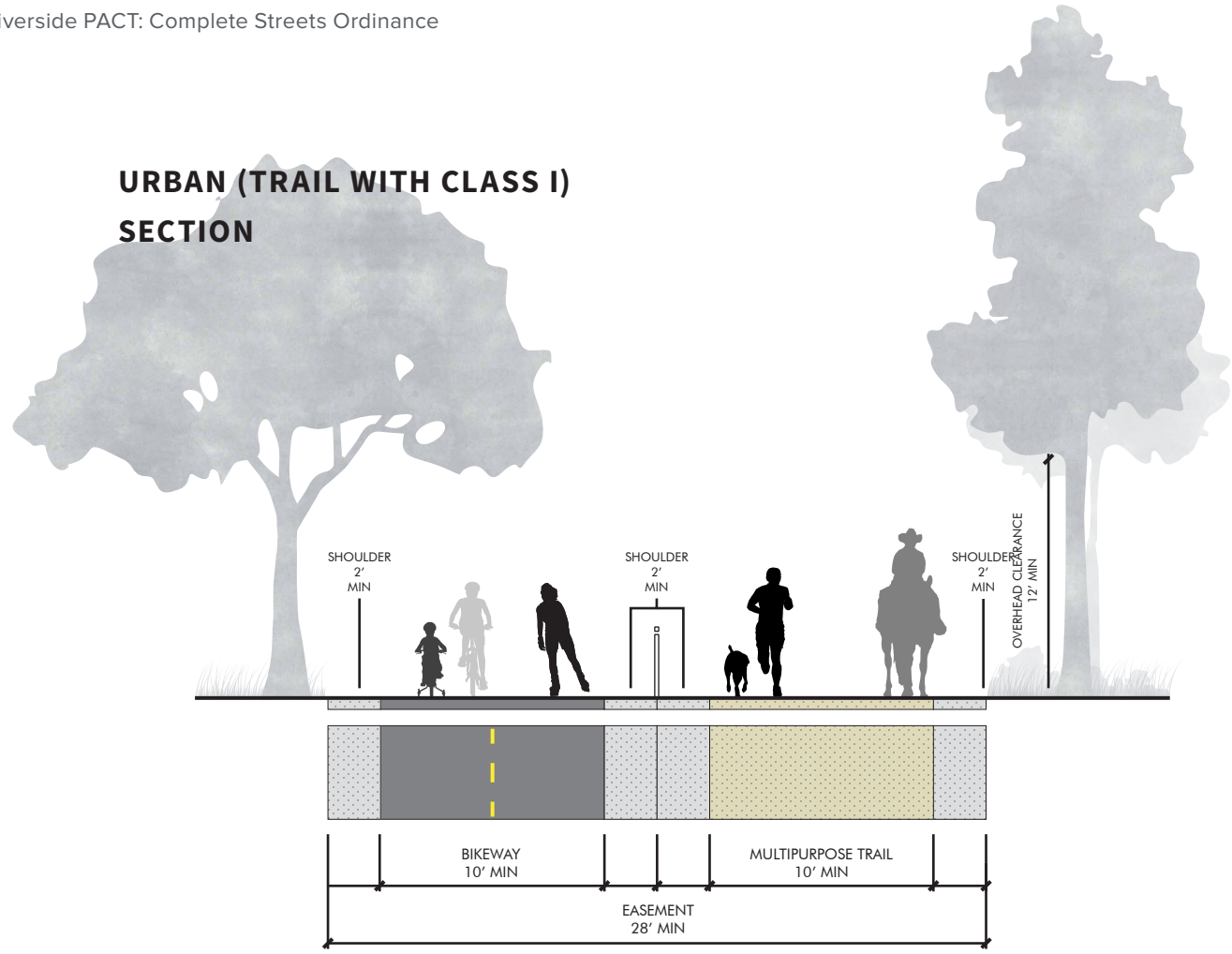


FIGURE 7-2

Minimum Overall Width: 28'; an additional 3' buffer is required between trail and roadway when roadway is present.

Bikeway Surface: Asphalt Concrete or Portland Cement/Aggregate Mixture

Bikeway Width: 10' Min.

Bikeway/Trail Separation: 2' Min. Paved or All-Weather Surface

Multipurpose Trail Surface: Stabilized Decomposed Granite

Multipurpose Trail Width: 10' Min.

Fencing: As required. See Riverside PACT Trails Master Plan.

Maximum Running Slope: 12%; Slope to match roadway where present.

Cross Slope: 2% Min., 5% Max.

Use Type: Open to all non-motorized modes.

ADA Compliance: Access to trailheads and facilities at trailheads shall be ADA compliant. Trails themselves shall be constructed for ADA compliance as site conditions allow.

SIDEPATH (SECONDARY/COLLECTOR STREET TREATMENT) SECTION

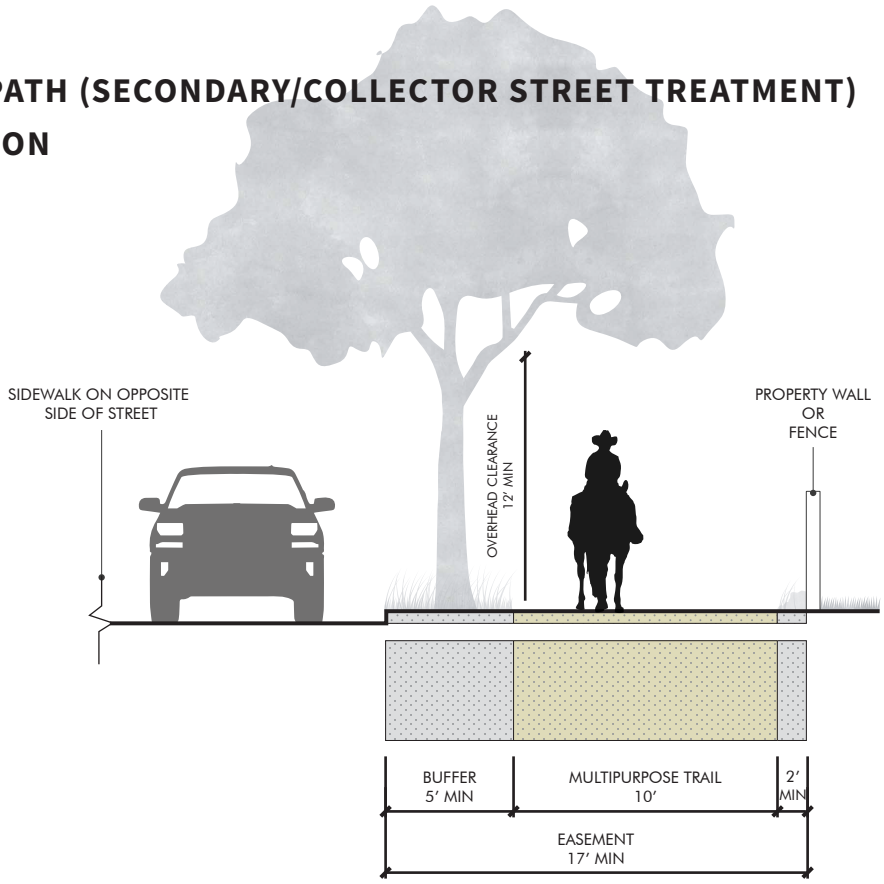


FIGURE 7-3

Minimum Overall Width: 17'

Multipurpose Trail Surface: Stabilized Decomposed Granite

Multipurpose Trail Width: 10' unless otherwise approved by City.

Property/Trail Separation: 2' flat shoulder at residential front yard fence, 3' bench when trail is at toe of manufactured slope, 4' when next to walls/ fences at the top of a manufactured slope, and 3' when next to any fence/wall over 4' in height.

Road/Trail Separation: 5' Min.; 8' Min. in Greenbelt

Fencing: As required. See fencing standards and guidelines, page 48.

Maximum Running Slope: Slope to match roadway

Cross Slope: 2% if roadway grade is < 5%, 5% Max.

Use Type: Open to all non-motorized modes. Some Segments are designated non-equestrian.

ADA Compliance: Trails shall comply with ADA-for-trails guidelines wherever possible, contingent upon existing roadway grades.

SIDEPATH (MAJOR STREET TREATMENT) SECTION

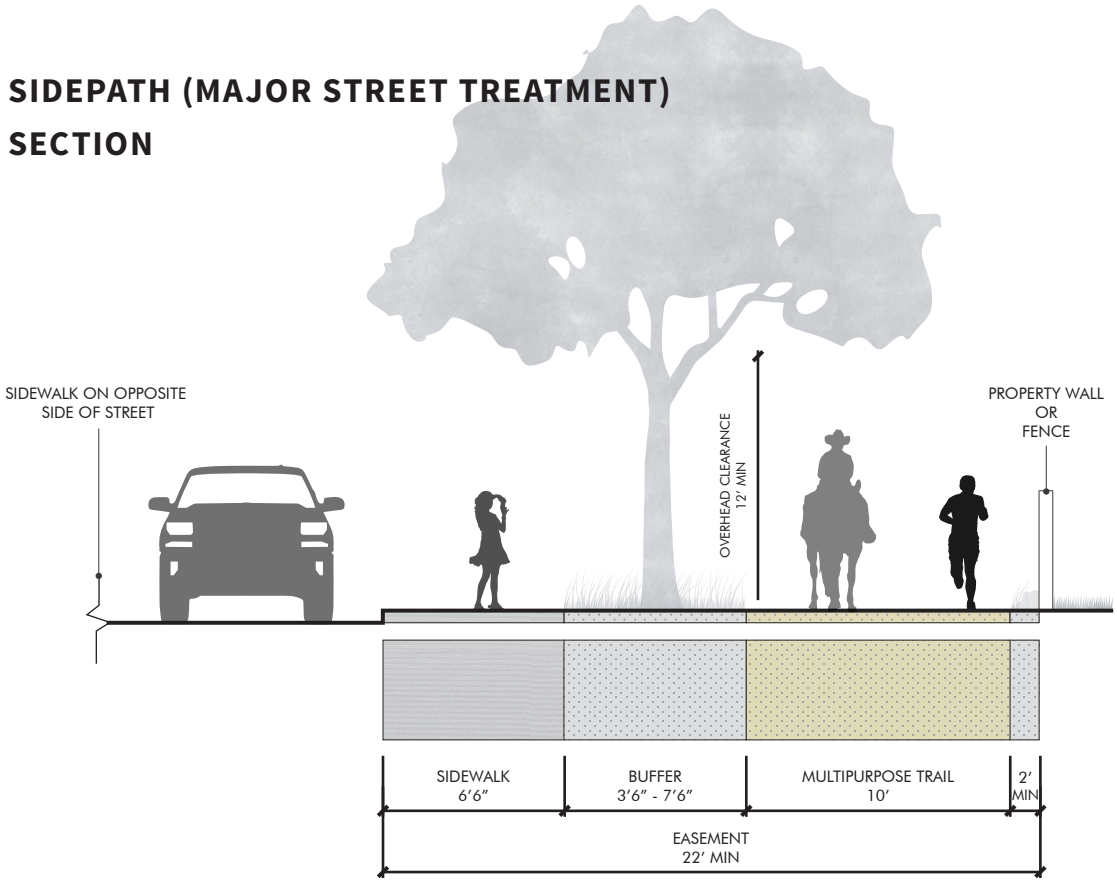


FIGURE 7-4

Minimum Overall Width: 22'

Multipurpose Trail Surface: Stabilized Decomposed Granite

Multipurpose Trail Width: 10'

Property/Trail Separation: 2' flat shoulder at residential front yard fence, 3' bench when trail is at toe of manufactured slope, 4' when next to walls/ fences at the top of a manufactured slope, and 3' when next to any fence/wall over 4' in height.

Sidewalk/Trail Separation: 3'6" - 7'6"

Sidewalk Width: 6'6"

Maximum Running Slope: Slope to match roadway

Cross Slope: 2% if roadway grade is < 5%, 5% Max.

Use Type: Open to all non-motorized modes. Some Segments are designated non-equestrian.

ADA Compliance: Trails shall comply with ADA-for-trails guidelines wherever possible, contingent upon existing roadway grades.

SIDEPATH (MINOR STREET TREATMENT) SECTION

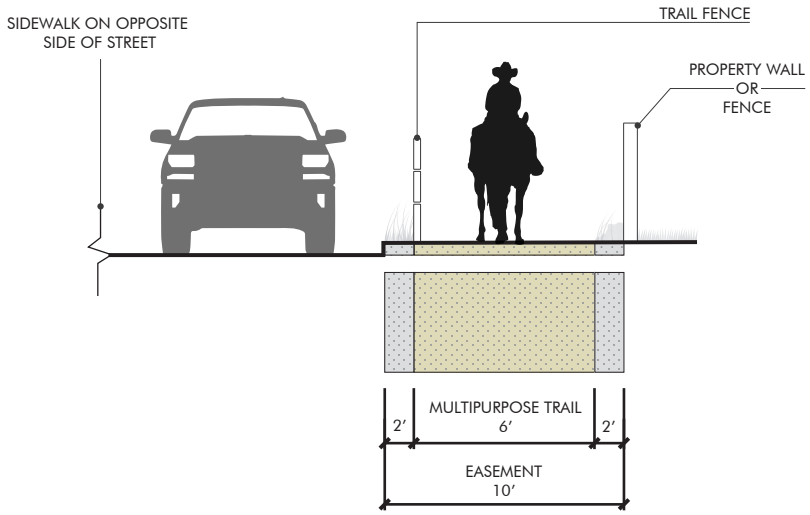


FIGURE 7-5

Minimum Overall Width: 10’

Trail Surface: Stabilized Decomposed Granite

Trail Width: 6'

Road/Trail Separation: 2'

Property/Trail Separation: 2’

Maximum Running Slope: Slope to match roadway

Cross Slope: 2% if roadway grade is < 5%, 5% Max.

Use Type: Open to all non-motorized modes. Some Segments are designated non equestrian.

ADA Compliance: Trails shall comply with ADA-for-trails guidelines wherever possible, contingent upon existing roadway grades.

Appendix A. Intersections with Collisions Involving Pedestrians

RANK	CROSS STREET 1	CROSS STREET 2	HIGHEST INJURY DEGREE	NUMBER OF COLLISIONS
1	Tyler St	Magnolia Ave	Complaint of Pain	13
2	Magnolia Ave	Tyler St	Fatal	12
3	University Ave	Iowa Ave	Complaint of Pain	10
4	Blaine St	Iowa Ave	Fatal	8
5	Tyler St	Diana Ave	Complaint of Pain	8
6	Van Buren Blvd	Philbin Ave	Fatal	8
7	Van Buren Blvd	Wood Rd	Severe Injury	7
8	La Sierra Ave	Indiana Ave	Complaint of Pain	6
9	Magnolia Ave	Adams St	Severe Injury	6
10	Riverside Ave	Merrill Ave	Complaint of Pain	6
11	University Ave	Chicago Ave	Complaint of Pain	6
12	University Ave	Orange St	Complaint of Pain	6
13	Iowa Ave	Massachusetts Ave	Complaint of Pain	5
14	Valley Springs PW	Corporate Centre Pl	Severe Injury	5
15	Central Ave	Streeter Ave	Other Visible Injury	4
16	Iowa Ave	Blaine St	Severe Injury	4
17	La Sierra Ave	Cochran Ave	Complaint of Pain	4
18	Magnolia Ave	Banbury Dr	Severe Injury	4
19	Magnolia Ave	Elizabeth St	Severe Injury	4
20	Magnolia Ave	Fifteenth St	Severe Injury	4
21	Magnolia Ave	Jurupa Ave	Complaint of Pain	4
22	Main St	Strong St	Severe Injury	4
23	University Ave	I 215 South Bound	Complaint of Pain	4
24	Van Buren Blvd	Arlington Ave	Fatal	4
25	Chicago Ave	University Ave	Complaint of Pain	3
26	I 215 Northbound Off Ramp	University Ave	Complaint of Pain	3
27	Iowa Ave	Linden St	Complaint of Pain	3
28	Jackson St	Garfield ST	Other Visible Injury	3
29	La Sierra Ave	Magnolia Ave	Complaint of Pain	3
30	La Sierra Ave	SR 91 Eastbound Off Ramp	Severe Injury	3
31	Magnolia Ave	Pierce St	Severe Injury	3
32	Main St	Russell St	Severe Injury	3
33	Martin Luther King Blvd	Canyon Crest Dr	Fatal	3
34	Sierra Vista Ave	Riverwalk	Severe Injury	3
35	Spruce St	Chicago Ave	Complaint of Pain	3
36	University Ave	Douglass Ave	Complaint of Pain	3
37	Van Buren Blvd	California Ave	Severe Injury	3
38	Van Buren Blvd	Lincoln Ave	Complaint of Pain	3
39	Alessandro Blvd	Mission Grove	Complaint of Pain	2
40	Arlington Ave	Ben Lomond Way	Complaint of Pain	2

Appendix B. Intersections with Collisions Involving Bicyclists

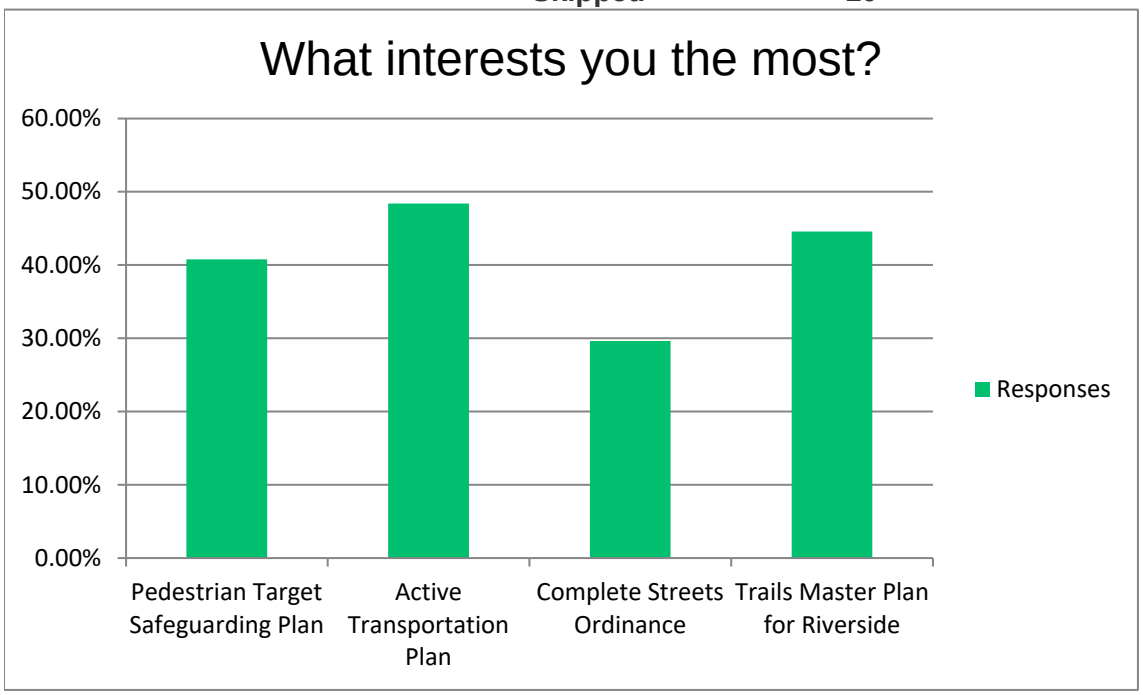
RANK	CROSS STREET 1	CROSS STREET 2	HIGHEST INJURY DEGREE	NUMBER OF COLLISIONS
1	Arlington Ave	Van Buren Blvd	Severe Injury	5
2	Van Buren Blvd	Magnolia Ave	Severe Injury	5
3	Magnolia Ave	Harrison St	Complaint of Pain	4
4	University Ave	Iowa Ave	Complaint of Pain	4
5	Alessandro Blvd	Sycamore Canyon Blvd	Other Visible Injury	3
6	Arlington Ave	Copper Lantern Dr	Complaint of Pain	3
7	Blaine St	Canyon Crest Dr	Complaint of Pain	3
8	Chicago Ave	Linden St	Complaint of Pain	3
9	Fourteenth St	Victoria Ave	Complaint of Pain	3
10	Indiana Ave	Madison St	Complaint of Pain	3
11	La Sierra Ave	Diana Ave	Complaint of Pain	3
12	La Sierra Ave	Pierce St	Complaint of Pain	3
13	Magnolia Ave	Banbury Dr	Complaint of Pain	3
14	Magnolia Ave	Jackson St	Severe Injury	3
15	Magnolia Ave	Jones Ave	Severe Injury	3
16	Main St	Strong St	Complaint of Pain	3
17	Polk St	Magnolia Ave	Other Visible Injury	3
18	Third St	Trade Center Dr	Complaint of Pain	3
19	Tyler St	Magnolia Ave	Severe Injury	3
20	University Ave	Cranford Av	Complaint of Pain	3
21	Van Buren Blvd	Cypress Ave	Complaint of Pain	3
22	Arlington Ave	Adams St	Complaint of Pain	2
23	Arlington Ave	Streeter Ave	Complaint of Pain	2
24	Blaine St	I 215 Nb off/Re	Complaint of Pain	2
25	Brockton Ave	Fourteenth St	Other Visible Injury	2
26	California Ave	Van Buren Bl	Other Visible Injury	2
27	Canyon Crest Dr	Blaine St	Complaint of Pain	2
28	Central Ave	State Hwy 91 Wb off/R	Complaint of Pain	2
29	Central Ave	Victoria Ave	Other Visible Injury	2
30	Chicago Ave	Third St	Other Visible Injury	2
31	Fairmount Blvd	Fifth St	Complaint of Pain	2
32	Harrison St	County Farm Rd	Other Visible Injury	2
33	Harrison St	Magnolia Ave	Property Damage Only	2
34	Hughes Al	Magnolia Ave	Complaint of Pain	2
35	Iowa Ave	Marlborough Ave	Severe Injury	2
36	Iowa Ave	Spruce St	Other Visible Injury	2
37	Iowa Ave	University Ave	Other Visible Injury	2
38	Kansas Ave	University Ave	Other Visible Injury	2
39	La Sierra Ave	Indiana Ave	Other Visible Injury	2
40	La Sierra Ave	Magnolia Ave	Complaint of Pain	2

Appendix C: PACT Survey Results

City of Riverside PACT Survey

What interests you the most?

Answer Choices	Responses	
Pedestrian Target Safeguarding Plan	40.76%	139
Active Transportation Plan	48.39%	165
Complete Streets Ordinance	29.62%	101
Trails Master Plan for Riverside	44.57%	152
	Answered	**341**
	Skipped	**10**



City of Riverside PACT Survey

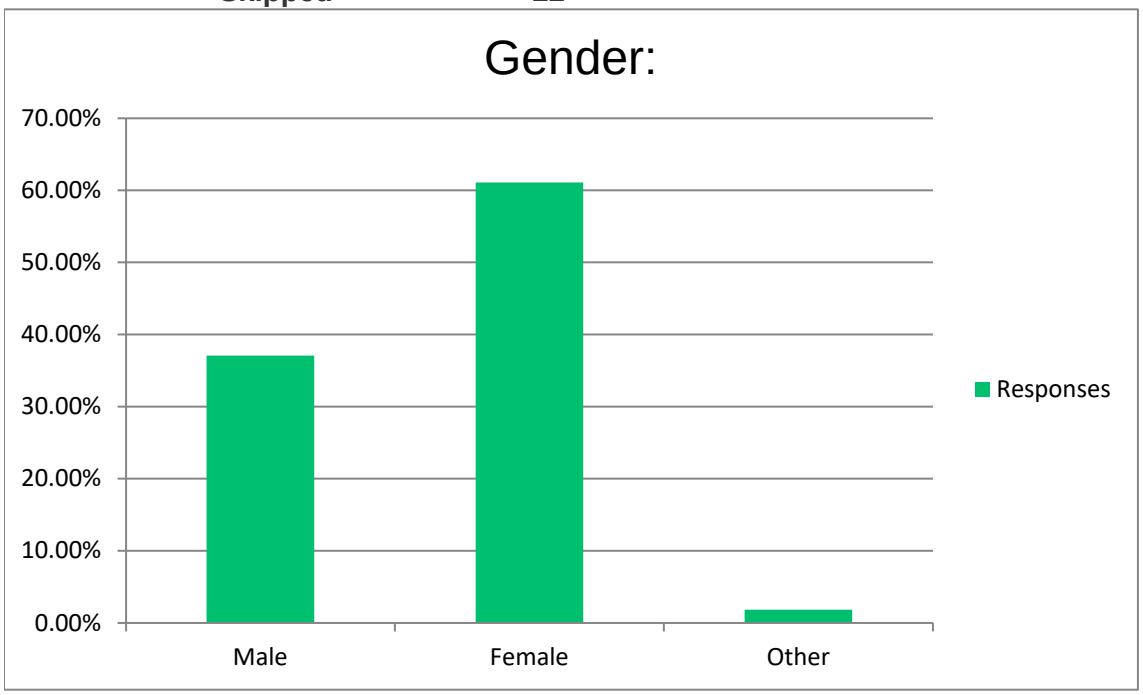
What is your address or zip code?

Answered	**325**
Skipped	**26**

City of Riverside PACT Survey

Gender:

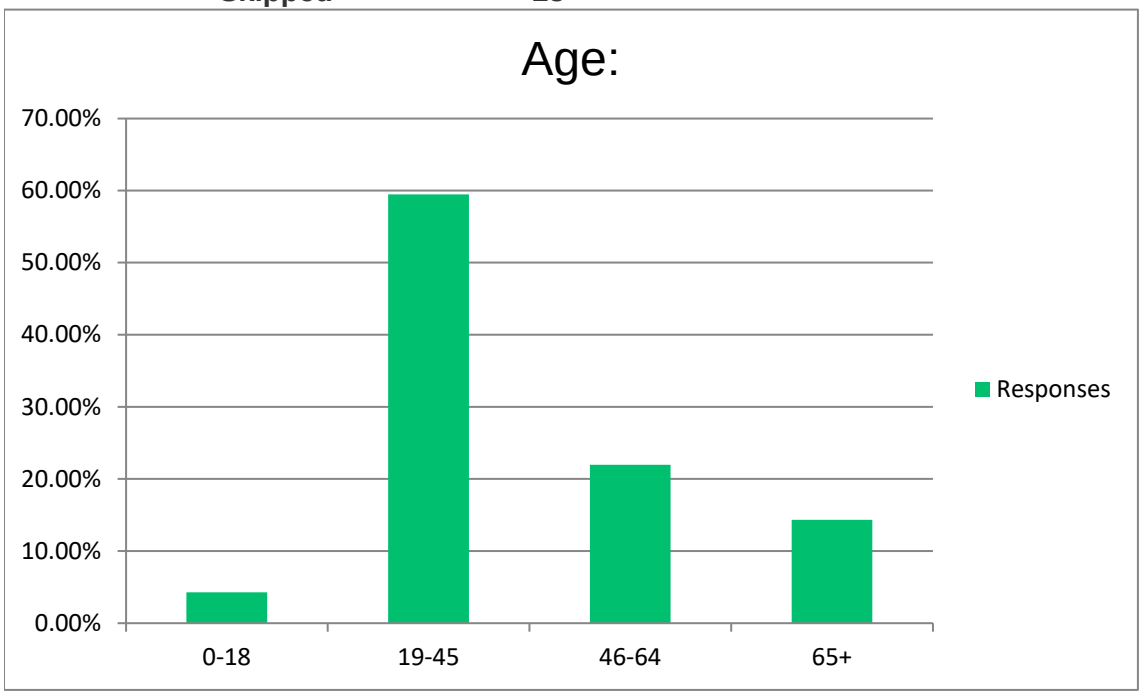
Answer Choices	Responses	
Male	37.08%	122
Female	61.09%	201
Other	1.82%	6
	Answered	**329**
	Skipped	**22**



City of Riverside PACT Survey

Age:

Answer Choices	Responses	
0-18	4.27%	14
19-45	59.45%	195
46-64	21.95%	72
65+	14.33%	47
	Answered	**328**
	Skipped	**23**



City of Riverside PACT Survey

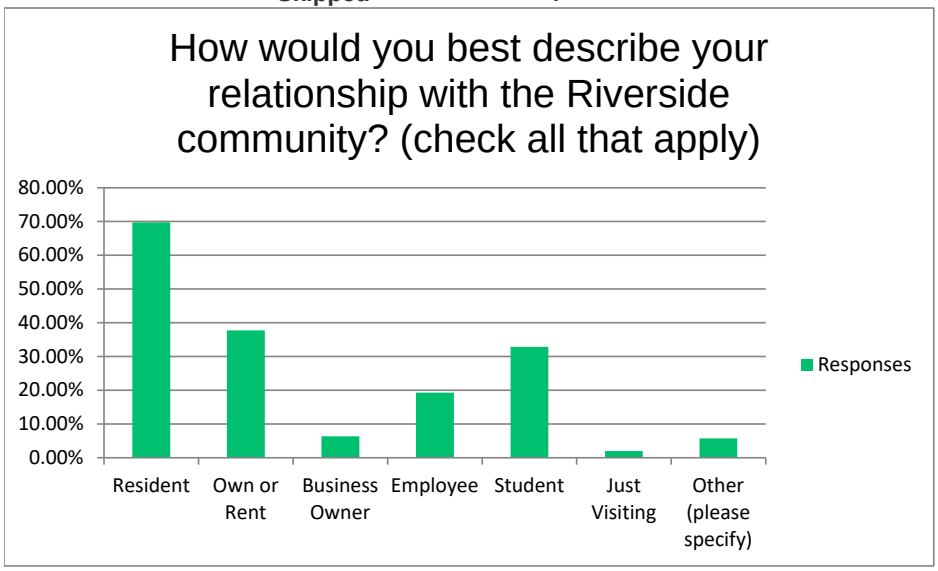
Want to stay informed about the PACT? If so, please provide your email address or phone number below.

Answer Choices	Responses	
Name:	97.28%	179
Phone:	66.85%	123
Email:	83.70%	154
	Answered	**184**
	Skipped	**167**

City of Riverside PACT Survey

How would you best describe your relationship with the Riverside community? (check all that apply)

Answer Choices	Responses	
Resident	69.74%	242
Own or Rent	37.75%	131
Business Owner	6.34%	22
Employee	19.31%	67
Student	32.85%	114
Just Visiting	2.02%	7
Other (please specify)	5.76%	20
	Answered	**347**
	Skipped	**4**



City of Riverside PACT Survey

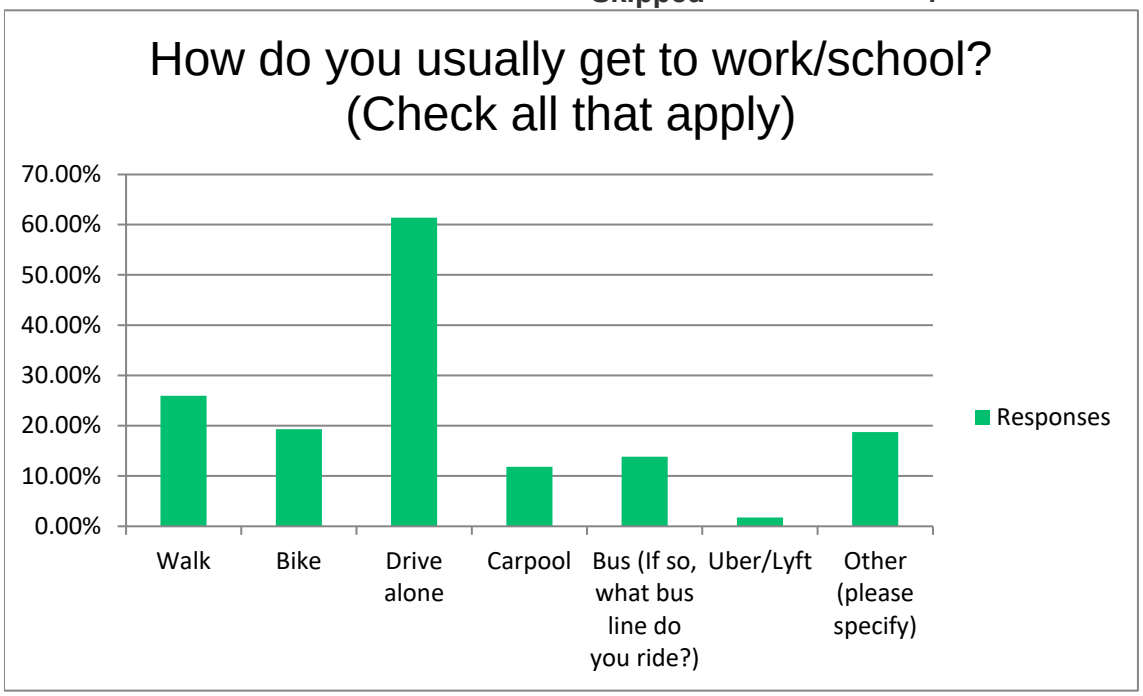
Are there any students in your household? If so, what school/university?

Answered	**306**
Skipped	**45**

City of Riverside PACT Survey

How do you usually get to work/school? (Check all that apply)

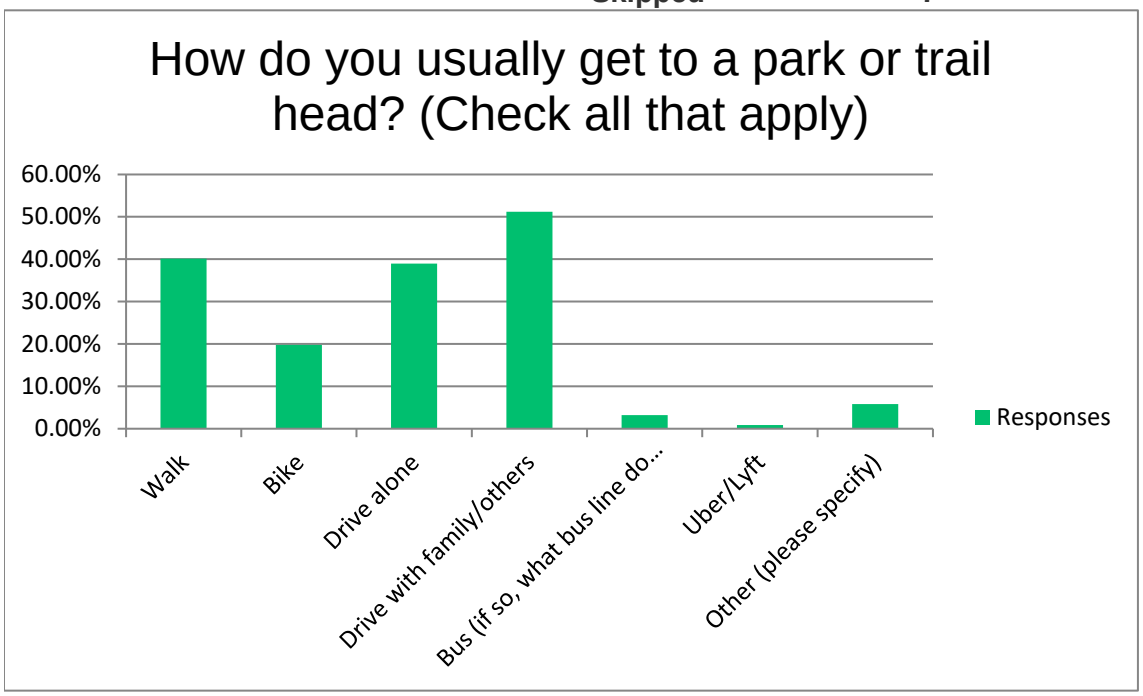
Answer Choices	Responses	
Walk	25.94%	90
Bike	19.31%	67
Drive alone	61.38%	213
Carpool	11.82%	41
Bus (If so, what bus line do you ride?)	13.83%	48
Uber/Lyft	1.73%	6
Other (please specify)	18.73%	65
	Answered	**347**
	Skipped	**4**



City of Riverside PACT Survey

How do you usually get to a park or trail head? (Check all that apply)

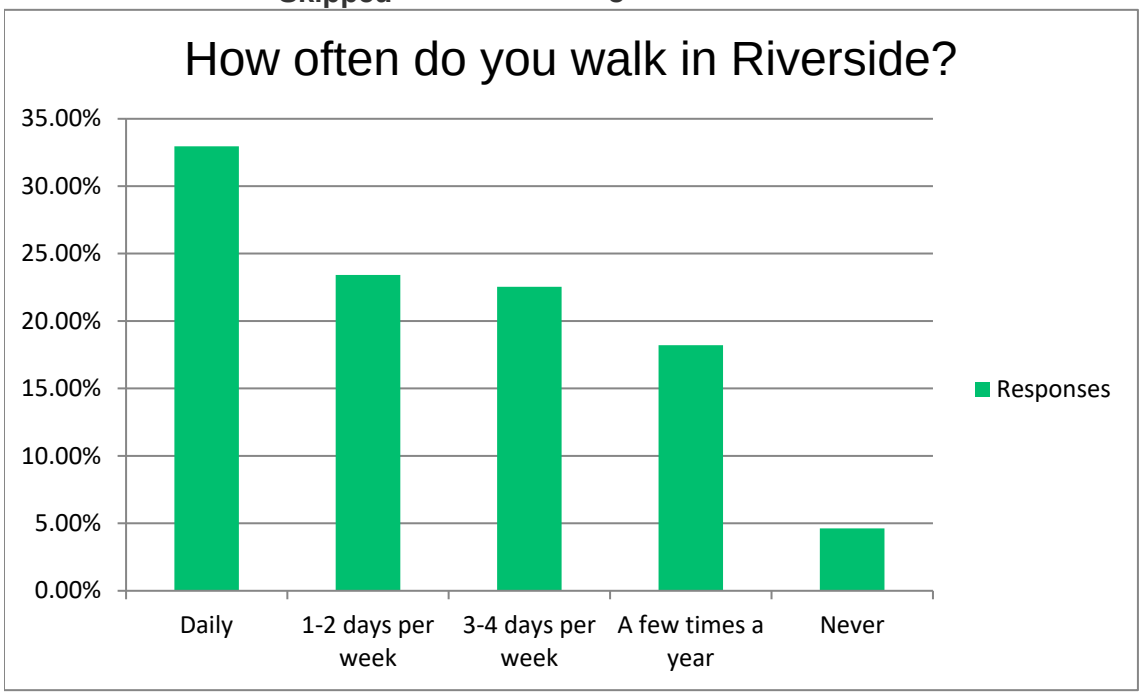
Answer Choices	Responses	
Walk	40.12%	138
Bike	19.77%	68
Drive alone	38.95%	134
Drive with family/others	51.16%	176
Bus (if so, what bus line do you ride?)	3.20%	11
Uber/Lyft	0.87%	3
Other (please specify)	5.81%	20
	Answered	**344**
	Skipped	**7**



City of Riverside PACT Survey

How often do you walk in Riverside?

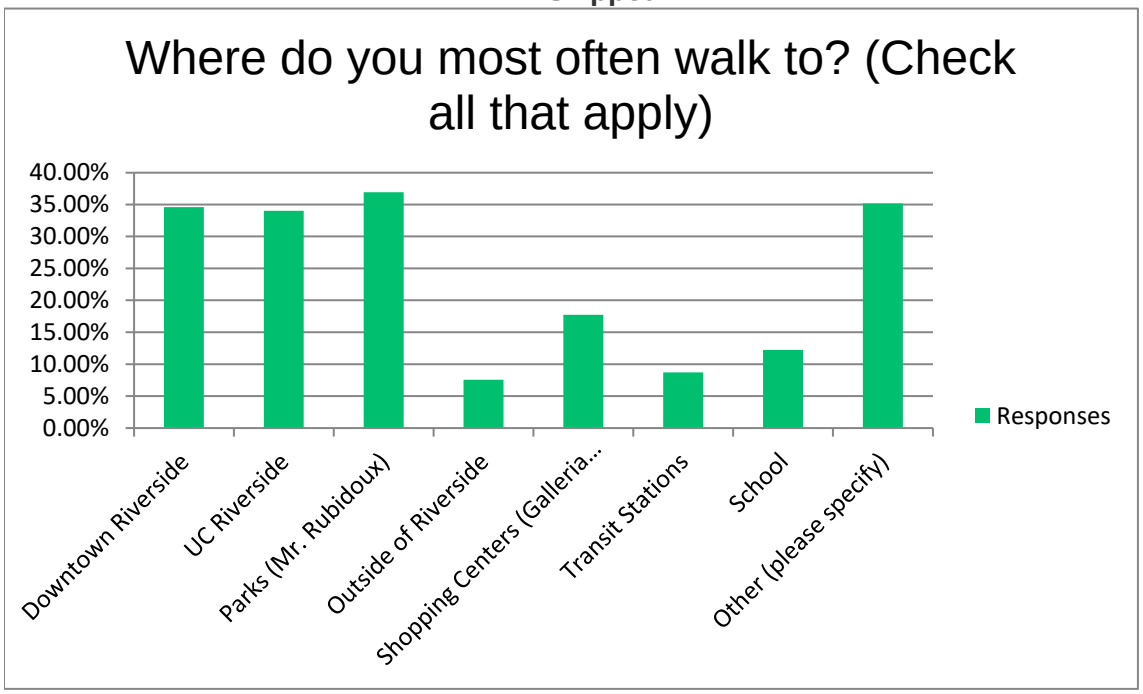
Answer Choices	Responses	
Daily	32.95%	114
1-2 days per week	23.41%	81
3-4 days per week	22.54%	78
A few times a year	18.21%	63
Never	4.62%	16
	Answered	**346**
	Skipped	**5**



City of Riverside PACT Survey

Where do you most often walk to? (Check all that apply)

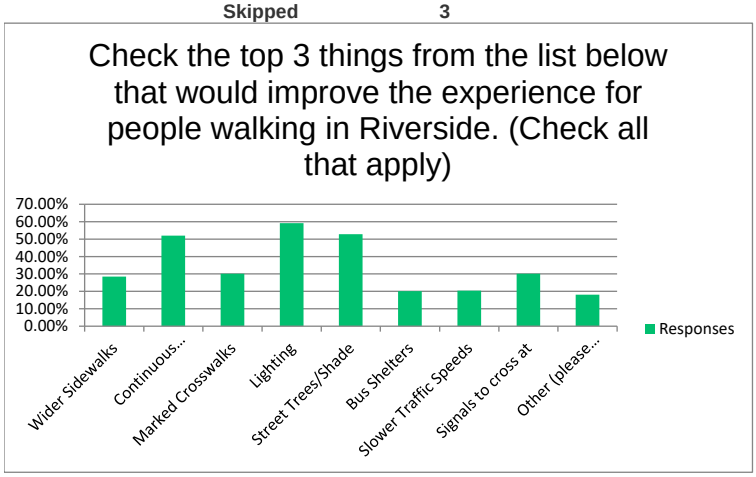
Answer Choices	Responses	
Downtown Riverside	34.59%	119
UC Riverside	34.01%	117
Parks (Mr. Rubidoux)	36.92%	127
Outside of Riverside	7.56%	26
Shopping Centers (Galleria at Tyler)	17.73%	61
Transit Stations	8.72%	30
School	12.21%	42
Other (please specify)	35.17%	121
	Answered	**344**
	Skipped	**7**



City of Riverside PACT Survey

Check the top 3 things from the list below that would improve the experience for people walking in Riverside. (Check all that apply)

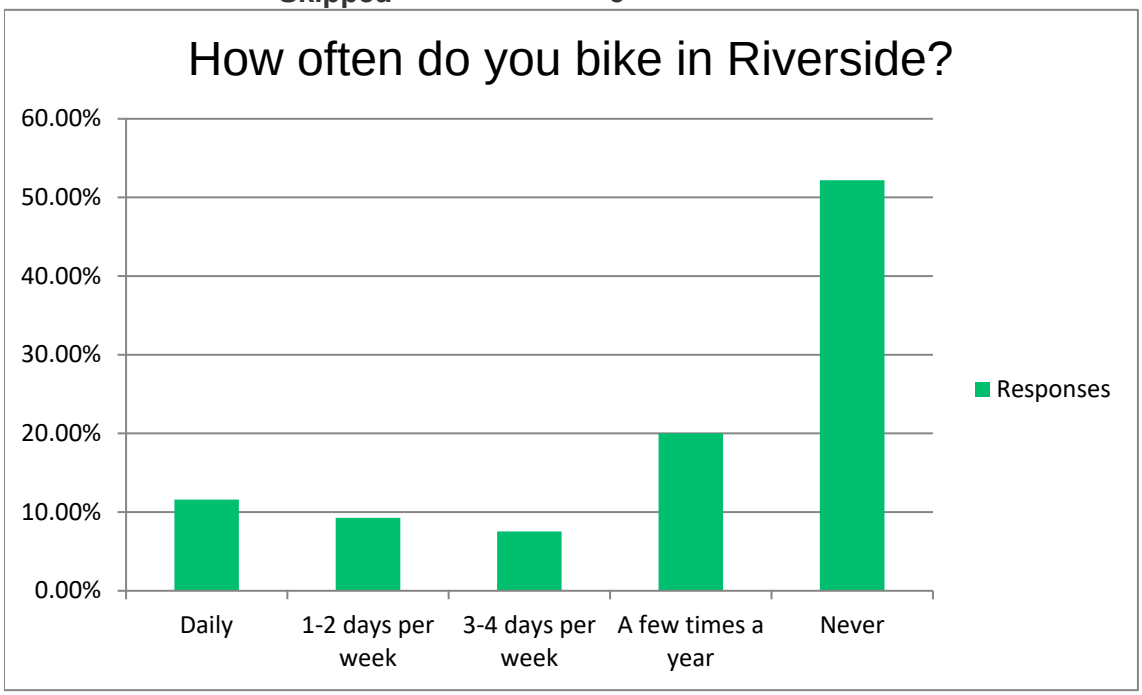
Answer Choices	Responses	
Wider Sidewalks	28.45%	99
Continuous Sidewalks	52.01%	181
Marked Crosswalks	30.17%	105
Lighting	59.20%	206
Street Trees/Shade	52.87%	184
Bus Shelters	20.11%	70
Slower Traffic Speeds	20.40%	71
Signals to cross at	30.17%	105
Other (please specify)	18.10%	63
	Answered	**348**
	Skipped	**3**



City of Riverside PACT Survey

How often do you bike in Riverside?

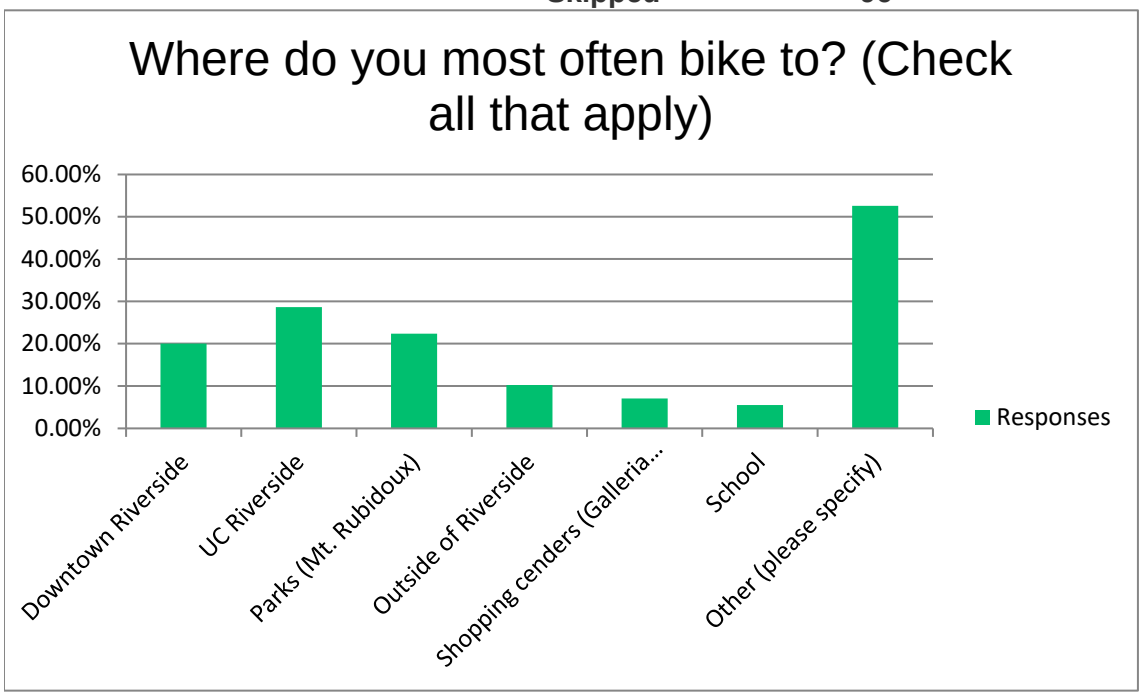
Answer Choices	Responses	
Daily	11.59%	40
1-2 days per week	9.28%	32
3-4 days per week	7.54%	26
A few times a year	20.00%	69
Never	52.17%	180
	Answered	**345**
	Skipped	**6**



City of Riverside PACT Survey

Where do you most often bike to? (Check all that apply)

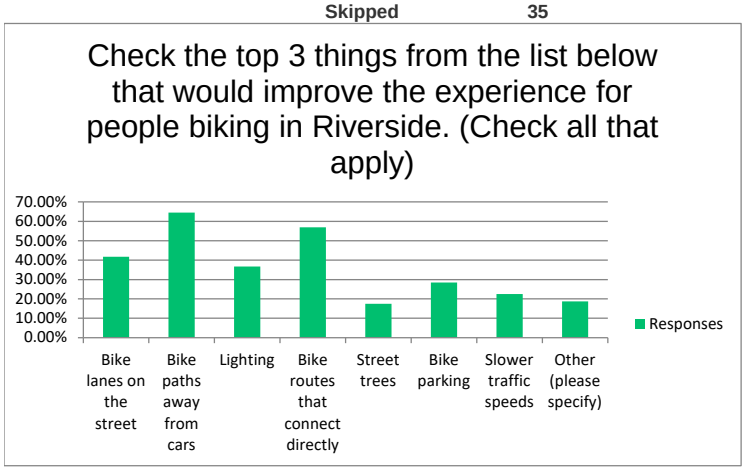
Answer Choices	Responses	
Downtown Riverside	20.00%	51
UC Riverside	28.63%	73
Parks (Mt. Rubidoux)	22.35%	57
Outside of Riverside	10.20%	26
Shopping cenders (Galleria at Tyler)	7.06%	18
School	5.49%	14
Other (please specify)	52.55%	134
	Answered	**255**
	Skipped	**96**



City of Riverside PACT Survey

Check the top 3 things from the list below that would improve the experience for people biking in Riverside. (Check all that apply)

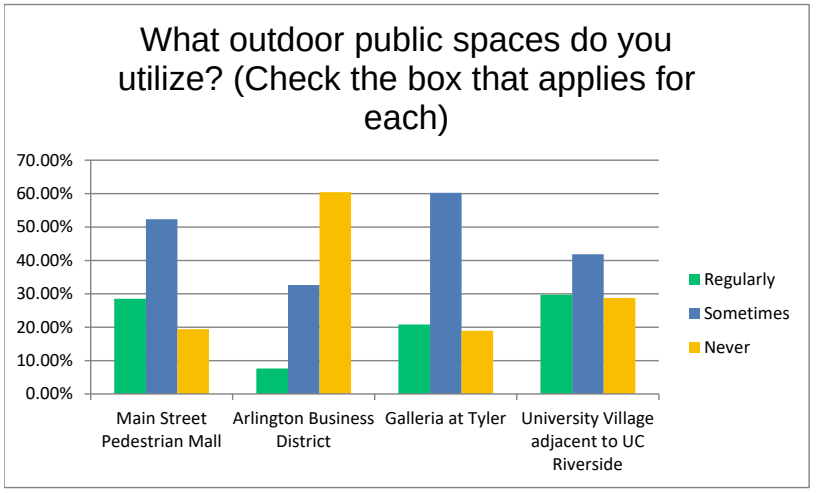
Answer Choices	Responses	
Bike lanes on the street	41.77%	132
Bike paths away from cars	64.56%	204
Lighting	36.71%	116
Bike routes that connect directly	56.96%	180
Street trees	17.41%	55
Bike parking	28.48%	90
Slower traffic speeds	22.47%	71
Other (please specify)	18.67%	59
	Answered	**316**
	Skipped	**35**



City of Riverside PACT Survey

What outdoor public spaces do you utilize? (Check the box that applies for each)

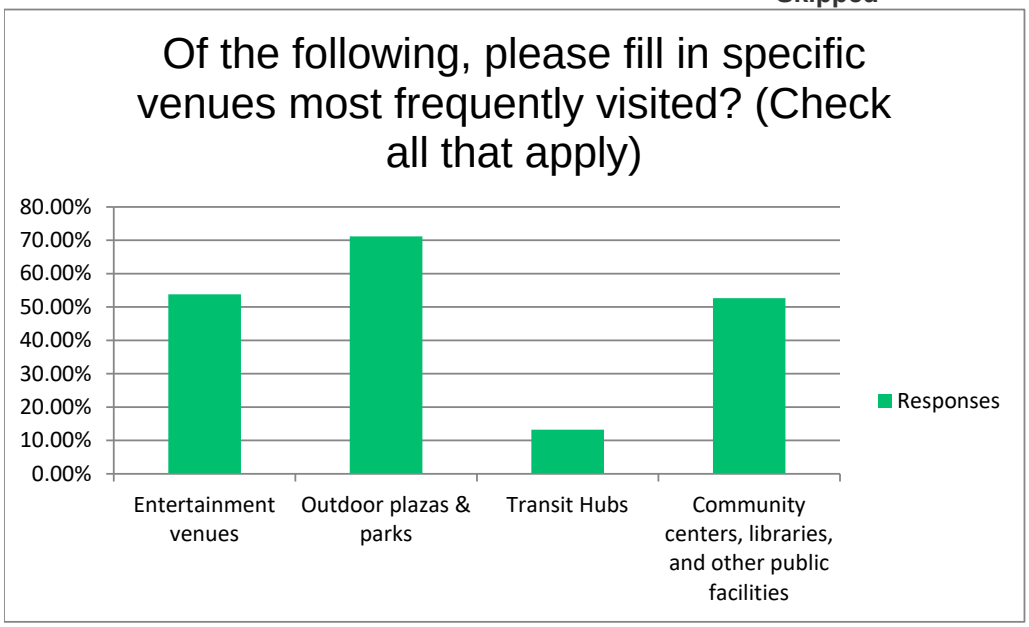
	Regularly		Sometimes		Never		Total
Main Street Pedestrian Mall	28.53%	91	52.35%	167	19.44%	62	319
Arlington Business District	7.64%	22	32.64%	94	60.42%	174	288
Galleria at Tyler	20.82%	66	60.25%	191	18.93%	60	317
University Village adjacent to UC Riverside	29.74%	91	41.83%	128	28.76%	88	306
						Answered	**340**
						Skipped	**11**



City of Riverside PACT Survey

Of the following, please fill in specific venues most frequently visited? (Check all that apply)

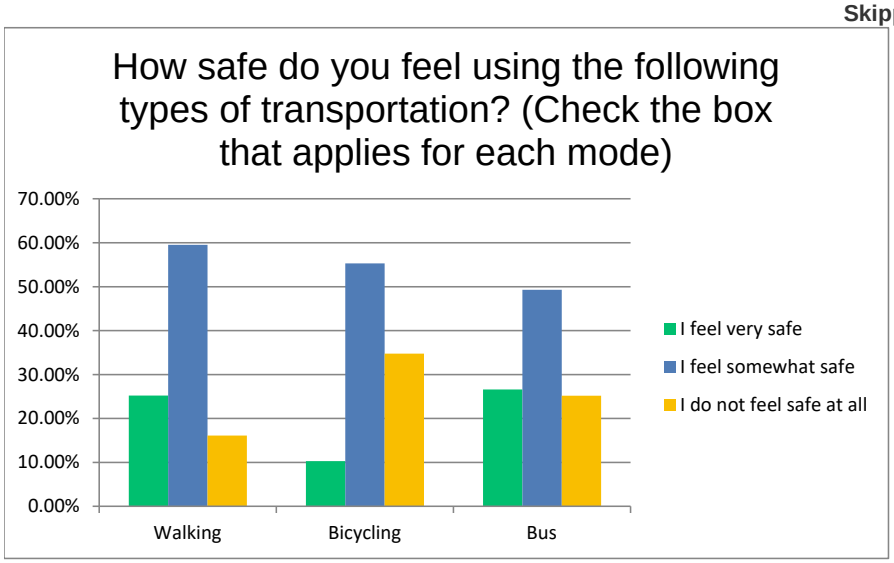
Answer Choices	Responses	
Entertainment venues	53.82%	183
Outdoor plazas & parks	71.18%	242
Transit Hubs	13.24%	45
Community centers, libraries, and other public facilities	52.65%	179
	Answered	**340**
	Skipped	**11**



City of Riverside PACT Survey

How safe do you feel using the following types of transportation? (Check the box that applies for each mode)

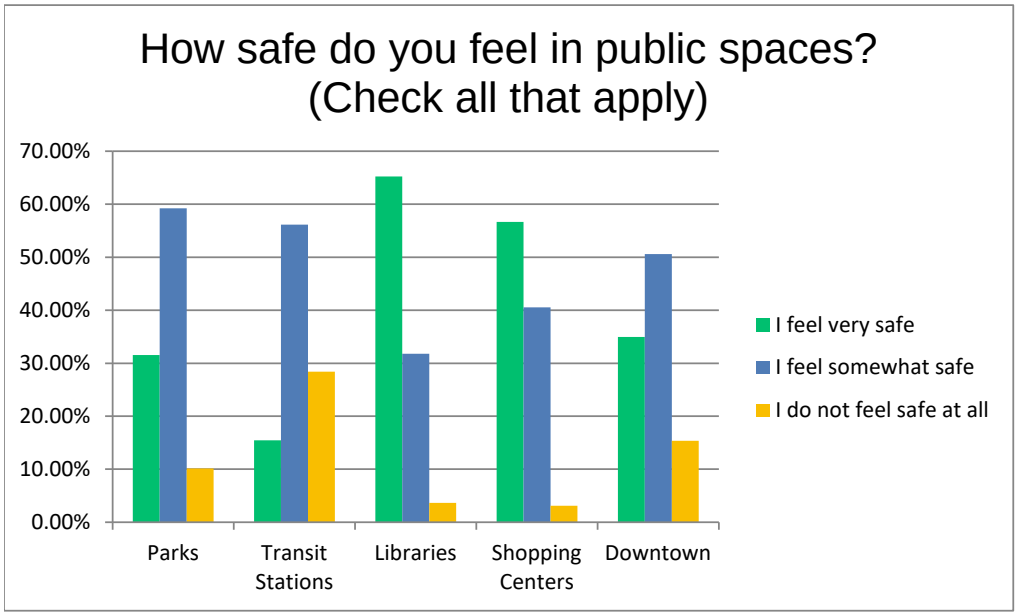
	I feel very safe		I feel somewhat safe		I do not feel safe at all		Total
Walking	25.22%	86	59.53%	203	16.13%	55	341
Bicycling	10.28%	29	55.32%	156	34.75%	98	282
Bus	26.62%	74	49.28%	137	25.18%	70	278
						Answered	**344**
						Skipped	**7**



City of Riverside PACT Survey

How safe do you feel in public spaces? (Check all that apply)

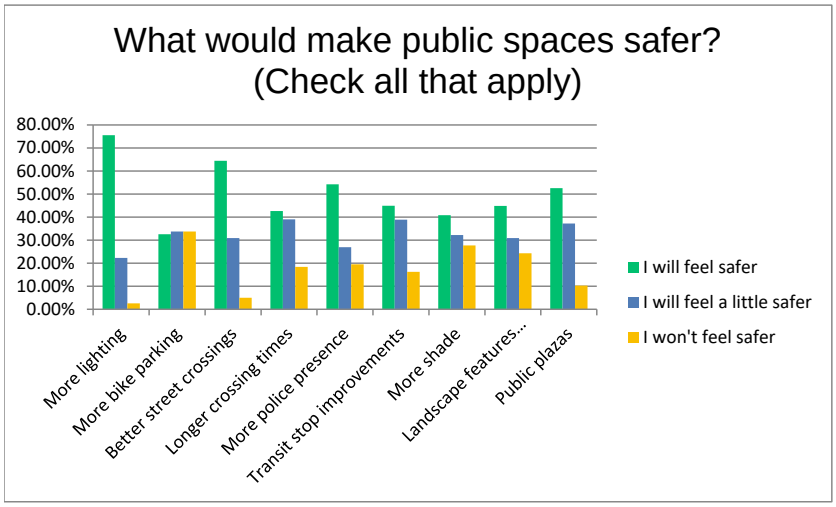
	I feel very safe		I feel somewhat safe		I do not feel safe at all		Total
Parks	31.55%	106	59.23%	199	10.12%	34	336
Transit Stations	15.44%	44	56.14%	160	28.42%	81	285
Libraries	65.23%	197	31.79%	96	3.64%	11	302
Shopping Centers	56.66%	183	40.56%	131	3.10%	10	323
Downtown	34.97%	114	50.61%	165	15.34%	50	326
						Answered	**343**
						Skipped	**8**



City of Riverside PACT Survey

What would make public spaces safer? (Check all that apply)

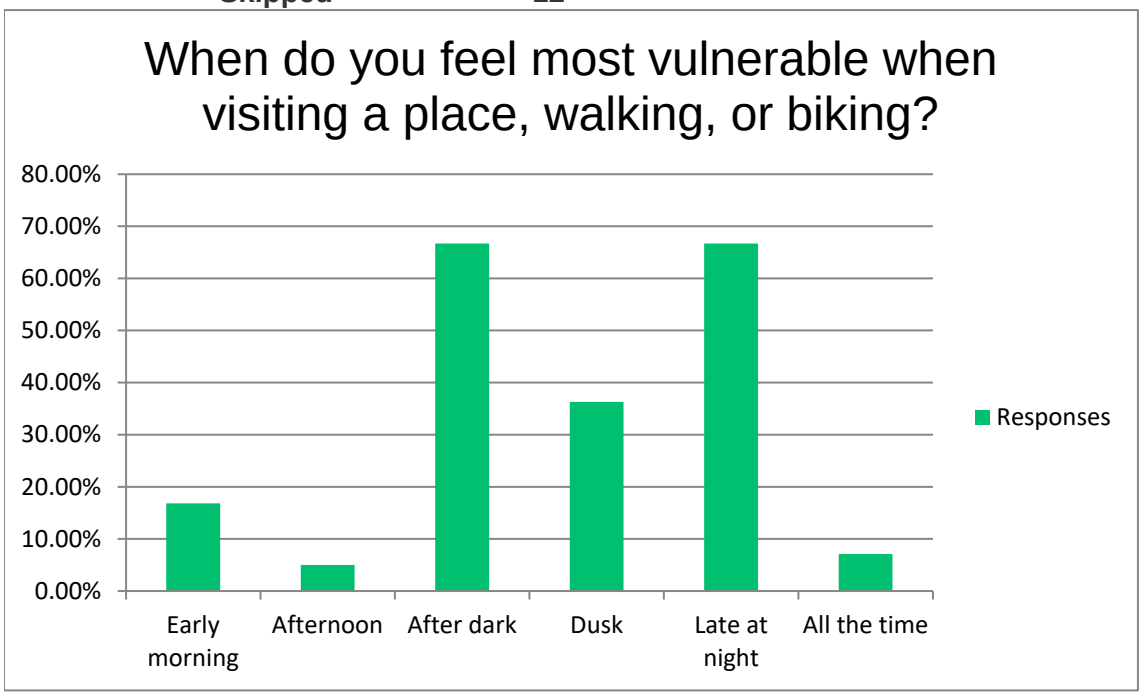
	I will feel safer		I will feel a little safer		I won't feel safer		Total
More lighting	75.55%	241	22.26%	71	2.51%	8	319
More bike parking	32.57%	85	33.72%	88	33.72%	88	261
Better street crossings	64.45%	194	30.90%	93	4.98%	15	301
Longer crossing times	42.65%	116	38.97%	106	18.38%	50	272
More police presence	54.22%	167	26.95%	83	19.48%	60	308
Transit stop improvements	44.91%	119	38.87%	103	16.23%	43	265
More shade	40.83%	118	32.18%	93	27.68%	80	289
Landscape features enclosing walkways	44.85%	122	30.88%	84	24.26%	66	272
Public plazas	52.55%	144	37.23%	102	10.22%	28	274
						Answered	**341**
						Skipped	**10**



City of Riverside PACT Survey

When do you feel most vulnerable when visiting a place, walking, or biking?

Answer Choices	Responses	
Early morning	16.81%	57
Afternoon	5.01%	17
After dark	66.67%	226
Dusk	36.28%	123
Late at night	66.67%	226
All the time	7.08%	24
	Answered	**339**
	Skipped	**12**



City of Riverside PACT Survey

What street(s) in your neighborhood could best use the walking & bicycling improvements discussed on this survey to improve your access to school, work, play, dining, or shopping?

Answered	**268**
Skipped	**83**

Appendix D: PACT Outreach Summaries

MEMORANDUM

617 W 7th Street, Suite 1103
Los Angeles, CA 90017
(213) 489-7443

To: Nathan Mustafa, City of Riverside

From: Cameron Savois, Alta Planning and Design

Date: 01/15/20

Re: Riverside PACT – Outreach Event Summary

Green n' Clean Halloween (10/29/19)

The Green n' Clean Halloween event was a trick or treat event held at the Cesar E. Chavez Community Center, focused on sustainability. Alta occupied a table and set up with the PACT documents, candy, and Alta swag. The families went around to each table with a "passport" and received a stamp as a way to check in. Alta explained the PACT project to everyone that came to the table and asked for their participation with the survey. We talked to around 25-35 people.

Observations

- The festivity of the event and kids-oriented programming enabled our team to discuss the PACT with many parents.
- Alta offered a raffle prize as an incentive for people to the fill out the survey which was an effective encouragement tool.
- Many of the residents engaged were Spanish speaking, and we received input from a diverse set of community members.

Key Topics of Conversation

- Most of the conversations that were had were purely explaining what the PACT is and why it is important.

MEMORANDUM

617 W 7th Street, Suite 1103
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To: Nathan Mustafa, City of Riverside

From: Cameron Savois, Alta Planning and Design

Date: 01/15/20

Re: Riverside PACT – Outreach Event Summary

Residents for Responsible Representation (11/06/2019)

The Residents for Responsible Representation (RRR) hold their monthly meeting on the second Monday of the month at the Riverside Police Department. A variety of discussion topics and presentations all relating to the "West End" neighborhoods of Riverside were discussed. There were roughly 30 people present consisting of residents primarily from Wards 6 and 7. Alta handed out PACT informational flyers and surveys and talked to residents before the meeting began and then gave a brief five-minute introduction to the PACT project and asked for survey participation.

Observations

- Residents were under the impression that Alta had completed the Plan without community involvement, this presentation was to ensure the residents that we were only just beginning the outreach phase of the Plan and we wanted their input.

Key Topics of Conversation

- Homelessness was the key topic of the meeting; the Riverside Police Department was present and presenting to the residents on their role is in regulating the streets and what the residents can do if they have issues with the homeless.
- This lead to a conversation with residents who didn't see the value in investing in active transportation infrastructure if the homelessness issue isn't addressed first.
- The RRR group invited Alta to return to a future meeting to share progress and get feedback on initial PACT recommendations

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MEMORANDUM

To: Nathan Mustafa, City of Riverside

From: Cameron Savois and Alexander Jauregui, Alta Planning and Design

Date: 12/4/19

Re: Riverside PACT – Outreach Event Summary

Walkshop 1 – Mt Rubidoux (9:00 am 11/11/19)

Alta Planning + Design hosted an active transportation focused walk audit ("walkshop") from Ryan Bonaminio Park along Glenwood Drive to 14th Street. One local stakeholder joined Alta staff for this walkshop, an employee at the Riverside-Corona Resource Conservation District which was located along the route. During the ¼ mile walk, Alta staff discussed a variety of issues and observations with the participant, as well as inventoried streetscape elements and cataloged relevant photos of the existing conditions.

Observations

- The park was extremely busy with pedestrian activity, and there was a constant flow of people walking to and from the Mt Rubidoux trail head.
- Due the Veterans Day holiday the park was heavily trafficked, and Alta staff were able to observe the flow, trends, and patterns of people as they moved along the street.
- The Alta team observed issues related to street crossing, sidewalk congestion creating conflict areas, and areas of missing sidewalk along Glenwood Dr.

Key Topics of Conversation

- The most common topic of conversation between Alta staff and the participant was the inconsistent sidewalk infrastructure along Glenwood Drive.
- Another key topic was the variability of right of way along the Glenwood Drive corridor. The distance varies from 48 feet at its widest to 18 feet at its narrowest. This along with a dramatic S curve makes walking, biking, and driving dangerous north of the Mt Rubidoux trail head.

Lessons Learned

- The key takeaway from this walkshop was understanding how heavily visited both Ryan Bonaminio Park and Mt Rubidoux Park are. The popularity of these parks indicates that special attention should be paid to this area to ensure safety for all users of the street.

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MEMORANDUM

To: Nathan Mustafa, City of Riverside

From: Cameron Savois and Alexander Jauregui, Alta Planning and Design

Date: 12/4/19

Re: Riverside PACT – Outreach Event Summary

Walkshop 2 – Canyon Crest (10:30 am 11/11/19)

Alta Planning + Design hosted an active transportation focused walk audit ("walkshop") in the Canyon Crest neighborhood along Canyon Crest Dr from El Cerrito Dr to Central Ave. This walkshop had the largest turnout, with eight people from the community participating. During the ¼ mile walk Alta staff discussed a variety of issues and observations with the participant, as well as inventoried streetscape elements and cataloged relevant photos of the existing conditions. The Alta team also conducted a windshield survey along Canyon Crest Dr. and University Dr. with a few of the community members who attended the walkshop.

Observations

- The majority of community members were more focused on discussing vehicular traffic issues rather than issues or concerns as a pedestrian or bicyclist.
- Canyon Crest Dr. serves as a major thoroughfare to the University of California Riverside for all modes of transportation.
- Vehicles drive much faster than the posted speed of 45 mph along Canyon Crest Dr., in part due to the limited number of curb cuts.

Key Topics of Conversation

- The most common topic of conversation between Alta staff and the participants was the speed at which cars drove along Canyon Crest Dr. and the dangerous condition this creates for bicyclists and a pedestrians along this corridor.
- Another topic that was brought up was the absence of bike lanes along Canyon Crest Dr. This road connects people from a major residential area to the UC Riverside campus. South of Central Ave along Canyon Crest Dr. there is an existing bike lane that turns into on-street parking at Central Ave. eliminating this desired connection.

Lessons Learned

- The key takeaway from this walkshop was understanding how heavily traveled a corridor Canyon Crest Dr. is. Canyon Crest Dr. is an important corridor that provides access to a mix of residential, recreational parks (Sycamore Canyon Park), and the UC Riverside campus.

MEMORANDUM

617 W 7th Street, Suite 1103
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To: Nathan Mustafa, City of Riverside

From: Cameron Savois and Alexander Jauregui, Alta Planning and Design

Date: 12/4/19

Re: Riverside PACT – Outreach Event Summary

Walkshop 3 – Market Street (12:00 pm 11/11/19)

Alta Planning + Design hosted an active transportation focused walk audit ("walkshop") along Market Street in Downtown Riverside, extending from White Park to 6th Street. This walkshop did not have any attendance from the community. Despite the lack of community participants, Alta staff conducted a field investigation documenting a variety of issues and observations. The Alta team also inventoried streetscape elements and cataloged relevant photos of the existing conditions. Due to the Veterans Day holiday downtown activity was atypical compared to a normal weekday.

Observations

- There was significant construction on Market St. restricting the use of the sidewalk on the east side of the street. Alta staff observed people walking in the street regardless of this condition creating a precarious situation for drivers and pedestrians.
- Market St. is the major thoroughfare providing north south connections through and to downtown Riverside.
- A number of people experiencing homelessness were observed in White Park, and other community members were seen taking alternative footpaths to avoid the park.

Key Topics of Conversation

- Due to the lack of community participation, the conversation was limited to first hand observations by Alta staff noted above.

Lessons Learned

- Market Street is a heavily trafficked street for all modes of transportation. Despite the holiday, Alta observed significant pedestrian, bicycle, and vehicular activity.
- Conflict zones like intersections and bike lane/bus stops appear to be an issue as well as vehicular traffic congestion during peak traffic times promulgating conflict for all other users of the street.

MEMORANDUM

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To: Nathan Mustafa, City of Riverside

From: Cameron Savois and Alexander Jauregui, Alta Planning and Design

Date: 12/4/19

Re: Riverside PACT – Outreach Event Summary

Walkshop 4 – Martin Luther King High School (2:30 pm 11/11/19)

Alta Planning + Design hosted an active transportation focused walk audit ("walkshop") in the Orangecrest neighborhood along Wood Road, extending from Van Buren Blvd. to Krameria Ave. This walkshop did not have any attendance from the community. Despite the lack of community participants, Alta staff conducted a field investigation including notating a variety of issues and observations. The Alta team also inventoried streetscape elements and cataloged relevant photos of the existing conditions. Due to the observance of Veterans Day activity around MLK High School was atypical compared to a normal weekday.

Observations

- The intersection at Van Buren Blvd. and Wood Rd. was very busy even on a day when the high school was closed. Despite being adjacent to Martin Luther King high school, and a popular student crossing as a result, the intersection lacked continental crosswalks, and N-S pedestrian crossing along the western side of Van Buren was prohibited.
- There is a well-designed and maintained decomposed granite path on the east side of Wood Rd. terminating at Krameria Ave. This path elevates pedestrians, removing them from at grade traffic and improving the walking experience.
- The vehicular speeds along this stretch of Wood Rd were well above the posted speed of 40 MPH. This condition may not exist when school is in session, but likely can be observed on most weekends and holidays.

Key Topics of Conversation

- Due to the absence of participation the conversation was limited to first hand observations of Alta staff noted above.
- Alta staff conducted an intercept interview of a student riding their bike along Wood Rd. Alta staff asked the student their level of comfort riding on the street and how often they rode their bike. The stakeholder responded in the affirmative to both questions, but did not provide more context or insight.

Lessons Learned

- The vehicular speeds are very high when the school zone speed is not in effect, creating unsafe bicycling conditions as well as walking conditions on the western non-protected sidewalk.

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(213) 489-7443

MEMORANDUM

To: Nathan Mustafa, City of Riverside

From: Cameron Savois and Alexander Jauregui, Alta Planning and Design

Date: 12/4/19

Re: Riverside PACT – Outreach Event Summary

Walkshop 5 – University Village (4:00 pm 11/11/19)

Alta Planning + Design hosted an active transportation focused walk audit ("walkshop") in the University Village neighborhood along University Ave., extending from Iowa Ave. to Canyon Crest Dr. This walkshop did not have any attendance from the community. Despite the lack of community participants, Alta staff conducted a field investigation documenting a variety of issues and observations. The Alta team also inventoried streetscape elements and cataloged relevant photos of the existing conditions. Due to the observance of Veterans Day, activity around the University of California Riverside was atypical compared to a normal weekday.

Observations

- The stretch of University Ave. that Alta staff investigated is a heavily walked path from UC Riverside to University Village, connecting students to transit as well as commercial destinations and housing.
- There are three crossings on both sides of University Ave where pedestrians are vulnerable to vehicular incursions. The on-ramps and off-ramps to I-215 create wide distances for pedestrian to cross.
- There are Class II bike lanes along University Ave., however the Class III bike lane transition and striping at West Campus Dr is very confusing for cyclists as well as vehicles.

Key Topics of Conversation

- Due to the absence of participation the conversation was limited to first hand observations of Alta staff noted above.
- Alta staff conducted a few intercept interviews of students walking and riding their bike along University Ave. We took notes of their response and pictures documenting the issues they addressed.

Lessons Learned

- The biggest takeaway from this walkshop was understanding the importance of University Ave. as a connector from amenities west of I-215 and the UC Riverside east of I-215.
- Creating a safe and clear connection under the freeway for all users of the street is imperative in promoting access and active transportation.

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MEMORANDUM

To: Nathan Mustafa, City of Riverside

From: Cameron Savois and Alexander Jauregui, Alta Planning and Design

Date: 12/4/19

Re: Riverside PACT – Outreach Event Summary

Walkshop 6 – Galleria at Tyler (11/12/19)

Alta Planning + Design hosted a walking workshop ("walkshop") from the Starbucks at the intersection of Tyler and Magnolia traveling along Magnolia Ave. past the Galleria at Tyler to Hughes Alley and then down Hole Ave. back to Tyler Street. There were no participants on this particular walkshop.

Observations

- No planting buffer on both sides of Tyler Street from Hole Ave. leaving the sidewalks feeling particularly unprotected from traffic with a posted speed limit of 40 directly adjacent. Magnolia Ave. has similar conditions with even heavier traffic and pedestrian activity on the sidewalks entering the Galleria.
- The Galleria at Tyler was primarily accessed by cars with large parking lots on either side of Magnolia creating expansive setback between the sidewalk and shopping opportunities.
- There is also a bus line that stops in front of the Galleria that provides access to public transportation users.
    - RapidLink – Line # 1
- The intersection at the entrance of the Galleria (no name given) had only one crosswalk on the north-east side. The next intersection traveling northbound on Magnolia is also a cross/street entrance to shopping opportunities on either side of the road without a name. The ped crossing on the east of this second intersection has a pedestrian refuge island and pedestrian push button configuration that requires users to jump across the right turn line without being able to activate the pedestrian push button.
    - This same configuration appears at intersection of Hole Ave. and Tyler St.
- There is a series of relatively new government building just North of the intersection of Hole and Magnolia.
- There is a connection to Arlington Park further north-east on Magnolia off of Van Buren Boulevard.

Key Topics of Conversation

- Moving north-east on Magnolia just past the intersection at Tyler where the 76 gas station bulbs out there is a tight pinch on the bike lane that causes an unsafe condition for riders expecting a direct continuation of the class 2 bike path striping which is not provided here, but picks up from an odd angle just after.
- There are plenty of commercial opportunities in the area. On either side of Magnolia Ave. Tyler St. and Hole Ave. but not a lot of pedestrian activity.

Lessons Learned

- In this area we noticed that the primary connection for residents to the wide array of commercial opportunities was through cars along arterial roads that did not engender any comfort for pedestrians.
- Streetscapes felt exposed and inactivated. Large setbacks and expansive parking lots added to this feeling.

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To: Nathan Mustafa, City of Riverside

From: Cameron Savois and Alexander Jauregui, Alta Planning and Design

Date: 12/4/19

Re: Riverside PACT – Outreach Event Summary

Walkshop 7 – La Sierra Station (11/12/19)

Alta Planning + Design hosted a walking workshop ("walkshop") at the La Sierra Station transit hub directly adjacent to the 91 freeway. The walkshop began at the station and continued along Indiana Ave. to La Sierra Ave., an arterial road with on and off-ramps connected to the freeway. There were no participants on this particular walkshop.

Observations

- The La Sierra Station is accompanied by a relatively modern transit-oriented development in the from of a large apartment complex, the Metro Gateway apartment homes which border the sidewalk on Indiana Ave.
- There is also another large residential gated community across from the station, Riverwalk Vista which purposefully creates a large barrier between the sidewalk and homes in the form of 25'-30' retaining wall.
    - The slope between this retaining wall and sidewalk is well planted however, creating a more pleasant pedestrian experience.
- The driveway of ARCO gas station along Indiana Ave. is particularly wide, introducing uncertainty about traffic controls. During the walkshop a driver exiting the gas station made a particularly unsafe maneuver nearly colliding with the team, after having made eye contact, attempting to make a left turn onto Indiana Ave.
- Class II bike lanes on either side of Indiana Ave. feel spacious and usable. The connection to class II bike lanes on La Sierra Ave. however feel far less safe given the nature of traffic on this arterial road.
- There are bus stops along Indiana that provide access to the Metro rail. Bus Line – 15.
- There is a great protected pedestrian facility with a vinyl gate separating pedestrians from traffic on the east side of La Sierra Ave. but the fencing is only up for a block between Vista Terrace and Indiana Ave.
- Good tree colonnade on La Sierra Ave. just south-east of the Vista Terrace intersection on both sides.

Key Topics of Conversation

- The intersection of La Sierra Ave. and Indiana Ave. is massive (+135' crosswalk length NE side), and the configuration of roads here (10 and 7 lanes wide respectively) leads to a car dominated typology.
- For people arriving to the La Sierra Station there is little motivation to walk around the community without any notable recreational opportunities or points of interest. Current configuration encourages car-use.

Lessons Learned

- In this area we learned that the transit hub is somewhat disjointed from the surrounding community. La Sierra Station is easily accessible by cars, but not conducive to the safety/comfort of cyclists or pedestrians. The 91 freeway presents an additional barrier to station access for cyclists and pedestrians.
- Outside the intersection of La Sierra and Indiana Ave., the area is primarily residential single-family homes connected through lower volume neighborhood streets that are more enticing for walking and biking.

MEMORANDUM

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To: Nathan Mustafa, City of Riverside

From: Cameron Savois and Alexander Jauregui, Alta Planning and Design

Date: 12/4/19

Re: Riverside PACT – Outreach Event Summary

Walkshop 8 – La Sierra Ave (11/13/19)

Alta Planning + Design hosted a walking workshop ("walkshop") on La Sierra Ave. starting from the Rite Aid on the corner of La Sierra Ave. and Pierce St. / Hole Ave. traveling south-east on the east side of La Sierra Ave. The team stopped at Schuyler / Minnier Ave. and returned traveling north-east on the west side of La Sierra Ave. There were no participants on this particular walkshop, although the team was able to connect with a few people on the street for intercept discussions.

Observations

- The intersection La Sierra Ave. and Pierce St. / Hole Ave., features red-colored crosswalks for increased visibility.
- There are several commercial opportunities on either side of La Sierra Ave. within the walkshop scope.
- There are bus stops on La Sierra Ave. between Whitford Ave. and Pierce/Hole. Bus Line – 15.
- Just south-east of Whitford Ave. traveling on La Sierra Ave. there is a planted median that begins with a good variety of mature street trees and shrubs that make the street more attractive and provides a sense of scale and space for drivers and pedestrians.
- Bike lanes on La Sierra Ave. are more spacious than average lanes observed throughout the city, but still share the gutter pan leaving riders closer to traffic traveling at a posted speed of 40mph.
    - There is a small buffer on the bike lanes past Schuyler moving south-east.
    - It should be noted that at the time of the walkshop, several magnolia trees planted along the curb had dropped their seed pods into the bike path creating a potentially dangerous condition for cyclists.
- The team noticed an elderly runner traveling north-west on La Sierra Ave. on the west side of the street. This woman was using the sidewalk to jog until she noticed a group of residents experiencing homelessness in front of a fast-food restaurant and altered her path to jog in the bike lane moving against oncoming traffic.

Key Topics of Conversation

- The conversation that we were able to elicit had much to do with the issue of homelessness and a general concern was voiced that sidewalks in the area could feel unsafe to some based on this.
- The team noticed higher than average pedestrian activity in this area in comparison to the rest of the walkshop sites. Many of the pedestrians observed were student-aged potentially headed to/from the La Sierra Academy off of Pierce St.

Lessons Learned

- In this area we learned that the use of trees, especially in the median, can dramatically impact the feel of a streetscape in both subtle and overt ways. The sense of space and scale they provided may have slowed vehicular traffic, and definitely created a more pleasant experience for pedestrians in coordination with a large lawn buffer.

MEMORANDUM

617 W 7th Street, Suite 1103
Los Angeles, CA 90017
(213) 489-7443

To: Nathan Mustafa, City of Riverside

From: Cameron Savois and Alexander Jauregui, Alta Planning and Design

Date: 12/4/19

Re: Riverside PACT – Outreach Event Summary

Walkshop 9 – Magnolia Ave (11/13/19)

Alta Planning + Design hosted a walking workshop ("walkshop") on Magnolia Ave. starting at the Arlington Library on the corner of Magnolia Ave. and Roosevelt St. The team was joined by a participant who was local to this area and provided a great amount of information relevant to the study. The group traveled from the Arlington Library to the Garden Inn just past McKenzie St. on the south side of Magnolia Ave. and then traveled back on the north side.

Observations

- Immediately we recognized the Arlington library as a well-loved community resource as the team arrived a few minutes before the library opened and several residents were already waiting to use the amenities within. The team was able to pass out information about the survey and even conduct one while waiting.
- Magnolia Ave. had ample commercial opportunities along the corridor on either side of the street. No parking lot setback for the storefronts lead to a much more lively and enjoyable pedestrian experience.
- Pedestrian push buttons at the intersection of Magnolia Ave. and Van Buren Blvd. were accompanied by an auditory beeping noise that the participant was very grateful for as she explained to us in greater detail how cues like this were greatly appreciated by both the elderly and vision impaired communities.
- There are several bus stops along Magnolia for the number 1, 10, and 21 bus lines.
- There are class II bike lanes on Van Buren Boulevard, a 7-lane road with a 40mph posted speed limit.
- Just north-east of Van Buren Boulevard the sidewalk extends on both sides of the street to create a pedestrian mall environment with a width of 25' including space for trees and associated tree boxes.
- There is a bike lane striping that moves up onto the sidewalk just past Farham Pl on the south side and Castleman St. on the north side moving north-east along Magnolia Ave. This striping condition runs for one block, then transfers to a Class II path in the roadway at McKenzie St. on the south side and Everest Ave. on the north side. There is no cycling infrastructure connecting to the facilities on Van Buren Blvd to the south-east.

Key Topics of Conversation

- A pedestrian crossing with signage, continental striping, and a HAWK beacon at Magnolia Blvd. and Farnham Pl. is well-executed, though users could potentially still feel unsafe crossing Magnolia as the participant stated.
- The historic value of this corridor is something that the community appreciates and wants to preserve.

Lessons Learned

- In this area we learned that the configuration of streetscapes can have an effect on user experience, with storefront activity, abundance of street trees, buffered parking, and widened sidewalk past Van Buren all of which lead to a significant positive impact on perceived safety and comfort one felt.

MEMORANDUM

617 W 7th Street, Suite 1103
Los Angeles, CA 90017
(213) 489-7443

To: Nathan Mustafa, City of Riverside

From: Cameron Savois and Alexander Jauregui, Alta Planning and Design

Date: 12/4/19

Re: Riverside PACT – Outreach Event Summary

Walkshop 10 – Brockton Arcade (11/13/19)

Alta Planning + Design hosted a walking workshop ("walkshop") around the intersection of Central Ave., Brockton Ave., and Magnolia Ave. starting at the Walgreens on the south-east corner. The team investigated this complicated intersection and then traveled south-west along Magnolia Ave. towards Nelson St. and then back up Brockton Ave. to the Walgreens. There were no participants for this particular walkshop.

Observations

- The team agreed that the street configuration within this walkshop limit was the most complicated encountered to date, especially the intersection of Brockton Ave., Magnolia Ave., and Central Ave.
- There is a Class II bike lane along Magnolia Ave. that could present a significant amount of danger for cyclists going through the aforementioned intersection as riders traveling south-west along Magnolia might come into conflict with drivers traveling from either Central or Brockton onto Magnolia. Traffic controls and regulation/signage in the intersection seem to account for this, though the potential for conflict persists.
    - The Class II bicycle lanes on Central Ave. become Class III facilities south-west of Central Ave. in order to accommodate traffic merging from Brockton Ave. onto Magnolia Ave. Following this merge, a Class II facility reappears, though it is narrow and constrained by curb-side parking.
- The team noticed a very fast queue time on the pedestrian walk signals at the aforementioned intersection, not giving us enough time to cross Magnolia and Brockton along Central Ave. in one go, stranding the team on the pedestrian island between traffic patterns traveling in seemingly every direction.
- The south-west intersection of Brockton Ave. and Magnolia Ave. also presents a dangerous condition for pedestrians as experienced twice by the team in a very limited time. The crosswalk on Magnolia across Brockton changes direction / angle on the right-hand turn lanes where drivers typically would want to see traffic even with "no turn on red" signage. Drivers seemed to not expect the crosswalk as far back from the street as it was, and as a result would either stop in the crosswalk without pedestrians or nearly hit pedestrians trying to use the crosswalk expecting to stop far too late for this particular configuration.
- There are bus stops on Magnolia and Brockton Avenue within the walkshop area. Bus lines – 1, 10, 15, 14.

Key Topics of Conversation

- Brockton Ave. itself was a very pleasant experience for pedestrians on a much smaller street, with a parking buffer, wide sidewalks, storefront shopping opportunities, activated alleys, bulbouts with continental crosswalks, and decorative hardscape. The pedestrian experience of this area was drastically different than the walkshop's starting point.

Lessons Learned

- In this area we learned that driver expectations based on consistent behaviors is important to understand as this area provides many situations that have drivers in unfamiliar scenarios that can cause trepidation.

617 W 7th Street, Suite 1103
Los Angeles, CA 90017
(213) 489-7443

MEMORANDUM

To: Nathan Mustafa, City of Riverside

From: Alexander Jauregui and Daniel Cortes, Alta Planning and Design

Date: 12/6/19

Re: Riverside PACT – Outreach Event Summary

Festival of Lights (11/29/19)

The City of Riverside sponsored a bus shuttle ride from the La Sierra Community Center to the Festival of Lights event in Downtown Riverside. During the 20-minute shuttle ride, Alta staff discussed the goals and vision for the PACT plan with community members, and solicited their feedback by way of online survey. The Festival of Lights is a well-loved 5-day "holiday extravaganza" celebrating its 27th anniversary in the city. Alta staff attended the "switch-on" ceremony on the inaugural day of the festival which was accompanied with a firework show and live music. Staff engaged attendees and handed out flyers at the event. In addition to the fireworks and lights display, there were an assortment of vendors and booths selling food and drink for the thousands of people in attendance to enjoy.

Observations

- The Festival of Lights was well-attended, but the bus ride from the Community Center saw far fewer attendees than RSVPs had indicated. This decline in attendance can in part be explained by intense rain in the days preceding the event, and the potential for more rain during the event.
- Though a limited group made it on the bus, staff were able to engage in more meaningful conversations as a result.

Key Topics of Conversation / Survey Results

- The most common topic of conversation amongst residents was the need for sidewalk improvements, and pedestrian safety in general. There were far fewer comments related to bicycle and trail infrastructure.
- There was an appetite for more events held in the La Sierra Community – one citizen in particular was appreciative that we were paying attention to their community specifically and providing access to community events.
- All of the survey respondents listed their zip code as 92506 – indicating they were all Riverside community members.
- Key themes from surveys completed during this outreach event include the following:
    - The majority of respondents stated that they walked either daily or 3-4 days per week in Riverside.
    - Many of the respondents noted that they enjoy neighborhood walks as a form of recreation and not necessarily to a particular destination.
    - The group of respondents as a whole did not identify as strongly as bike riders. This said, they indicated clear interest in improving the bicycle infrastructure in Riverside as evidence by their

response to the first question: "What interests you the most?" Active Transportation was in 100% of the answers collected.

- Survey respondents indicated that they generally felt safe walking or biking in Riverside, but did not feel safe using the Bus nor in transit stations.

Lessons Learned

- A city-branded booth, or t-shirts with the city's seal would help lend an "official" aura to outreach staff and facilitate engaging with the public. Additionally, given the nature of the event, a table with a free drink (e.g. champurrado) could have assisted with attracting survey participants.

Name	Email	How many?	Signature
Julie Bjork	Bjork23@aol.com	3	
Marta Gonzalez	An6i35@gmail.com	8	
Silvia Serratos	Serratos1107@gmail.com	4	
Ana López	Lopezana102@yahoo.com	4	
Tania	Talavera_tania@yahoo.com	6	
Marilyn Sloan	marilynslia49@gmail.com	4	
KERI SANTILLAN	ksantillan7@yahoo.com	10	
maria Hernandez	msgthrpy4u@gmail.com	6	
Madai Randal	madairandal@icloud.com	~~5~~ 2	
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Beatriz	Bettyespinal26@gmail.com	3	
Philip Tarshis	ptarshis1@charter.net	2	
~~Helen Beckman~~	~~helen7311@me.com~~	~~0~~	(3 Canceled)
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Cassandra Rodgers	rodgerscassandra@ymail.com	6	
Ana rojas	akrojas8989@gmail.com	8	
Tania Padilla	mrs.padilla1989@gmail.com	6	
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Rufina Ramirez	miriamobr29@gmail.com	7	
Andy Macias	Arox0826@gmail.com	4	
Janice Van Sickle	jvsty@sbcglobal.net	4	
Marisol Cadena	cadenamarisol52212@gmail.com	8	
Natalie Conrad	natalie.t.conrad@gmail.com	2 ~~6~~	
Jessica Salley	Jessicamija69@gmail.com	2	
Priscilla Ramirez	pr.priscilla@gmail.com	5	
Debi Logan	debi_logan@yahoo.com	~~2~~ 1	
Ervin Hernandez	moniquecrosal@gmail.com	10	
Amanda Osborne	Amandaosborn3907@gmail.com	4	
	TOTAL	198	

Riverside PACT Outreach Summary

Name of Event: Riverside Reindeer Run

Event Date and Time: December 8, 2019, 7am – 10am

Event Summary: The Reindeer Run was very busy event. Our booth was located where people exited from the run, where most people were still out of breath and weren't interested in taking a survey at this location. The team would recommend attending an event like this again as long as there is some sort of branding for the booth such as a PACT tablecloth, easy-up, t-shirts, etc. to identify the booth and staff as an extension of the City of Riverside.

Engagements: There were over 1,000 people in attendance. The team had about 30 people visit the booth, most of whom wanted to take the survey at home and were given QR codes with survey links. We had one person take a paper survey and five online surveys.

Name of Event: Galleria @ Tyler Riverside Farmer's Market

Event Date and Time: December 8, 2019, 8:30am – 12:30pm

Event Summary: The farmer's market was very slow due to the rainy weather and about half the vendors did not show up. There was an estimate of 30 people that attended the farmer's market.

Engagements: The team engaged with 10 people, three filled out surveys, and one woman requested to take the survey online at the comfort of her own home. The team gave her the information sheet and a copy of the survey.

Name of Event: Festival of Lights

Event Date and Time: December 11, 2019, 5pm – 9pm

Event Summary: The Festival of Lights is one of the largest events of the year for the City of Riverside and it is recommended in the future to have a booth with identifiable branding for visitors to come and talk to staff about the project. Additionally, the Festival of Lights closes off the streets Thursday-Sunday, which are the busy nights of the festival. The team recommends surveying on one of those days in the future instead of Wednesday as it was very slow for the event.

Engagements: The team engaged with about 50 people, including business owners and workers. The outreach team provided the event attendees and businesses with fact sheets, and survey cards if they were not willing to take the survey in person. While many event attendees were visitors to Riverside and did not want to speak with the team, 9 people were willing to participate and filled out the survey.

Name of Event: Citrus Heritage Run

Event Date and Time: January 4, 2020, 6:30am -12:00pm

Event Summary: The Citrus Heritage Run had an estimated attendance of 1,500 people. Since it was a run with various race times, most booth visitors visited after their run from 10am-11am. The team recommends having more identifiable branding for booth visitors to draw people in such as a real estate sign or pop up banner and a giveaway or prize wheel to incentivize visitors to take the survey. Many booth visitors were from out of town when asked, so we did not have them take the survey.

Engagements: The team engaged with approximately 50 people which included people who live and work in Riverside, in addition to people who visit Riverside for events and entertainment. The outreach team provided booth visitors with fact sheets, surveys, QR codes for the survey if they were not willing to take the survey in person. There were many positive interactions with Riverside locals about PACT and those surveyed were excited to hear about the options for changes and the opportunity to give their input. 15 people were willing to fill out the survey.

Name of Event: UCR's Commuter Pit Stop

Event Date and Time: January 7, 2020, 11:30am-1:30pm

Event Summary: The UCR Commuter Pit Stop had two other tables available with information in addition to the PACT outreach team. Most booth visitors were visiting during lunch and in between classes. A few booth visitors mentioned they biked to campus and many lived on campus. UCR TAPs team posted the outreach team's presence and survey link on their Instagram story.

Engagements:

The team engaged with approximately 40 people and provided booth visitors and nearby students/staff with paper surveys, QR codes, and project fact sheets.

Name of Event: Surveying at Riverside Downtown Metrolink Station

Event Date and Time: January 17, 2020, 5:30am-7:30am

Event Summary: AA staff was on hand at the Riverside Downtown Metrolink Station early Friday morning to survey the morning Metrolink commuters. Most of the commuters we approached were open to participating in the survey online as opposed to filling out the paper survey as they wait for their train. Commuters were excited about

the options presented, most commuters we approached mentioned they are either active in walking/hiking or cycling in their communities. AA staff would recommend surveying at this location again.

Engagements:

The team engaged with approximately 65 people which included Riverside residents and those who work in the city. The outreach team provided project fact sheets, surveys and QR code flyers to direct stakeholders to the online survey.

Name of Event: MLK Jr. Walk-A-Thon

Event Date and Time: January 20, 2020, 9:00am-2:00pm

Event Summary: There was a great turnout at the MLK Walk-A-Thon. It was a busy location once the runners/walkers started to arrive. Most of the community members that the team engaged with were interested to learn more about the project. Others showed indifference but the team made sure to provide them with fact sheets for them to review on their time.

Engagements: There was an estimate of 100 people that attended the event. We engaged with 40 people, 11 took the paper survey, and 5 people requested the QR code to take it online.

Name of Event: Surveying at Hunter Park Metrolink Station

Event Date and Time: January 21, 2020, 5:30am-7:15am

Event Summary: AA staff was on hand at the UCR/Hunter Park Metrolink Station early Wednesday morning to survey the morning Metrolink commuters. Most of the

commuters we approached were open to participating in the survey online. There were 10 people who were getting on at the UCR/Hunter Park Station.

Engagements: The team engaged with 5 people which included Riverside residents and those who work in the city. Due to weather, commuters waited in their cars until the train left. It was difficult for people to fill out the hard copy survey but were given the fact sheet and QR code.

Name of Event: Surveying at La Sierra Metrolink Station

Event Date and Time: January 22, 2020, 5:30am-7:30am

Event Summary: This station was a good location for surveying due to the stakeholders waiting around for their trains to leave.

Engagements: The team engaged with 15 people which included Riverside residents and people who were catching the buses. The people engaged were interested in the PACT and the team received 4 paper surveys and gave away 10 QR code flyers.

Name of Event: Surveying at Riverside Food Lab

Event Date and Time: January 22, 2020, 6pm-9pm.

Event Summary: The Food Lab was slightly busy with visitors during this time, however the outreach team did not want to interrupt people while they were eating. Once people were done eating, they were asked to do the survey but preferred to take it online on their own time.

Engagements: The team spoke to 16 people and gave QR code cards to all. The outreach team also left QR codes at the Food Lab and surrounding businesses such as

coffee shops and the Riverside Game Lab.

Name of Event: Surveying at Riverside Food Lab

Event Date and Time: January 23, 2020, 4pm-6pm

Event Summary: The Food Lab was busier during this time due to people getting out of work at this time.

Engagements: The outreach team spoke to 14 people and 5 people were willing to take paper surveys. Four of the five people who took surveys were not Riverside residents but visited Riverside often. The rest of those engaged said they would take the survey online via QR code.

MEMORANDUM

617 W 7th Street, Suite 1103
Los Angeles, CA 90017
(213) 489-7443

To: Nathan Mustafa, City of Riverside

From: Cameron Savois, Alta Planning and Design

Date: 01/15/20

Re: Riverside PACT – Outreach Event Summary

Residents for Responsible Representation (01/13/20)

The Residents for Responsible Representation (RRR) hold their monthly meeting on the second Monday of the month at the Riverside Police Department. A variety of discussion topics and presentations all relating to the "West End" neighborhoods of Riverside were discussed. There were roughly 40 people present including familiar faces from Alta's previous RRR visit in November 2019.

Observations

- A large contingent from the Riverside Community College, as well as the Councilman and his liaison for Ward 7 were also present.
- Alta gave a five-minute presentation followed by five-minutes of Q & A.

Key Topics of Conversation

- Concern was raised that many of the existing bike lanes in the city also contain parking or terminate where there is also on-street parking, creating dangerous situations for riders.
- Equestrian trails and connectivity was a hot topic of conversation. RRR members expressed pride in their equestrian activities, and wanted to see more equestrian facilities in the West End neighborhoods.
- Several questions were asked related to police enforcement of cycling behavior. Many of the comments regarding bicyclists and bike lanes were not positive.
- Several issues with RTA services and ridership were brought up.
- A general sense of underrepresentation was expressed during the meeting. Many of the residents described displeasure towards the City when it comes to the lack of attention and investment that Ward 6 and Ward 7 receives – in this context about equestrian trails.

MEMORANDUM

617 W 7th Street, Suite 1103
Los Angeles, CA 90017
(213) 489-7443

To: Nathan Mustafa, City of Riverside

From: Tim Bevins, Alta Planning and Design

Date: 2/20/20

Re: Riverside PACT – Outreach Event Summary

Ward 4 Community Meeting (2/19/20)

Alta staff attended a Ward 4 community meeting at the Orange Terrace Community Center, which focused on updates from Public Works, the Riverside Police Department and District Attorney's office, and a developer.

Observations

- Approximately 50 community members attended the meeting, and featured a lively discussion about traffic and pedestrian concerns in the community.

Key Topics of Conversation

- Riverside Public Works updated community members on ongoing roadway maintenance, upcoming pedestrian crossing improvements, and traffic signal modernization efforts.
- Alta staff presented a broad overview of the PACT effort, and the importance of community members making their voices heard via the online survey, which they were directed to.

617 W 7th Street, Suite 1103
Los Angeles, CA 90017
(213) 489-7443

MEMORANDUM

To: Nathan Mustafa, City of Riverside

From: Tim Bevins, Alta Planning and Design

Date: 2/27/20

Re: Riverside PACT – Outreach Event Summary

Blindness Support Services Meeting (2/22/20)

Alta staff attended the monthly Blindness Support Services Peer Support meeting, at the request of a community member engaged at a previous PACT outreach event. This organization provides services to blind and visually impaired community members in Riverside. About 20 participants attended the meeting, all of whom were visually impaired and were eager to share their experiences of walking and riding public transit in Riverside.

Key Topics of Conversation

- Sidewalks:
  - Participants noted that they need a minimum 4' of unimpeded sidewalk space in order to effectively use their cane.
  - For complicated or busy sidewalks, participants noted that textured pavement or a linear grove that one can follow with their cane would help them navigate these areas.
  - There was consensus around the desire for tactile indicators that can be felt with a cane prior to sidewalk obstructions. These could be small truncated domes, successive score lines, etc. The most common obstacles identified for this treatment were utility pole guy wires, public benches that do not have a solid base, and tree wells.

- Crosswalks:
  - For shared curb ramps that serve both sides of the street, participants noted the desire for a tactile indicator such as a groove line that they could follow with their cane to access the crosswalk.
  - Similarly, participants stated that it can be difficult to know whether or not one is in the crosswalk while crossing the street. A groove line running parallel to the crosswalk markings was suggested as a helpful aid.
  - Audio cues at crosswalks, particularly busy ones, are useful and appreciated. Participants mentioned that chirping indicators are harder to hear and easier to misinterpret than those that state the name of the street being crossed.
  - A tactile method for designating un-signaled intersections would be helpful.

- Transit:
    - Participants noted that the majority of persons who are blind/visually impaired are transit dependent, and as a result, access to/from public transit is of paramount importance. Fixed route buses, dial a ride services, and trains must be safe, efficient, reliable, timely and affordable.
    - Visually impaired transit users can have a difficult time locating bus stops if they do not have benches or shelters, and the bus stop sign itself is affixed to a post or a light pole. In these instances, a desire for a tactile indicator was expressed.
    - Participants discussed the proposed Vine Street Mobility Hub near the Riverside Downtown Mobility Hub, and their desire for it to feature exceptional blindness support as many of them rely heavily on Metrolink.
    - Participants discussed the desire for coordination between large developers and public transit agencies to provide paved pathways from bus stops to nearby destinations.

- Specific Locations:
    - Because of the group's reliance on public transit, Downtown Riverside was identified as a priority area for improvements as many bus lines and connections run through here.
    - Crosswalk enhancements such as those described above were called for near Beatty and Magnolia (where Blindness Support Services is located) and connecting to Riverside Plaza.
    - Participants mentioned that they encountered challenges navigating to the Downtown Riverside Metrolink station via University Avenue and 14th Street.
    - The intersection of Magnolia and Brockton is confusing to those with limited or no vision, and the island in particular is difficult to navigate.
    - The rail underpass on Streeter Ave, south of Lantana and north of Dewey, features a raised sidewalk that does not have a rail on its outer edge. Meeting participants expressed their desire for a rail that would keep them from walking off the sidewalk down the embankment.
    - The train tracks near the sidewalk on the north-east side of Van Buren and Arlington are confusing when utilizing a cane, and participants mentioned that it can feel as if they are walking into the street.

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(619) 269-5982

MEMORANDUM

To: Nathan Mustafa, City of Riverside

From: , Alta Planning and Design

Date: 05/04/2020

Re: Riverside PACT – Outreach Event Summary

PACT Virtual Workshop April 22, 2020 and Rebroadcast April 23, 2020

Due to the COVID-19 Stay at Home Order, the PACT Virtual Workshop was held in a webinar (Zoom) presentation format which was aired across multiple platforms (YouTube Live, Facebook Live, and Riverside TV) along with interactive elements for live polling. The project team consisted of the presenters as well as individuals fielding live questions via text and through the Zoom portal. The presentation combined two components of the PACT, the Active Transportation Plan and the Trails Master Plan. Active Transportation Plan was using this workshop as a way to share and gather feedback on preliminary bicycle and pedestrian recommendations that were developed. The Trails Master Plan was using the workshop to gather general feedback on what types of trails residents used and wanted as well as identified areas in the city where trails were desired. Below are the numbers and type of involvement we received during both of the live presentation as well as the rebroadcast:

- **04/22/20 Live Presentation, Polling and Q&A**
- 564 active viewers (346 FB, 48 Zoom, 170 YouTube)
    - o - view time ~6 mins
- Reached approximately 11,866 people
- 1,437 engagements (email, clicking, viewing, liking, posting, sharing)
- Received 31 comments/questions
- 19 additional survey inputs
- 16 mapping inputs
- Swift - 13-22 responses per question
    - o 247 total responses
- **04/23/20 Rebroadcast – Live Q&A**
- 356 active viewers (247 FB, 12 Zoom, 97 YouTube)
    - o - view time ~3.5 mins
- Reached approximately 9,609 people
- 1,430 engagements (email, clicking, viewing, liking, posting, sharing)
- Received 5 comments/questions
- 4 additional survey inputs
- 6 mapping inputs
- SWIFT - 1-3 responses per question
    - o 38 total responses

Observations

- One of the more poignant takeaways was the lack of personal interaction that was allowed in the workshop format. Although we covered all the information well and were able to gather feedback via comments, questions and polling we still weren't able to have those one on one conversations with individuals.
- Although we reached thousands of people, it isn't clear how long individuals were watching or participating. On the flip side, the amount of people we reached was much greater than a traditional in person community meeting.

Key Topics of Conversation

- We received some great comments and questions during the both the live workshop as well as the rebroadcast, the polling results gave good insight into recommendation preferences for the Active Transportation Plan and provided the Trails Master Plan with priority areas for trail use/desires within the City.
- Comments/questions we received included:
    - Make Van Buren Blvd more walkable,
    - Develop more recommendations for the SE part of the City,
    - Improve safety along the Santa Ana River Trail,
    - Improve cross-town connectivity,
    - Emphasis on Victoria Ave corridor,
    - Lack of investment outside of the downtown area,
    - Safety concerns while riding on-street bike lanes.
- Polling results included:
    - **Trails Master Plan:**
        - La Sierra Hills – Want more trails
        - Santa Ana River Trail – Most used trail
        - Gage Canal & Victoria Ave – Most desirable trails
        - Natural Surface Path & Paved Path – Most desirable trail experience
    - **Active Transportation Plan (Pedestrian/Bike) Highest Vote Percentage:**
        - Ward 7 – La Sierra Ave & Hole St /Tyler St
        - Ward 6 – Van Buren Blvd & Jackson St/Van Buren Blvd
        - Ward 5 – Van Buren Blvd & Indiana Ave/Victoria Ave
        - Ward 4 – Madison St & Lincoln Ave/ Victoria Blvd
        - Ward 3 – Van Buren Blvd & Arlington Ave/Arlington Ave
        - Ward 2 – Chicago Ave & University Ave/ Victoria Ave
        - Ward 1 –Blaine St & Iowa Ave/ University Ave

Lessons Learned

- Difficult to get quality feedback and discussions in the webinar format.
- The presentation reached a lot of eyes but it is unclear how much of the content people consumed.
- For future online use, tailor the presentation to each platform the project team decides to utilize.
- Imperfect system but the project team received great results despite the restrictions in response to COVID-19.

Appendix E: PACT Comment Sheets

COMMENTS SHEET

Name: Anna Moore

Email (optional): eightyBanna@aol.com

Please use the space provided below to note any general comments you have to the Riverside PACT Plan. PACT Needs to coordinate w/ RTA!

RTA Bus Related

→ Every bus stop should have a trash can for riders that are waiting @ the bench.

*Lower the riding Fee $ $ $ Cost is too high! (Senior + Student)

→ there should also be a canopy or shaded TREES! enclosure if the bus bench is in direct sun.

→ All bus stops NEED to have the RTA map of that specific Route posted @ the stop. With times and day of the week for eastbound and westbound. over →

Streets

★ Golden Ave. from Westwind st to Grameray Ave.

Needs to be repaved a.s.a.p. That section of street is horrible and so far gone past the point of just slurry. it will have to be tore out and completely Re-done.

★ People who ~~drive~~ ride bikes and scooters need the bike lane section of the street (potholes) in particular) filled in.

TRAILS Ward 4 is big equestrian community w/ a lot of trails near the Santa Ana River + Hidden Valley Nature Center. Trail access is huge amenity and is limited already We need more parking areas for trail access @ the top of Tyler Ave. near Jarupa Ave + Van Buren.

★ Walking paths in and around Parks should have drinking fountains that are accessable to Handicapped residents as well as pets. And the fountains must be working.

Bus Related: RTA
→ Bus stops use to have the Route maps posted @ each stop but couple years ago they took them all away and moved to the text # for Route info. that is no help if the rider does not have a Cell phone!

COMMENTS SHEET

Name: AARON MOORE

Email (optional): ATMOORE84AM@GMAIL.COM

Please use the space provided below to note any general comments you have to the Riverside PACT Plan.

IF THE CITY DOES NOT HAVE ENUGHT FUNDS THEY COULD MAKE SIDE WALKS IN PLACES THAT COULD USE THEM. MAKE THEM OUT OF HOT ASSFUACT COMPACTED INTO A SIDEWALK AND CURB THEN TREATED WITH AN ADDITIVE/CONCREAT ADHESIVE THEN FINISHED WITH A CONCREAT SLEARY TO MAKE IT SILLED AND [redacted] FINISHED TO LOOK LIKE NORMAL CURB AND GUTTER WITH SIDEWALK. (JUST A THOUGHT.) ACTIVE TRANSPORTATION LIKE PHISICOL WALKING, RUNNING, BIKE (ECT.) OR JUST TRYING TO GET PEOPLE MOVED AROUND TO WHAT THEY WOULD LIKE TO DO. BRING BACK THE TRALEY AND HAVE THE RIDES FOR 50 CENTS. JUST IN THE CITY LIKE IN LARGE CERCOLS LIKE FROM DOWN TOWN GOING DOWN JURPA, STREETER ARLINGTON TO LASCARRA THEN MAGNOLA TO ARLINGTON DOWN ARLINGTON TO CENTRL THEN DOWN THE HILL INTO THE EAST SIDE AND AROUND.  THE DOTTED LINE IS NORTHSIDE TO WATKENS AROUND TO ALASANDRO TO CENTRL TO VAN BEARN TO CALIFONA TO COLETTO RIVERWALK TO INDANA TO LASCARRA TO ELSIBRANTA TO

WOOD, BACK TO VANBEARN AND OVER TO TRAWTENE AROUND IN BIG OVELS TO IN CORPERATE ALL of RIVERSIDE REALY BRINGING THE CITY TOGETHER AS A HOLE. THAT WOULD BE AMAZING!!! YOU COULD EVEN CHARGE 1.00 DOLLER, BUT THEN GIVE A TRANSFER TO PEOPLE THAT WOULD LIKE ONE. TO CHANGE TO THE OTHER TRALEY AT ONE of THE TWO SPOTS WERE THEY OVERLAP EACH OTHER. THAT WOULD GET PEOPLE TO GET ALMOST ANYWERE OR AT LEST REALY CLOSE TO WEREVER THEY WOULD LIKE OR NEED TO GO FOR REALY INEXPESIVE. I THINK PEOPLE WOULD RIDE SOMETHING LIKE THAT. NOT LIKE THE RTA BUT "RIVERSIDES TRALEYS". I REMBER WHEN THEY FRIST CAME OUT THEY WERE FREE TO RIDE BUT THAT DID NOT LAST TO LONG THEN YOU HAD TO PAY THEN THEY JUST STOPED ALTOGETHER.

PULLING	PUTTING	PUTTING	PUTTING
ALL THE	ALL THE	ALL	ALL
CITY	CITY	COMMENTS	C
TOGETHER	TRALEY	TOGETHER	T

MORE AREA OF BUS

ACCESSIBILITY ISSUES

PARKING IN BUS LANES

GAPS IN GRAMERCY FOR EQUESTRIAN

STREET CLEANING

COMMENTS SHEET

Name: Justin	
Email (optional):	

Please use the space provided below to note any general comments you have to the Riverside PACT Plan.

[redacted] sidewalk and horse trail stops on Mitchell between Gramercy & [redacted] Campbell and needs to be completed. Sidewalk need to be continued on Campbell east of Stover Ave for the kids who walk to school.

COMMENTS SHEET

Name: Rudy Gonzales

Email (optional):

Please use the space provided below to note any general comments you have to the Riverside PACT Plan.

I would like to see more 'nature' left for residents
Nature trails, bike trails/lanes are important for safety
It is very nice to leave 'open space' and have a
safe way to + from these areas

COMMENTS SHEET

Name: Robert L. Treen

Email (optional): rtreen1937@gmail.com

Please use the space provided below to note any general comments you have to the Riverside PACT Plan.

At street corners with wheelchair ramps safety steel poles offset to allow bikes wheelchairs to pass but block autos especially on commercial busy streets

Victoria Avenue Bike lanes Better marked and No Parking Zones enforced

Directions to allow the 3 Feet From bicycles.

COMMENTS SHEET

Name: Jean Denbo
10240 Dunn Ct Riverside 92503
Email (optional): Jean E Den @ AOL.com

Please use the space provided below to note any general comments you have to the Riverside PACT Plan.

Parking needed for walking the Riverbottom at Jurupa and Tyler. Too many park on Jurupa Ave and leave trash on that street and adjacent neighborhoods

Appendix F: Trail Design and Construction Details and Specifications

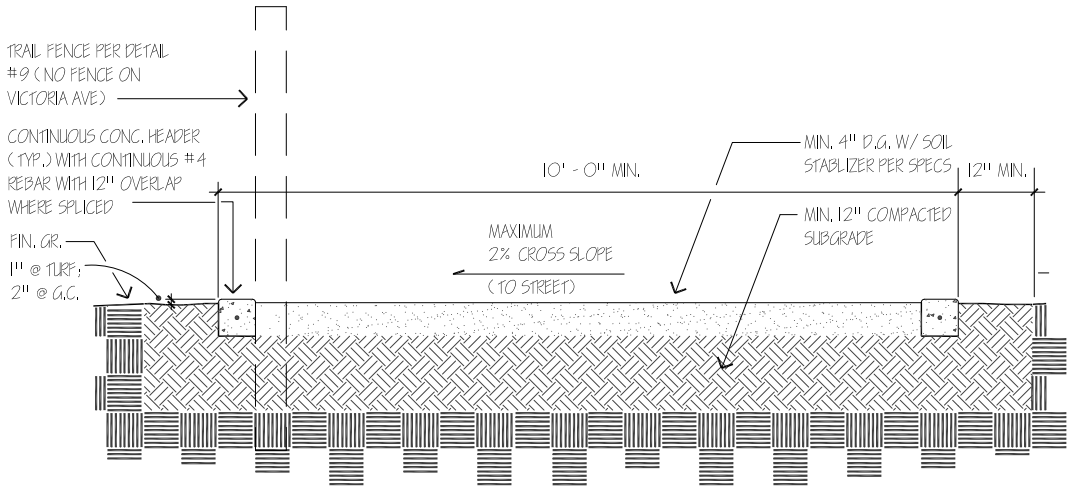
Design and Construction Details and Specifications

The following pages include the City of Riverside's most commonly used trail construction details and trail specifications, and the more commonly used design details from the California State Parks Trails Handbook (2019) and the USDA United States Forest Service Standard Trail Plans and Specifications. These include:

- Travelway Excavation
- General Brushing
- Clearing and Brushing Travelway
- Railings
- Typical Switchbacks
- Puncheons
- Wooden Steps
- Rock Steps
- Equestrian Steps
- Split Rail Gate
- Timber Planking
- Equestrian Puncheon

Following the previous information are details showing types of fence construction. These include:

- Post and Rail
- Post and Cable
- City of Riverside Standard PVC



NOTES:

GRADES:

TRAIL LONGITUDINAL GRADIENT SHALL COMPLY W/ ADA STANDARDS WHERE FEASIBLE.

GRADE TRAIL TREAD FLUSH TO T.C. AT LOWER SIDE AND MAX. 1/ 2" BELOW AT UPPER SIDE.

NATIVE SOILS MAY BE USED FOR D.G. WHERE MEETING 'GREENBOOK' DEFINITION OF "D.G."

TRAIL SUBGRADE TO BE COMPACTED TO 90% RELATIVE COMPACTION FOR MINIMUM OF 12" BELOW D. G. SUBGRADE.

TRAIL LONGITUDINAL GRADIENT SHALL NOT EXCEED 10% WITHOUT PRIOR WRITTEN CITY APPROVAL.

D.G. TO BE MIXED WITH SOIL STABLIZER AS SPECIFIED PRIOR TO PLACEMENT. APPLICATION RATE TO BE FOR "HIGH TRAFFIC."

FENCE:

WHERE R.O.W. IS 66' OR LESS, AND TRAIL IS ALONG FRONT OR SIDE YARDS, PLACE FENCE AT EDGE OF TRAIL EASEMENT ADJACENT TO PRIVATE PROPERTY TO SERVE AS P/ L FENCE.

WHERE R.O.W. EXCEEDS 66' (e.g. REVERSE FRONTAGE LANDSCAPE AREAS) PLACE TRAIL FENCE ON STREET SIDE OF TRAIL TREAD.

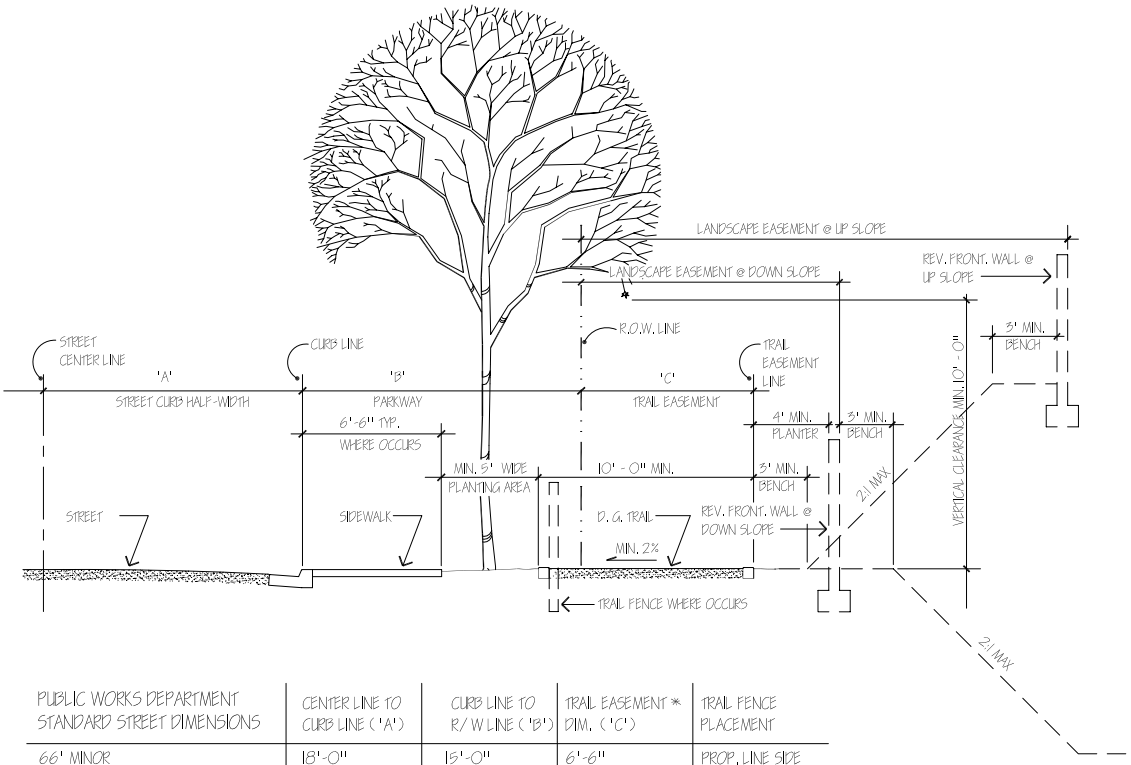
TRAIL FENCE MAY BE OMITTED WHERE TRAIL LEAVES RIGHT OF WAY ONCE 25' AWAY FROM R.O.W. LINE.

CONCRETE:

CONCRETE MOWCURB(S) MAY BE OMITTED WHERE TRAIL ABUTS "NATIVE VEGETATION" (I.E. NON-IRRIGATED) AREAS.

WHERE TRAIL CROSSES DRIVEWAYS/ SIDEWALKS PROVIDE HEAVY BROOM FINISH CONCRETE.

Approved BJ	Date 09/12/03	Park and Recreation Department CITY OF RIVERSIDE	Detail No. 1
Revised	Date	STANDARD TRAIL SECTION	



PUBLIC WORKS DEPARTMENT STANDARD STREET DIMENSIONS	CENTER LINE TO CURB LINE ('A')	CURB LINE TO R/W LINE ('B')	TRAIL EASEMENT * DIM. ('C')	TRAIL FENCE PLACEMENT
66' MINOR	18'-0"	15'-0"	6'-6"	PROP. LINE SIDE
66' SECONDARY/ COLLECTOR	20'-0"	13'-0"	8'-6"	PROP. LINE SIDE
66' INDUSTRIAL COLLECTOR	22'-0"	11'-0"	4'-0"	STREET SIDE
80' SECONDARY	20'-0"	20'-0"	1'-6"	STREET SIDE
88' MAJOR	32'-0"	12'-0"	9'-6"	STREET SIDE
100' MAJOR	34'-0"	10'-0"	12'-6"	STREET SIDE
110' MAJOR	34'-0"	12'-0"	10'-6"	STREET SIDE
120' MAJOR	50'-0"	10'-0"	12'-6"	STREET SIDE
FRONTAGE ROAD	15'-0"	12'-0"	10'-6"	PROP. LINE SIDE

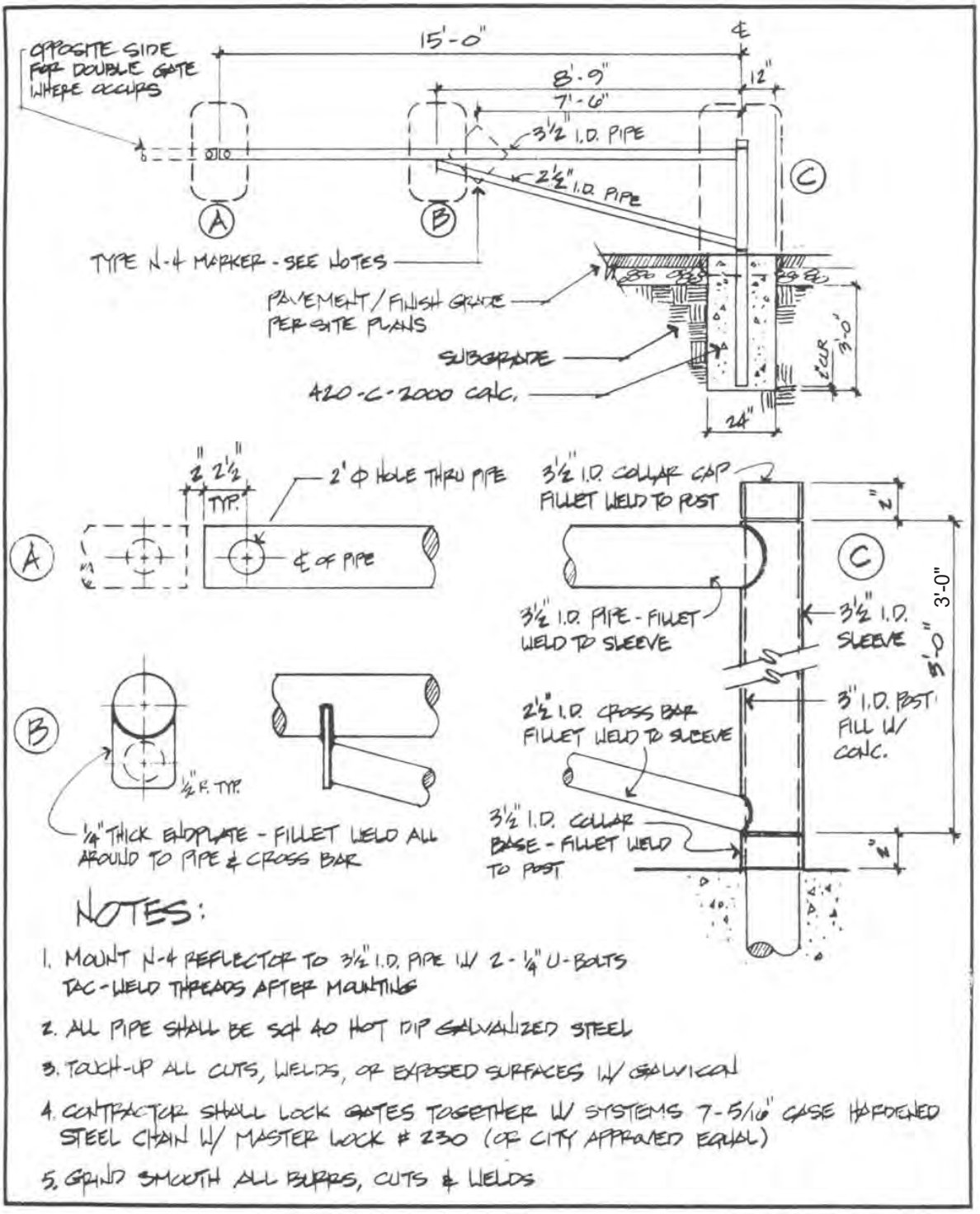
* ASSUMES STANDARD CITY SIDEWALK IS BEING PROVIDED AT ALL EXCEPT 66' INDUSTRIAL COLLECTOR

Approved BJ	Date 09/12/03
Revised	Date

Park and Recreation Department
CITY OF RIVERSIDE

TYP. TRAIL & PARKWAY SECTION

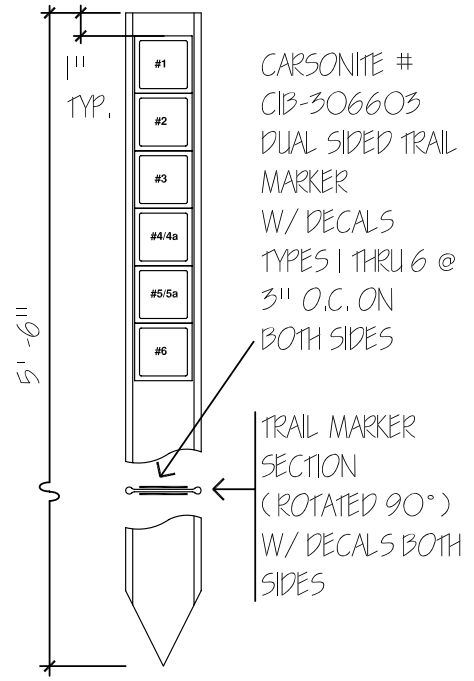
Detail No. 2



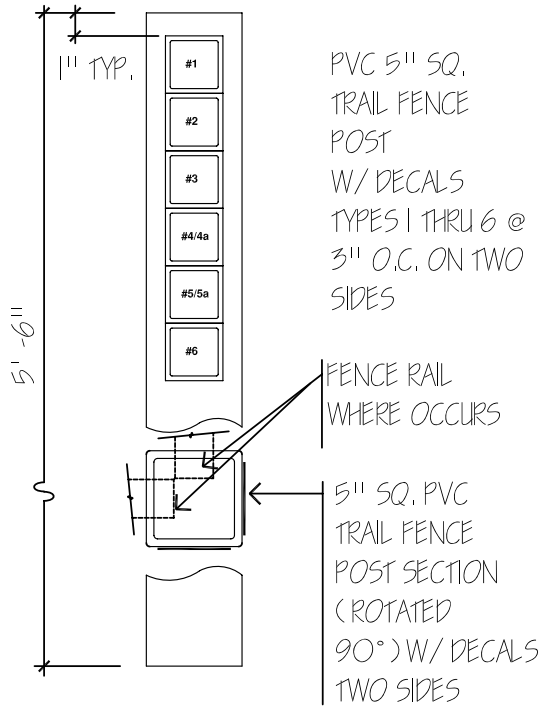
NOTES:

1. MOUNT N-4 REFLECTOR TO 3½" I.D. PIPE W/ 2 - ¼" U-BOLTS TAC-WELD THREADS AFTER MOUNTING
2. ALL PIPE SHALL BE SCH 40 HOT DIP GALVANIZED STEEL
3. TOUCH-UP ALL CUTS, WELDS, OR EXPOSED SURFACES W/ GALVICOAT
4. CONTRACTOR SHALL LOCK GATES TOGETHER W/ SYSTEMS 7-5/16" CASE HARDENED STEEL CHAIN W/ MASTER LOCK # 230 (OR CITY APPROVED EQUAL)
5. GRIND SMOOTH ALL BURRS, CUTS & WELDS

Approved	Date	Park & Recreation Department CITY OF RIVERSIDE	Detail No.
Revised	Date	STEEL SWING ARM GATE	5110



CARSONITE MARKER W/DECALS (TYP.)



PVC TRAIL FENCE W/DECALS (TYP.)

CARSONITE DECALS
TOLL FREE CONTACT NUMBER 1-800-648-7915

TYPE		DESCRIPTION	TYPE		DESCRIPTION
#1	CLOSED TO ALL MOTORIZED VEHICLES	CLOSED TO ALL MOTORIZED VEHICLES CARSONITE DECAL 4149TMD	#4a		NON-EQUESTRIAN TRAIL CARSONITE DECAL RS-064 W/ SLASH
#2		HIKING/ JOGGING TRAIL CARSONITE DECAL RS-068	#5		ACCESSIBLE TRAIL CARSONITE DECAL RS-028
#3		BICYCLE TRAIL CARSONITE DECAL RS-066	#5a		NON-ACCESSIBLE TRAIL CARSONITE DECAL RS-028 W/ SLASH
#4		EQUESTRIAN TRAIL CARSONITE DECAL RS-064	#6		NO MOTORIZED VECHICLES PERMITTED CARSONITE DECAL RS-065 W/ SLASH

Approved BJ	Date 09/12/03	Park and Recreation Department CITY OF RIVERSIDE	Detail No. 12
Revised	Date	TRAIL MARKERS/DECALS	

SECTION 02211 - TRAIL GRADING AND CONSTRUCTION

PART 1 - GENERAL

1.01 STANDARD SPECIFICATIONS: The provisions of the "Standard Specifications for Public Works Construction" shall apply except as modified herein.

1.02 SCOPE: The Work of this Section shall consist of furnishing all labor, materials, equipment, appliances and services necessary for the execution and completion of all **Trail Grading and Construction Work** as shown on the Plans and as described in the Specifications including, but not necessarily limited to, the following:

- Rough grading as shown on the plans, including cut, fill, backfill and backfill compaction
- Subgrade preparation for D.G. paving including any over-excavation and re-compaction as may be required
- Excavation of soils for all trail fence posts and structures
- Excavation, backfill and compaction of soils for all mowcurbs
- Soil compaction as required;
- Protective measures;
- Dust and noise abatement;
- Borrow from and/or export to a local borrow/disposal site as directed and as necessary for a balanced grading operation;
- Fine grading of the work site;
- Decomposed Granite Paving;
- Soil testing as required;
- Coordination with Work of other Sections;
- Clean-up; and,
- Erosion Repairs, Guarantees and Warranty Work.

1.03 RELATED WORK SPECIFIED ELSEWHERE:
Finish Grading in Landscaped Areas Section 02480

1.04 QUALITY ASSURANCE:

A. Other Requirements: All Work of this Section shall comply with the requirements of the following:
   1. The Grading Code of the City of Riverside.
   2. The Soils Engineering Investigation Reports for the site prepared by Soils Engineer (see Appendix).

B. Tests and Inspections:
   1. All Work in this Section shall be subject to the observation and testing as required by the Soils Engineer selected by City. The Soils Engineer will submit a compaction report to the Parks Department Representative certifying Contractor's compliance with the Plans, Specifications, Soils Reports and City Grading Ordinance in placing all fills and backfills. The Soils Engineer will conduct all specified tests to insure compliance. The Soils Engineer will also test, identify and make recommendations on borrow site fill materials as specified in this Section.
   2. The number and location of soils tests shall be at the discretion of the Soils Engineer to assure uniformity and compliance with the City Grading Ordinance, and shall be at least one test per two vertical feet of fill, but not less than one test per 500 cubic yards, all as approved by the Parks Department Representative.
   3. The costs of services of the Soils Engineer for specified field density and maximum density tests, compaction reports and certificates of compliance, will be borne by City except that additional tests and recompactions made necessary by inadequate compaction, inadequate materials provided by Contractor, or inaccurate excavations shall be paid for by Contractor.

1.05 GRADING A "BALANCED" OPERATION: It is the intent of the Plans and Specifications that the grading shall be a balanced operation with site material. No import nor export is contemplated. If during grading operations an excess or deficiency of earth becomes apparent, Contractor shall notify the Parks Department Representative immediately in writing and ask for direction in adjustment of plan grades such that the grading

shall be completed with site material conforming as nearly as possible to the finish grades shown and insuring positive drainage all at no additional cost to City.

1.06 WATER: See Special Provisions Section **7-8.5 Temporary Light, Power, and Water** regarding temporary construction water.

1.07 JOB CONDITIONS:

A. Protection of Existing Items:
   1. Contractor shall furnish, place and maintain all shoring and bracing as may be required for protection of existing structures and utility services during execution of the Work.
   2. All bench marks, monuments and other reference points shall remain undisturbed unless specifically directed otherwise by the Park Projects Inspector.

B. Coordination with Others:
   1. Contractor shall give written notice to the Parks Department Representative, utility agencies, and other legal authorities prior to starting Work.
   2. Contractor shall coordinate Contractor's operations with other trades, utility agencies, and other affected public departments to assure continuity for both access and service of all utility service distribution lines, in conformance with applicable requirements of these organizations. No services to any property shall be impeded.

C. Abandoned and Unknown Utilities:
   1. Abandoned lines, meters and boxes, obstructions or piping, shall be removed, plugged, or capped in accordance with the requirements and approval of the agencies affected, or as directed by the Park Projects Inspector. Coordinate all such Work with applicable mechanical or electrical trade having responsibility. Remove all abandoned utility lines, pipes, or conduits, to a point outside new construction lines.
   2. Where unmarked utility lines or other underground obstructions or piping are uncovered within the Work area, notify the agencies or service utility companies having jurisdiction and take necessary measures to prevent interruption of service. Should such lines or services be damaged, broken, or interrupted through Contractor's own negligence, those services shall be repaired immediately by the party designated by the utility owner, at Contractor's expense. If an unmarked utility is damaged other than through the negligence of Contractor, Contractor's responsibility is limited to providing immediate and proper notification of the damage to the utility owner so that repairs can be made. Contractor shall cooperate with the utility owner and provide access for repair work.

PART 2 - MATERIALS

2.01 D.G. PAVING: Shall be Natracil ™ Stabilized Decomposed Granite/Crushed Aggregate Stone, as manufactured by Gail Materials, 10060 Dawson Canyon Road, Corona, CA 92883, (951) 667-6106, http://www.gailmaterials.com/ or City approved equal.

A. D.G.: Shall be color as approved by the Inspector to match existing, decomposed granite free of silt, clay, weed seed, and any other deleterious material, conforming with Section 400-2.3 Disintegrated Granite, per the Standard Specifications and as approved by the Parks Department Representative. Contractor shall provide a one pound sample to the Parks Department Representative a minimum of 35 days prior to ordering materials for the review and approval of the Parks Department Representative.

B. Stabilizer: Shall be Natracil™ psyllium husk binder, or City approved equal. The stabilizer shall be incorporated with the granite fines by the use of a pug mill that includes a weight belt feeder that ensures the proper ratio of binder to granite fines. Blending with the use of a bucket loader or similar is not acceptable. The binder shall be blended at the rate of 12 lbs. per ton of granite fines.

2.02 DRAIN ROCK: Drain rock for all sumps and french drains shall be pervious backfill as specified in Standard Specifications, Section **300-3.5.2 Pervious Backfill**.

2.03 FILL MATERIAL:

C. Required Approval: All fill material must be approved by the Soils Engineer and the Parks Department Representative.

D. On-site Material: On-site excavated materials may be used for fill as approved by the Soils Engineer and the Parks Department Representative.

2.04 GRANULAR BEDDING MATERIAL: Where called for on the Plans, granular bedding material shall be crushed stone or pea gravel conforming to the following grading:

Sieve Size	% Passing
3/4"	100
1/2"	95
#4	5

2.05 IMPORT:

E. Landscape Fills: All import soil used for fill in landscape areas shall be Class 'A' topsoil per Standard Specifications, Section **212-1.1 Top Soil, General**.

F. Structural Fills: All import soil used solely for structural fill shall be non-expansive, predominantly granular material free from organic contaminants, and capable of attaining the required compacted densities.

G. Approved Samples: Samples of all import soil, as obtained by the City's Inspector at the borrow site, must be approved by the Parks Department Representative prior to start of import of soil to the Project site.

2.06 TRAIL FENCE: Trail fence shall be as specified by the Parks, Recreation and Community Services Department, per the updated Trails Master Plan (2021).

PART 3 - EXECUTION

3.01 GENERAL:

A. Work Sequence: All demolition, clearing and grubbing of objectionable materials must be completed to the satisfaction of the Parks Department Representative before starting any earthwork grading and excavation.

B. Survey: See Special Provisions Section **2-9.3 Survey Service** regarding responsibility for provision of all survey services as necessary for horizontal and vertical control points, layouts, lines and levels, and staking of the Work.

C. Allowable Gradients: Trails shall be constructed in the field to comply with the following maximum and minimum gradients.
1) Cross Slope: Trail cross slope shall be between 1% minimum and 2% maximum.
2) Longitudinal Gradients:
a) Accessible Trails: Trails designated for ADA access shall not exceed a longitudinal slope of 5% (20:1) unless configured as an Accessible Ramp.
b) Non-Accessible Trails: Trails designated as non-accessible, must be so marked, and generally shall not exceed a longitudinal gradient of 10% (10:1). However, slopes steeper than this for short distances may be allowed under the following conditions:
- Maximum of 15% slope for distance of 500' or less.
- 20% slope permitted only in unique situations and limited to 100' or less.
- Under no circumstances shall any slope exceed 20%.

c) Alternate Trail Designs: Where the natural terrain is so steep that provision of a trail at more

than 20% gradient is required, to decrease grade, terrace steps may be used.

3) Accessible Ramp Systems: All ramps shall not exceed a maximum slope of 8.333% (12:1). Ramps shall not exceed a maximum of 30' in length between landings. All landings shall not exceed a maximum cross slope of 2% in any direction. All landings shall be sized at a minimum of 60" x 60" or the width of the trail whichever is greater, all per ADA requirements. All ramps and landings shall be provided with accessible handrails.

4) Trail Edge: Where adjacent to developed landscape areas, the trail D.G. shall be contained by a concrete mowcurb on each edge of the trail tread. Where adjacent to native landscapes, no mowcurb is required and may be omitted.

5) Trail Fence and Markers: All trails along public streets shall be fenced and marked per the Trails Master Plan and Trails Standard Details.

6) Crossing Concrete: Where the trail is designated to cross concrete aprons and sidewalks, such aprons and sidewalks shall be constructed of concrete with rough broom or rake finish to prevent slipping. Where such areas exist, they shall be removed and replaced with rough broom finish concrete, or shall be heavy sandblasted in place to provide an equivalent non-slip surface..

3.02 ROUGH GRADING:

A. Conformance with Plans: Rough grading of the site shall be completed in accordance with indicated contours, elevations, and limit lines shown on the Plans and shall allow for the depths of slabs, paving, sub-base, topsoil, and controlled fills.

B. Grading Tolerances:

1. Sub-grades to receive slabs and pavements shall be graded to a tolerance of plus or minus one-half (1/2) inch, and shall be compacted as specified below in Sub-section **3.04 CONTROLLED FILL**, paragraph **G. Relative Compaction Requirements**, sub-paragraph **1. Slabs & Pavement Subgrades**.
2. Tolerance for rough grading in all other areas is 1/10th of a foot.
3. In all areas, appearance and positive drainage will be factors in the acceptability of grades.

C. Compacted Lifts: Graded material shall not be left in loose layers, but shall be stockpiled for use in controlled fill or compacted in thin layers as grading takes place in accordance with the requirements for controlled fill.

D. Scarification: Shall be performed on all areas indicated to receive paving to depths as indicated in the soils report. In the absence of a soils report, scarification shall be to a minimum depth of six (6) inches or to a depth permitting twelve (12) inches of controlled fill whichever is greater.

E. Engineer's Approval: Contractor shall obtain the Soil Engineer's approval of all scarified surfaces prior to placement of fill.

3.03 CONTROLLED FILL:

A. Landscape Fills: The topmost 12" of fill in all landscape areas shall be topsoil.

B. Rocks: Rocks larger than two (2) inches in diameter shall be removed from all fills to be compacted.

C. Lifts: Fill material shall be spread in uniform lifts of six (6) to eight (8) inches of un-compacted thickness.

D. Moisture Content: Prior to starting compaction, the fill material shall be brought to optimum moisture content by spraying with water if too dry, and aeration if too wet.

E. Mixing: Thoroughly mix each lift to assure uniform distribution of water content.

F. Allow for Shrinkage & Subsidence: Bring fills to suitable elevations above required grades to provide foreffects of shrinkage and settlement.

G. Relative Compaction Requirements:
1. D.G. Pavement Subgrades: For all areas designated to receive D.G. pavement and within a perimeter five (5) feet outside these areas, each lift shall be compacted to a minimum of 90% of maximum density as determined by ASTM D1557-78.
2. Planting Areas: Where fill is required in planting areas each lift shall be compacted to a minimum of 85% maximum density.
3. Mechanical Equipment: Perform all compaction by suitable mechanical equipment and methods approved by the Soils Engineer.

H. Contractor's Responsibility: During the grading operations, inspection and field tests will be carried on by the Soils Engineer. However, Contractor is responsible to ensure obtaining the required degree of compaction and the proper moisture content. Where compaction of less than the specified percentage is found, additional compaction effort shall be made with adjustment of the moisture content as necessary until the minimum specified compaction is obtained.

I. Over-excavation Due to Unsuitable Materials: Excessively wet material, material in any soft or spongy spots, and material in standing water shall be over-excavated to such depth as directed by the Soils Engineer and replaced with suitable material, properly compacted.

3.04 EXCAVATION: Contractor shall perform all necessary excavation work for trail fence footings and mowcurbs and shall perform any additional excavation work necessary to provide ample room for installation of concrete forms where required. The bottom of all excavations shall be level and free from loose material, and shall be brought to the indicated or required grades in undisturbed earth. All excavations shall be kept free of standing water. Contractor shall perform all pumping, draining, and dewatering as may be necessary to keep excavations free of standing water while carrying on the Work. Should excavations for footings, through error, be excavated to a greater depth or size than indicated or required, such additional depth or size shall be filled with concrete at Contractor's expense.

3.05 OPEN TRENCH OPERATIONS: Shall conform with Standard Specifications Section **306-1 Open Trench Operations**, as modified by the following:

A. General: Add the following to Standard Specifications Section **306-1.1.1 General**:
" Where trench is close to existing pole mounted lights, catch basins, or other structures that are to remain, Contractor shall brace as necessary to prevent dislocation of such structures. In the area of any such structures, the trench backfill shall be compacted to 90% to the full depth of the structure."

B. Unsuitable Material: Add new subsection 306-1.1.7 as follows:
3.06-1.1.7 Unsuitable Material. The conditions and requirements for the determination and disposition of unsuitable material encountered during open trench operations shall be in accordance with Standard Specifications Section **300-2.2 Unsuitable Material**.

C. Trench Backfill: Shall conform with Public Works Department Standard Drawing No.453.

3.06 BACKFILLING:
A. Material: Select site material shall be used for backfill of trenches and shall be free from large stones and clods. Material shall be as approved by the Soils Engineer.

B. Pre-Conditioning and Placement:
1. Layers of backfill shall be pre-conditioned by moistening with water, the amount to be controlled to insure optimum moisture conditions for the type of fill material used. Excess water causing saturated earth beneath footings, walks, and curbs is unacceptable.
2. Backfill shall be deposited in layers of maximum six inch thickness.
3. Backfill shall be compacted by suitable means to a minimum relative compaction of 90%.
4. All trenches shall be backfilled in accordance with this Section, and may be tested at the discretion of the Engineer.

3.07 FINE GRADING: Fine grading, as specified under this Section, is a separate operation from finish grading as specified under Section **02480 Planting**. Fine Grading Work is to commence upon completion of all trenching and backfill operations, and prior to soil preparation.

Upon completion of Fine Grading Work all areas shall slope to drain without water pockets or irregularities and shall conform to the intent of all Plans and Specifications after thorough settlement and compaction of the soil. Fine grading should allow for Soil Preparation Work as specified under Section **02480 Planting**, such that finish grades shall meet the elevations indicated on the Plans. Tolerance for fine grading is 1/4 inch, plus or minus. Any corrections to the Grading Work required to obtain proper drainage and to bring it into conformance with the intent of the Plans and Specifications and City codes shall be performed by Contractor at no additional cost to City.

3.08 DECOMPOSED GRANITE: Pre-mixed D.G. and stabilizer shall be placed in lifts, wetted and compacted as specified by the stabilizer manufacturer to a minimum relative compaction of 90%. D.G. pavement shall be smooth, free of rills, dips, and flow lines, such that surface water will properly drain off the surface of the pavement. Contractor shall provide as a turn-over item a minimum of 10 pounds of stabilizer product per 1000 lineal feet of trail being installed.

3.09 UTILITY INFRASTRUCTURE: Any and all utility infrastructure shall be place outside of the trail. Lines may pass under the trail, however, no cabinets, valves, boxes, etc. shall be installed within the trail.

3.10 DUST AND NOISE ABATEMENT: During the entire construction period, site areas shall be kept sprinkled (either with water or an approved dust palliative) as necessary to minimize dust in the air and annoyance to sur rounding properties. Adhere to the requirements of City ordinances for dust and noise control.

END OF SECTION

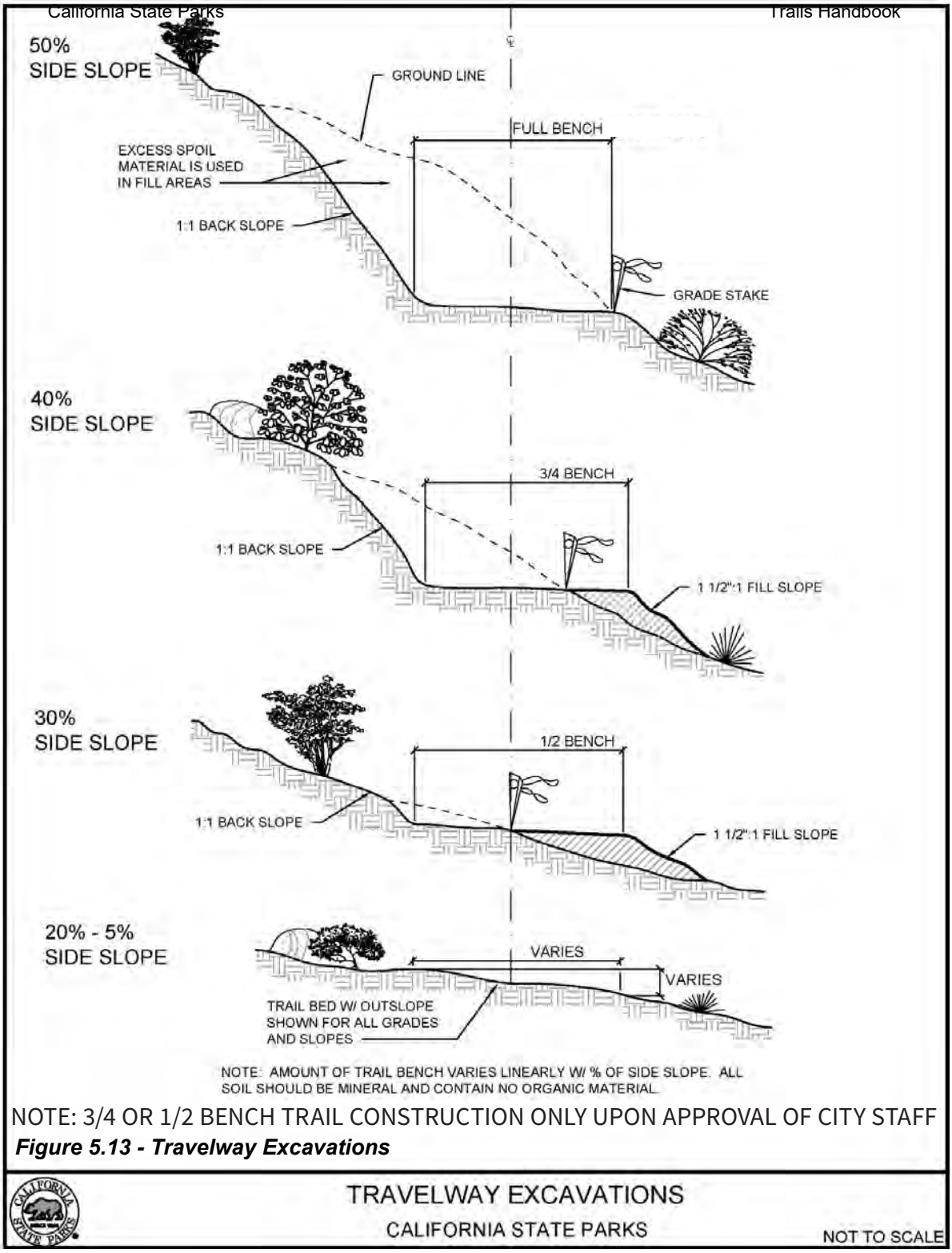


Figure 5.13 - Travelway Excavations

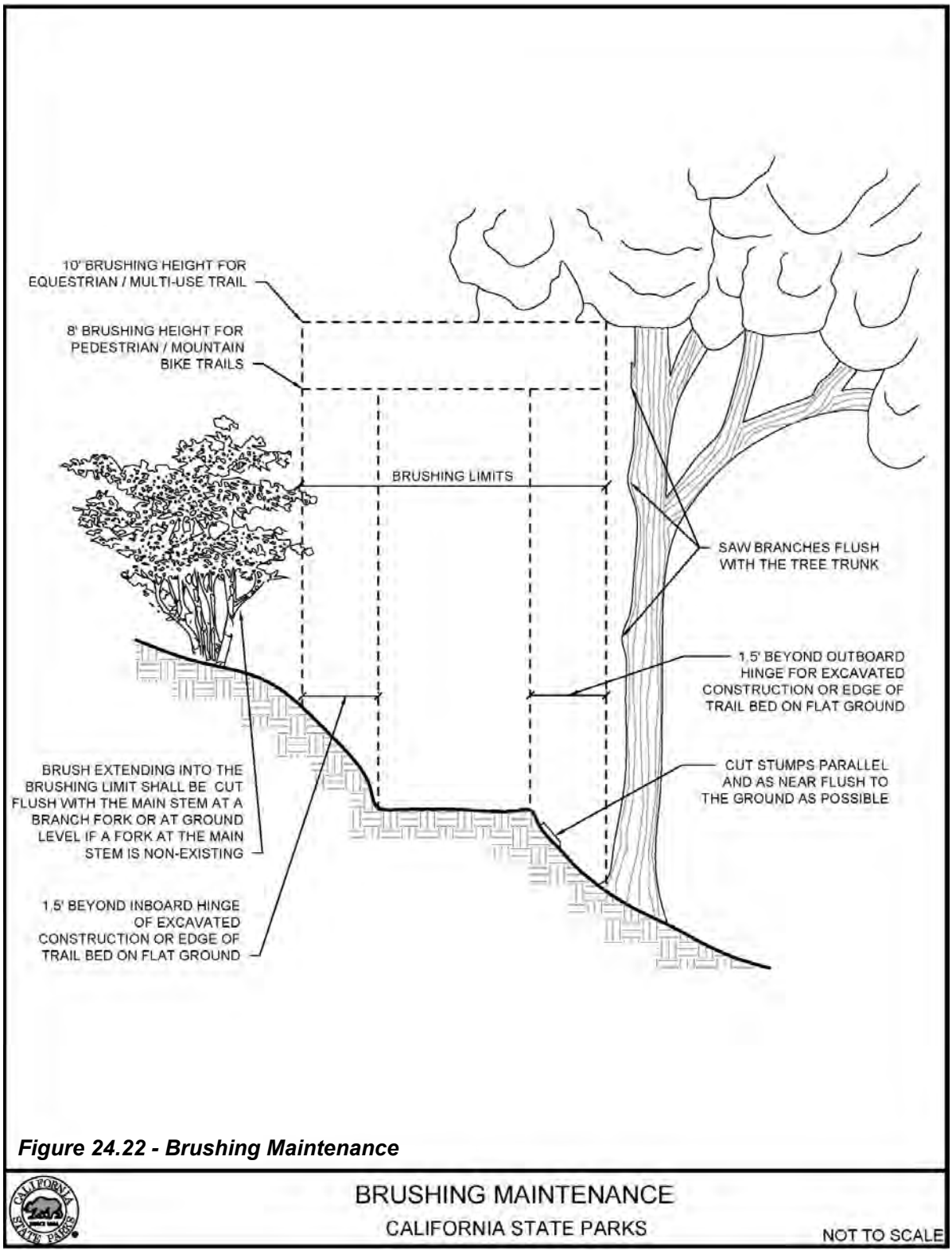


Figure 24.22 - Brushing Maintenance

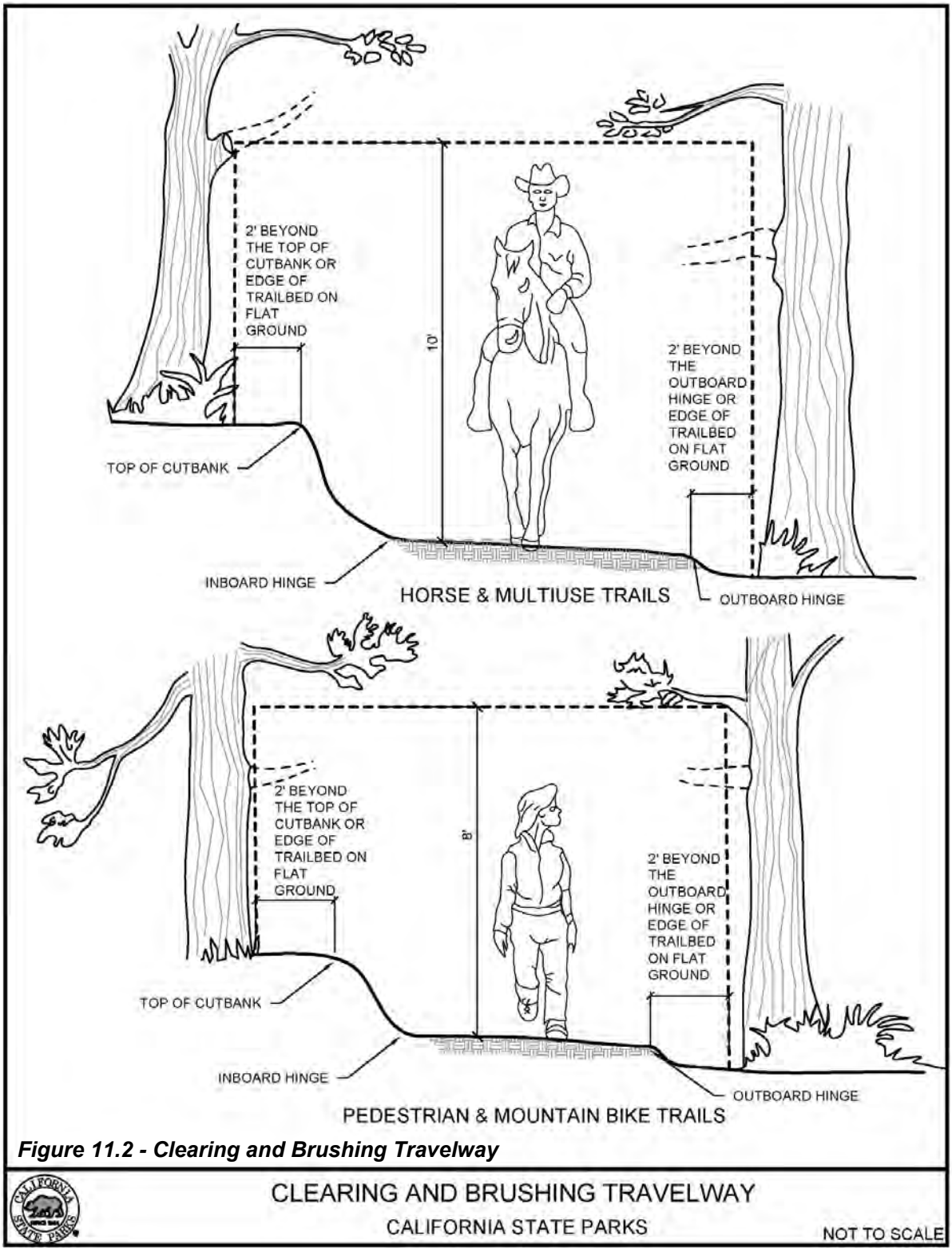


Figure 11.2 - Clearing and Brushing Travelway

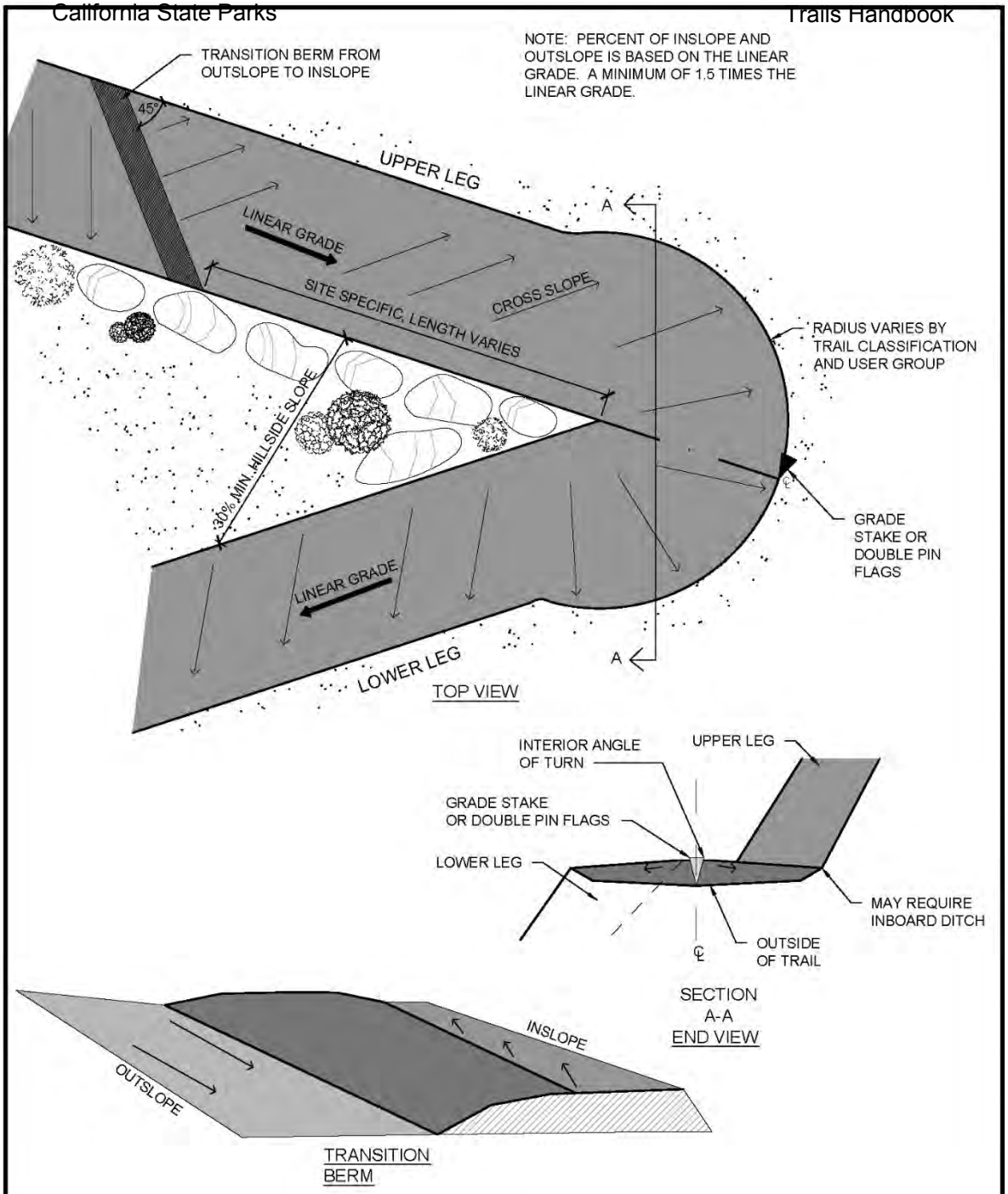


Figure 12.2 - Typical Switchback Details

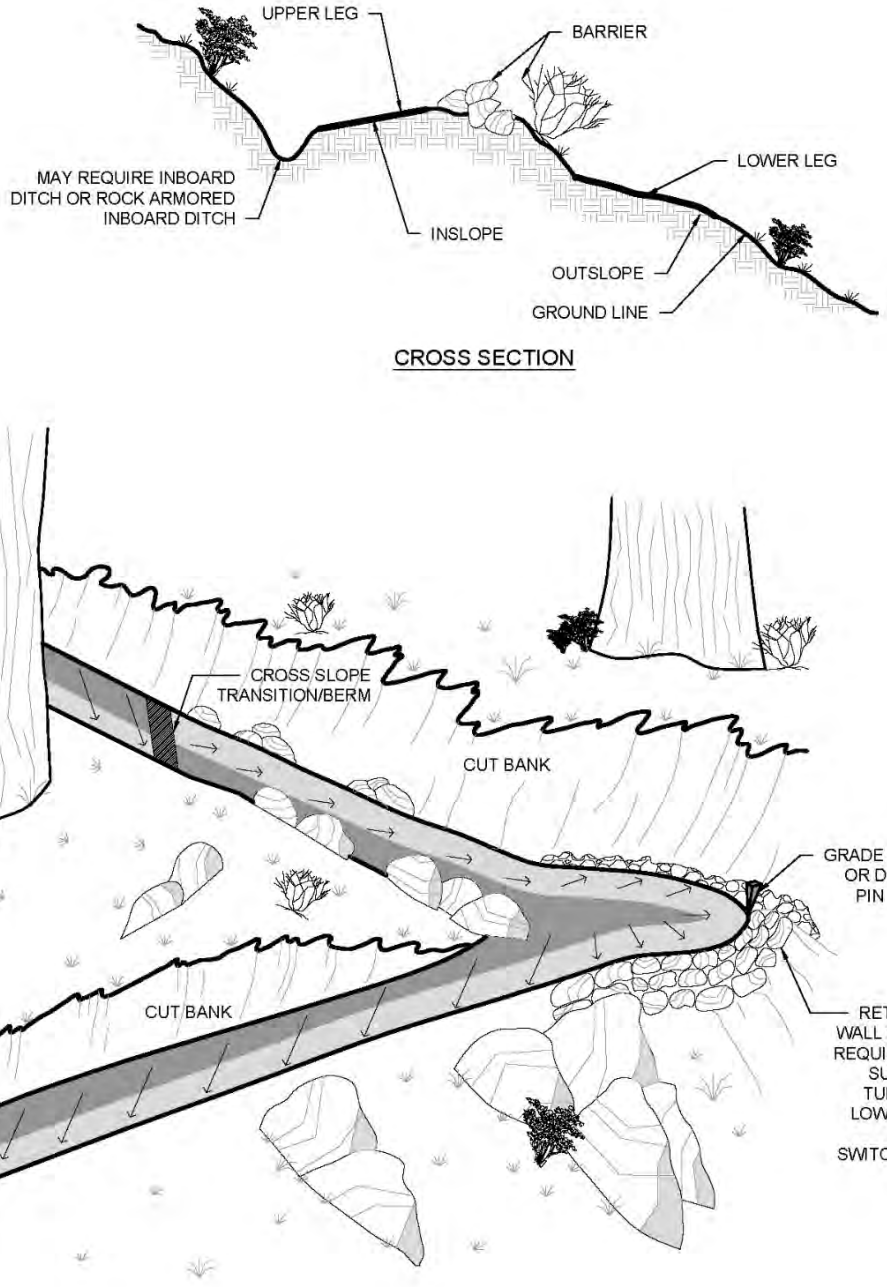


Figure 12.3 - Typical Switchback Details Continued

TYPICAL SWITCHBACK DETAILS CONTINUED

CALIFORNIA STATE PARKS

NOT TO SCALE

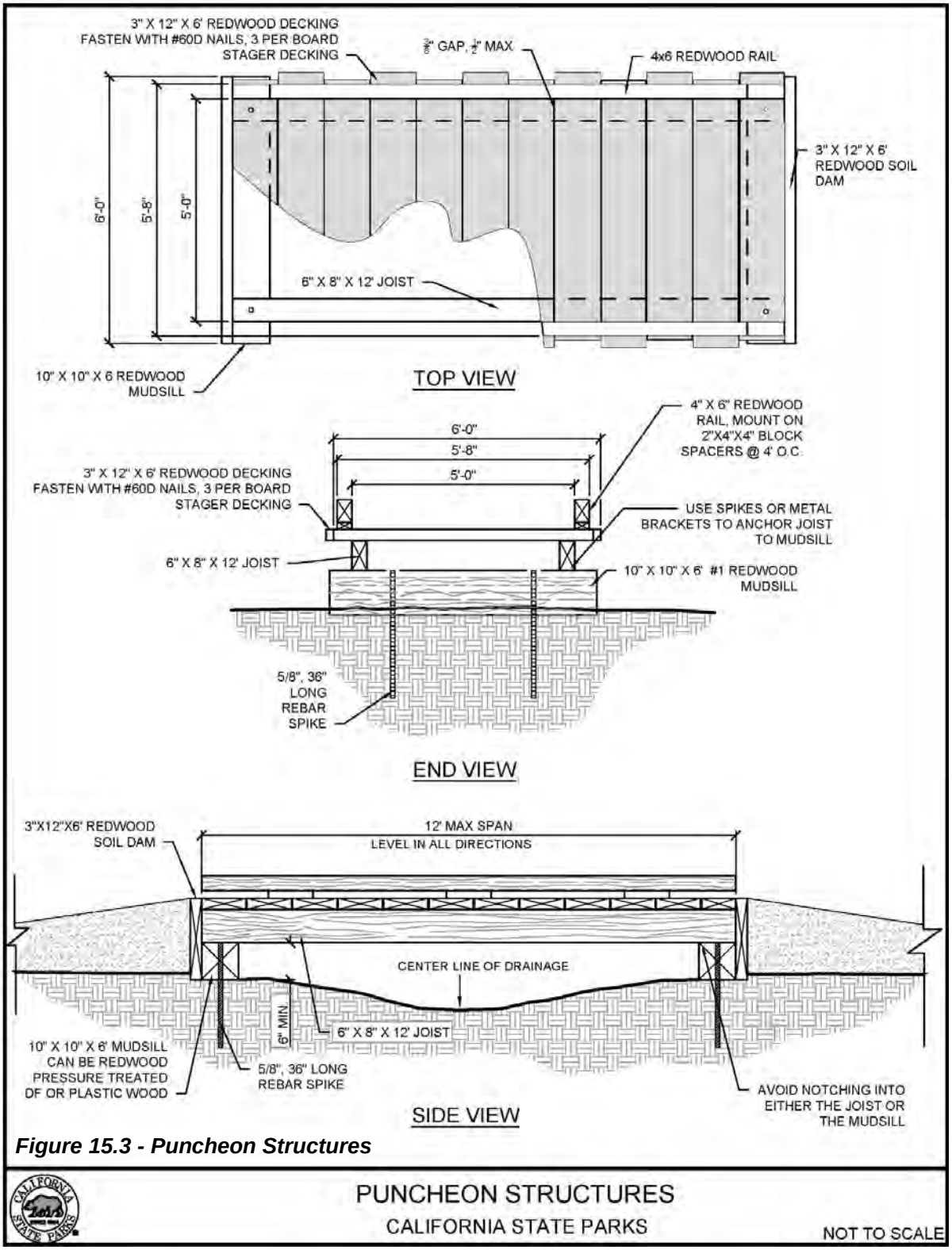


Figure 15.3 - Puncheon Structures

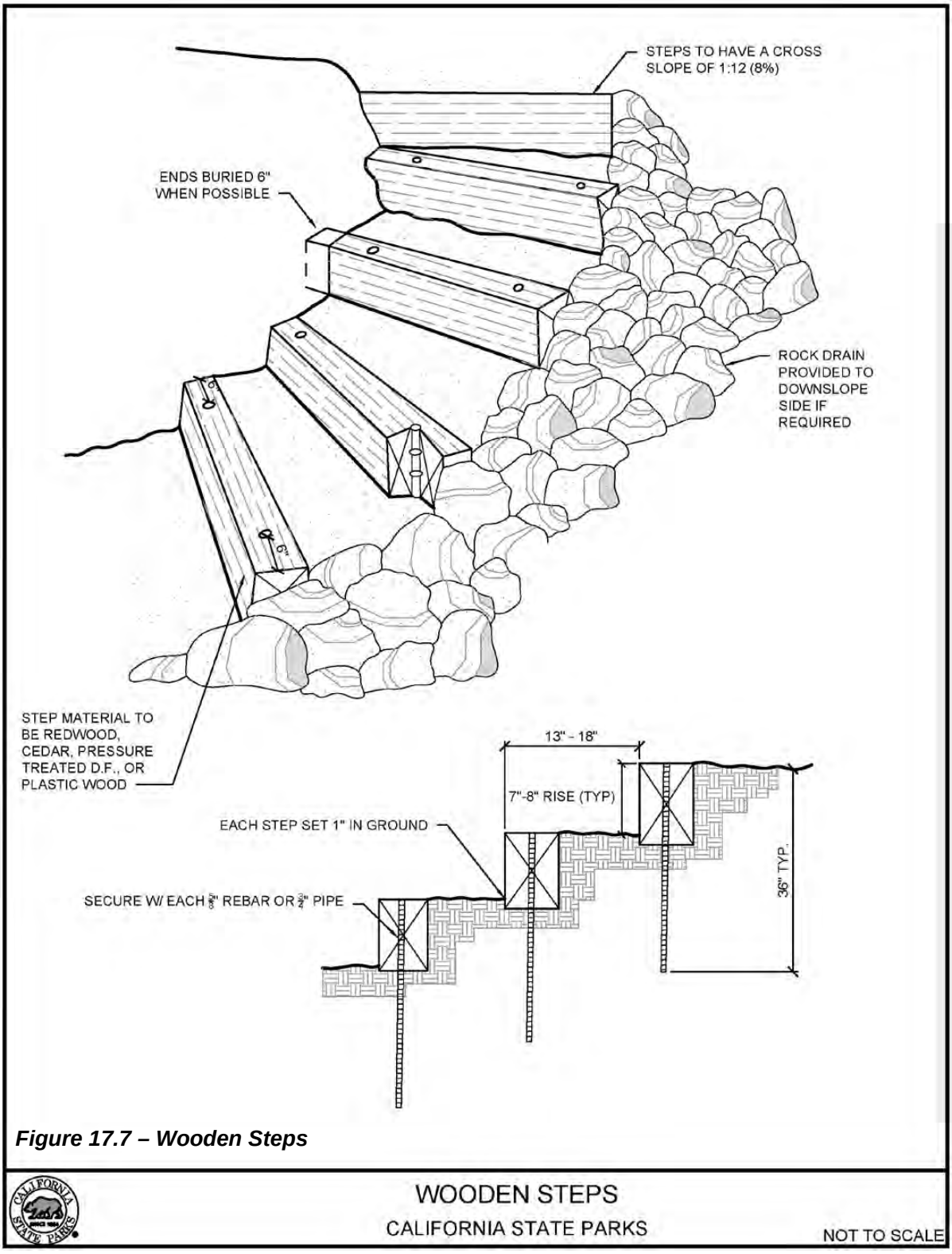


Figure 17.7 – Wooden Steps

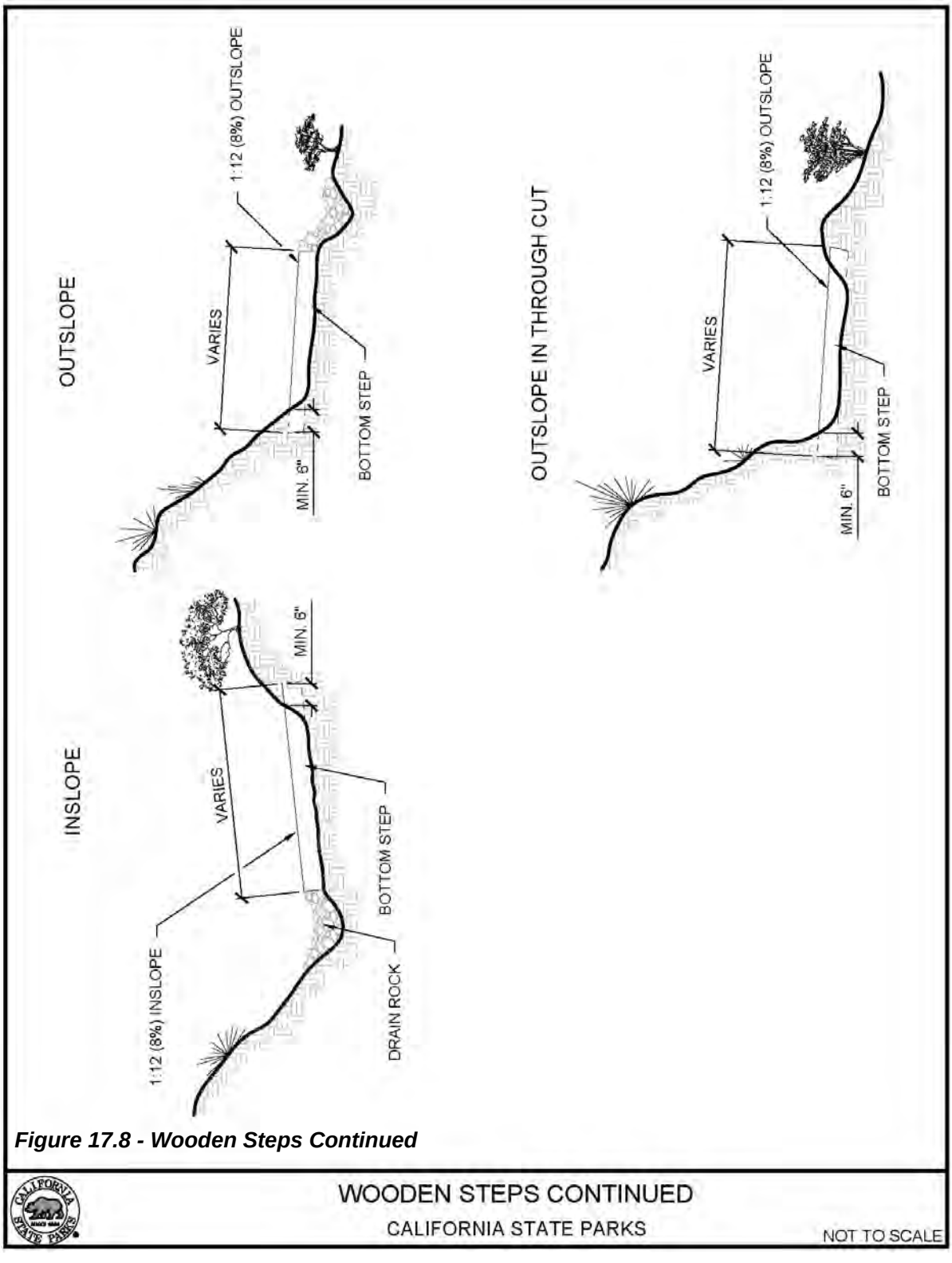


Figure 17.8 - Wooden Steps Continued

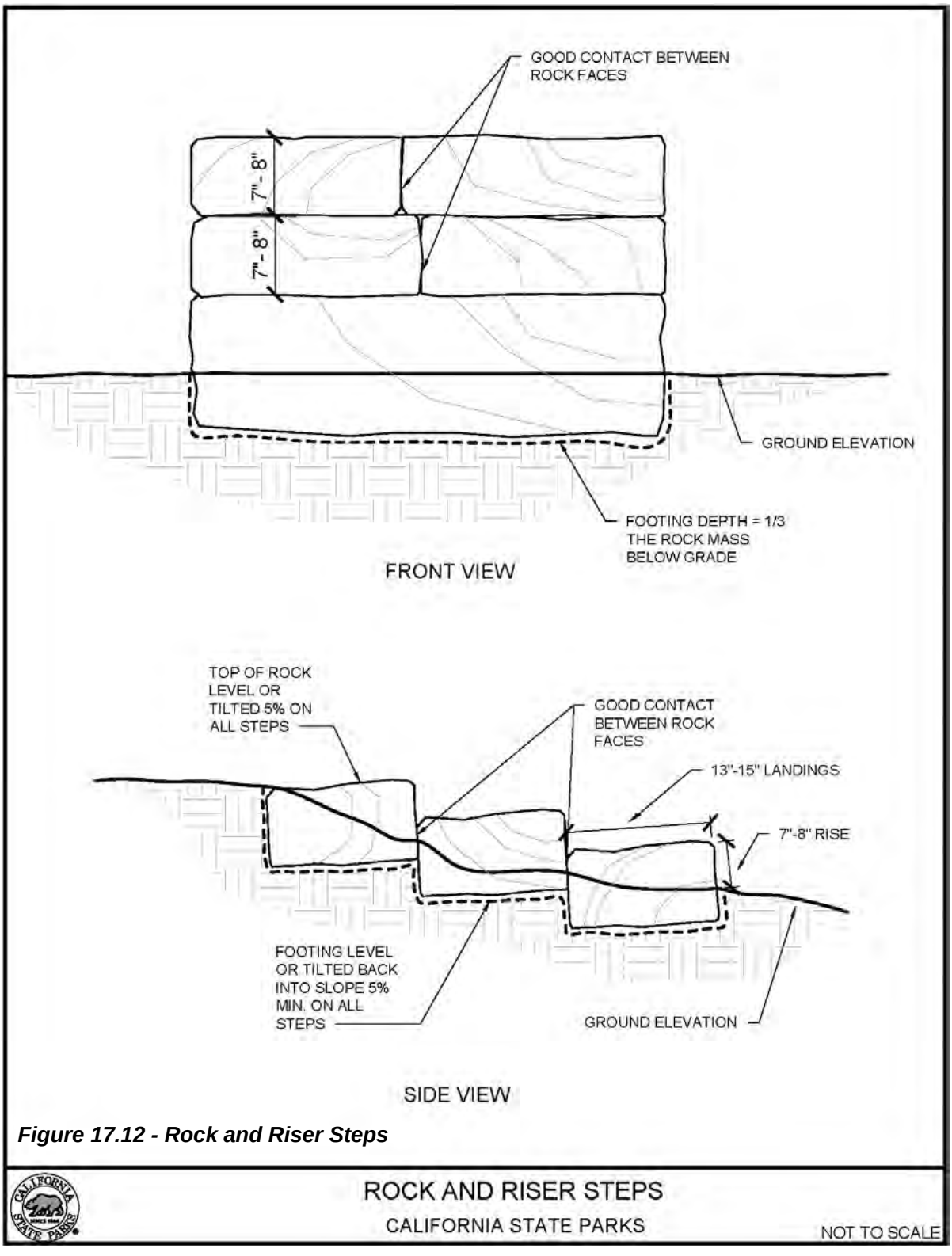


Figure 17.12 - Rock and Riser Steps

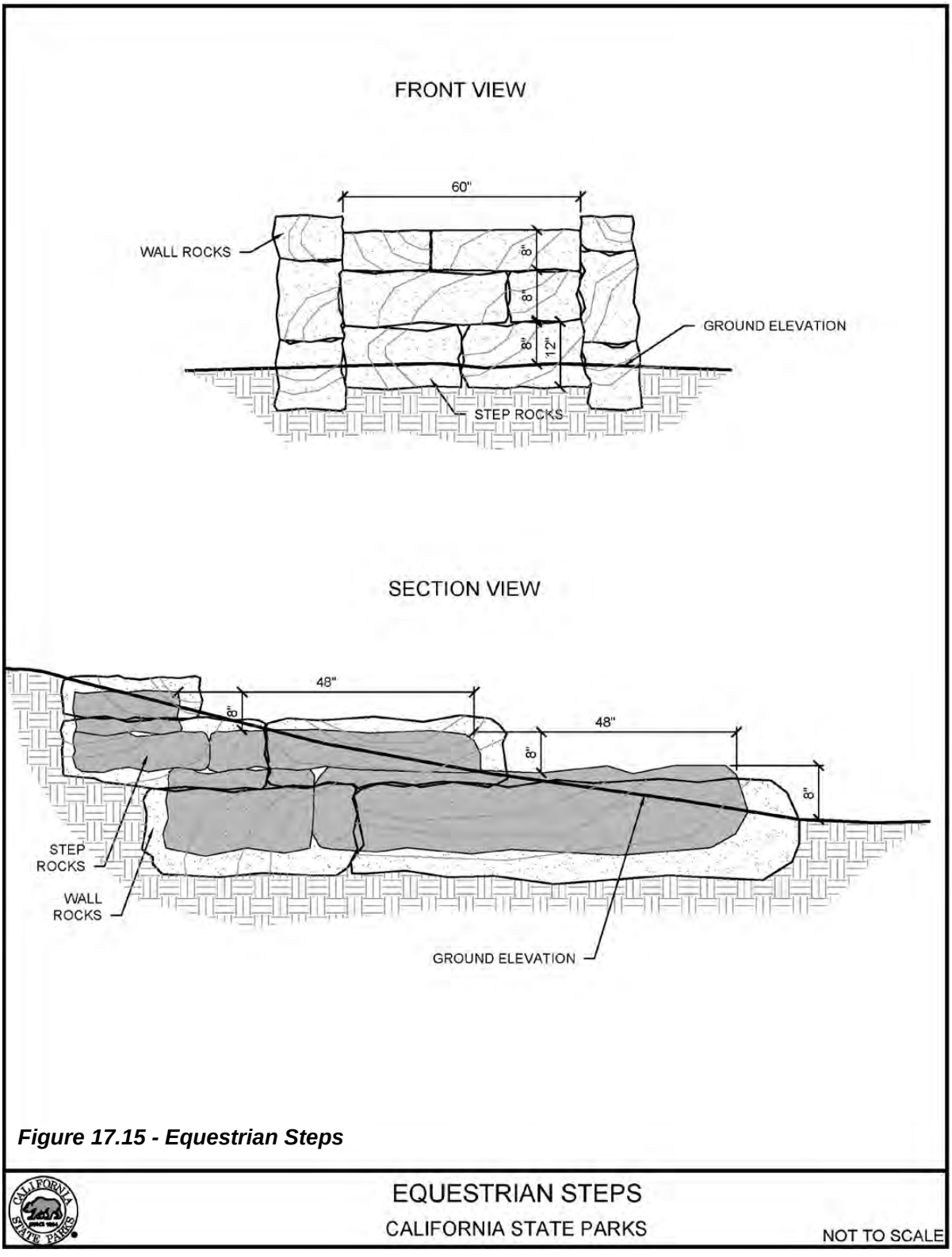


Figure 17.15 - Equestrian Steps

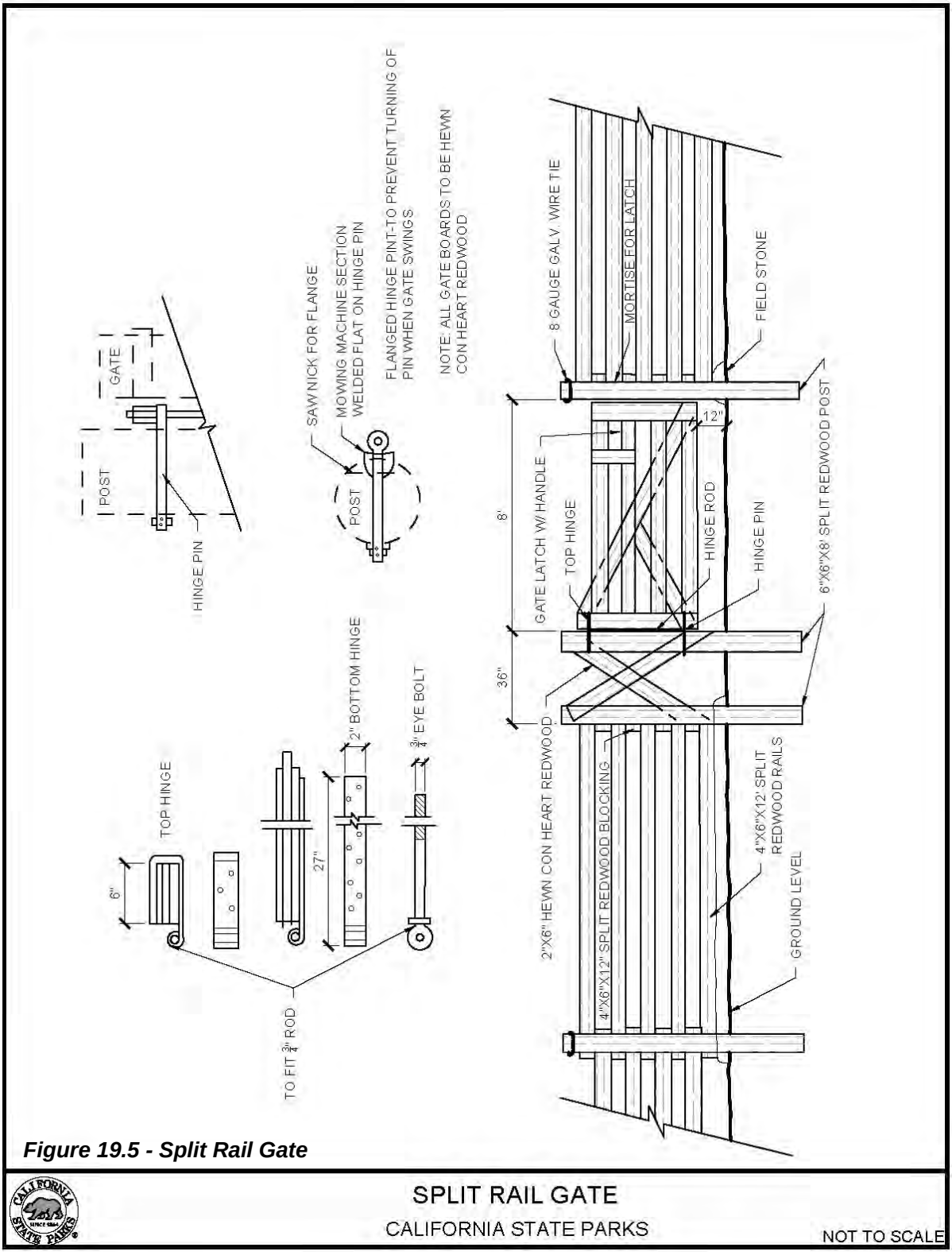


Figure 19.5 - Split Rail Gate

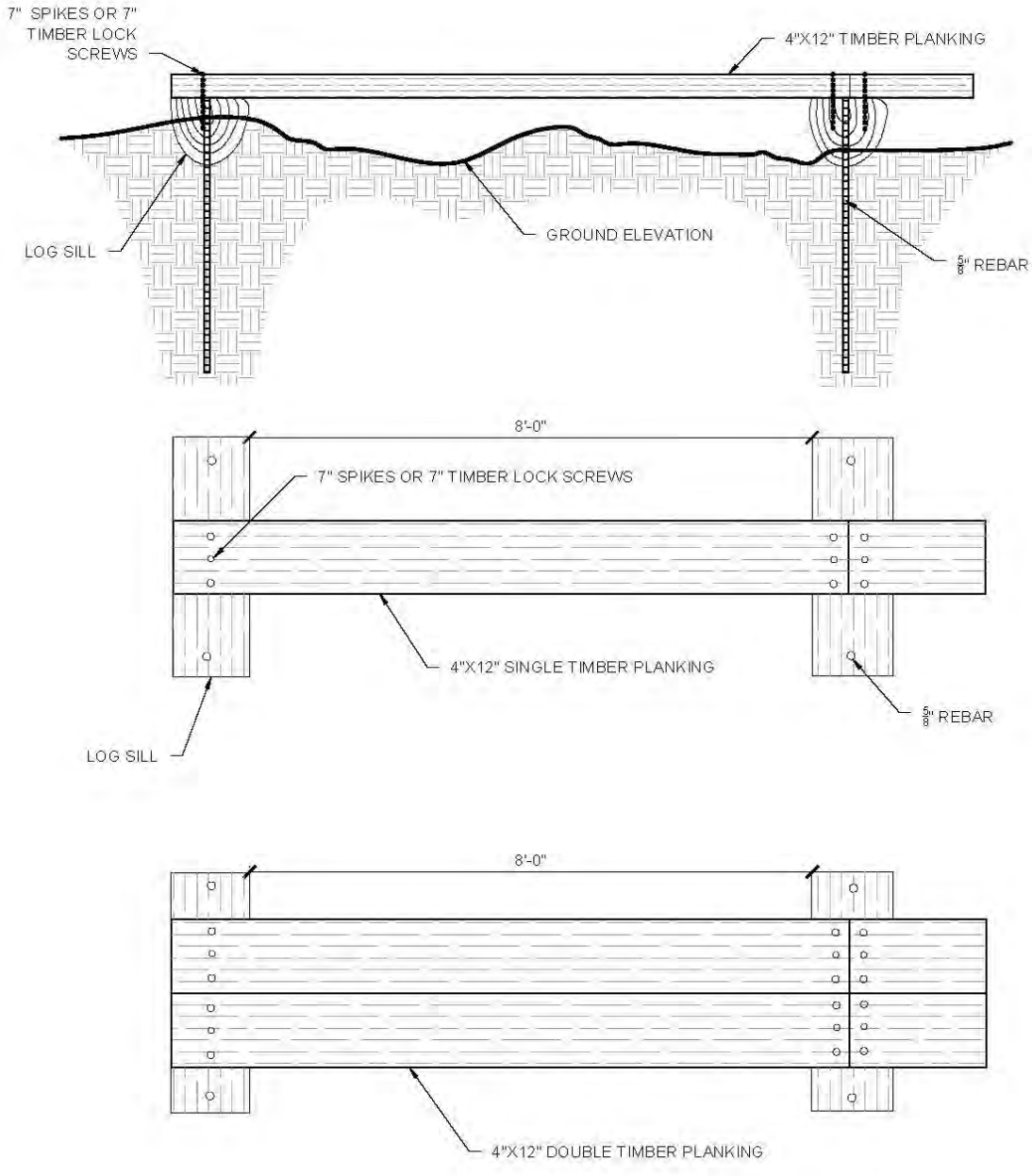


Figure 15.1 - Timber Planking

TIMBER PLANKING

CALIFORNIA STATE PARKS

NOT TO SCALE

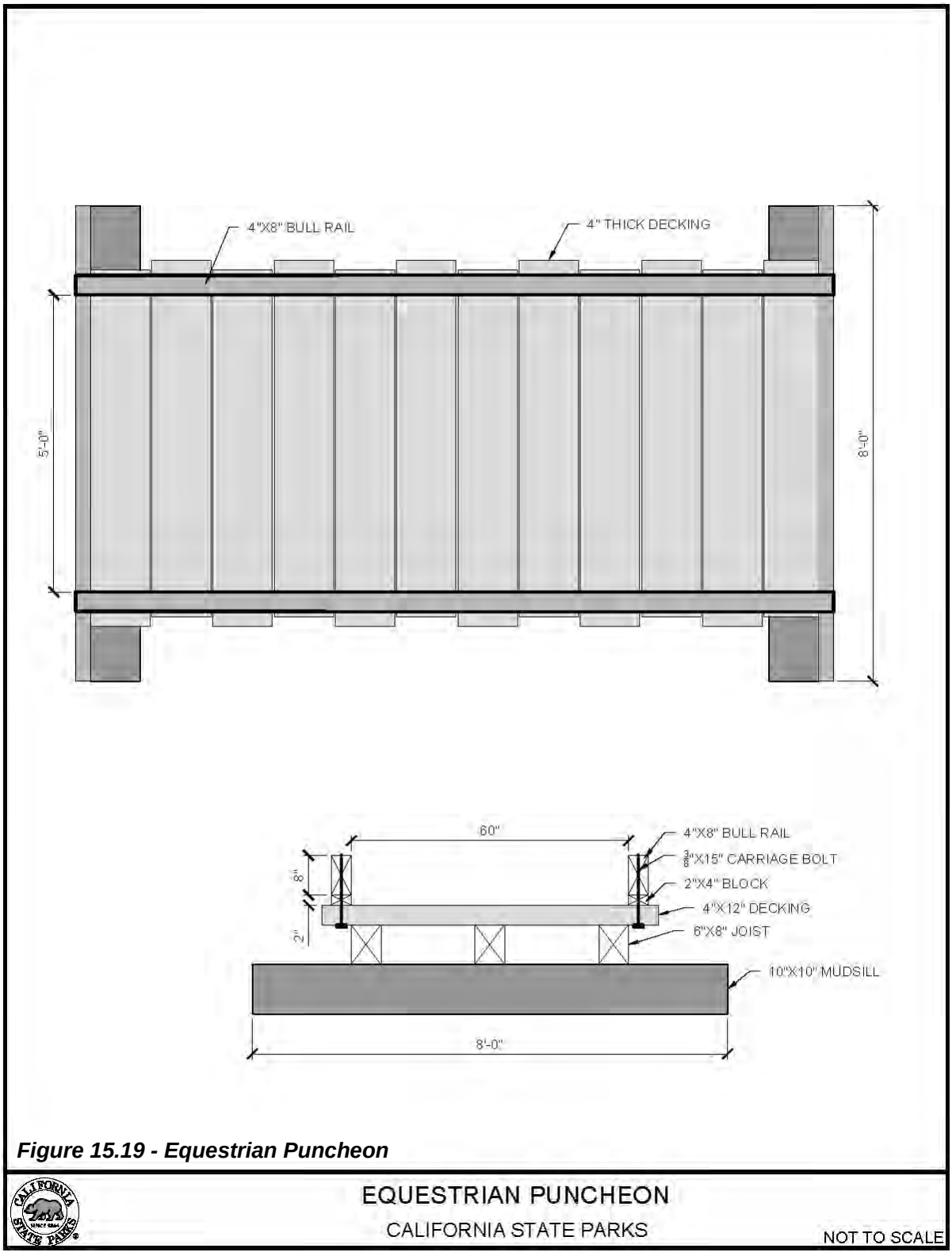
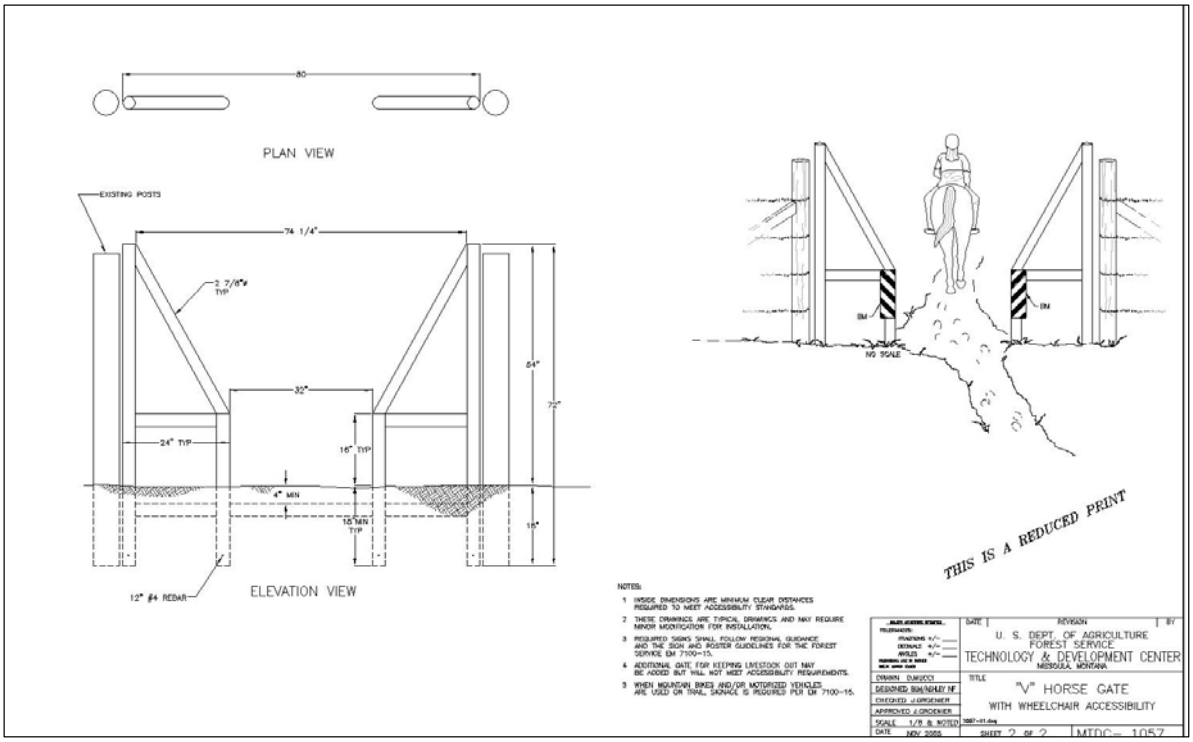
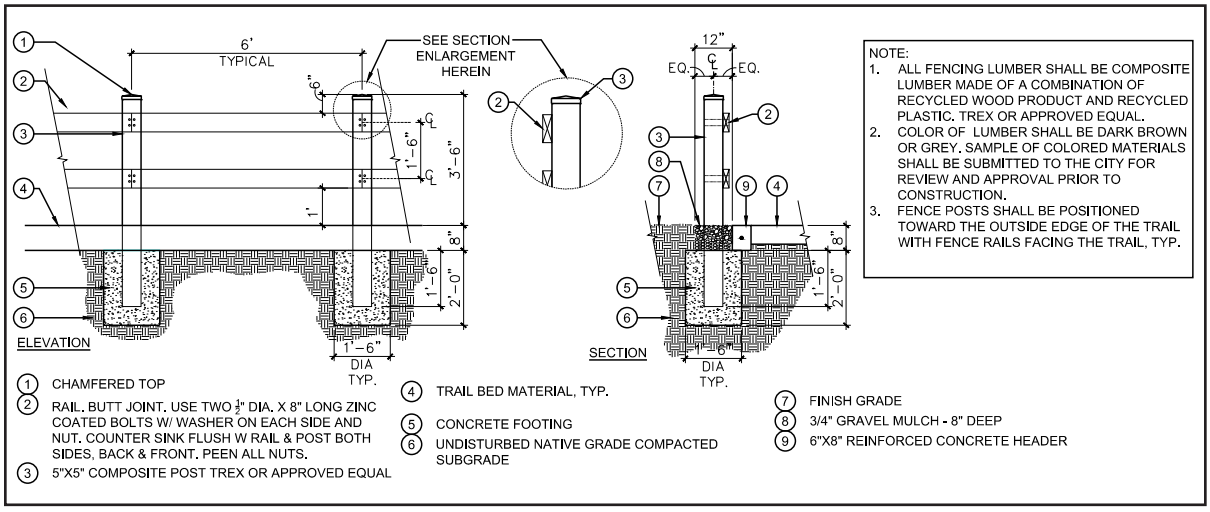
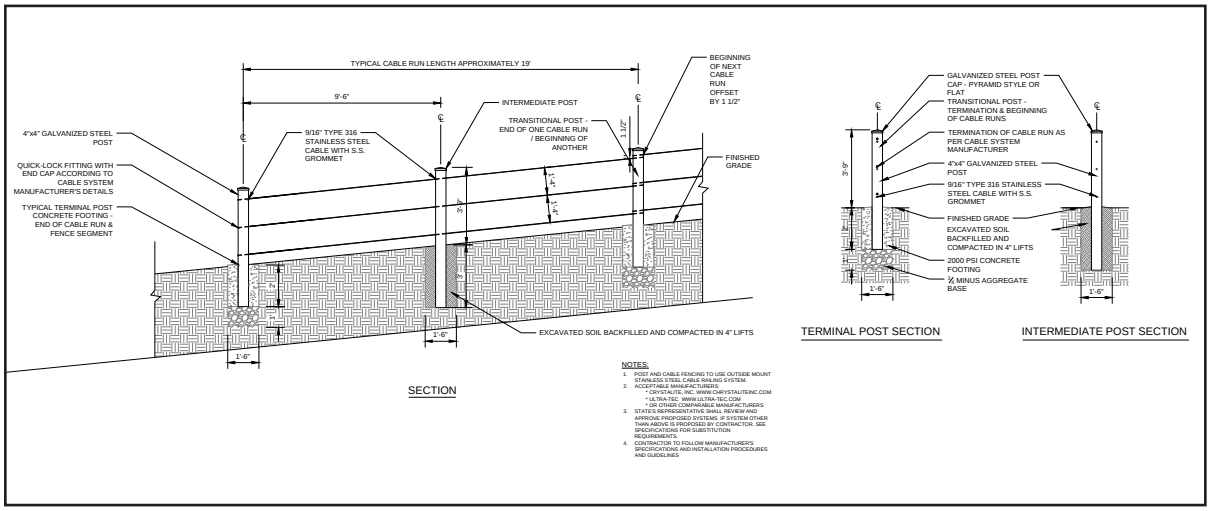


Figure 15.19 - Equestrian Puncheon

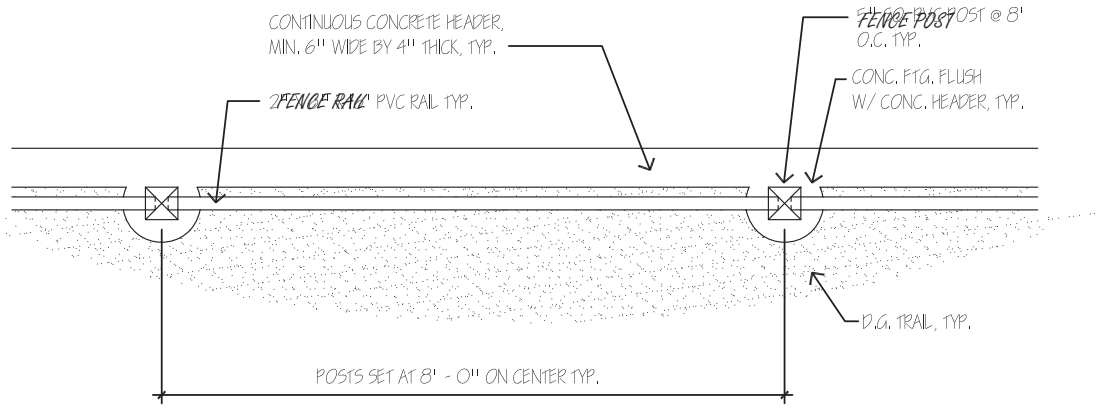

80
PLAN VIEW
EXISTING POSTS
74 1/4"
2 7/8"
TYP
54"
72"
32"
24" TYP
16" TYP
4" MIN
18" MIN
TYP
18"
12" #4 REBAR
ELEVATION VIEW
BM
BM
NO SCALE
THIS IS A REDUCED PRINT
NOTES:
1 INSIDE DIMENSIONS ARE MINIMUM CLEAR DISTANCES REQUIRED TO MEET ACCESSIBILITY STANDARDS.
2 THESE DRAWINGS ARE TYPICAL DRAWINGS AND MAY REQUIRE MINOR MODIFICATION FOR INSTALLATION.
3 REQUIRED SIGNS SHALL FOLLOW REGIONAL GUIDANCE AND THE SIGN AND POSTER GUIDELINES FOR THE FOREST SERVICE EM 7100-15.
4 ADDITIONAL GATE FOR KEEPING LIVESTOCK OUT MAY BE ADDED BUT WILL NOT MEET ACCESSIBILITY REQUIREMENTS.
5 WHEN MOUNTAIN BIKES AND/OR MOTORIZED VEHICLES ARE USED ON TRAIL, SIGNAGE IS REQUIRED PER EM 7100-15.
DATE
REVISION
BY
U. S. DEPT. OF AGRICULTURE
FOREST SERVICE
TECHNOLOGY & DEVELOPMENT CENTER
MISSOULA, MONTANA
DRAWN D.MUCCI
DESIGNED B.McNALEY NF
CHECKED J.GROSKREUTZ
APPROVED J.GROSKREUTZ
SCALE 1/8 & NOTED
DATE NOV 2005
TITLE
"V" HORSE GATE
WITH WHEELCHAIR ACCESSIBILITY
SHEET 2 OF 2
MTDC- 1057



Sample post and rail fence construction detail



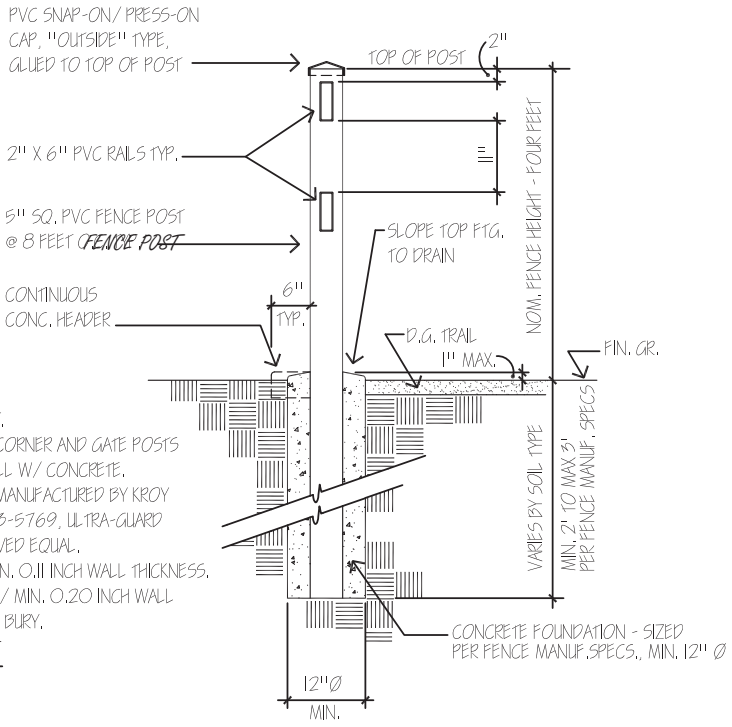
Sample post and cable fence construction detail



PLAN VIEW

NOT TO SCALE

AT RESIDENTIAL FRONT YARDS INSTALL FENCE AT PROPERTY-LINE SIDE OF TRAIL. ALL OTHER LOCATIONS, INSTALL FENCE ON STREET SIDE OF TRAIL



- PROVIDE CONC. FTG. AT EVERY POST.
- USE ALUMINUM INSERT AT ALL END, CORNER AND GATE POSTS (BOTH LATCH & HINGE SIDES) OR FILL W/ CONCRETE.
- ALL FENCE MEMBERS SHALL BE AS MANUFACTURED BY KROY BUILDING PRODUCTS INC, 800/ 933-5769, ULTRA-GUARD 800/ 592-6220, OR CITY APPROVED EQUAL.
- RAILS SHALL BE RIBBED TYPE, W/ MIN. 0.11 INCH WALL THICKNESS.
- POSTS SHALL BE MIN. 6' LENGTH, W/ MIN. 0.20 INCH WALL THICKNESS, INSTALLED W/ MIN. 24" BURY.

POST SECTION VIEW

NOT TO SCALE

Approved BJ	Date 01/ 02/ 96
Revised BJ	Date 08/ 23/ 02

Park and Recreation Department
CITY OF RIVERSIDE

PVC TRAIL FENCE

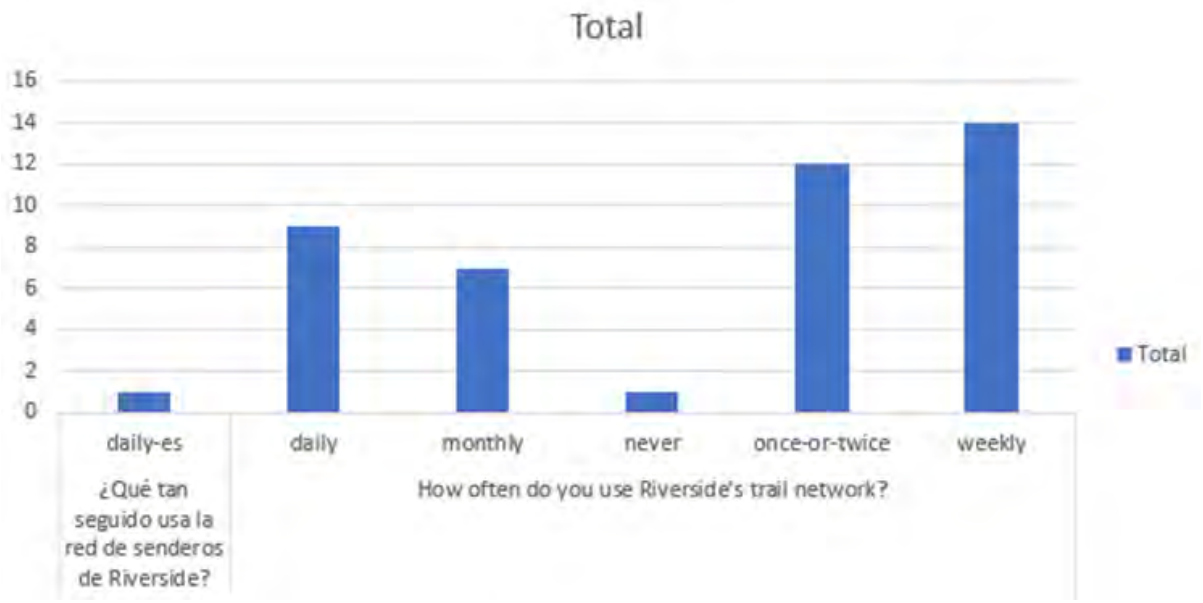
Detail No. 9

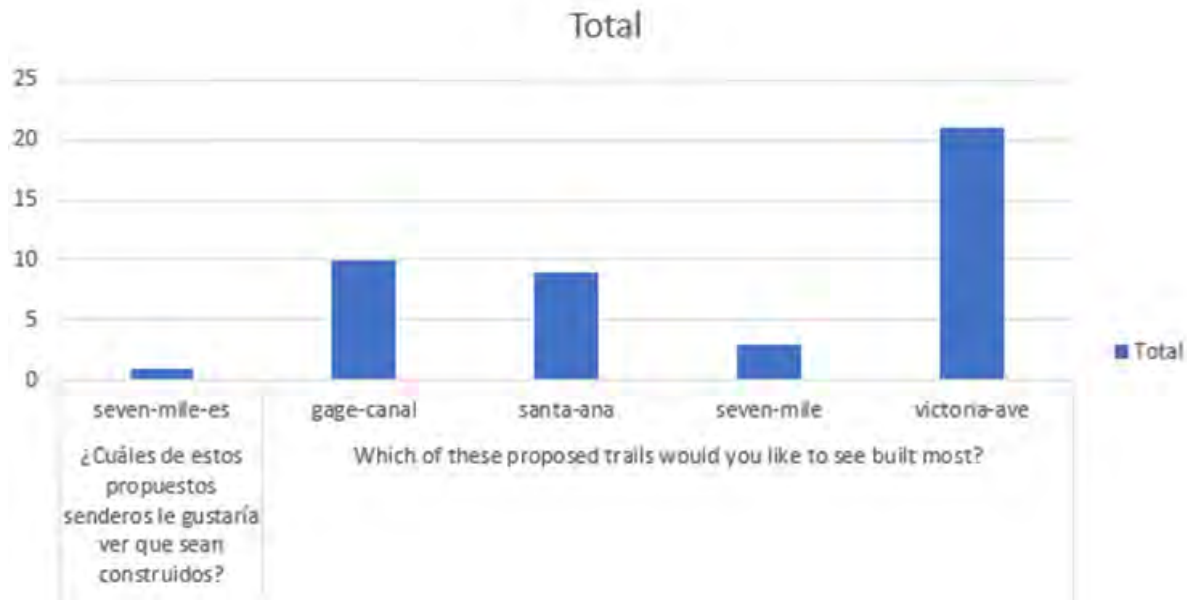
Appendix G: Public Outreach Summary

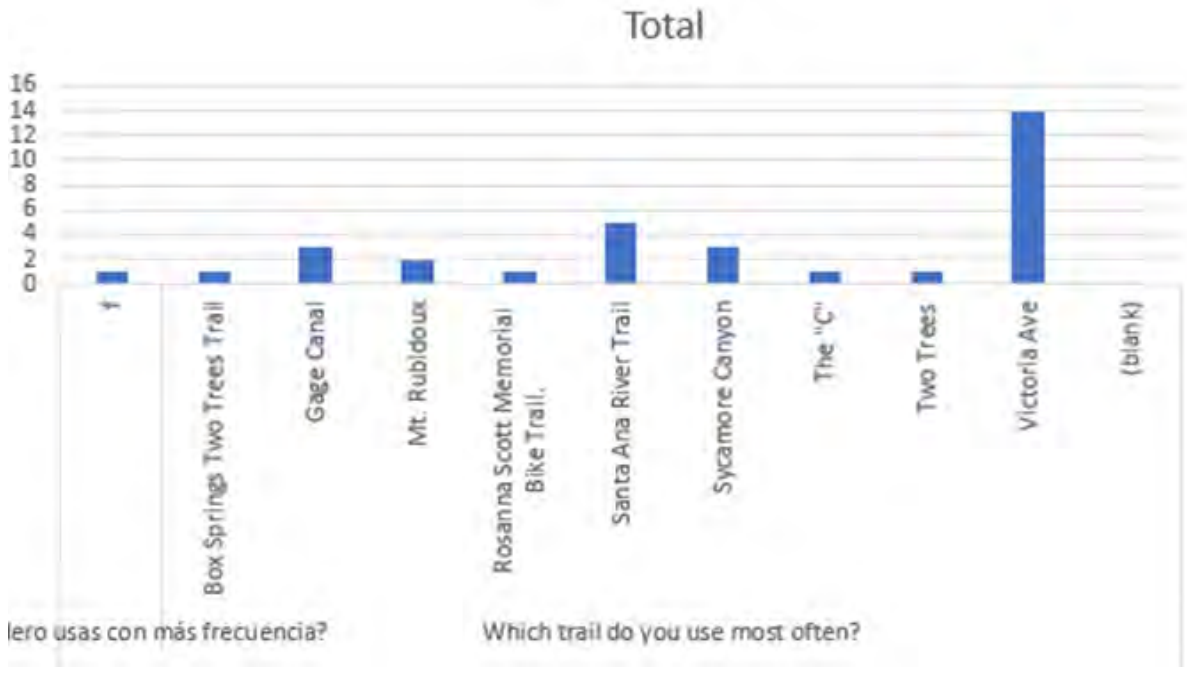
Public Outreach Summary

WEB MAP SURVEY RESULTS

The web map survey ran from March 17, 2020 - June 15, 2020. Results are shown on the following pages.



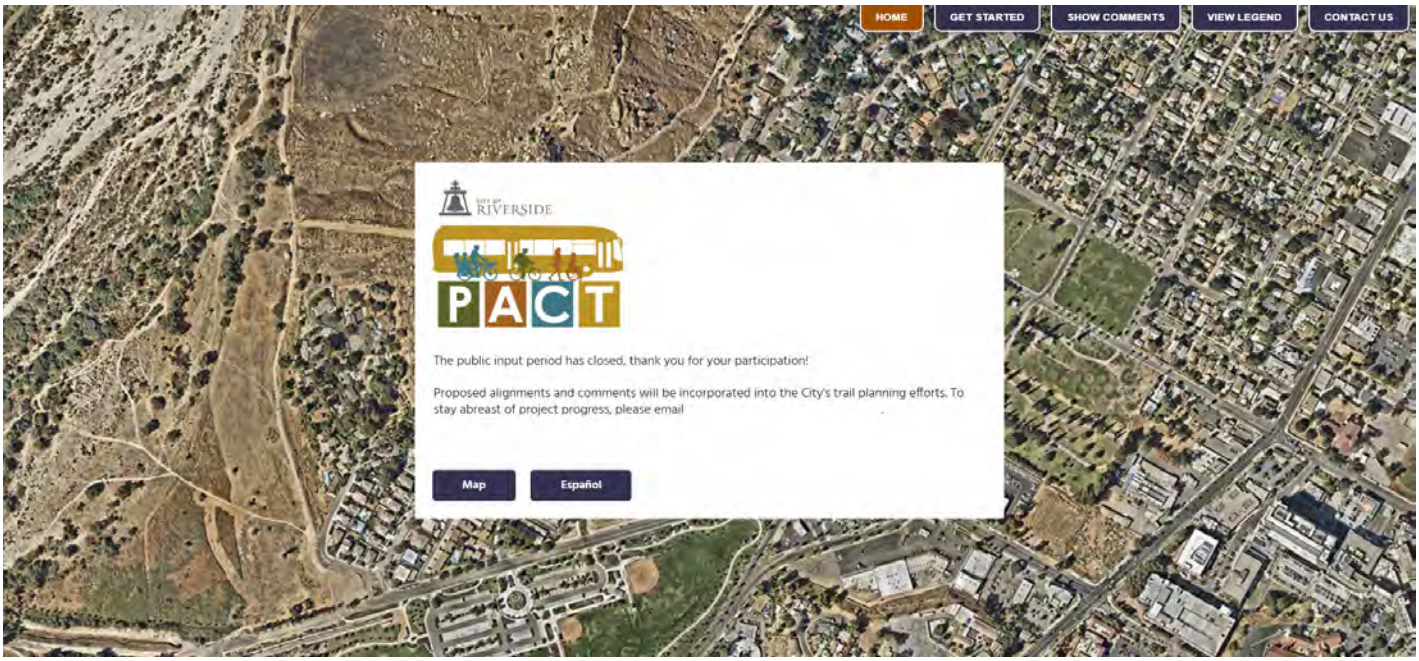

Total
25
20
15
10
5
0
Total
seven-mile-es
gage-canal
santa-ana
seven-mile
victoria-ave
¿Cuáles de estos propuestos senderos le gustaría ver que sean construidos?
Which of these proposed trails would you like to see built most?

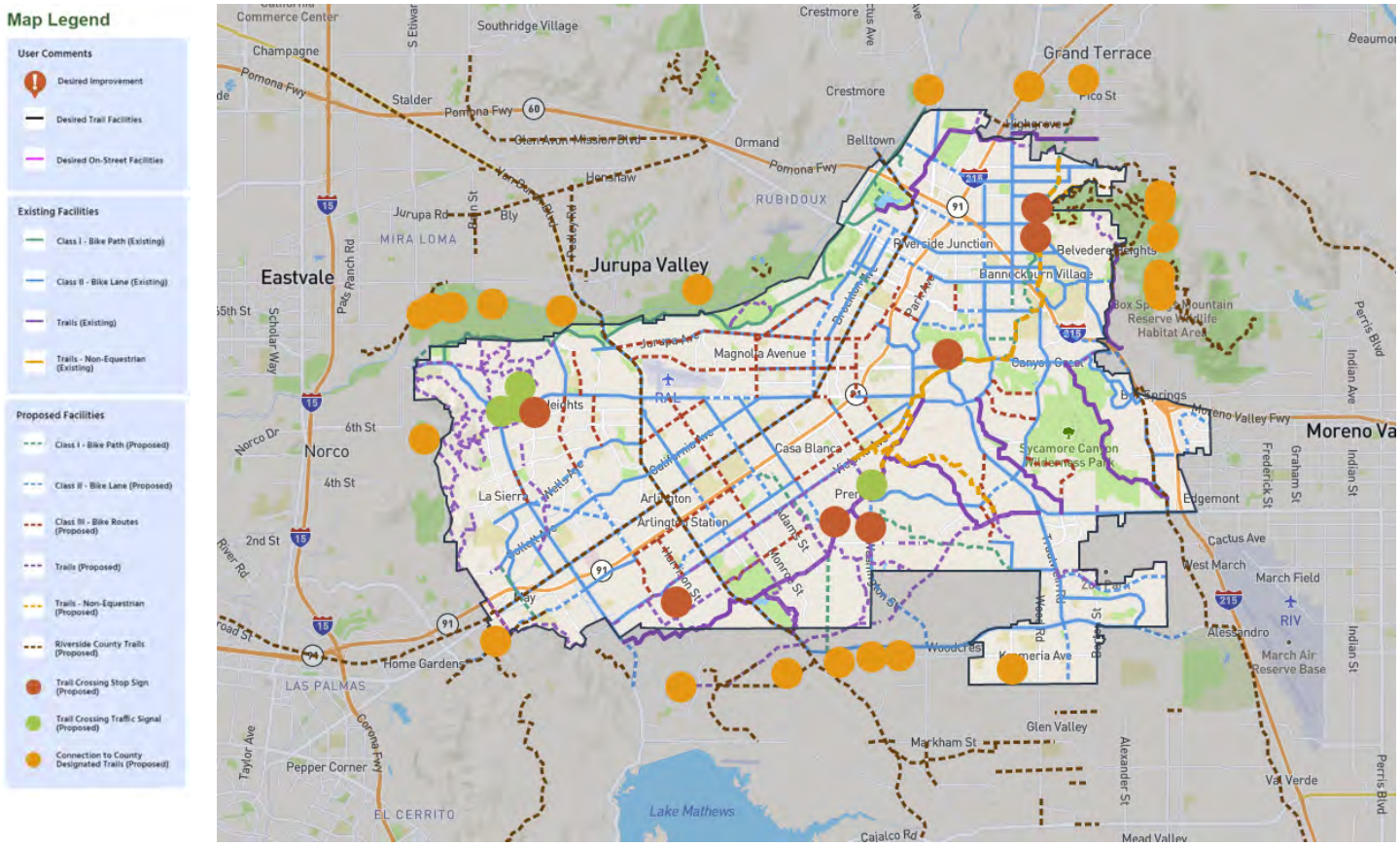

Total
16
14
12
10
8
6
4
2
0
Box Spring Two Trees Trail
Gage Canal
Mt. Rubidoux
Rosanna Scott Memorial Bike Trail.
Santa Ana River Trail
Sycamore Canyon
The "C"
Two Trees
Victoria Ave
(blank)
lero usas con más frecuencia?
Which trail do you use most often?

Is there a gap in Riverside's trail network you would like to see addressed? Please be specific.

- A connection between the Sycamore Canyon wilderness area north of Alessandro Blvd and the open space area south of Alessandro Blvd (West of Meridian)
- I would like to see a trail connection (away from streets) between the neighborhood of Woodcrest and the Gage Canal. Perhaps opening a connection between Gratton Street and Constable Road, or the other proposed trails that are on the map.
- The trail to the "C" needs access from UCR
- There are a few cracks, holes here &there but nothing that runners can't get around
- Need more bike paths that are not in roads with cars. Victoria Ave needs flashing stoplights.
- University to Victoria Avenue's bike paths. Bike routes painted in color coded markings through quiet residential neighborhoods.
- A safe connection corridor between SART and Victoria avenue. Possibly up La Sierra.
- Can't find info on proposed? Seven mile trail? Connect Northside neighborhood trail (off Rivera) to SART.
- There is a gap near John Street.
- Victoria Avenue trails, especially on the south side.
- The City should establish a plan to complete the (currently) erratic and inconsistent trail system on Victoria Ave. The outbound side should be asphalt and the inbound side should be decomposed granite. And the trail system should run, at a minimum, from Arlington Ave to La Sierra Ave.
- Victoria Ave Madison south
- Inbound Victoria Ave.
- Trigger the light to change when a bicycle is present in the travel lane. It's hazardous to try to cross the right-turn lane in front of cars in order to press the pedestrian button for a light change.
- The gage trail would be good too
- We walk gage canal a lot. It really feels like you are on a non residential trail
- West side of Riverside nearest Country Lane Homes (La Sierra/Dufferin) connecting to Gage Canal
- Honestly, I do not know.
- I want to be able to bike from my home to different places. It is simply not safe to do so. Thus, more biking options and trails well away form speeding cars is what I request.

Web map landing page and input map with public comments





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Appendix H: Planning and Design Best Practices

Best Practices

User Types

Riverside trails serve a variety of users, including bicyclists, pedestrians, and equestrians, all of whom have different characteristics and needs. Urban trails, also known as Class I facilities or multi-use paths, also serve users with mobility disabilities. Class I facilities are described in more detail in the Active Transportation portion of this Plan. Trails are not intended for use by off-highway vehicles (OHV).

PEDESTRIANS / RUNNERS / HIKERS

- Speed of Travel: 1 to 3 mph
- Comfortable on trails that are grade-separated from vehicles and fast active users. May use both paved and unpaved trails.

BICYCLISTS

- Speed of Travel: 6 (slow/child bicyclists) to 25 mph (experienced/fitness bicyclists)
- Road bicyclists prefer fewer crossings, paved separated paths, and room for fast users to pass slower users. Mountain bikers prefer natural surface trails.

EQUESTRIANS

- Speed of Travel: 3 to 8 mph (trot)
- Prefer a soft surface tread separated from people riding bicycles. In park areas, equestrian use can be compatible with people hiking.

Accessibility

Trails should be accessible to users of all ages and abilities, given environmental limitations. Wheelchair users and people pushing strollers can use unpaved trails if they are designed to American with Disabilities Act (ADA) standards and utilize firm surface material. In some cases, natural-surface trails or those with steep grades may not be accessible to users with mobility disabilities.

ADA Standards

The United States Access Board issued updated provisions to the 2004 ADA-ABA Accessibility Guidelines in 2014. These updated provisions, also referred to as the "Final Rule," include new provisions for accessibility standards for trails[1].

The trail accessibility standards are not included in the Department of Justice's (DOJ) 2010 ADA Standards for Accessible Design[2], which apply to sidewalks and other urban transportation routes.

Accessibility guidelines for trails apply to pedestrian-designated trails that connect to accessible trailheads or other trails. They do

1 *United States Access Board (2014): A Summary of Accessibility Standards for Federal Outdoor Developed Areas*

2 *https://www.ada.gov/2010ADAstandards_index.htm*

not apply to trails primarily designated for bicyclists or equestrians.

Accessible trails require a minimum width of 36 inches, the use of "firm and stable" surface materials, and grades of less than 5% (except in short segments with resting intervals) (Table 5-9). Other design standards are related to cross slopes, passing spaces, resting intervals, and tread obstacles.

In certain conditions where meeting these standards would be exceedingly difficult, such as in wilderness areas or areas with very steep slopes, trails are exempt from the requirements.

Connectivity

Trails that connect to other trails and major destinations create a network of recreation and transportation facilities that serve a greater number of users.

Amenities

Where there is sufficient right-of-way available at access points, amenity areas including seating, bottle filling stations and drinking fountains, interpretive signage, and shade structures should be considered.

Management & Maintenance

A strong management structure provides oversight and coordination for the trail. A well-developed maintenance plan ensures trails are adequately maintained to provide a comfortable experience for trail users.

Trail Corridor Width

Trail corridor widths typically range up to 12 feet, depending on the land context, available right-of-way, and anticipated use of the trail. Two-way shared-used paths should be at least 8 feet wide to adequately serve expected users. However, 10 to 12 feet is recommended in areas with higher concentrations of users. Sidepaths can be placed adjacent to trails to accommodate different user groups, and should be a minimum of 4 feet wide in areas with constrained right-of-way or low expected use. Trails in more rural or park areas can be as narrow as 4 feet in certain conditions.

Trail Grade

Natural surface trails should have a sustained gradient of less than 12%, though short segments of up to 15% to 20% may be acceptable in certain situations. Bike routes with grades steeper than 15% are often difficult to travel uphill. Urban trails should have a grade of less than 5% in order to serve users of all ages and abilities.

Fall-Line Orientation

For long-term sustainability, an unpaved trail should avoid a fall line orientation, which is a route that drops directly down the hillside. Fall-line trails follow the same

TABLE 5-11 : ADA STANDARDS: MAXIMUM RUNNING SLOPE & SEGMENT LENGTH

MINIMUM SLOPE	MAXIMUM SLOPE	MAXIMUM LENGTH OF TRAIL SEGMENT
1:20 (5%)	1:12 (8.33%)	200 feet
1:12 (8.33%)	1:10 (10%)	30 feet
1:10 (10%)	1:8 (12%)	10 feet

TABLE 5-12 : NATIONAL PARK SERVICE TRAIL SLOPE RECOMMENDATIONS

STANDARDS	RECREATION SETTING			
	URBAN	RURAL	SEMI-PRIMITIVE	PRIMITIVE
Maximum Sustained Slope (Hiking)	10%	10%	15%	Varies
Maximum Sustained Slope (Accessible Areas)	5%	8%	12%	Varies
Maximum Slope (Hiking)	15% for 100 feet	20% for 100 feet	30% for 100 feet	Varies
Maximum Slope (Accessible Areas)	8% for 30 feet	10% for 50 feet	10% for 50 feet	Varies
Maximum Cross Slope	3%	5%	8%	Varies

Source: National Park Service - Handbook for Trail Design and Construction and Maintenance - 2015

path that water flows, resulting in segments that are difficult, if not impossible, to drain. In general, trails should have a gradient no steeper than 1/2 the native side slope gradient. An exception to this rule is for hill climb trails, which are stabilized with hardened steps or stairs.

Trail Drainage

One of the most important considerations for sustainable unpaved trails is maintaining natural drainage patterns. Trails need to be drained by drain dips (reverse grade dips or rolling dips) installed at frequent (100 to 175 foot) spacings. The larger (deeper) the dip the longer the life expectancy. These dips prevent water from concentrating on trails, and also force water from them frequently, preventing concentrated flows that can erode the trail surface.

Switchbacks

To the extent feasible, trails should be laid out to avoid or minimize switchbacks as users often "cut" the switchback which can lead to erosion problems.

Steep Unstable Slopes

In more rural or park areas, trails should avoid crossing steep unstable slopes wherever possible to prevent erosion and to ease passage by visitors.

Swales and Valley Bottoms

In general, trails along valley and swale bottoms should be avoided as they can be difficult to drain and tend to be wet and subject to getting muddy and rutted.

Full Bench Construction

All new natural surface trails should be constructed using full bench construction, meaning cutting the full width of the tread into the hillside. The tread must be outsloped at least 5 percent. Full bench construction results in trails that are more durable and require less maintenance than those built using partial-bench construction.

Equestrian Facilities

Equestrian facilities may be part of shared-use paths that accommodate multiple modes or may be separated by a buffer. In areas with higher concentrations of users and along paved trails, a separated

Long, straight sections of steep trail can lead to long-term erosion issues

sidepath for horseback riding is preferable to minimize conflicts between user groups. These equestrian-only trails are also known as bridle trails or bridle paths, and should be separated by at least a 6-foot buffer in trail corridors with high concentrations of users. In areas with lower concentrations of users or with constrained right-of-way, a 2- to 3-foot buffer can be used.

In park areas with steep grades, steps should be designed to allow horses to comfortably navigate them. These steps should ideally be no higher than 12 inches tall.

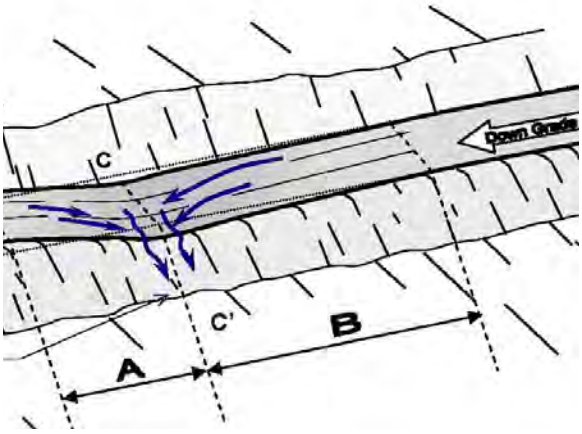
OHV Use Prevention

OHV use can significantly impact any trail. Potential strategies to prevent OHV use include avoiding alignments in close proximity to established OHV routes and areas where OHV use might be tempted to extend down the trail. Where unable to avoid OHV routes, physical barriers, trail width, and the spacing of drain dips can also be used. The proximity of potential switchbacks to established OHV trails may further encourage misuse of the proposed trail alignments and/or result in trail damage.

Safety

Trails should be designed with Crime Prevention Through Environmental Design principles, such as natural surveillance, territorial reinforcement, natural access control, and maintenance. Trails should have high visibility for legitimate users and keep unwanted behavior under observation.

In urban settings, low fencing, hardscape, landscaping, and topography should be used to separate private areas from public areas and control access. Trails should be separated from vehicles by curbs/hardscape, open-style fencing, and landscaping.



Drain dips can help alleviate drainage problems on steep trails

WAYFINDING

A comprehensive wayfinding system is important for making sure trails are safe, accessible, and well-used. Wayfinding provides users with a sense of direction and security, and alerts them of upcoming destinations and trail connections. Important aspects of wayfinding include:

- Improved awareness of trails;
- A greater sense of security and comfort;
- Enhanced environmental protections as trail users are notified to keep on the trail and out of sensitive areas; and
- Information to inform users of the intensity and length of the trail.

New wayfinding signage should be consistent with existing wayfinding systems in Riverside. Should a new signage design theme be desired, the City should undergo a comprehensive wayfinding design process to determine a design theme that will be standardized across multiple trails and properties. A wayfinding system should have a uniform design style, including graphics and icons, colors, fonts, materials, shapes, and proportions.

Accessible Signage Design

Wayfinding should be accessible to all trail users, regardless of language or cognitive ability. In areas with high concentrations of non-English speakers, consider implementing signs in multiple languages. Do not rely only on text; instead, utilize icons, graphics, and consistent colors. Follow ADA guidance for sign placement, offsets, and text sizes. Signs should include information about trail surface, slope, and distance.

Fonts & Text Hierarchy

Aside for fonts used for logos, a single sanserif font family should be used across an entire wayfinding system. A hierarchy of size and font properties such as bold font or italics should be used to communicate tiers of detail. Color

A minimal color palette should be used across all signs in a wayfinding system. As a general rule, maintain standard background, logo, and text colors.

Branding & Iconography

The City of Riverside could implement a branding scheme to create a strong identity for its trail system as a whole or for individual trails.

Types of Signage

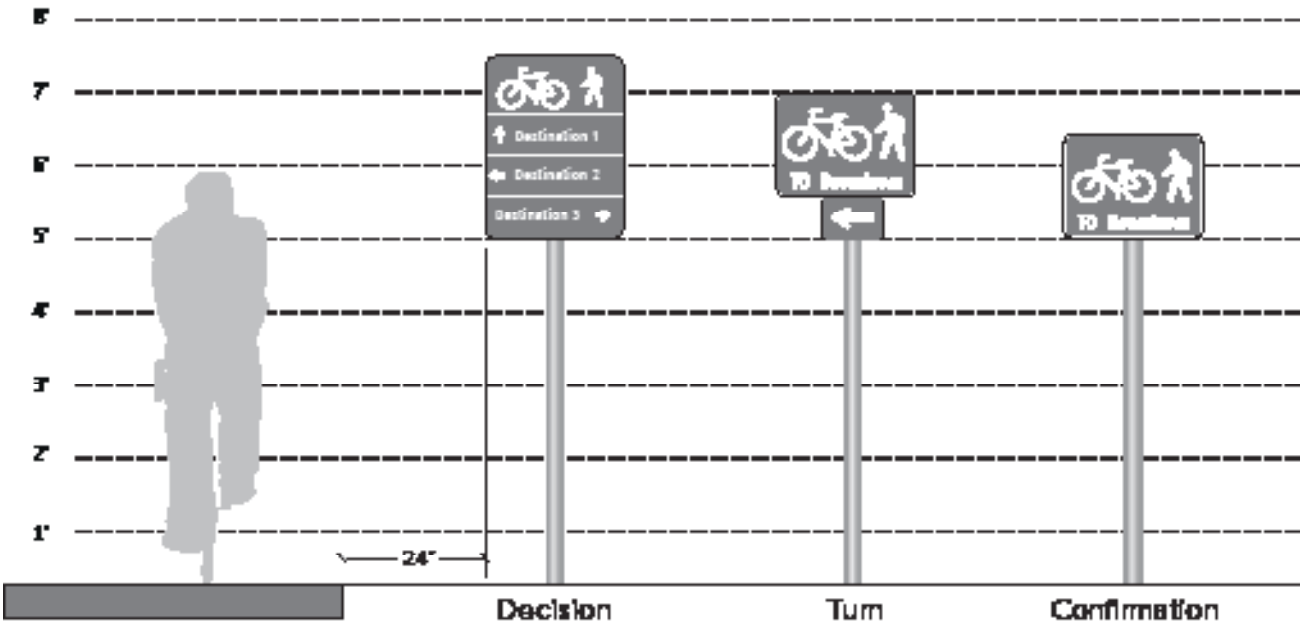
There are several types of signage typically used in wayfinding systems. These include:

- Gateway/Monument Sign: Placed at major trail access points, gateway signs enhance the visibility of the trail.
- Direction Signs: Direction signs provide directional and distance information to

destinations, trail amenities, and other trails.

- Trailhead Kiosk: Placed at access points, trailhead kiosks are the first point of orientation for trail users.
- Confirmation Posts: Confirmation posts inform users they are on a designated trail and include, at minimum, an arrow indicating the intended direction of travel.
- Mile Marker: Mile markers allow trail users to track how far they have traveled. Mile markers are generally placed every 1/4 to 1/2 mile.
- Interpretive Signs. These signs provide educational, historical, or cultural content that informs, educates, and entertains the public.

FIGURE 5-46 TYPICAL NAVIGATIONAL SIGNAGE



Appendix I: Existing Plans and Context

Existing Plans and Context

TRAILS MASTER PLAN (1996)

The 1996 Trails Master Plan has guided trail development in the City for over 20 years, focusing on developing a network of trails throughout the natural areas that surround the City, along with connections from these trails to nearby neighborhoods and trails traversing the City's interior. It establishes minimum trail standards such as easements, setbacks, grading, fencing, and trail surfacing, as well as cross section illustrations of typical trail treatments and material specifications. The 1996 Plan also does not include a prioritized list of trails by need, type, ward, or public input. This guidance has been modernized and expanded to include a larger range of existing and proposed trail typologies found in this update.

GENERAL PLAN 2025 (2007)

The Circulation and Community Mobility Element of the City's General Plan includes a subsection on walking and biking in Riverside that establishes a vision to "provide an extensive and regionally linked public bicycle, pedestrian and equestrian trails system." This vision is supported by 13 policy objectives that provide guidance for expansion of the City's trail network, including maximizing connections between trails and major activity centers and neighborhoods, linking to the trails of adjacent jurisdictions, and incorporating trails into future development projects.

BICYCLE MASTER PLAN (2007; 2012)

Riverside's Bicycle Master Plan, adopted in 2007 and updated in 2012, recommends several Class I Bike Paths such as the completion of the Gage Canal Trail and providing connections to the Santa Ana River Trail. The Bicycle Master Plan also proposes guidelines to encourage trail usage, and calls for coordination with the County to connect City trails with the County's network of regional trails.

DOWNTOWN SPECIFIC PLAN (2002; 2017)

The Downtown Specific Plan proposes a network of urban trails primarily geared toward pedestrians and cyclists, including a scenic downtown trail loop that could lead to historic and cultural elements, as well as extending west to capture the area's natural elements such as Fairmount Park, Mount Rubidoux, and the Santa Ana River Trail.

NORTHSIDE SPECIFIC PLAN (2020)

The Draft Northside Specific Plan (expected

to be adopted in 2020) proposes an extensive open space network, including the restoration of the Springbrook Arroyo to a natural channel, accompanied by a series of natural surface trails. In addition to interior trails in parks, the draft plan proposes connecting trails running along Main Street, Orange Street, and Center Street, among others.

LA SIERRA UNIVERSITY SPECIFIC PLAN (1997)

The La Sierra University Specific Plan references the 1996 Trails Master Plan's call for a multi-purpose trail along Collett Avenue, which is now built.

MISSION GROVE SPECIFIC PLAN (1996)

The Mission Grove Specific Plan calls for the construction of a semi-improved access trail within the arroyo in Sycamore Canyon Park, which has since been built.

RANCHO LA SIERRA SPECIFIC PLAN (1996)

The Rancho La Sierra Specific Plan establishes a vision for a public trail network linking area neighborhoods with the Santa Ana River Trail as well as connections to trails through Norco Hills. Though much of the development specified in this plan has not yet been developed, a trails network connecting to the Santa Ana River Trail is in place.

SYCAMORE CANYON SPECIFIC PLAN (1991)

The objective of the Sycamore Canyon Specific Plan is to protect the area's natural hillsides and arroyo areas, and provide a network of trails within the Canyon. The trails existing on the land designated as public park and habitat conservation land at the time of Specific Plan adoption were adopted in the plan.

SYCAMORE CANYON WILDERNESS PARK STEPHENS' KANGAROO RAT MANAGEMENT PLAN AND UPDATED CONCEPTUAL DEVELOPMENT PLAN (1999)

Urban development through the 1970s and 1980s led to population decline among the Stephen's Kangaroo Rat species, landing it on the endangered species list in 1988.

The Sycamore Canyon Wilderness Park Stephens' Kangaroo Rat Management Plan and Updated Conceptual Development Plan includes passive recreational activities such as hiking and wildlife observation as an encouraged managed activity.

The plan does not contain specific guidelines for design, construction, use, and maintenance of trails, rather, the

management plan offers trail planning considerations, defines appropriate recreation activities and provides recommendations for ensuring the compatibility of uses. In addition, the plan included conceptual plans for the overall development of Sycamore Canyon Park.

COMPREHENSIVE PARKS, RECREATION, AND COMMUNITY SERVICES MASTER PLAN (2020)

The 2020 Parks Master Plan identifies trails as one of the City's top facility needs, a conclusion supported by analysis of existing offerings and public input that ranked trails among the most supported and requested improvements. In addition to recommending that the City explore creating trail connections where possible to expand its overall trail network, the Plan recommends a Trails Master Plan Update to "ensure the viability of trail implementation under current development conditions and to ensure connectivity with regional trails beyond city limits." The Parks Master Plan identifies 6 opportunities for expanded trail systems:

- Update existing Trail Master Plan and trail design and construction standards.
- Develop a joint use agreement with Riverside County Parks and local non-profits to work towards the construction of a trail route over or under the Perris Valley Metro Link line to provide access to Box Springs Mountain Reserve and from the City to the "C" Trail.
- Update Sycamore Canyon Wilderness Park Stephens' Kangaroo Rat Management Plan and Updated Conceptual Development Plan (1999) based on a suitability and sustainability analysis of the current inventory of trails in the park.
- Develop a Master Plan for 7 Mile Trail working in conjunction with Riverside Public Utilities, County of Riverside, and other appropriate agencies.
- Continue to work with Riverside Public Utilities, County of Riverside, and other public agencies to explore further opportunities for opening of waterways/ drainage areas such as Gage Canal for trail use.
- Explore opportunities to develop Green Streets or Linear Parkways within the park poor sections of the town.

RIVERSIDE COUNTY COMPREHENSIVE TRAILS PLAN (2018)

The 2018 Riverside County Comprehensive Trails Plan addresses the nearly 4,000 miles of planned and existing trails within the Riverside County Parks and Open-Space District, and overseen by a mix of federal, state, county, and local communities in

the County. The plan establishes three primary goals: 1) the creation of a backbone trail network that is feasible, compatible with other plans, leverages trails within other jurisdictions, and closes gaps in a countywide trail system; 2) providing guidance for the design of trails which are accessible, usable by a variety of users, and connect to major destinations and other trails; and 3) sharing recommendations for continued management of regional trails. The backbone trail network incorporates elements of the Santa Ana River Trail and the Juan Bautista De Anza Historical Trail that lie within the City of Riverside.

RIVERSIDE COUNTY BOX SPRINGS MOUNTAIN RESERVE COMPREHENSIVE TRAILS MASTER PLAN (2015)

The Box Springs Trails Master Plan was created to establish a vision for improved trails and increased connectivity within the 3,400 acre reserve. While much of Box Springs is situated outside of the city, a portion of the land falls within Riverside's northwestern border. This plan identifies the "C" Trail, a steep 0.95-mile trail leading to the concrete UC Riverside "C" as a trail-improvement opportunity that is partially situated within city limits. Several other opportunities are included in this plan and the City's Trails Master Plan to connect from the City trail network to Box Springs Mountain Reserve.

CITY OF RIVERSIDE PARK AND RECREATION MASTER PLAN UPDATE (2003)

The City of Riverside Park and Recreation Master Plan Update was created to be a decision making guide through the year 2020. The Report addressed the adequacy of the existing park and recreation facilities within the city, and identified future needs and opportunities. The plan update also made recommendations to the trails system as it relates to park, recreation, and open space connections.

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Appendix J: Network Prioritization

Trail Network Prioritization

The following pages include maps detailing how trail segments scored against the different criteria used in the trail network prioritization process.

FIGURE 5-47 : CALENVIROSCREEN SCORE

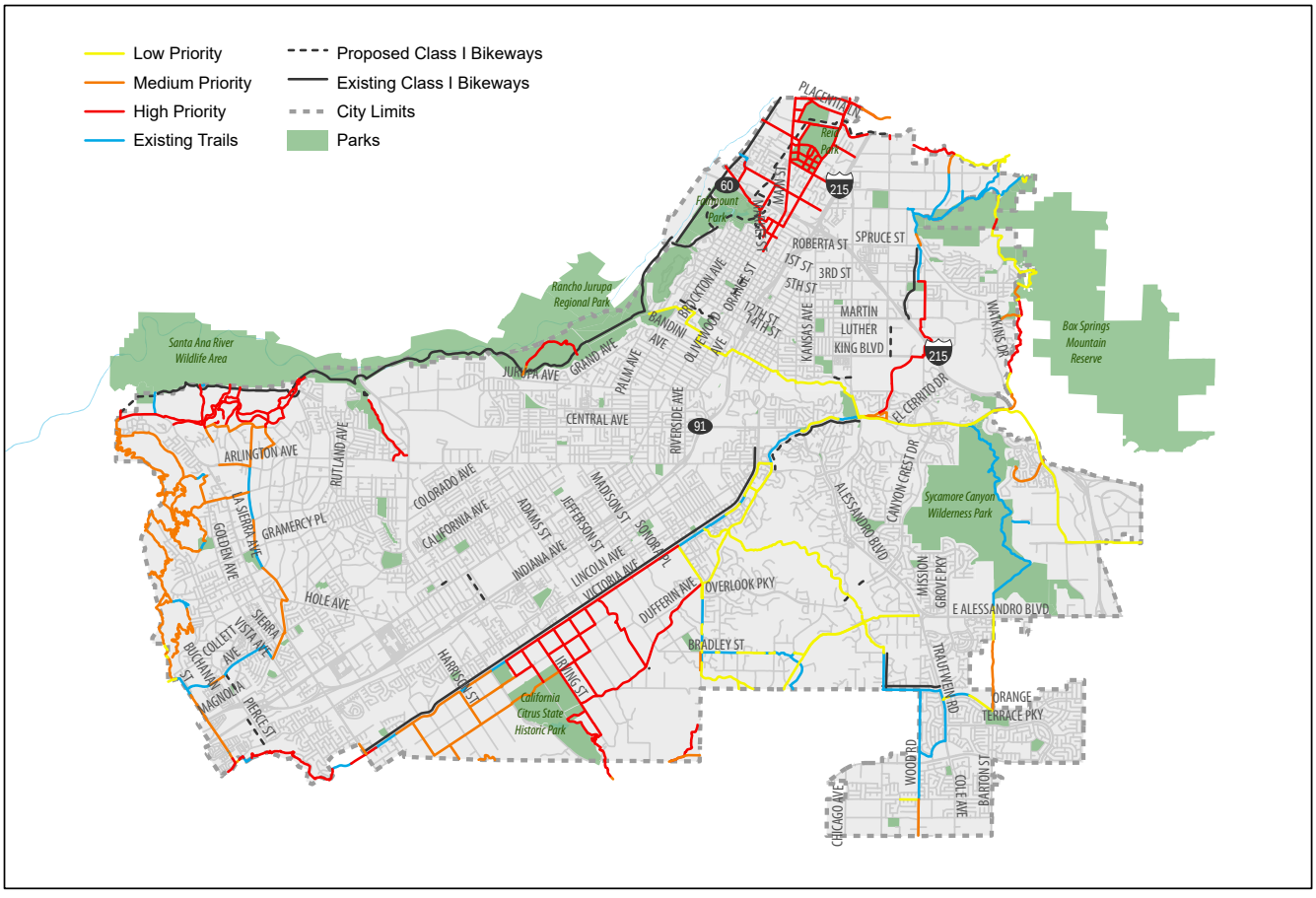


FIGURE 5-48 : SAFETY - ADJACENT COLLISIONS

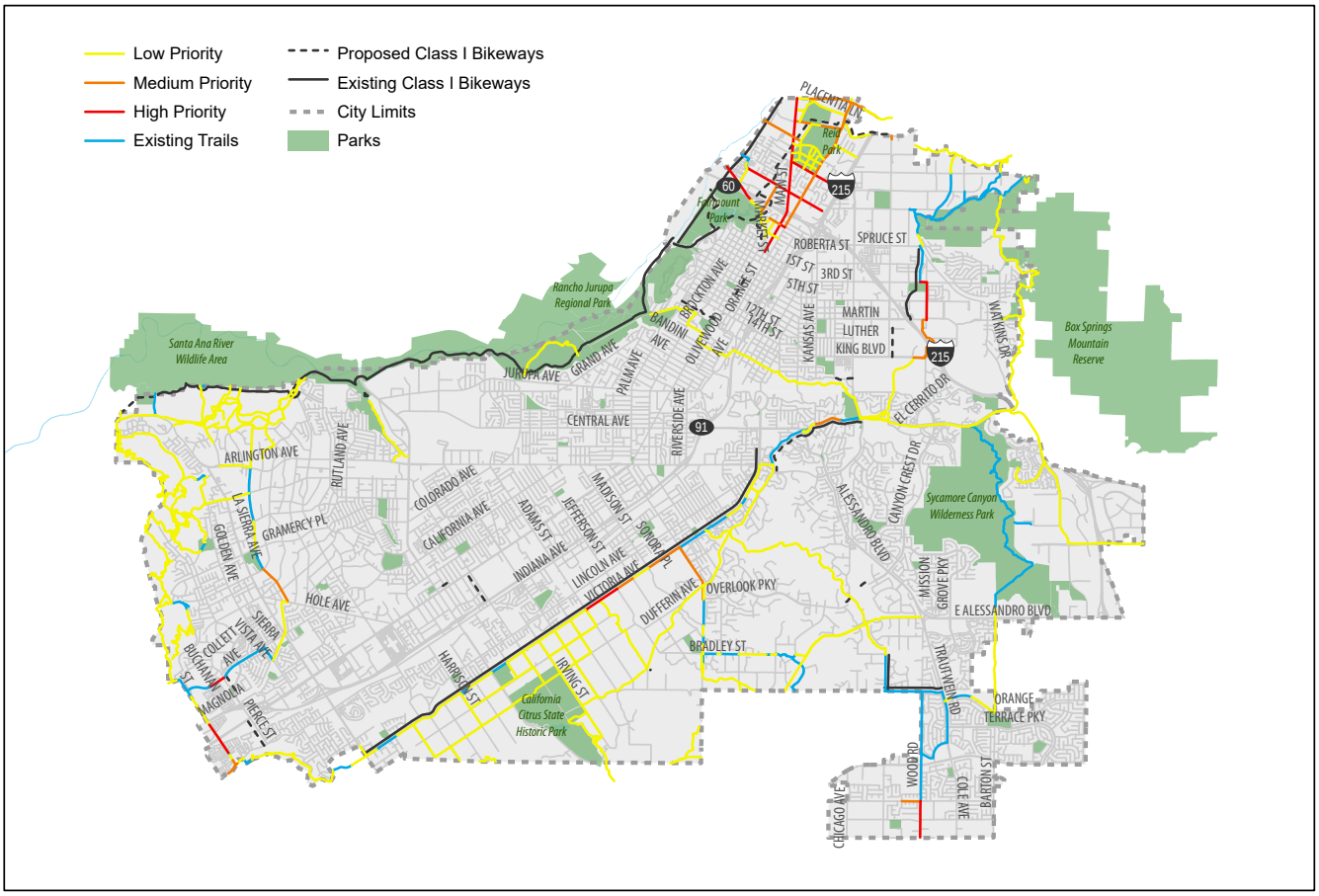


FIGURE 5-49 : DISADVANTAGED COMMUNITIES - FREE AND REDUCED MEALS PROGRAM SCORE

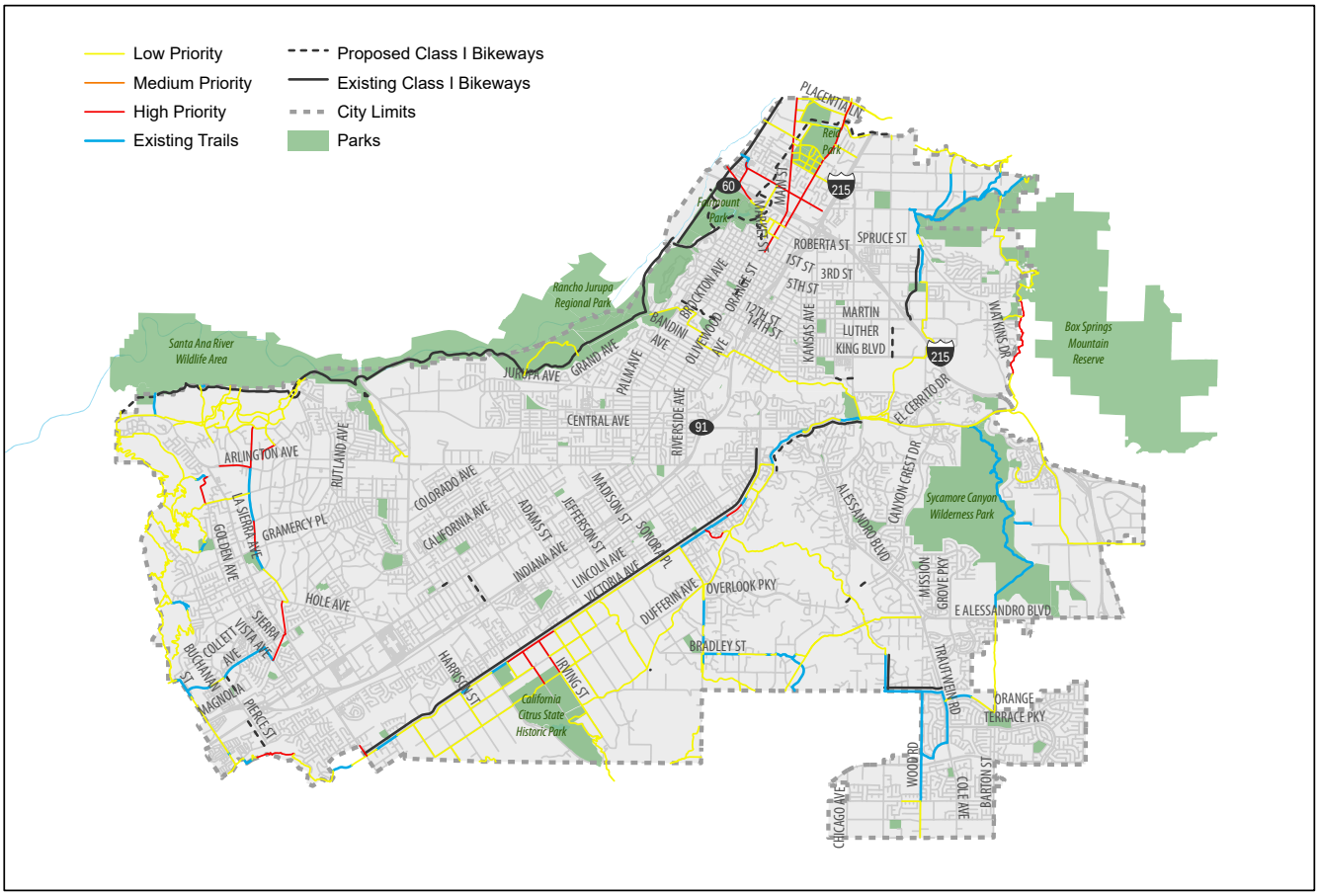


FIGURE 5-50 : GAP CLOSURE SCORE

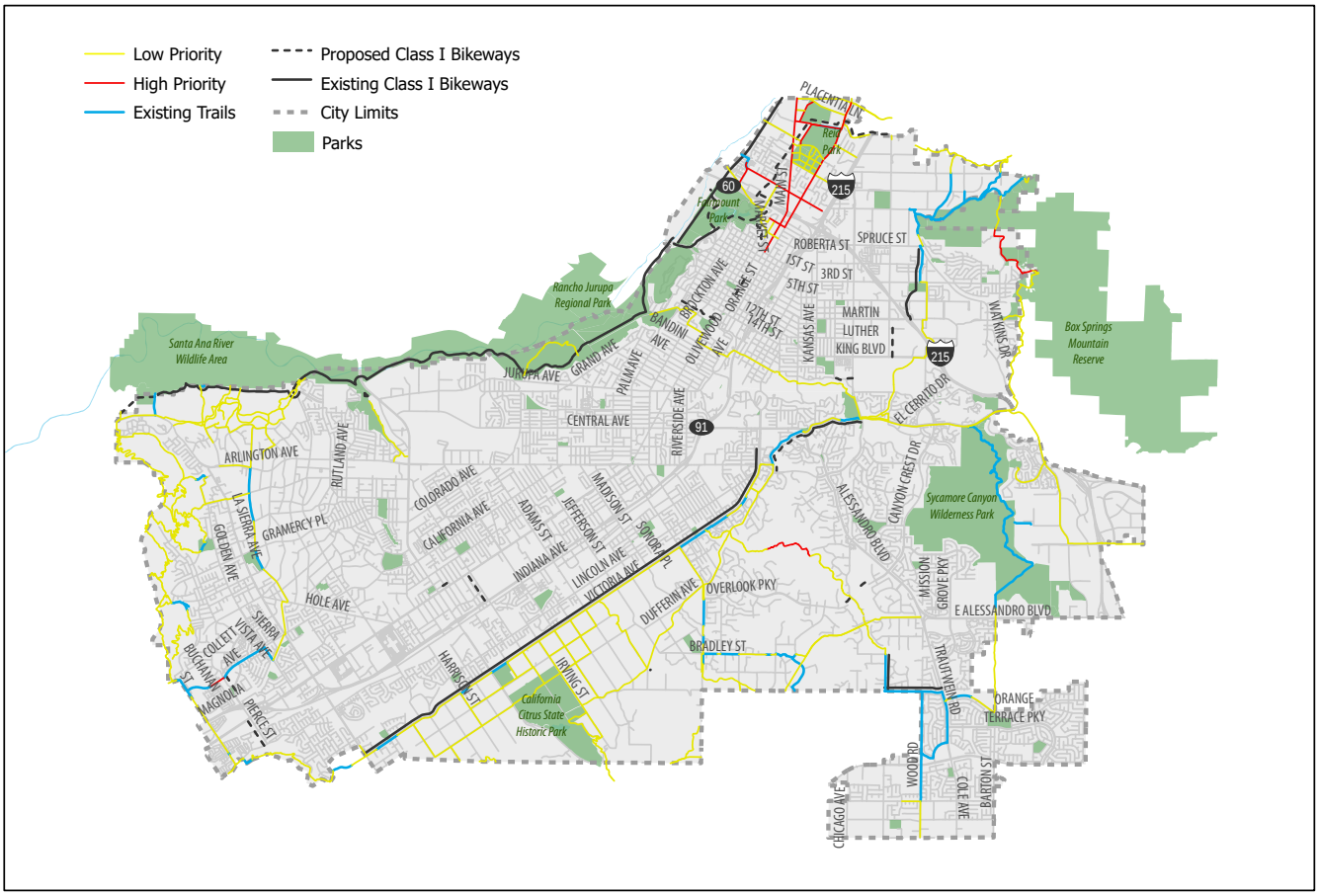


FIGURE 5-51 : DISADVANTAGED COMMUNITIES - INCOME SCORE

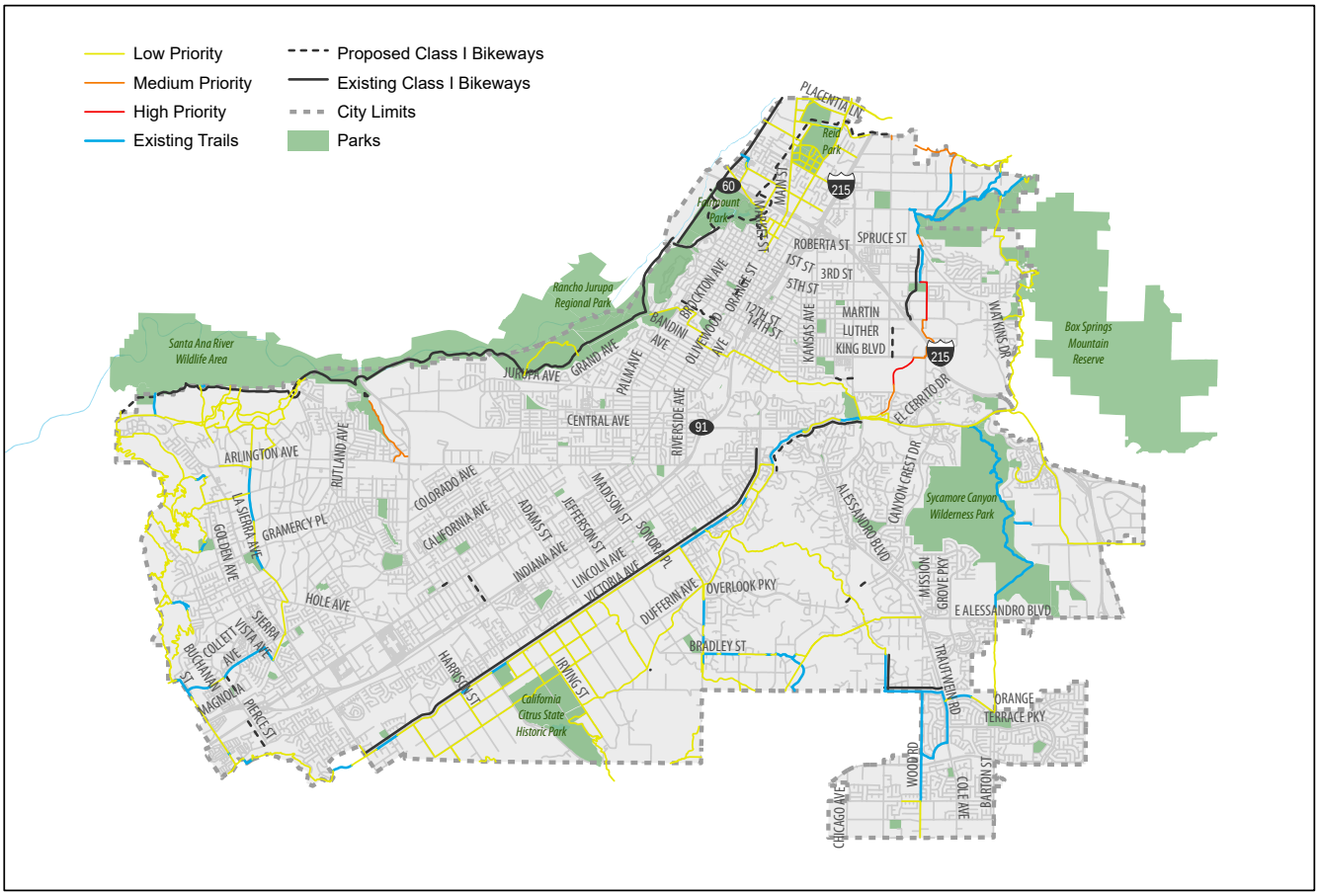


FIGURE 5-52 : CONNECTIVITY: LIVE, LEARN, WORK, PLAY SCORE

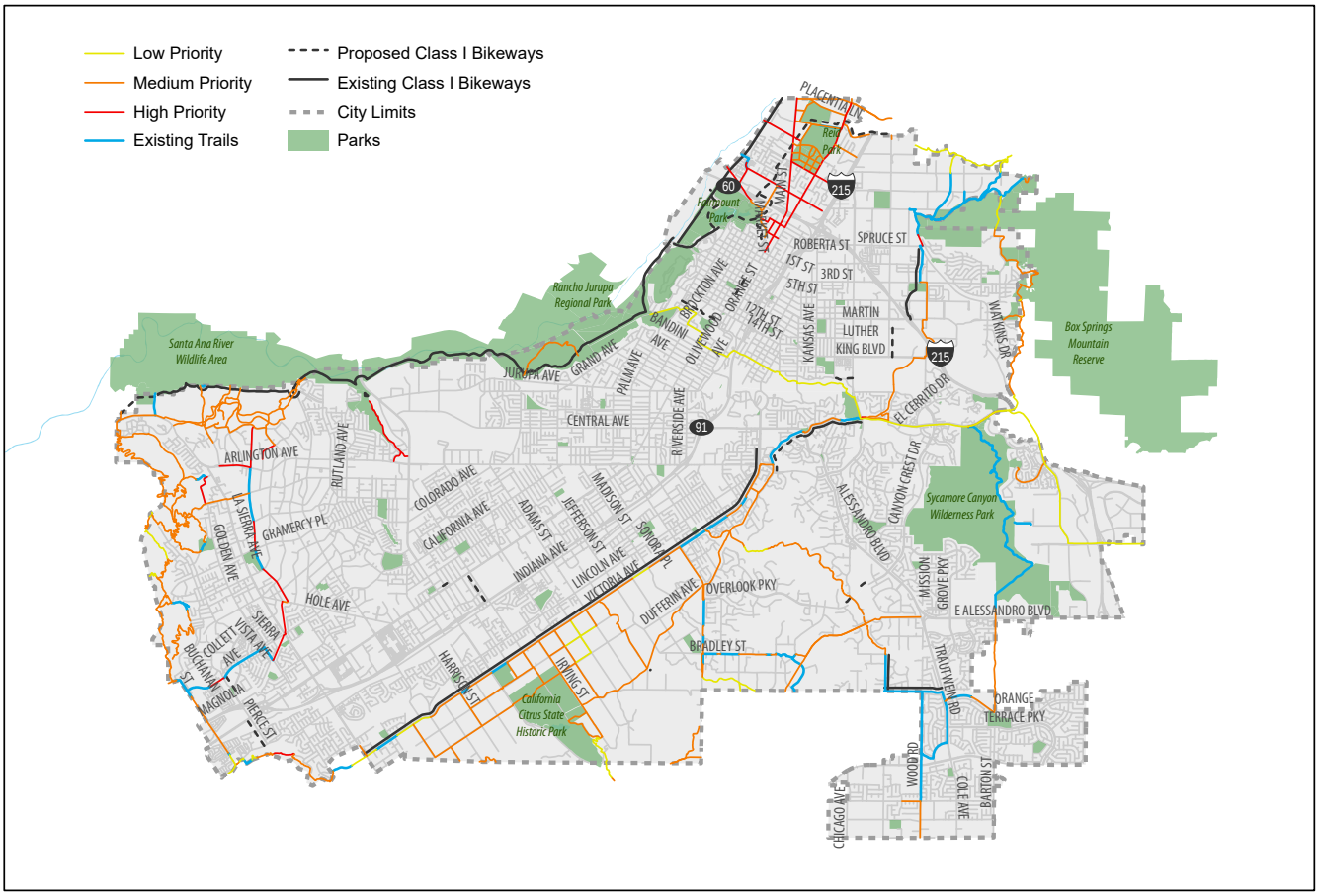


FIGURE 5-53 : LOCAL TRAIL SCORE

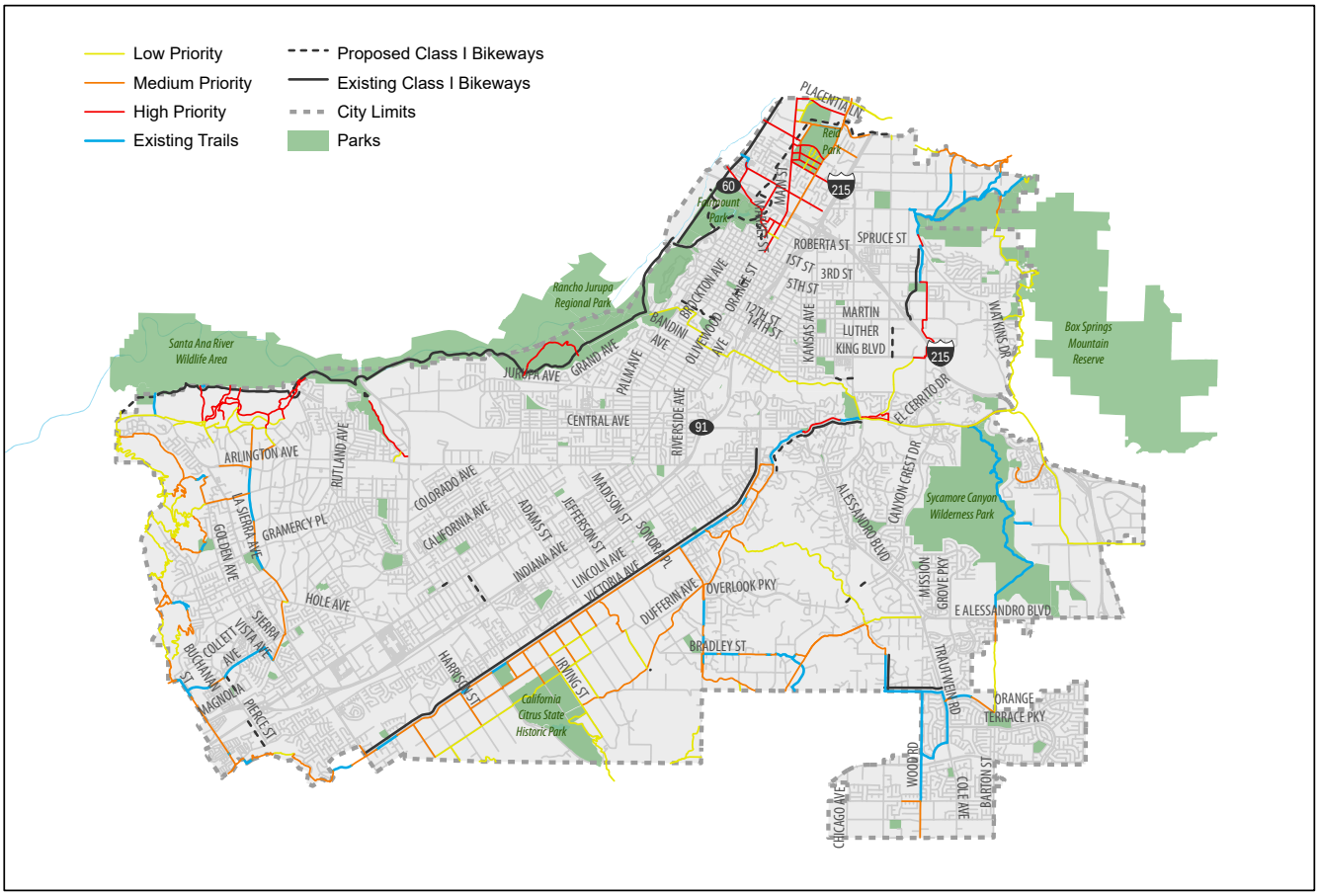


FIGURE 5-54 : REGIONAL TRAIL SCORE

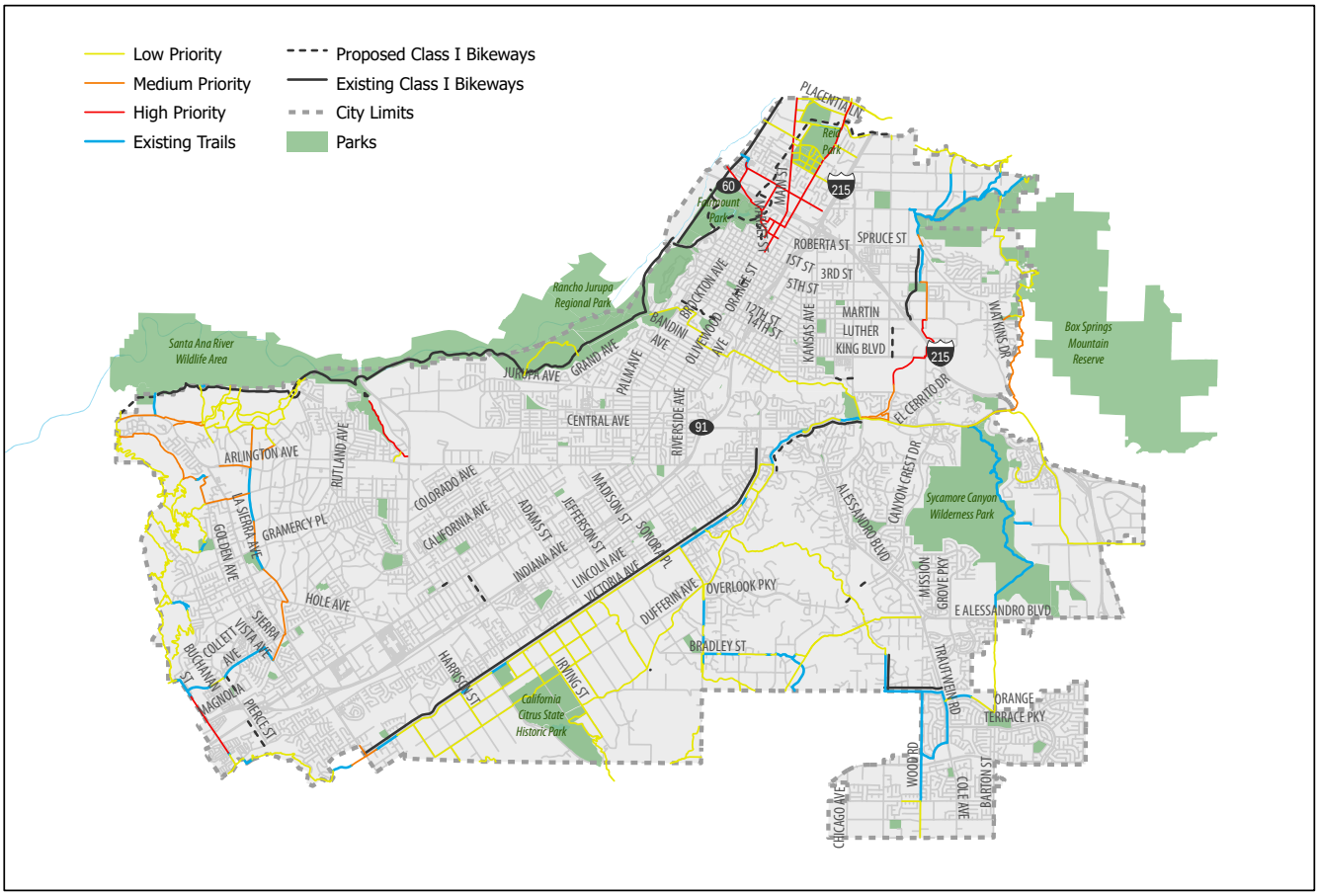
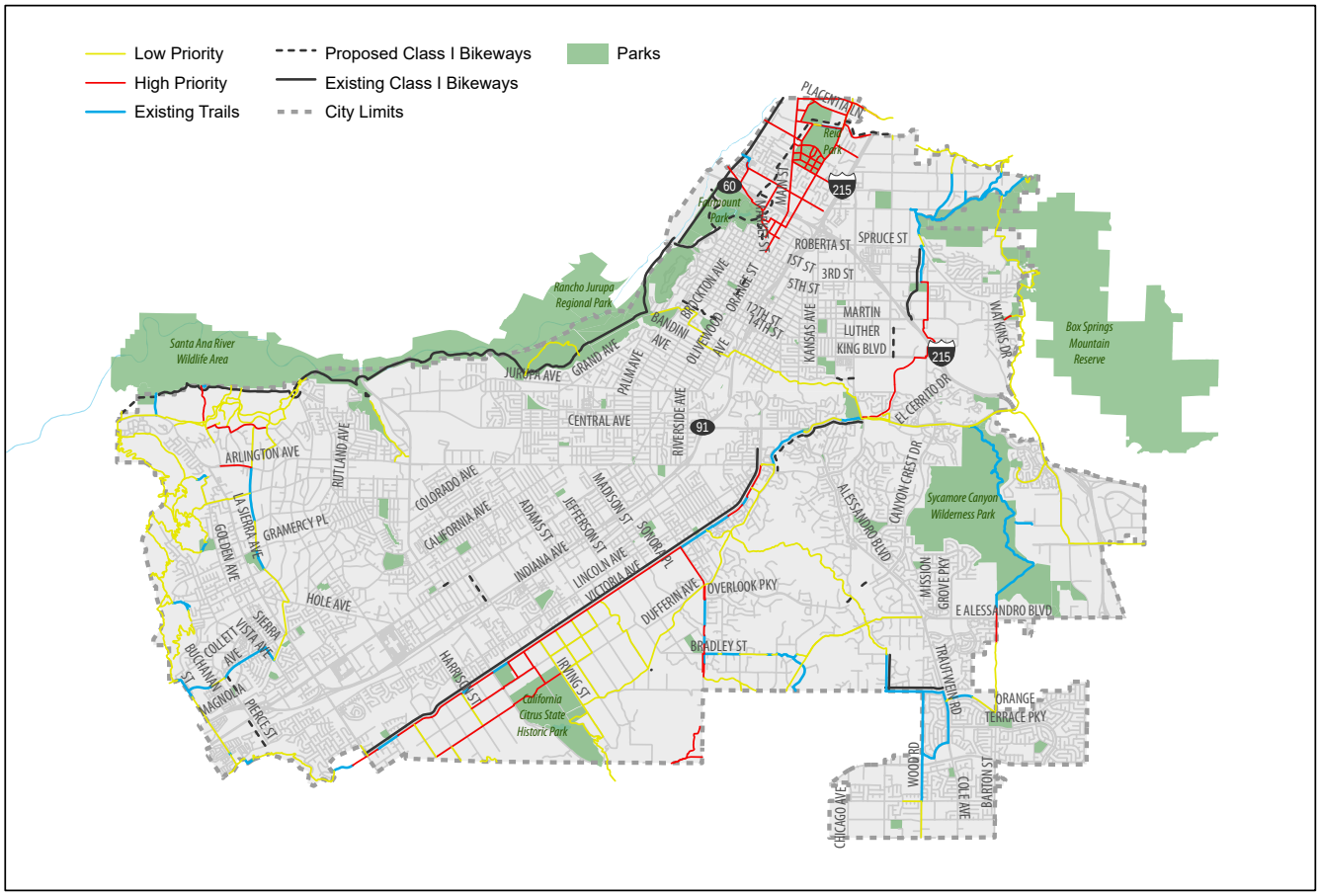


FIGURE 5-55 : PUBLIC SUPPORT SCORE



Appendix K. New Active Transportation Improvements

The City has finished construction on three new bicycle facilities since the PACT has been completed. There is a Class IV two-way cycle track on Watkins Drive between Blaine Street and Valencia Hill Drive. This new cycle track does not eliminate parking; motorists can make use of the “floating” parking lane that is striped between the traveled way and the new cycle track. Temporary signs have been placed to highlight the new parking lane. The two-way cycle track will provide easier access to UCR facilities for bicyclists along Watkins Drive. Bicyclists are recommended to dismount and use pedestrian crossing facilities when entering & exiting the cycle track in the northbound direction.

Also recently installed are the Class IV buffered cycle track on Canyon Crest Drive between MLK Boulevard and El Cerrito Drive, and the Class II bike lane on Central Avenue between Van Buren Boulevard and Streeter Avenue.

Funding for these projects was provided through the Active Transportation Program.

Photo Caption: Canyon Crest Drive

Photo Caption: Watkins Drive

Photo Caption: Central Avenue