Improvement to Transit Access for Cyclists and Pedestrians

Submitted to the San Bernardino Associated Governments

by Alta Planning + Design

with Gruen Associates

August 2012

Governments SANBAG Working Together

SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

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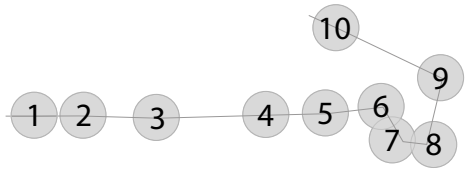

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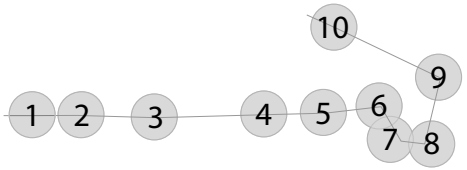

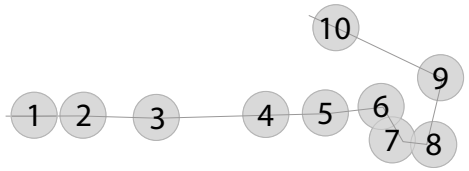

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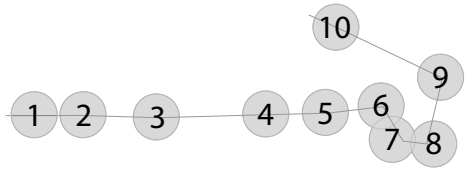

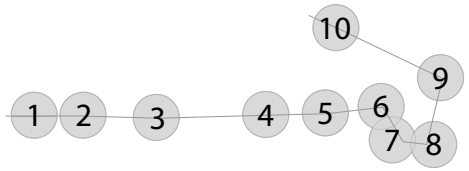

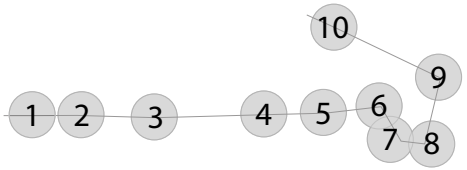

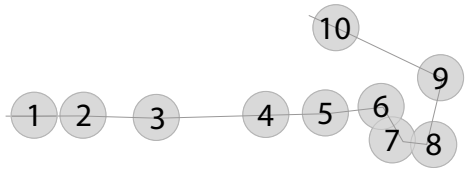

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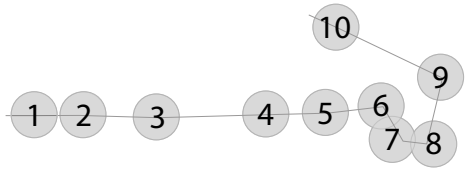
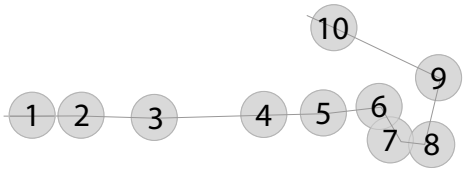




Executive Summary

Plan Process

San Bernardino Associated Governments (SANBAG) undertook an effort to examine the ability of non-motorized users to access its regional transit network, including existing the County's six Metrolink Commuter Rail services, and four selected planned sbX Bus Rapid Transit (BRT) Stations in the City of San Bernardino.

This year-long project consisted of a series of efforts designed to identify existing barriers to access, inform stakeholders of industry best practices relating to improving non-motorized circulation, and propose planning-level improvements in and around the selected stations. These improvements were based on existing conditions documentation, including fieldwork and Geographic Information Systems (GIS) analysis, industry research, extensive stakeholder consultation, public outreach efforts, and financial feasibility.

The project is designed to serve as a guiding document for cities looking to secure funding for transit station area improvements, implement the SANBAG Non-Motorized Transportation Plan, and improve access to and from these stations for local residents and commuters.

A Project Working Group (PWG) was convened at the beginning of the project, and consisted of over three dozen members, ranging from City staff, SANBAG and SCAG representatives, local cycling advocates, community members, representatives from Metrolink and Omnitrans, and major employers in the region such as Cal State San Bernardino. The PWG met every two months for the duration of the project, and members were kept abreast of project progress via regular e-mail and phone communication.

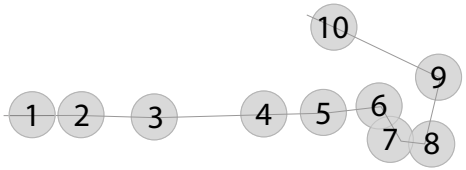
Existing Conditions

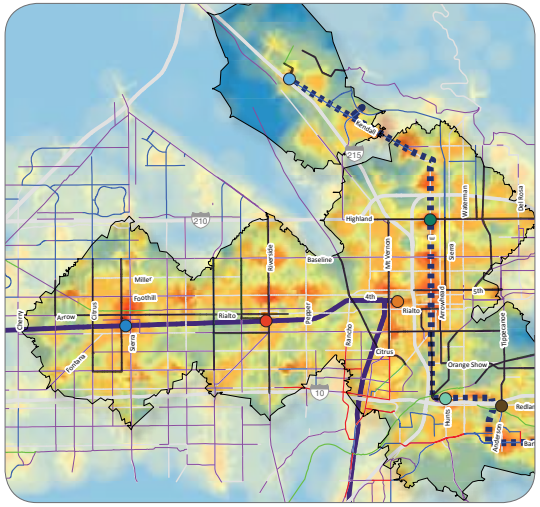
San Bernardino County has long been an auto-dominated environment. Roadways are typically laid out in a grid network, topography permitting, with a standard hierarchy of classifications. The Cities in the study area vary widely in their approach to implementing bicycle and pedestrian facilities, owing to a number of factors relating to circulation priorities, land use patterns, and transit station built environments. SANBAG has recently completed its countywide Non-Motorized Transportation Plan, which quantified the existing non-motorized network in the region. While it is difficult to generalize, the existing non-motorized network typically consists of a number of disconnected facilities for both cyclists and pedestrians. On-street facilities face challenges from vehicle speeds and volumes, substandard infrastructure, while off-street facilities (such as walking trails and bike paths) face challenges of a lack of funding for creating facilities and maintaining existing facilities.

Despite these challenges, walking, bicycling, and transit usage throughout the study area remains high, and connecting non-motorized facilities to not only one another, but the people that use them, is a key objective of this project.

Best Practices

Chapter Three presents a number of industry best practices from throughout the country designed to improve access to and from transit stations. These examples served to inform the public and the PWG, and formed the basis of a series of recommendations in and around the transit stations areas under study, including innovate new traffic control devices and bicycle facilities, wayfinding concepts, and other hardscape improvements.





Public Outreach

This project featured a number of events and exercises designed to engage the public and solicit their opinions. An initial survey effort was conducted at each of the ten stations under study, designed at identifying transit users' issues, challenges, and preferences relating to accessing their respective transit stations. These surveys took place over the course of two weeks, and resulted in over 200 completed surveys.

In addition, a total of four public workshops were held over the course of the project, which helped to solicit additional comments and educate the public about the proposed improvements found in Chapter Four.

Lastly, SANBAG maintained a project webpage on its website, which featured project materials such as deliverables and public notices for review and comment by the public. In addition, the webpage featured a project-specific e-mail address for community members to provide their comments on the project. This e-mail address was checked daily, and resulted in a number of unique suggestions which have been taken into consideration in the recommended improvements.

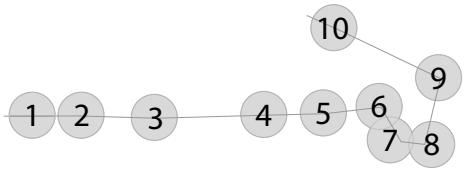
Recommended Improvements

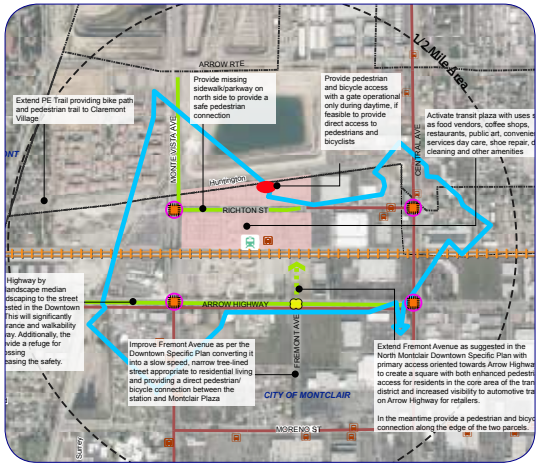
The project study area includes approximately 140 square miles of project catchment area, and recommends an "outside-in" approach, whereby the scale and scope of the proposed improvements become more specific and more detailed as they approach the respective station areas.

This methodology allows participating cities to use this project to identify priority non-motorized transit access corridors within their jurisdictions, helping them to implement the regional bicycle network in a manner that simultaneously improves direct, logical connections to transit facilities, closes gaps in the regional bicycle network, and improves cyclist safety and mobility.

Closer to the station, the recommendations become more specific and detailed, proposing improvements such as new sidewalks, enhanced pedestrian crossings, additional bicycle parking, street trees, or lighting elements, as well as general recommendations designed to help to create a "sense of place" in and around the station area. Highlights of the recommendations include:

- Over 70 miles of high-priority bicycle corridors providing safer, more direct access to transit stations
- Nearly 50 new or improved pedestrian crosswalks for commuters and residents
- Over 23 miles of new, ADA-compliant sidewalks





- Over 2,300 new pedestrian-scale lighting elements in and around station areas
- Over 1,700 new trees for shade and improved aesthetics

In addition to these specific improvements, the following general recommendations are proposed:

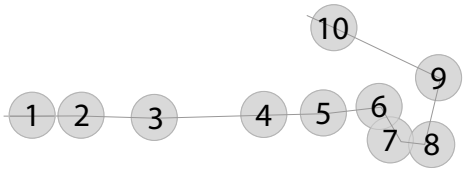
- Develop comprehensive wayfinding plan(s) for local residents, commuters, and visitors
- Prioritize roadway resurfacing on designated bikeways
- Increase the quality and amount of bicycle parking at stations and surrounding destinations

Phasing of the improvements identified will be site-specific and dependent on the goals and objectives of each of the participating cities, however, it is recommended that implementation measures occur in concert with not only one another, but with those of neighboring cities to maximize cost effectiveness, non-motorized network activity, and public enjoyment of the facilities.

Funding and Implementation

The consultant team understands the financial challenges currently facing the cities that participated in this project. Despite the difficult environment under which funding and implementing non-motorized improvements, federal, state, local, and private grant funds are available from a number of targeted accounts. In addition to transportation funds, public health, air quality, and various grant sources allow for the design and construction of facilities like those identified in this report.

Chapter 5 presents a listing of these sources and identifies the application process for cities and other governmental agencies to follow in order to secure monies for implementation.



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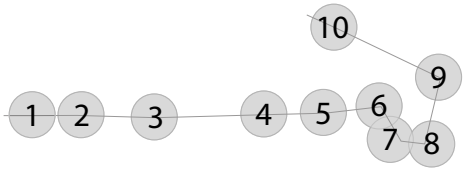
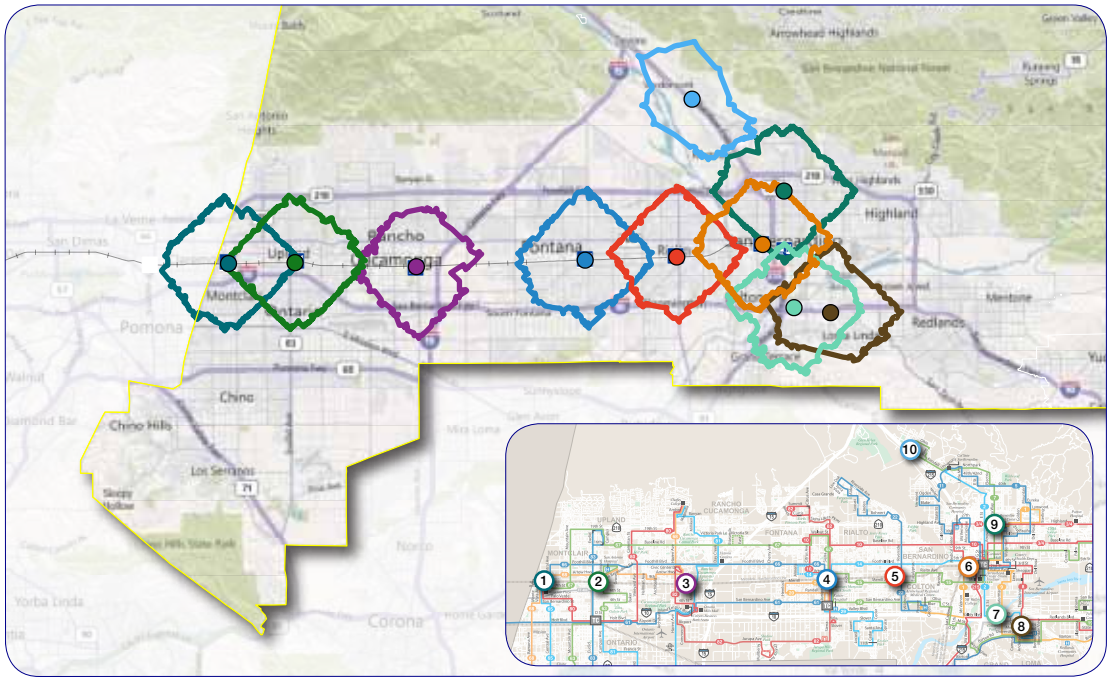
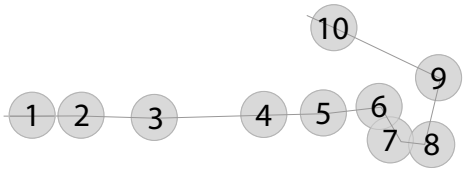


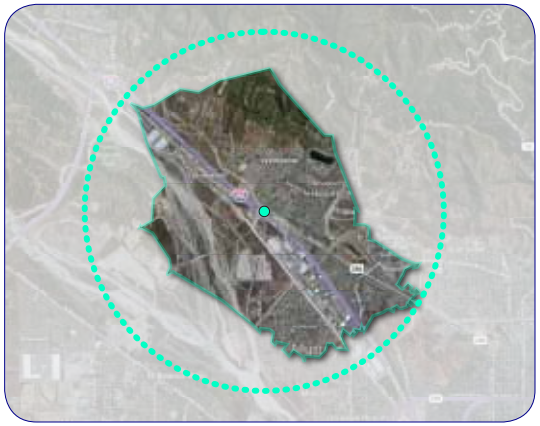
FIGURE I.0 **STUDY AREA LOCATIONS AND PROXIMITY BUFFERS**





Accessing transit on foot or by bicycle often involves negotiating difficult street environments

Transit waiting environments can affect ridership



Example of GIS-based distance buffer compared to radial distanced-based buffer

1 Introduction and Existing Conditions

Study Area Description

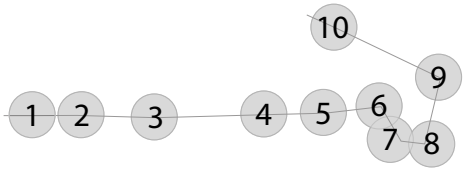
The project study area is located in the southwestern corner of San Bernardino County, primarily along the Metrolink Commuter Rail network and the Interstate 10 corridor, with a small number of stations along the Interstate 215 corridor. Fixed-route bus transit service is provided by Omnitrans, and as mentioned, Metrolink provides commuter rail service within the study area. San Bernardino County cities participating in the study include Montclair, Upland, Rancho Cucamonga, Fontana, Rialto, San Bernardino, and Loma Linda.

Stations Selected for Analysis

The Project Development Team (PDT) developed ten stations for analysis. The locations were selected for a number of reasons, including high levels of existing or planned transit service, proximity to transit-oriented subpopulations such as students or employees, and for some smaller stations, the opportunity to serve as a model for how to implement infrastructure improvements designed to best serve the needs of bicyclists and pedestrians at transit stations throughout the Inland Empire.

The following ten stations were selected for analysis:

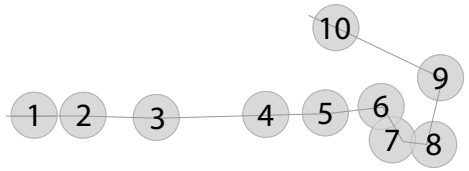
1. Montclair Metrolink Station
2. Upland Metrolink Station
3. Rancho Cucamonga Metrolink Station
4. Fontana Metrolink Station
5. Rialto Metrolink Station
6. San Bernardino Metrolink Station
7. Hunts Lane (San Bernardino) sbX Station
8. Anderson Street (Loma Linda) sbX Station
9. Highland Avenue (San Bernardino) sbX Station



Unmaintained bike lane and non-ADA compliant sidewalk

Residential uses often do not connect to adjacent bikeway facilities

10. Palm Avenue (San Bernardino) sbX Station



Project Catchment Areas and Distances

Frequently in transit access analyses, simple distance-based buffers are applied around the station location to comply with the Federal Transit Administration (FTA) guidelines of one-half mile for pedestrian access, and three miles for bicycle access. These distances are used to identify which projects within a city may be eligible for FTA transit access funding and fit the description found in the FTA *Final Policy Statement on the Eligibility of Pedestrian and Bicycle Improvements Under Federal Transit Law.*

Increasingly, however, distance-based buffers are making use of sophisticated routefinding software algorithms to better reflect the true travel distance from a station as reflected by the local street network. This method allows for planners to account for barriers and delays built into travel routing to develop a catchment area that is more reflective of the conditions on the ground than an area that is simply radial in nature.

These barriers to travel may include having to alter one's route to access freeway, rail corridor, or river channel crossing points, cul-de-sacs, private drives, or other non-connected features of the built environment. Based on feedback from the Project Development Team, each station catchment area under study was refined to reflect this "true" travel distance, and complies with FTA guidelines.

This chapter is broken into ten sections, one for each transit station under study. Each station is assessed generally and specifically with regards to the pedestrian and bicycle environment present in each respective catchment area.

General assessment criteria include:

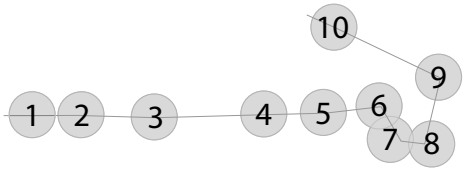
- Opportunities and Constraints bullet points as observed by the Project Team through fieldwork and other professional judgement criteria
- Nearby and adjacent land uses and their observed effects on transit access (see general legend at left)
- Population density figures as reported by the 2010 Census (see general legend at left)
- Overall level of existing and planned transit connectivity based on Omnitrans' route network (local Omnitrans Routes are shown in ORANGE, the E Street sbX BRT route is shown in BLUE)

In addition to these general observations, each station catchment area was specifically assessed for the level of its pedestrian and bicycle infrastructure networks. SANBAG and SCAG provided Geographic Information System (GIS) infrastructure data to the consultant team from their databases, and coordinated the data collection efforts between the participating cities. Alta Planning + Design and

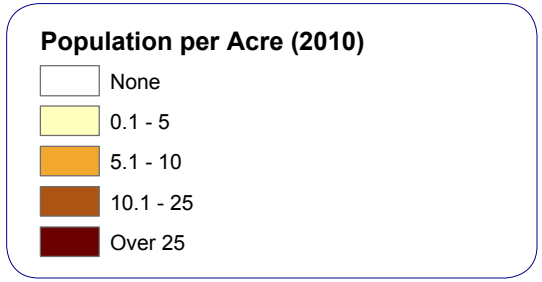
Caption

Unmaintained facilities discourage use and create hazards

Interactions with interstate-bound traffic are frequent and challenging in the study area



The land uses in each study vary greatly, and affect the nature of pedestrian and bicyle travel around each station



The more dense the population, the more potential for pedestrian and bicyclist access

Gruen Associates used this data to confirm existing conditions as part of their fieldwork efforts in 2011.

These findings are reported in a series of matrices following the general assessments of each respective station. Specific assessment criteria include:

Bicycle Network

- **Speed and Condition of Vehicular Traffic** - Class II and III bikeway facilities share the road right-of-way with automobiles, and their usage is often correlated with the speed and congestion of automobile traffic. Bicyclists who feel adjacent traffic is too congested or moving too fast may be unwilling to use these facilities.
- **Pavement Condition** - Roadway shoulders or bike lanes that are neglected, unmaintained, or in poor condition can be hazardous, and can discourage bicyclists from using the facility.
- **"Door Zone" and Driveway Conflicts** - Vehicles entering or exiting driveways frequently pose challenges to on-road cyclists, as do drivers exiting their vehicles from the driver's side of a parallel parking space. The more parallel parking and driveways in a corridor, the greater possibility of these types of conflicts.
- **Transit Service and Waiting Environment Within Corridor** - Transit must be accessible and inviting to encourage use. Ample transit service with adequate waiting environments are key components of a well-used transit network for all users.
- **Amount of Trip Generators and Attractors** - The more attractions in an area, the greater the potential for bicycle traffic in and around the study area.
- **Amount of Bike Facility Striping or Signage** - Successful bicycle facilities should be well-signed for routefinding along the facility itself, and regional wayfinding to nearby destinations.

Pedestrian Network

Providing safe, convenient and attractive sidewalks, pedestrian crossings and transit stops are imperative to ensuring transit riders have a positive experience. A safe, comfortable, and pleasant pedestrian environment encompasses the following:

- **Sidewalk/Parkway Width** - Sidewalk and Parkway width includes the landscape/furniture zone and the pedestrian zone. The Landscape/Furniture Zone is defined as the area between the roadway curb face and the front edge of the walkway. The recommended minimum width of this zone is 5 feet

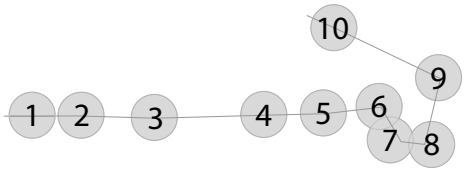
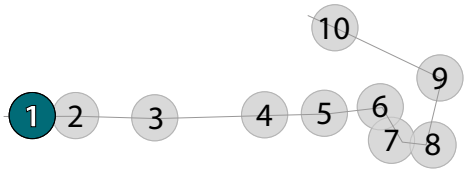
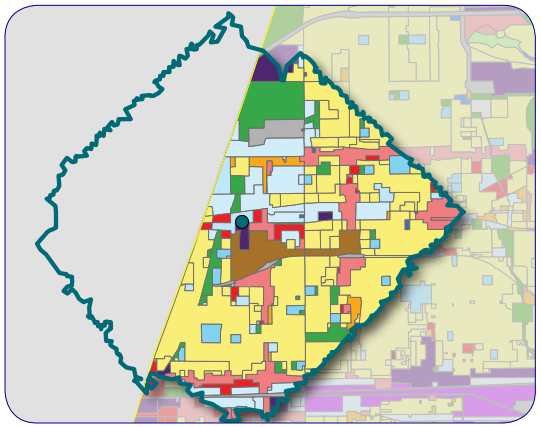


TABLE 1.1 **BICYCLE AND PEDESTRIAN SCORING CRITERIA**

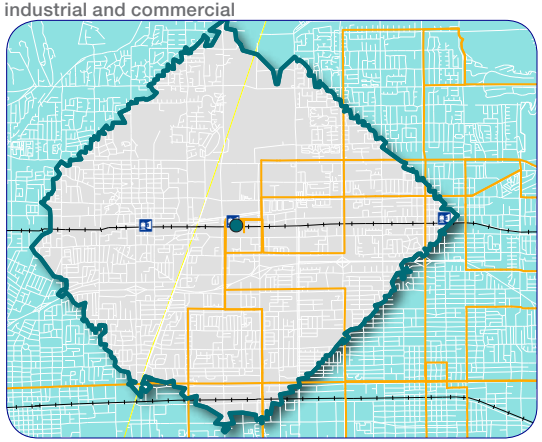
	Rating				
Matrix Item	○	◔	◑	◕	●
Bicycle Environment					
Speed and Conditions of Vehicular Traffic	Low speeds, free flow	Moderate speeds, free flow	Moderate speeds, some constrained flow	Moderately high or low speeds, constrained flow	Low speeds, failing flow, or excessively high speeds
Pavement Condition	Excellent pavement conditions	Good pavement conditions	Average pavement conditions	Below average pavement conditions	Poor pavement conditions
"Door Zone" and Driveway Conflicts	No conflicts	Few conflicts	Some conflicts	Many conflicts	Dangerous amount of conflicts
Transit service and waiting environment within Corridor	Several bus routes, mostly enhanced or standard stop types	Several bus routes, mix of standard and sub-standard stop types	Some routes, mix of standard and sub-standard stop types	Few routes, mostly basic stop types	No routes, no stops
Amount of Key Attractions Served	Several key attractions	Some key attractions	Few key attractions	Very few key attractions	No key attractions
Amount of Bike Facility Striping or Signage	Ample signage and striping, good condition	Some signage and striping, good condition	Some signage and striping, fair condition	Little signage and striping, fair condition	No signage or striping
Pedestrian Environment					
Sidewalk/Parkway Width	> 12 ft	10 ft	8 to 10 ft	5 to 10 ft	0 to 4 ft
Sidewalk Width	> 6 ft	5 ft	4 to 5 ft	4 ft	0 to 3 ft
Sidewalk Condition	Excellent sidewalk conditions	Good sidewalk conditions	Average sidewalk conditions	Below average sidewalk conditions	Poor sidewalk conditions
Sidewalk and/or Parkway Location	Parkway planted with shade trees located next to the curb with sidewalk behind	Landscaped parkway planted with some trees located next to the curb with sidewalk behind	Landscaped parkway planted with no trees located next to the curb with sidewalk behind	Sidewalk next to the curb	No sidewalks
Crosswalks	Continental markings /Decorative/Colored Concrete/Stamped crosswalks and curb extensions	Continental markings crosswalks	Crosswalks with parallel markings	Crosswalks with parallel markings in fair condition	No crosswalks
Curb Ramp	ADA complaint with truncated dome; good condition	Curb ramp without truncated dome; good condition	ADA complaint without truncated dome; fair condition	ADA non-compliance	No curb ramp
Street Trees Location	Double row of trees spaced 30 to 35 ft apart	Single row of trees spaced 30 to 35ft apart in parkway/tree wells located next to the curb	Shade trees spaced more than 40ft apart in parkway/tree wells located next to the curb	No trees in public right-of-way; adjoining trees on private property shading sidewalks	No trees
Raised Median	14 ft or greater median with landscaping and large mature trees	10 ft to13ft median with landscaping and large mature trees	10 to 14ft landscaped median with a few trees	Concrete median with no trees and/or landscaping	No raised median
Utility Poles and wires	Underground	Located within Parkway allowing for street trees	Located within sidewalk with enough room for pedestrians and trees in parkway	Located within parkway with no room for trees	Located within sidewalk restricting pedestrian mobility
Lighting	Street lights and pedestrian-scaled lights	Street lights and/or pedestrian-scaled lights	Street lights with double arms	Street lights with single arm	No lights
Street Furniture	Benches/Bicycle Racks/Trash Receptacle/Public Art	Benches/Bicycle Racks/Trash Receptacle	Benches and Trash Receptacle	Benches or Trash Receptacle	None
Wayfinding Signage in public realm	Ample pedestrian-scaled wayfinding signage; good condition	Some pedestrian-scaled wayfinding signage; good condition	Some pedestrian-scaled wayfinding signage, fair condition	Little pedestrian-scaled wayfinding signage, fair condition	No wayfinding signage



View of Montclair Metrolink Station



Area immediately surrounding station area is primarily industrial and commercial



Transit service focuses on connections to commercial and residential areas

1.1 Montclair Metrolink Station

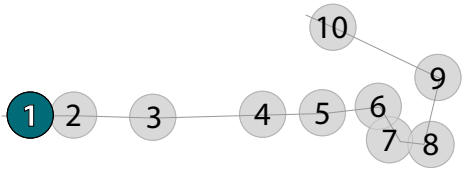
The Montclair Metrolink Station serves as the western terminus of the Omnitrans fixed-route transit network, and provides connections to Los Angeles and Riverside County transit services. It is also a large commuter station for Metrolink services to Los Angeles County, and features a large parking area to accommodate "park-and-ride" transit users.

The station is surrounded by commercial, residential, and industrial uses, and is located just south of the Pacific Electric Rail Trail, a Class I facility running between Montclair and Fontana.

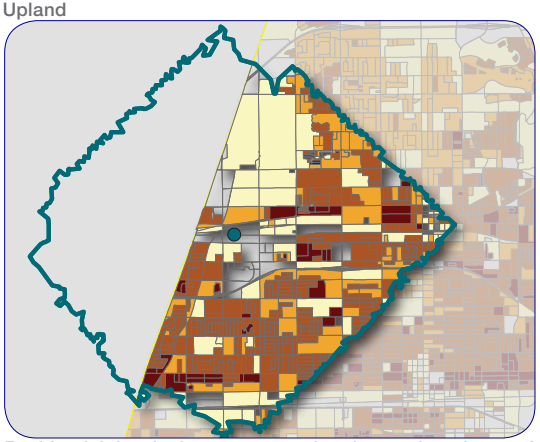
Most of the Montclair Metrolink Station catchment area is physically within Upland City limits, however the station itself is located in Montclair.

Opportunities

- Pacific Electric Rail Line Trail provides for non-motorized access paralleling existing Metrolink alignment.
- Significant connections to wide range of transit services throughout the region.
- Moderate density of existing and planned residential land uses nearby.
- Ample space for bicycle parking facilities or other commuter facilities.
- Montclair Transcenter is a major stop on the San Bernardino Metrolink line and is served by Foothill Transit, Omnitrans and RTA bus lines. In addition, the Transcenter acts as a Caltrans Park-and-Ride facility providing regional connectivity.
- Montclair Transcenter provides opportunities for the development of commuter-related facilities within its own site and is a key element in the transportation link between North Montclair, the Montclair Plaza and outlying cities.
- Montclair Plaza is a major destination in the area.
- The *North Montclair Downtown Specific Plan* recognizes this and includes an overall vision to provide a viable and convenient connection between the Transcenter and Plaza and proposes creating a mixed-use, transit-oriented district between the Transcenter and Plaza."



Unimproved mid-block crossing at border of Montclair and Upland

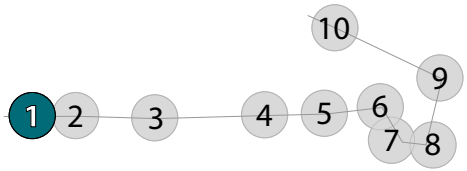


Residential density is concentrated to the south and east of the Metrolink Station

- Planned mixed-use and transit-oriented residential developments in the North Montclair Downtown Specific Plan will offer its residents convenient access to rail transit via Metrolink commuter rail service.
- The City will also be the eastern terminus of the Gold Line light rail, which will link the foothill communities of the San Gabriel Valley with Pasadena and Downtown Los Angeles.
- The Pacific Electric Bicycle Trail, connecting Montclair to Rialto, ends approximately 1300 feet south of Monte Vista Avenue; however, the Huntington right-of-way provides the opportunity to extend this bike path and pedestrian trail to Claremont Village.
- The Transit plaza could include a day-care center, restaurants, coffee shop, police substation, and other commuter-related facilities to re-energize the plaza.

Constraints

- City of Montclair has no existing or planned bicycle facilities
- Off-street connections to regional bicycle facilities are limited
- High-speed, high-volume arterials
- Commercial developments discourage pedestrian activity
- Currently, North Montclair is characterized by “super-block” development - blocks that are well over 800 to 1000 feet in length, and are oriented towards automobile movement. In large measure, this is the result of parcels that have not yet been improved, or are subdivided only as necessary to accommodate big box retail with surface parking.
- Richton Street is a wide four lane street with sidewalks next to the curb (no hardscape zone) making it unfriendly for pedestrians and bicycles alike.
- Sidewalk is missing on the north side of Richton Street between Monte Vista Avenue and the first entry/exit to the station park & ride lot
- Monte Vista Avenue is a wide street with a landscaped median and bike lanes; however, the street appears extremely pedestrian unfriendly north of Richton Street. Shade trees are missing along much of the sidewalk; utility poles are located within the narrow sidewalk on the east side



limiting pedestrian mobility; the median lacks enough trees to breakup this wide street. South of Richton Street: Sidewalk is missing on the east side between 8th Street and Richton Street limiting pedestrian access.

- Access from the south side of the platforms is limited to Monte Vista Avenue and Central Avenue which are approximately 2500 feet apart.
- The Transit Plaza seems highly underutilized especially during off-peak hours.

Illegal bicycle parking near tunnel to access Track 2.

Adequate signage and utilities placed clear of sidewalks encourage facility use for users of all mobility levels

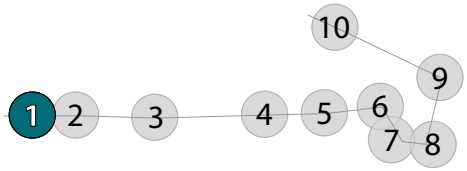
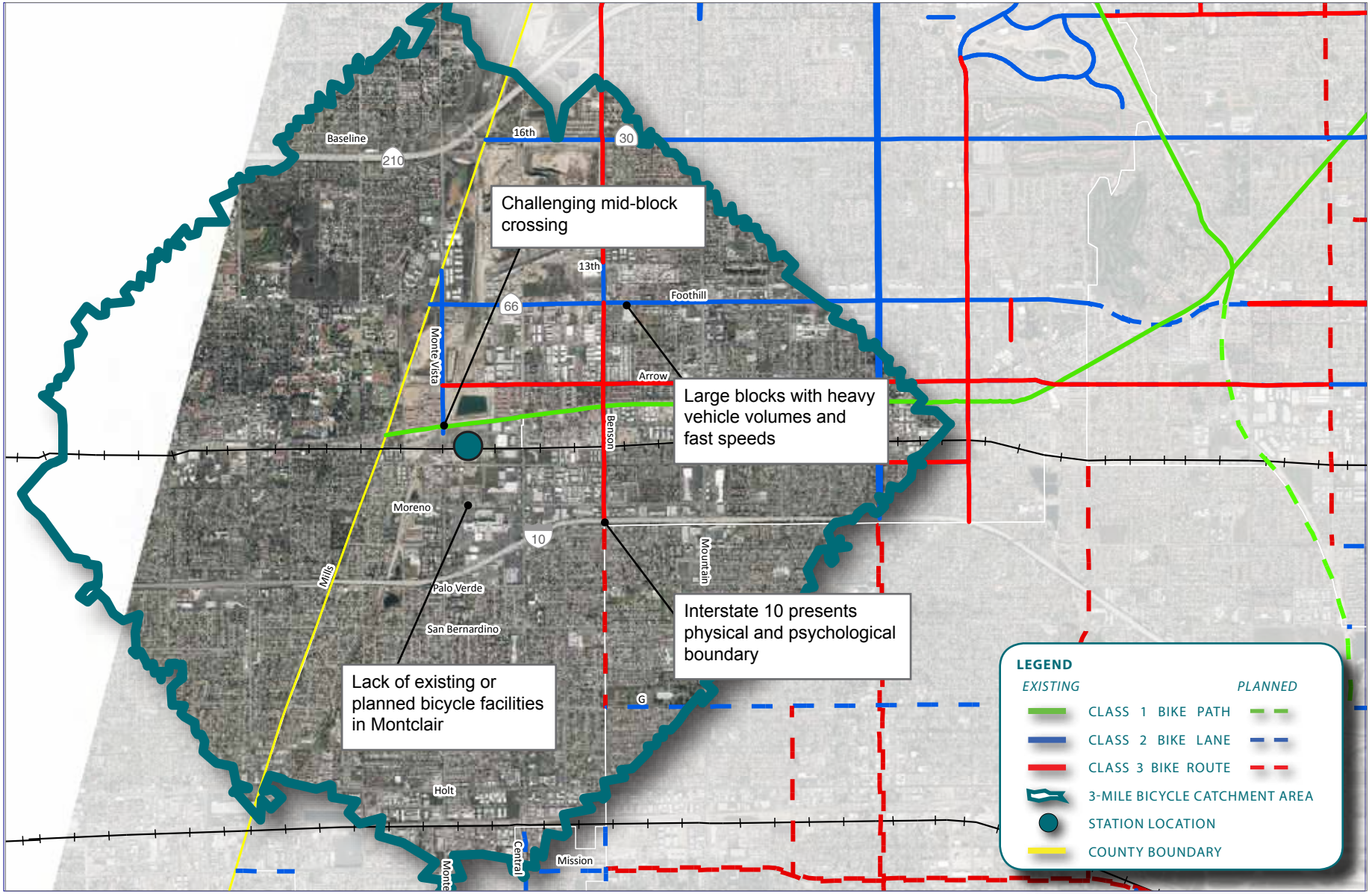


FIGURE 1.1 **MONTCLAIR METROLINK STATION AND CATCHMENT AREA**



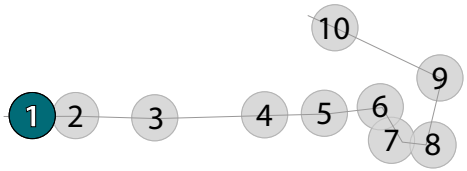
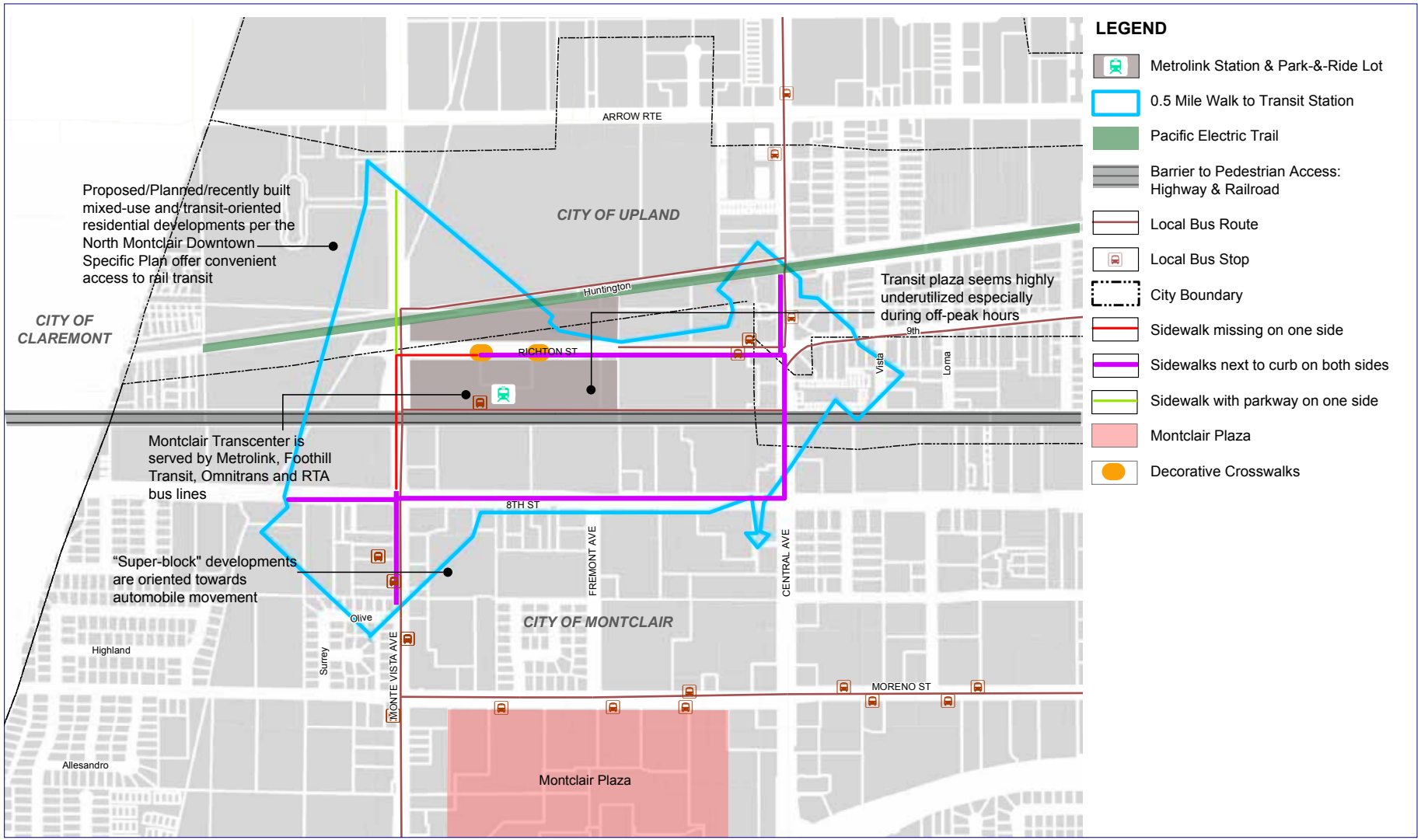


FIGURE 1.2 **MONTCLAIR METROLINK STATION PEDESTRIAN ANALYSIS**



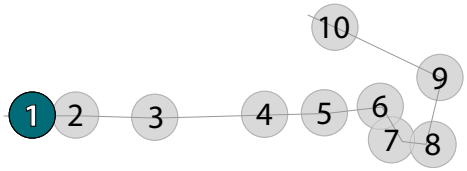


TABLE 1.2 **EXISTING BICYCLE FACILITIES**

Street	Monte Vista Ave	Pacific Electric Bike Trail	Baseline Rd	16th Street	Foothill Blvd	Benson Ave				Arrow Route	Arrow Hwy	Euclid Ave
Segment	South of Claremont Blvd to Richton St	Claremont Blvd to 5th Ave	Summer Ave to Hwy 210 Onramp	Hwy 210 Onramp to Columbia Wy	Monte Vista Ave to 3rd Pl	Murfield Ave to Birkdale Ave	Birkdale Ave to 13th St	13th St to Foothill Blvd	Foothill Blvd to 10 Fwy	Monte Vista Ave to Benson Ave	Benson Ave to 5th Ave	15th St to 10 Fwy
Existing Facility Type	Class II	Class I	Class II	Class II	Class II	Class I	Class III	Class II	Class III	Class III	Class III	Class II
Speed and Condition of Vehicular Traffic	◑	N/A	◕	◕	◕	N/A	◔	◔	◔	◑	◑	◔
Pavement Condition	◑	◑	◔	◔	◑	○	◔	◔	◔	◔	◔	◔
"Door Zone" and Driveway Conflicts	○	○	◔	◔	◔	○	◑	◑	◑	◕	◕	◔
Transit Service and Waiting Environment in Corridor	N/A	◑	N/A	N/A	○	N/A	◔	◔	◔	◔	◔	◔
Amount of Key Attractions	◔	◑	◑	◑	◔	●	◔	◔	◔	◔	◑	◔
Amount of Bike Facility Striping or Signage	◑	○	◔	◔	◕	◑	◕	◔	◕	●	●	◑

TABLE 1.3 **EXISTING PEDESTRIAN FACILITIES**

Street	Richton St	Monte Vista Ave		Central Ave	8th St
Segement		North of Richton St	South of Richton St		
Sidewalk/Parkway Width	◕	◕	◑	◑	◕
Sidewalk Width	○& ●	◕	◑	◑	◕
Sidewalk Condition	◔	◔	◔	◔	◑
Sidewalk and/or Parkway Location	◕	◔	◑	◕	◕
Crosswalks	○	○	◑	◑	◑
Curb Ramp	◔	◔	◔	◔	◔
Street Trees Location	◕	○& ●	●	◕	●
Raised Median	●	○	○	○	●
Utility Poles and wires	○	○& ●	○	○	●
Lighting	◑	◕	◕	◕	◕
Street Furniture	●	●	●	●	●
Wayfinding Signage in public realm	●	●	●	●	●

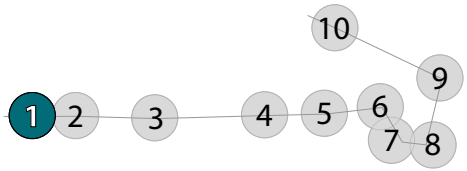


FIGURE 1.3 **TYPICAL SECTION - MONTE VISTA DRIVE**

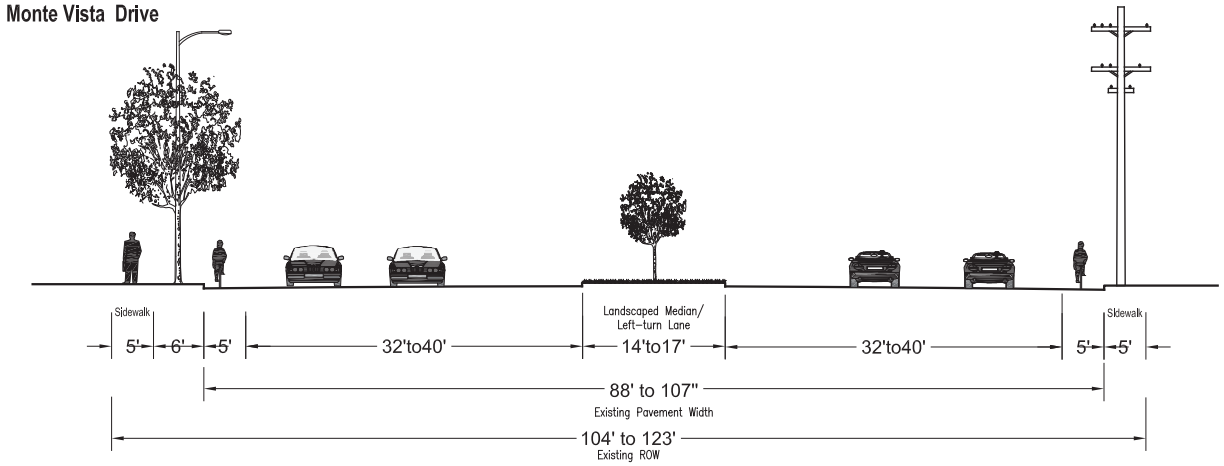
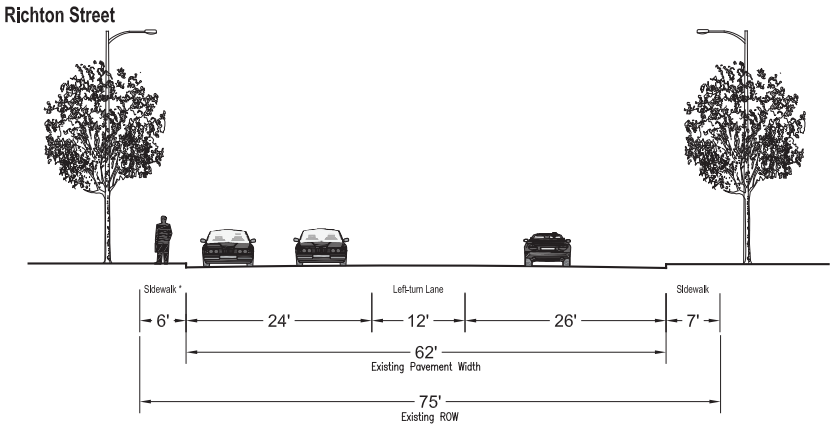


FIGURE 1.4 **TYPICAL SECTION - RICHTON STREET**



* Sidewalk is missing between Monte Vista Avenue and the first entry/exit to the station park & ride lot

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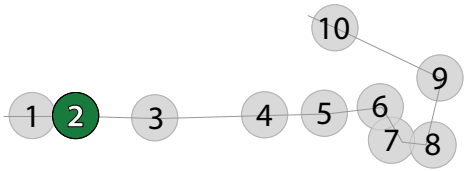
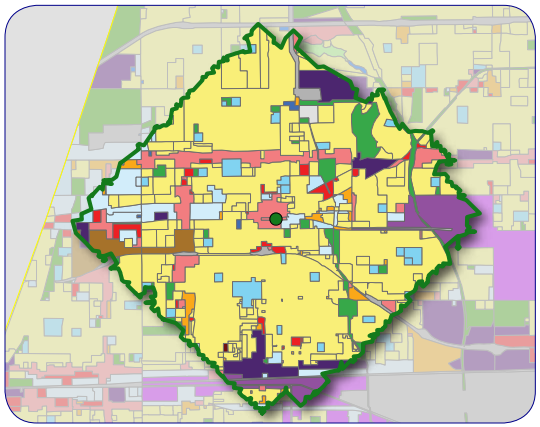
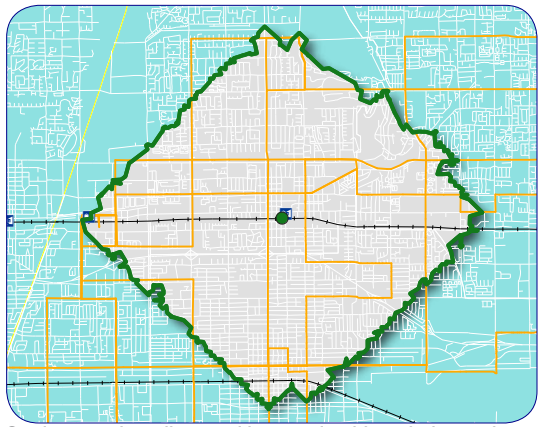


View of Upland Metrolink Station



Residential is the dominant land use in the study area



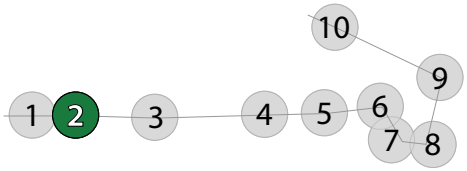
Station area is well-served by transit, although the station itself has limited direct connections to transit

1.2 Upland Metrolink Station

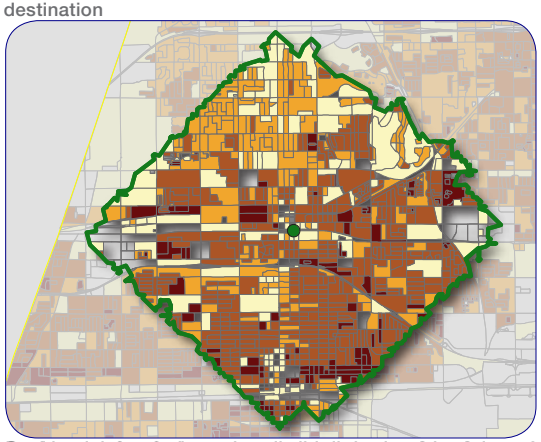
The Upland Metrolink Station is located in the center of Downtown Upland, and is well-connected to the adjacent pedestrian and bicycle network. The station is surrounded by older storefront commercial development, which is itself surrounded primarily by low-density residential land uses.

Opportunities

- Excellent connection to downtown Upland commercial and residential areas
- Mature trees and pedestrian-scale storefronts invite pedestrian activity
- Pacific Electric Trail is well-located and well-signed
- Upland Metrolink Station is located within close proximity of the Downtown.
- Downtown Upland has wide sidewalks lined with widened landscaped sidewalks, street furniture, on-street parking in the center of the street, decorative crosswalks, pedestrian lighting and shops and small businesses oriented to the sidewalks.
- The *Historic Downtown Upland Specific Plan* (bounded by Arrow Highway to the north, 8th Street to the south, Campus Avenue to the east and Euclid Avenue in the west) has design standards and guidelines to improve pedestrian circulation, safety and activity and create a cohesive identity and environment for the Downtown.
- The *Historic Downtown Upland Specific Plan* includes working with the Southern California Regional Rail Authority and SANBAG to fund and construct a pedestrian bridge over the Metrolink tracks, working with Omnitrans to provide direct bus and shuttle service to the Upland Metrolink station and encouraging and supporting transit-oriented development near the Metrolink station, consisting of higher-density residential development that provides pedestrian access to public transit and nearby services.
- The Historic Downtown Upland Specific Plan identifies sidewalks locations where sidewalks are needed or should be improved in Downtown.
- The Metrolink Station can be accessed by the City of Upland's adjacent Pacific Electric Trail project, which includes a series of paved walking and jogging paths that help to preserve the right-of-ways and provides convenient pedestrian access to the Metrolink station.



Downtown Upland promotes itself as a regional tourist destination



Residential areas by the Metrolink Station

- The Long Range Transportation Plan recommends Bus Rapid Transit along Euclid Avenue.
- A vacant lot located at the northeast corner of Sultan Avenue and 8th Street represents an opportunity for transit-oriented uses and connecting the station to Olivedale Park.
- The walkable grid pattern with tree-lined streets in the station vicinity is ideal for walking.
- A Street, the main access street to the Station, is a pedestrian-scaled street with one lane of traffic in each direction, parking on both sides, parkway/sidewalk and historic lights.
- Alleys in Downtown provide a great opportunity for pedestrian and public spaces by using such elements as pervious paving materials, potted plants and trees, park benches, lighting, allowances for outdoor café seating, and other amenities.

Constraints

- Limited opportunities between station and Interstate 10
- Arterials with landscaped medians often lack mid-block crossings for cyclists and pedestrians
- Omnitrans does not directly serve the station, but runs route 83 along Euclid Avenue
- 3rd Avenue lacks landscape improvements between A Street and 9th Street. Sidewalks are missing on the west side of 3rd Avenue at the intersection of 3rd Avenue and A Street. Also, shade trees are missing in this segment and there are no street lights.
- Pedestrian crossings connecting north and south sides of the station area are limited to 2nd Avenue and Campus Avenue.
- The existing Pacific Electric Trail, serving pedestrians and bicyclists, does not have a designated crossing at Euclid Avenue or any other streets in Downtown.

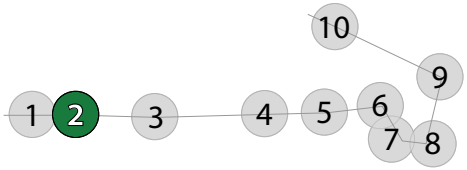
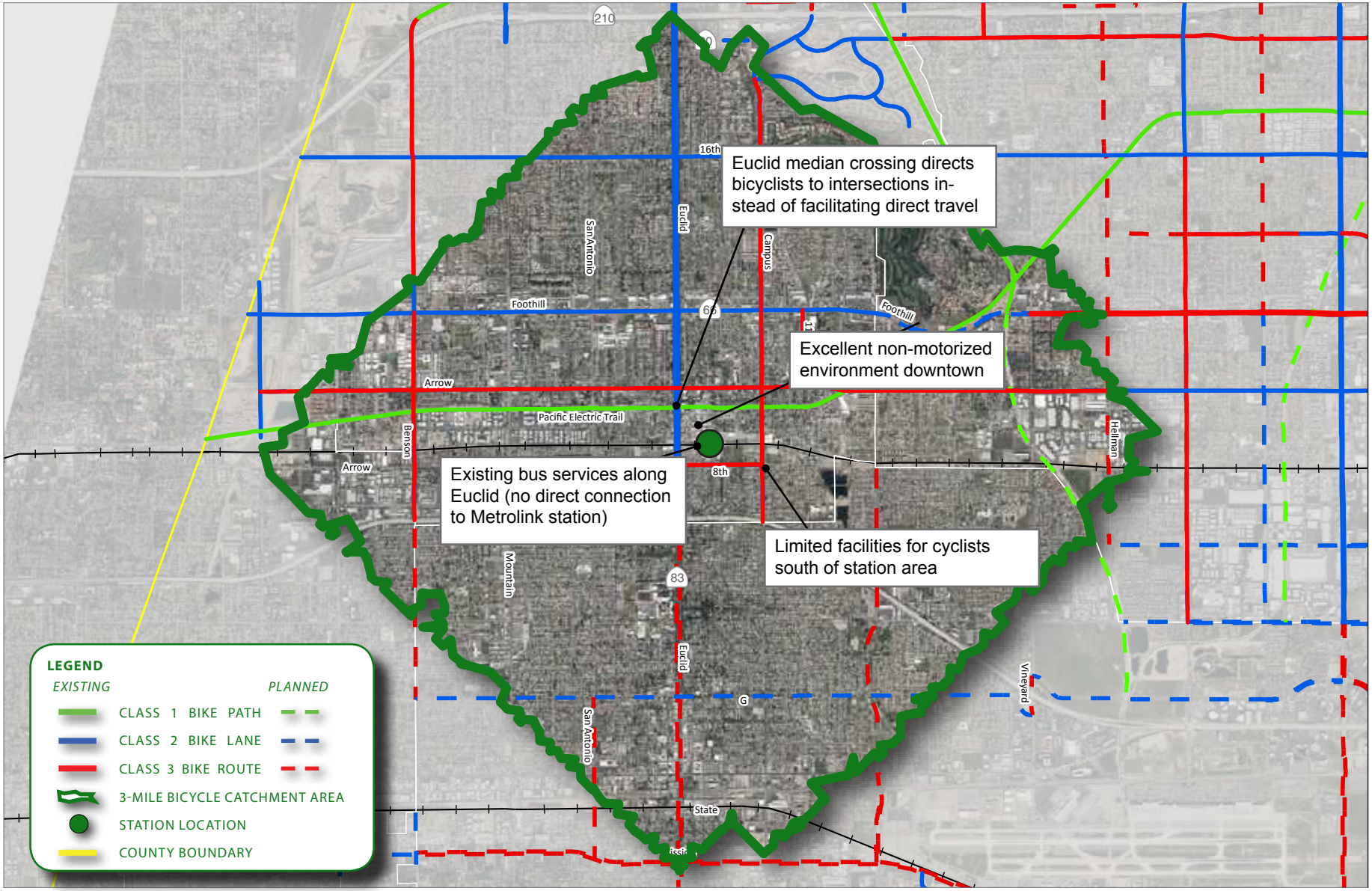


FIGURE 1.5 **UPLAND METROLINK STATION AND CATCHMENT AREA**



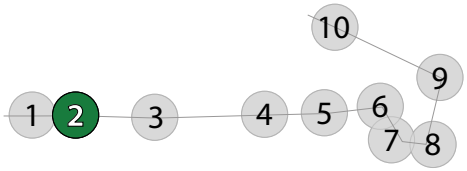
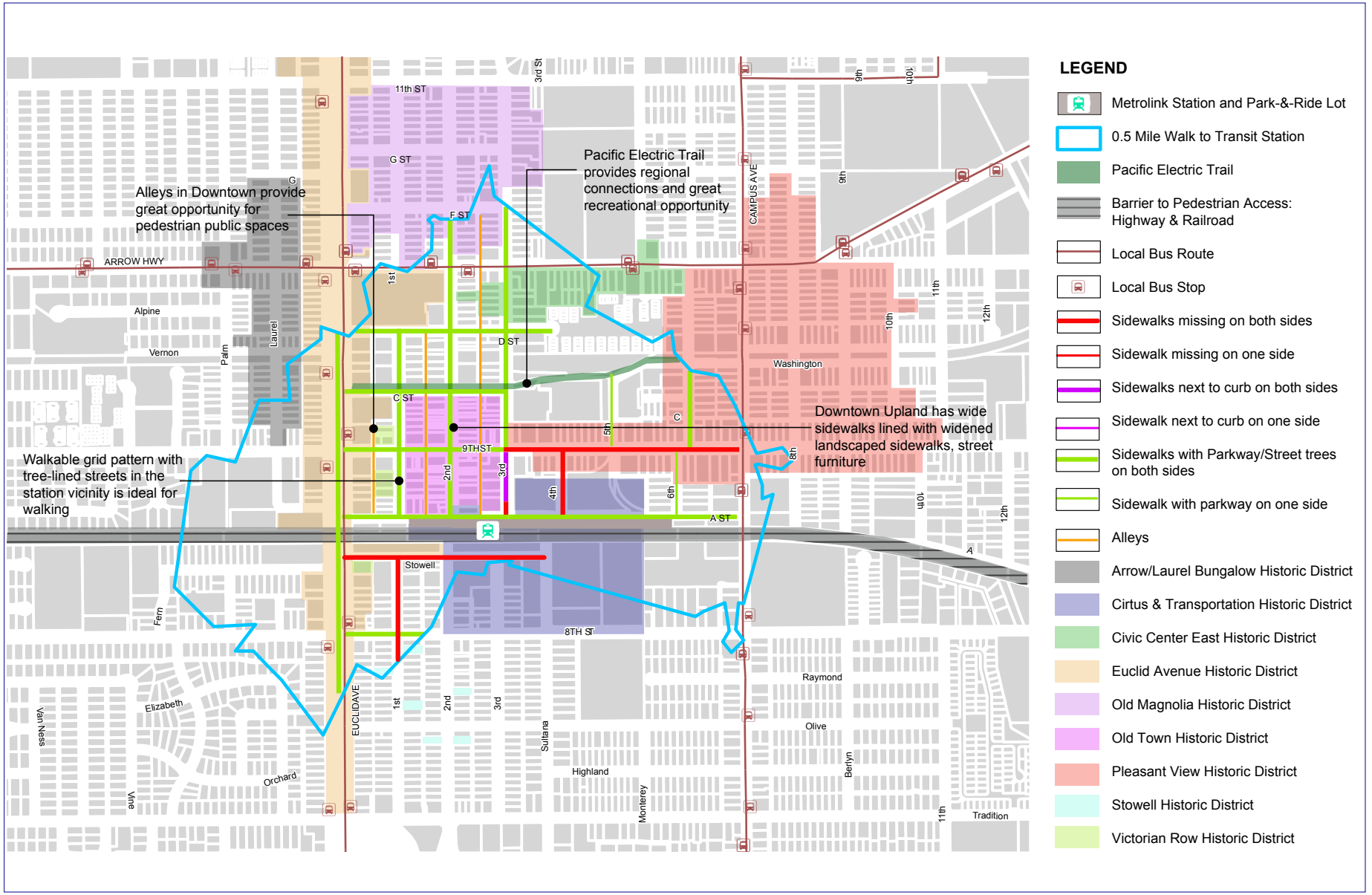


FIGURE 1.6 **UPLAND METROLINK STATION PEDESTRIAN ANALYSIS**



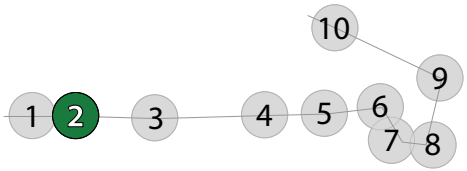


FIGURE 1.7 **TYPICAL SECTION - 3RD AVENUE**

3rd Avenue (between A Street and 9th Street)

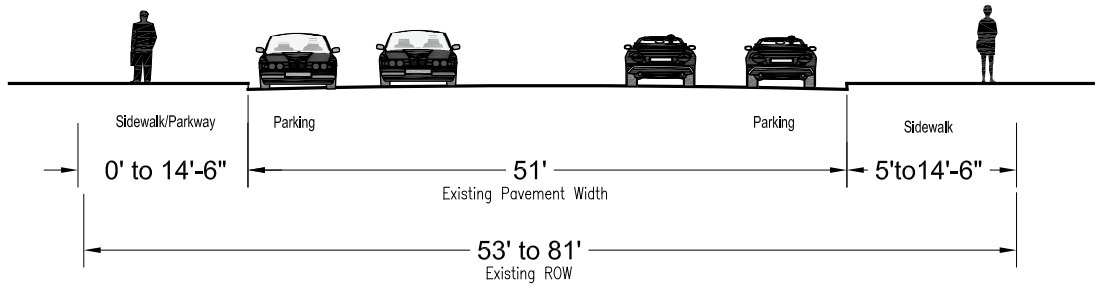
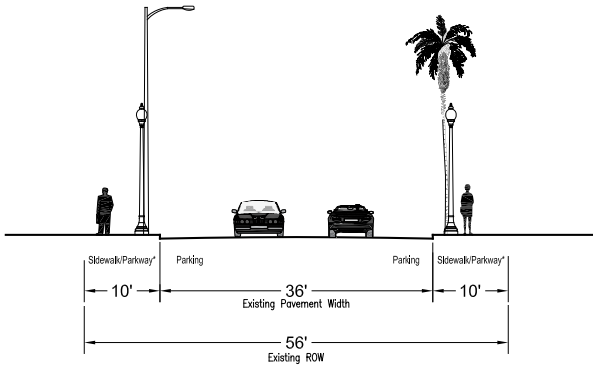


FIGURE 1.8 **TYPICAL SECTION - A STREET**

A Street



* In some sections there is a 5ft parkway next to the curb whereas in some sections there are tree wells

Shade of mature trees provides a natural alternative to bus shelter

Identifying Metrolink connections along the Pacific Electric Bike Trail

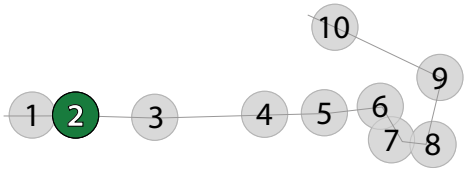


TABLE 1.4 **EXISTING BICYCLE FACILITIES**

Street	Foothill Blvd	16th Street	Baseline Rd	Mountain Ave	19th St	Campus Ave			Hwy 30	Colonies Pkwy
Segment	**Monte Vista Ave to Grove Ave**	**Hwy 210 Onramp to Campus Ave**	**Campus Ave to Lion St**	**Hwy 210 to 19th St**	**Miramar St to East End**	**21st St to 20th St**	**Hwy 210 to Colonies Pkwy**	**Colobies Pkwy to 10 Fwy**	**Campus Ave to Channel**	**Campus Ave to Hwy 30**
Existing Facility Type	Class II	Class II	Class II	Class II	Class II	Class III	Class II	Class III	Class II	Class II
Speed and Condition of Vehicular Traffic	◕	◔	◑	○	○	◔	◔	◔	◕	○
Pavement Condition	◑	◑	◔	○	◔	◔	◔	◔	○	○
"Door Zone" and Driveway Conflicts	◕	◔	◑	◔	◔	◔	◔	◔	◔	◔
Transit Service and Waiting Environment in Corridor	◔	◔	◔	N/A	N/A	◔	◔	◔	◔	N/A
Amount of Key Attractions	◔	◑	◑	◕	●	◕	◕	◕	◑	◕
Amount of Bike Facility Striping or Signage	○	○	○	○	○	●	○	●	○	○

Street	Tanglewood Ave	8th Street	Cucamonga Creek	Pacific Electric Bike Trail	Benson Ave			Arrow Route		Arrow Hwy	20th St
Segment	**Colonies Pkwy to Hummingbird Ln**	**Euclid to Campus**	**Hwy 210 to Foothill Blvd**	**Monte Vista Ave to Hellman Ave**	**18th St to 13th St**	**13th St to Foothill Blvd**	**Foothill Blvd to 10 Fwy**	**Monte Vista Ave to Benson Ave**	**Helman Ave to Archibald Ave**	**Benson Ave to Hellman Ave**	**Campus Ave to Campus Ave**
Existing Facility Type	Class II	Class III	Class I	Class I	Class III	Class II	Class III	Class III	Class II	Class III	Class III
Speed and Condition of Vehicular Traffic	○	◔	N/A	N/A	◔	◔	◔	◑	◑	◕	◔
Pavement Condition	○	◑	◔	◔	◔	◔	◔	◔	◔	◔	◑
"Door Zone" and Driveway Conflicts	◔	◔	○	○	◑	◑	◑	◑	◑	◑	◔
Transit Service and Waiting Environment in Corridor	N/A	◑	N/A	N/A	◔	◔	◔	◑	◔	◔	N/A
Amount of Key Attractions	◕	●	◔	◔	◔	◔	◔	●	◕	◕	●
Amount of Bike Facility Striping or Signage	○	●	○	○	◕	◔	◕	●	◑	●	●

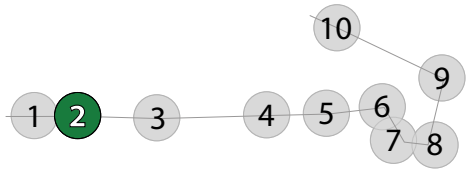


TABLE 1.5 **EXISTING PEDESTRIAN FACILITIES**

Street	A St	9 th St	C St	D St	Euclid Ave	1st St	2nd St	3rd St	4th St	5th St	6th St
Sidewalk/Parkway Width	◔	○	○	○	○	○	○	○ & ●	○ & ●	◕	◕
Sidewalk Width	◔	○	○	○	○	○	○	○	●	◕	◕
Sidewalk Condition	◔	○	○	○	○	○	○	○	◕	◕	◑
Sidewalk and/or Parkway Location	○ & ◕	○	○	○	○	○	○	○ & ◕	○ & ●	◕	◔
Crosswalks	◑	◑	◑	◑	◑	◑	◑	◑	◑	◕	◕
Curb Ramp	◔	◔	◔	◔	◔	◔	◔	◔	◔	◑	◑
Street Trees Location	◕	◔	◔	◔	◔	◔	◑	◑	◑	●	◑
Raised Median	●	N/A	N/A	N/A	○	N/A	N/A	N/A	N/A	N/A	N/A
Utility Poles and wires	●	○	○	○	○	○	○	○	○	○	◔
Lighting	◔	○	◔	◔	◔	◔	◔	◔	●	●	◕
Street Furniture	●	○	●	●	●	●	◔	●	●	●	●
Wayfinding Signage in public realm	◑	○	●	●	◔	◔	◔	◔	●	●	●

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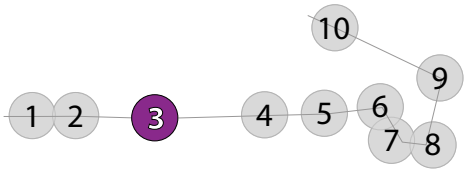
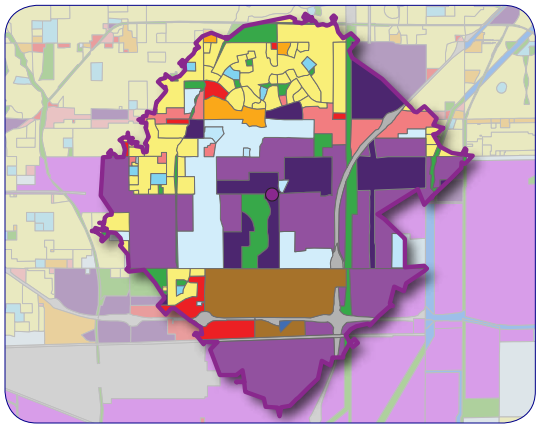
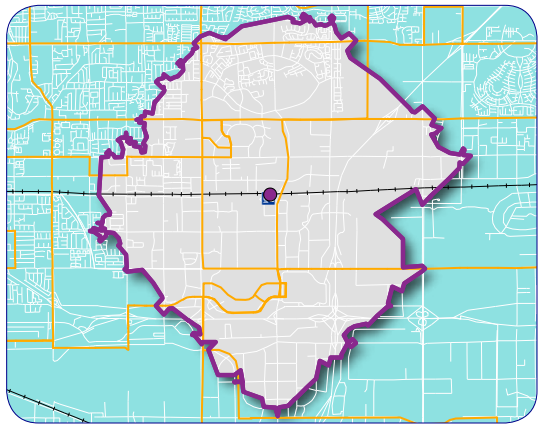


View of Rancho Cucamonga Metrolink Station



Limited residential density in study area, primarily industrial



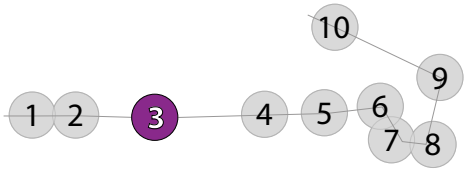
Transit service to station follows Milliken

1.3 Rancho Cucamonga Metrolink Station

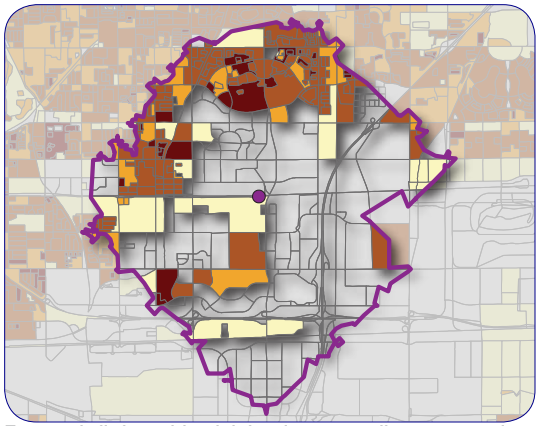
The Rancho Cucamonga Metrolink Station and catchment area are dominated by industrial land uses, although there are areas of low-density residential development in the northern part of the study area. The station is surrounded by large areas of free motor vehicle commuter parking, which are generally well-utilized during the workday. Roadways around the station are high-speed and high-volume, with significant truck traffic.

Opportunities

- Excellent bicycle parking facilities (bike lids and bike racks) for commuters and day users
- Extensive existing bikeway facilities throughout study area
- Existing Class II/III facility along Milliken Avenue provides direct connection between Terra Vista and the Metrolink Station
- General sloping topography allows residents commuting from areas north of the station to peddle downhill on morning commute
- Milliken Avenue is a major arterial with six lanes; however the landscaped median, bike lanes, sidewalks next to landscaped parkways, landscaped setbacks and street lights makes it a pedestrian-friendly street.
- Rancho Cucamonga Metrolink Station plaza area has colored concrete, benches, pedestrian-scale lights, trees in tree wells and other pedestrian amenities.
- Rancho Cucamonga Metrolink Station has bicycle lockers.
- Omnitrans Route #81 serves the bus loop near the platform.
- Newer higher density transit supportive land uses are located at the northwest and northeast corner of 6th Street and Milliken Avenue with landscaped sidewalks and direct pedestrian connections to the station.
- The golf-course could be redeveloped as potential transit-supportive uses.
- Some industrial/business park uses could be intensified or converted into Transit-Oriented Developments.



Wayfinding at station identifies City-sponsored bike lockers

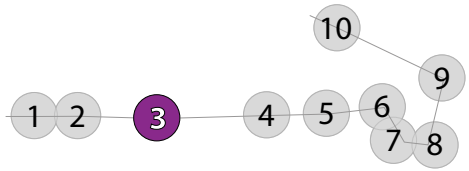


Extremely little residential development adjacent to station area discourages pedestrian access

- The Rancho Cucamonga General Plan Community Mobility Element recommends relocating the Metrolink Station to Haven Avenue to provide more convenient access to employment centers and to allow for coordination with bus transit, including a possible BRT route along Haven Avenue. The Plan also recognizes the need to increase bicycle, trail and pedestrian use and recommends policies to expand pedestrian, bicycle and trail networks.

Constraints

- Industrial land uses limit pedestrian connectivity in and around station area
- Conflicts with freeway traffic at Interstates 15 and 10
- Limited Omnitrans fixed-route transit connections to station
- Rancho Cucamonga Metrolink Station is surrounded by a large parking lot.
- Bike lockers are located on the far east side of the station boarding and ticketing area adding more travel time for bicyclist to park and board the train. There is enough room near the transit station ticketing area to accommodate these bike lockers closer to the boarding area.
- The transit plaza seems underutilized, especially during the off-peak period. It could be activated with food vendors, coffee shops and/or restaurants that not only cater to transit patrons, but also to commercial/industrial uses nearby.
- No direct pedestrian/bicycle access exists from the commercial/industrial developments on the north side to the station platform.
- No crosswalk exists at the intersection of Milliken Avenue and Azusa Ct., limiting direct pedestrian and bicycle access to the station. Pedestrians and bicyclists have to either use crosswalks at Jersey Boulevard or 7th Street; these crosswalks are approximately 2500 feet apart.
- There is no direct access for pedestrians and bicyclists on the west sidewalk along Milliken Avenue until Azusa Ct. This forces pedestrians and bicyclists to walk an extra 500 ft. along the edge of the station park & ride lot to access the station.
- Street lights along Milliken Avenue are located within the parkway, approximately 18" from the curb and face away from the sidewalks.



- Wayfinding signage leading up to the station are missing along Milliken Avenue.
- Shade trees are missing along the north side parkway on Azusa Ct.
- Auto-oriented, super-block development pattern is well established.
- Generally, Washingtonia Robusta (Mexican Fan Palms) is the major Street tree on Sierra Avenue between Orange Way and Valencia Avenue. These trees offer a strong defining edge and add character to the street; however, they provide no shade. Another accent shade tree could be added for pedestrian comfort.
- Within the study area, Juniper Street has narrow sidewalks located next to the curb. In some locations, utility poles are located within the sidewalk reducing pedestrian mobility.

Short-term and long-term bicycle parking facilities accommodate all users

Area north of station is undeveloped and lacks direct connection to station

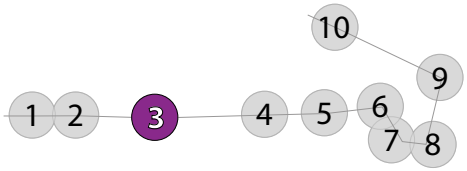
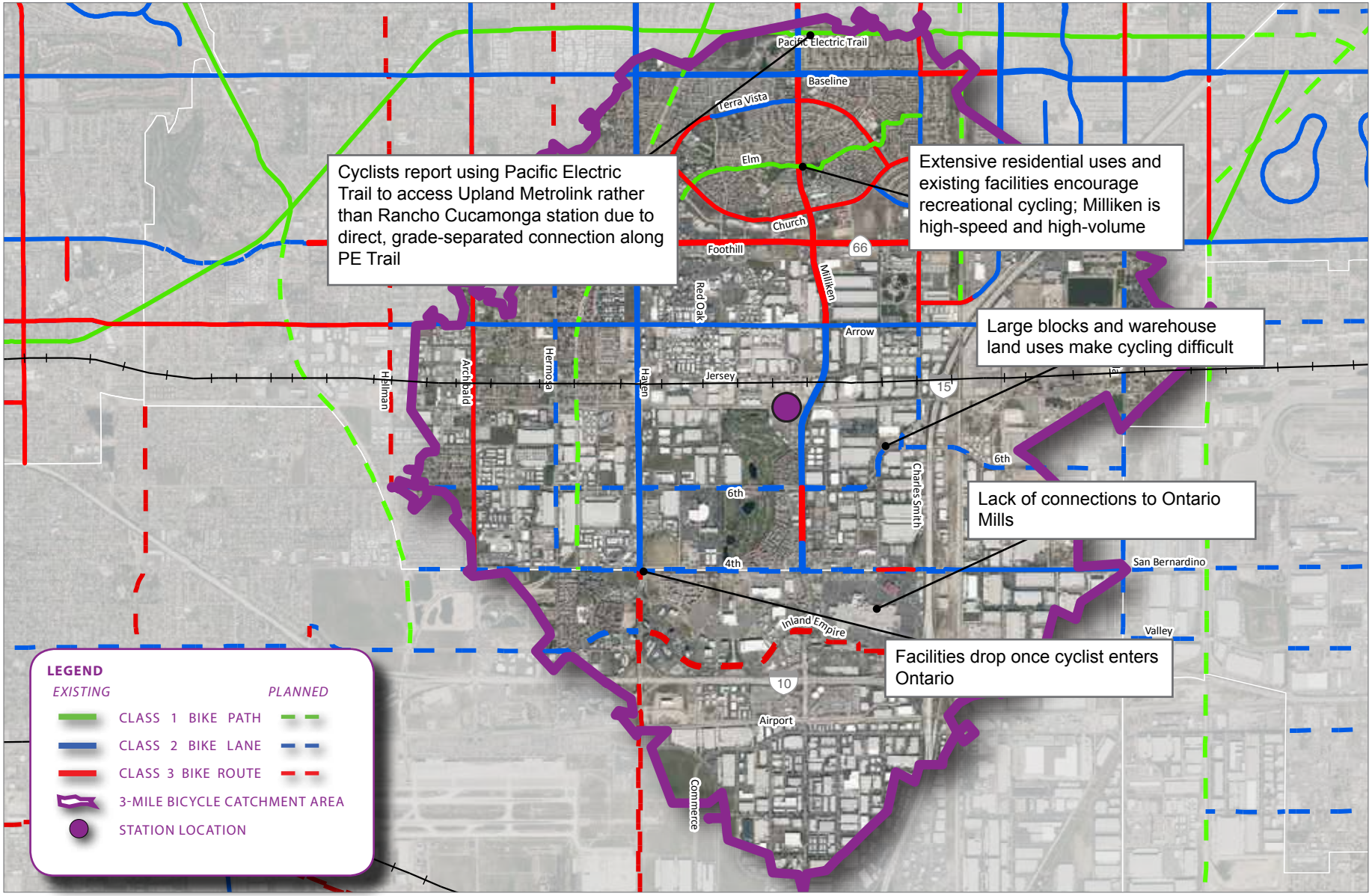


FIGURE 1.9 **RANCHO CUCAMONGA METROLINK STATION AND CATCHMENT AREA**



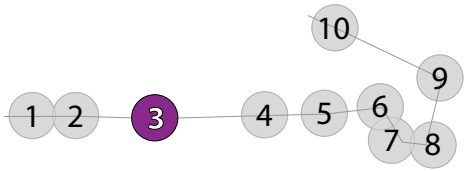
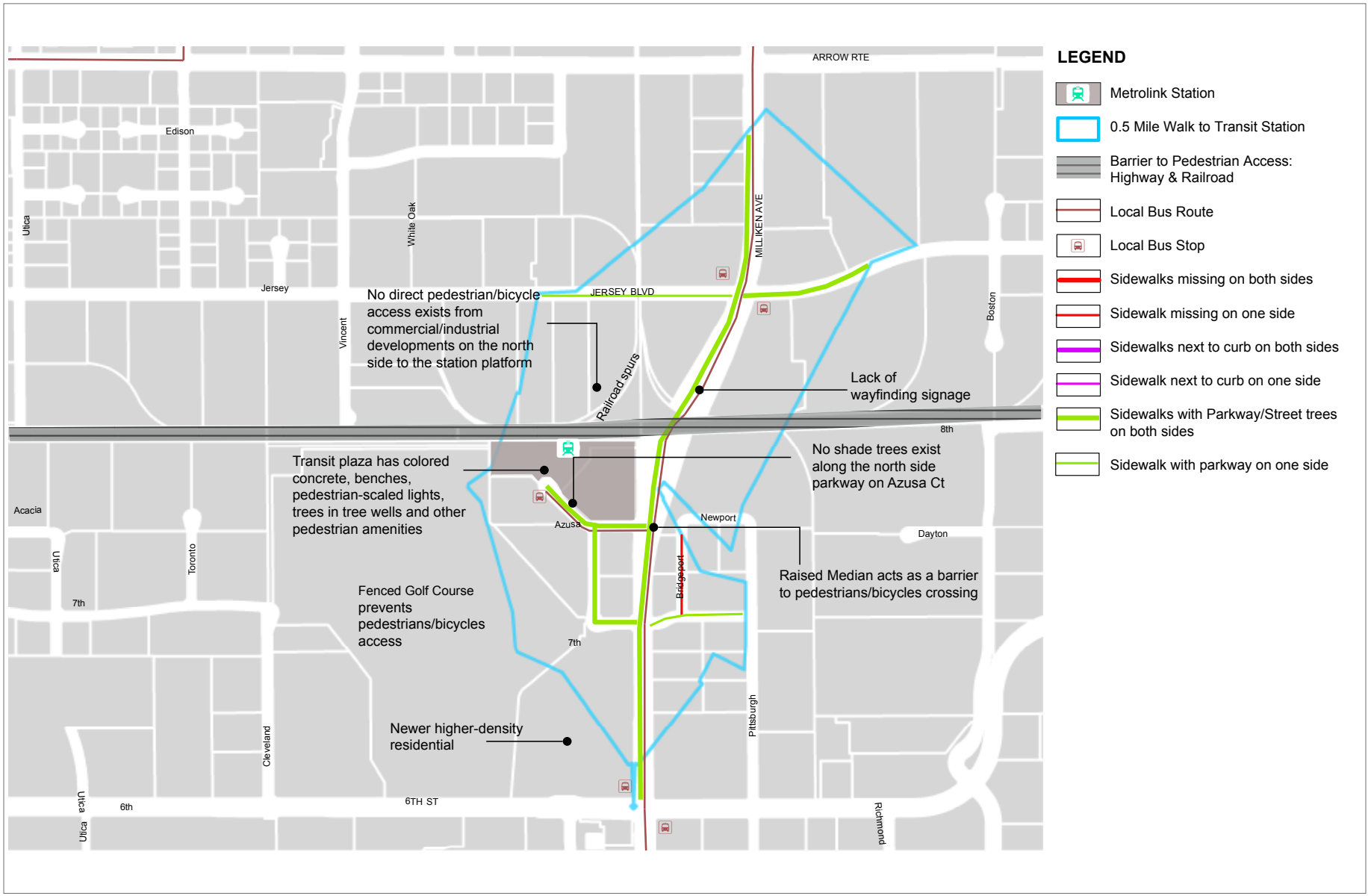


FIGURE 1.10 **RANCHO CUCAMONGA METROLINK STATION PEDESTRIAN ANALYSIS**



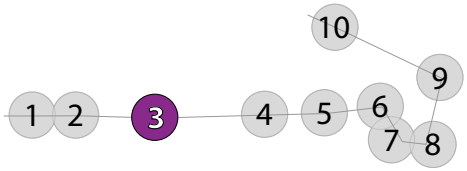


FIGURE 1.11 **TYPICAL SECTION - AZUSA COURT**

Azusa Ct

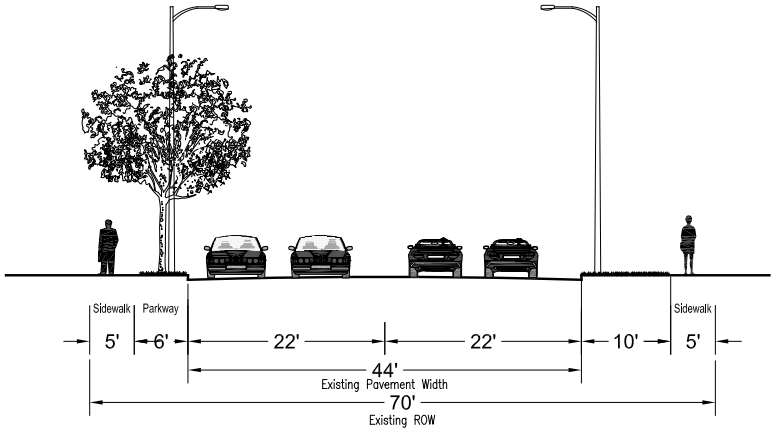
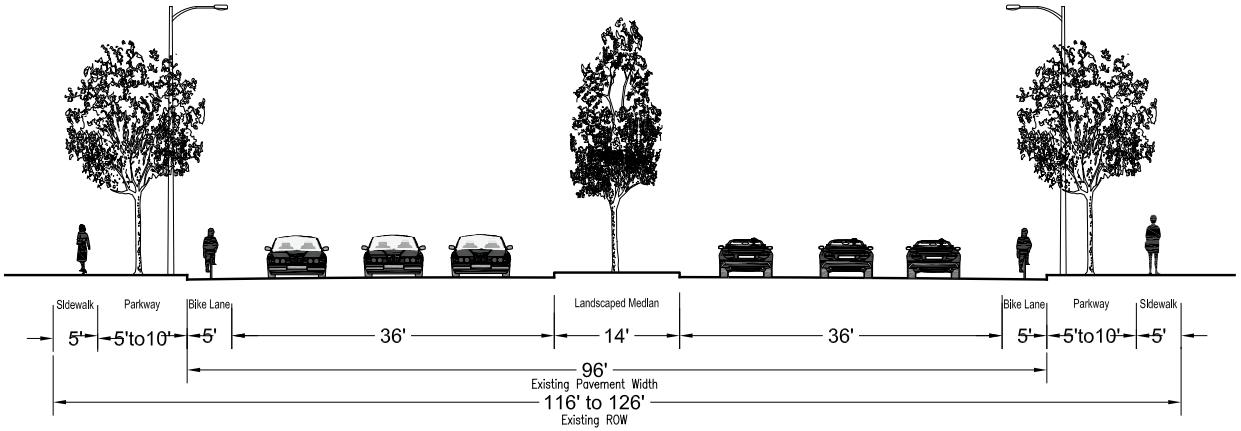


FIGURE 1.12 **TYPICAL SECTION - MILLIKEN AVENUE**

Milliken Avenue



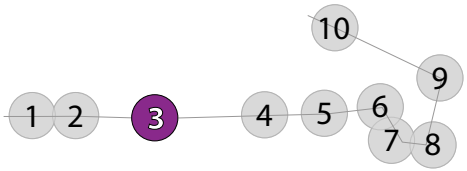


TABLE 1.6 **EXISTING BICYCLE FACILITIES**

Street	Victoria Park Ln - Fairmont Wy	Victoria Park Ln - Victoria Gardens Ln	Charleston St - Alberta Pl - Loyola Ct	Deer Creek Channel	Pacific Electric Bike Trail	Baseline Rd	Church St	Terra Vista Pkwy	Elm Ave Bike Path	Malaga Dr
Segment	Charleston St to Victoria Windrows Loop	Barberry St to Day Creek Blvd	Deer Dreek Channel to Fairmont Wy	Hwy 210 to Baseline Rd	Archibald Ave to Etiwanda Ave	Amethyst Ave to Etiwanda Ave	Archibald Ave to Etiwanda Ave	Church St to Milliken Ave	Town Center Dr to Rochester Ave	Church St to Rochester Ave
Existing Facility Type	Class II	Class II	Class II	Class I	Class I	Class II	Class II & III	Class II & III	Class I	Class II
Speed and Condition of Vehicular Traffic	◔	◔	◔	N/A	N/A	◕	◕	◔	N/A	○
Pavement Condition	○	○	○	◕	○	◑	◑	◔	○	○
"Door Zone" and Driveway Conflicts	○	○	○	○	○	◑	◑	◔	○	◔
Transit Service and Waiting Environment in Corridor	◔	◔	◔	N/A	N/A	◔	N/A	N/A	N/A	N/A
Amount of Key Attractions	◕	◕	◕	◕	◔	◔	◔	◑	●	●
Amount of Bike Facility Striping or Signage	○	○	○	○	○	○	●○	●○	○	○

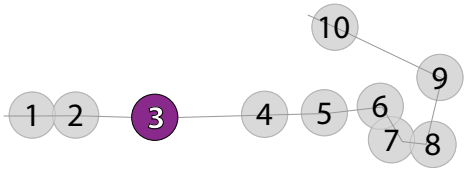


TABLE 1.6 **EXISTING BICYCLE FACILITIES (CONTINUED)**

Street	Arbor Ln	Day Creek Blvd - Jack Benny Dr	Jack Benny Dr	Haven Ave	Foothill Blvd				Archibald Ave
Segment	**Vintner Dr to Cultural Center Dr**	**Victoria Park Ln to South End of Bike Lanes**	**Rochester Ave to Bike Lanes (East)**	**Hwy 30 to 4th St**	**East of Vineyard Ave to Rochester Ave**	**Rochester Ave to 15 Fwy Onramp**	**15 Fwy Onramp to Etiwanda Ave**	**Etiwanda Ave to Cottonwood Ave**	**Pacific Electric Bike Trail to 4th St**
Existing Facility Type	Class II	Class II	Class III	Class II	Class III	Class II	Class III	Class II	Class II
Speed and Condition of Vehicular Traffic	○	◕	○	◕	◕	◕	◕	◕	◕
Pavement Condition	◔	◔	○	◑	◔	◔	◔	◔	◔
"Door Zone" and Driveway Conflicts	○	◕	○	◑	◑	◑	◑	◑	◔
Transit Service and Waiting Environment in Corridor	N/A	◔	◕	◕	◔	◔	◔	◔	N/A
Amount of Key Attractions	◕	○	◑	◔	◔	◔	◔	◔	◕
Amount of Bike Facility Striping or Signage	○	○	●	○	●	○	●	○	●○

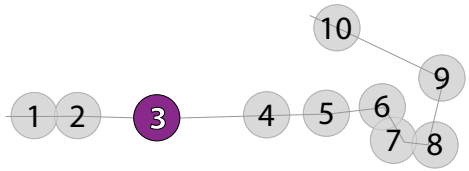


TABLE 1.6 **EXISTING BICYCLE FACILITIES (CONTINUED)**

Street	Milliken Ave								
Segment	**Kenyon Wy to Fairmont Wy**	**Fairmont Way to Baseline Rd**	**Baseline Rd to Arrow Route**	**Arrow Route to 6th St**	**6th St to Beginning of Bike Lanes (South of 5th)**	**Beginning of Bike Lanes (South of 5th St) to 4th St**	**Victoria Park Ln to Baseline Rd**	**Baseline Rd to Foothill Blvd**	**Foothill Blvd to Arrow Route**
Existing Facility Type	Class III	Class II	Class III	Class II	Class III	Class II	Class III	Class II	Class III
Speed and Condition of Vehicular Traffic	◕	◕	◕	◕	◕	◕	◕	◕	◕
Pavement Condition	◔	◔	◔	◔	◔	◔	◔	◔	◔
"Door Zone" and Driveway Conflicts	◔	◔	◔	◔	◔	◔	◔	◔	◔
Transit Service and Waiting Environment in Corridor	◔	◔	◔	◔	◔	◔	◔	◔	◔
Amount of Key Attractions	◑	◑	◑	◑	◑	◑	◑	◑	◑
Amount of Bike Facility Striping or Signage	◑	○	◑	○	◑	○	◑	○	◑

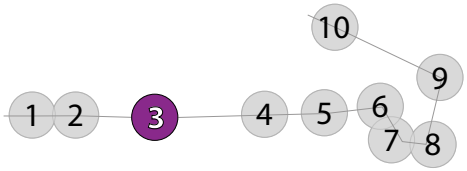


TABLE 1.6 **EXISTING BICYCLE FACILITIES (CONTINUED)**

Street	Etiwanda Ave	Arrow Route	4th St	East Ave	San Sevaine Trail
Segment	**Baseline Rd to Foothill Blvd**	**Vineyard Ave to Etiwanda Ave**	**Buffalo Ave to Etiwanda Ave**	**Miller Ave to Foothill Blvd**	**Northeast of Foothill Blvd to Foothill Blvd**
Existing Facility Type	Class II &III	Class III & III	Class II & III	Class III	Class I
Speed and Condition of Vehicular Traffic	◔	◕	◑	◑	N/A
Pavement Condition	◑	◑	◑	◕	◔
"Door Zone" and Driveway Conflicts	◔	◑	◑	◑	○
Transit Service and Waiting Environment in Corridor	N/A	◔	◔	N/A	N/A
Amount of Key Attractions	◕	◑	◔	◕	◕
Amount of Bike Facility Striping or Signage	●○	●○	●○	●	○

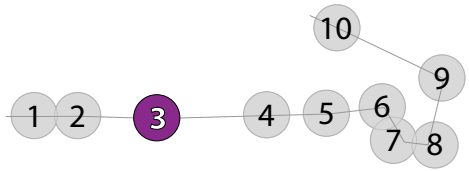


TABLE 1.7 **EXISTING PEDESTRIAN FACILITIES**

Street	Milliken Avenue			Azusa Ct	Jersey Blvd	Bridgeport
Segment	North of Jersey Blvd	Jersey Blvd to Azusa Ct	Azusa Ct to 6th St			
Sidewalk/Parkway Width	◔	○	○	◑	○	○
Sidewalk Width	◑	◔	◔	◑	◔	●
Sidewalk Condition	◔	◔	◔	◔	◔	◔
Sidewalk and/or Parkway Location	◑	◔	◔	◔	◔	○
Crosswalks	◑	◑	◑	◑	◑	●
Curb Ramp	◔	◔	◔	◔	◑	●
Street Trees Location	●	◑	◑	◑	◑	◔
Raised Median	○	○	○	N/A	●	N/A
Utility Poles and wires	○	○	○	○	○	○
Lighting	◔	◔	◔	◔	◔	◔
Street Furniture	●	●	●	●	●	●
Wayfinding Signage in public realm	●	●	●	●	●	●

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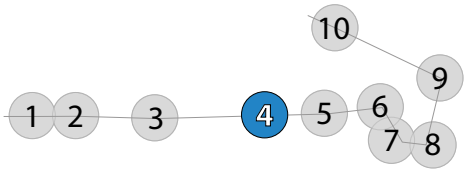
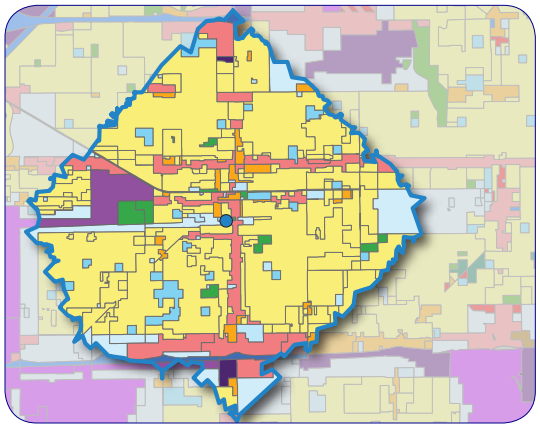
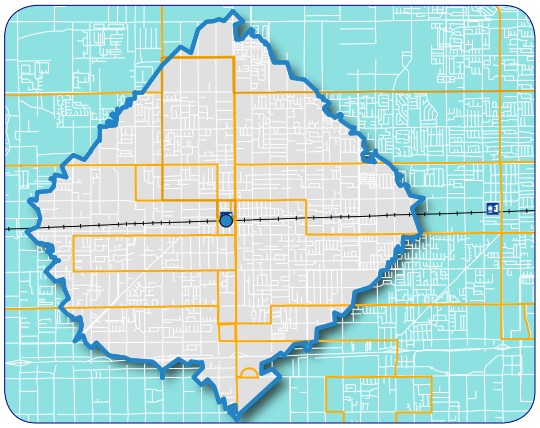


View of Fontana Metrolink Station



Mix of residential and arterial commercial land uses



Extensive transit connections throughout study area

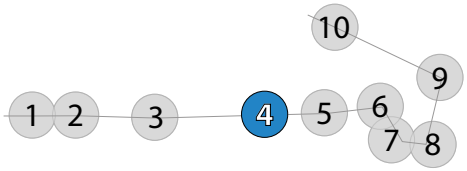
1.4 Fontana Metrolink Station

The Fontana Metrolink Station is located in Downtown Fontana, and serves as a Transit Plaza for area residents and visitors. It is surrounded by a mix of commercial, civic, and residential land uses. The Pacific Electric Bicycle Trail reaches its eastern terminus northeast of the station.

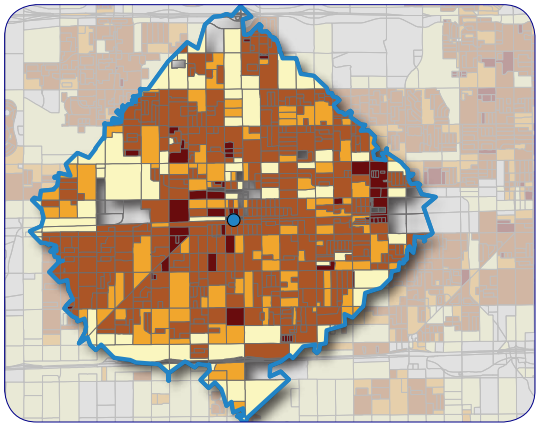
FONTANA
CALIFORNIA

Opportunities

- Improved downtown area along Sierra provides excellent pedestrian connectivity and a great walking environment
- Eastern terminus of existing Pacific Electric Bike Trail
- The station is in close proximity to Downtown Fontana and various civic and public uses.
- Omnitrans maintains a transit center next to the station, which serves as a transfer point to various bus routes.
- Sierra Avenue is a pedestrian-friendly street with widened landscaped sidewalks, street furniture, curb extension, on-street parking, decorative crosswalks, pedestrian lighting and shops and small businesses oriented to the sidewalks and a landscaped median in some locations.
- Pacific Electric Bicycle Trail with tree groves, open space, benches and landscaped areas provides an excellent opportunity for regional connectivity.
- Grid street pattern in the station area is ideal for walking.
- Most neighborhood streets such as Rosena, Bennett, Nuevo, Wheeler, Newport and Emerald have approximately 5 to 6' wide sidewalks located next to a 10' parkway with shade trees.
- A few newer and existing dense residential developments creates demand for pedestrian/bicycle-friendly neighborhoods.
- Decorative crosswalks and colored intersection occur at Orange Way and Arrow Boulevard intersections with Sierra Way.



Downtown features excellent wayfinding measures



Substantial residential density throughout study area

Constraints

- Barriers created by Interstate 10
- Generally, Washingtonia Robusta (Mexican Fan Palms) is the major Street tree on Sierra Avenue between Orange Way and Valencia Avenue. These trees offer a strong defining edge and add character to the street; however, they provide no shade. Another accent shade tree could be added for pedestrian comfort.
- Within the study area, Juniper Street has narrow sidewalks located next to the curb. In some locations, utility poles are located within the sidewalk reducing pedestrian mobility.

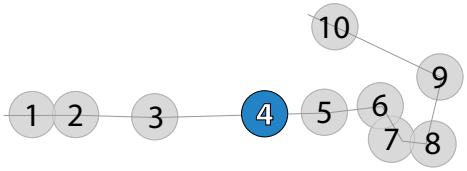
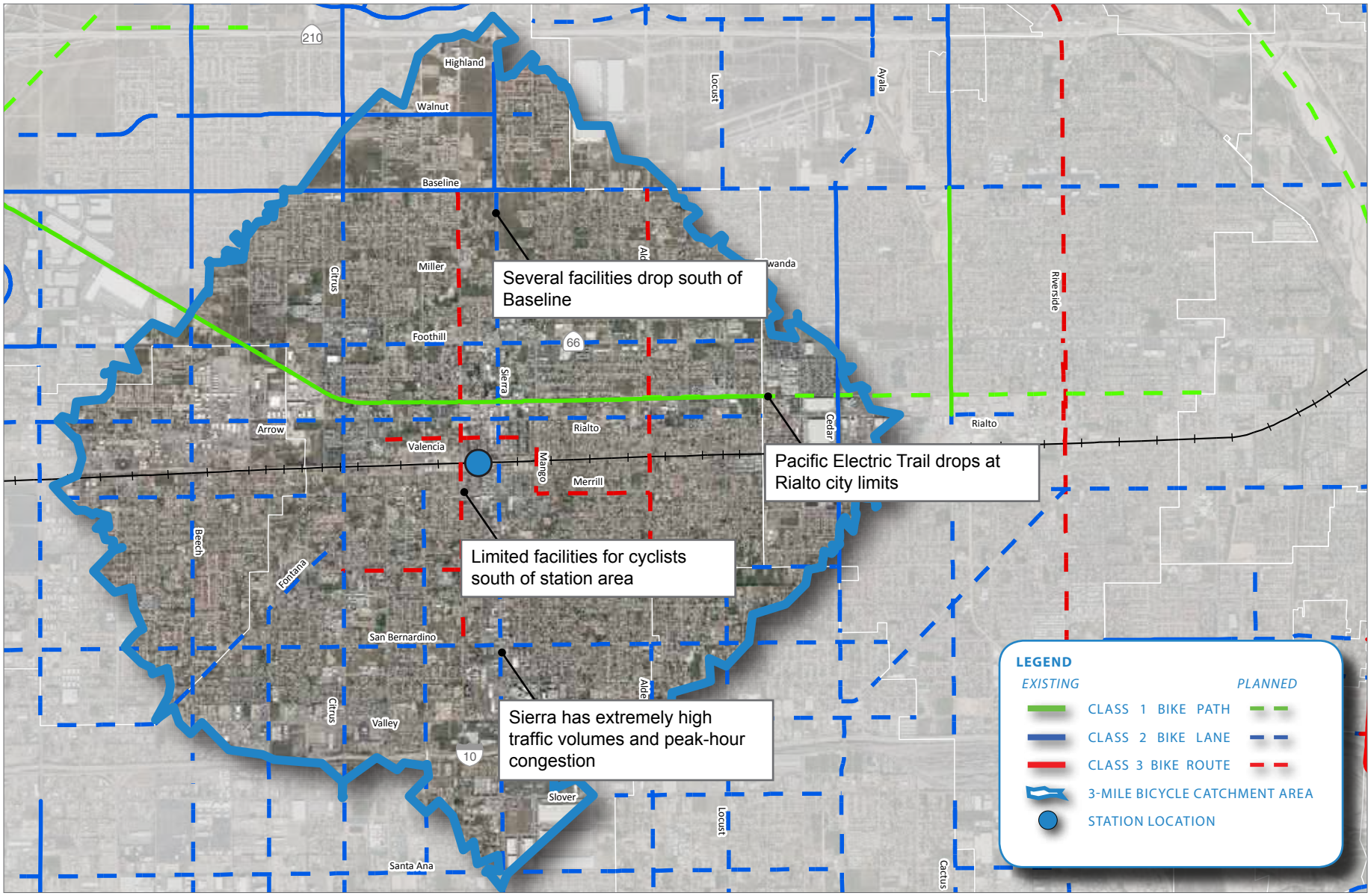


FIGURE. 1.13 **FONTANA METROLINK STATION AND CATCHMENT AREA**



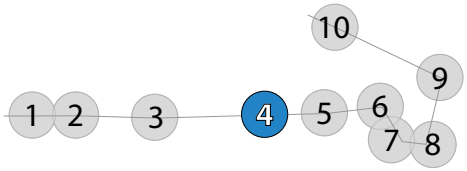
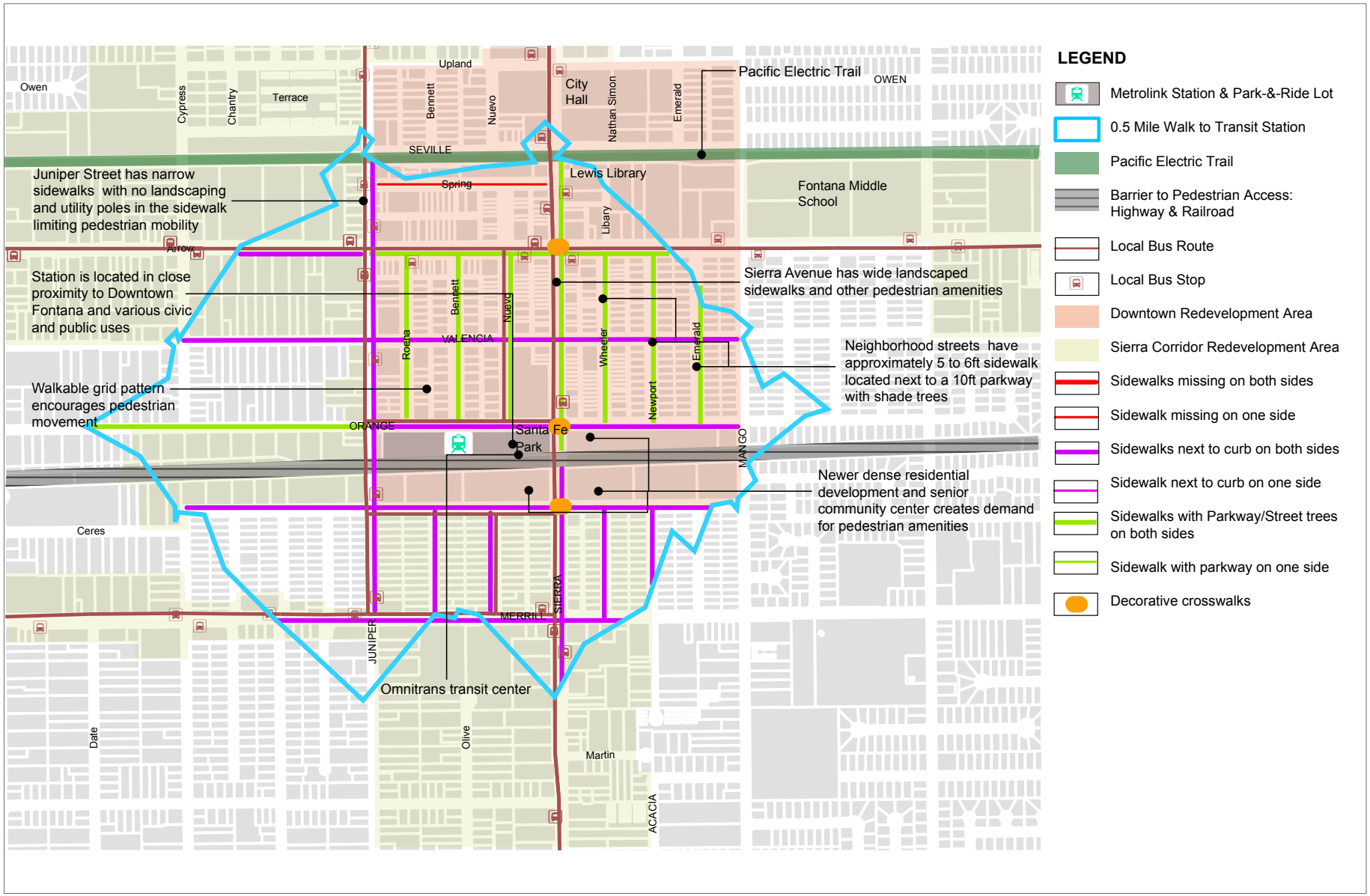


FIGURE 1.14 **FONTANA METROLINK STATION PEDESTRIAN ANALYSIS**



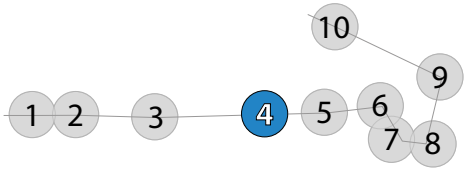
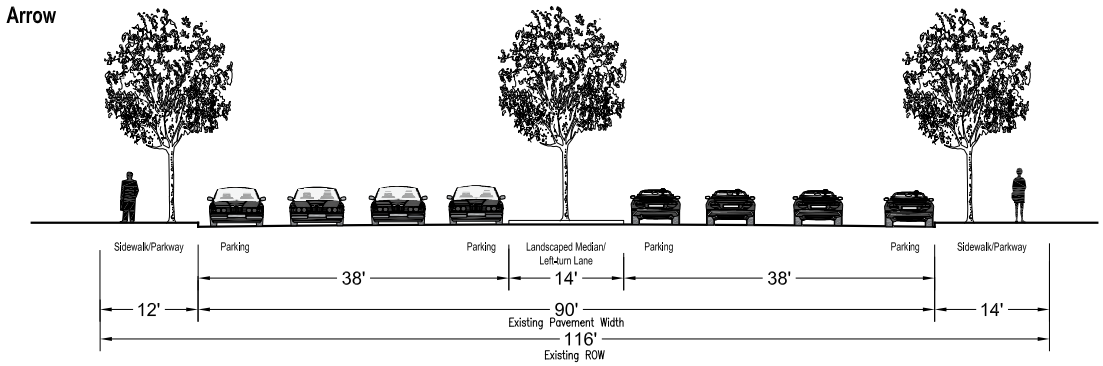
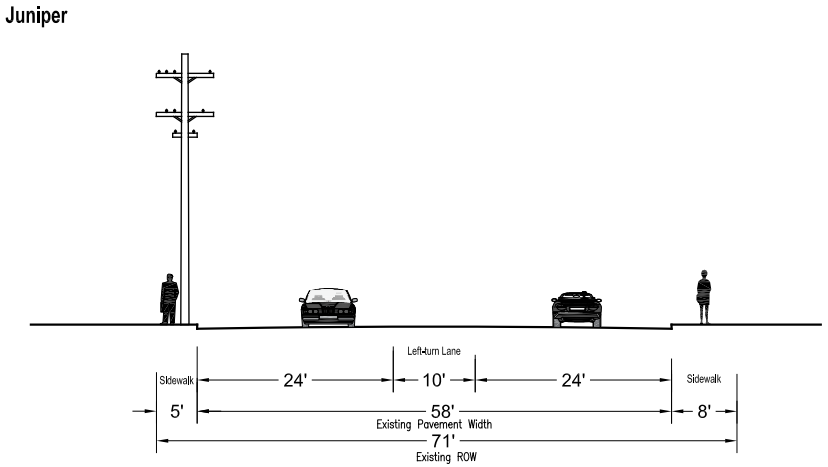


FIGURE 1.15 **TYPICAL SECTION - ARROW HIGHWAY**



Street trees are sparsely placed along Arrow Blvd
Landscaped median is only between Palmetto and Juniper Avenues

FIGURE 1.16 **TYPICAL SECTION - JUNIPER**



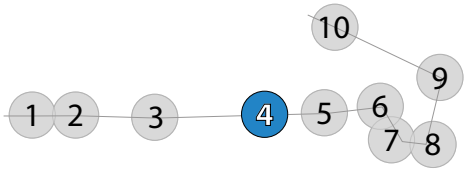


FIGURE 1.17 **TYPICAL SECTION - ORANGE WAY**

Orange Way

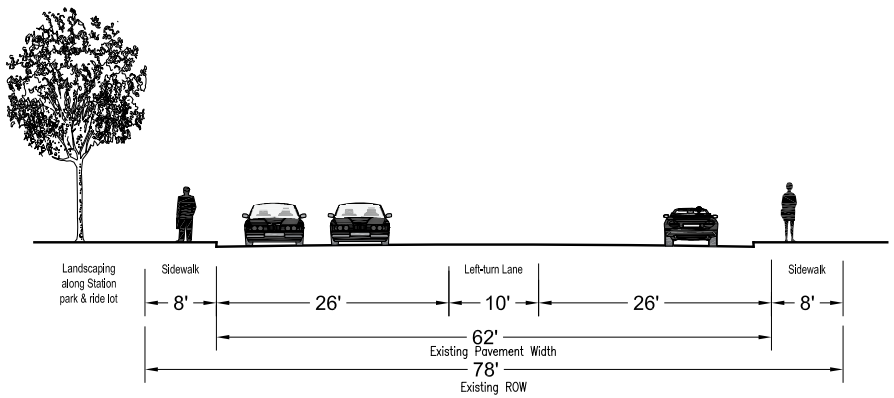


FIGURE 1.18 **TYPICAL SECTION - RESIDENTIAL**

Typical residential street

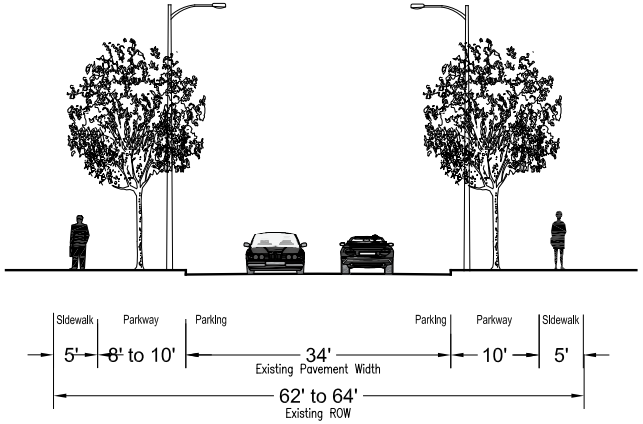
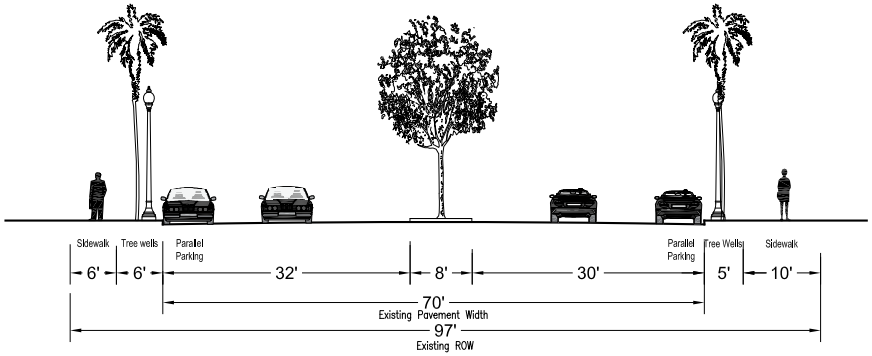


FIGURE 1.19 **TYPICAL SECTION - SIERRA AVENUE**

Sierra



Between Valencia Avenue and Arrow Boulevard the major street is Ficus

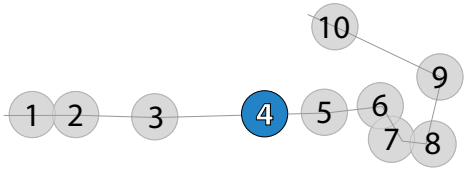


TABLE 1.8 **EXISTING BICYCLE FACILITIES**

Street	Pacific Electric Bike Trail	Cedar Ave	Beech Ave	Citrus Ave	Sierra Ave	Walnut St	Baseline Rd
Segment	**Almeria Ave to Palmetto Ave**	**Baseline Rd to Randall Ave**	**Walnut St to Miller Ave**	**210 Fwy to Baseline Rd**	**Highland Ave to Baseline Rd**	**Beech Ave to Sierra Ave**	**Live Oak Ave to Sierra Ave**
Existing Facility Type	Class I	Class II	Class II	Class II	Class II	Class II	Class II
Speed and Condition of Vehicular Traffic	N/A	◕	◔	○	○	◑	◑
Pavement Condition	○	○	○	○	○	◑	◔
"Door Zone" and Driveway Conflicts	○	●	○	○	○	○	◑
Transit Service and Waiting Environment in Corridor	◑	◕	◕	◕	◔	◔	◔
Amount of Key Attractions	○	◔	◑	◑	◑	◕	◑
Amount of Bike Facility Striping or Signage	○	◑	○	○	○	○	○

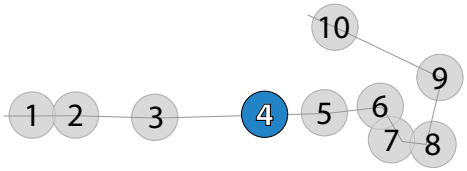


TABLE 1.9 **EXISTING PEDESTRIAN FACILITIES**

Street	Orange Way	Sierra Way	Valencia Ave	Arrow Blvd	Ceres Ave	Merrill Ave	Juniper	Residential/Local Streets	
Segment								North of Orange Way	South of Orange Way
Sidewalk/Parkway Width	◑	○	◕ & ●	○	◕	◕ & ●	◕ & ●	○	◕ & ●
Sidewalk Width	○	○	◕ & ●	○	◕	◕ & ●	◕ & ●	◔	◕ & ●
Sidewalk Condition	◔	○	◕	◔	◑	◑	◑	◑	◑
Sidewalk and/or Parkway Location	◕	○	◑ & ◕	◔ & ◕	◕	◕	◕	○	◕
Crosswalks	◕	○	◕	◑	◕	◑	◕	◕	◕
Curb Ramp	◕ & ●	○	◕	◑	◑	◑	◑	◕	◑
Street Trees Location	●	○	●	◕	●	◕ & ●	●	◔	●
Raised Median	●	○	●	◑ & ●	●	●	●	N/A	N/A
Utility Poles and wires	○	○	◔ & ●	○ & ◔	○ & ●	○ & ●	●	○	●
Lighting	◕	○	●	◕	◕	◕	◕	●	◕ & ●
Street Furniture	●	○	●	◑	●	●	●	●	●
Wayfinding Signage in public realm	●	○	●	◕	●	●	●	●	●

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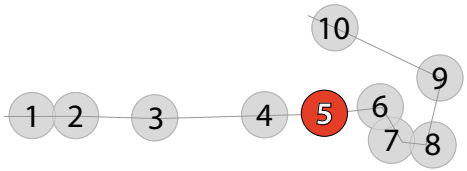
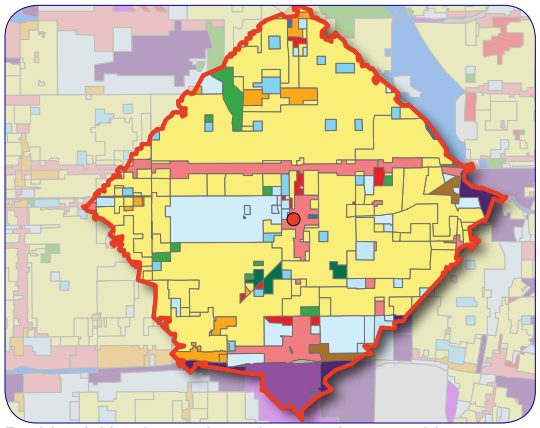


1.5 Rialto Metrolink Station

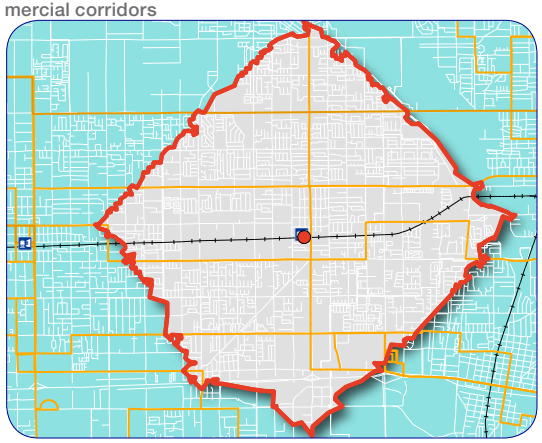
The Rialto Metrolink Station is located immediately west of Riverside Avenue in Downtown Rialto. As with the nearby Fontana station, the immediate station area is characterized by revitalized commercial and older residential neighborhoods.

Riverside Avenue features extensive pedestrian enhancements in the study area, including landscaped medians and pedestrian refuge islands, curb extensions and bulbouts, and crosswalk enhancements.

View of Rialto Metrolink Station



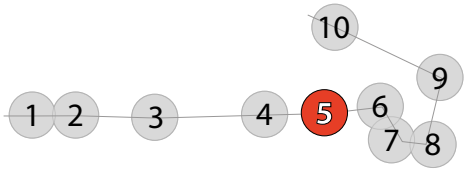
Residential land uses throughout study area, with commercial corridors



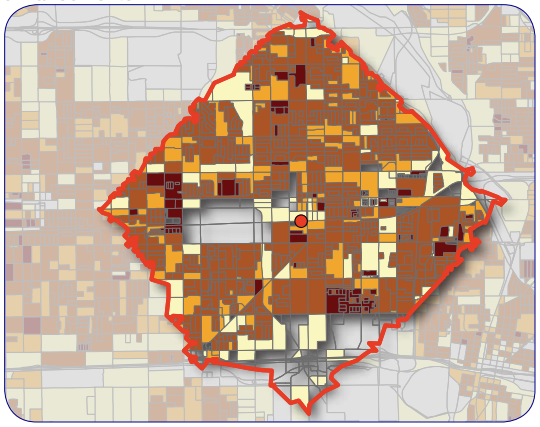
Study area has well-distributed transit service

Opportunities

- Central downtown allows for pleasant non-motorized experience.
- The station is proximate to Downtown Rialto and major civic uses including the City Hall.
- Riverside Avenue (Downtown area) has an attractive and pedestrian-friendly streetscape with a wide landscaped median, widened landscaped sidewalks, street furniture, curb extensions, on-street parking, decorative crosswalks, pedestrian lighting and shops and small businesses oriented to the sidewalks.
- Generally large shade trees are prevalent in the study area.
- A walkable grid pattern street network exists in the vicinity of the station.
- Station area is well-integrated with Downtown.
- Most of the area around the Station is within the Rialto Downtown Redevelopment Area and is in the Downtown Specific Plan (also called the Central Area Specific Plan).
- Rialto Park and Margaret Todd Park are located within close proximity of the station.
- Vacant and underutilized properties in the station vicinity provide opportunities for potential Transit-Oriented Development (TOD) and/or intense transit supportive mixed-use development.
- Local Omnitrans bus service runs along Riverside Avenue and Merrill Avenue .
- The recently updated Rialto General Plan includes a Downtown Mixed Use designation to facilitate development of a complementary mix of retail and commercial, dining, entertainment, and residential uses within walking distance of each other and the nearby Metrolink station and Civic Center.



Downtown Rialto features extensive pedestrian enhancements



Study area is residential in nature throughout

- The former Pacific Electric right-of-way offers opportunity for regional bikeway connection. The General Plan has a measure to pursue funding to construct the Pacific Electric Bicycle Trail and include amenities for bicyclists and pedestrian including lighting, seating areas, bicycle racks, landscaping, and related amenities.

Constraints

- Barriers created by Interstate 10
- Foothill Blvd is high-speed and high-volume
- Limited existing bicycle facilities
- Existing Class I facility along Cactus Avenue is isolated and under-utilized
- Poor pedestrian access from Downtown along Rialto Avenue; Sidewalks are generally narrow with no landscaping and/or street trees; there are no pedestrian or street lights
- Orange Avenue and Palm Avenue are main streets connecting the adjacent neighborhoods to the Metrolink Station and they lack the character of an inviting pedestrian-friendly street i.e. shade trees, street & pedestrian lights, street furniture etc.
- Along Willow Avenue, sidewalks and curb ramps are generally not ADA compliant.
- Unimproved sidewalks and parkways exist along the vacant and underutilized properties located within the vicinity of the station.
- Currently, the Pacific Electric right-of-way within City of Rialto is vacant and underutilized and not connected to the regional trail network.
- Most of the streets have sidewalks and parkways; however, there is a lack of maintenance and shade trees.

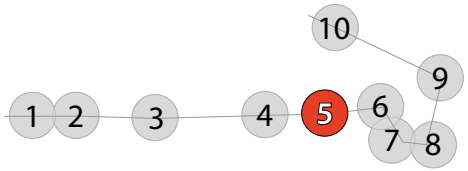
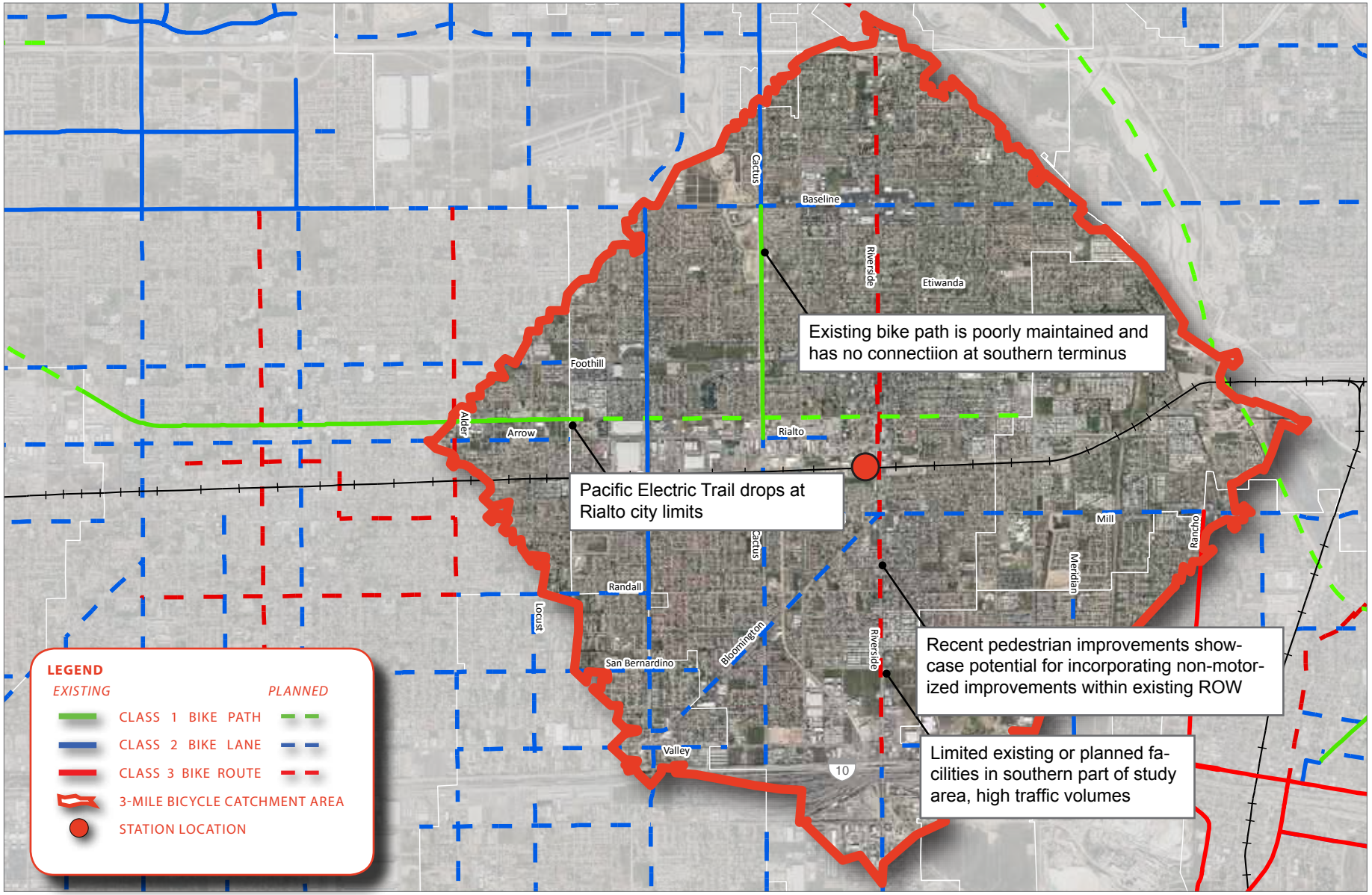


FIGURE 1.20 **RIALTO METROLINK STATION AND CATCHMENT AREA**



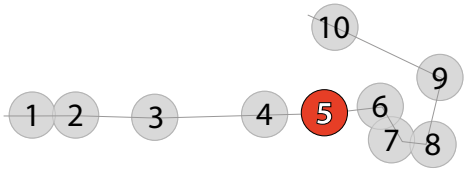
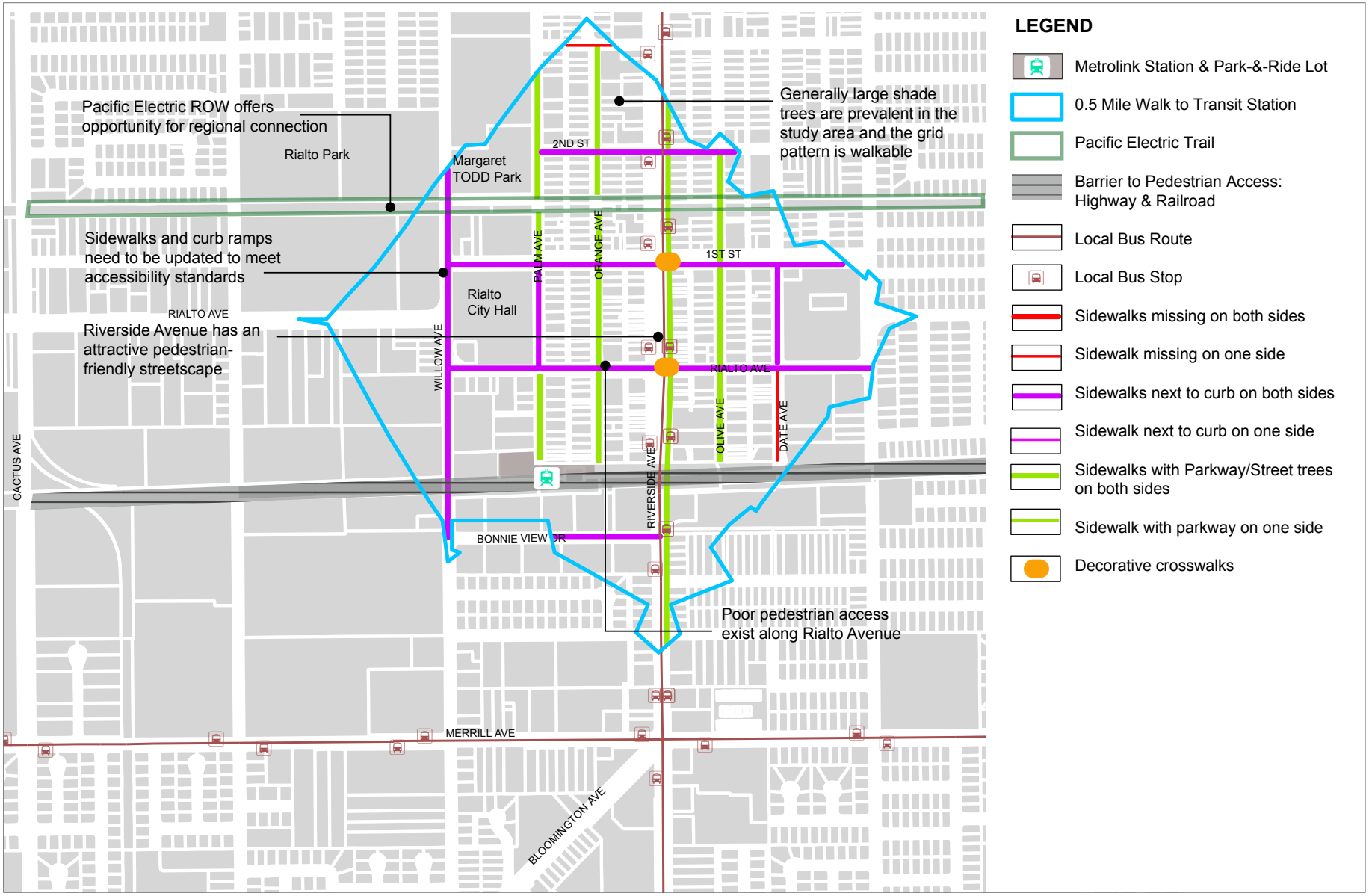


FIGURE 1.21 **RIALTO METROLINK STATION PEDESTRIAN ANALYSIS**



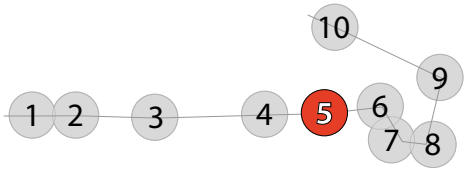
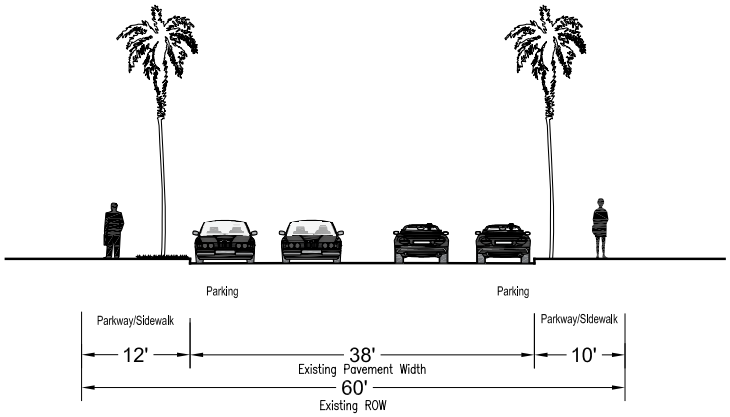


FIGURE 1.22 **TITLE OF MATRIX HERE**

FIGURE 1.24 **TYPICAL SECTION - RIALTO AVENUE**

Palm Avenue



Rialto Avenue

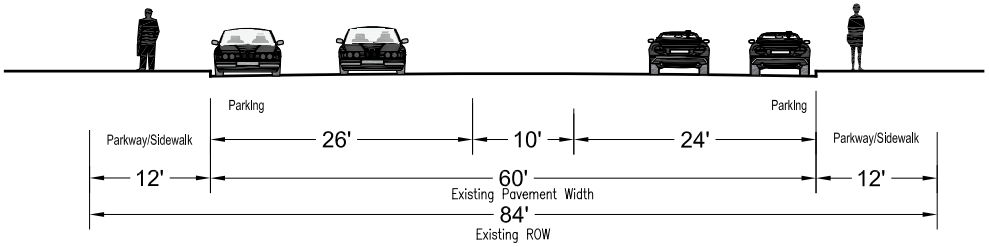
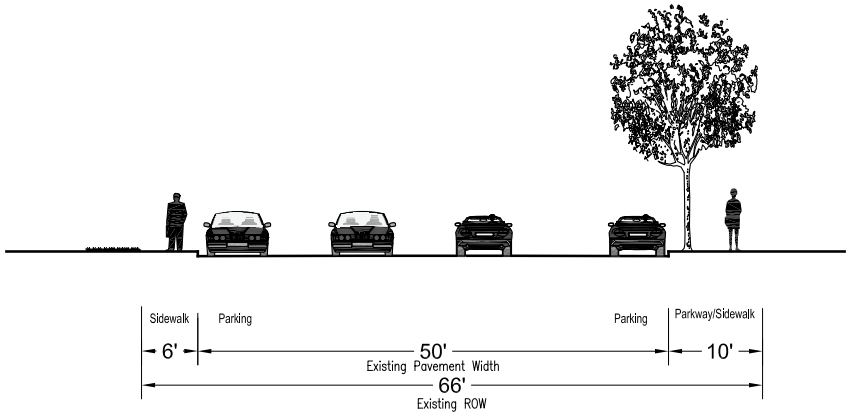


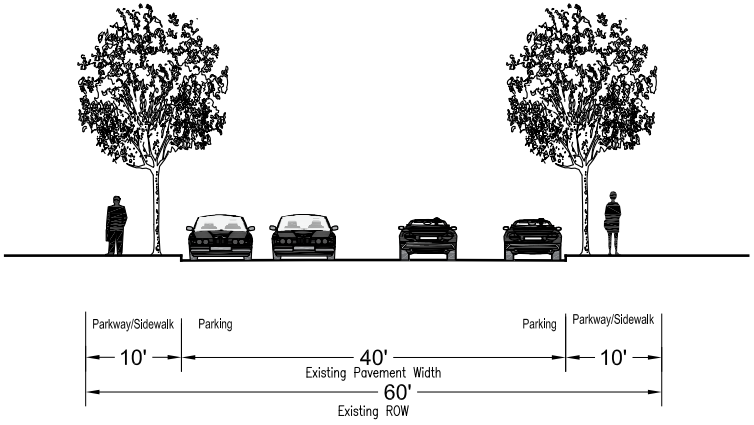
FIGURE 1.23 **TYPICAL SECTION - PALM AVENUE**

FIGURE 1.25 **TYPICAL SECTION - RESIDENTIAL**

Palm Avenue btw Rialto and 1st Street



Typical residential street



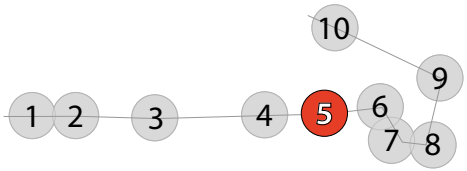


TABLE 1.10 **EXISTING BICYCLE FACILITIES**

Street	Cactus Ave	Ayala Dr	Cedar Ave	Cactus Ave	San Bernardino Ave	Meridian Ave	Rancho Ave	Valley Blvd		
Segment	Mesa St to Baseline Rd	Casmalia St to Hwy 210	Baseline Rd to Randall Ave	Baseline Rd to Rialto Ave	Sycamore Ave to Pepper Ave	San Bernardino Ave to Valley Blvd	Mill St to 10 Fwy	Wildrose Ave to Pepper Ave	Pepper Ave to Hermosa Ave	0.05 mi West of Rancho Ave to 2nd St
Existing Facility Type	Class II	Class II	Class II	Class I	Class II	Class II	Class III	Class III	Class III	Class III
Speed and Condition of Vehicular Traffic	◑	◑	◑	N/A	◑	◑	◕	◕	◕	◕
Pavement Condition	◑	◑	◑	○	◑	◑	◑	◔	◔	◔
"Door Zone" and Driveway Conflicts	◔	◔	○	○	○	◔	◔	◑	◑	◑
Transit Service and Waiting Environment in Corridor	N/A	N/A	◑	N/A	○	N/A	N/A	◔	◔	◔
Amount of Key Attractions	◕	◕	◑	◑	◑	◑	◔	◕	◕	◕
Amount of Bike Facility Striping or Signage	◑	◑	○	○	◑	◑	●	●	●	●

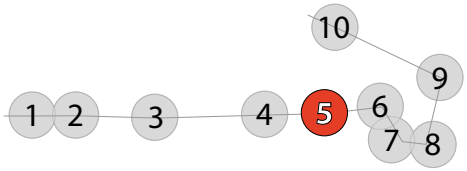


TABLE 1.11 **EXISTING PEDESTRIAN FACILITIES**

Street	Riverside Ave	Rialto Ave	1st St	2nd St	Willow Ave	Palm Ave	Orange Ave	Olive Ave	Date Ave	Bonnie View Dr
Sidewalk/Parkway Width	○	○	◕	◕	◕	◕	◕	◕	◕	◕ & ●
Sidewalk Width	○	◔	◕	◕	◕	◕	◕	◕	◕	◕ & ●
Sidewalk Condition	○	◕	◑	◑	◑	◕	◕	◕	◕	◕
Sidewalk and/or Parkway Location	○	◑	◕	◑ & ◕	◑ & ◕	◔ & ◕	◔ & ◕	◔ & ◕	◑ & ◕	◕
Crosswalks	○	◕	◕	◕	◕	◕	◕	◕	◕	◕
Curb Ramp	○	◕	◕	●	◕	◕	◕	◕	◕	●
Street Trees Location	○	●	●	◑	◑ & ◕	◑ & ◕	◑ & ◕	◑ & ◕	◑ & ◕	●
Raised Median	○	●	●	●	●	●	●	●	●	●
Utility Poles and wires	○	◔	●	◔	◔	◔	◔	◔	◔	●
Lighting	○	●	●	●	●	●	●	●	●	◕
Street Furniture	○	●	●	●	●	●	●	●	●	●
Wayfinding Signage in public realm	○	●	●	●	●	●	●	●	●	●

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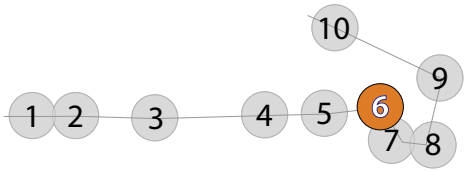
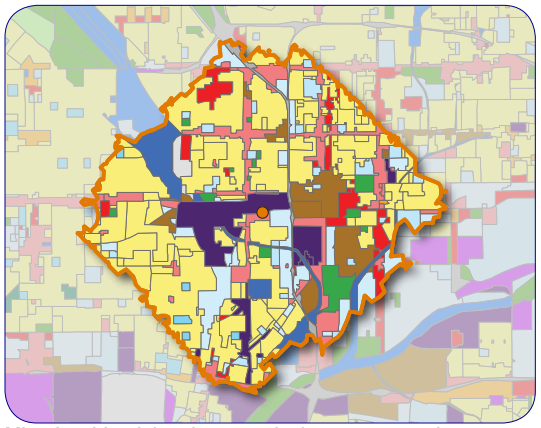


1.6 San Bernardino Metrolink Station

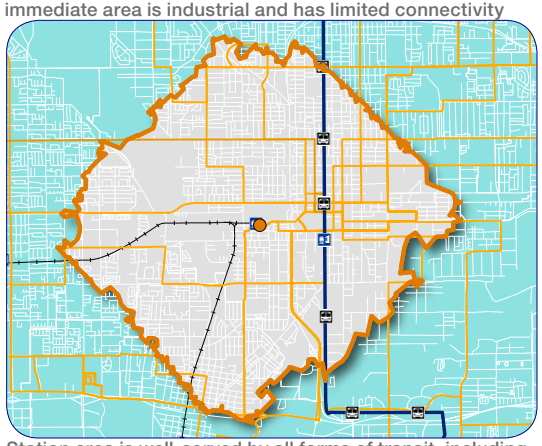
The San Bernardino Metrolink Station is a regional transit station serving the greater San Bernardino area. Transit services at the site include Metrolink commuter rail, Omnitrans local buses, and Mountain Area Regional Transit Authority (MARTA) bus service.

Amtrak service is available at the adjacent Santa Fe Depot, and the nearby Fourth Street Transit Mall at the Carousel Mall provides extensive connections to the regional Omnitrans fixed route network.

View of San Bernardino Metrolink Station



Mix of residential and commerical uses near station, yet immediate area is industrial and has limited connectivity



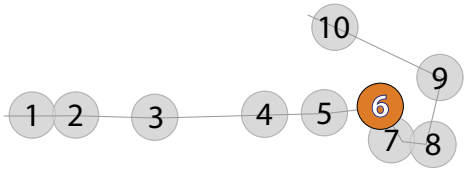
Station area is well-served by all forms of transit, including Fourth Street Transit Mall at Carousel Mall

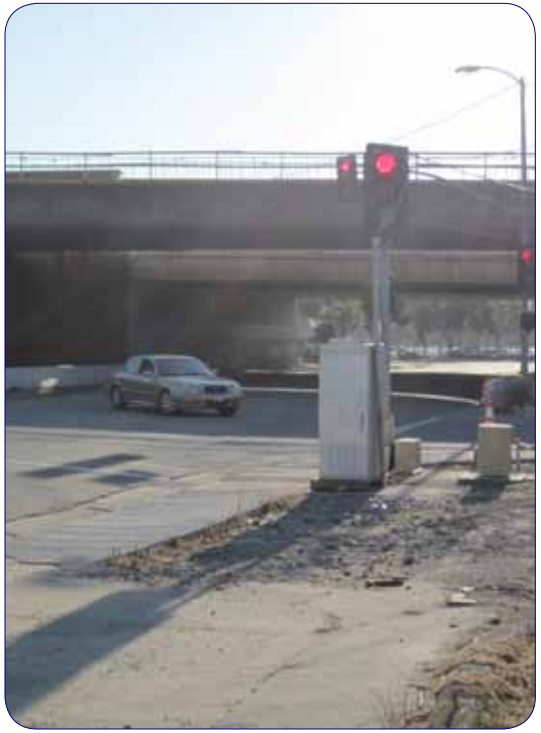
Opportunities

- Strengthen the connection between the Metrolink Station and Omnitrans service at Carousel Mall
- Grid street network provides routefinding flexibility
- Wide local streets
- Large amount of nearby residential development
- San Bernardino station serves as the eastern terminus for most Metrolink San Bernardino Line trains which originate from Los Angeles' Union Station and the northern terminus for some Inland Empire-Orange County Line trains providing regional connectivity.
- Planned Metrolink extension to Rialto/E Street will provide additional connectivity to Downtown San Bernardino, sbX E Street BRT Corridor and Redlands passenger Rail Corridor.
- A walkable grid street pattern exists within station vicinity.
- Generally, adjacent residential neighborhoods' streets have sidewalks/parkways with shade trees.
- San Bernardino General Plan Land Use Element establishes a Santa Fe Depot Strategic Area with the main goal of integrating the Depot with surrounding neighborhoods through design, landscaping, entry features and pedestrian pathways.

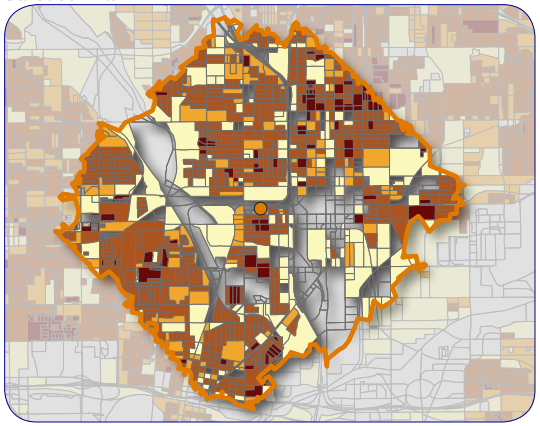
Constraints

- Interstate 215 and BNSF rail yard create physical and psychological barriers to connections with areas north and west of station





Construction hinders walking and biking connections to Carousel Mall



Station area has dense, well-distributed population, but with barriers created by rail and freeway infrastructure

- Current construction along I-215 further discourages pedestrian and bicycle connections
- Ample free parking may discourage accessing station by bike or on foot if other modes are available to the user
- Lack of short-term bicycle parking
- Major arterials are high-speed and high-volume San Bernardino Metrolink station acts as a barrier to pedestrian mobility from developments north of the station.
- No direct pedestrian access exists between the new Third Street Shopping Center and the Metrolink Station.
- 2nd Street has narrow sidewalks with little to now landscaping.
- Poor pedestrian access or wayfinding signage exists between the ticketing area on the west side of the station and the local bus stop located along 3rd Street stop.
- Sidewalks/parkways in adjacent neighborhoods are not well maintained.

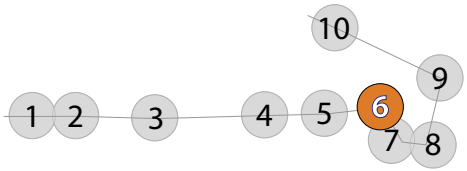
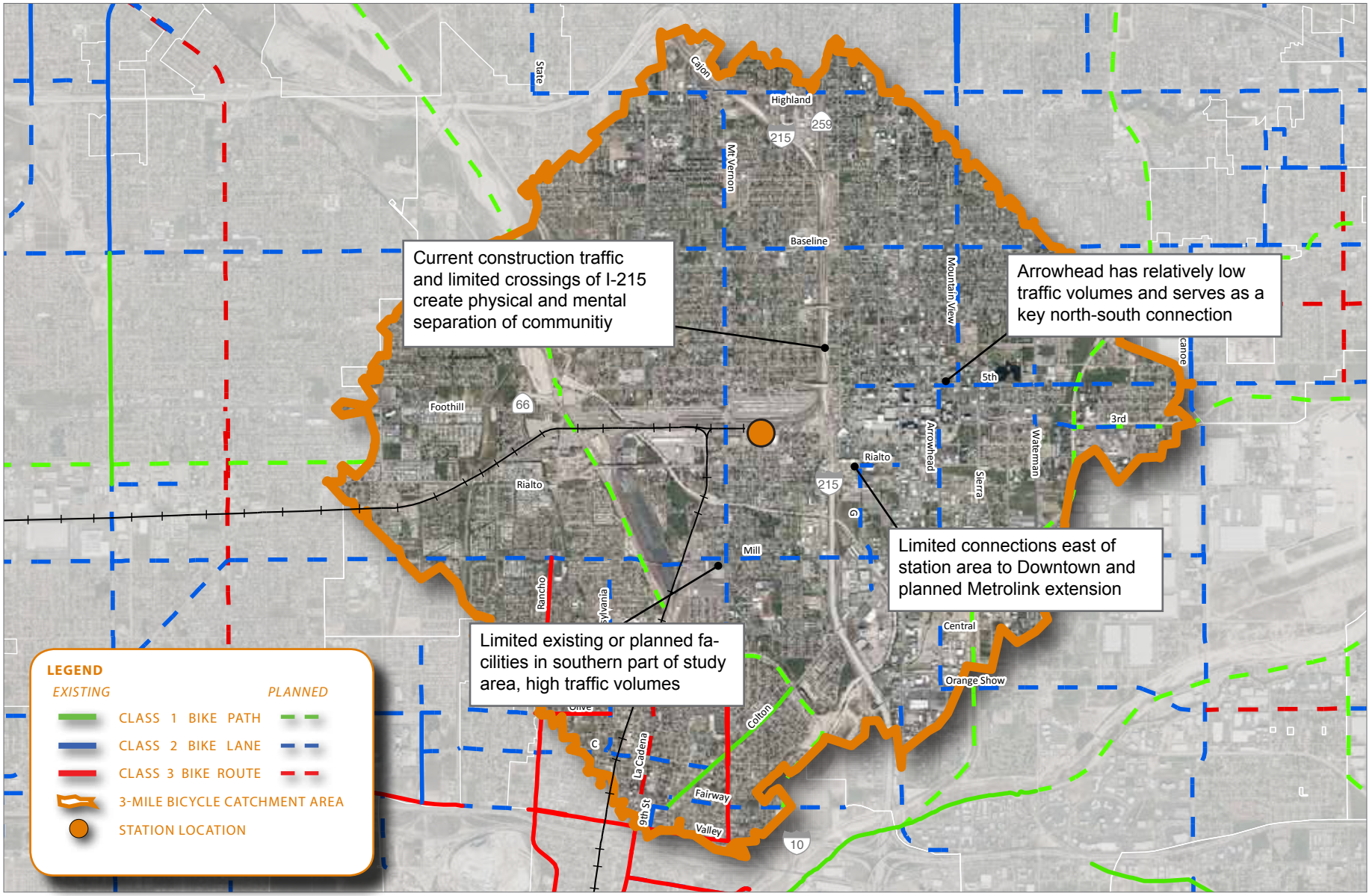


FIGURE 1.26 **SAN BERNARDINO METROLINK STATION AND CATCHMENT AREA**



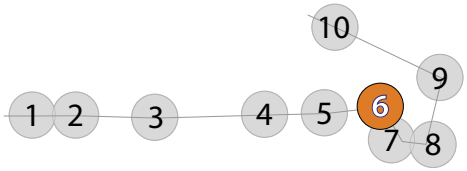
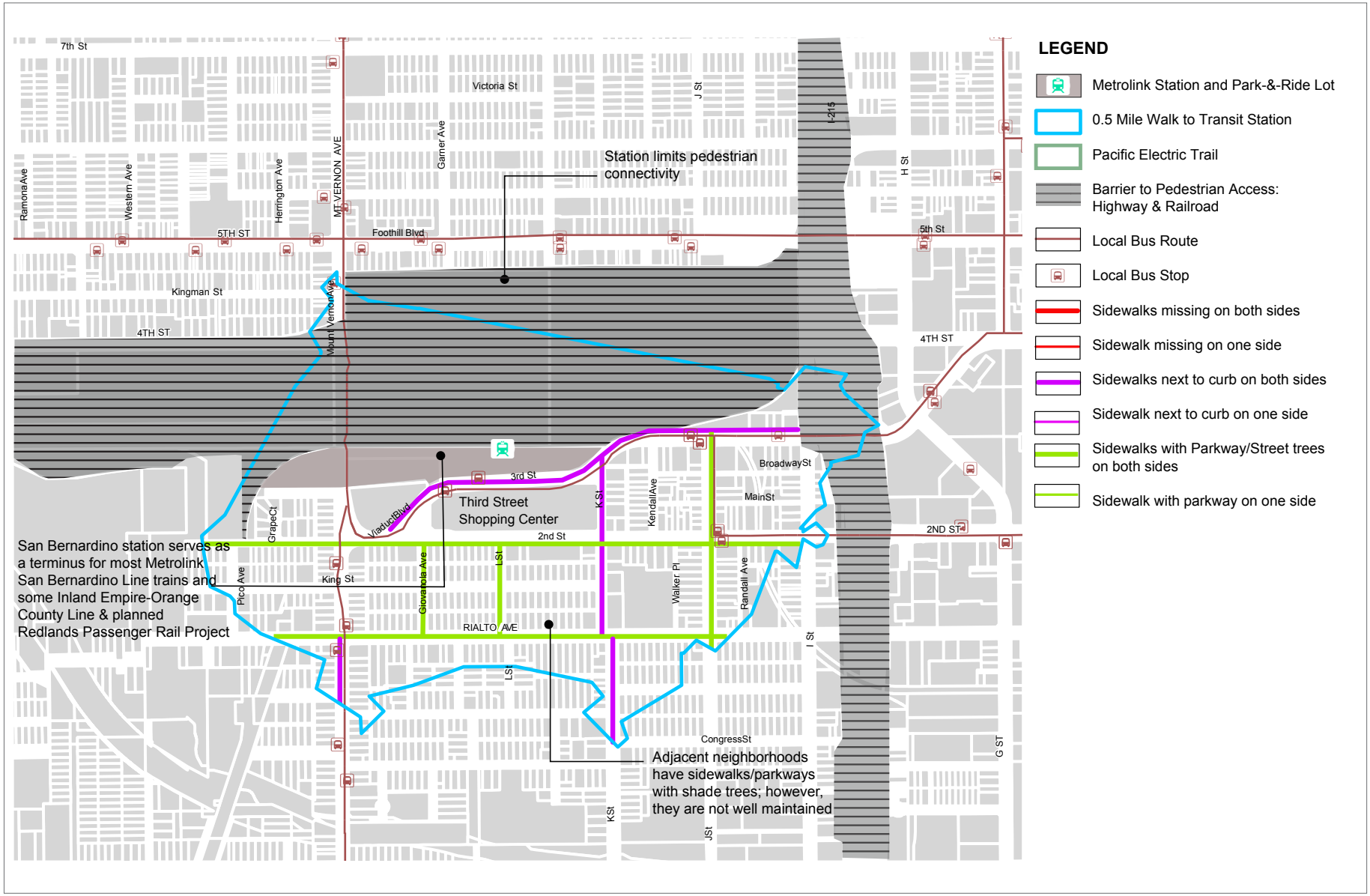


FIGURE 1.27 **SAN BERNARDINO METROLINK STATION PEDESTRIAN ANALYSIS**



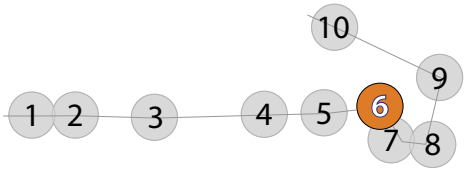


FIGURE 1.28 **TYPICAL SECTION - 2ND STREET**

2nd Street

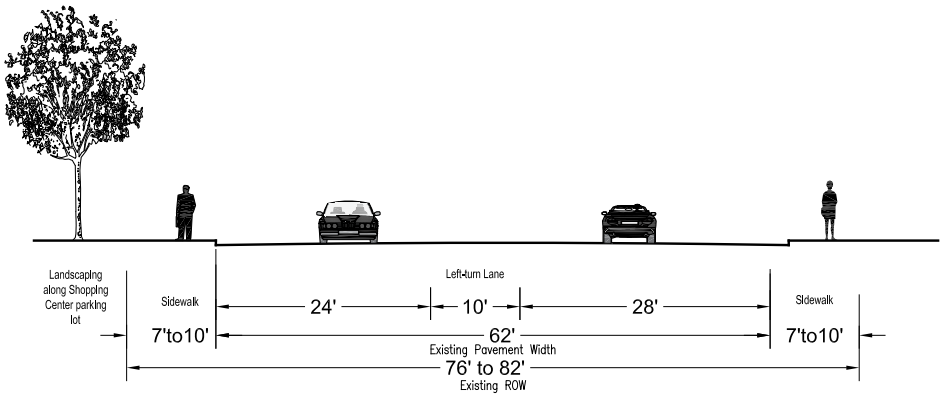


FIGURE 1.29 **TYPICAL SECTION - 3RD STREET**

3rd Street

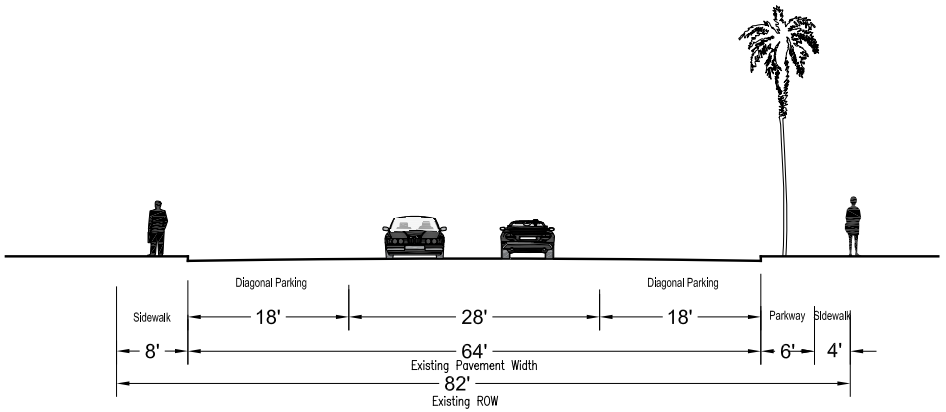
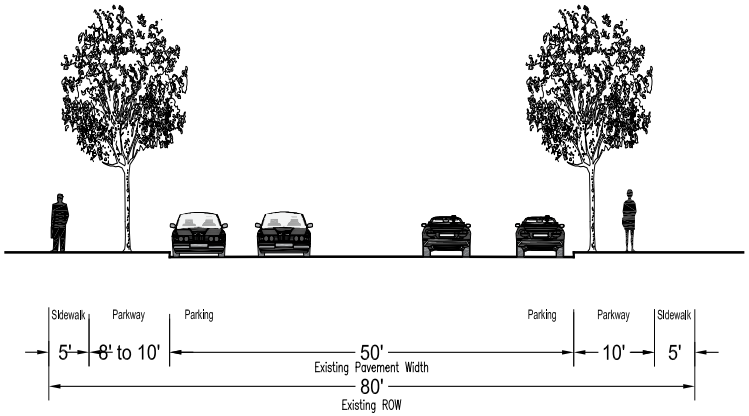


FIGURE 1.30 **TYPICAL SECTION - RESIDENTIAL**

Typical residential street



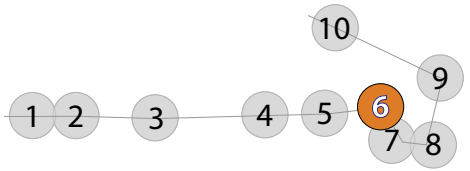


TABLE 1.12 **EXISTING BICYCLE FACILITIES**

Street	Mountain View Ave	Meridian St	Rancho Ave	San Bernardino/ Olive St	Valley Blvd	9th St	G St	Mt Vernon Ave	La Cadena Dr	Colton Ave Bike Path	Santa Ana River Trail
Segment	28th St to 23rd St	San Bernardino Ave to C St	Mill St to 10 Fwy	West of Rancho Ave to Pennsylvania	West of Rancho Ave to Mt Vernon Ave	G St to Valley Blvd	9th St to 10th St	Grant Ave to Valley Blvd	Valley Blvd to M St	G St to Wheeler Lm	Waterman Ave to Mt Vernon Ave
Existing Facility Type	Class II	Class II	Class III	Class III	Class III	Class II	Class II	Class III	Class III	Class I	Class I
Speed and Condition of Vehicular Traffic	○	◑	◑	◕	●	●	●	◕	◕	N/A	N/A
Pavement Condition	◑	◑	●	◑	◕	◑	◑	◑	◑	○	○
"Door Zone" and Driveway Conflicts	◑	◕	○	○	○	○	○	○	○	○	○
Transit Service and Waiting Environment in Corridor	N/A	○	◑	◑	N/A	◑	◑	◔	◔	N/A	◑
Amount of Key Attractions	◑	○	○	◔	◕	◑	◔	◔	◔	○	○
Amount of Bike Facility Striping or Signage	◑	◑	●	●	●	◑	◑	●	●	○	○

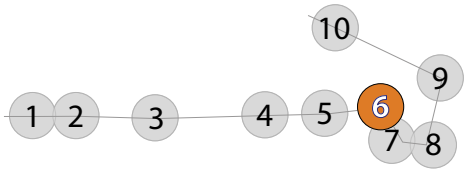


TABLE 1.3 **EXISTING PEDESTRIAN FACILITIES**

Street	3rd St	2nd St	Rialto Ave	Mt Vernon Ave	K St	Other Local/Residential Streets
Sidewalk/Parkway Width	◑	◕	◕	◕	◕	◕
Sidewalk Width	○ & ◑	○	◕	◕	◕	◕
Sidewalk Condition	◔	◑	◕	◕	●	●
Sidewalk and/or Parkway Location	◔ & ◕	◕	◑	◕	◕	◔
Crosswalks	◑	◑	◕	◕	◕	●
Curb Ramp	◔	◑	◕	◕	◕	◕ & ●
Street Trees Location	◑ & ●	●	◑	●	◑	◑
Raised Median	N/A	●	●	●	●	●
Utility Poles and wires	○	●	◔ & ◕	●	◑	◔
Lighting	◕	◕	◕	◕	◕	◕
Street Furniture	●	●	●	●	●	●
Wayfinding Signage in public realm	●	●	●	●	●	●

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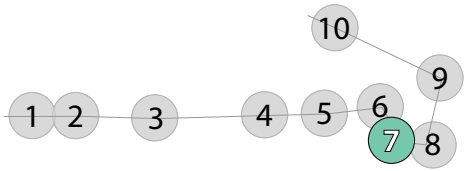
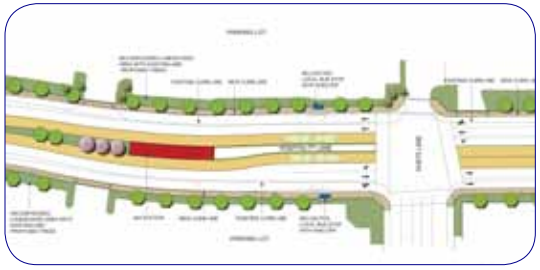
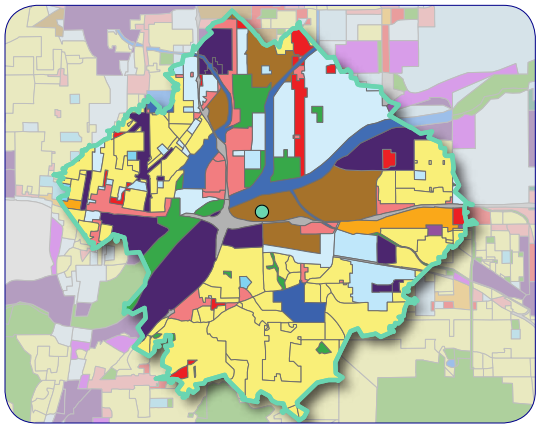
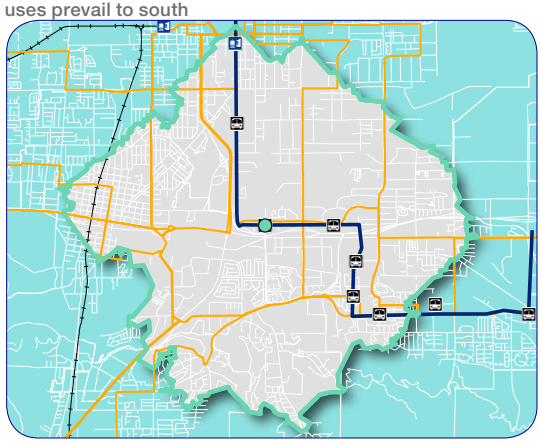




Plan for Hunts Lane sbX Station



Commercial uses prevail adjacent to station, residential uses prevail to south



Area will be well-served by BRT service, potential for high commuter trip volumes

1.7 Hunts Lane sbX Station

The Hunts Lane sbX Station is located immediately north of Interstate 10 and just east of Interstate 215. The land uses around the station area are generally non-residential, aside from an area south of Interstate 10. The station has a direct connection to the Santa Ana River Trail, located directly behind the Hall of Records. Automobile traffic is significant.

Opportunities

- Access to Class I facility provides excellent connection to regional bicycle network
- Station area provides mix of commercial uses and relatively dense office parks
- The existing Santa Ana River trail provides regional connectivity and is a great recreational resource.
- sbX will improve the pedestrian environment along Hospitality Lane by reconfiguring the street to include a 6' wide parkway with street trees next to the curb and sidewalk behind.
- Underutilized industrial/business park area south of the I-10 Freeway can be redeveloped with high-intensity transit-supportive uses.

Constraints

- Limited residential land use north of station
- Several signalized, short-block intersections around station area
- Station area ridership potential and access is constrained by major barriers – Santa Ana River, the I-10 Freeway and I-215 Freeway.
- Auto-oriented, super-block development pattern is well established.
- Poor pedestrian access exists into and through super-blocks.
- Hunts Lane is the only direct access to Santa Ana River Trail from Hospitality Lane and future sbX Station
- Sidewalks and pedestrian lights are missing along Hunts Lane on both sides, north of Hospitality Lane.
- Lack of direct pathway and wayfinding signage to Santa Ana River Trail from Hospitality Lane.

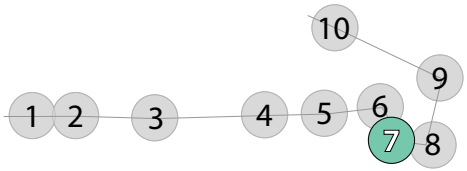
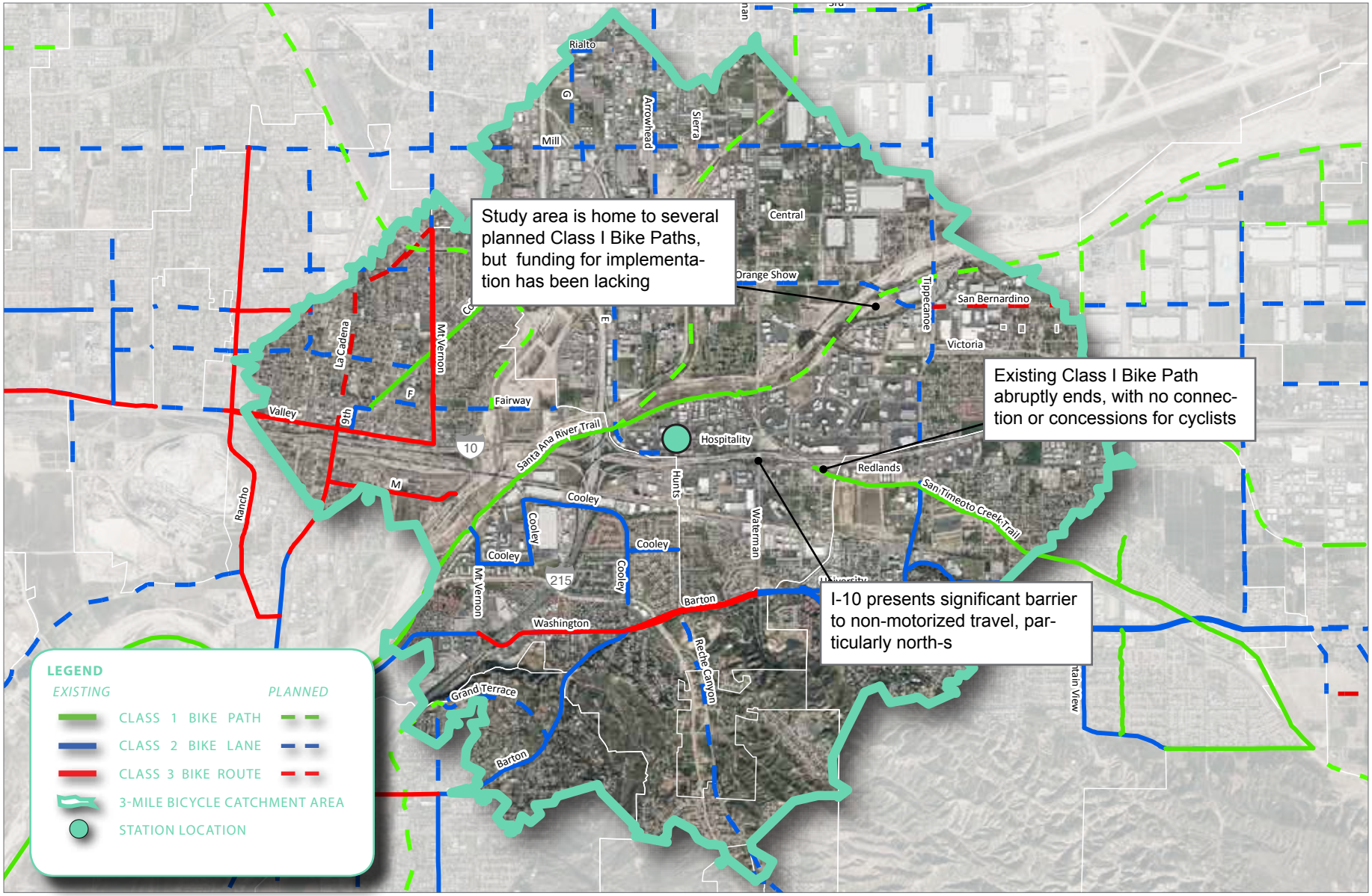


FIGURE 1.31 **HUNTS LANE SBX STATION CATCHMENT AREA**



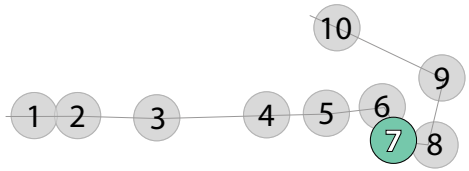
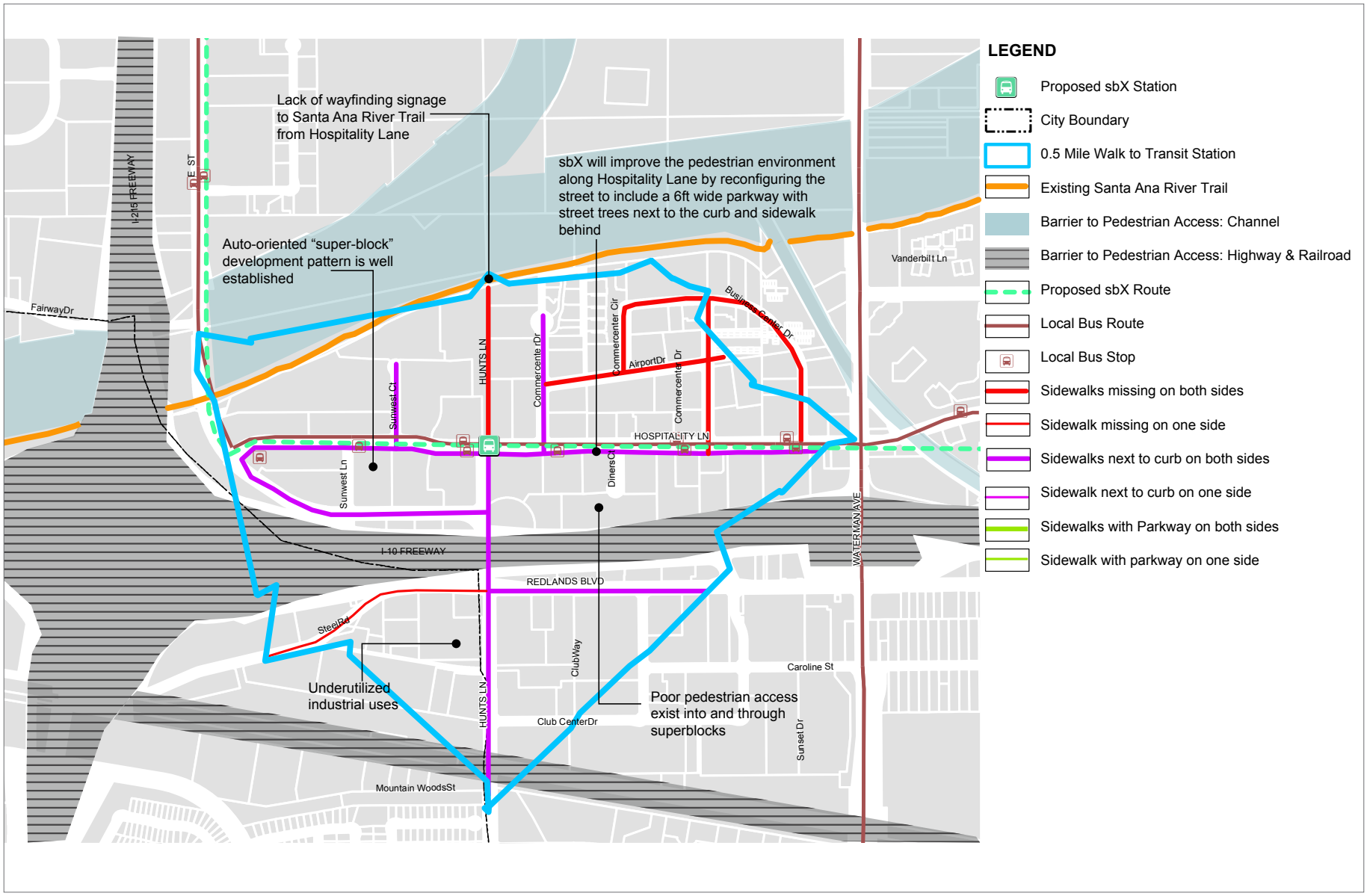


FIGURE 1.32 **HUNTS LANE SBX STATION PEDESTRIAN ANALYSIS**



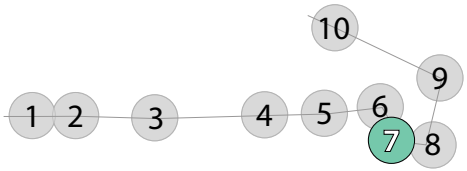


FIGURE 1.33 **TYPICAL SECTION - HOSPITALITY LANE**

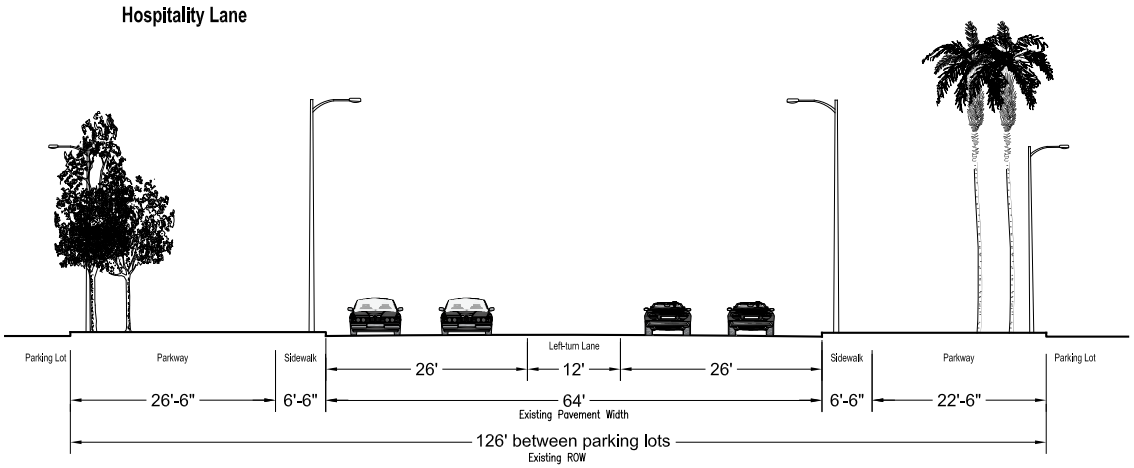
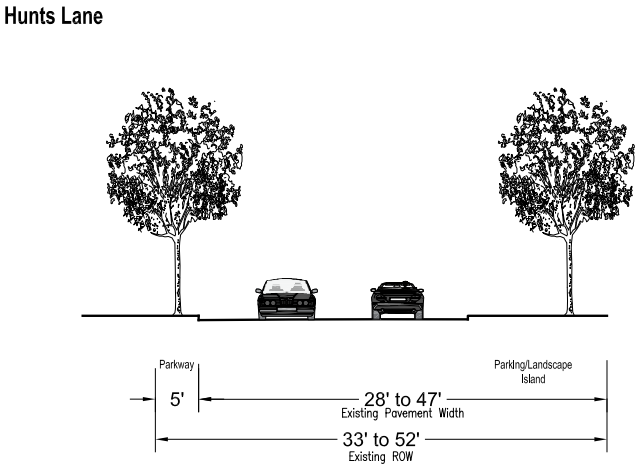
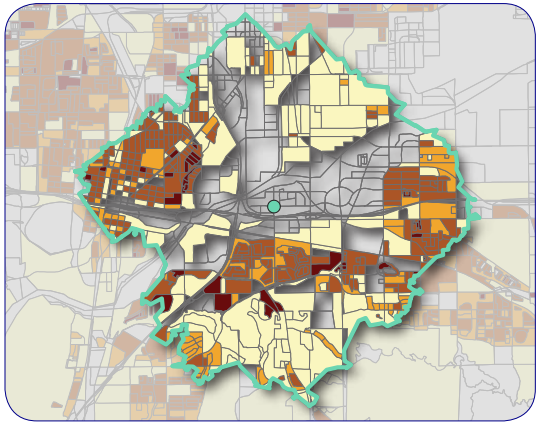


FIGURE 1.34 **TYPICAL SECTION - HUNTS LANE**





Residential densities concentrated to south and west of study area

Santa Ana River Trail Class I facility north of the Hall of Records

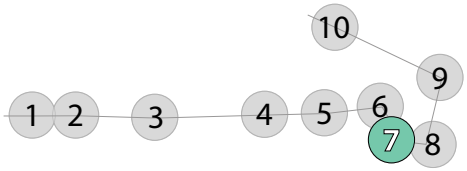


TABLE 1.14 **EXISTING BICYCLE FACILITIES**

Street	Rancho Ave	San Bernardino/ Olive St	Valley Blvd	9th St	G St	Colton Ave Bike Path	Mt Vernon Ave			La Cadena Dr	
Segment	**Citrus St to La Cadena Dr**	**West of Rancho Ave to Pennsylvania**	**West of Rancho Ave to Mt Vernon Ave**	**G St to Valley Blvd**	**9th St to 10th St**	**G St to Wheeler Lm**	**Grant Ave to Valley Blvd**	**Santa Ana River Trail to Cooley Dr**	**Barton Rd to Cardinal St**	**Valley Blvd to M Bike Lanes**	**Start of Bike Lanes to Santa Ana River Trail**
Existing Facility Type	Class III	Class III	Class III	Class II	Class II	Class I	Class III	Class II	Class II	Class III	Class II
Speed and Condition of Vehicular Traffic	◔	◔	◕	◑	◑	N/A	◕	◔	◑	◕	◕
Pavement Condition	◑	◑	◔	◑	◑	○	◑	◔	◔	◑	◕
"Door Zone" and Driveway Conflicts	◑	◑	◕	◑	◑	○	◑	◑	◔	◑	◕
Transit Service and Waiting Environment in Corridor	N/A	N/A	◔	N/A	N/A	●	◔	◑	●	●	●
Amount of Key Attractions	◕	◕	◔	◕	◕	◕	◑	◕	◑	●	◑
Amount of Bike Facility Striping or Signage	●	●	●	○	○	○	●	○	○	●	●

Street	Santa Ana River Trail	M St	Washington St		Barton Rd				Cooley Dr		Cooley Dr W
Segment	**La Canada Dr to Waterman Ave**	**La Cadena Dr to Mt Vernon Ave**	**Mt Vernon Ave to Barton Rd**	**Milano Way to Mt Vernon Ave**	**Cooley Dr E to Waterman Ave**	**Michican St to Mt Vernon Ave**	**Mt Vernon Ave to Washington St**	**Waterman Ave to Power Line Easement**	**Mt Vernon Ave to Cooley Ln**	**Cooley Dr W to Valley Woods St**	**Cooley Dr to Cooley Dr**
Existing Facility Type	Class I	Class III	Class III	Class II	Class III	Class III	Class II	Class II	Class II	Class II	Class II
Speed and Condition of Vehicular Traffic	N/A	◔	◑	◑	◑	◑	◑	◑	◔	◔	◔
Pavement Condition	○	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑
"Door Zone" and Driveway Conflicts	○	◑	◕	◕	◔	◔	◔	◔	◔	◔	◔
Transit Service and Waiting Environment in Corridor	◑	●	◔	◔	◔	◔	◔	◔	N/A	N/A	N/A
Amount of Key Attractions	◔	●	◔	◔	◕	◕	◔	◔	◕	◕	◕
Amount of Bike Facility Striping or Signage	○	●	●	○	●	●	○	○	○	○	○

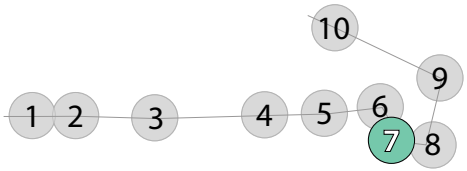


TABLE 1.14 **EXISTING BICYCLE FACILITIES (CONTINUED)**

Street	Cooley Dr E	Cooley Ln	University Ave	Anderson St	Shepardson Dr	Benton St	San Timoteo Creek Trail	Power Line Easement
Segment	**Valley Woods St to Old Ranch Rd**	**Cooley Dr E to Hunts Ln**	**Barton Rd to Campus St**	**Court St to University Ave**	**Stewart St to Benton St**	**Shepardson Dr to Barton Rd**	**Redlands Blvd to Power Line Easement**	**North End to San Timoteo Creek Trail**
Existing Facility Type	Class II	Class II	Class II	Class II	Class II	Class III	Class I	Class I
Speed and Condition of Vehicular Traffic	◔	○	◔	◕	○	◑	N/A	N/A
Pavement Condition	◔	○	◔	◔	◑	◑	◑	○
"Door Zone" and Driveway Conflicts	○	○	◕	◑	◕	◕	○	○
Transit Service and Waiting Environment in Corridor	N/A	N/A	◔	◔	N/A	○	◑	N/A
Amount of Key Attractions	◑	●	◔	◔	◕	◔	◑	◑

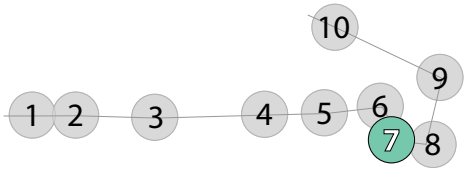


TABLE 1.15 **EXISTING PEDESTRIAN FACILITIES**

Street	Hospitality Ln	Hunts Ln		Redlands Blvd		E St/Sunwest Ct	Airport Dr / Commercenter Cir/Commercenter Dr/Business Center Dr
Segment		**North of Hospitality Ln**	**South of Hospitality Ln**	**East of Hunts Ln**	**West of Hunts Ln**		
Sidewalk/Parkway Width	○	●	◕	●	●	◕	●
Sidewalk Width	○	●	◑	●	●	◑	●
Sidewalk Condition	○	N/A	◔	◑	N/A	◔	N/A
Sidewalk and/or Parkway Location	◕	N/A	◕	◕	N/A	◕	N/A
Crosswalks	◑	N/A	◑	◑	N/A	◑	N/A
Curb Ramp	◑	N/A	◑	◕	N/A	◑	N/A
Street Trees Location	◕	◕	◕	●	●	◕	◕
Raised Median	●	N/A	●	●	●	●	N/A
Utility Poles and wires	○	○	◔	●	○	○	○
Lighting	◕	●	◕	◕	●	◕	◕
Street Furniture	●	●	●	●	●	●	●
Wayfinding Signage in public realm	●	●	●	●	●	●	●

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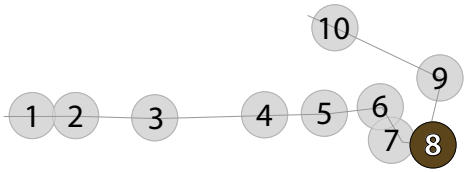


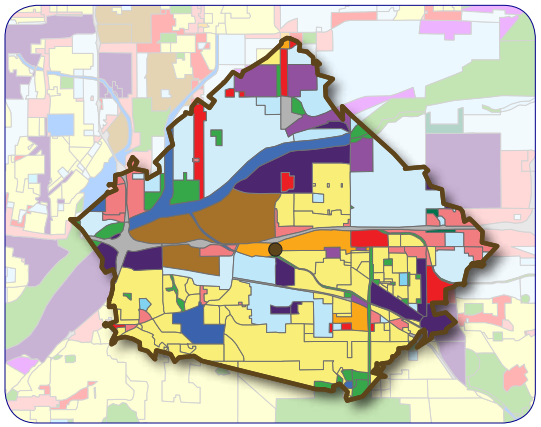
1.8 Anderson Street sbX Station

The Anderson Street sbX Station south of Redlands Boulevard was selected for study due to its close proximity to Loma Linda University and Medical Center and the nearby San Timoteo Creek Class I facility.

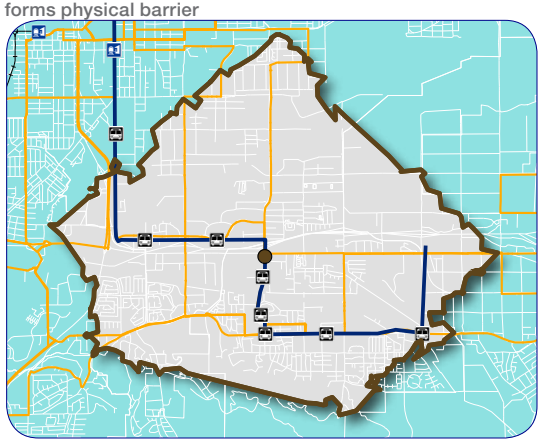
A well-developed access plan can attract a number of local students and non-student residents, as well as regional bicycle trips from the Class I facility.

The area also possesses a fairly good mix of retail and residential uses nearby, and high-density commercial uses north of Interstate 10.

Plan for Anderson Street sbX Station



Residential uses are concentrated south of station, I-10 forms physical barrier



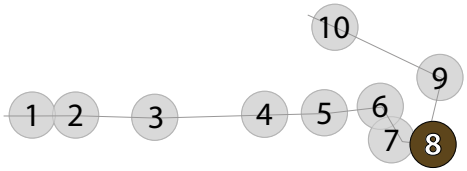
Transit concentrated around Loma Linda University and Medical Center

Opportunities

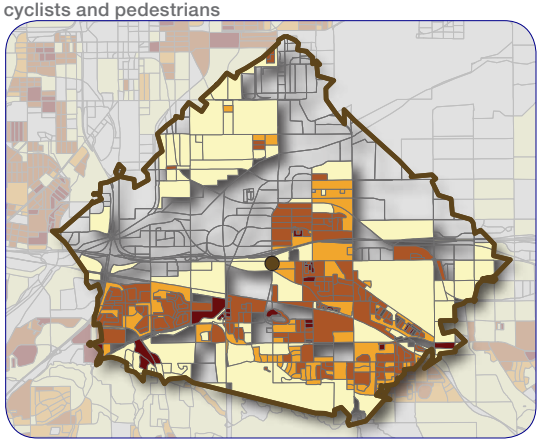
- Uninterrupted connection to San Timoteo Class I facility
- Campus setting and student population comfortable with cycling for transportation
- The major activity center is the Loma Linda Academy immediately south of the station
- Bike lanes exist along Anderson Street.
- Planned San Timoteo Creek Trail will provide regional connectivity.
- sbX park & ride lot provides opportunities for the development of commuter-related facilities within its own site.
- Congestion from I-10 freeway to and from Anderson Boulevard is moderate to severe today due to limited through street options making it unsafe for pedestrians; however, the proposed I-10 freeway and Anderson Boulevard interchange would improve traffic conditions to and from I-10 freeway.

Constraints

- High-speed arterials throughout study area
- Interstate 10 creates physical barrier and challenging crossings
- Limited north-south connections



Site of sbX station is frequently congested and difficult for cyclists and pedestrians



Residential density is concentrated to the south and west of the station area

- Nearby barriers to pedestrian access to transit include I-10 and San Timoteo Creek.
- North of Redlands Boulevard: East of Tippecanoe Avenue, there are generally no sidewalks and curbs existing within the residential neighborhoods, limiting pedestrian safety and activity from these neighborhoods. West of Tippecanoe Avenue, the office park and commercial development along Harriman Place have sidewalks buffered by landscaping providing some pedestrian amenity but the area has large blocks with few interconnected streets and poor pedestrian connectivity.
- South of Redlands Boulevard: East of Anderson Boulevard there are many vacant and undeveloped parcels with few interconnected streets and poor pedestrian connectivity. West of Anderson Boulevard, Loma Linda Academy dominates this area; however narrow sidewalks located next to the curb connect this Academy to the station limiting pedestrian activity.

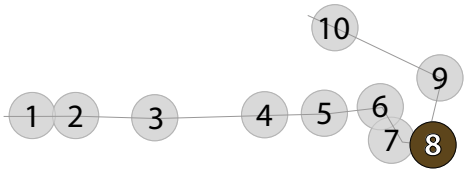
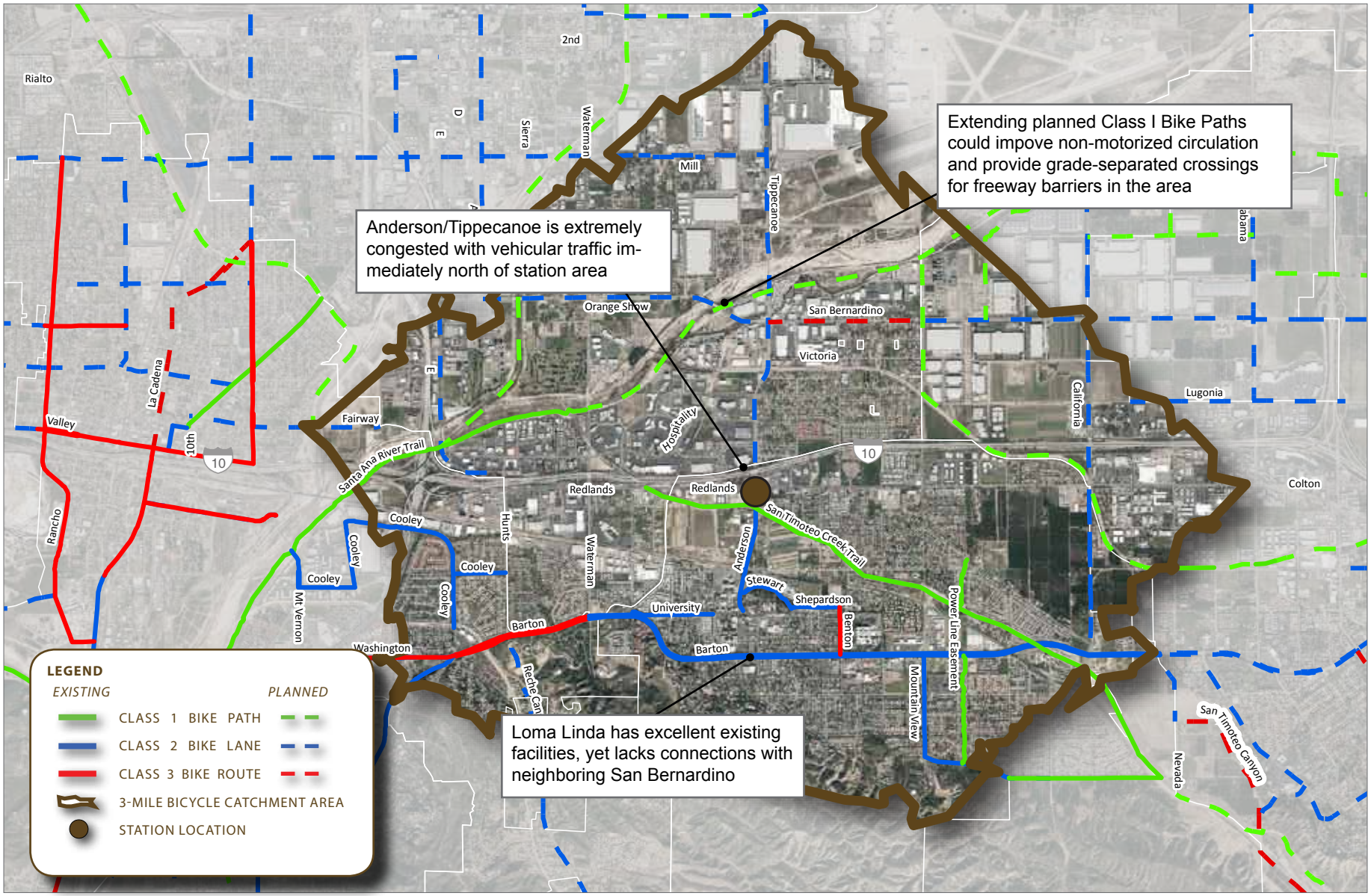


FIGURE 1.35 **ANDERSON STREET SBX STATION CATCHMENT AREA**



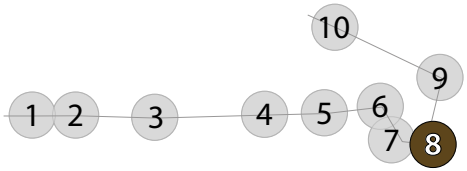
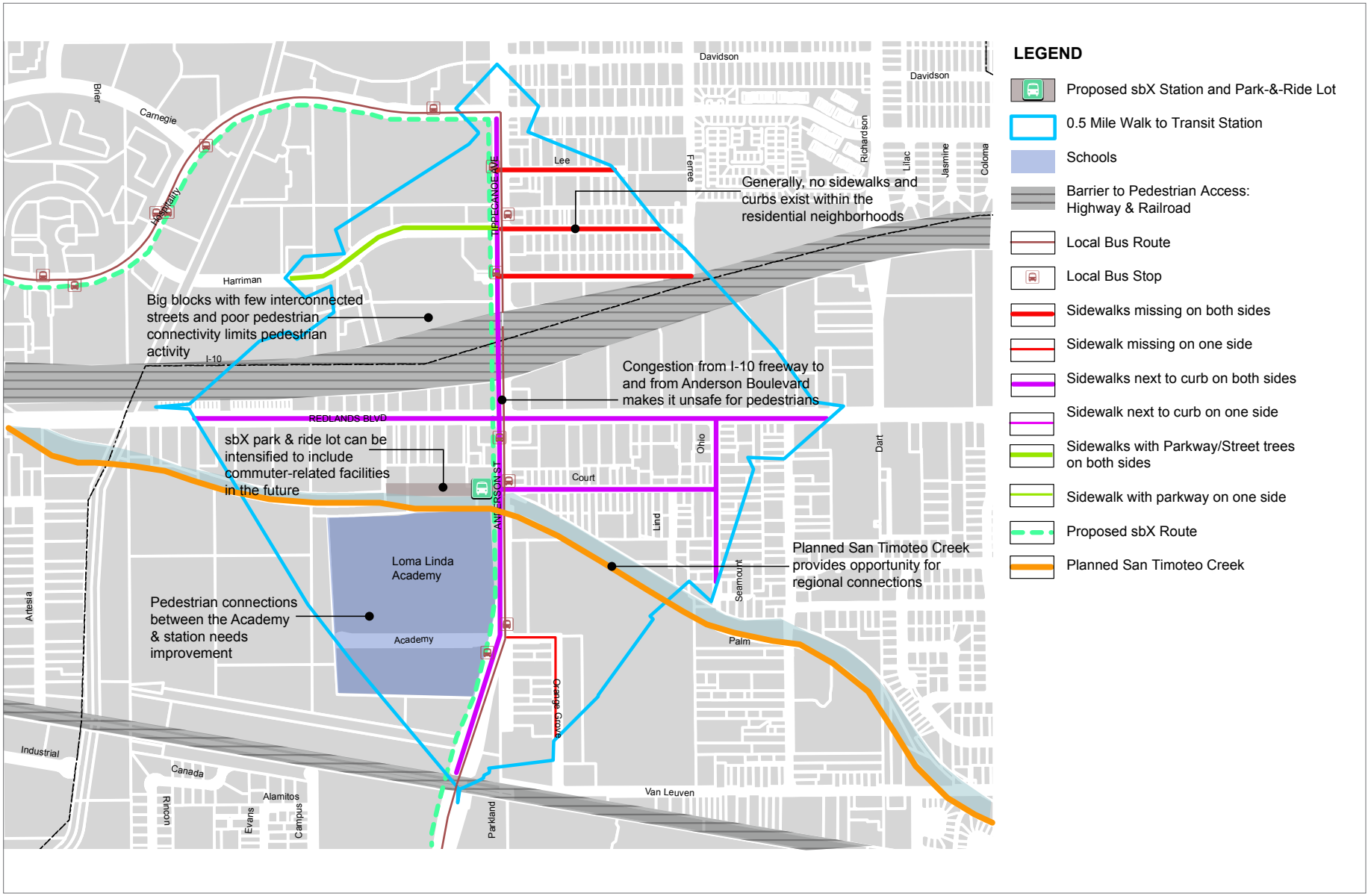


FIGURE 1.36 **ANDERSON STREET SBX STATION PEDESTRIAN ANALYSIS**



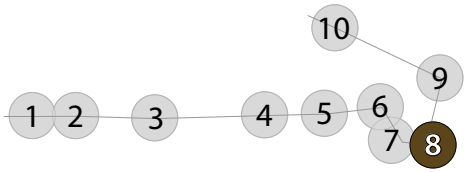
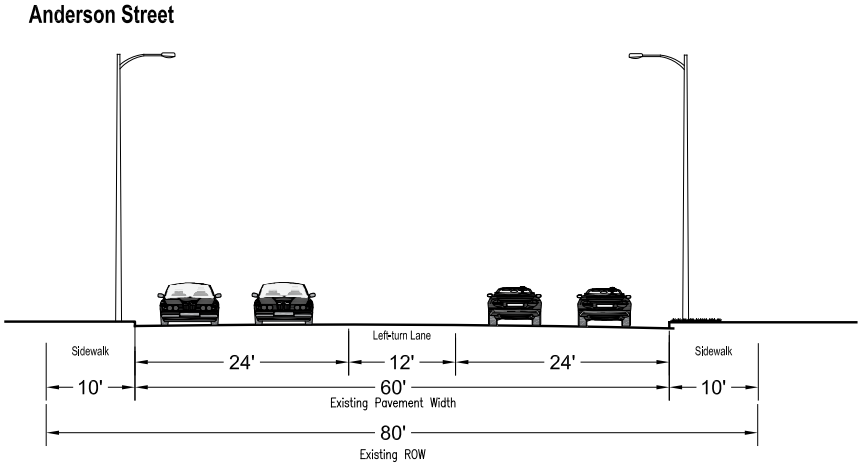
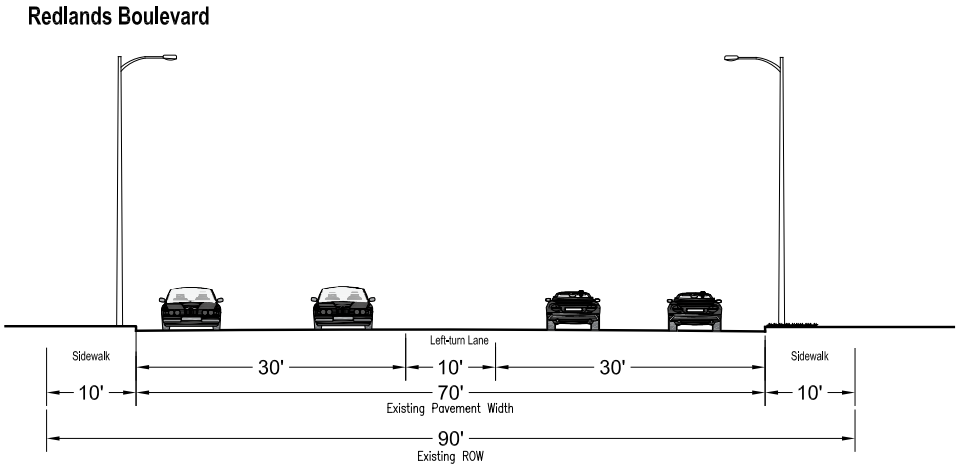


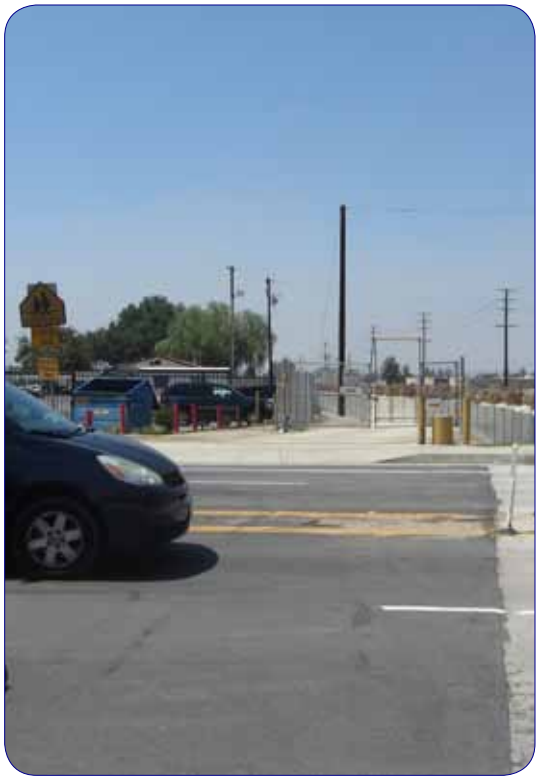
FIGURE 1.37 **TYPICAL SECTION - ANDERSON STREET**



Existing Class I facility currently terminates east of Anderson

FIGURE 1.38 **TYPICAL SECTION - REDLANDS BOULEVARD**





Class I facility will resume west of Anderson, crosswalk improvements may be needed

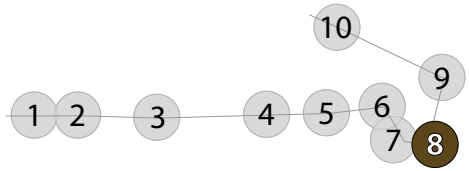


TABLE 1.16 **EXISTING BICYCLE FACILITIES**

Street	Washington St		Barton Rd			University Ave	Cooley Dr		Cooley Dr W
Segment	**Theatre Rd to Mt Vernon Ave**	**Mt Vernon Ave to Barton Rd**	**Cooley Dr E to Waterman Ave**	**Waterman Ave to San Timoteo Canyon Rd**	**Preston St to Cooley Dr E**	**Barton Rd to Campus St**	**Mt Vernon Ave to Cooley Ln**	**Cooley Dr W to Valley Woods St**	**Cooley Dr to Cooley Dr**
Existing Facility Type	Class II	Class III	Class III	Class II	Class II	Class II	Class II	Class II	Class II
Speed and Condition of Vehicular Traffic	◑	◑	◑	◑	◑	◔	◔	◔	◔
Pavement Condition	◑	◑	◑	◑	◑	◔	◑	◑	◑
"Door Zone" and Driveway Conflicts	◕	◕	◔	◔	◔	◕	◔	◔	◔
Transit Service and Waiting Environment in Corridor	◔	◔	◔	◔	◔	◔	N/A	N/A	N/A
Amount of Key Attractions	◔	◔	◕	◔	◕	◔	◕	◕	◕
Amount of Bike Facility Striping or Signage	○	●	●	○	○	○	○	○	○

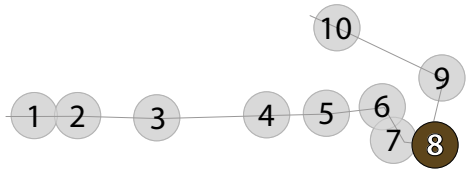


TABLE 1.16 **EXISTING BICYCLE FACILITIES (CONTINUED)**

Street	Cooley Dr E	Cooley Ln	Mt Vernon Ave	Mountain View Ave	Beaumont Ave		Anderson St
Segment	**Valley Woods St to Old Ranch Rd**	**Cooley Dr E to Hunts Ln**	**Santa Ana River Trail to Cooley Dr**	**Barton Rd to Beaumont Ave**	**Mountain View Ave to Whittier Ave**	**Whittier Ave to San Timeoteo Creek Trail**	**Court St to University Ave**
Existing Facility Type	Class II	Class II	Class II	Class II	Class II	Class I	Class II
Speed and Condition of Vehicular Traffic						N/A	
Pavement Condition							
"Door Zone" and Driveway Conflicts							
Transit Service and Waiting Environment in Corridor	N/A	N/A	N/A	N/A	N/A	N/A	
Amount of Key Attractions							
Amount of Bike Facility Striping or Signage							

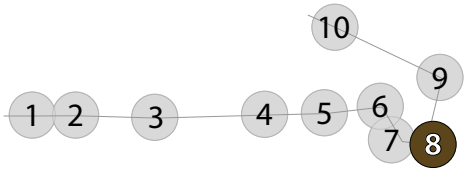


TABLE 1.16 **EXISTING BICYCLE FACILITIES (CONTINUED)**

Street	Shepardson Dr	Benton St	San Timeoteo Creek Trail	Power Line Easement		Citrus Ave	Colton Ave Bike Path	Santa Ana River Trail
Segment	Stewart St to Benton St	Shepardson Dr to Barton Rd	Redlands Blvd to Beaumont Ave	North End to San Timoteo Creek Trail	Barton Rd to Beaumont Ave	Nevada St to Iowa St	Vista Way to Wheeler Ln	Mt Vernon Ave to Waterman Ave
Existing Facility Type	Class II	Class III	Class I	Class I	Class I	Class I	Class I	Class I
Speed and Condition of Vehicular Traffic	○	◑	N/A	N/A	N/A	N/A	N/A	N/A
Pavement Condition	◑	◑	◑	○	○	◑	○	○
"Door Zone" and Driveway Conflicts	◕	◕	○	○	○	○	○	○
Transit Service and Waiting Environment in Corridor	N/A	○	◑	N/A	N/A	N/A	N/A	◑
Amount of Key Attractions	◕	◔	◑	◑	◑	●	◑	◑
Amount of Bike Facility Striping or Signage	○	●	◑	◑	◑	●	◑	○

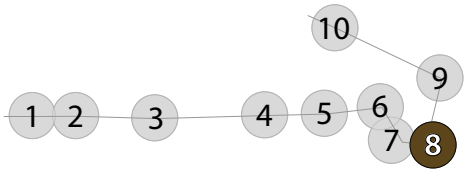


TABLE 1.17 **EXISTING PEDESTRIAN FACILITIES**

Street	Redlands Blvd	Anderson St	Tippecanoe Ave	Court/Ohio Sts	Lee/Laurelwood Dr/Rosewood Dr	Harriman Pl	Orange Grove St
Segment							
Sidewalk/Parkway Width	◔	◔	◕	●	●	◕	◕
Sidewalk Width	◔	◔	◑	◕	●	◑	◑
Sidewalk Condition	◑	◑	◑	◕	●	◔	◑
Sidewalk and/or Parkway Location	◑ & ◕	◕	◕	◕	●	◑	◕
Crosswalks	◑	◑	◑	●	●	◑	N/A
Curb Ramp	◑	◑	◔	●	●	◑	N/A
Street Trees Location	●	●	●	●	●	◑	●
Raised Median	●	●	◕	N/A	N/A	◕	N/A
Utility Poles and wires	◑	●	○	●	●	○	○
Lighting	◕	●	◕	●	◕	◕	●
Street Furniture	●	●	●	●	●	●	●
Wayfinding Signage in public realm	●	●	●	●	●	●	●

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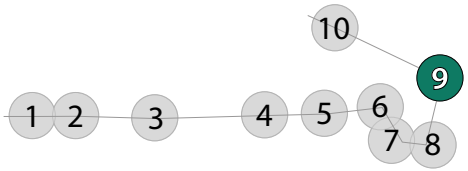
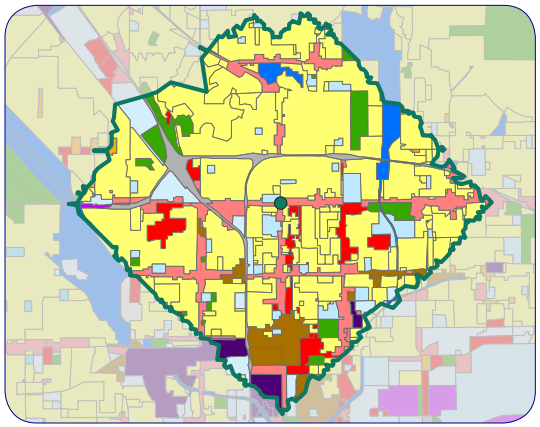
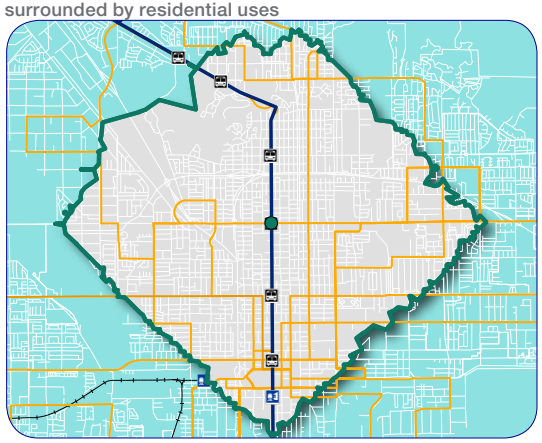


1.9 Highland Avenue sbX Station

The Highland Avenue sbX Station is located in the heart of San Bernardino. The site will feature stations at opposite corners of Highland Avenue and E Street. Residential and commercial uses dominate the area, and the immediate vicinity is home to two schools, Arrowview Middle School and San Bernardino High School.


Plans for Highland Ave sbX Station


Key north-south and east-west commercial corridors are surrounded by residential uses


Commercial area is well-served by transit

Opportunities

- Destinations within the station vicinity include Arrowview Middle School immediately west of the station and San Bernardino High School to the south.
- A walkable grid street pattern exists in the station catchment area.
- Large shade trees in parkways provide a pleasant pedestrian-friendly environment within the neighborhoods north of Highland Avenue along E Street.
- Sidewalks are in good condition near station
- Good pedestrian activity along both E Street and Highland Avenue and the walkable grid street pattern in the vicinity support walking.
- Existing east-west transit connections along Highland Avenue and planned BRT system along E Street provide additional mobility choices.
- D Street is a four lane street with approximately 20' curb lanes offering opportunity to accommodate bike lanes paralleling E Street.

Constraints

- Highland Avenue is not a pedestrian-friendly street, especially east of E Street, as it is a four lane street with painted left-turn lane and 9' sidewalks located next to the curb with little to no landscaping.
- Generally sidewalks and curb ramps are not ADA compliant.

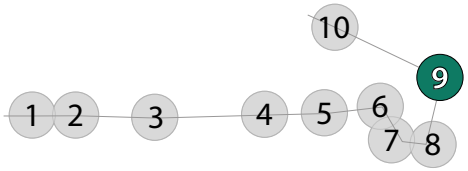
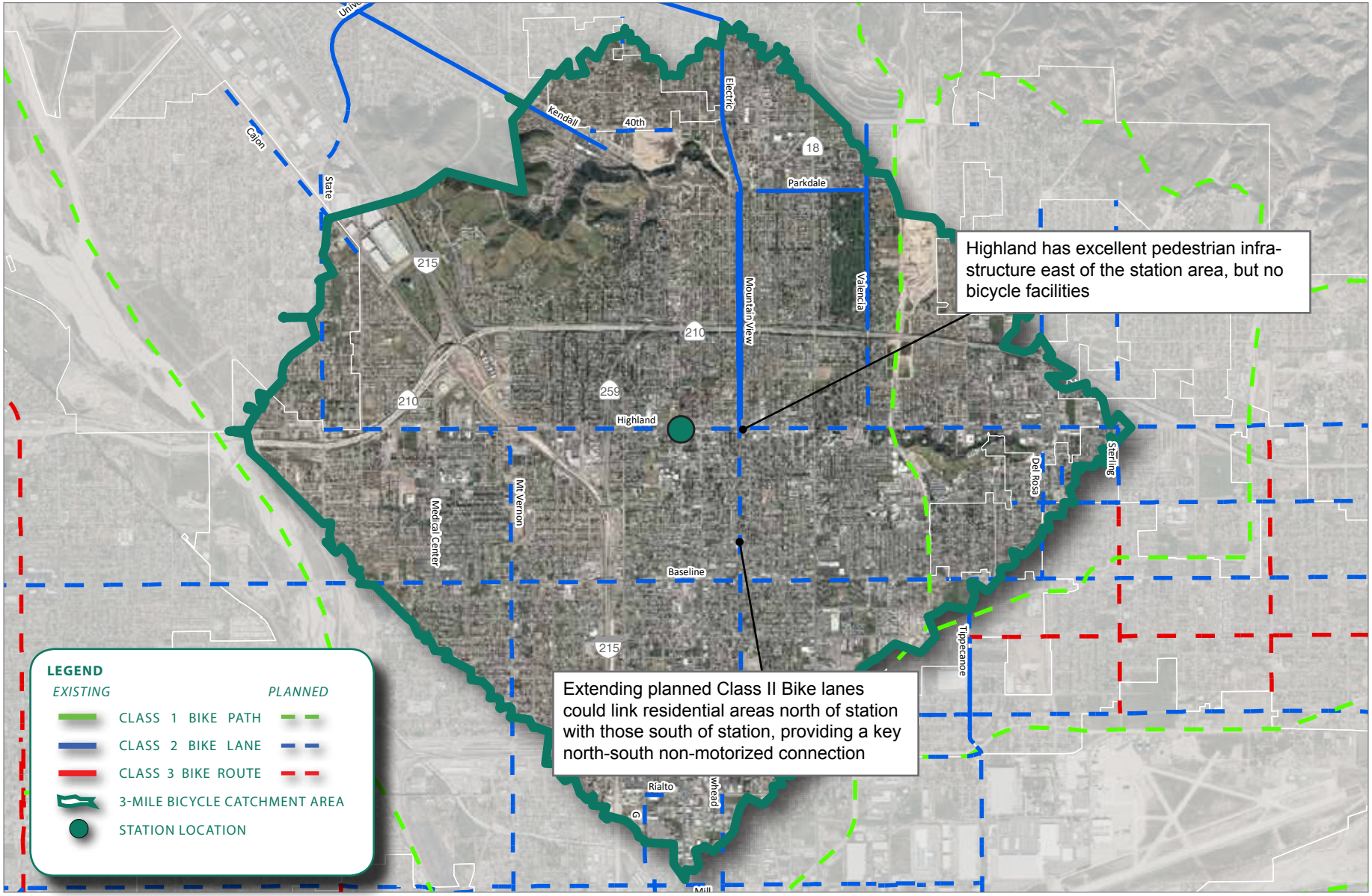


FIGURE 1.39 **HIGHLAND AVENUE SBX STATION CATCHMENT AREA**



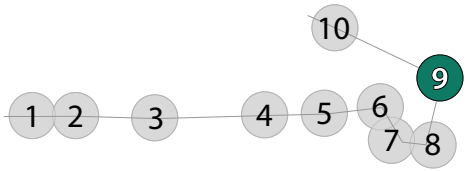
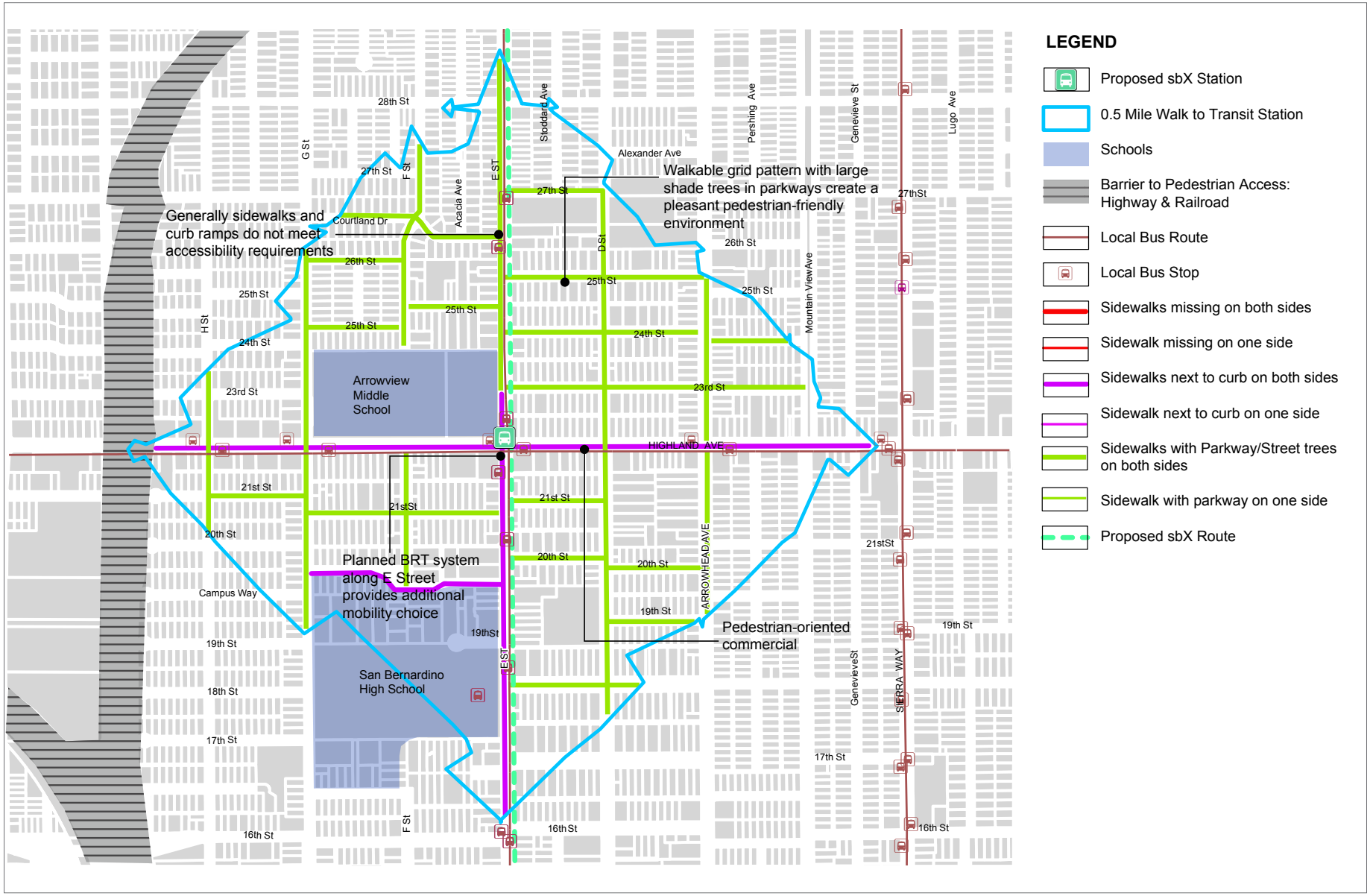
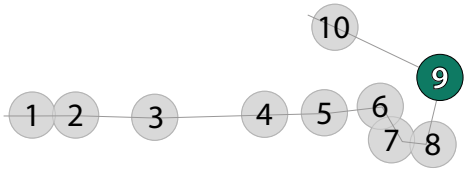
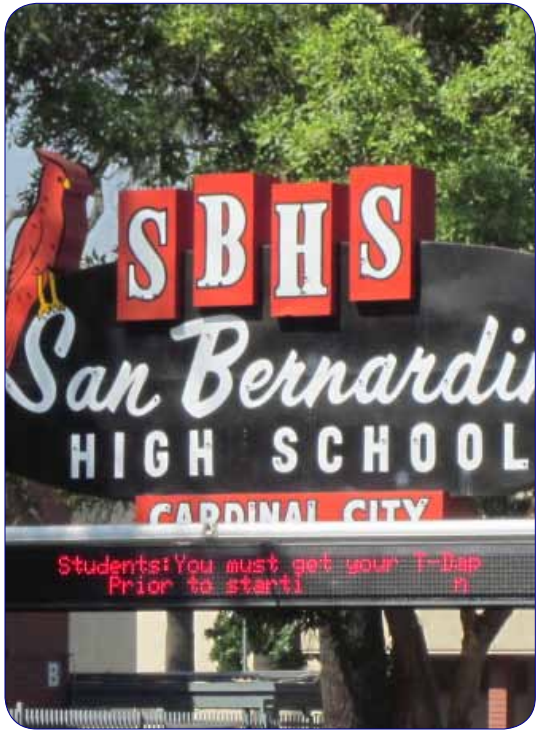


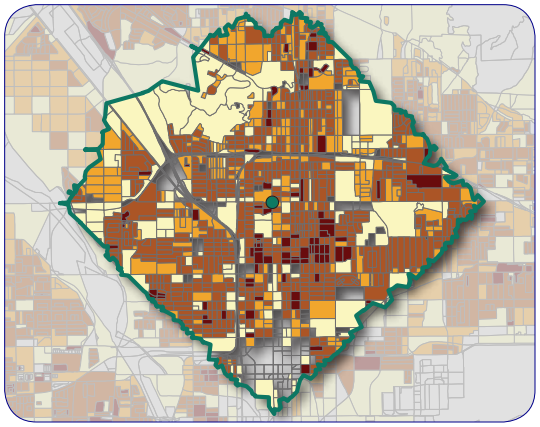
FIGURE 1.40 **HIGHLAND AVENUE SBX STATION PEDESTRIAN ANALYSIS**







Several schools can be found within study area



Residential density is significant throughout study area

FIGURE 1.41 **TYPICAL SECTION -HIGHLAND AVE**

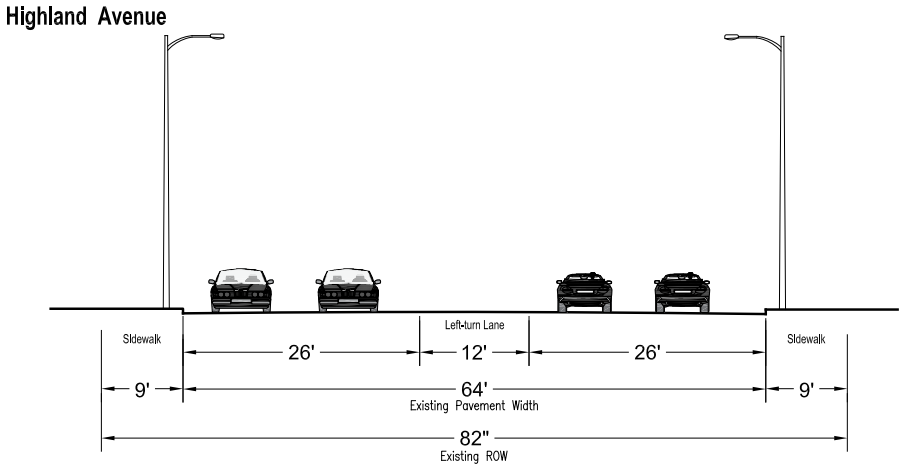
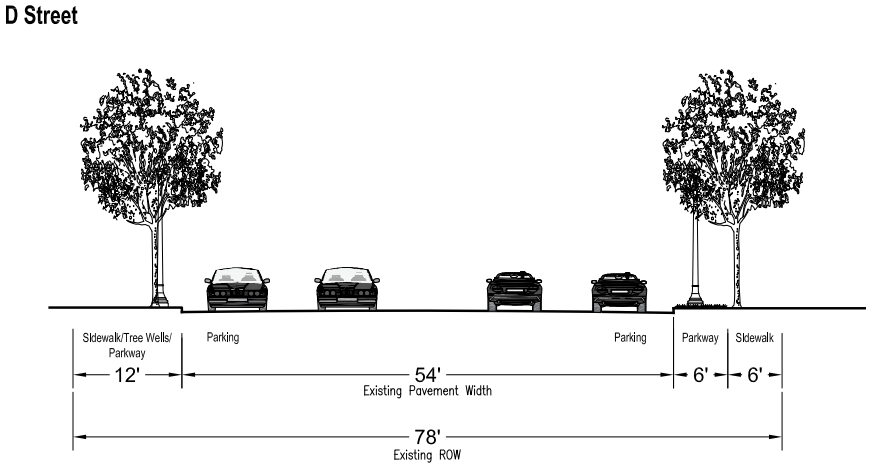


FIGURE 1.42 **TYPICAL SECTION - D STREET**



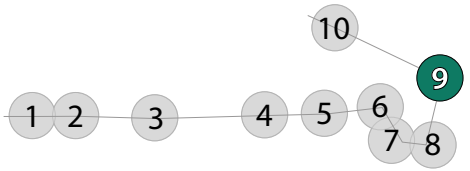


FIGURE 1.43 **TYPICAL SECTION - RESIDENTIAL**

Typical residential street

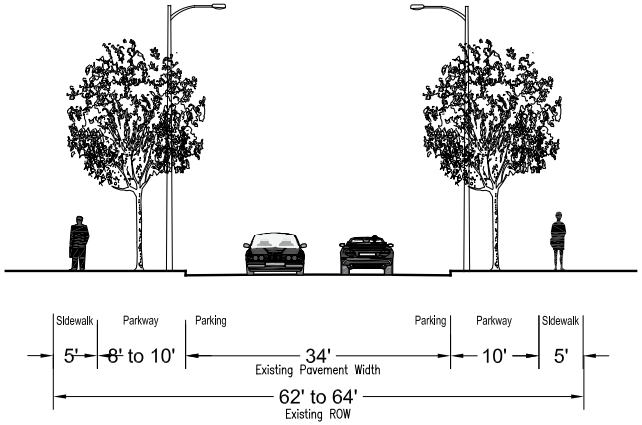


TABLE 1.18 **EXISTING BICYCLE FACILITIES**

Street	Kendall Dr	Northpark Blvd	Electric Ave - Mountain View Ave	Parkdale Dr	Valencia Ave
Segment	**Brookfield St to Shandin Hills Cir**	**Mountain Dr to Electric Ave**	**Northpark Blvd to 23rd St**	**Sierra Way to Valencia Ave**	**40th St to 30th St**
Existing Facility Type	Class II	Class II	Class II	Class II	Class II
Speed and Condition of Vehicular Traffic	◑	◔	◑	◑	○
Pavement Condition	◔	○	◑	◑	○
"Door Zone" and Driveway Conflicts	○	○	○	◑	○
Transit Service and Waiting Environment in Corridor	◑	◑	◑	N/A	N/A
Amount of Key Attractions	◑	◑	◑	◑	◑
Amount of Bike Facility Striping or Signage	◑	◔	○	◑	○

Example of a standard unimproved crosswalk

Highland Avenue commercial area pedestrian environment

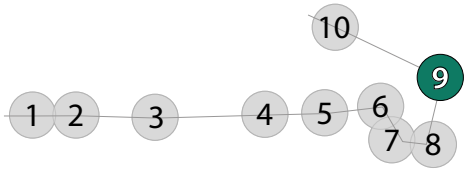


TABLE 1.19 **EXISTING PEDESTRIAN FACILITIES**

Street	E Street		Highland		D Street	Arrowhead Avenue	G Street	H Street	Residential Streets	
Segment	North of Highland Avenue	South of Highalnd Avenue	East of E Street	West of E Street					North of Highland Avenue	South of Highalnd Avenue
Sidewalk/Parkway Width	◑	◑	◑	◕	◔	◑	◕	◕	○	◕
Sidewalk Width	◑	◑	○	◑	◔	◑	◕	◕	◔	◕
Sidewalk Condition	◑	◑	◔	◑	◔	◑	◕	◑	◔	◑
Sidewalk and/or Parkway Location	○	◑	◔	◕	◔	◔	◔	◔	○	◔
Crosswalks	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑
Curb Ramp	◕	◕	◕	◕	◑	◑	◑	◑	◑	◑
Street Trees Location	◔	●	◔	●	◔	◔	◑	◑	◔	◔
Raised Median	●	●	●	●	●	●	●	●	N/A	N/A
Utility Poles and wires	○	○	○	○	◑	◑	◑	◑	○	◔
Lighting	◕	○	◑	◑	◔	◔	●	●	●	●
Street Furniture	●	●	●	●	●	●	●	●	●	●
Wayfinding Signage in public realm	●	●	●	●	●	●	●	●	●	●

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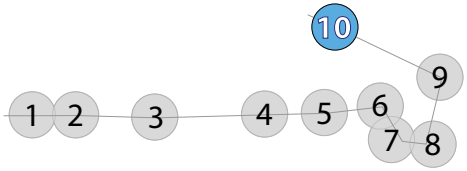
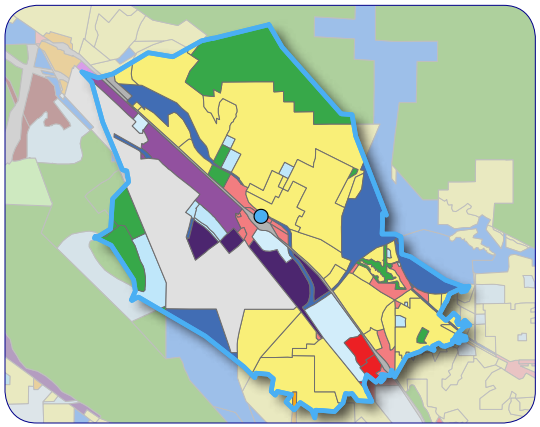


1.10 Palm Avenue sbX Station

The Palm Avenue sbX Station is located immediately southwest of a newer residential development. On the opposite side of the station and the adjacent Interstate 15 freeway are a number of low-density heavy industrial uses. Interstate 15 effectively bisects the study area, and creates a barrier for accessing the station from a second area of residential development at the southern end of the study area.

The station is designed to be the northern terminus of the E Street sbX line, and when completed, will feature an off-street facility with bus bays, waiting areas, and a small passenger parking lot.

Plan for Palm Avenue sbX Station



Residential land uses are separated by Interstate 215

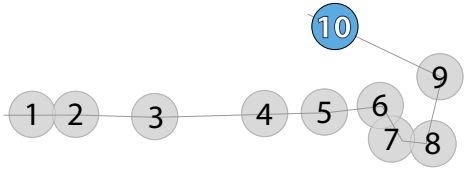
Limited existing and planned transit service, "end of line" sbX facility

Opportunities

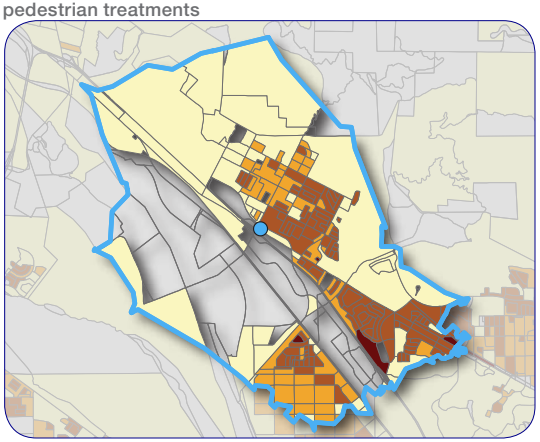
- Existing Class I facility running through center of residential district
- Planned Class I facility along flood channel would connect to greater San Bernardino
- Sloping topography
- Limited existing development around station area provides "blank canvas" for station-area improvements and appropriate design guidelines
- sbX station and improvements offer an opportunity to improve pedestrian connections.
- Existing Chestnut Trail provides recreational opportunities.
- Two vacant parcels near the station are slated for mixed-use developments.

Constraints

- Interstate 215 presents physical and psychological barrier to access to and from residential area southeast of station
- Industrial land uses south of Interstate 215 employ relatively few people at present, meaning non-motorized access to station may be peak-only and one-directional
- Nearby barriers to pedestrian access to transit include the I-215 Freeway, a drainage channel and steep topography.



Newer residential development features ADA-compliant pedestrian treatments



Interstate creates physical barrier to access for residents south of station

- North of Kendall Drive newer residential areas have 5 to 6' sidewalks leading to the stations; however, no landscaping and/or shade trees are located next to the curb to protect and/or shade pedestrians.
- Incomplete sidewalks exist along Kendall Drive, near the sbX station and park & ride lot and near the intersection of Kendall Drive and Palm Avenue

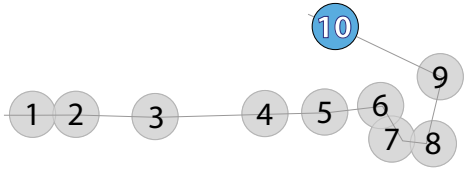
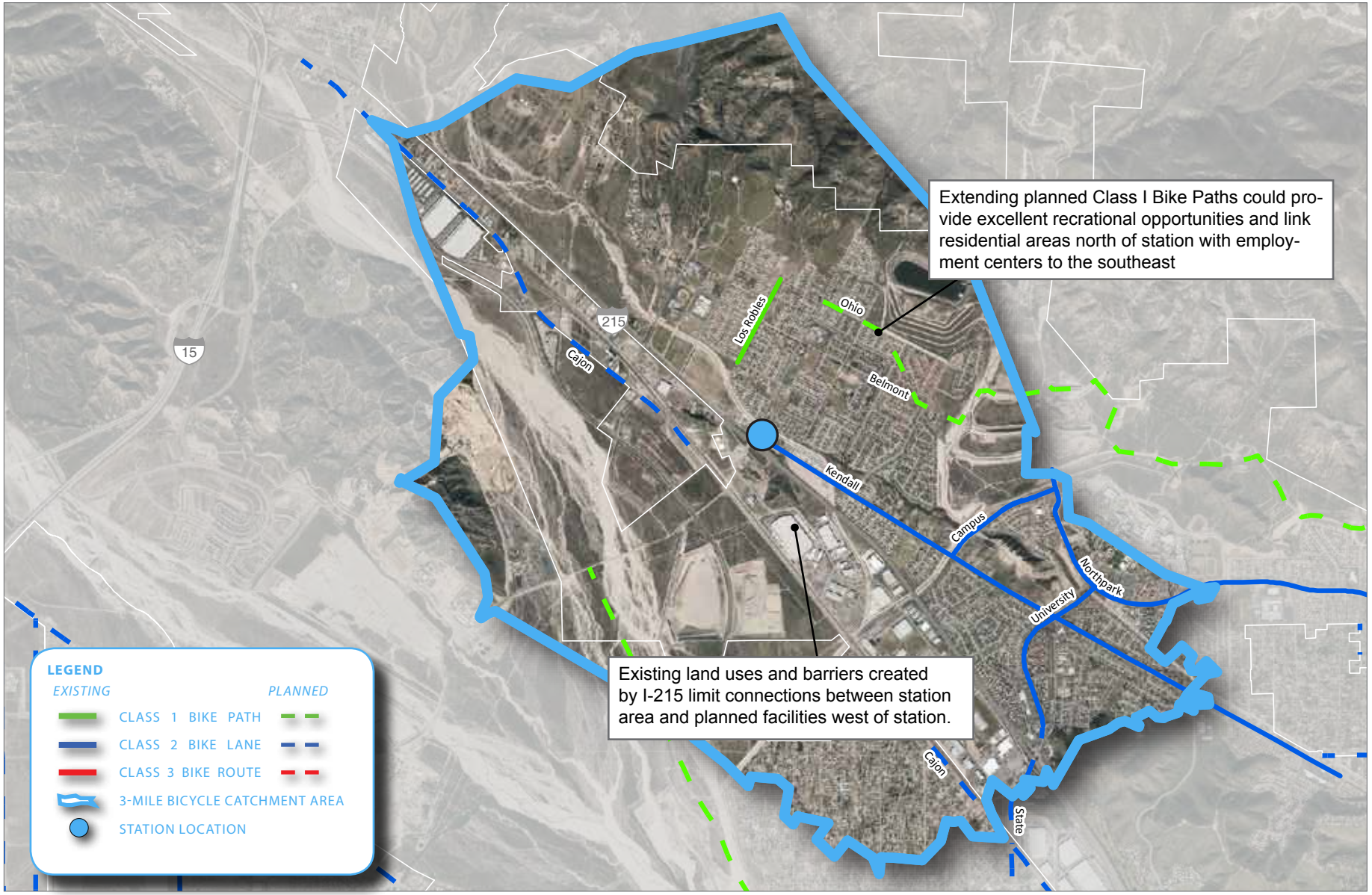


FIGURE 1.44 **PALM AVENUE SBX STATION CATCHMENT AREA**



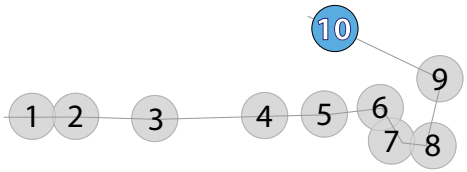
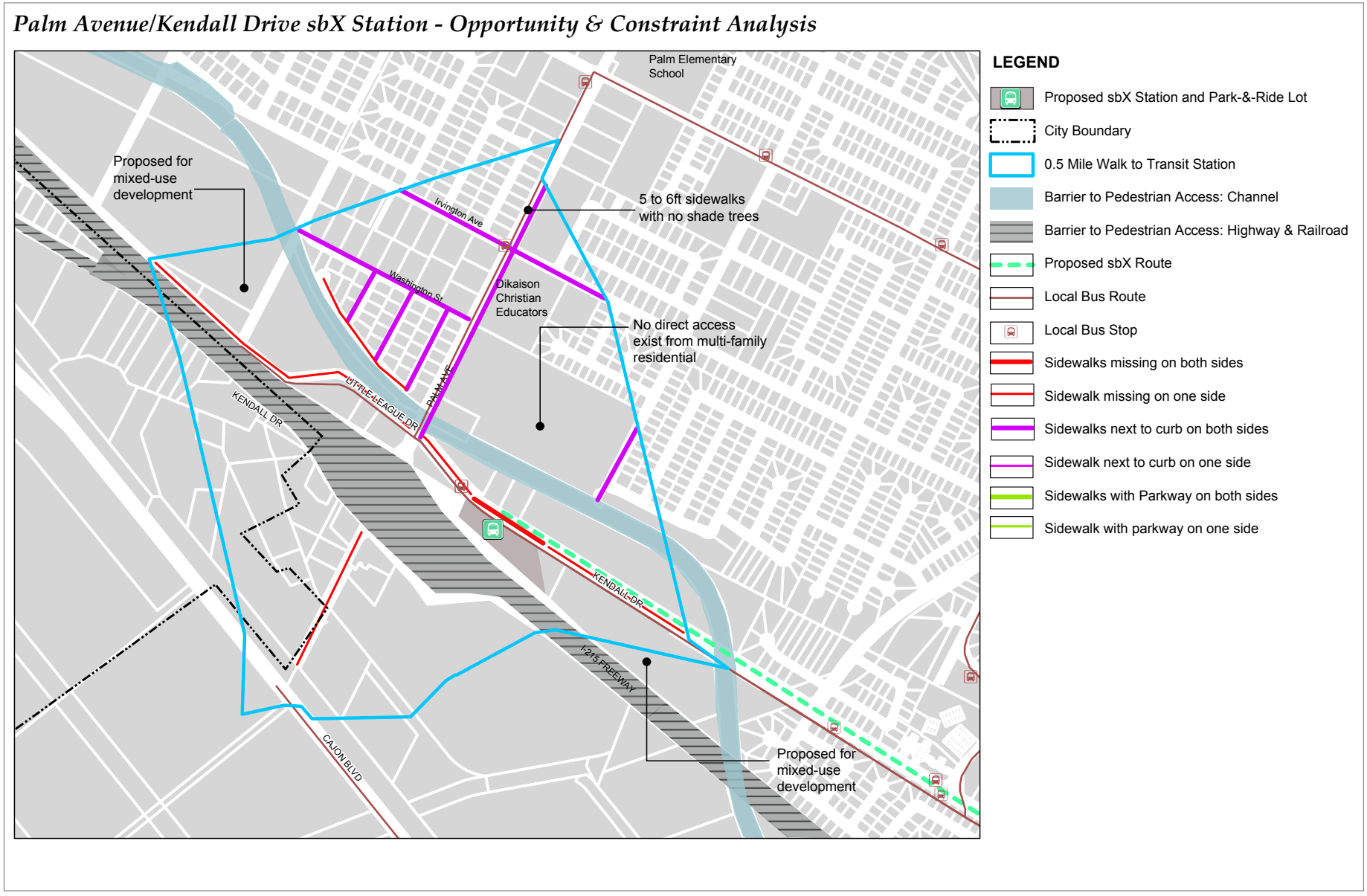


FIGURE 1.45 **PALM AVENUE SBX STATION PEDESTRIAN ANALYSIS**



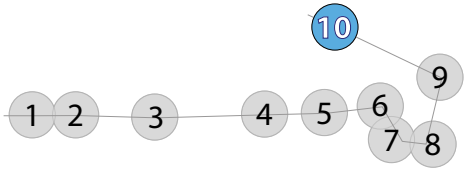


FIGURE 1.46 **TYPICAL SECTION - KENDALL AVENUE**

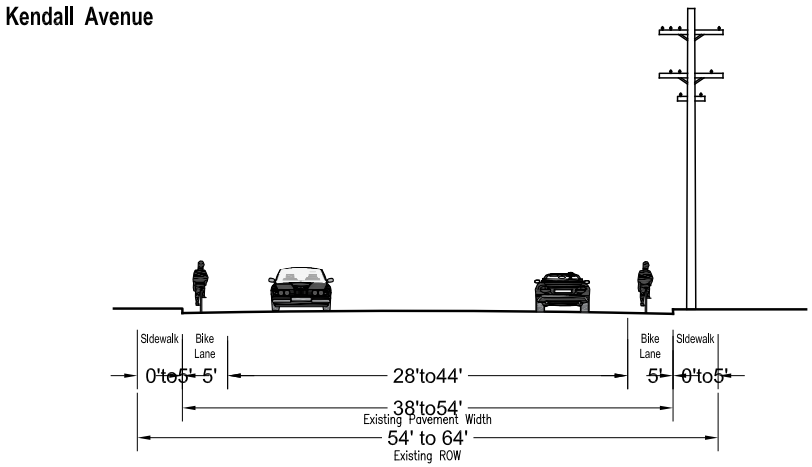
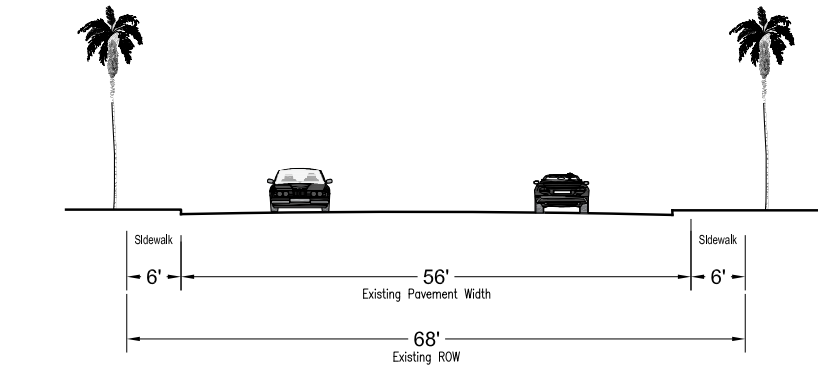
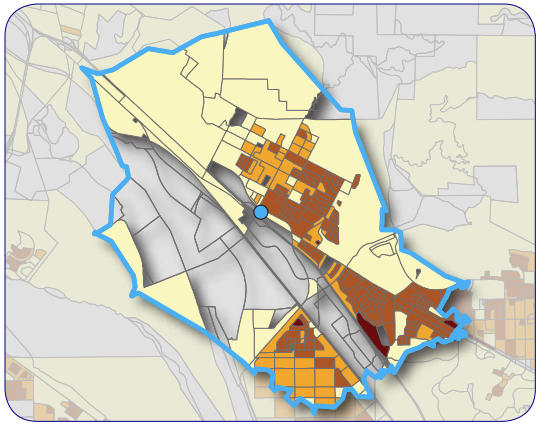
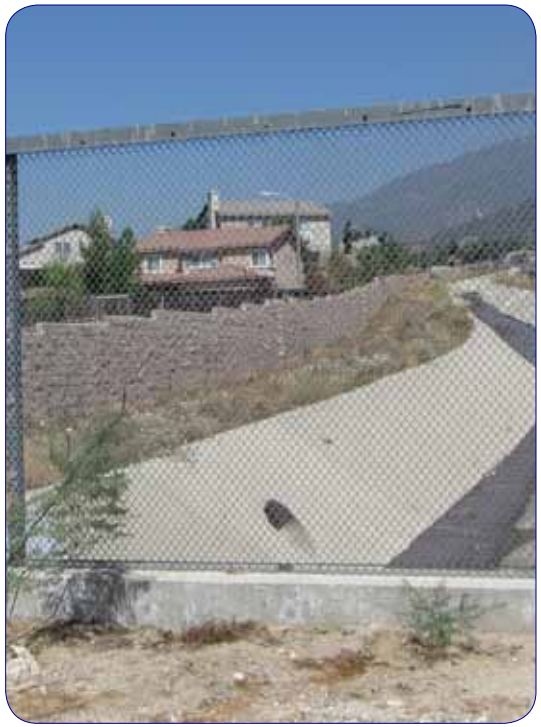


FIGURE 1.47 **TYPICAL SECTION - PALM AVENUE**





Interstate creates physical barrier to access for residents south of station



Site of planned Class I facility north of station area

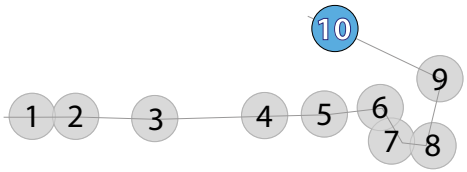


TABLE 1.20 **EXISTING BICYCLE FACILITIES**

Street	Chesnut Ave Path	Kendall Dr	Campus Pkwy	Devils Canyon Rd - Northpark Blvd	University Pkwy
Segment	**Ohio Ave to Irvington Ave**	**Palm Ave to Little Mountain Dr**	**Kendall Dr to Devils Canyon Rd**	**Ben Canyon Rd to Westwind Dr**	**Northpark Blvd to State St**
Existing Facility Type	Class I	Class II	Class II	Class II	Class II
Speed and Condition of Vehicular Traffic	N/A	◑	◑	◑	◑
Pavement Condition	○	◔	○	○	○
"Door Zone" and Driveway Conflicts	○	○	○	○	○
Transit Service and Waiting Environment in Corridor	N/A	○	◔	◔	◔
Amount of Key Attractions	◕	◕	○	○	○
Amount of Bike Facility Striping or Signage	○	◑	◑	◑	◑

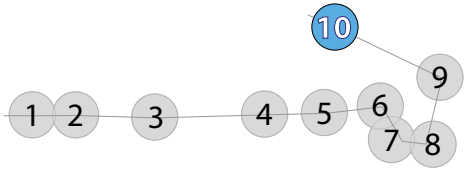
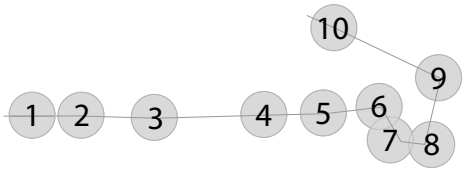


TABLE 1.21 **EXISTING PEDESTRIAN FACILITIES**

Street	Kendall Dr	Palm Ave		Irvington Ave	Washington St	Other Residential Streets
Segment		North of Kendall Dr	South of Kendall Dr			
Sidewalk/Parkway Width	&		&		&	
Sidewalk Width	&					
Sidewalk Condition						
Sidewalk and/or Parkway Location	&					
Crosswalks						N/A
Curb Ramp						
Street Trees Location						
Raised Median				N/A	N/A	N/A
Utility Poles and wires			&			
Lighting						
Street Furniture						
Wayfinding Signage in public realm						



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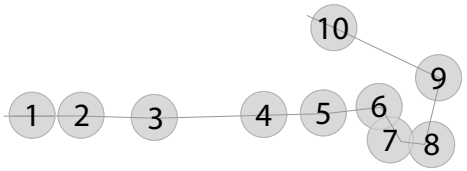
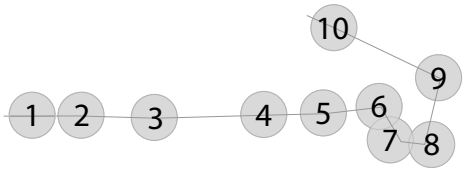


2 Best Practices

This chapter presents best practices designed to improve the attractiveness of non-motorized transportation facilities within station catchment areas. The elements presented in this section seek to create environments in which bicycling and walking to transit stops and stations are convenient transportation options and where non-motorized transportation is safe and comfortable.

This chapter is organized as a toolkit with the following sections:

- 2.1 Sidewalks - Sidewalk width, street furniture, landscaping, driveways, and street lighting
- 2.2 Intersections - Crosswalks, curb extensions, curb ramps, median crossing islands, triangular median islands, pedestrian push button, pedestrian countdown signal, bicycle detection, intersection crossing markings, bike box, and advance stop bar / yield line
- 2.3 Traffic Calming - Curb radii reduction, landscaped medians, speed humps / speed tables, chicanes / chokers, speed feedback signs
- 2.4 Bicycle Facilities - Bicycle paths, bicycle lanes, bicycle routes, bicycle boulevards, on-street parking, wayfinding signage, bicycles on transit, roadway hazards, undercrossings / overcrossings, and bicycle signals
- 2.5 Transit Stops and Stations - Shelter, seating, trip information, trash container, bicycle storage, security, and wayfinding signage



2.1 Sidewalks

The following section presents best practices in sidewalk design and maintenance to improve access to transit stops and stations by walking.

Sidewalks should be wider than four feet in areas with high pedestrian volumes.

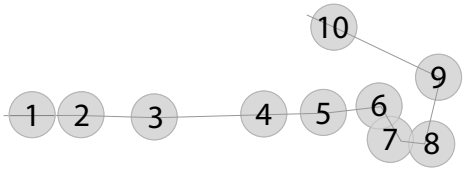
Sidewalk Width and Clear Pathways

A continuous and well-connected sidewalk network creates a safe and more comfortable environment for pedestrians. Sidewalks should be at least four feet wide and wider in areas with high pedestrian volumes. Obstructions such as utility boxes and newspaper racks should be located outside of the path of travel to provide access for persons with disabilities. Sidewalks can be constructed from concrete or decorative pavers, such as bricks, which creates a more aesthetically pleasing streetscape. Concrete sidewalks cost approximately $90 per linear foot to install and the cost to install sidewalks using decorative pavers varies by material.

Street furniture on sidewalks acts as a buffer between pedestrians and vehicular traffic.

Street Furniture

Providing street furniture on sidewalks acts as a buffer between pedestrians and vehicular traffic. Benches, water fountains, and bicycle parking racks are recommended types of street furniture because they address needs that a pedestrian may have, such as a place to rest. Street furniture should be placed outside of the walking zone as to not create a hazard to pedestrians. The cost to install street furniture varies by type and among vendors.



Street trees can provide shade for people walking and gathering on the sidewalk.

Driveways with a "right-in right-out" design reduce the number of conflict points between automobiles and pedestrians.

Pedestrian scale lighting creates a more comfortable walking environment.

Landscaping

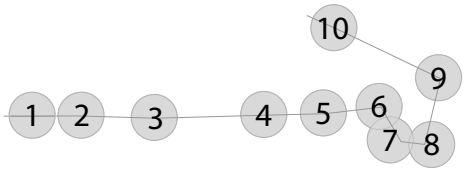
Installing sidewalk landscaping also creates a buffer between pedestrians and vehicular traffic. Landscaping can make a streetscape more visually appealing and street trees can provide shade for people walking and gathering. Costs of sidewalk landscaping include additional water and maintenance, which can be a challenge for implementation. Drought tolerant plants can reduce maintenance costs because they require less water.

Driveways

Improving the design and minimizing the frequency of driveways can reduce conflicts between vehicles and pedestrians. Reducing driveway width and tightening curb radii causes motorists to drive more slowly. Converting driveways to a "right-in right-out" design reduces the number of conflict points between automobiles and pedestrians. Providing a level sidewalk across driveways improves access for persons with disabilities.

Street Lighting

Street lighting improves streetscapes by increasing security for pedestrians and increasing visibility for both bicyclists and pedestrians. Streetlights should be installed on both sides of the street and the level of lighting should be consistent throughout the segment. Providing pedestrian scale lighting creates a more aesthetically pleasing and comfortable environment to walk in. Intersections often require additional lighting to allow motorists to see pedestrians crossing.



2.2 Intersections

The following section presents best practices for intersection design to improve safety and convenience in walking and bicycling to transit stops and stations.

Marked crosswalks indicate to motor vehicles where pedestrians have right-of-way and where to yield.

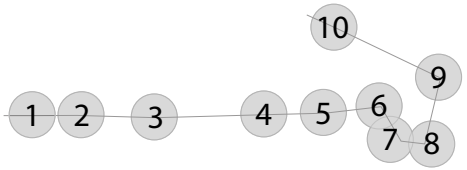
Crosswalks

Installing crosswalks helps pedestrians to identify ideal locations at which to cross a street. Marked crosswalks also indicate to motorists where pedestrians have right-of-way and where to yield. Crosswalks should be highly visible to both drivers and pedestrians and can be installed with basic striping or decorative pavers. The cost of striping a typical high visibility crosswalk is approximately $600 per crosswalk. The cost of installing decorative crosswalks varies by size and materials. Crosswalks can also be supplemented with in-pavement flashing lights or freestanding beacons to increase visibility, which is particularly important for mid-block crossings.

Curb extensions can have decorative pavers and landscaping.

Curb Extensions

A curb extension is a portion of the sidewalk that is extended into the parking lane at intersections. This reduces the distance that pedestrians need to walk to cross the street, makes pedestrians more visible to motor vehicles, and causes drivers to reduce speeds by narrowing the roadway. Curb extensions must be installed with curb ramps that comply with ADA standards (see following page). Curb extensions are typically constructed with concrete, but can have decorative pavers and landscaping, as well.



Curb ramps should be installed at each crossing approach.

Curb Ramps

Curb ramps allow persons in wheelchairs, with walkers, with strollers, and with disabilities convenient access to the sidewalk from the street. The Americans with Disabilities Act (ADA) requires curb ramps to be installed at all locations where pedestrians cross. Curb ramps for each crossing approach are recommended rather than one curb cut per corner so that visually impaired persons have better orientation. Warning strips should be installed on all ramps. Curb ramps cost approximately $5,000 each to construct.

Median crossing islands allow pedestrians to focus on crossing one direction of traffic at a time.

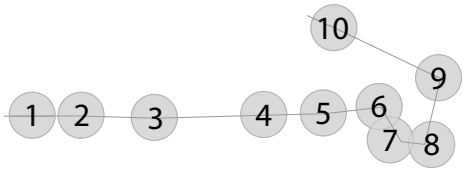
Pedestrian Refuge Islands

Medians are elevated barricades that divide the roadway down the center. Pedestrian refuge islands can provide a protected space for pedestrians crossing the street and allow pedestrians to focus on crossing one direction of traffic at a time. They are especially recommended for wide streets and arterials that pedestrians may have trouble crossing before the end of the signal phase. The cost to construct a pedestrian refuge island is approximately $20,000.

Triangular median islands allow pedestrians to cross right turn slip lanes and wait in the median until they have the right-of-way to cross.

Triangular Median Islands

Installing triangular or “porkchop” median islands provides increased safety and convenience for pedestrians crossing right turn slip lanes. Pedestrians can cross the slip lane and wait in the median until they have the right-of-way to cross the street. Striping crosswalks in combination with triangular median islands increases the visibility of pedestrians to motorists. The cost to construct triangular medians depends on the size of the island.



Pedestrian push buttons allow pedestrians to trigger the signal when motor vehicles are not present.

Pedestrian Push Button

Installing pedestrian push buttons at signalized intersections allows pedestrians to trigger the signal when motor vehicles are not present. Push buttons are appropriate for arterial and congested streets because they can allot more time to pedestrians only when they are present and thus reduce vehicular delay. Push buttons can be enhanced with audible messages for visually impaired persons.

Pedestrian countdown signals display to pedestrians crossing the street how much time is left until the signal phase changes.

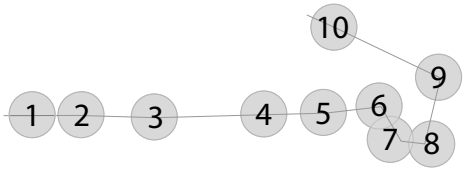
Pedestrian Countdown Signal

Pedestrian countdown signals display to pedestrians crossing the street when they have enough time to enter the crosswalk and how much time they have left to cross the street. Countdown signals improve pedestrian safety by helping pedestrians to finish crossing before the end of the signal phase. Countdown signals cost approximately $10,000 to install.

Bicycle detection at signalized intersections can be managed using bicycle loop detectors.

Bicycle Detection

Bicycle detection at signalized intersections allows bicyclists to trigger the signal when motor vehicles are not present. Detection can be in the form of bicycle loop detectors or video detection with higher sensitivity. Bicycle loop detectors cost approximately $3,000 each to install. If a City already uses video detection for vehicular traffic, increasing the sensitivity may not require additional costs.



Intersection crossing markings help bicyclists with proper lane positioning.

Intersection Crossing Markings

Pavement markings through intersections help bicyclists with proper lane positioning and alert motorists to the presence and path of bicyclists. Since intersection crossing markings make bicyclist movements more predictable, they also have the potential to reduce collisions between bicyclists and motorists. The cost to stripe intersection crossing markings is approximately $3,500 each.

Bike boxes allow bicyclists to position themselves in front of the traffic queue during red signals.

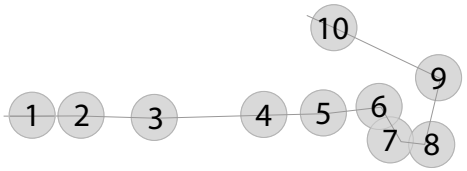
Bike Box

Bike boxes allow bicyclists to position themselves in front of the traffic queue during red signals. When the signal changes to green, bicyclists can move first into the intersection and thus reduce conflicts with vehicles turning right. The cost to stripe a bike box depends on the size of the box and whether or not the box is painted a “fill color.” Striping costs approximately $2 per linear foot.

Advance stop bars should be installed with accompanying signage.

Advance Stop Bar / Yield Line

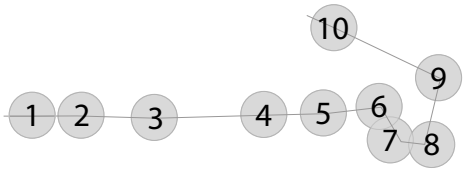
Advance stop bars or yield lines are installed up to 50 feet prior to marked crosswalks. Striping advance stop bars and yield lines helps show motorists where they should stop in relation to the crosswalk to provide pedestrians with increased safety while crossing the street. They also make pedestrians crossing more visible to drivers. Both treatments should be installed in combination with signage to make motorists more aware of crosswalks. Advance stop bars and yield lines cost approximately $1,000 to $2,000 to install.



Bicycle signals provide a bicycle only signal phase for bicyclists to enter and exit bicycle facilities without conflicts with motor vehicles.

Bicycle Signals

Bicycle signals can be installed where bicycle facilities with high volumes of bicyclists intersect other roadways, such as at the terminus of a bicycle path. Bicycle signals provide a bicycle only signal phase so that bicyclists can enter and exit the bicycle facility without conflicts with motorized vehicles and provide adequate timing for bicyclists to cross an intersection.



2.3 Traffic Calming

This section provides best practices in traffic calming treatments to create safer environments for bicyclists and pedestrians.

Reducing the curb radius at intersections causes motorists to lower speeds when initiating a turn.

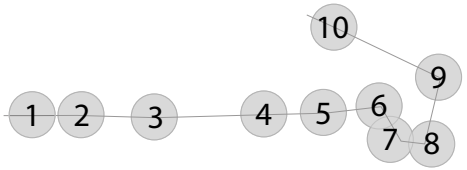
Curb Radii Reduction

Wide curb radii can often result in motorists traveling at high speeds when initiating turns. Reducing the curb radius at intersections causes motorists to slow down, minimizes the distance pedestrians must cross, increases the visibility of pedestrians to drivers, and reduces the risk of right hook collisions between bicyclists and vehicles. Depending on the location's conditions, reconstructing a curb radius can cost between $5,000 to $30,000 at each corner.

Landscaped medians lead to reduced speeds and create a more aesthetically pleasing streetscape.

Landscaped Medians

Medians are elevated barricades that divide the roadway down the center. They have the potential to reduce speeds by narrowing the visual width of the roadway. This effect is enhanced by the addition of landscaping, such as trees and bushes, which also creates a more aesthetically pleasing streetscape. Medians should be constructed without obstructing pedestrian and bicycle access. Costs of landscaping include additional water and maintenance, which can be a challenge for implementation. Drought tolerant plants can reduce maintenance costs because they require less water.



Crosswalks can be installed on speed tables to reduce speeds and make pedestrians more visible to drivers.

Speed Humps / Speed Tables

Speed humps and speed tables are raised, paved portions of the street that extend from curb to curb and are intended to slow vehicle speeds. Speed tables have flat tops and can be used as raised crosswalks, which both slow traffic speeds, make pedestrians more visible to drivers, and remove the need to install curb ramps. Speed humps and speed tables can be constructed with asphalt, concrete, or decorative pavers. The cost to install speed humps and speed tables varies by size and material.

Chokers can reduce vehicle speeds by visually narrowing the roadway and requiring vehicles to shift their positions horizontally.

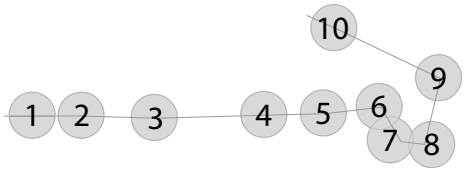
Chicanes / Chokers

Chicanes and chokers are curb extensions that alternate from one side of the street to the other. These treatments can reduce vehicle speeds by visually narrowing the roadway and requiring vehicles to shift their positions horizontally. If supplemented with landscaping, chicanes and chokers can also create a more pleasant walking environment and a buffer between the sidewalk and the street. The cost to install chicanes and chokers depends on their size, the site conditions, and the decision to install landscaping.

Speed feedback signs display a driver's speed as compared to the posted speed limit.

Speed Feedback Signs

Speed feedback signs display a driver's speed as compared to the posted speed limit on a particular segment. By showing when motorists are exceeding the posted speed limit, speed feedback signs can cause drivers to slow their speeds. A typical speed feedback sign costs approximately $10,000 to install.



Traffic circles slow the flow of vehicular traffic into intersections.

Traffic Circles

Traffic circles are circular islands in the center of intersections that control the flow of traffic. Drivers that enter the traffic circle must travel in a counter clockwise direction around the island to get to the other side. Intersections with traffic circles can be signalized, stop-controlled, or yield-controlled. Traffic circles slow the flow of vehicular traffic into intersections, which creates a more safe and comfortable environment for bicyclists and pedestrians. Studies have shown traffic circles improve air quality and roadway circulation by eliminating the stop-and-start movements associated with a four-way stop. The cost to construct a traffic circle varies by size and materials. Landscaped traffic circles are generally more expensive because of maintenance costs.

2.4 Bicycle Facilities

The following section presents best practices in bicycle facilities and treatments that enhance safe and convenient bicycle travel.

Bicycle paths should have safe and convenient connections to transit stops and stations.

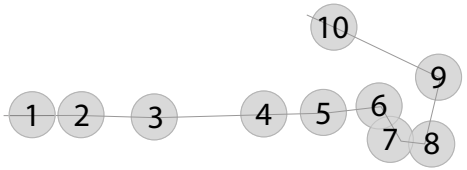
Bicycle Paths

Bicycle paths provide a completely separated right-of-way for exclusive use by bicyclists and pedestrians with cross-flow traffic minimized. Bicycle paths should provide safe and convenient connections to other existing facilities and to transit stops and stations. Wayfinding at decision points and intersecting facilities can help bicyclists and pedestrians know when to exit the paths and to navigate the network (see page 17). Bicycle paths cost approximately $800,000 per mile to construct.

Bicycle lanes can be located adjacent to a curb or on-street parking.

Bicycle Lanes

Bicycle lanes are one-way striped travel lanes for exclusive use by bicyclists on a street or highway. Bicycle lanes should be at least five feet wide and can be located adjacent to a curb or on-street parking. Bicycle lanes should be kept clear of debris and well-maintained to increase safety of bicyclists. The cost to install bicycle lanes is approximately $40,000 per mile.



Shared lane markings can create a safer bicycling environment by alerting motorists to the presence of bicyclists.

Bicycle Routes

Bicycle routes are low volume streets that are shared with motor vehicles. Shared lane markings and "Share the Road" signage is recommended to create a safer bicycling environment by alerting motorists to the presence of bicyclists. Shared lane markings also help bicyclists with proper lane positioning when on-street parking is present. Bicycle routes without shared lane markings cost approximately $15,000 per mile and bicycle routes with shared lane markings cost approximately $25,000 per mile to install. Additional signage costs approximately $500 per sign.

Bicycle boulevards are bicycle routes enhanced with traffic calming to increase safety for both bicyclists and pedestrians.

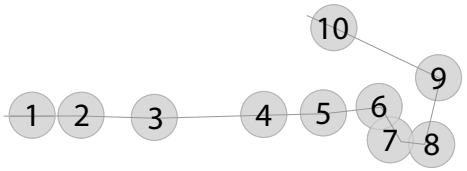
Bicycle Boulevards

Bicycle boulevards are bicycle routes that are enhanced with traffic calming to increase safety for both bicyclists and pedestrians. They are typically located on neighborhood streets that are parallel to an arterial street that provides access to the same destinations. Bicycle boulevards should be well-connected for convenient travel. Bicycle boulevards cost approximately $30,000 per mile to construct, but can cost significantly more depending on the level of traffic calming treatments applied.

On-street parking should be in the form of parallel parking or back-in angled parking.

On-street Parking

Streets with bicycle facilities should be designed to enhance the comfort and safety of bicyclists. On-street parking should be in the form of parallel parking or back-in angled parking to reduce conflicts between bicyclists and motor vehicles. Typical head-in diagonal parking creates potential conflicts as it is challenging for drivers to see bicyclists when backing out of spaces. Converting parking space orientation costs approximately $2 per linear foot.



Wayfinding signage can help guide both bicyclists and pedestrians to key destinations.

Wayfinding Signage

Wayfinding signage can help guide bicyclists, pedestrians, and other road users to key destinations, such as transit stops and stations, and can orient bicyclists with the bicycle network. Wayfinding signage should be placed at decision points and intersecting facilities, and should be highly visible and consistent throughout the jurisdiction. To ease navigation at night, wayfinding signage should also be appropriately reflective. The cost to install wayfinding signage is approximately $500 per sign.

Trains can supply bicycle storage areas in specific cars and can maximize space utilization by hanging bicycles vertically.

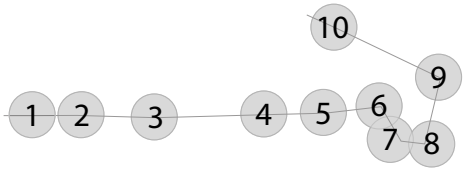
Bicycles on Transit

Combining bicycling and transit trips can offer a high level of mobility that is comparable to travel by automobile. In order to increase the feasibility of combining trips, transit providers should allow bicycles onboard transit vehicles. Buses often provide bicycle racks on the front of the vehicles and trains can supply bicycle storage areas in specific cars.

Sewer grates should be clearly marked so that bicyclists have time to avoid them.

Roadway Hazards

When trash and debris collect on the roadway, it increases the risk of bicyclists falling and getting injured. In order to minimize hazards to bicyclists, streets should be paved and swept regularly. Sewer grates should be clearly marked so that bicyclists have time to avoid them or be installed with bicycle friendly designs that bicycle tires do not get trapped in. Utility covers should be installed outside of bicyclists' path of travel. Railroad tracks should be enhanced with treatments to allow bicyclists to cross at 90 degree angles.

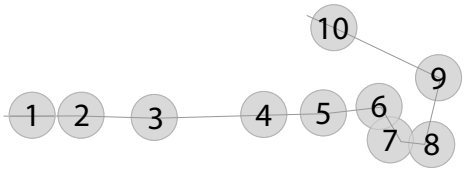


Overcrossings can provide access over railroad tracks for a more direct path of travel.

Overcrossings / Undercrossings

Overcrossings and undercrossings can provide separated rights-of-way for bicyclists and pedestrians where roadway widths are constrained or there are barriers to travel, such as railroad tracks. These facilities reduce conflicts with vehicles and provide more direct paths of travel. Both types of crossings must be properly designed to encourage their use. Overpassings should be convenient so that bicyclists and pedestrians utilize them and undercrossings need to be well lit and free of graffiti to create a sense of security. Both facilities are recommended as a last resort due to the high cost of construction, which varies depending on the site conditions.

Implementing Agency: City



2.5 Transit Stop and Station Design

The following section presents best practices in bicycle and pedestrian access to transit stops and stations, including design and circulation considerations.

Shelter should be provided at all transit stops and stations to protect commuters from sun and inclement weather.

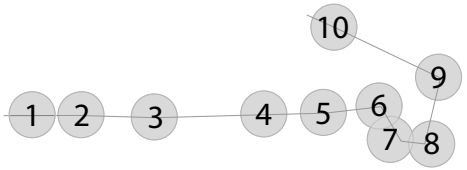
Shelter

Providing a shelter at all transit stops and stations allows commuters protection from sun and from inclement weather. Shelters should be established outside of the pedestrian walking zone and with sufficient room for bus wheelchair lifts to load and unload passengers. If there is not adequate space to install a dedicated shelter, there should be awnings or overhangings on the surrounding buildings for commuters to stand beneath.

Seating should be located within visual range of the transit driver and under the provided shelter.

Seating

Benches or seats should be provided at all transit stops and stations for commuters to rest while waiting for the bus or train. Elderly and disabled passengers often have difficulty standing for long periods. Seating should be installed within close proximity of transit stops and stations and under the provided shelter if feasible.



Transit providers should install timetables and maps at transit stops and stations.

Trip Information

At a minimum, all transit stops and stations should provide signage displaying the route number. Providing timetables and maps are recommended to increase convenience for commuters with transfers and those that are less familiar with the network, such as a bicyclist with a flat tire in an unfamiliar location. For major transit stations and terminals, providing passengers with real time information on arriving transit vehicles is a valuable customer service improvement.

Providing trash containers creates a sense of security at transit stops and stations.

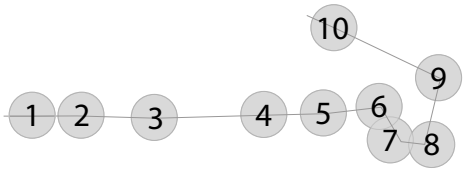
Trash Container

Clean transit stops and stations increase the sense of security that commuters feel when waiting for a bus or train and reduce the likelihood of litter in the area. Providing ample trash containers gives riders and others a place to put their trash to keep waiting areas well-maintained.

Short- and long-term bicycle parking should be provided at transit stops and stations to increase convenience of combining trips.

Bicycle Storage

Providing bicycle storage at transit stops and stations allows commuters to combine their trips with greater convenience. Short-term bicycle racks are appropriate for bus stops where storage space in the public right-of-way is limited. Long-term storage facilities, such as lockers or enclosed storage rooms, should be provided at train stations in addition to bicycle racks for commuters that require all-day storage. Both short- and long-term parking facilities should be located near loading zones and, when possible, in view of station attendants. Racks cost approximately $200 per rack and lockers cost approximately $2000-$3000 per locker to install.



Lighting can increase commuters' sense of security at transit stops and stations.

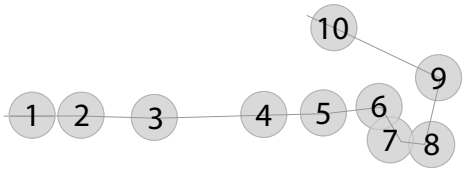
Security

Installing lighting at transit stops and stations can increase the sense of security that commuters feel when waiting for buses and trains. Lighting should be located as close as possible to the waiting areas without blocking pedestrian access. In addition to lighting, video surveillance cameras and emergency phones can also be installed to improve security.

Wayfinding signage at transit stops and stations can help users locate bicycle storage areas and loading zones.

Wayfinding Signage

Wayfinding signage at transit stops and stations helps users navigate the area and locate amenities, such as bicycle storage areas and passenger loading zones. Providing passengers with this information improves access to transit by removing barriers of potential users.



3 Public Outreach

3.1 Intercept Surveys

As part of the public outreach process, SANBAG and the consultant team conducted intercept surveys at each of the 10 stations in the study to learn which bicycling and walking improvements commuters would like to see implemented. Students from Cal State San Bernardino were hired as surveyors through the University's careers website, as well as through communications with professors in the transportation, urban planning, and geography departments.

On September 9, 2011, students attended a training session with the consultant team to learn how to conduct the intercept surveys and determine a schedule. Students conducted the majority of the surveys in September 2011, but interviewed additional commuters in October at stations that lacked an adequate number of responses. Two students were placed at each station, at least one of which was bilingual in English and Spanish. Survey forms were also written in both languages.

Student surveyors noted that at Metrolink Stations commuters sat in their cars until the train arrived, making it difficult to interview them. At the San Bernardino station in particular, commuters sat in the train because it was the start of the line. At the Hunts bus stop, people were mostly exiting the bus and thus didn't want to stop to talk. At the Anderson stop, there were very few people to interview since it is serves Cal State San Bernardino, but school had not yet started for the year.

Students interviewed a total of 250 commuters at the 10 stations. **Figure 3.1** shows the number of respondents from each station. **Table 3.1** displays the breakdown of responses by station, as well as the mode commuters used to arrive at each station. The Rancho Cucamonga Metrolink Station had the highest number of commuters willing to answer a survey, while the Palm bus station had the lowest number of respondents. The most common way respondents arrived at the stations was by motorized vehicle, either driving themselves (35 percent), getting dropped off (20 percent), or taking the bus (20 percent). Another 20 percent of commuters walked to the station, while only four percent of people rode bicycles.

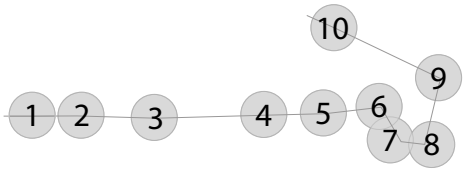
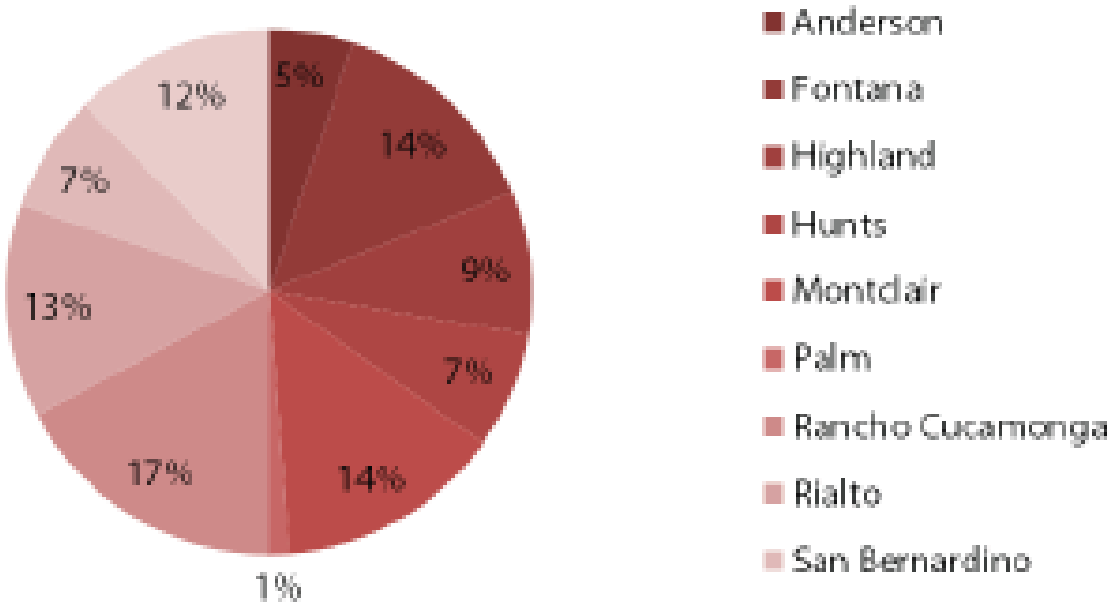


FIGURE 3.1: TOTAL SURVEY RESPONDENTS



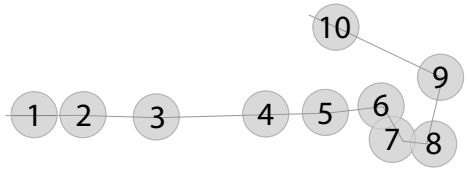


TABLE 3.1 : SURVEY RESPONDENT COMMUTE MODE TO STATION

STATION	MODE						TOTAL RESPONDENTS
	BIKE	WALK	BUS	DROVE	DROPPED OFF	OTHER	
Anderson		13					13
Fontana		2	16	7	6	3	34
Highland		16	6				22
Hunts		7	8		3		18
Montclair			6	26	1	2	35
Palm		3					3
Rancho Cucamonga	2		7	25	9		43
Rialto	2	4	2	10	14	1	33
San Bernardino			5	9	4		18
Upland	6	2		11	12		31

In addition to asking how respondents arrived at the stations, surveyors asked how many would consider biking or walking to the stations (if they did not already) and why/why not. **Table 3.2** presents this information. More respondents would consider walking/biking than would not consider it. The main reasons for both considering and not considering walking/biking is proximity; respondents either live close enough or live too far away. Many commuters also noted the need for additional bicycle and pedestrian facilities to influence their decisions.

TABLE 3.2 : PRIMARY REASONS RESPONDENTS WOULD/WOULD NOT CONSIDER WALKING/BIKING

STATION	% RESPONDENTS WOULD CONSIDER WALKING/ BIKING	PRIMARY REASONS	% RESPONDENTS WOULD NOT CONSIDER WALKING/BIKING	PRIMARY REASONS
Anderson	100%	The bike trail	0%	-
Fontana	27%	Exercise, when it is not as hot, live close to station	73%	Too far, health issues, lack of secure bike parking
Highland	59%	If there were bike facilities, if it was more convenient	41%	Too old, too far, health issues
Hunts	36%	-	64%	Too far
Montclair	26%	If there were bike lanes, if there was secure bike parking	74%	Clothes, health issues, too far, not enough time
Palm	100%	Live close to stop	0%	-
Rancho Cucamonga	30%	If lived closer	70%	Too far, clothes, too old, lack of facilities, too cold
Rialto	45%	Less expensive, health, if lived closer to station	55%	Too far, not convenient, doesn't work with schedule
San Bernardino	28%	Save money, if there were more facilities, if there was more lighting	72%	Too far
Upland	55%	Save money, close enough to home, health, if had the right clothes, save gas, don't have a car	45%	Too hot, nice clothes, too far, not convenient, rain

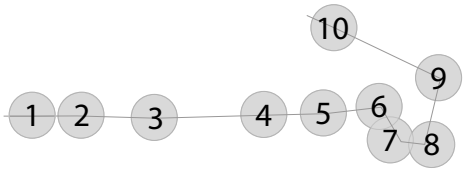
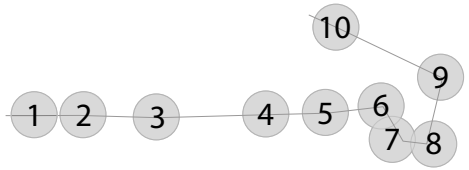


Table 3.3 displays non-motorized transportation improvements that survey respondents identified as desirable at each station. The most common improvements listed include bike lanes, clean stops/stations, increased bus service, and more shade.

TABLE 3.3 : RESPONDENT-IDENTIFIED IMPROVEMENTS

IMPROVEMENTS	ANDERSON	FONTANA	HIGHLAND	HUNTS	MONTCLAIR	PALM	RANCHO CUCAMONGA	RIALTO	SAN BERNARDINO	UPLAND
ROUTE IMPROVEMENTS										
More / better sidewalks					X			X		
Crosswalks								X		
Bike lanes		X			X		X	X	X	X
Street maintenance / road conditions								X	X	
Sidewalk quality										X
Lighting				X				X	X	X
Fountains								X		
Bike Parking		X		X					X	X
More sidewalks					X					X
Clean stop / station		X	X	X	X	X				
Delay alerts / automated displays		X			X					
Shelter / shade		X		X						
Traffic signals		X					X			
Station attendant		X								
General Improvements										
Crosswalks										X
More bus stops		X	X		X		X	X	X	X
More bus service	X	X	X	X	X	X	X	X	X	X
Bike Lanes	X	X	X	X	X		X	X	X	X
Bike parking		X								X
Access to shopping centers								X		
Shade	X			X	X	X		X	X	X
Sidewalks		X						X	X	X
Trails / paths	X						X		X	



IMPROVEMENTS	ANDERSON	FONTANA	HIGHLAND	HUNTS	MONTCLAIR	PALM	RANCHO CUCAMONGA	RIALTO	SAN BERNARDINO	UPLAND
ROUTE IMPROVEMENTS										
Street maintenance / road conditions	X			X						X
Seating areas										X
Shelters	X		X				X			
Clean stop / station		X	X		X	X				
Information on Alternative Trans.					X					
More room for bikes on buses					X					
Traffic signals		X								
Lighting			X	X						

3.2 Walking and Bicycling Audits

The consultant team organized a series of walking and bicycling "audits" as part of this effort. These exercises were conducted over the course of two days in and around the Upland and San Bernardino Metrolink Stations.

Led by the consultant team, participants from the study area cities, Omnitrans, Metrolink, and other stakeholders toured the station areas, identified non-motorized network deficiencies, brainstormed solutions, and documented other barriers to non-motorized access to the transit stations.

Combined with independent fieldwork conducted at each of the stations, the findings formed the basis for a number existing conditions observations. A full documentation of the audit forms completed as part of this project will be available as an Appendix to the project Final Report.

3.3 Public Workshops

A total of four public workshops were held over the course of this project. Two of the workshops were held early in the process in Fontana and Rancho Cucamonga to solicit comments from the public regarding their opinions bicycling and walking issues in and around the station areas. Later in the process, workshops were held in San Bernardino and Upland to present the proposed improvements in the East and West Valley portions of the study area, respectively.

Notice of the workshops was given over a month in advance, and advertised on City and SANBAG websites, local community and senior, centers, as well as several other local sources depending on location.

San Bernardino Associated Governments

Improving Transit Access for Bicyclists and Pedestrians

Join us for a Biking and Walking Tour!

The San Bernardino Associated Governments (SANBAG) is working on improving access to buses and trains throughout the Inland Empire. The project will guide the development of bicycle facilities and programs in the area over the next several years.

You are invited to join us for a half-day of active touring and research to provide input on biking in the study area and to help identify locations where bicycle facilities are most needed.

When
Thursday, November 3, 2011
10:00am - 3:00pm

Where
Montclair Metrolink Station

Meet here!

Our bike route will take us to the Upland Metrolink Station via a mix of Class I, II, and III facilities. The ride will be approximately 6 miles in length and will last 2 hours. See the attached handout for more details.

We will break for lunch in Downtown Upland, and will conduct our walk audit through Downtown Upland from 1-3:00pm. You will have to secure your bike during the walk audit.

There are several Metrolink trains available shortly after the conclusion of the tour to transport you back to Montclair or other Metrolink destinations (check published schedules for details).

Please bring a working bike, bike lock, and helmet - They are required to participate!

Contacts

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jwalcek@sanbag.ca.gov

SCAG SANBAG alta GRUENASSOCIATES

The most common theme expressed at each of these workshops was a desire for additional bicycle facilities throughout the study area, particularly Class I bike paths and additional high-quality bicycle parking. Participants also expressed a desire for safer pedestrian environments around the transit stations, through greater lighting and enhanced security patrols.

A full documentation of public comments compiled as part of this project will be available as an Appendix to the project Final Report.

3.4 Website Comments

In addition to the above measures, project documents were posted on the SANBAG website, and visitors were encouraged to make use of a project-specific e-mail address to submit their comments on the project documents, as well as general comments related to non-motorized transportation in the study area.

The e-mail address was monitored daily, and specific requests for infrastructure improvements were incorporated into the project recommendations, including audible pedestrian countdown timers for visually-impaired residents, new or improved mid-block crossings along the Pacific Electric Trail, and the creation of cycletracks and buffered bike lanes throughout study area communities.

A full documentation of website comments compiled as part of this project will be available as an Appendix to the project Final Report.

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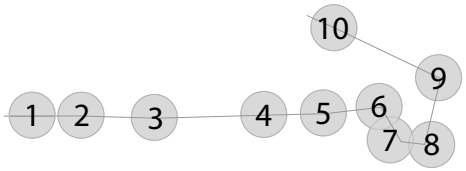


4 Recommended Improvements

This chapter presents proposed facility improvements on specific corridors leading to the MetroLink stations. These recommended improvements are intended to make non-motorized access to transit more comfortable and accessible for all skill levels and trip purposes. Each station has a description of the recommended improvements for cyclists and pedestrians, a visual with "call-out" boxes explaining where each improvement should be made, and a cost estimate of implementing the recommended improvements.

General Improvements

Develop a Comprehensive Wayfinding Plan

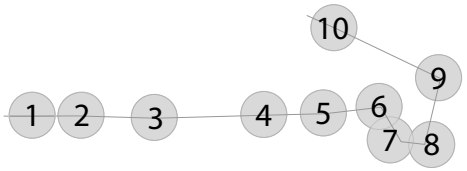
Wayfinding is a cost-effective and highly visible treatment that can improve the walking and bicycling environment. Wayfinding signs and pavement markings identify routes to pedestrians, bicyclists and motorists, provide destination and distance information, and act as a passive marketing tool that increases awareness of the walking and bicycling network.

Wayfinding Signs Tactile and Auditory Cues

Wayfinding signs displaying destinations, distances and walking and/or riding time can dispel common misconceptions about time and distance. The signs are typically placed at key locations leading to and along pedestrian and bicycle routes, including where multiple routes intersect and at key "decision points." Wayfinding signs also visually cue motorists that they are driving along a pedestrian or bicycle route and should correspondingly use caution and be courteous. In its placement of signs, cities must be aware of "sign clutter" that can diminish the effectiveness of signage overall.

Pavement Markings

A variety of pavement marking techniques can be employed to enhance the bicycle network. Markings reinforce to bicyclists that they are on a designated route and also remind motorists to drive courteously. Shared Roadway Bicycle Markings (or "sharrows") can be used on streets where dedicated bicycle lanes are desirable but not feasible due to width constraints. Shared Roadway Bicycle Markings are approved by the CA MUTCD for use in travel lanes adjacent to on-street parallel parking. A number of other innovative pavement markings are in use in cities around the U.S. These take a variety of forms, such as small bicycle



symbols placed every 600-800 feet along a linear corridor (used on Portland, Oregon's Bicycle Boulevard network) to larger-scale "BIKE BLVD" stencils used in Berkeley, California.

Prioritize Roadway Resurfacing on Designated Bikeways

While implementing bikeway facilities is important, keeping them in good condition is equally important. When the surface of a bicycle lane becomes deteriorated, not only is it a safety hazard to the bicyclist, but cyclists may be forced to ride in the motor vehicle lane. Poor roadway conditions can contribute to crashes and deter potential cyclists unwilling to risk flat tires and other mechanical problems. Roadway resurfacing should be prioritized for designated bikeways. In addition, ongoing maintenance of the on-street bikeway network should include street sweeping and periodic checks to identify areas where bike lane striping, stencils, and signs have been worn or damaged. Any signage that is missing should be replaced and any striping or stenciling that has become well worn should be refreshed. Maintenance activities should be incorporated into current road checks and by maintenance requests from the public.

More Bike Parking at Stations and Surrounding Destinations

Bicycle parking is an important feature of the bicycle network that gives bicyclists a dedicated location to store their bicycle when they reach the station or surrounding destination. Bicycle racks are the most common way to secure bicycles for a short period and can be installed within the furnishing zone of a sidewalk. Bicycle "corrals" utilize on-street space for bicycle parking in areas otherwise used for vehicular loading or parking. Bike corrals typically provide space for 4 to 10 bicycle racks and can park between 8 and 20 bicycles. They are best located in areas with high demand for bicycle parking and can be installed in parallel, perpendicular or diagonal configurations. For longer durations, some cyclists will want fully secure parking that protects the entire bicycle and all its accessories. Examples of long-term secure bicycle parking include bike lockers, Bikestations, monitored parking, restricted access parking, and personal storage.

Network Improvements, Route Selection and Prioritization

In assessing the existing conditions of a large study area such as this one, it is helpful to utilize the latest in analysis tools to identify not just specific segments of the bicycle and pedestrian network, but larger, less-defined areas of non-motorized activity.

By assessing the suitability of a particular area of the community for bicycling and walking, city staffs can better target potential non-motorized infrastructure improvements, programs, and other support facilities.

This section summarizes the inputs and analysis process of Alta's Bicycle and Bicycle Suitability Index (BSI) tool.

The Bicycle and Pedestrian Suitability Index uses a quantitative modeling approach discussed in detail in this report to identify and prioritize bicycle corridors by overlaying GIS data pertinent to a regional-level study.

The BSI model was developed to evaluate current and future activity levels in the project study area. The model essentially use a two-pronged approach to understanding activity levels in a community: a demand analysis, which includes where people live, work, play and access transit- and a supply analysis, which includes a look at roadway quality and supportive non-motorized infrastructure.

This type of analysis helps to:

- Quantify factors that impact bicycle and pedestrian activity
- Provide for a geographically informed project list
- Identify bicycle and pedestrian network gaps and corridors as potential projects
- Guide community leaders and the public on the project prioritization process
- Guide the development of new pedestrian and bicycle trip demand tools that enhance the user experience
- Maximize bikeability and walkability

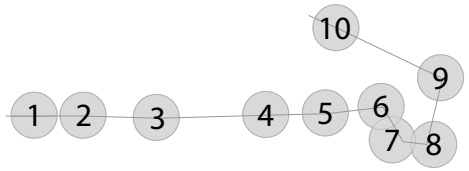
In short, the BSI helps to identify areas where non-motorized activity is most likely to be. The analysis assigns values to available GIS datasets based on their relative impact on cycling and walking. It also assigns values based on the density of features to which people are likely to bike and/or walk. Whenever possible given the dataset, this technique also assigns scores to the roadway network and can therefore be used to prioritize projects.

The metrics fall into categories of trip generators and attractors but are further categorized into the criteria of live, work, play, and transit/roadway quality. These metrics play key roles in influencing activity, and illustrate the potential for the development of successful facilities.

Using these datasets, a composite model may be developed which combines the density of intersections, presence or lack of bicycle facilities and selected roadway characteristics such as speed limits and number of lanes to identify areas highly-suited to improvements.

The analysis is based on land use and demographic data obtained from SANBAG, SCAG, and Census Bureau sources. Data was selected based on its availability, distance, and significance to non-motorized transportation.

As mentioned previously in this report, when dealing with a study area of this size, it becomes important to develop an "outside-in" approach to network recommendations. Key corridors targeted for improvements



were identified initially based on public comment and professional judgement for their ability to close gaps in the regional bicycle network and connect transit facilities to key activity centers.

By applying an additional, quantitative analysis using GIS, the project team was able to refine the project recommendations, target improvements, and maximize limited capital improvement funds to projects and corridors that would provide the greatest return on investment to influence non-motorized travel to and from the selected stations.

The figures on the following pages present a graphical interpretation of the selected inputs, model weights, and resulting GIS analysis designed to identify areas of significant potential for successful non-motorized transportation facilities.

Following the regional BSI results, a detailed breakdown of specific improvements in and around each station area is presented.

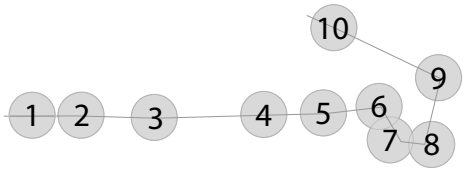
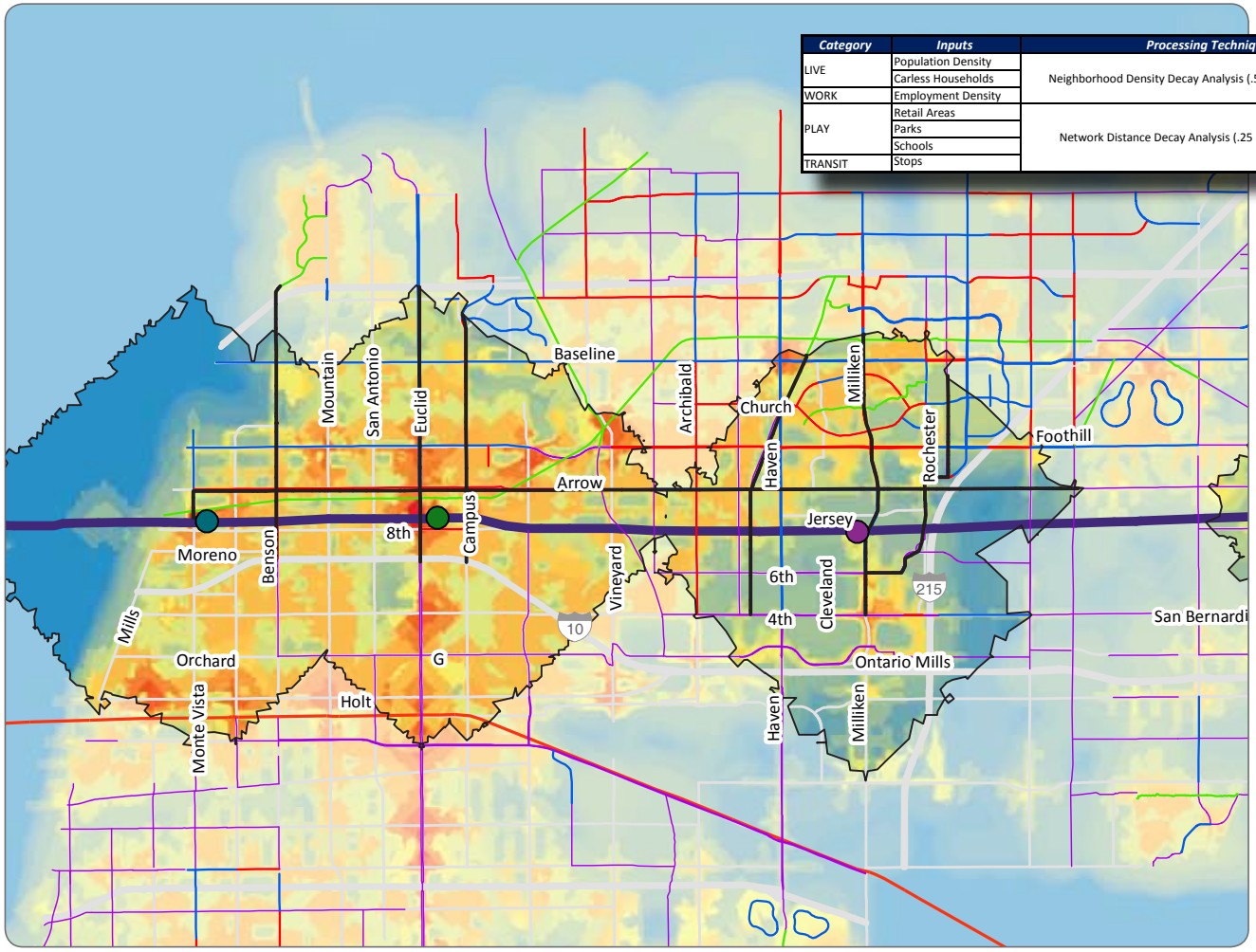


FIGURE 4.2: **ALTA BICYCLE SUITABILITY INDEX (BSI) FOR WEST VALLEY STATIONS**



BSI MATRIX LAND USES AND SCORING

Category	Inputs	Processing Technique	Base Score	Weighting
LIVE	Population Density	Neighborhood Density Decay Analysis (.5 mile neighborhoods)	1 - 5	x1
	Carless Households			x2
WORK	Employment Density			x2
PLAY	Retail Areas	Network Distance Decay Analysis (.25 and .5 mile "sheds")	.25 miles = 5; .5 miles = 3	.25 miles = x2; .5 miles = x1
	Parks			.25 miles = x1.5; .5 miles = x1.25
	Schools			.25 miles = x3; .5 miles = x2.5
TRANSIT	Stops			.25 miles = x3; .5 miles = x2.5

COMPOSITE BSI INDEX

HIGH

MEDIUM

LOW

LEGEND

- CLASS 1 BIKE PATH
- CLASS 2 BIKE LANE
- CLASS 3 BIKE ROUTE
- PLANNED SANBAG NETWORK
- IDENTIFIED PRIORITY CORRIDORS
- METROLINK ALIGNMENT
- SBX BRT ALIGNMENT
- STATIONS UNDER STUDY
- COMBINED CATCHMENT AREAS

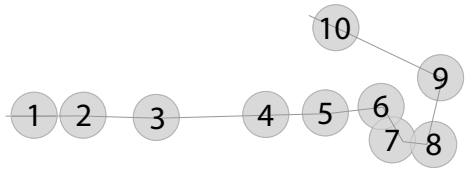
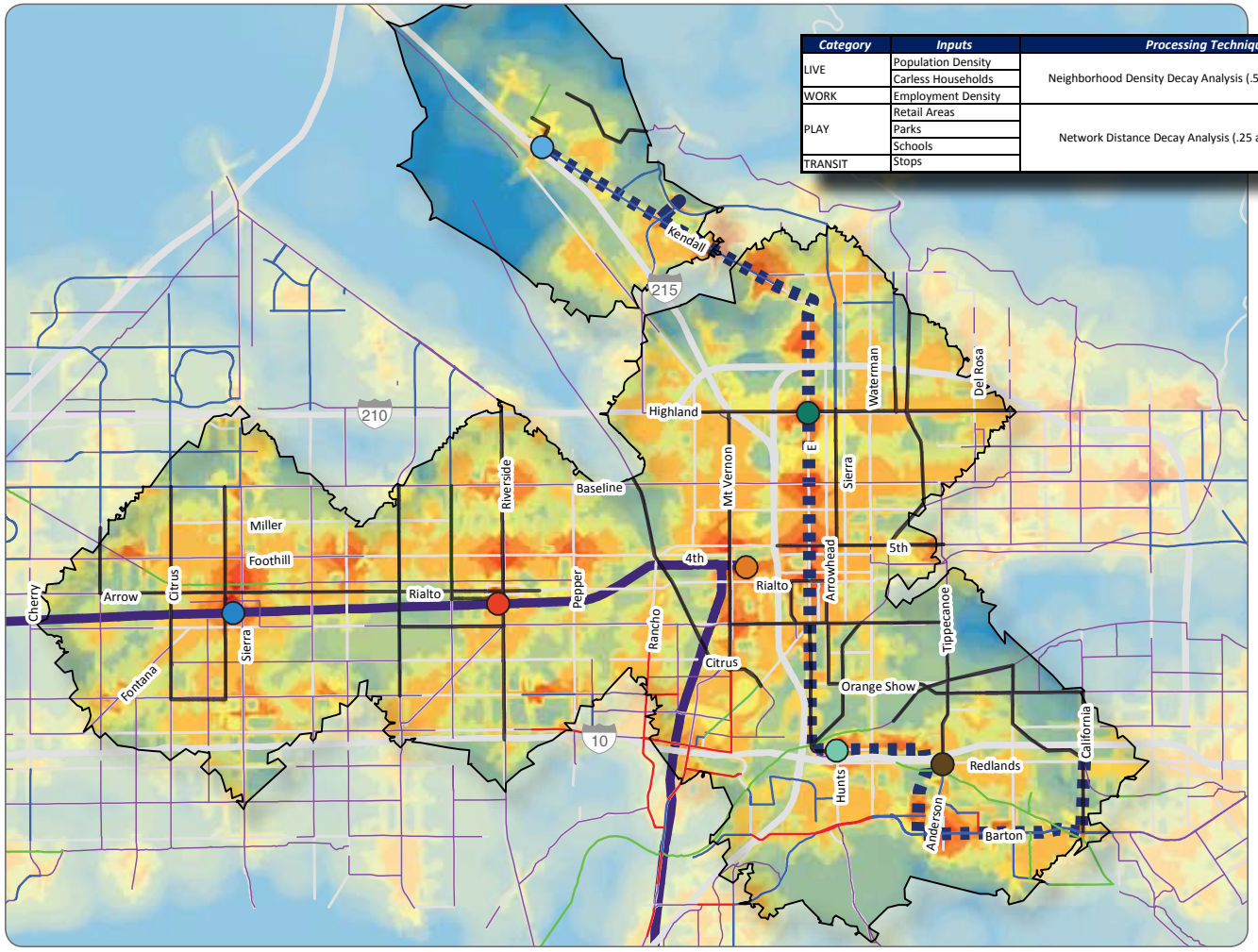


FIGURE 4.1: **ALTA BICYCLE SUITABILITY INDEX (BSI) FOR EAST VALLEY STATIONS**



BSI MATRIX LAND USES AND SCORING

Category	Inputs	Processing Technique	Base Score	Weighting
LIVE	Population Density	Neighborhood Density Decay Analysis (.5 mile neighborhoods)	1 - 5	x1
	Carless Households			x2
WORK	Employment Density			x2
PLAY	Retail Areas	Network Distance Decay Analysis (.25 and .5 mile "sheds")	.25 miles = 5; .5 miles = 3	.25 miles = x2; .5 miles = x1
	Parks			.25 miles = x1.5; .5 miles = x1.25
	Schools			.25 miles = x3; .5 miles = x2.5
TRANSIT	Stops			.25 miles = x3; .5 miles = x2.5

COMPOSITE BSI INDEX

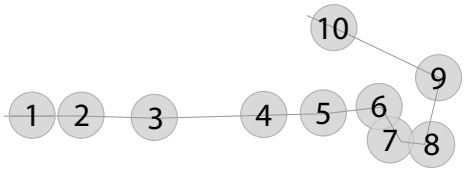
HIGH

MEDIUM

LOW

LEGEND

- CLASS 1 BIKE PATH
- CLASS 2 BIKE LANE
- CLASS 3 BIKE ROUTE
- PLANNED SANBAG NETWORK
- IDENTIFIED PRIORITY CORRIDORS
- METROLINK ALIGNMENT
- SBX BRT ALIGNMENT
- STATIONS UNDER STUDY
- COMBINED CATCHMENT AREAS



Cost Assumption

This section presents the unit costs utilized in developing the cost estimates presented in the following section. Unit costs for bike paths, bike lanes, bike routes, and roadway widening are from the San Bernardino County Non-Motorized Transportation Plan, which are based on a review of construction averages for the State of California. All other unit costs are based on Southern California averages.

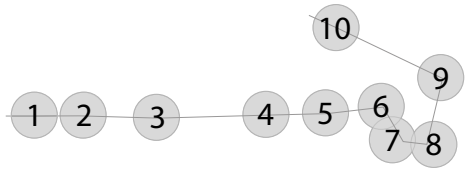
It should be noted that these unit costs are at the planning level and thus do not take into consideration site-specific costs, such as grading or striping removal, unless otherwise noted. They are intended to provide an "order of magnitude" opinion for each project cost, so that further steps can be taken, including soliciting funding, preliminary and final design.

In general, priority bicycle corridor recommendations were not costed beyond the per-mile unit cost assumptions below. Therefore, site-specific enhancements identified in the series of proposed bicycle network improvements (wayfinding, intersection improvements, etc.) are not figured into the cost totals. However, two specific bicycle corridor projects were developed for each station area, and more refined project estimates were developed based on site review.

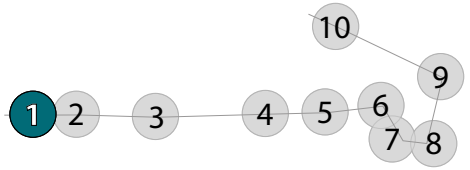
As they represent a more immediate opportunity to improve non-motorized access adjacent to station areas, detailed, site-specific estimates for improvements within the half-mile pedestrian catchment areas were developed and subjected to a 30% contingency factor.

TABLE 4.1: COST ASSUMPTION

IMPROVEMENT	COST	UNIT
Bicycle Facilities		
Class I Bike Path	$1,000,000	Mile
Class II Bike Lanes	$50,000	Mile
Buffered Bike Lanes	$80,000	Mile
Class III Bike Route (signage only)	$30,000	Mile
Shared Lane Markings	$2,000	Mile
Bicycle Boulevard (Local Bike Street)	$40,000	Mile
Parking Lane	$10,000	Mile
Bicycle/Pedestrian Overcrossing	$1,000,000	Each



IMPROVEMENT	COST	UNIT
Bicycle Intersection Treatments		
Colored Pavement (for conflict zones, bike lanes)	$65	Square Yard
Intersection Crossing Markings	$3,500	Each
Flashing Beacons	$20,000	Each
Median Refuge Island	$20,000	Each
Railroad Crossing Treatment	$50,000	Each
Bicycle Support Facilities		
Bicycle Racks	$200	Each
Bicycle Lockers	$3,000	Each
Bike Sharing/Rental Shop	$1,000,000	Each
Signage (MUTCD supplemental signage)	$200	Each
Signage (Wayfinding)	$500	Each
Pedestrian Facilities		
High Visibility Crosswalk	$600	Each
Crosswalk with Decorative Concrete	$3,000	Each
Curb Extensions	$50,000	Each
Curb Ramp	$5,000	Each
Sidewalk Installation	$90	Linear Foot
In-Pavement Flashers	$50,000	Each
Pedestrian Amenities		
Landscaping	$25	Square Foot
Street Trees (plus tree grates)	$1,500	Each
Trash Receptacles	$8,000	Each
Benches	$1,000	Each
Pedestrian Scale Lighting	$3,500	Each
Roadway Widening		
Level Terrain (Type 1)	$150,000	Mile
Moderate Terrain (Type 2)	$350,000	Mile
Rugged Terrain (Type 3)	$700,000	Mile
Roadway Reconstruction (Type 4)	$500,000	Mile



4.1 Montclair Metrolink Station Improvements

Overview

The City of Montclair was not an active stakeholder in this project, and has limited existing bicycle facilities. The bicycle network improvements fall under the jurisdiction of Upland, which has implemented the majority of its planned network in the area. Priority corridors for enhancement of existing facilities include Arrow and Benson, and upgrades to wayfinding, intersection improvements, and at-grade crossings with the Pacific Electric Trail.

The immediate station area is characterized by a large parking lot for transit passengers and long block lengths. Improvements are designed to improve the station area and "activate" the transit plaza with vendors, public art, and an increase sense of place.

Recommended Pedestrian Catchment Area Improvements

- Sidewalk construction
- Median improvements
- Tree plantings
- Mid-block access improvements

Recommended Bicycle Catchment Area Improvements

- Additional bicycle parking at station
- Pacific Electric Trail crossing improvements
- Upgrades to Existing Class II and III facilities north of station area
- Improved access to station from Monte Vista

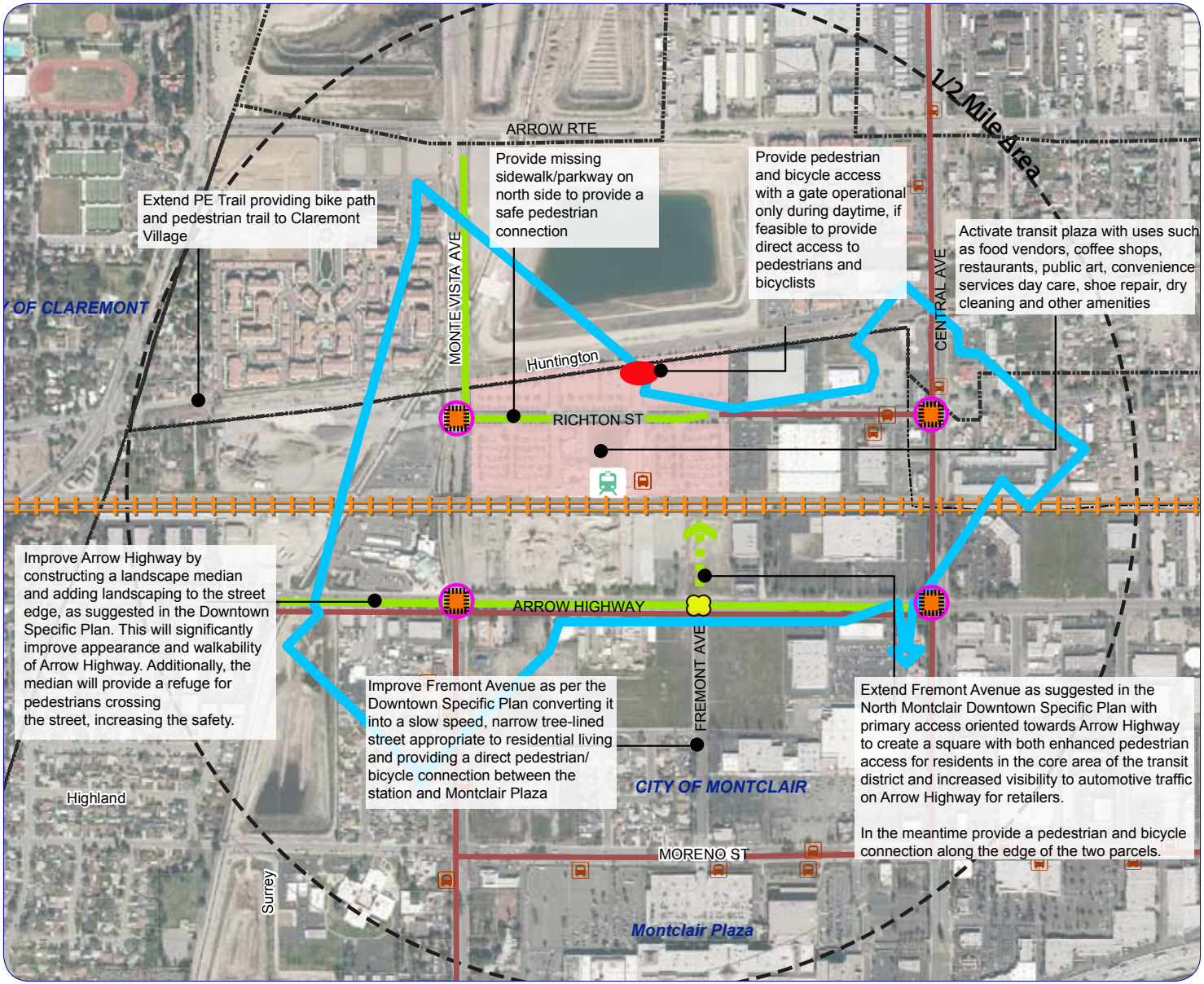
IMPROVEMENT TYPE	ESTIMATED COST
General Priority Bikeways Corridor Improvements	*
Specific Improvements in Bicycle Catchment Area	$233,000
Specific Improvements in Pedestrian Catchment Area, including 30% contingency	$1,594,060
TOTAL	**$1,827,060**

** No general priority bikeways corridor improvements identified, all planned facilities serving station are currently constructed*

Wide arterials along the Pacific Electric Trail do not encourage cyclists or pedestrians

Improvements can include high-visibility crosswalks, rectangular rapid flashing beacons (RRFB), or other traffic control devices

FIGURE 4.3: **MONTCLAIR METROLINK STATION PROPOSED PEDESTRIAN IMPROVEMENTS**



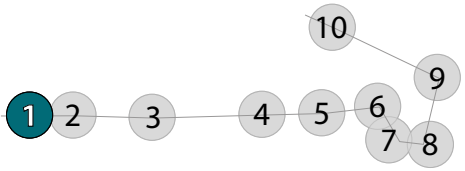
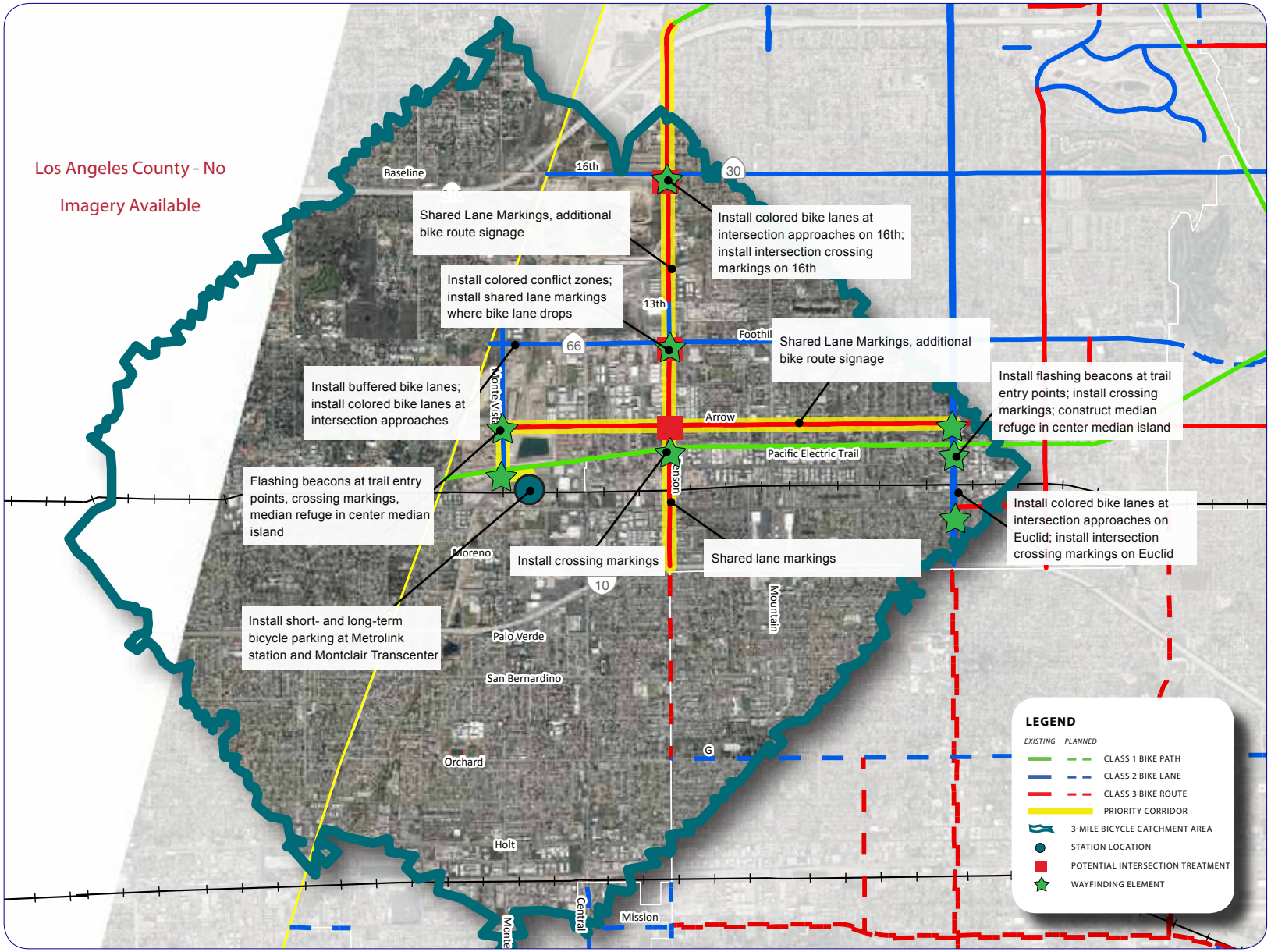
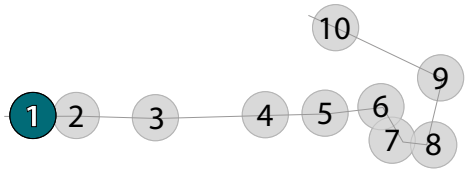


FIGURE 4.4: **MONTCLAIR METROLINK STATION PROPOSED BICYCLE NETWORK IMPROVEMENTS**

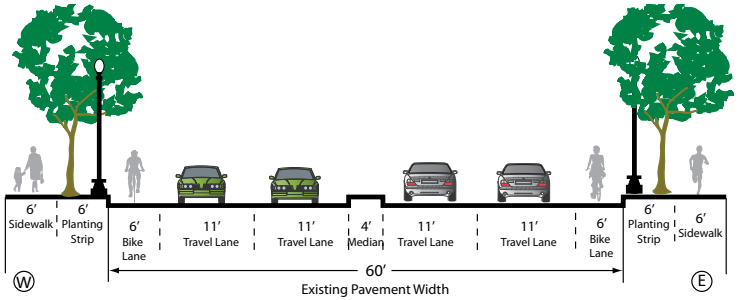




Montclair Station: Pacific Electric Trail Crossings

Project Description

The Pacific Electric Trail approaches Montclair Station from the west, providing a protected route for pedestrians and bicyclists. Because of the proximity to a signalized crossing, a rectangular rapid flashing beacon is proposed at Monte Vista Avenue. Other crossings should be improved with median refuge islands and signs.



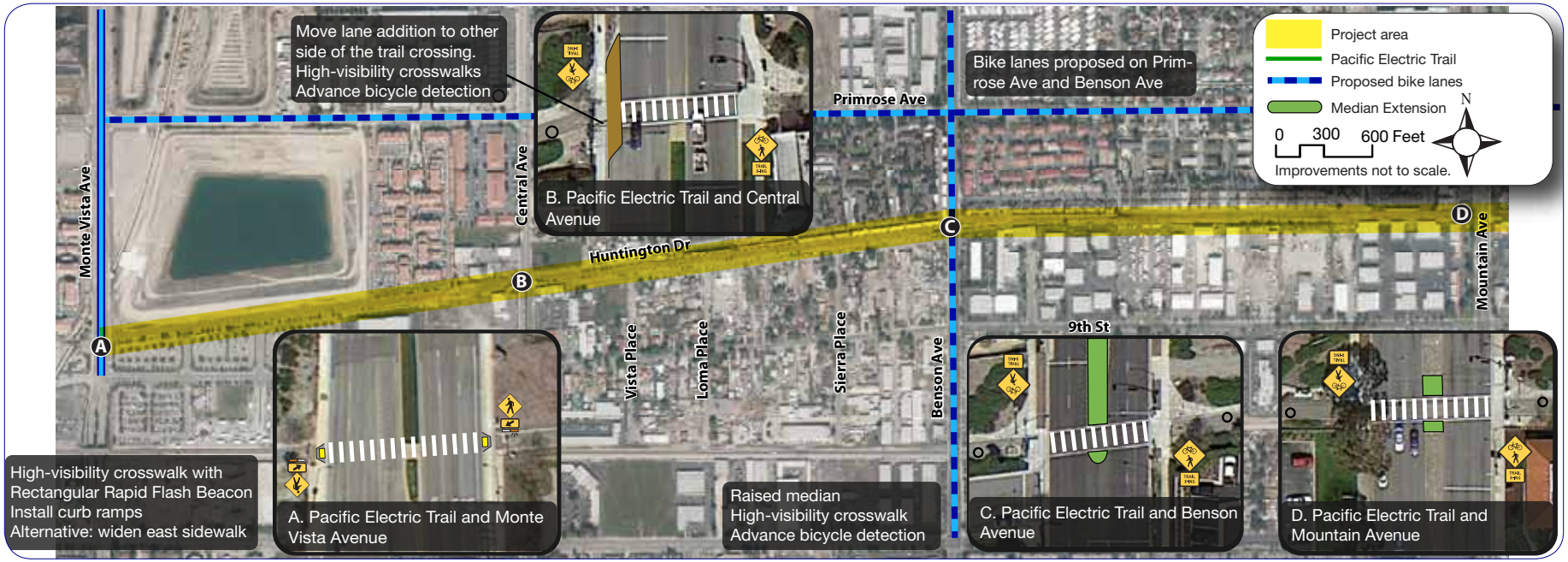
Rectangular rapid flashing beacons will increase driver compliance, providing more frequent crossing opportunities.

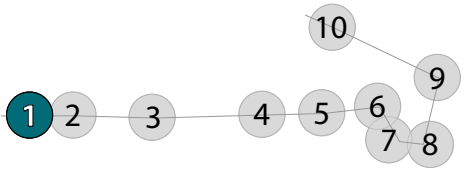
Cost Estimate

- 2 median extensions @ $15,000
- Curb extension on Central Avenue @$30,000
- 4 trail crossings with high-visibility crosswalks and signs
- Rectangular rapid-flash beacon at Monte Vista Avenue

Total Cost: $115,000

FIGURE 4.5: **PACIFIC ELECTRIC TRAIL CROSSINGS IMPROVEMENTS**

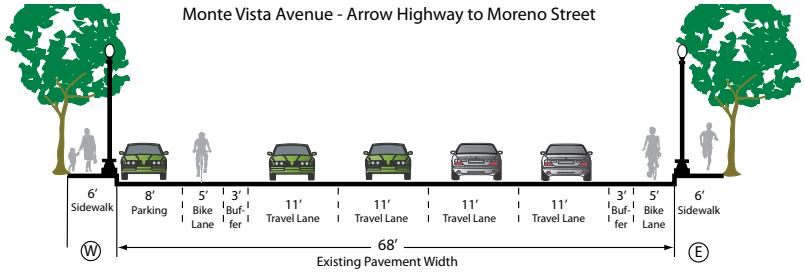




Montclair Station: Monte Vista Avenue

Project Description

Monte Vista Avenue provides a connection between Montclair Station and the Montclair Shopping Plaza. Traffic volumes are low relative to the capacity of the roadway, suggesting that a lane could be removed in each direction to provide buffered bike lanes without adversely impacting motor vehicle traffic.



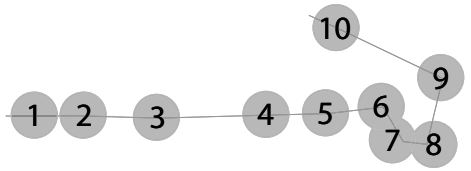
Buffered bike lanes and intersection markings would improve bicyclists' comfort and safety along Monte Vista Avenue.

Cost Estimate

- Buffered bike lanes: 0.70 miles @ $80,000 per mile
- Green paint: 40 yards @ $650/SY
- High-visibility crosswalks and bicycle left turn lane at S. Montclair Plaza Lane
- Refuge Island on Arrow Highway

Total Project Cost: $118,000

FIGURE 4.6: **MONTE VISTA AVENUE IMPROVEMENTS**



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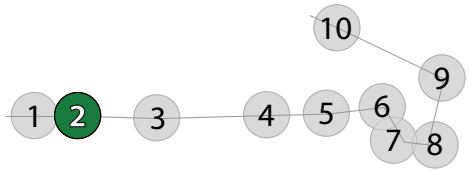


4.2 Upland Metrolink Station Improvements

Overview

The Upland Station is located in Downtown Upland, and is well-connected to local attractions by a grid street network. Existing bicycle and pedestrian facilities are ample and adequate. Interestingly, Omnitrans does not currently serve the Metrolink Station, instead serving passengers one block to the west along Euclid.

Project improvements focus on improving existing Class II and III bicycle facilities in the study area, and creating a connection to the planned transit-oriented development immediately southeast of the station.

Recommended Pedestrian Catchment Area Improvements

- Activate alleyways as "found" public space
- Pedestrian overpass
- Additional wayfinding and public art
- Relocated transit stops
- Improved sidewalks

Recommended Bicycle Catchment Area Improvements

- Additional signage and intersection markings along Class II and III facilities at Arrow, Euclid, and Campus
- Mid-block crossing improvements along the Pacific Electric Trail
- Additional bicycle parking options at station area

IMPROVEMENT TYPE	ESTIMATED COST
General Priority Bikeways Corridor Improvements	*
Specific Improvements in Bicycle Catchment Area	$334,000
Specific Improvements in Pedestrian Catchment Area, including 30% contingency	$3,501,264
TOTAL	**$3,835,264**

** No general priority bikeways corridor improvements identified, all planned facilities serving station are currently constructed*

Existing Class II bike lanes in Upland provide adequate utility for cyclists, but are not always noticed by motorists

Example of colored bike lane concept on Euclid Avenue in Upland to increase visibility (Plan recommends colored conflict zones at intersections)

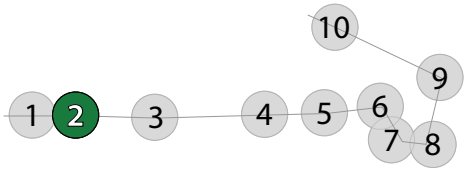
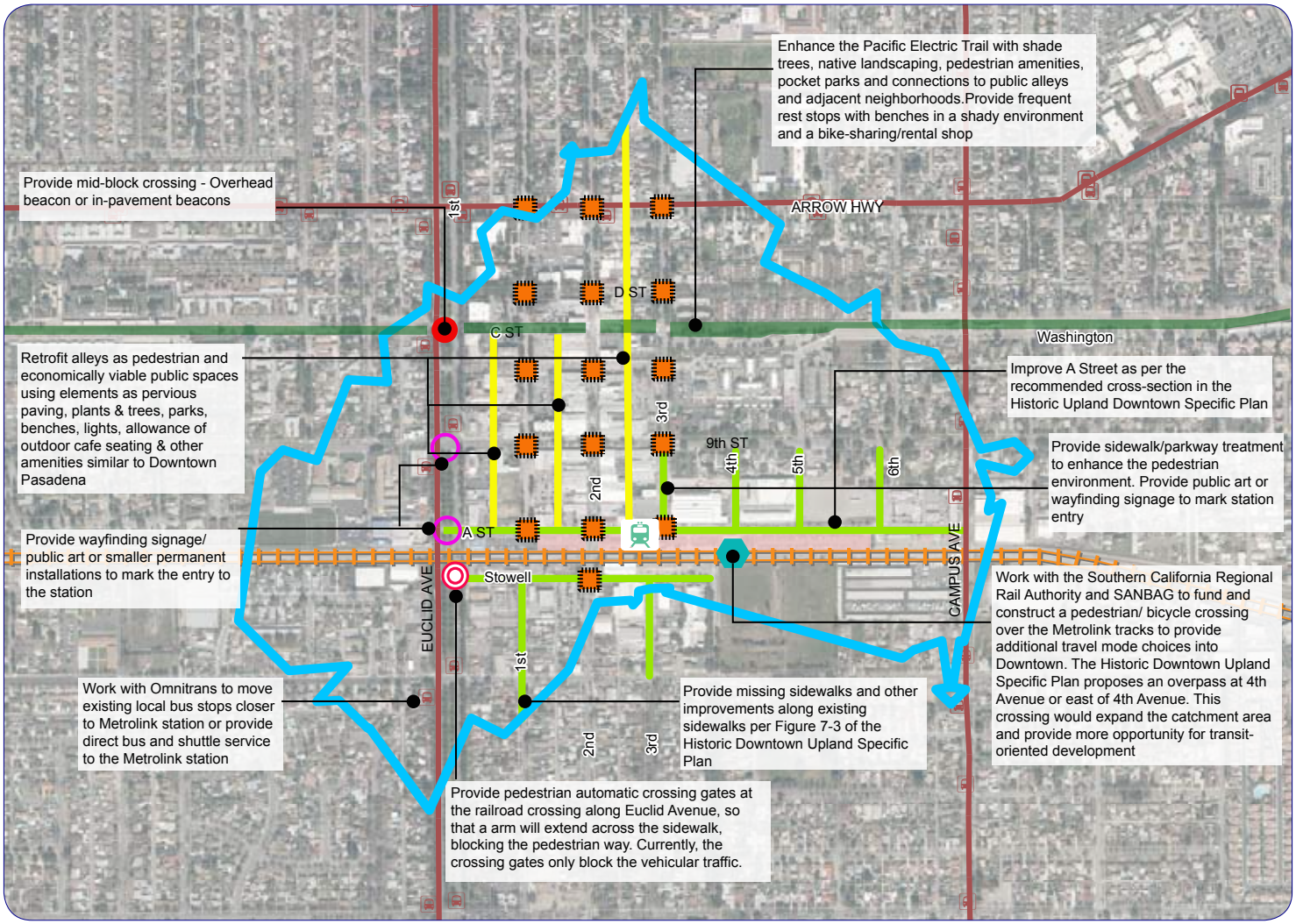


FIGURE 4.7 **UPLAND METROLINK STATION PROPOSED PEDESTRIAN IMPROVEMENTS**



LEGEND

- Existing Metrolink Station
- 0.5 Mile Walk to Transit Station
- Existing Railroad
- Existing Local Bus Route
- Existing Local Bus Stop
- Provide sidewalks with Parkway/ Street trees on both sides
- Proposed Mid Block Pedestrian Crossing
- Proposed Pedestrain/Bicycle Overcrossing
- Provide Wayfinding Signage/Public Art
- Provide Decorative Crosswalks (Historic Downtown Upland Specific Plan)
- Proposed Pedestrian Automatic Crossing Gates

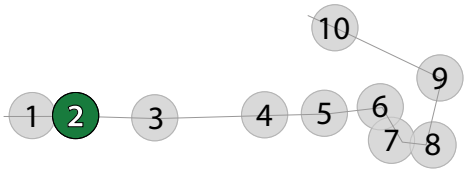
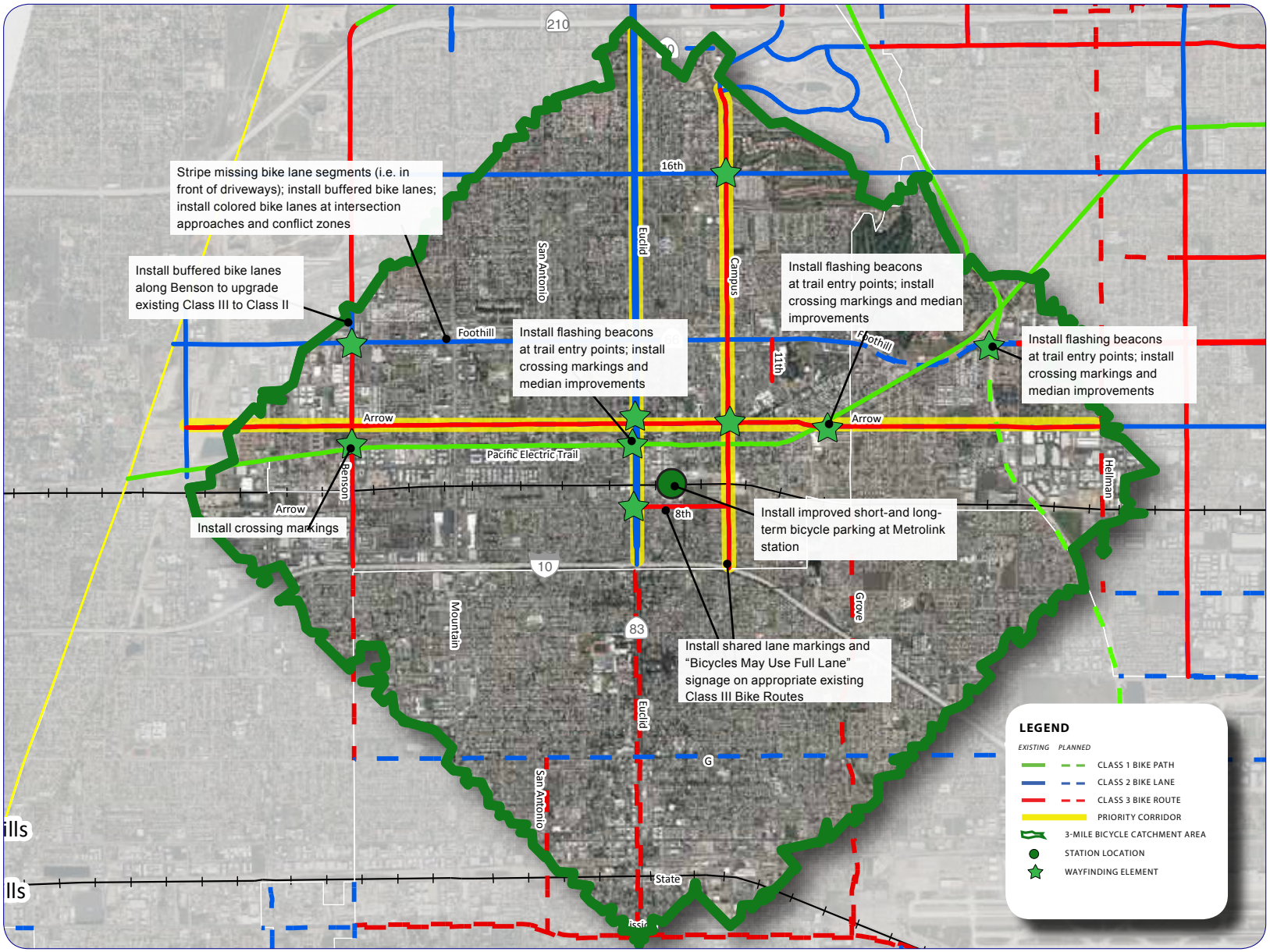
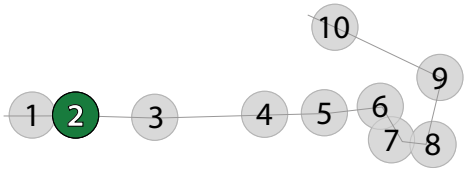


FIGURE 4.8 **UPLAND METROLINK STATION PROPOSED BICYCLE NETWORK IMPROVEMENTS**





Upland Station: E 8th Street and Pacific Electric Trail Crossings

Project Description

Bike lanes can be striped on E. 8th Street with the removal of parking on one side of the street. Enhanced street crossings along the Pacific Electric Trail will facilitate Upland Station access from the east and west.

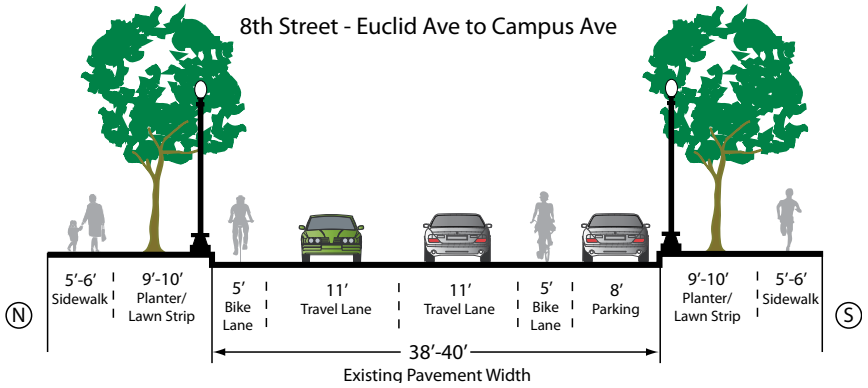


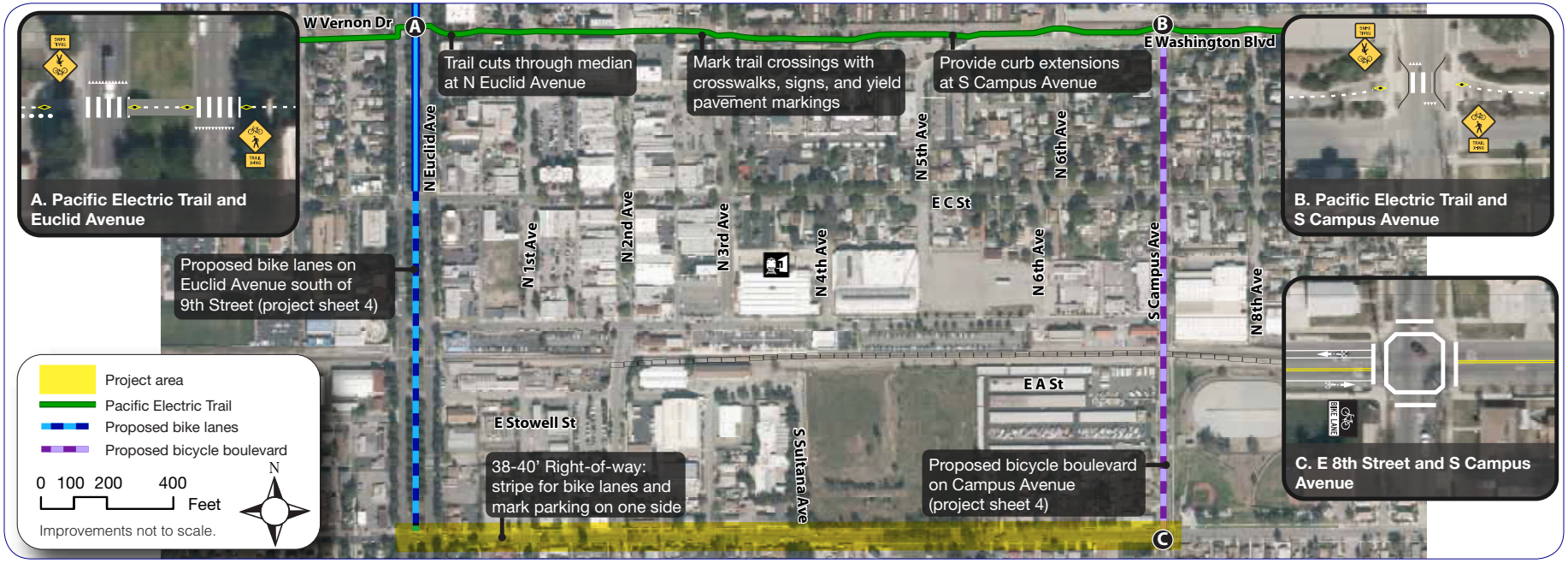
FIGURE 4.9 **E 8TH AND PACIFIC ELECTRIC TRAIL CROSSINGS IMPROVEMENTS**

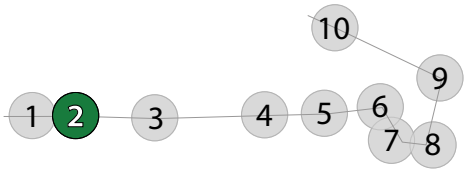
Pacific Electric Trail crossings should be high visibility, with marked crosswalks, signs, and yield pavement markings to improve safety for trail users.

Cost Estimate

- Class II Bike lanes: 0.54 mile @ $50,000/mile
- 6 Trail crossings (marked crosswalks and signs on all, curb extensions at S Campus Ave)
- Pacific Electric Trail crossing enhancements: $53,000

Total Cost: $103,000

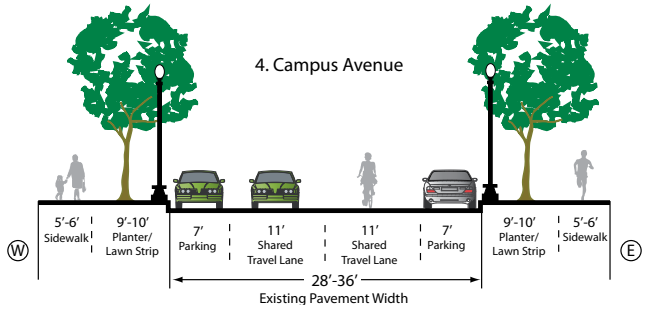




Upland Station: Campus and Euclid Avenues from E Foothill Boulevard to Interstate 10

Project Description

To designate Campus Avenue as a bicycle boulevard, reduce posted speed to 25 mph and add signs and pavement markings. On Euclid Avenue, the bike lanes should be extended south of N 9th Street and intersection markings used to increase visibility at conflict areas.



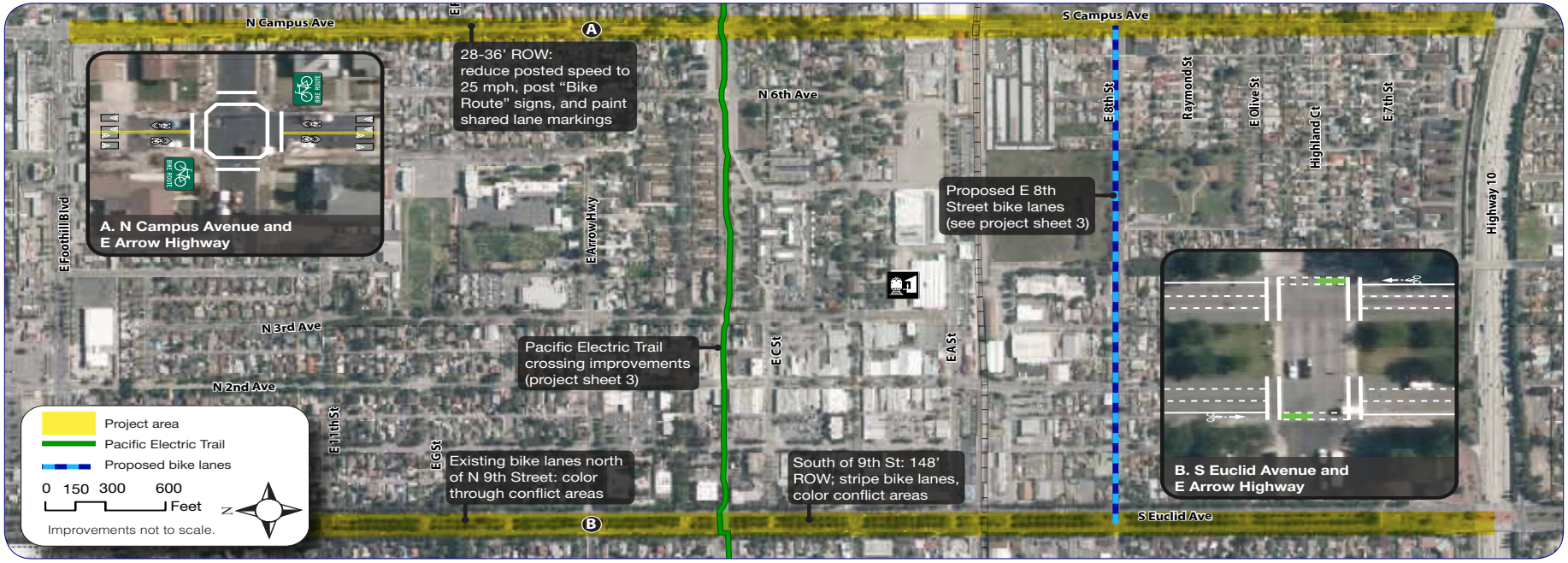
Campus Avenue has low motor vehicle volumes and can accommodate bicyclists as a bicycle boulevard if speeds are reduced. Monitor speeds and volumes to evaluate if additional treatments are necessary.

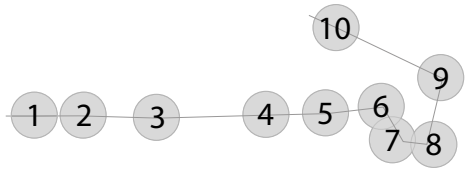
Cost Estimate

- Class II bike lanes: 1.37 mile @ $50,000 mile
- Class II bike lanes: 0.6 mile @ $50,000 mile
- Colored pavement (at Foothill Boulevard, Arrow Highway, 1st, 9th, and 7th Streets): 562 yards @ $65/sq yard
- Campus Avenue bicycle boulevard: $41,000
- Euclid Avenue bike lanes and crossing enhancements: $55,000

Total Cost: $231,000

FIGURE 4.10 **CAMPUS AND EUCLID AVENUES FROM E FOOTHILL BLVD TO HWY 10**





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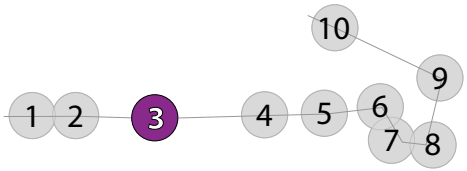


4.3 Rancho Cucamonga Metrolink Station Improvements

Overview

The Rancho Cucamonga station is located in an area of industrial and residential land uses. Block lengths are some of the longest and most challenging in the study area. Several multi-lane, high-speed arterials are found in the immediate station area.

Pedestrian and cyclist amenities are adequate and ample, owing to the relatively new construction in the area. Several planned Class I Bike Path facilities are found in the study area.

Improvements were developed to close gaps in the non-motorized facility network and improve on some of the circuitous paths of travel created by the long blocks, major roadways, and limited points of access.

Recommended Pedestrian Catchment Area Improvements

- Lighting
- Directional signage/wayfinding
- Additional points of access
- Improved crosswalks
- Public art/gateway features

Recommended Bicycle Catchment Area Improvements

- Convert existing Class III segments to Class II to minimize conflicts with motor vehicles
- Provide low-speed option for north-south access along Rochester
- Develop Deer Creek and Day Creek Channels for planned Class I Bike Paths
- Relocate existing bicycle parking closer to station area

IMPROVEMENT TYPE	ESTIMATED COST
General Priority Bikeways Corridor Improvements	$6,232,500
Specific Improvements in Bicycle Catchment Area	$74,000
Specific Improvements in Pedestrian Catchment Area, including 30% contingency	$1,224,028
TOTAL	**$7,503,528**

Existing wayfinding monument along Pacific Electric Trail.

Improved wayfinding monument with City logo and Metrolink destination.

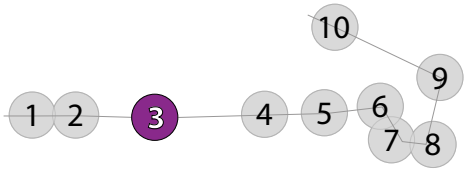
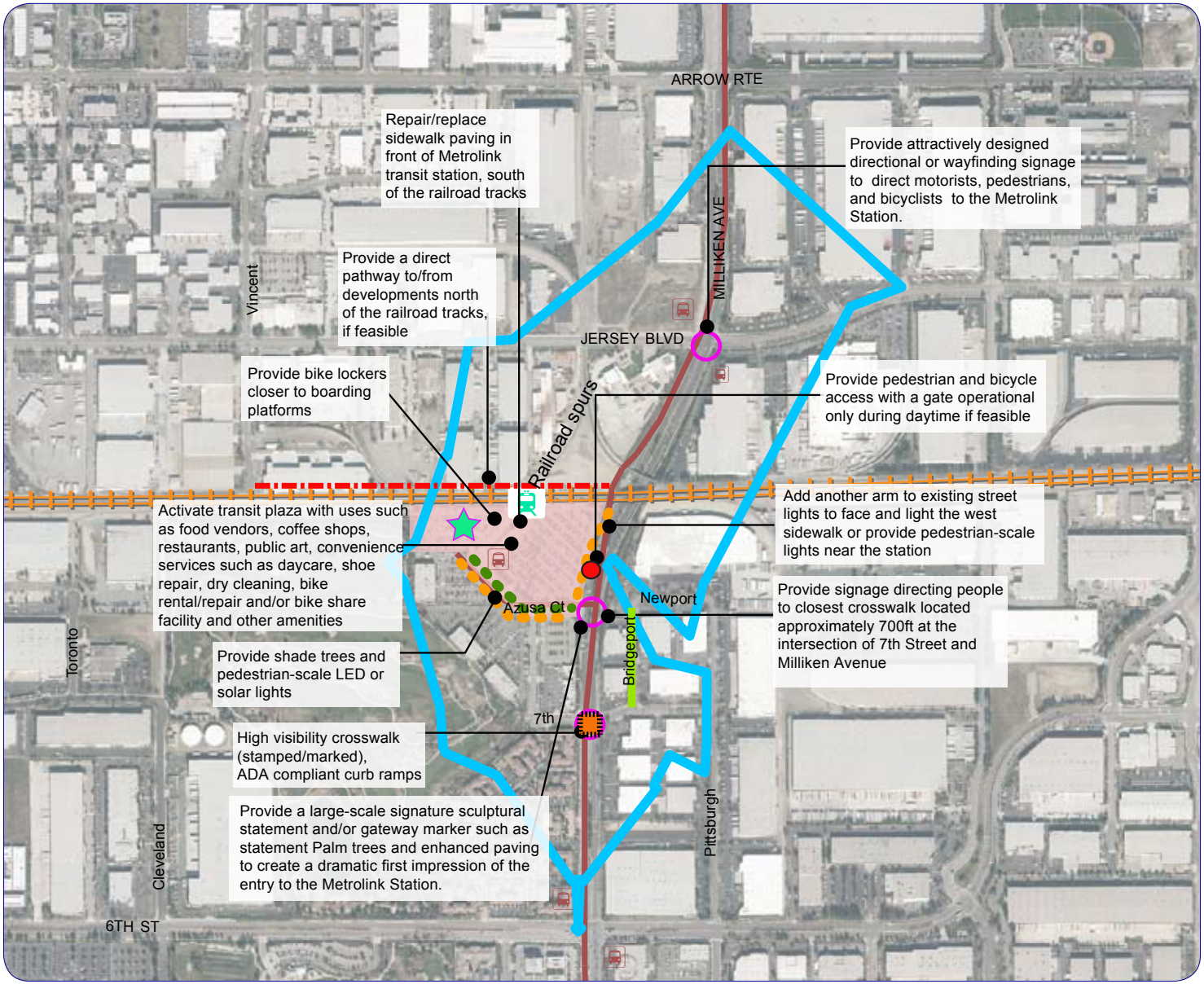


FIGURE 4.11: **RANCHO CUCAMONGA METROILINK STATION PROPOSED PEDESTRIAN IMPROVEMENTS**



LEGEND

- Existing Metrolink Station
- 0.5 Mile Walk to Transit Station
- Existing Railroad
- Existing Local Bus Route
- Existing Local Bus Stop
- Provide sidewalks with Parkway/ Street trees on both sides
- Proposed Pathway
- Provide Wayfinding Signage/Public Art
- Provide Decorative Crosswalks
- Proposed shade trees
- Proposed Pedestrian-Scale LED or Solar Lights
- Proposed Bike Rental

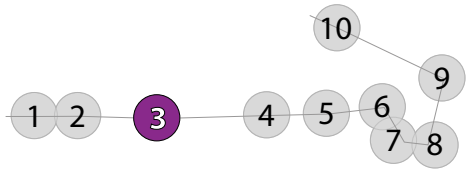
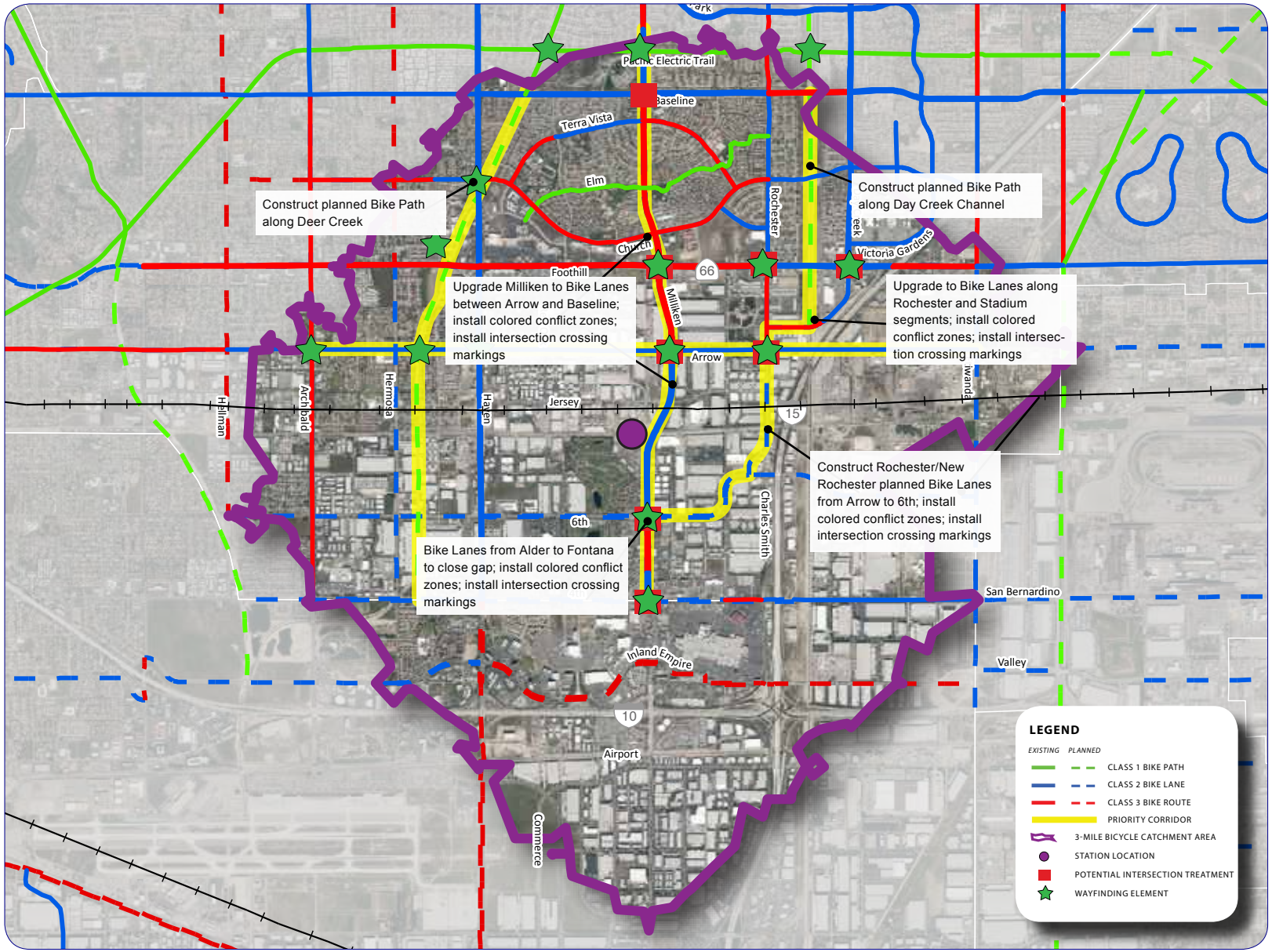
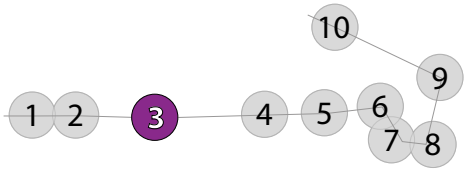


FIGURE 4.12: **RANCHO CUCAMONGA METROLINK STATION PROPOSED BICYCLE NETWORK IMPROVEMENTS**





Rancho Cucamonga: 6th Street/Rochester Avenue between proposed trails

Project Description

This project connects the proposed Deer Creek Channel and Day Creek Channel Trails along 6th Street and provides access to the Station on facilities like bike lanes on Milliken Avenue.

Bike lanes can be striped between the proposed Deer Creek Trail and Haven Avenue, while buffered bike lanes can be accommodated from Haven Avenue to Arrow Route through a road diet treatment.

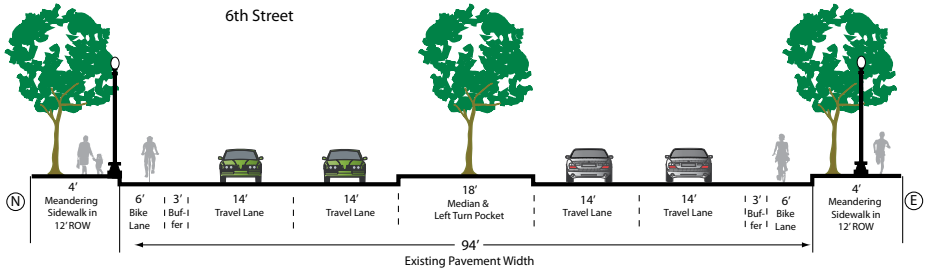


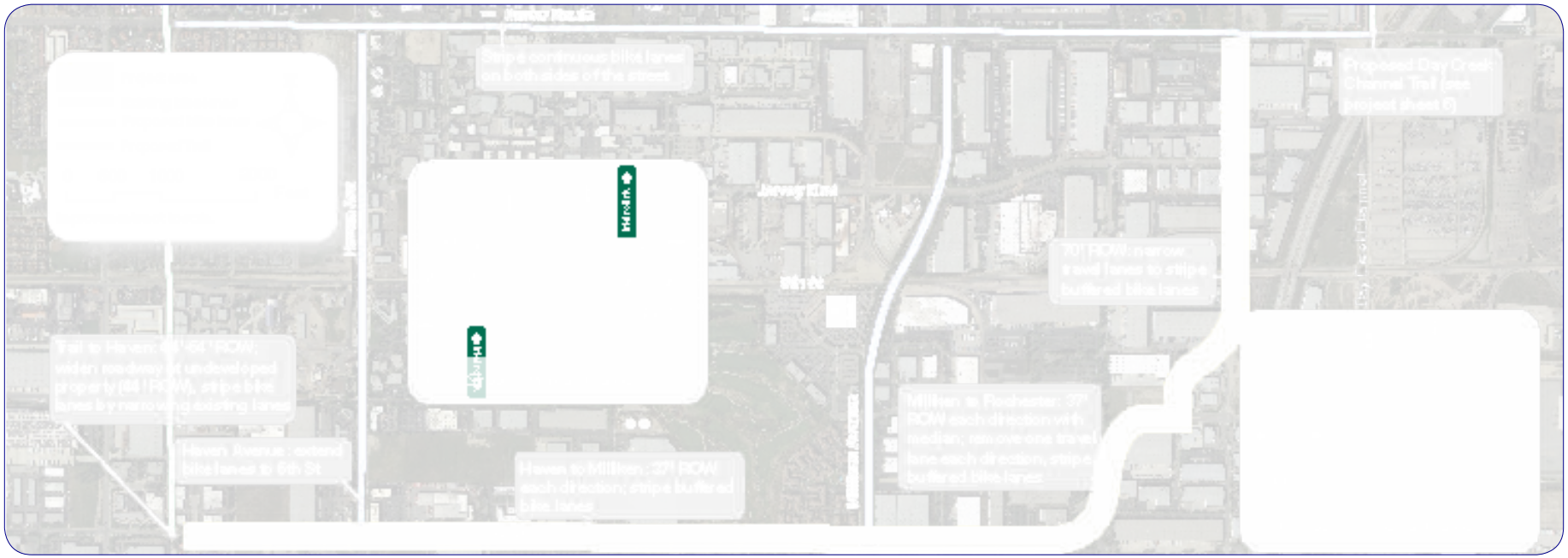
FIGURE 4.13: **6TH STREET/ROCHESTER AVENUE BETWEEN PROPOSED TRAILS IMPROVEMENTS**

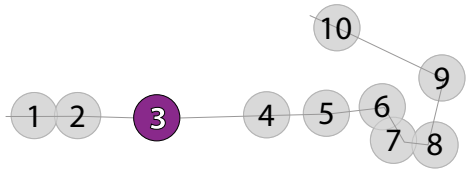
Buffered bike lanes will provide a more comfortable bicycling environment for bicyclists traveling between the Rancho Cucamonga Station and the proposed Deer Creek Channel and Day Creek Channel Trails.

Cost Estimate

- Class II bike lanes (Haven Avenue to Beech Street: 2.92 mile @ $50,000/mile
- Buffered bike lanes (Beech Street to Lime Avenue): 0.38 mile @ $80,000/mile
- Green paint: 100 yards @ $65/SY

Total Cost: $152,500





Rancho Cucamonga: Deer Creek Channel and Day Creek Channel Trails

Project Description

Two trails in the Rancho Cucamonga station area could be developed by opening existing creek channel maintenance roads to the public, creating low-stress connections to the station from the north.

The projects should improve crossings of major streets to improve visibility and provide crossing gaps for trail users. These crossings include Base Line Road, Church Street, Foothill Boulevard, Arrow Route and local streets between Arrow Route and 6th Street. Treatments may include pavement markings, signs, bollards, and offset intersections with median paths.

Enhancing crossings and opening these existing canal maintenance roads is a low-cost opportunity to provide off-street facilities.

Cost Estimate

- Deer Creek Channel Trail: 3.18 miles @ $1,000,000/mile
- Day Creek Channel Trail: 2.90 miles @ $1,000,000/mile

Total Cost:

- Deer Creek Channel Trail: **$3,180,000**
- Day Creek Channel Trail: **$2,900,000**

Day Creek Channel Path

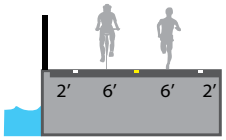


FIGURE 4.14: **DEER CREEK CHANNEL AND DAY CREEK CHANNEL TRAILS IMPROVEMENTS**

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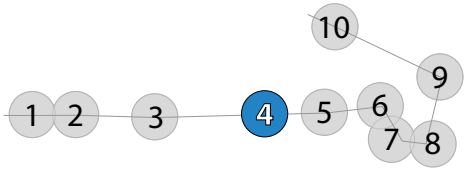


4.4 Fontana Metrolink Station Improvements

Overview

The Fontana Metrolink Station is located in downtown Fontana, and provides excellent access to nearby commercial and residential land uses. Sierra Avenue has recently been improved by a series of improvements, and the pedestrian environment adjacent to the station area is pleasant and well-designed. Aside from the nearby Pacific Electric Trail, dedicated bicycle facilities are largely nonexistent.

Improvements to the area focus on additional shade trees, lighting enhancements, a more active Santa Fe Park, bicycle parking, and the implementation of key corridors of the regional bicycle network designed to directly connect to the station.

Recommended Pedestrian Catchment Area Improvements

- Lighting
- Trees
- Curb extensions
- Crosswalk and sidewalk improvements

Recommended Bicycle Catchment Area Improvements

- Additional bicycle parking options at station
- Key bicycle corridor development along Arrow, Citrus, and Juniper
- Mid-block crossing improvements along the Pacific Electric Trail

IMPROVEMENT TYPE	ESTIMATED COST
General Priority Bikeways Corridor Improvements	$656,100
Specific Improvements in Bicycle Catchment Area	$152,000
Specific Improvements in Pedestrian Catchment Area, including 30% contingency	$6,956,326
TOTAL	**$7,764,426**

Along the Pacific Electric Trail, cities have often not improved mid-block crossings. This example is in Upland.

Signage and pavement markings can make crossings easier to navigate (example based on Upland Crossing above)

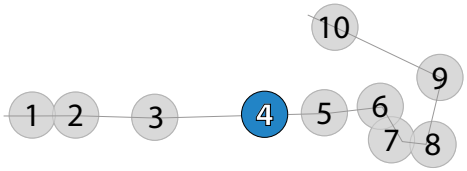
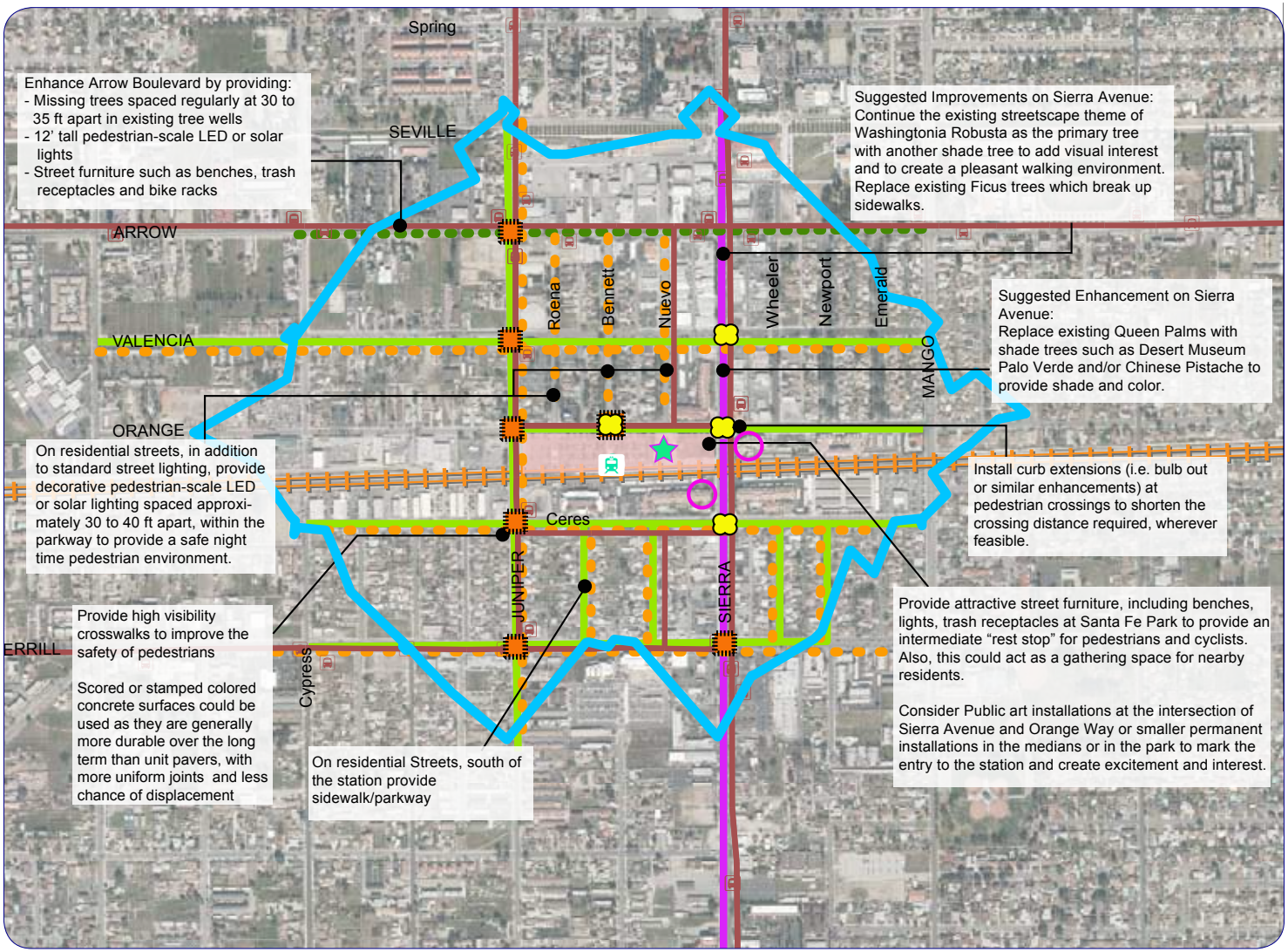


FIGURE 4.15:: **FONTANA METROLINK STATION PROPOSED PEDESTRIAN IMPROVEMENTS**



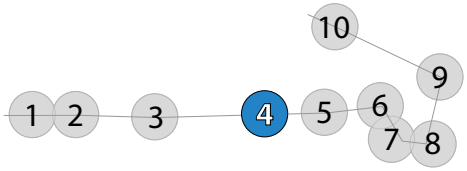
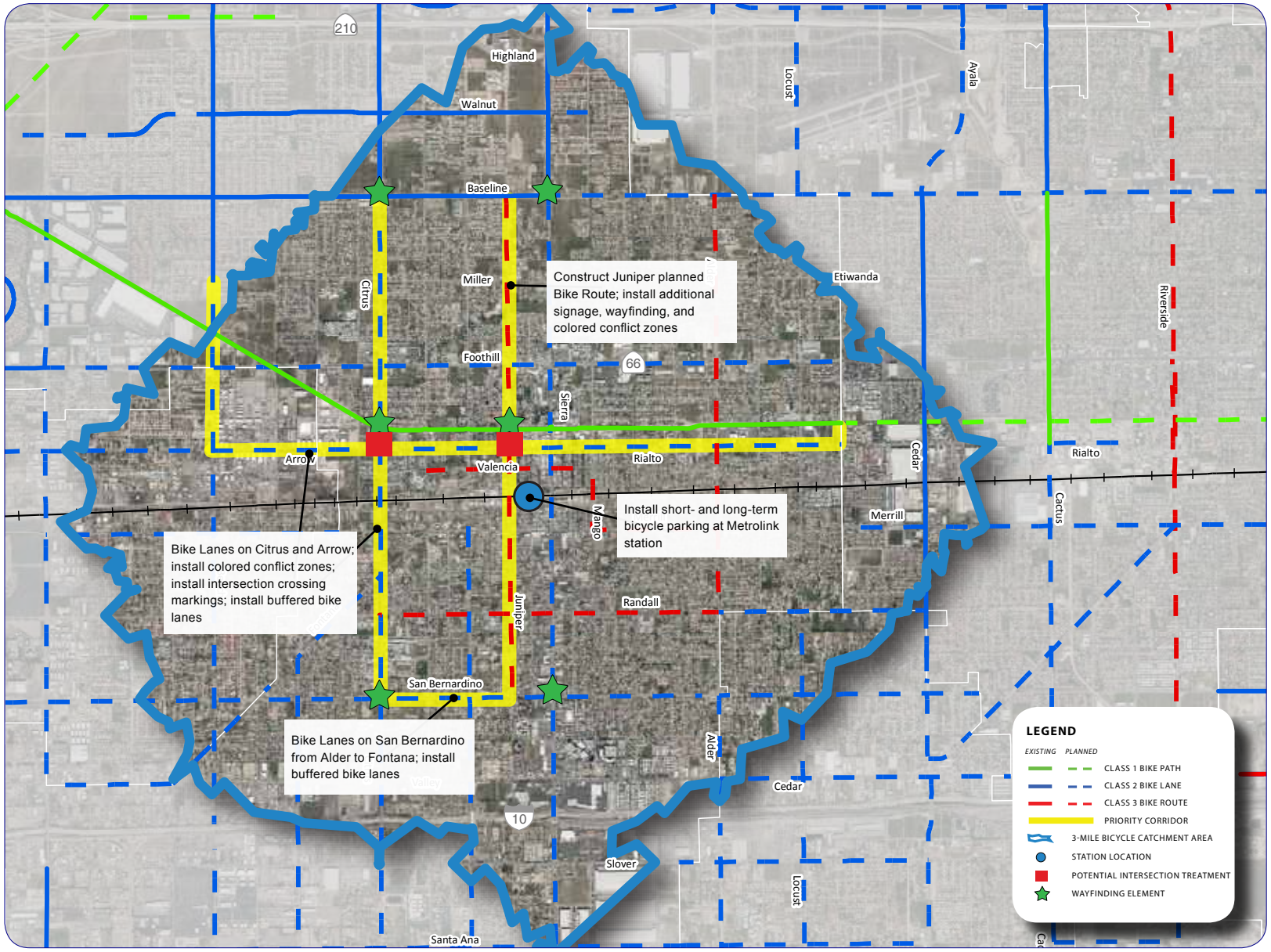
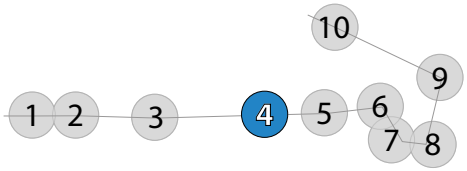


FIGURE 4.16: **FONTANA METROLINK STATION PROPOSED BICYCLE NETWORK IMPROVEMENTS**

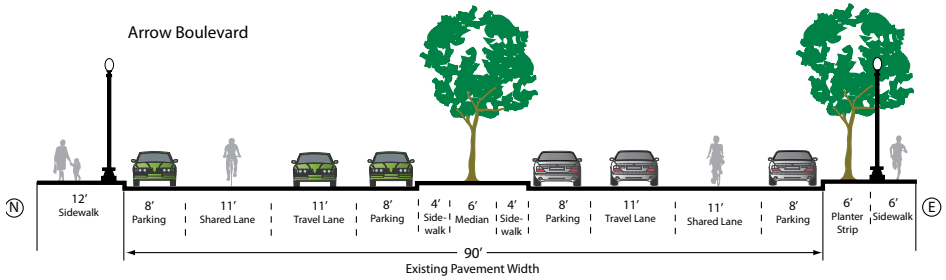




Fontana Station: Arrow Boulevard

Project Description

Arrow Boulevard is a key east-west connector through Fontana and Rialto. Bike lanes will provide access to the station via Juniper Avenue (see project sheet 8). The street character varies throughout this corridor, with sections lacking curb, gutter, and sidewalk. If the street is built out in the future, it should have sufficient width to accommodate bike lanes.



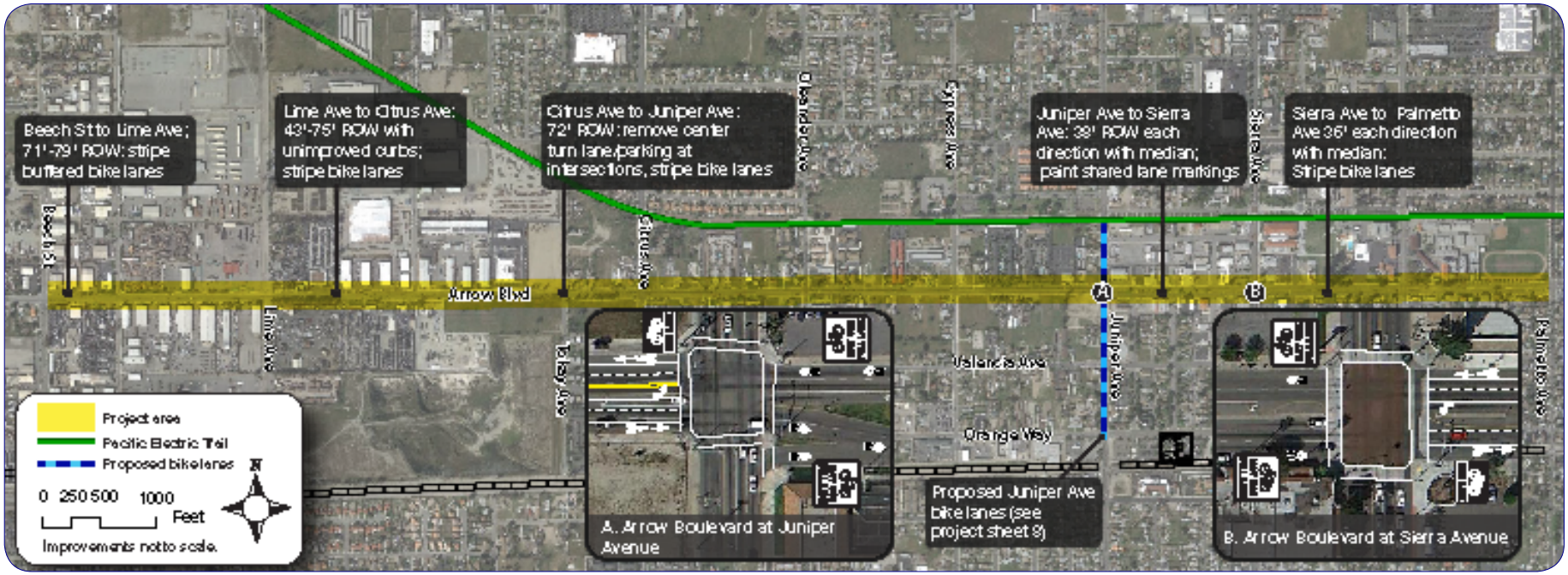
The character of Arrow Boulevard changes significantly along the corridor. When the street is built out with curb and gutter, formal bike lanes should be included along the street.

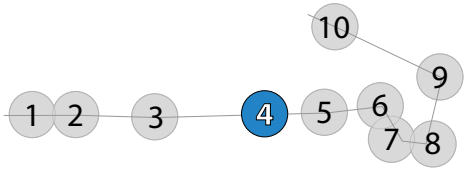
Cost Estimate

- Buffered bike lanes (Beech Street to Lime Avenue): 0.38 mile @ $80,000/mile
- Class II bike lanes (Lime Avenue to Juniper Avenue and Sierra Avenue to Palmetto Avenue): 1.90 mile @ $50,000/mile
- Shared lane markings (Juniper Avenue to Sierra Avenue): 0.25 mile @ $2,000/mile

Total Cost: $126,000

FIGURE 4.17: **ARROW BOULEVARD IMPROVEMENTS**





Fontana Station: Juniper Avenue

Project Description

Juniper Avenue makes a connection between the existing Pacific Electric Trail, proposed bike lanes on Arrow Boulevard, and Fontana station. The street currently has no on-street parking, and buffered bike lanes can be accommodated through restriping.

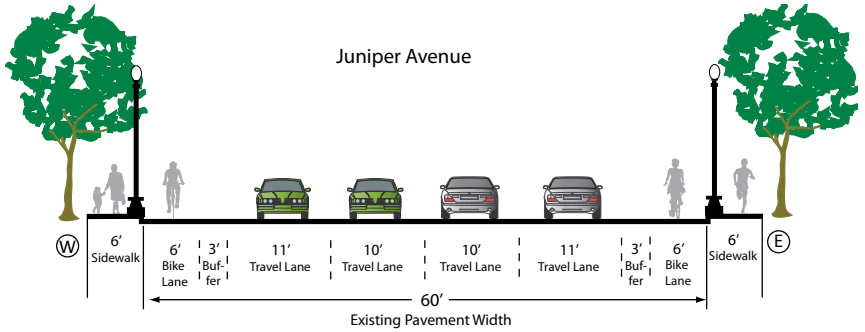


FIGURE 4.18: **JUNIPER AVENUE IMPROVEMENTS**

Wayfinding signs should be posted at the Pacific Electric Trail, Arrow Boulevard, and Orange Way to assist bicyclists in finding appropriate routes to their destinations.

Cost Estimate

- Class II bike lanes: 0.49 mile @ $50,000/mile
- 6 wayfinding signs @ $300

Total Cost: $26,000

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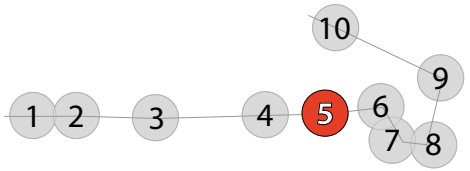


4.5 Rialto Metrolink Station Improvements

Overview

The Rialto Metrolink Station has adequate connections to the nearby residential land uses north of the station. Connections to the south are more challenging. Several of the nearby streets are identified as candidates for widening as part of the City's General Plan, which presents an excellent opportunity to implement a number of the recommendations in this section.

The bicycle network is disconnected, and the Rialto section of the Pacific Electric Trail remains the lone unconstructed piece of the trail.

Improvements include curb improvements, additional sidewalks, pedestrian overcrossings, and numerous bicycle network improvements consistent with the City General Plan and SANBAG Non-Motorized Plan.

Recommended Pedestrian Catchment Area Improvements

- Additional multi-use paths
- Public art
- Pedestrian overcrossing
- Street furniture and shade trees

Recommended Bicycle Catchment Area Improvements

- Finish Pacific Electric Trail facility
- Improvements to and connections with existing facilities on Cedar and Cactus
- Additional bicycle parking options at station area
- Construction of Class III Bike Route on Riverside

IMPROVEMENT TYPE	ESTIMATED COST
General Priority Bikeways Corridor Improvements	$3,137,800
Specific Improvements in Bicycle Catchment Area	$239,000
Specific Improvements in Pedestrian Catchment Area, including 30% contingency	$4,854,421
TOTAL	**$8,231,221**

Existing Class I Bike Path is overgrown and unattractive to users.

Cost-effective striping improvements and additional maintenance can increase attractiveness and functionality.

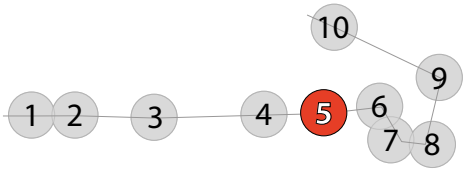
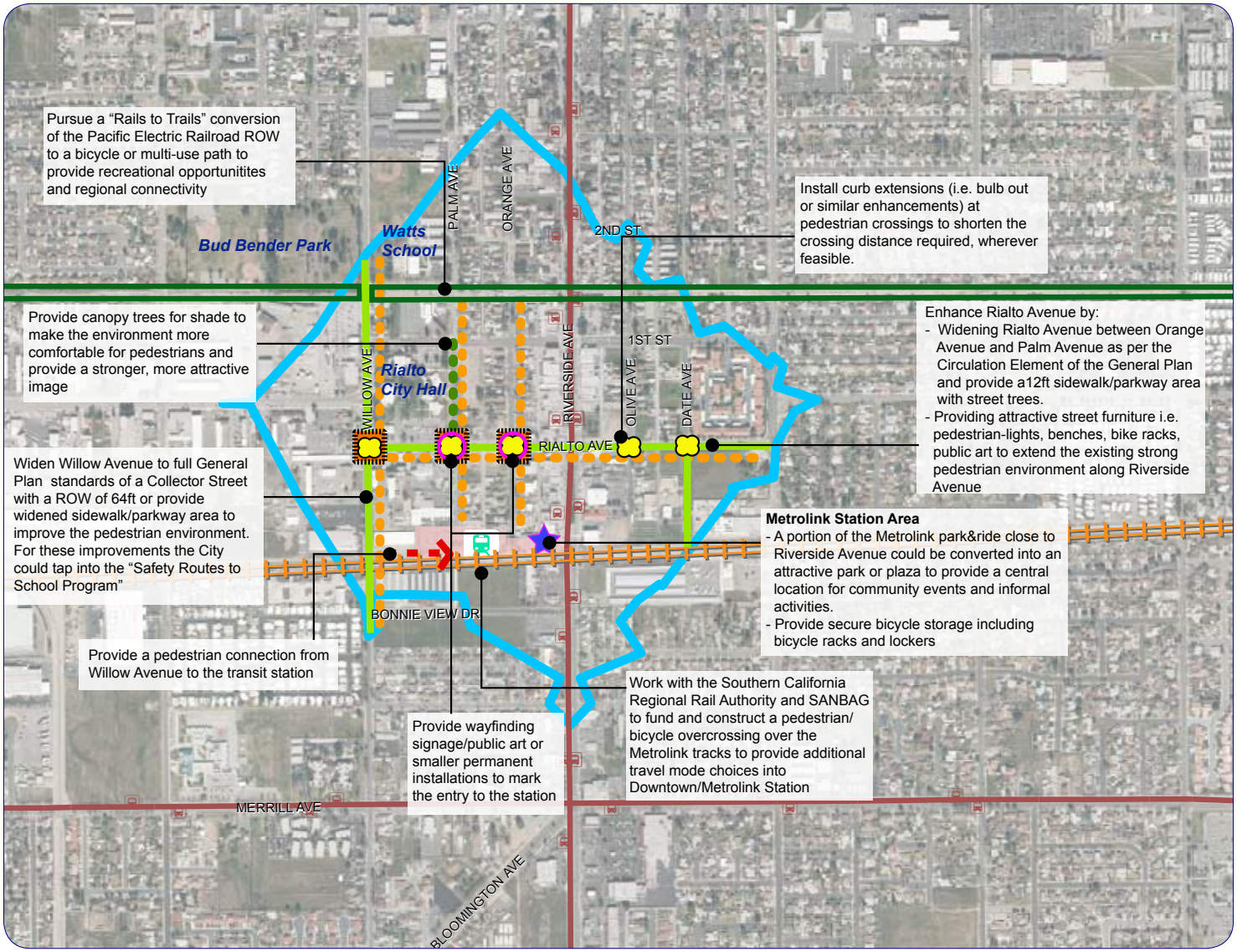


FIGURE 4.19: **RIALTO METROLINK STATION PROPOSED PEDESTRIAN IMPROVEMENTS**



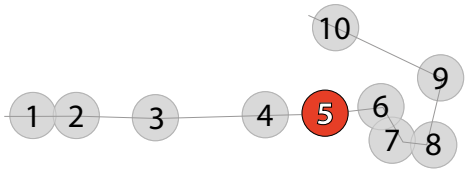
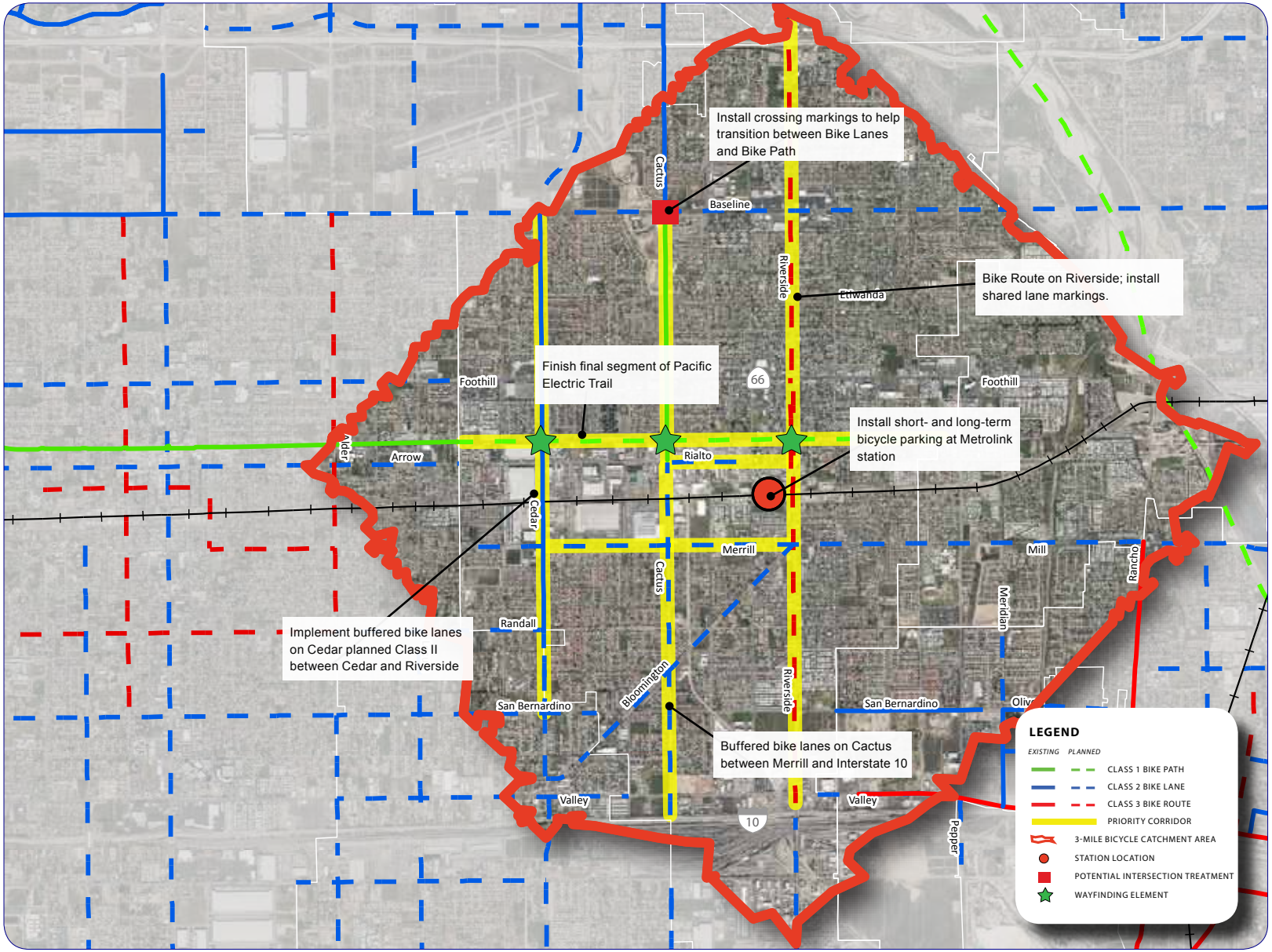
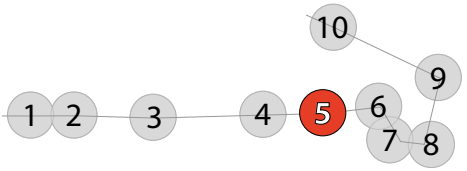


FIGURE 4.20: **RIALTO METROLINK STATION PROPOSED BICYCLE NETWORK IMPROVEMENTS**

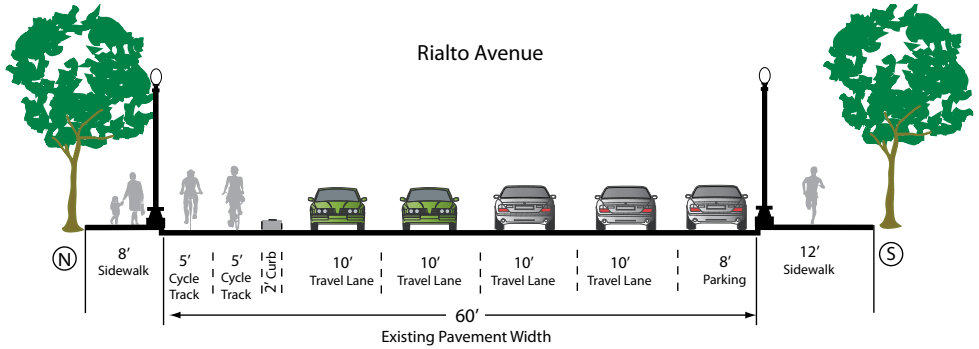




Rialto Station: Arrow Boulevard

Project Description

This project continues bike lanes on Arrow Boulevard from the city limits to Willow Avenue, where the corridor jogs south by the Station. A cycle track connection on the east side of S. Palm Avenue provides a direct route to the station. A dedicated signal phase will help bicyclists continue on Rialto Avenue or turn onto S. Palm Avenue.



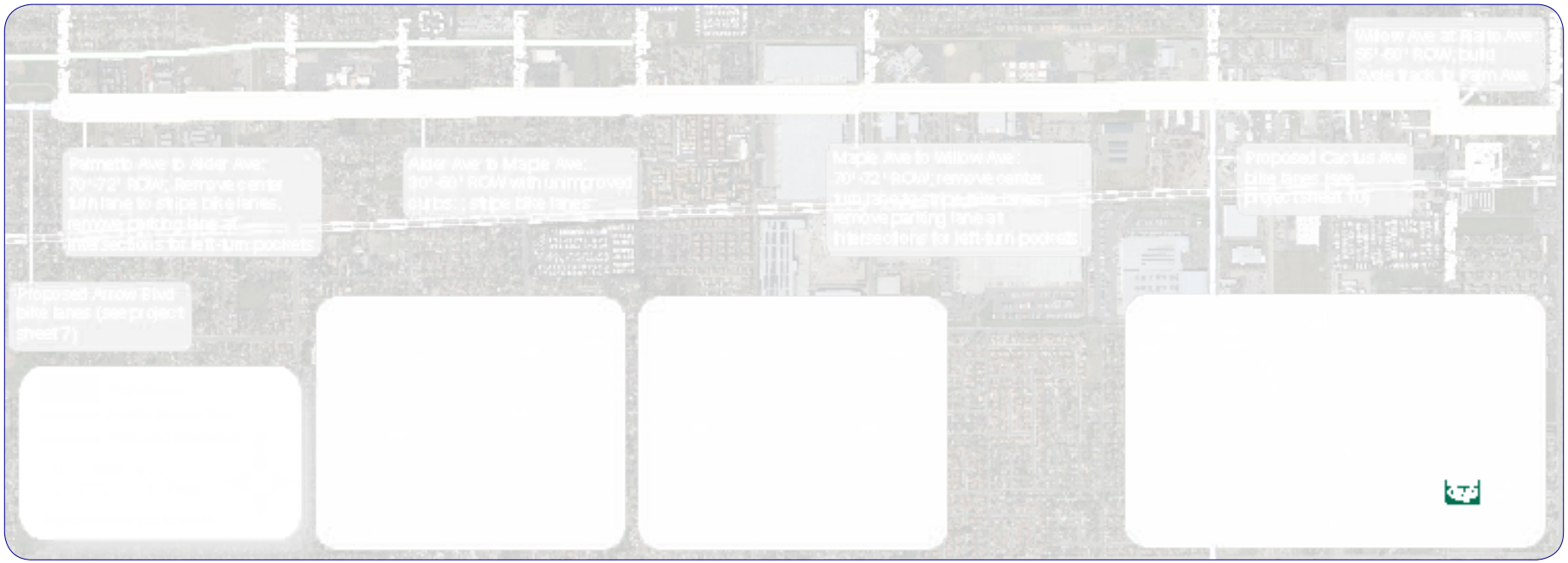
A two-way cycle track on Willow Avenue and Rialto Avenue would facilitate a bicycle connection to the Rialto Station.

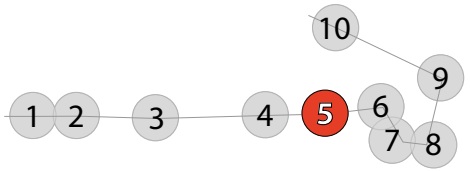
Cost Estimate

- Class II bike lanes (Arrow Boulevard/Rialto Avenue): 3.28 mile @ $50,000/mile
- Cycle track (east side of S. Palm Avenue and north side of Rialto Avenue): 0.13 mile @ $80,000/mile
- Class III bike route (Palm Avenue): 0.11 mile @ $30,000/mile

Total Cost: $178,000

FIGURE 4.21: **ARROW BOULEVARD IMPROVEMENTS**





Rialto Station: N Cactus Avenue

Project Description

Bike lanes currently exist on N. Cactus Avenue north of W. Rialto Avenue. This project extends the bicycle facility south to Bloomington Avenue, enhancing bicycle access to the station from the south.

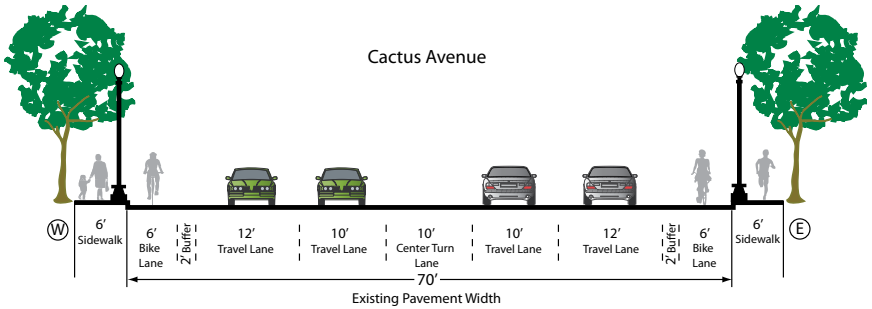


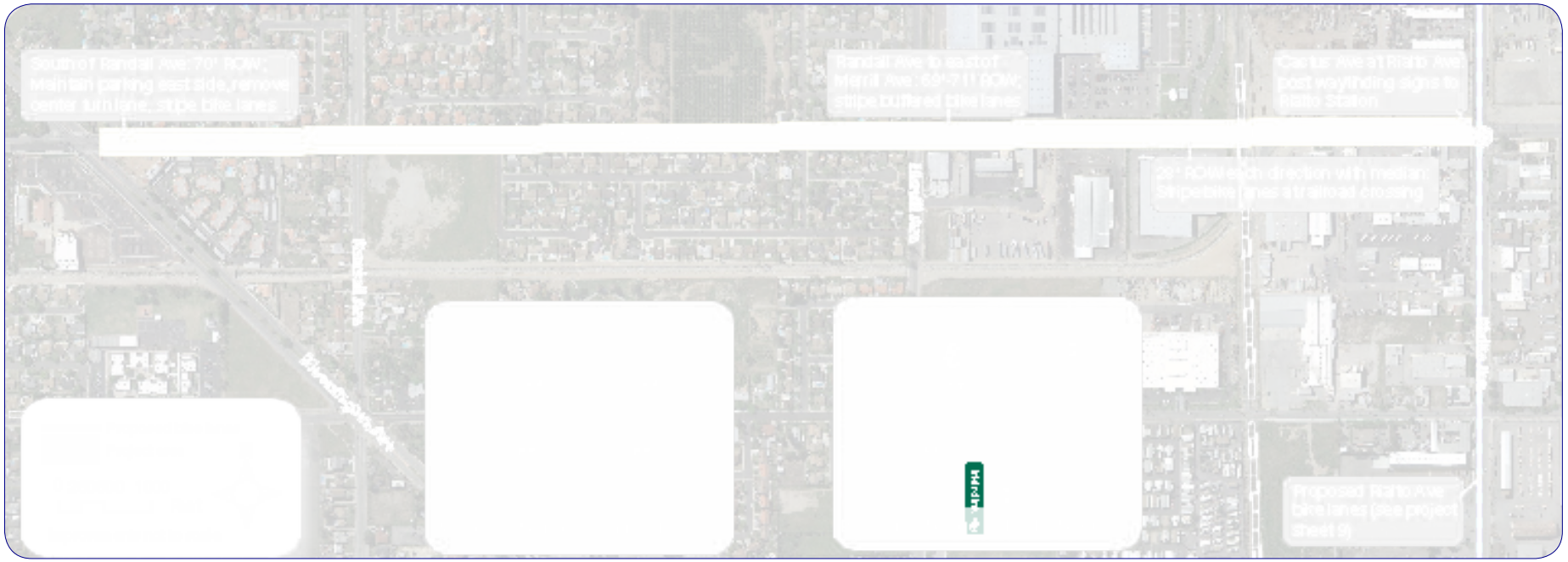
FIGURE 4.22: **N CACTUS AVENUE IMPROVEMENTS**

Buffered bike lanes can be accommodated along this corridor by narrowing travel lanes and removing the center turn lane.

Cost Estimate

- Class II bike lanes: 1.21 mile @ $50,000/mile
- 2 wayfinding signs @ $300

Total Cost: $61,000



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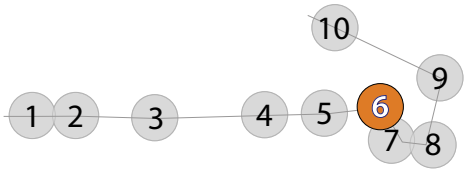


4.6 San Bernardino Metrolink Station Improvements

Overview

The San Bernardino Metrolink Station represents the current eastern terminus of Metrolink service in San Bernardino County. The immediate station area has a number of substandard, disconnected sidewalks, limited shade, and is disconnected from areas to the north of the station by the adjacent freight rail yard, save for a single, deteriorating bridge at Mt. Vernon Avenue.

Bicycle facilities in the study area are limited, and provide no direct connection to nearby attractions, despite an observed high level of bicycle activity.

Improvements in the area focus on improving connections within the community and mitigating the divisive nature of the rail yard and nearby Interstate 215.

Recommended Pedestrian Catchment Area Improvements

- Pavement, sidewalk, and bridge improvements
- Wayfinding
- Public art
- Shade trees

Recommended Bicycle Catchment Area Improvements

- Extend Rialto Avenue bike lanes to I-215 and possibly Mt. Vernon to bypass freeway ramp conflicts
- Buffered bike lanes along Arrowhead
- Class II Bike Lanes along Mt. Vernon
- Intersection crossing markings and colored conflict zones
- Construct Class I Bike Path from Baseline to Colton

IMPROVEMENT TYPE	ESTIMATED COST
General Priority Bikeways Corridor Improvements	$4,104,500
Specific Improvements in Bicycle Catchment Area	$180,000
Specific Improvements in Pedestrian Catchment Area, including 30% contingency	$5,034,900
TOTAL	**$9,319,400**

Cyclists often find freeway ramp environments challenging and difficult to navigate, such as this interchange at Baseline and I-15 in Rancho Cucamonga.

Colored bike lanes provide motorists and cyclists with a less challenging, less stressful experience.

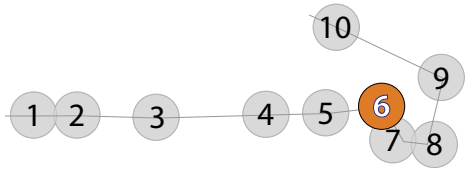
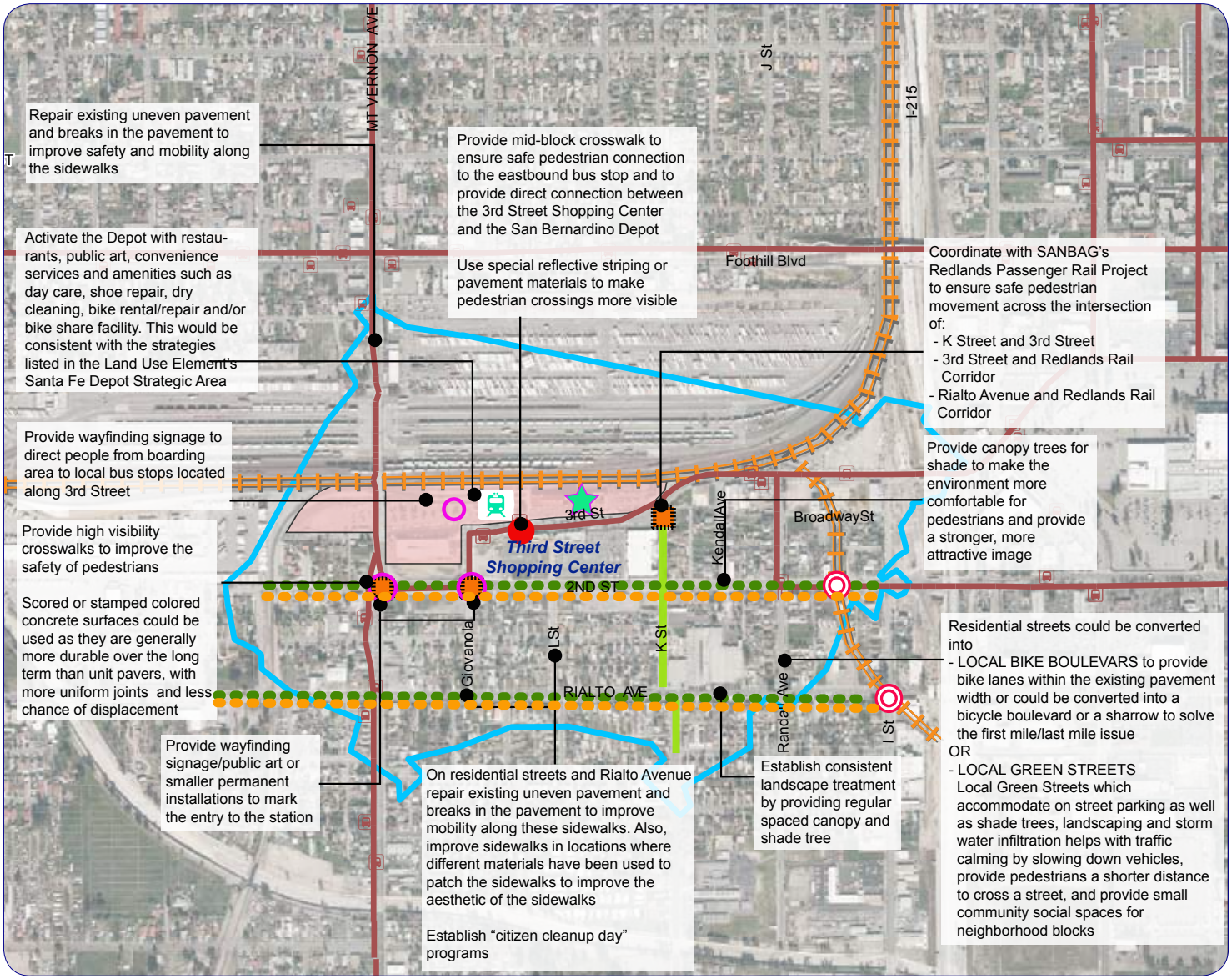


FIGURE 4.23: **SAN BERNARDINO METROLINK STATION PROPOSED PEDESTRIAN IMPROVEMENTS**



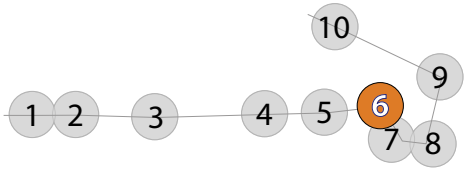
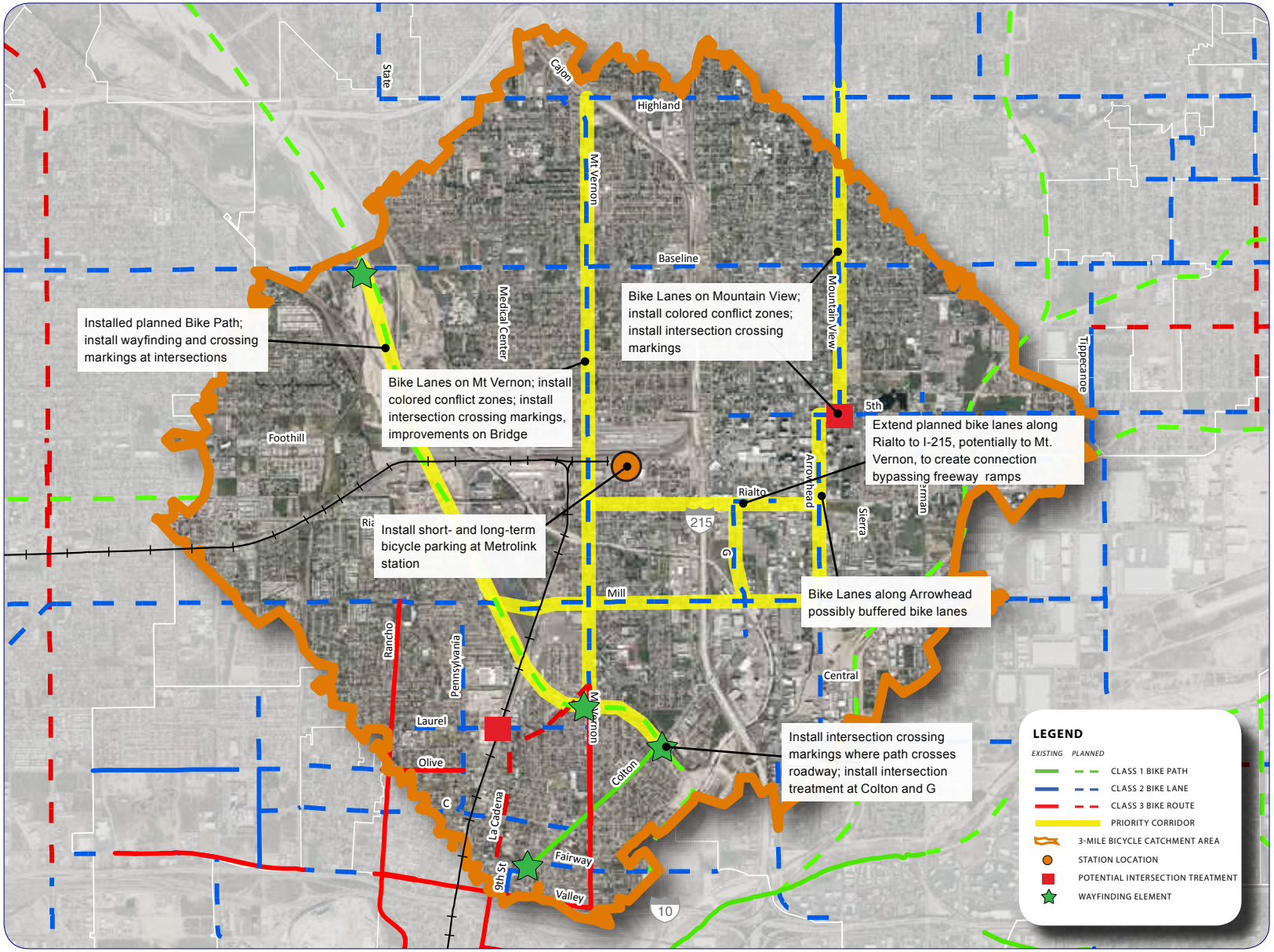
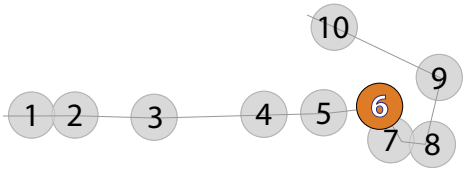


FIGURE 4.24: **SAN BERNARDINO METROLINK STATION PROPOSED BICYCLE NETWORK IMPROVEMENTS**

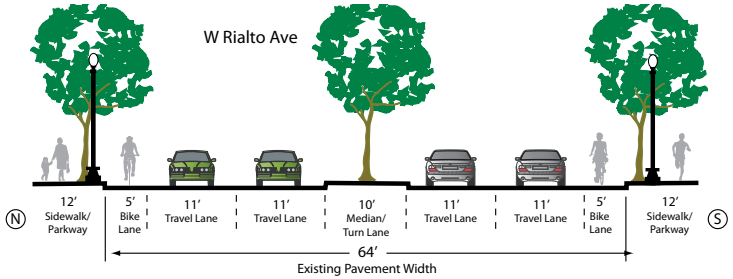




San Bernardino Station: W Rialto Avenue

Project Description

Bike lanes can be provided by narrowing the lanes along W. Rialto Avenue from I-215 to W. Arrowhead Street. Intersection through-markings with green paint will improve visibility of the bike lanes. Following successful implementation, additional study should be done to examine the feasibility of a direct connection West to Mt. Vernon, which would connect the existing Metrolink Station to the planned station at Arrowhead along a facility without freeway ramp conflicts.



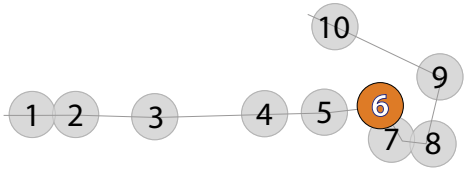
Provide intersection through markings with green paint on the approaching side of the intersection to improve drivers' awareness of bicyclists.

Cost Estimate

- Class II bike lanes: 0.68 mile @ $50,000/mile
- Colored pavement: 100 yards @ $65/SY
- Intersection crossing markings: 5 @ $3,500

Total Cost: $58,000

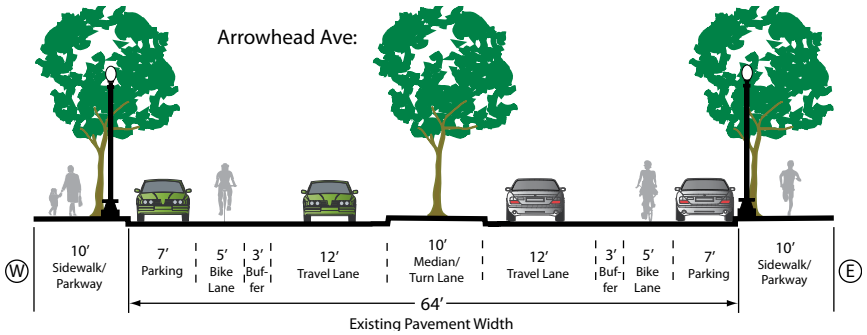
FIGURE 4.25: **W RIALTO AVENUE IMPROVEMENTS**



San Bernardino Station: N Arrowhead Avenue

Project Description

This project would remove a travel lane from N. Arrowhead Avenue in each direction to provide a buffered bike lane, a center turn lane/median, and parking in both directions from W. 5th Street to E. Mill Street.



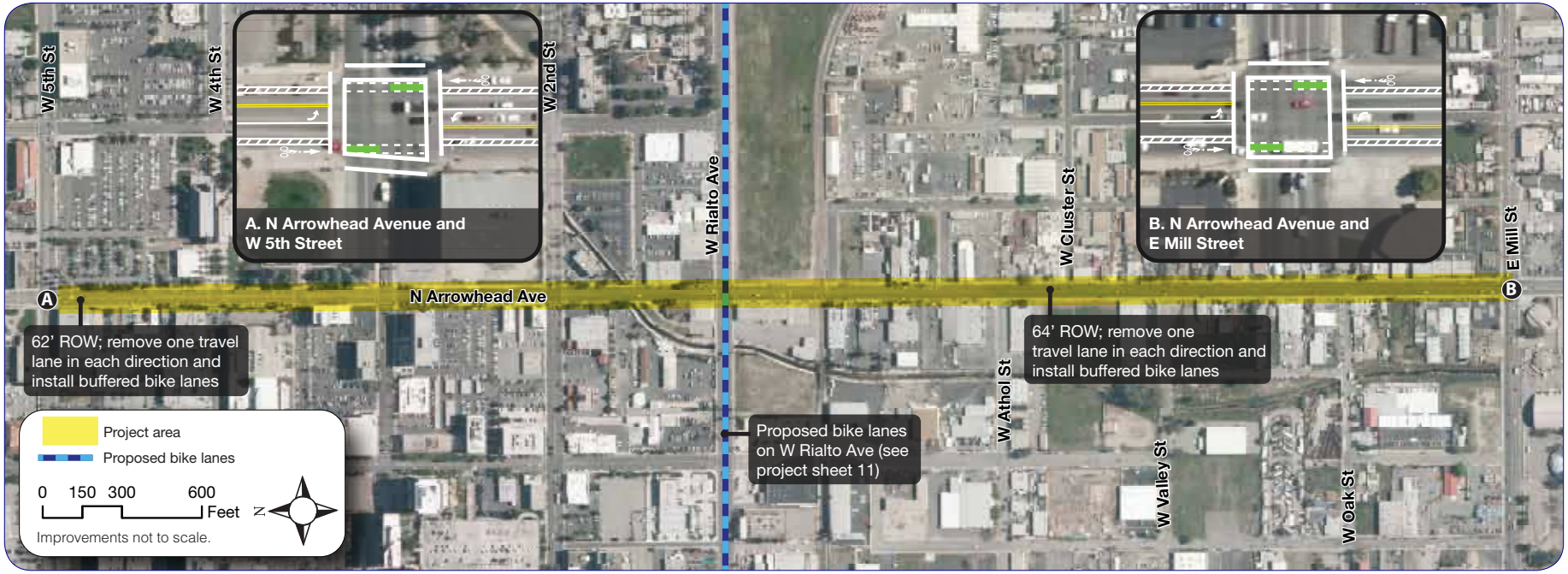
Stripe buffered bike lane to separate bicyclists from automobiles and to provide a more comfortable bicycling environment.

Cost Estimate

- Class II buffered bike lanes: 1.11 mile @ $80,000/mile
- Colored pavement: 140 yards @ $65/SY
- Intersection crossing markings: 7 @ $3,500

Total Cost: $122,000

FIGURE 4.26: **N ARROWHEAD AVENUE IMPROVEMENTS**



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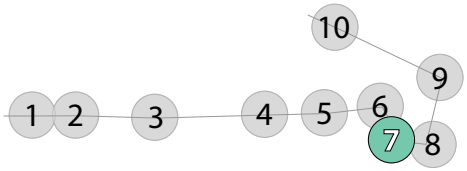


4.7 Hunts Lane sbX Station Improvements

Overview

The Hunts Lane sbX Bus Rapid Transit (BRT) station is located in the middle of a busy commercial corridor. The station are features a variety of pedestrian environments, from tree-lined, well-connected sidewalks, to the challenging I-10 undercrossing south of the station.

Several planned bicycle facilities can be found in the area, including extensions of the Santa Ana River Trail, San Timoteo Creek Trail, as well as other Class II Bike Lanes.

Improvements in the area are designed to improve the connections to the area from the north and east, and to provide pedestrians and cyclists with safe, direct routes across Interstate 10.

Recommended Pedestrian Catchment Area Improvements

- Direct connections to the nearby Santa Ana River Trail
- Improved crosswalks and sidewalks
- Shade trees
- Improved I-10 undercrossing

Recommended Bicycle Catchment Area Improvements

- Extend E Street Bike Lanes to Mill
- Construct Santa Ana River Trail from Waterman to Tippecanoe
- Construct Class I Bike Path from E to Mill
- Wayfinding
- Extend San Timoteo Creek Trail to station via drainage channel or Redlands Blvd
- Additional Class II Bike Lanes along Orange Show, Mill, Arrowhead, and Tippecanoe
- Bicycle parking at station area

IMPROVEMENT TYPE	ESTIMATED COST
General Priority Bikeways Corridor Improvements	$3,443,080
Specific Improvements in Bicycle Catchment Area	$1,418,000
Specific Improvements in Pedestrian Catchment Area, including 30% contingency	$4,870,268
TOTAL	**$9,731,348**

Existing Santa Ana River Trail signage near the Hall of Records is vague and uninviting

Branding the Santa Ana River Trail as a destination for regional cyclists will increase usage by commuters

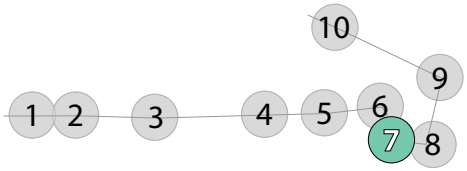
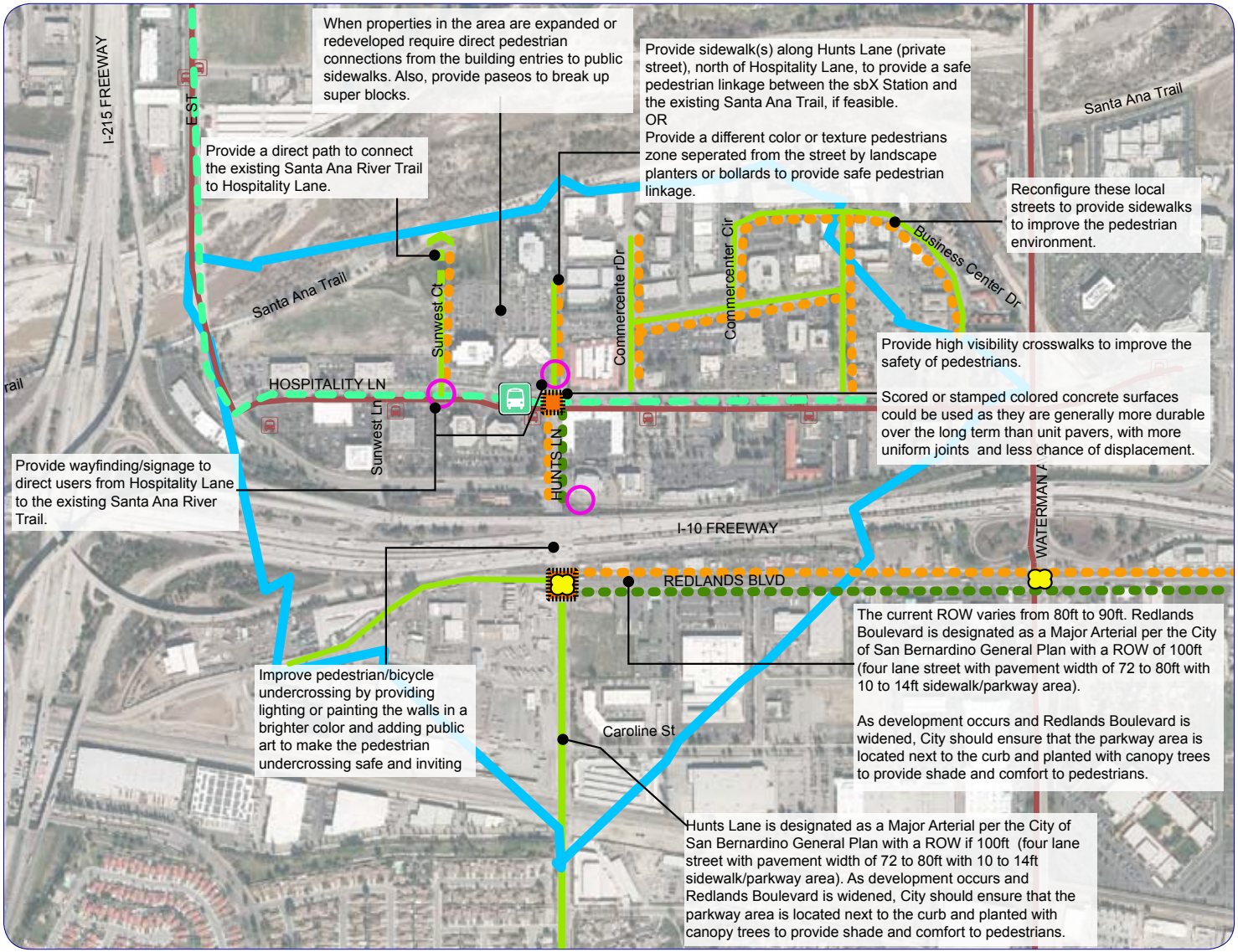


FIGURE 4.27: **HUNTS LANE SBX STATION PROPOSED PEDESTRIAN IMPROVEMENTS**



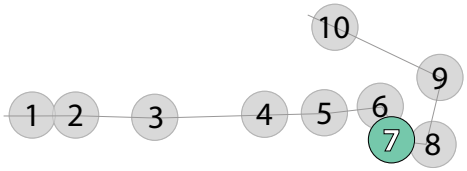
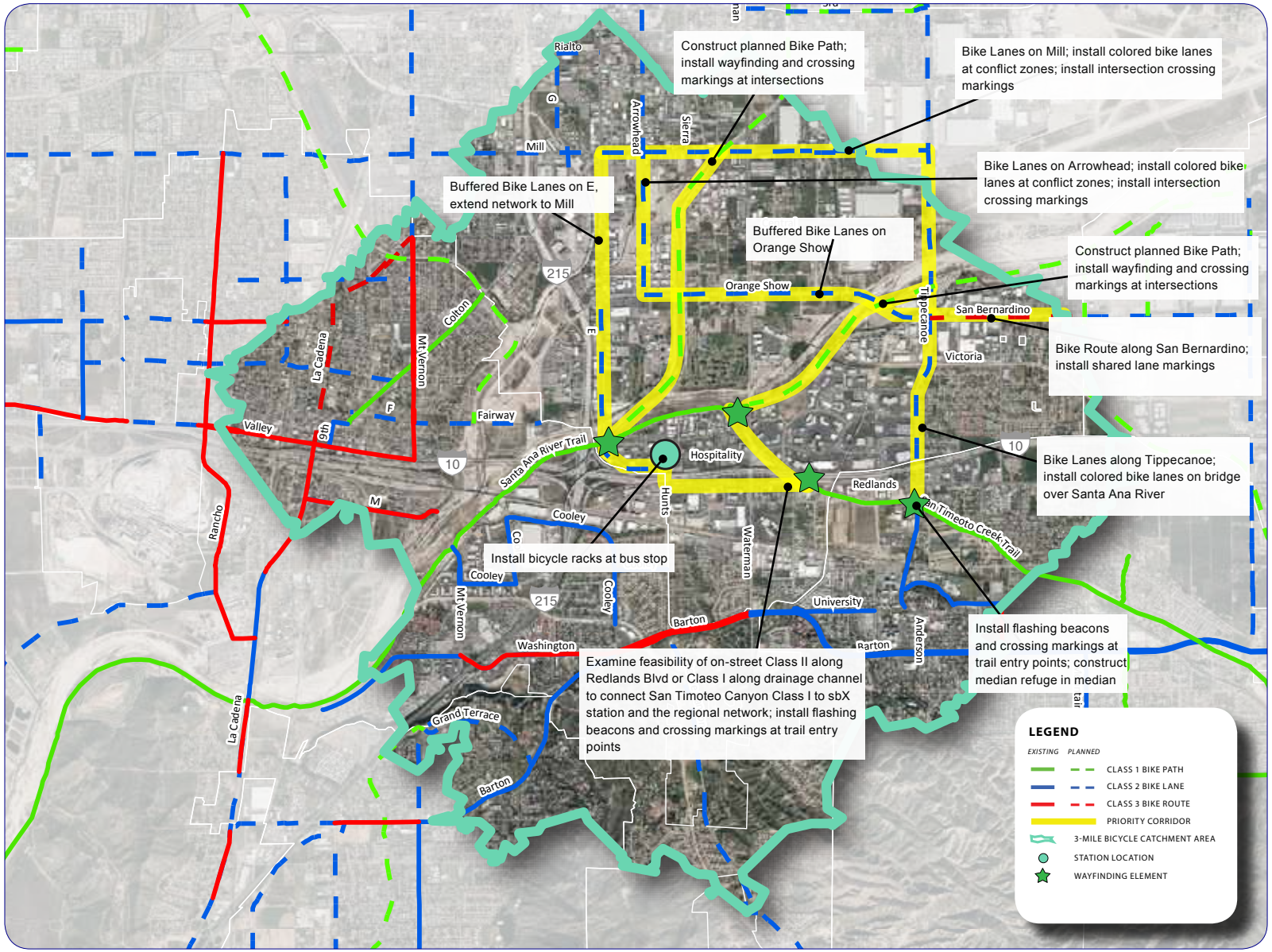
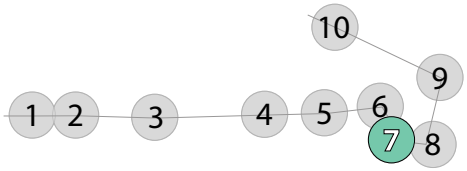


FIGURE 4.28: **HUNTS LANE SBX STATION PROPOSED BICYCLE NETWORK IMPROVEMENTS**

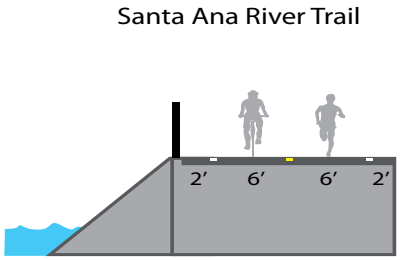




Hunts Lane Station: Santa Ana River Trail

Project Description

The Santa Ana River Trail has been constructed alongside the Santa Ana River west of the project area to S Waterman Drive. This project provides a crossing of S Waterman Drive and continues the trail east to S. Tippecanoe Avenue. The alignment includes a stream and railroad crossing, as well as a crossing at E Orange Show Road and at S Tippecanoe Avenue.



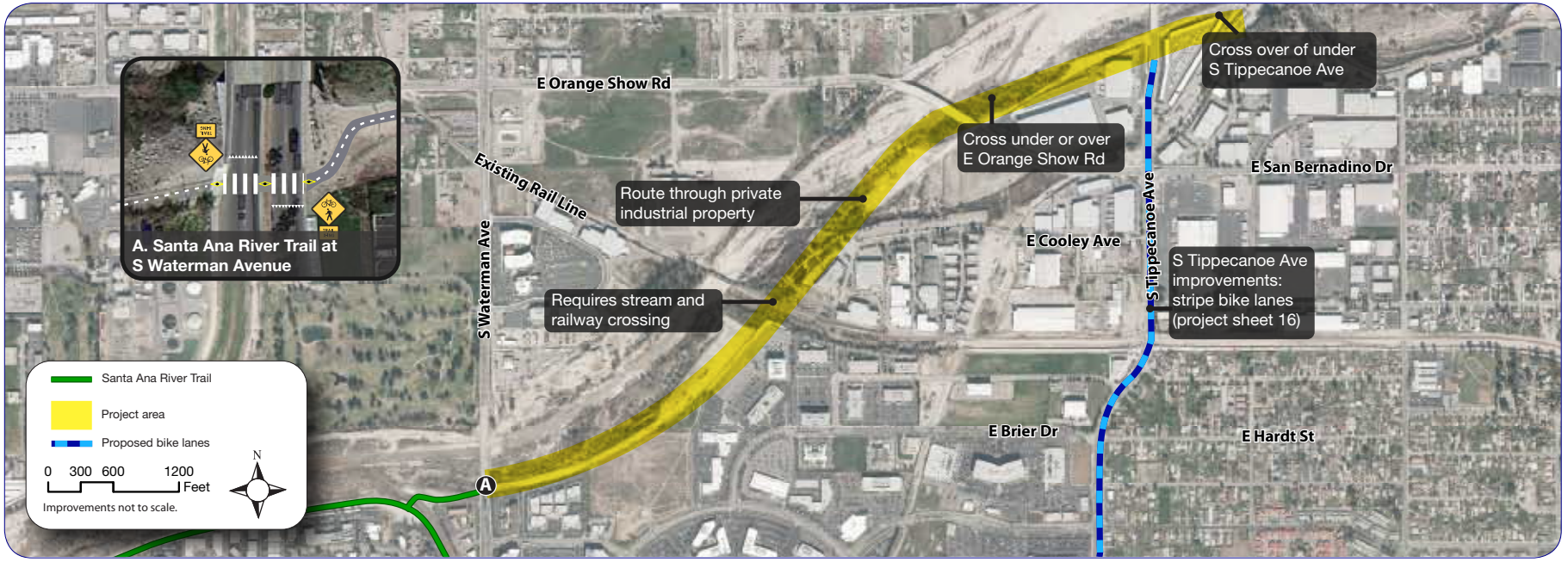
This trail would be constructed along the Santa Ana River and will require several complicated crossings.

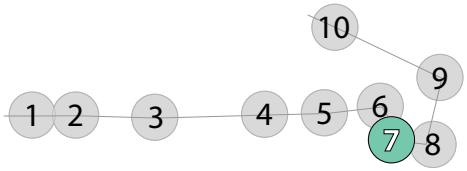
Cost Estimate

- Class I bike path: 1.35 miles @ $1,000,000/mile

Total Cost: $1,350,000

FIGURE 4.29: **SANTA ANA RIVER TRAIL IMPROVEMENTS**

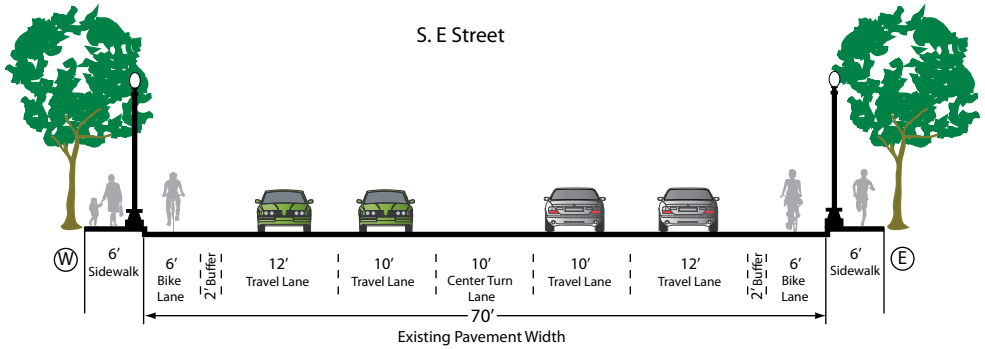




Hunts Lane Station: E Street

Project Description

E Street and Hunts Lane provide a direct connection from Hunts Lane Station north to Orange Show Road. Bike lanes can be provided on E Street with the removal of the center turn lane through the corridor and removal of the second left turn lane at W. Orange Show Road.



The center turn lane can be removed to accommodate bike lanes along E Street.

Cost Estimate

- Class II bike lanes: 1.33 mile @ $50,000/mile
- Shared lane markings (S Hunts Lane): 2 @ $400

Total Cost: $68,000

FIGURE 4.30: **E STREET IMPROVEMENTS**

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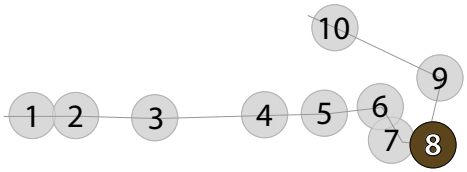


4.8 Anderson Street sbX Station Improvements

Overview

The Anderson Street sbX BRT station is situated south of Interstate 10 on the border of Loma Linda and San Bernardino. Connections to the station from Loma Linda are ample and adequate, with the exception of the terminus of the San Timoteo Creek Trail, which is located approximately a quarter mile from the station, forcing pedestrians and cyclists to detour through neighborhood streets to reach the station.

Anderson Street north of the station is typically congested with vehicles, and provides a challenging environment for the non-motorized traveller as he approaches the I-10 undercrossing.

Improvements are designed to extend the San Timoteo Creek Trail across Anderson, improve at-grade pedestrian crossings and sidewalks, and provide greater shade for residents and commuters.

Recommended Pedestrian Catchment Area Improvements

- Sidewalk improvements
- Crosswalk improvements
- Additional trees
- Additional lighting

Recommended Bicycle Catchment Area Improvements

- Extend E Street Bike Lanes to Mill
- Construct Santa Ana River Trail from Waterman to Tippecanoe and spur to California
- Construct Class I Bike Path from E to Mill
- Wayfinding
- Extend San Timoteo Creek Trail to station via drainage channel or Redlands Blvd
- Additional Class II Bike Lanes along Orange Show, Mill, Arrowhead, and Tippecanoe

IMPROVEMENT TYPE	ESTIMATED COST
General Priority Bikeways Corridor Improvements	$2,843,860
Specific Improvements in Bicycle Catchment Area	$283,000
Specific Improvements in Pedestrian Catchment Area, including 30% contingency	$3,601,137
TOTAL	**$6,727,997**

Regional Class I Bike Path facility abruptly ends east of Anderson.

Opening the pathway provides a direct link to the Anderson sbX station and the rest of the City bike network.

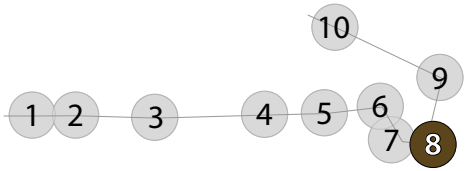
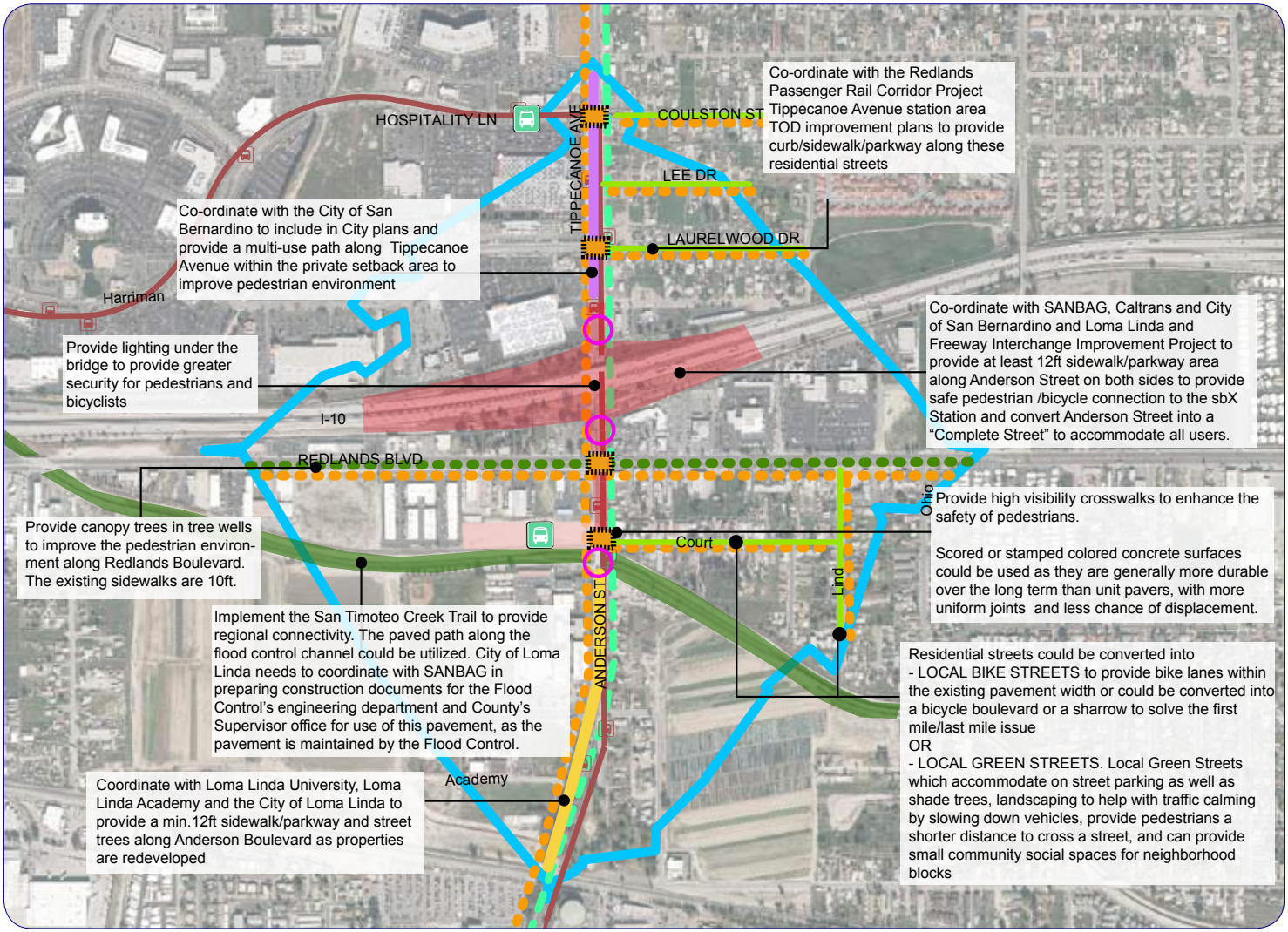


FIGURE 4.31: **ANDERSON STREET SBX PROPOSED PEDESTRIAN IMPROVEMENTS**



LEGEND

- Proposed sbX Station & Park & Ride Lot
- 0.5 Mile Walk to Transit Station
- Existing Local Bus Route
- Existing Local Bus Stop
- Provide sidewalks with Parkway/ Street trees on both sides
- Proposed Multi-Use Path
- Proposed Pedestrian Enhancements
- Provide Wayfinding Signage/Public Art
- Proposed Shade Trees
- Proposed Pedestrian-Scale LED or Solar Lights
- Proposed Decorative Crosswalks
- Proposed sbX Route
- Proposed San Timoteo Creek Trail

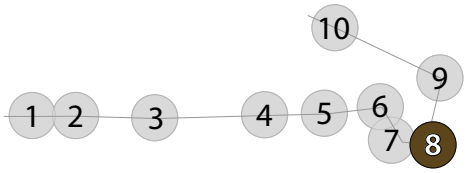
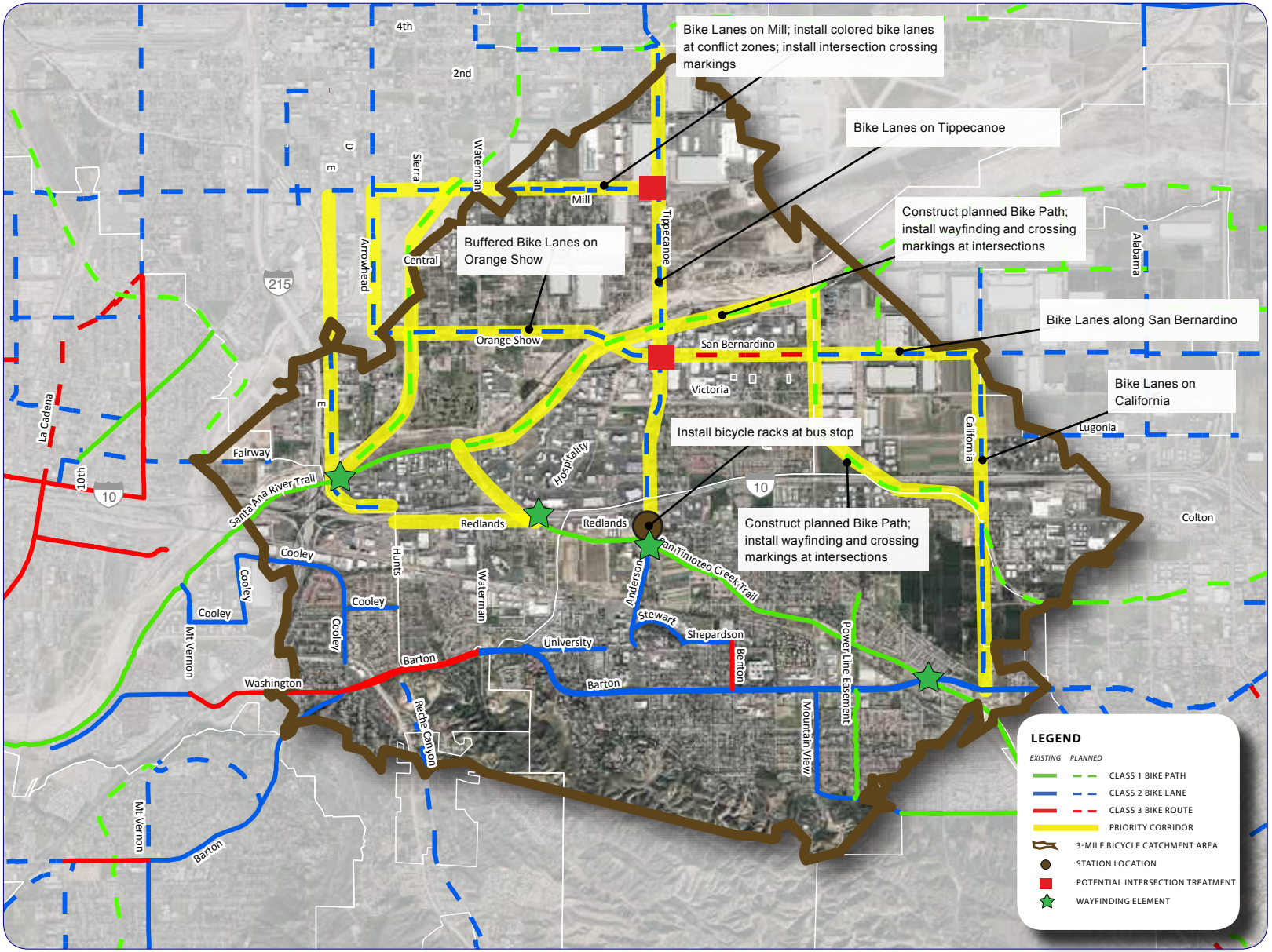
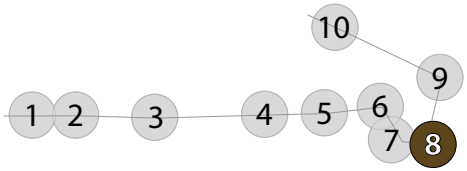


FIGURE 4.32: **ANDERSON STREET SBX PROPOSED BICYCLE NETWORK IMPROVEMENTS**





Anderson Station: San Timoteo Creek Trail

Project Description

An existing access road along the San Timoteo Creek could be repaved and striped as a Class I Bike Path. The project would connect to the on-street bike route proposed in Project #16. Improvements would include opening existing gates at access points, landscaping, and providing enhanced crossings of roadways.

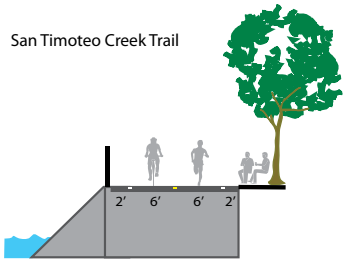
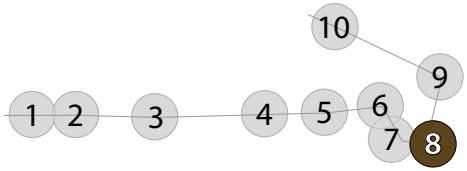


FIGURE 4.33: SAN TIMOTEO CREEK TRAIL **IMPROVEMENTS**

Cost Estimate

- Upgrade Class I bike path: 1.00 miles @ $100,000/mile
- Crossing treatment at Redlands Boulevard, includes crosswalk, median extension, and signage @ $17,000

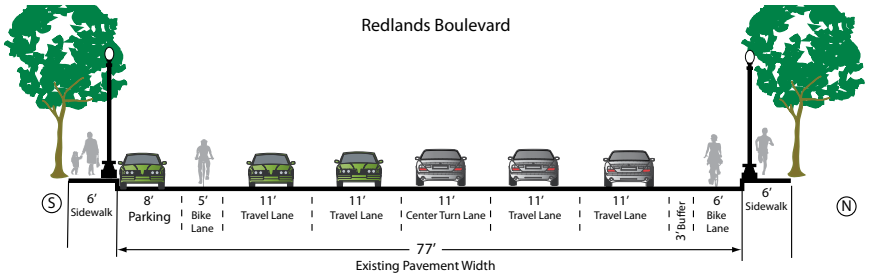
Total Cost: $117,000



Anderson Station: Redlands Boulevard

Project Description

Redlands Boulevard currently has on-street parking on both sides, despite the presence of ample off-street parking for nearby land uses. Removal of parking on the north side, whose numerous curb cuts prevent parking, creates space for bike lanes in both directions.



Coloration should be used in the bike lanes at the interstate ramps to enhance visibility of bicyclists in the bike lanes.

Cost Estimate

- 2 curb extensions @ $30,000
- 5 high-visibility crosswalks @ $600
- 3 bike lane crossing treatments @ $3,500
- 0.95 miles of bike lanes, buffered on one side @ $65,000

Total Cost: $166,000

FIGURE 4.34: REDLANDS BOULEVARD IMPROVEMENTS

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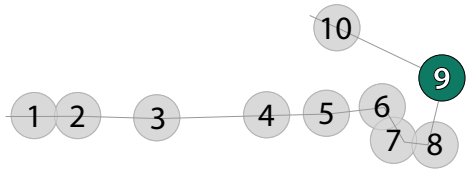


4.9 Highland Avenue sbX Station Improvements

Overview

The Highland sbX BRT station area is located in a residential area of San Bernardino. Highland Avenue has a number of commercial businesses along its length, with generally wide and clear sidewalks. San Bernardino High School is located south of the station. The area has a number of mature trees along nearby smaller residential streets, whose roots can cause problems for those with mobility issues.

As with several streets in the area, planned bike lanes can be constructed within the existing center turn lane and a narrowing of travel lanes. Some streets may also accommodate buffered bike lanes as a way to create safer transitions to and from major arterials.

Recommended Pedestrian Catchment Area Improvements

- Curb ramp improvements
- Crosswalk improvements
- Shade trees
- Wayfinding
- Lighting improvements

Recommended Bicycle Catchment Area Improvements

- Class II Bike Lanes or buffered bike lanes on Highland, Mt. Vernon, 5th, Valencia, and Mountain View
- Intersection crossing markings
- Colored conflict zones
- Construct Class I Bike Path from 5th to Parkdale

IMPROVEMENT TYPE	ESTIMATED COST
General Priority Bikeways Corridor Improvements	$3,923,000
Specific Improvements in Bicycle Catchment Area	$38,000
Specific Improvements in Pedestrian Catchment Area, including 30% contingency	$4,977,882
TOTAL	**$8,938,882**

Highland Avenue has ample space to accommodate the Class II Bike Lanes planned for the corridor.

Busy roadways can benefit from colored pavement markings identifying the designated bike lanes.

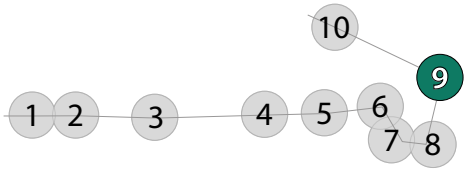
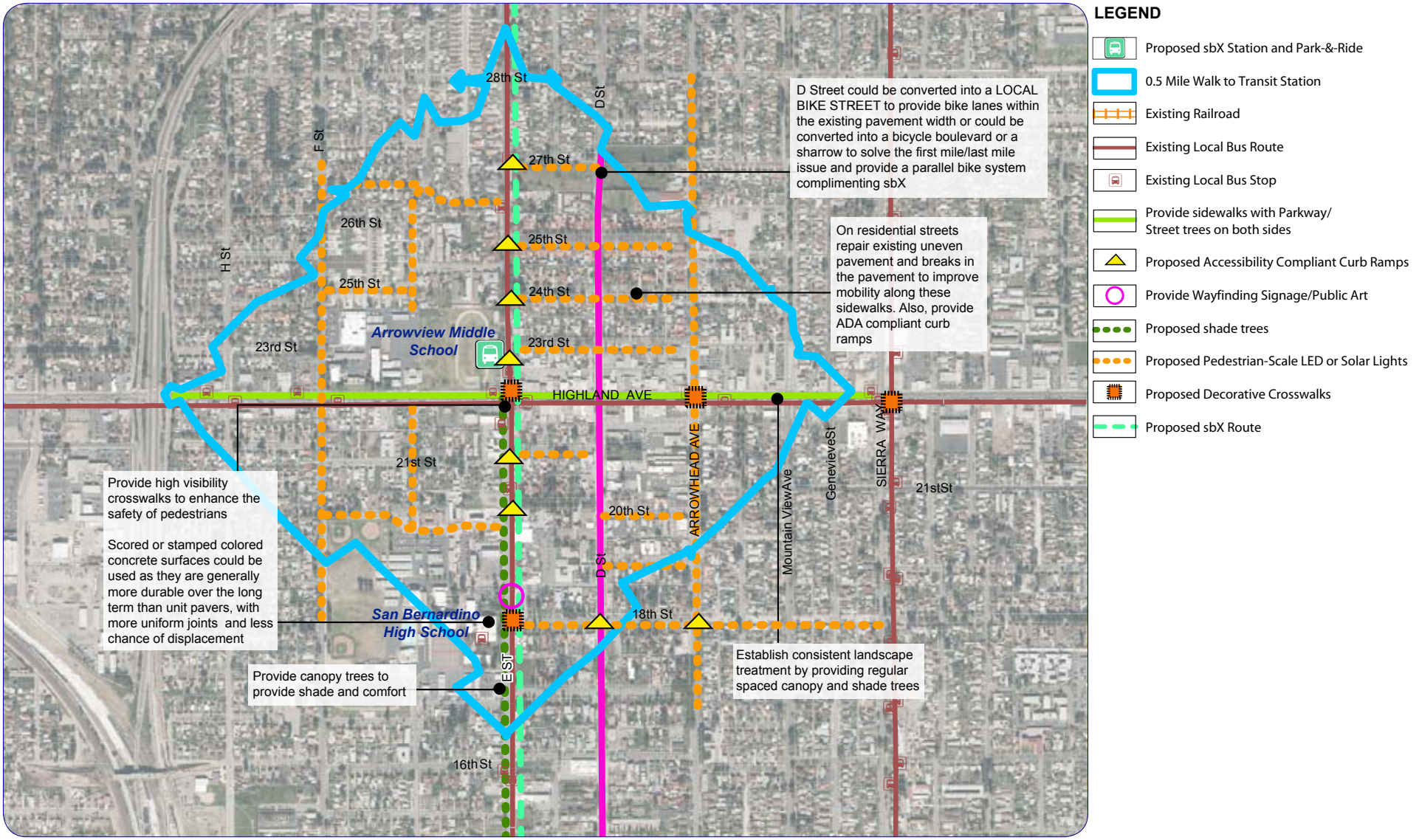


FIGURE 4.35: **HIGHLAND AVENUE SBX STATION PROPOSED PEDESTRIAN IMPROVEMENTS**



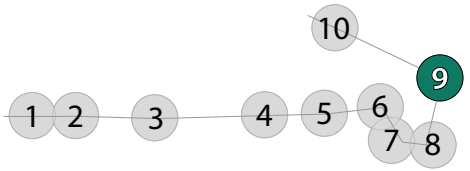
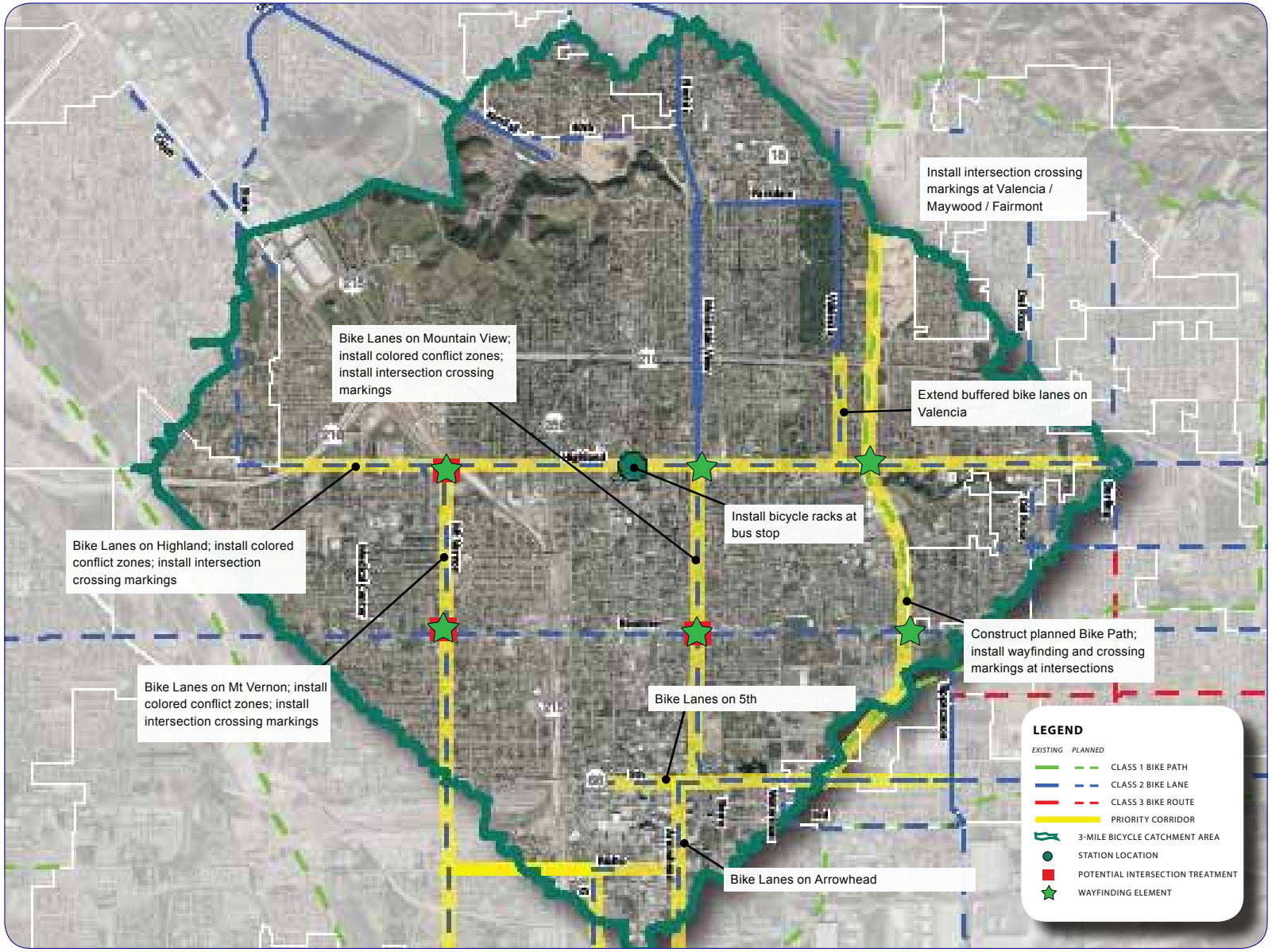
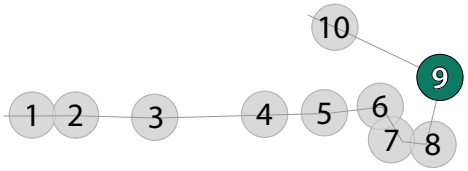


FIGURE 4.36: **HIGHLAND AVENUE SBX STATION PROPOSED BICYCLE NETWORK IMPROVEMENTS**

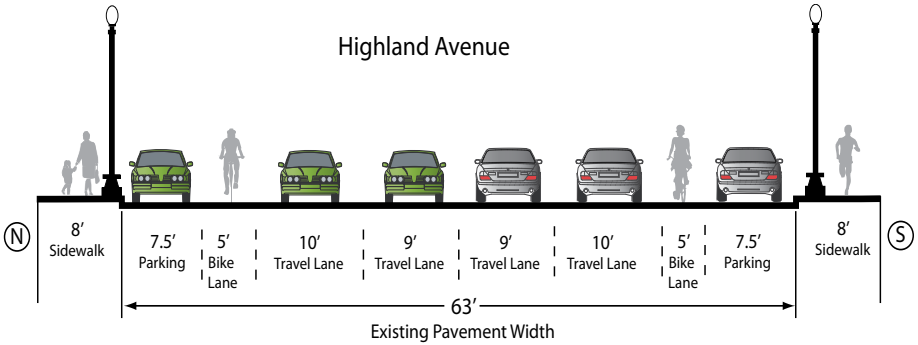




Highland Avenue Station: Highland Avenue

Project Description

Bike lanes can be striped on Highland Ave with the removal of the center turn lane and the narrowing of travel lanes. One parking lane should be removed at each intersection to allow for left-turn pockets. The roadway is very narrow for a four-lane road, and requires undesirable lane widths.



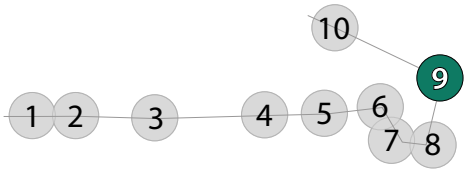
Coloration in the bike lanes should be used where drivers are likely to cross the bike lane to make a right turn.

Cost Estimate

- Class II bike lanes: 0.39 mile @ $50,000/mile
- Green paint: 80 square yards @ $65/SY

Total Cost: $25,000

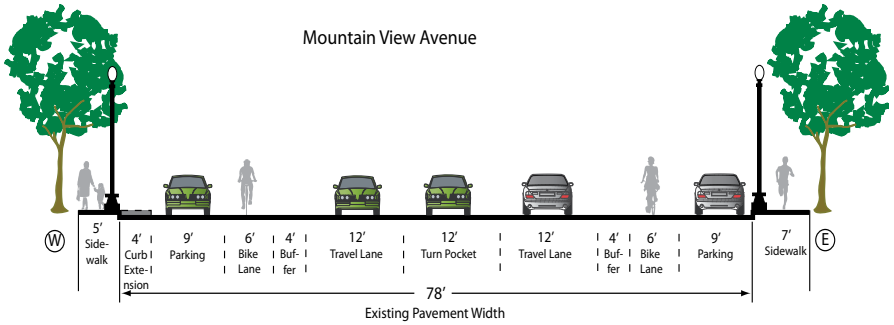
FIGURE 4.37: **HIGHLAND AVENUE IMPROVEMENTS**



Highland Avenue Station: Mountain View Avenue

Project Description

The wide right-of-way on Mountain View Avenue provides sufficient space to stripe buffered bike lanes from where they currently end at W 23rd Street to Highland Avenue. This project connects to the Highland Avenue bike lanes project and the station.



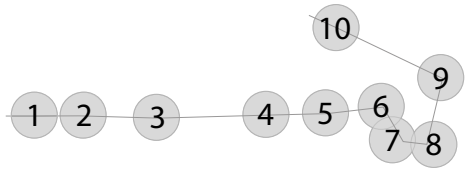
Painting buffered bike lanes and a center turn lane on Mountain View Avenue from W 23rd Street to Highland Avenue will simplify the roadway configuration for all users.

Cost Estimate

- Buffered bike lanes: 0.06 mile @ $80,000/mile
- Green paint: 120 square yards @ 65/SY

Total Cost: $13,000

FIGURE 4.38: **MOUNTAIN VIEW AVENUE IMPROVEMENTS**



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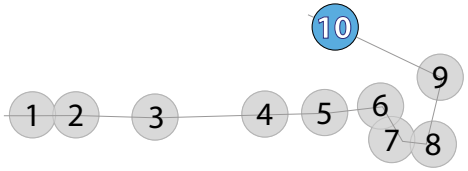


4.10 Palm Avenue sbX Station Improvements

Overview

The Palm sbX Station is the northernmost station in the study area, and is the least-developed in the study area. Residential land uses with a mix of pedestrian and cyclist amenities are typical of the area immediately north and east of the station. Vehicle travel speeds are relatively low, and provide an opportunity to implement a series of "low-stress" recreational and commuter bicycle facilities.

Interstate 215 bisects the study area and poses a challenge for non-motorized transportation, with the area west of the freeway having little to no amenities for travellers.

Improvements include connecting the existing developer-provided soft trail with the planned Class I facility to the east, sidewalk improvements, tree plantings, and intersection improvements.

Recommended Pedestrian Catchment Area Improvements

- Street trees
- Curb extensions
- New and/or improved sidewalks
- Crosswalk improvements

Recommended Bicycle Catchment Area Improvements

- Intersection crossing markings
- Wayfinding elements
- Bike Path along Ohio
- Buffered bike lanes on Kendall, Northpark and Campus

IMPROVEMENT TYPE	ESTIMATED COST
General Priority Bikeways Corridor Improvements	$1,650,000
Specific Improvements in Bicycle Catchment Area	$82,000
Specific Improvements in Pedestrian Catchment Area, including 30% contingency	$2,001,922
TOTAL	**$3,733,922**

Many flood channel roads are closed and unavailable for non-motorized use.

Slower, low-traffic neighborhood streets provide an excellent opportunity for bicycle boulevards.

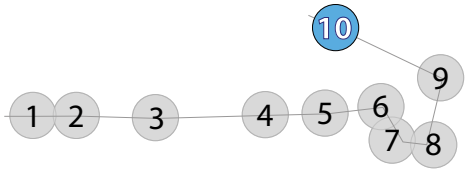
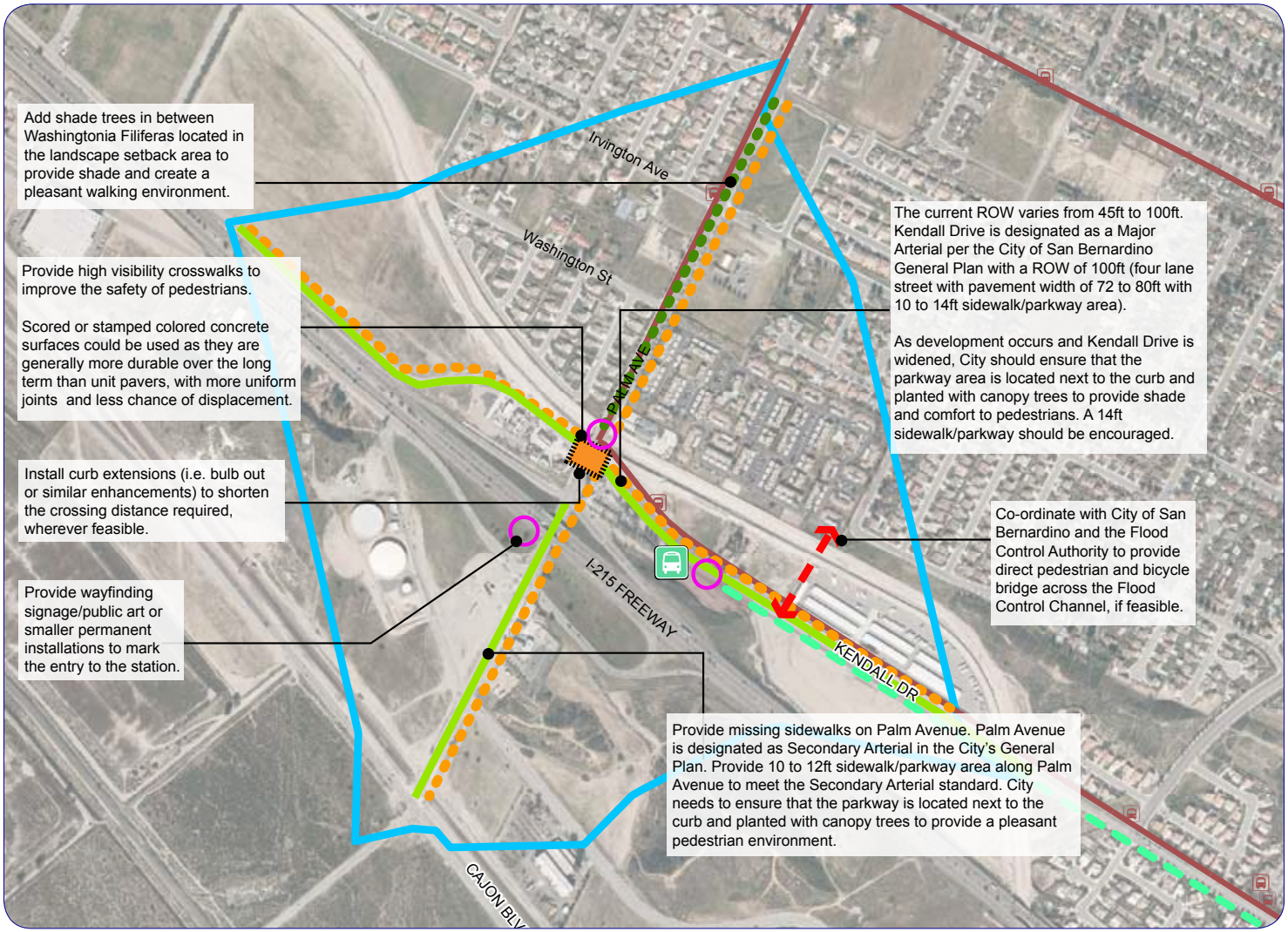


FIGURE 4.39: **PALM AVENUE SBX PROPOSED PEDESTRIAN IMPROVEMENTS**



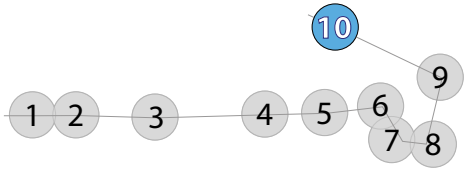
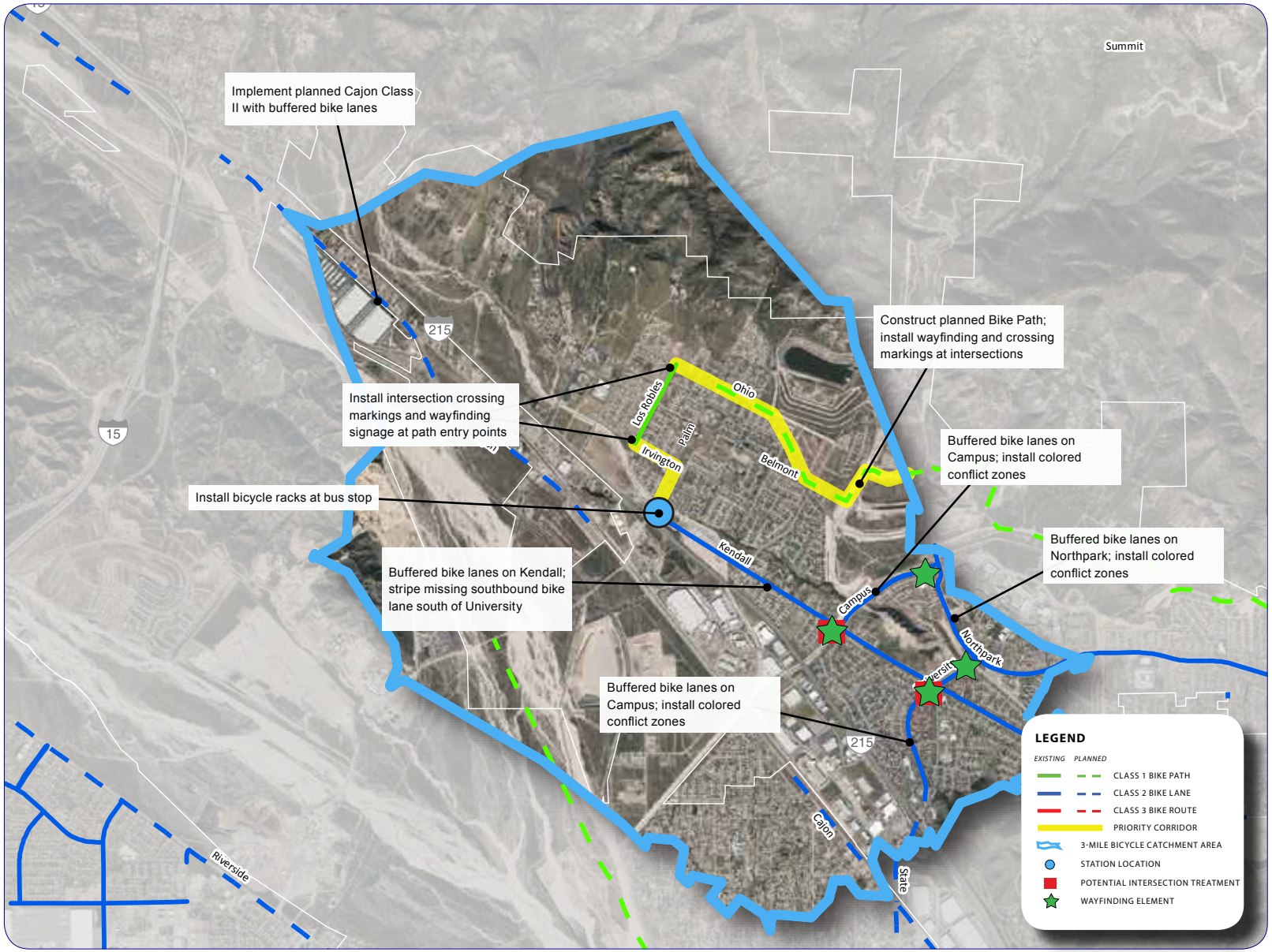
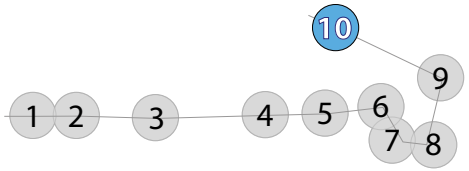


FIGURE 4.40: **PALM AVENUE SBX PROPOSED BICYCLE NETWORK IMPROVEMENTS**

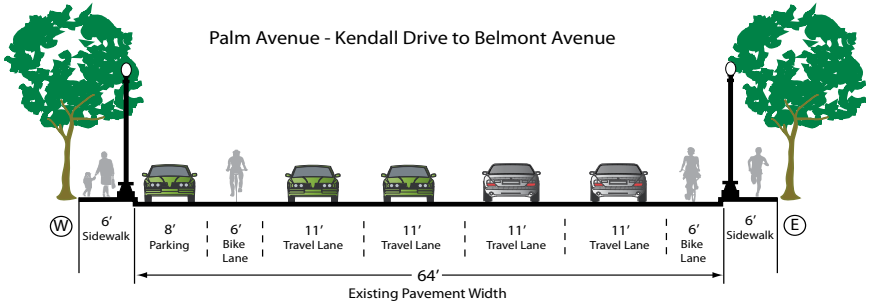




Palm Avenue Station: Palm Avenue

Project Description

Bike lanes can be striped on Palm Avenue from the Station to Belmont Avenue. North of Belmont Avenue, road widths and lower speed limits allow a Class III bike route to be designated with signs and pavement markings. This route connects to existing bike lanes on Kendall Drive, Palm Elementary School, and projects on Ohio Avenue and Irvington Avenue.



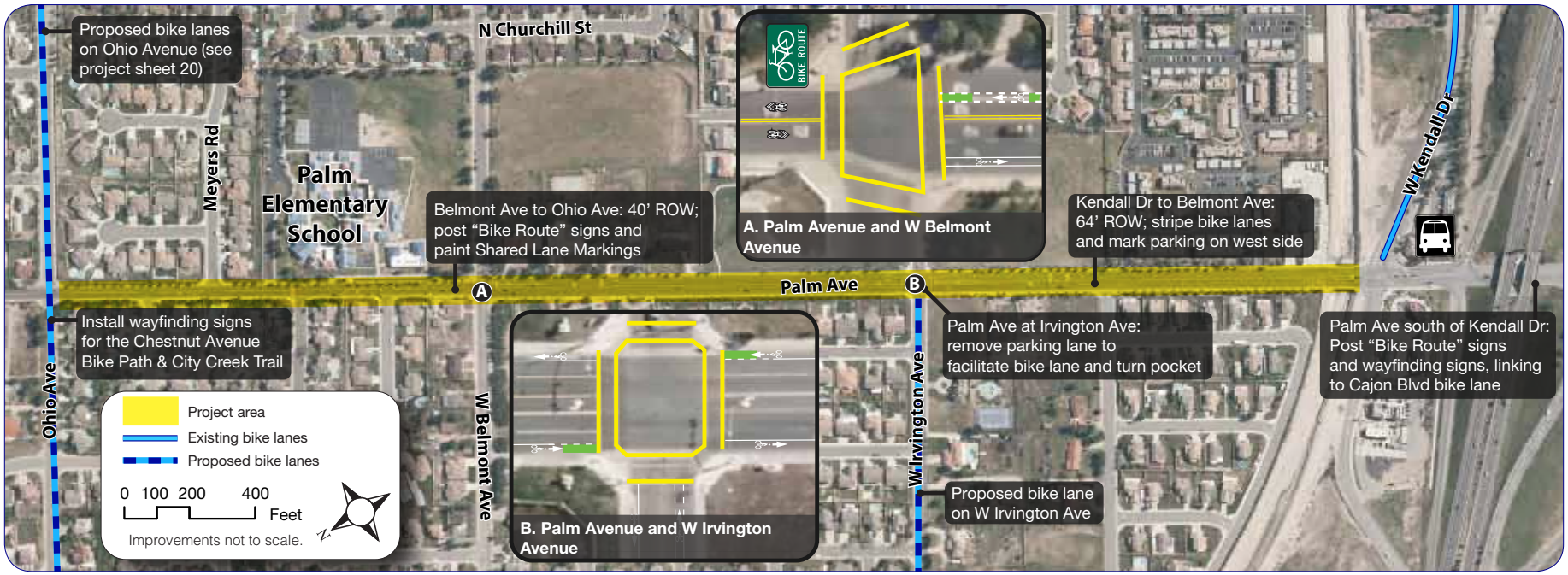
North of Belmont Avenue, low vehicular speeds and volumes enable a Class III bike route to be signed and marked.

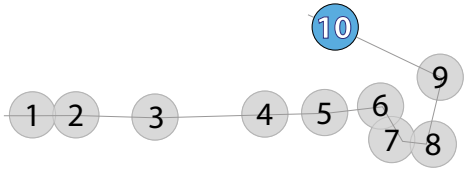
Cost Estimate

- Class II bike lanes: 0.52 mile @ $50,000/mile
- Class III bike route: 0.27 mile @ $30,000/mile

Total Cost: $34,000

FIGURE 4.41: **PALM AVENUE IMPROVEMENTS**

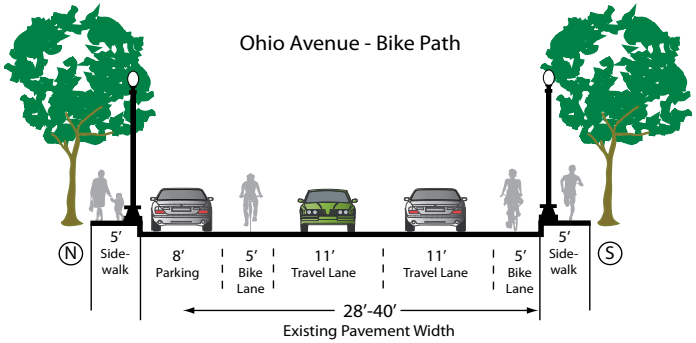




Palm Avenue Station: Ohio Avenue

Project Description

Ohio Avenue can have bike lanes from the bike path to Ridgeline Avenue. East of Ridgeline Avenue, the unimproved northern side of the street would need construction to facilitate bike lanes. This project connects to the City Creek Trail and to the bike route on Palm Avenue.



Bike lanes can be accommodated on Ohio Avenue with the removal of parking on one side of the street.

Cost Estimate

- Class II bike lane: 0.66 mile @ $50,000/mile
- Roadway widening (level terrain; Ridgeline Avenue to Palm Avenue): 0.10 mile @ $150,000/mile

Total Cost: $48,000

FIGURE 4.42: **OHIO AVENUE IMPROVEMENTS**

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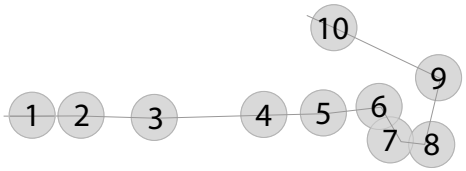


5 Funding and Implementation

This chapter reviews federal, state, local, and other financing options for use by the participating cities to implement recommendations as part of the Improvement to Transit Access for Cyclists and Pedestrians Project. Following a narrative describing each source, **Table 5.1** presents on overview of federal funding sources by bicycle and pedestrian improvement type and **Table 5.2** presents details of all funding sources discussed.

There are many opportunities for funding sources to implement bicycle and pedestrian projects. This section examines the potential federal, state, local, and other sources that could be used to implement recommended improvements to transit access.

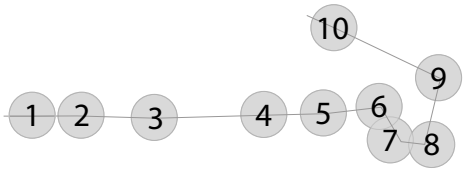
5.1 Federal Funding Sources

Safe, Accountable, Flexible, Efficient Transportation Equity Act – a Legacy for Users (SAFETEA-LU)

Federal funding is primarily distributed through a number of different programs established by Congress. The latest act, the Safe, Accountable, Flexible, Efficient Transportation Equity Act – a Legacy for Users (SAFETEA-LU) was enacted in August 2005 as Public Law 109-59.

SAFETEA-LU authorized the federal surface transportation programs for highways, highway safety, and transit for the 5-year period 2005-2009. SAFETEA-LU legislation expired on September 30, 2009. At the time of writing, SAFETEA-LU has been extended through June 2012 and new legislation is in the process of being written. It should therefore be noted that it is not possible to guarantee the continued availability of any listed SAFETEA-LU programs, or to predict their future funding levels or policy guidance. Nevertheless, many of these programs have been authorized in some form in repeated federal transportation reauthorization acts, and thus may continue to provide capital for improvements.

In California, federal monies are administered through the California Department of Transportation (Caltrans) and regional planning agencies. Most, but not all, of these programs are oriented toward transportation versus recreation, with an emphasis on reducing auto trips and providing inter-modal stop, connections. Federal funding is intended for capital improvements and safety and education programs, and projects must relate to the surface transportation system.



There are a number of programs identified within SAFETEA-LU that are applicable to bicycle and pedestrian projects. These programs are discussed below.

More information: http://www.fhwa.dot.gov/safetealu/index.htm

Transportation Enhancements

A federal program administered by Caltrans, the Transportation Enhancements (TE) program is funded by a set-aside of Surface Transportation Program (STP) monies. Ten percent of STP funds are designated for Transportation Enhancement (TE) activities, which include the "provision of facilities for pedestrians and bicycles, provision of safety and educational activities for pedestrians and bicyclists," and the "preservation of abandoned railway corridors (including the conversion and use thereof for pedestrian and bicycle trails)" 23 USC Section 190 (a)(35). Other TE categories are Historic Preservation; Landscaping and Scenic Beautification; and Environmental Mitigation. Projects must serve a transportation need. TE grants can be used to build a variety of pedestrian, bicycle, streetscape, and other improvements that enhance the cultural, aesthetic, or environmental value of transportation systems. The statewide grant process is competitive. San Bernardino County receives approximately $19 million for TE activities, which it has historically used to fully fund regional county-wide projects.

More information: http://www.dot.ca.gov/hq/TransEnhAct/TransEnact.htm

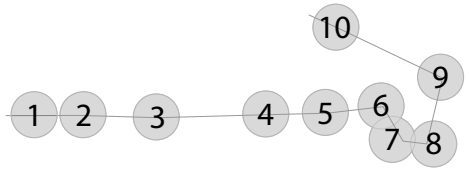
http://sanbag.ca.gov/funding/fed_tea-21_TEA.html

http://www.fhwa.dot.gov/environment/transportation_enhancements/

Surface Transportation Program

The Surface Transportation Program (STP) provides states with flexible funds which may be used for a variety of projects on any Federal-aid Highway including the National Highway System, bridges on any public road, and transit facilities. Bicycle and pedestrian improvements are eligible activities under the STP. This covers a wide variety of projects such as on-street facilities, off-road trails, sidewalks, crosswalks, bicycle and pedestrian signals, parking, and other ancillary facilities. SAFETEA-LU also specifically clarifies that the modification of sidewalks to comply with the requirements of the Americans with Disabilities Act (ADA) is an eligible activity.

As an exception to the general rule described above, STP-funded bicycle and pedestrian facilities may be located



on local and collector roads which are not part of the Federal-aid Highway System. In addition, bicycle-related non-construction projects, such as maps, coordinator positions, and encouragement programs, are eligible for STP monies. SANBAG estimates that they receive an average of $109.3 million annually for this program.

STP funds are allocated to Caltrans of which 75 percent are programmed by regional agencies under current state law. The Federal government does not allocate funds to specific projects.

More information: http://www.fhwa.dot.gov/safetealu/factsheets/stp.htm

http://sanbag.ca.gov/funding/fed_tea-21_RSTP.html

Highway Safety Improvement Program

This program is designed to help communities implement projects designed to achieve significant reductions in traffic fatalities and serious injuries on all public roads, bikeways, and walkways. This program includes the Railway-Highway Crossings Program and the High Risk Rural Roads Program. Cities could pursue Highway Safety Improvement Program funds for on- or off-street projects seeking to reduce serious crashes at highway or railway crossings or on rural roads. Caltrans expects the available funding apportioned to local agencies in 2013 to be approximately $100 million for the Highway Safety Improvement Program.

More information: http://safety.fhwa.dot.gov/hsip/resources/fhwasa09030/

http://www.dot.ca.gov/hq/LocalPrograms/hsip.htm

Recreational Trails Program

The Recreational Trails Program (RTP) of the federal transportation bill provides funding to states to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. Examples of trail uses include hiking, bicycling, in-line skating, and equestrian use. These monies are available for both paved and unpaved trails, but may not be used to improve roads for general passenger vehicle use or to provide shoulders or sidewalks along roads.

Recreational Trails Program funds may be used for:

- Maintenance and restoration of existing trails
- Purchase and lease of trail construction and maintenance equipment
- Construction of new trails, including unpaved trails
- Acquisition or easements of property for trails
- State administrative costs related to this program (limited to seven percent of a state's RTP dollars)

- Operation of educational programs to promote safety and environmental protection related to trails (limited to five percent of a state's RTP dollars)

In California, the Recreational Trails Program is administered by the California Department of Parks and Recreation as a grant program. This grant is specifically designed to pay for recreational trail projects rather than utilitarian transportation-based projects. Proposed shared-use paths are the most likely facility type that could be funded through the Recreational Trails Program, as on-street facilities are typically more transportation-related and therefore not eligible.

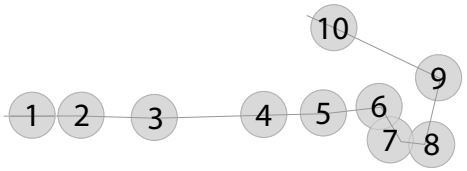
More information: http://www.parks.ca.gov/?page_id=24324

Transportation, Community, and System Preservation Program

The Transportation, Community, and System Preservation (TCSP) Program provides federal funding for transit-oriented development, traffic calming, and other projects that improve the efficiency of the transportation system, reduce the impact on the environment, and provide efficient access to jobs, services, and trade centers. The program is intended to provide communities with the resources to explore the integration of their transportation system with community preservation and environmental activities. The TCSP Program funds require a 20 percent match.

Because the TCSP program is one of many programs authorized under SAFETEA-LU, current funding has only been extended through June 2012. Program officials accepted applications for fiscal year 2012, though it is The Transportation, Community, and System Preservation (TCSP) Program provides federal funding for transit-oriented development, traffic calming, and other projects that improve the efficiency of the transportation system, reduce the impact on the environment, and provide efficient access to jobs, services, and trade centers. The program is intended to provide communities with the resources to explore the integration of their transportation system with community preservation and environmental activities. The TCSP Program funds require a 20 percent match.

Because the TCSP program is one of many programs authorized under SAFETEA-LU, current funding has only been extended through June 2012. Program officials accepted applications for fiscal year 2012, though it is unclear if funding will be available in the future. In most years, Congress has identified projects to be selected for funding through the TCSP program. Assuming that this method is used to allocate TCSP monies in the future, cities will need to work closely with the San Bernardino Associated Governments, Caltrans, and Members of Congress to gain access to this funding.



More information: http://www.fhwa.dot.gov/tcsp/

Congestion Mitigation/Air Quality Program

The Congestion Mitigation/Air Quality Improvement Program (CMAQ) provides funding for projects and programs in air quality non-attainment and maintenance areas for ozone, carbon monoxide, and particulate matter which reduce transportation related emissions. These federal dollars can be used to build bicycle and pedestrian facilities that reduce travel by automobile. Purely recreational facilities generally are not eligible. To be funded under this program, projects and programs must come from a transportation plan or a State (STIP) or Regional (RTIP) Transportation Improvement Program that conforms to the State Implementation Plan, and must be consistent with the conformity provisions of Section 176 of the Clean Air Act.

According to SANBAG, California's apportionment is estimated at $2 billion for the term of SAFETEA, of which San Bernardino County's share is approximately $145.8 million. These funds are divided between the two air basins within San Bernardino County:

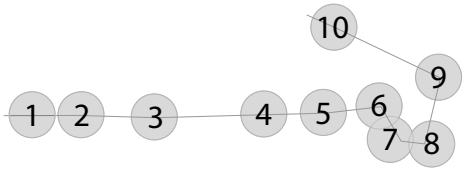
- The South Coast Air Basin (generally the valley and mountain regions), which is currently designated as a "severe" non-attainment area; and
- The Mojave Desert Air Basin (generally the desert region), which is designated as a non-attainment area.

More information: http://www.fhwa.dot.gov/environment/air_quality/cmaq/

National Scenic Byways Program

The National Scenic Byways (NSB) Program recognizes certain roads as National Scenic Byways or All-American Roads based on their archaeological, cultural, historic, natural, recreational, and scenic qualities. The grant program supports the implementation of projects on highways designated as National Scenic Byways or All-American Roads, or as State or Indian tribe scenic byways. Projects submitted for consideration should benefit the byway traveler's experience, whether it will help manage the intrinsic qualities that support the byway's designation, shape the byway's story, interpret the story for visitors, or improve visitor facilities along the byway.

National Scenic Byways Program funds may be used for improvements, including bicycle and pedestrian facilities, on the byway or a facility providing direct, immediate access from the byway to a recreational area



directly related to the byway and the byway's intrinsic quality(s) that support the byway's designation.

There are 150 such designated byways in 46 states, two of which are located near the project area: Route 91 (Riverside Freeway) along the Santa Ana River and Rim of the World Scenic Byway in the San Bernardino Mountains. Grant funds through the National Scenic Byways Program could potentially be used to implement recommended improvements along these byways, such as to along the Santa Ana River Trail.

More information: http://www.fhwa.dot.gov/hep/byways/

http://www.bywaysonline.org/grants/application/information/

Federal Safe Routes to School

Caltrans administers California's portion of the national Safe Routes to School (SR2S) program, which provides grants that can be used to identify and reduce barriers and hazards to children walking or bicycling to school. Projects can range from building safer street crossings to establishing programs that encourage children and their parents to walk and bicycle safely to school. California was apportioned approximately $26 million in SR2S funding in fiscal year 2011 and since fiscal year 2005 has been apportioned approximately $116 million total.

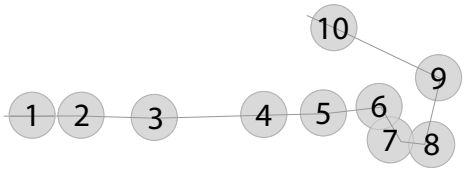
San Bernardino County currently has a SR2S Program, which increases its chances in receiving SR2S funds. Projects in the Improvement to Transit Access for Cyclists and Pedestrians plan that also provide access to schools are eligible for SR2S funds.

More information: http://safety.fhwa.dot.gov/saferoutes/

Federal Lands Highways

The Federal Lands Highways program provides for transportation planning, research, engineering, and construction of highways, roads, and parkways and transit facilities that provide access to or within public lands, national parks, and Indian reservations. The Santa Ana River Trail leads to the San Bernardino National Forest and thus may be eligible for these funds.

More information: http://www.fhwa.dot.gov/safetealu/factsheets/fedlands.htm



Community Development Block Grants

The Community Development Block Grants (CDBG) program provides money for streetscape revitalization, which may be largely comprised of pedestrian improvements. Federal CDBG grantees may "use Community Development Block Grants funds for activities that include (but are not limited to): acquiring real property; reconstructing or rehabilitating housing and other property; building public facilities and improvements, such as streets, sidewalks, community and senior citizen centers and recreational facilities; paying for planning and administrative expenses, such as costs related to developing a consolidated plan and managing Community Development Block Grants funds; provide public services for youths, seniors, or the disabled; and initiatives such as neighborhood watch programs."

More information: http://www.hcd.ca.gov/fa/cdbg/EconDev.html

Land and Water Conservation Fund

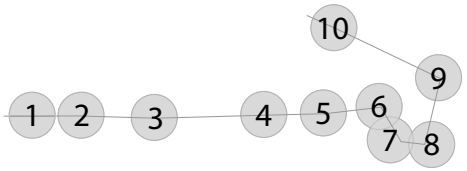
The Land and Water Conservation Fund (LWCF) is a National Parks Service program that provides grants for planning and acquiring outdoor recreation areas and facilities, including trails. The program is administered by the California Department of Parks and Recreation. Funds can be used for right-of-way acquisition and construction. Any projects located in future parks could benefit from planning and land acquisition funding through the LWCF. Trail corridor acquisition can be funded with LWCF grants as well.

More info: http://www.nps.gov/ncrc/programs/lwcf/grants.html

Rivers, Trails, and Conservation Assistance Program

The Rivers, Trails, and Conservation Assistance Program (RTCA) is a National Parks Service (NPS) program providing technical assistance via direct NPS staff involvement to establish and restore greenways, rivers, trails, watersheds and open space. The RTCA program provides only for planning assistance—there are no implementation monies available. Projects are prioritized for assistance based on criteria including conserving significant community resources, fostering cooperation between agencies, serving a large number of users, encouraging public involvement in planning and implementation, and focusing on lasting accomplishments. This program may benefit trail development throughout the cities in San Bernardino County, but should not be considered a future capital funding source.

More info: http://www.nps.gov/pwro/rtca/who-we-are.htm



Transportation Investment Generating Economic Recovery Program (TIGER)

The Recovery Act was signed into law by President Obama on February 17th, 2009 as an effort to jump start the United States economy and create or save millions of jobs. The Recovery Act includes measures to modernize the nation's infrastructure, enhance energy independence, expand educational opportunities, preserve and improve affordable health care, provide tax relief, and protect those in greatest need. The TIGER (Transportation Investment Generating Economic Recovery) Discretionary Grant Program was included in the Recovery Act to spur a national competition for innovative, multi-modal and multi-jurisdictional transportation projects that promise significant economic and environmental benefits to an entire metropolitan area, a region, or the nation. Projects funded with the $1.5 billion allocated in the Recovery Act include improvements to roads, bridges, rail, ports, transit, intermodal facilities, and non-motorized transportation facilities. Trail projects in San Bernardino County may be appropriate projects to submit for TIGER funding as they provide regional transportation improvements.

More information: http://www.dot.gov/recovery/ost/

Federal Lands Highway Program

The Federal Lands Highways program provides for transportation planning, research, engineering, and construction of highways, roads, and parkways and transit facilities that provide access to or within public lands, national parks, and Indian reservations. Eligible projects included non-motorized transportation facilities that provide this access. Recommended improvements near the San Bernardino National Forest may be eligible.

More information: http://www.fhwa.dot.gov/safetealu/factsheets/fedlands.htm

Bus and Bus Facilities Program: State of Good Repair

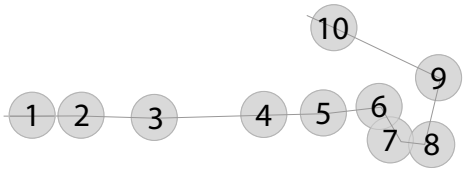
The State of Good Repair Initiative of the Bus and Bus Facilities Program is administered by the Federal Transit Administration. The program provides funds to public transit providers for new and replacement buses, related equipment, and facilities, which includes bike racks on busses, transfer facilities, bus malls, transportation centers, and intermodal terminals.

More information: http://www.fta.dot.gov/grants/13077_14330.html

Bus Livability Initiative

The Bus Livability Initiative is administered by the Federal Transit Administration and also provides funds to public transit providers for new and replacement buses, related equipment, and facilities, which includes bike racks on busses, transfer facilities, bus malls, transportation centers, and intermodal terminals.

More information: http://www.fta.dot.gov/grants/13077_14331.html



Hazard Elimination and Railway-Highway Crossing Program

The Federal Highway Administration administers the Hazard Elimination and Railway-Highway Crossing Program to make available funds for safety improvements that eliminate hazards and for the installation of protective devices at railway-highway crossings. Funds can be used for improvements to bicycle and pedestrian facilities.

More information: http://www.fhwa.dot.gov/discretionary/rhchehsrc2012info.htm

National Highway System

This program makes available funding for improvements to rural and urban roads that are part of the national highway system (NHS), including the Interstate System and designated connections to major intermodal terminals. Bicycle improvements are eligible as long as they are located on NHS roadways.

More information: http://www.fhwa.dot.gov/safetealu/factsheets/nhs.htm

Energy Efficiency and Block Grant Program

The Energy Efficiency and Conservation Block Grant (EECBG) Program is funded by the American Recovery and Reinvestment Act (Recovery Act) of 2009. The program is similar to the Community Development Block Grant program and is intended to help cities, counties, states, territories, and Indian tribes to develop, promote, implement, and manage energy efficiency and conservation projects and programs. Approximately $2.7 billion is available through formula grants. Funds can be used for a variety of activities, including transportation programs to conserve energy and support renewable fuel infrastructure.

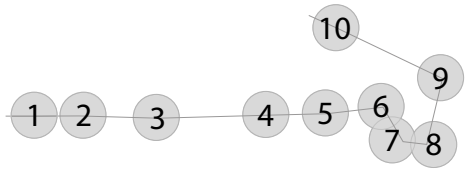
More information: http://www1.eere.energy.gov/wip/eecbg.html

Sustainable Communities Regional Planning Grant Program

The Sustainable Communities Regional Planning Grant Program provides funding for larger-scale planning efforts that join housing, land use, economic and workforce development, transportation, and infrastructure investments. Efforts funded will take into account the principles of sustainability, including economic revitalization, social equity, public health, and environmental impacts. The Program prioritizes partnerships that move the Federal Livability Principles into approaches that result in long-term development and reinvestment, show a commitment to addressing regional issues, use data to establish and evaluate progress toward performance goals, and involve stakeholders and residents in the decision-making process. The improvements identified in this plan may be very competitive in this grant program due to their regional, multi-modal nature.

More information:

http://portal.hud.gov/hudportal/HUD?src=/program_offices/sustainable_housing_communities/sustainable_communities_regional_planning_grants



5.2 State Funding Sources

California Safe Routes to School

Caltrans administers California's portion of the national Safe Routes to School (SR2S) program. As previously discussed, grants can be used to identify and reduce barriers and hazards to children walking or bicycling to school. The Cycle 10 "Call for Projects", the latest California SR2S cycle announced on December 20, 2011, is for $45 million in projects for a two-year cycle of funds.

More information: http://www.dot.ca.gov/hq/LocalPrograms/saferoutes/saferoutes.htm

Community Based Transportation Planning

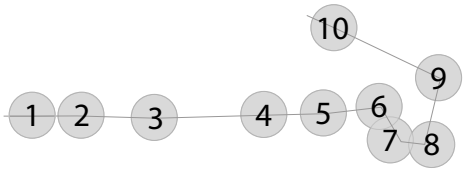
Caltrans administers the Community Based Transportation Planning grant program to fund planning projects throughout the state that create livable communities, integrate land use and transportation planning, and encourage public participation Planning projects funded will promote the State's goal of providing transportation choices that meet future demands and enhance the environment. This transit access study is one type of project that could receive funding from the Community Based Transportation Planning program. If future studies are needed to implement recommended improvements included in this plan, this funding source could be of high importance.

More information: http://www.dot.ca.gov/hq/tpp/grant_files/1011/10-11_CBTP_Grant_Marketing.pdf

Environmental Justice Planning Grants

The Environmental Justice Grant Program aims to help low-income, minority, and Tribal communities that face socioeconomic barriers, such as the high cost of car ownership for people on low and fixed incomes. One of the key goals of this grant is to improve bicycle and pedestrian infrastructure. Large-scale transportation facilities are key contributors of air and noise pollution, which low-income and minority communities are disproportionately located near. However, non-motorized transportation projects support low-income and minority communities as they provide cost-effective commute options and have fewer or no negative environmental impacts. Thus, recommended improvements in this plan are appropriate for pursuing this funding source.

More information: http://www.dot.ca.gov/hq/tpp/grants.html (see Power Point)



Highway Safety Improvement Program

Administered by Caltrans, the goal of the Highway Safety Improvement Program (HSIP) is to significantly reduce traffic fatalities and serious injuries resulting from collisions on all public roads by implementing infrastructure-related highway safety improvements. If this funding source is pursued, the applying agency should conduct a detailed collision analysis to determine if any of the recommended improvements are located in areas with high crash rates and if the treatments would likely benefit those sites.

More information: http://www.dot.ca.gov/hq/LocalPrograms/hsip.htm

Environmental Enhancement and Mitigation Program

The Environmental Enhancement and Mitigation Program provides funds for projects that reduce environmental impacts of altered or new public transportation facilities including streets, mass transit guideways, park-n-ride facilities, transit stations, tree planting (to minimize the effects of motor vehicle emissions), off-road trails, and the acquisition or development of roadside recreational facilities. Proposed shared-use path improvements are eligible under the Roadside Recreation Projects category.

More information: http://resources.ca.gov/eem/

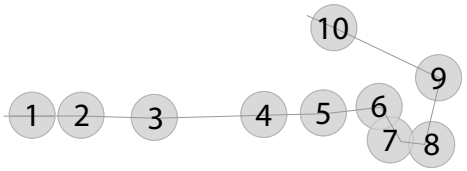
State Highway Operations and Protection Program (SHOPP)

Caltrans administers SHOPP, which provides funding for capital improvements projects that reduce collisions, restore damaged roadways, enhance mobility, and preserve bridges, roadways, roadsides, and other transportation facilities related to the state highway system. Eligible projects can include bicycle and pedestrian facilities. As of March 2012, Caltrans will target resources on the direst categories of projects in the SHOPP, which are safety, mandates, bridge, and pavement preservation.

More information: http://www.dot.ca.gov/hq/transprog/shopp.htm

Petroleum Violation Escrow Account

The Petroleum Violation Escrow Account (PVEA) consists of funding from money collected from oil companies for price overcharges on crude oil and refined petroleum products. Ttransportation related PVEA projects are administered by Caltrans and do not require a match. To date, PVEA refunds have totaled more than $4.7 billion, nationwide. California has received more than $417 million since the beginning of the program with



$129 million allocated for transportation related projects and approximately $102 million expended for transportation related projects. Projects eligible for PVEA funds must save or reduce energy.

More information: http://www.dot.ca.gov/hq/LocalPrograms/lam/prog_g/g22state.pdf

Office of Traffic Safety (OTS) Grants

The Office of Traffic Safety (OTS) aims to reduce vehicular fatalities and injuries through a national highway safety program. The OTS obtains funds from the National Highway Safety Act and provides grants for approximately one to two years. One of the priority areas includes pedestrian and bicycle safety, including bicycle safety programs.

More information: http://www.ots.ca.gov/ots_and_traffic_safety/faqs.asp

California Conservation Corps

The California Conservation Corps (CCC) provides labor assistance for projects related to natural resource management. Public agencies can hire a CCC team at low cost. The nearest CCC center is the Inland Empire center located in San Bernardino.

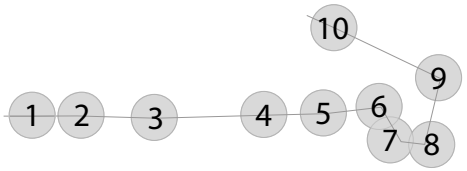
More information: http://www.ccc.ca.gov/about/glance/faqs/abouthiringacrew/Pages/faqhirecrew.aspx

AB 2766 Subvention Fund Program

In 1990, California Assembly Bill 2766 was signed into law (Health & Safety Code Sections: 44220 - 44247) and the funding program described in that law has since been known as the "AB2766 program" or just "AB2766."

AB 2766 provides for the collection of an additional $4 in motor vehicle registration fees to fund various air pollution efforts. Each dollar collected is disbursed as follows:

- 30 cents - used by the AQMD for programs to reduce air pollution from motor vehicles and to carry out planning, monitoring, enforcement and technical studies that are authorized by, or necessary to implement, the California Clean Air Act.
- 40 cents - distributed on a quarterly basis by the AQMD to cities and counties located in the South Coast District, based on their percentage of population, to be used to reduce motor vehicle air pollution. Every year AQMD provides technical assistance and training for the local government AB2766 reporting process.
- 30 cents - deposited by the AQMD into a "Discretionary Fund" to be used to implement or monitor programs to reduce motor vehicle air pollution. To determine which projects should be funded by the Discretionary Fund, AB 2766 provided for the creation of the Mobile Source Air Pollution Reduction Review Committee (MSRC), which develops a Work Program for evaluating programs and makes a final recommendation to the SCAQMD Governing Board as to which programs and/or projects should be funded.



More information: http://www.aqmd.gov/localgovt/AB2766.htm

http://www.aqmd.gov/trans/ab2766/summit_doc/questions_ab2766_summit.pdf

State-Local Transportation Partnership Program

The State-Local Transportation Partnership Program (SLTPP) was implemented in 1989 to encourage local agencies to fund and construct transportation improvement projects both on and off the State Highway System. The program is continuously funded from the State Highway Account at a level of approximately $200,000,000 per fiscal year. To qualify for the SLTPP, a project must be on a local road, State highway, or exclusive public mass transit guideway and must be constructed by contract. The completed project must be a usable segment that either increases capacity, extends service to a new area, or extends the useful life of the roadway by ten years as an eligible rehabilitation project.

More information: http://www.catc.ca.gov/programs/SLPP.htm

http://www.dot.ca.gov/hq/LocalPrograms/lam/ArchivedDocs/g15sltppArch.pdf

Habitat Conservation Fund

The Habitat Conservation Fund provides funding through State general funds to local agencies to protect threatened species, to address wildlife corridors, to create trails, and to provide for nature interpretation programs which bring urban residents into park and wildlife area. This source would be appropriate for recommended improvements to the shared-use paths, such as the Pacific Electric Trail.

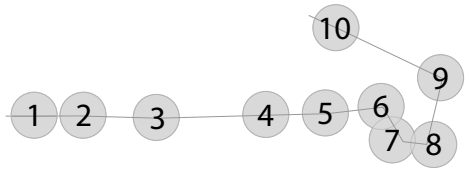
More information: http://www.parks.ca.gov/pages/1008/files/hcf_fact_sheet_2010.pdf

http://www.parks.ca.gov/pages/1008/files/faqs%202012.pdf

California River Parkways

The California River Parkways program grants funds for river parkway acquisition or development projects that meet at least two of the following conditions: recreation, habitat, flood management, conversion to a river parkway, and/or conservation and interpretive enhancement. Trails along the Santa Ana River, for example, could satisfy the recreation category, and potentially be considered for the conservation and interpretive enhancement category if additional improvements, such education kiosks, are included in the project.

More information: http://www.resources.ca.gov/grant_programs.html#



Transportation Development Act Article 3 Funds

Transportation Development Act (TDA) Article III funds awarded annually to local jurisdictions for bicycle and pedestrian projects in California, with about $700,000 awarded for San Bernardino County. These funds originate from the state gasoline tax and are distributed to counties based on population, with a competitive process administered by SANBAG for local jurisdictions. Funds may be used for the following bicycle and pedestrian activities:

- Engineering expenses
- Right-of-way acquisition
- Construction and reconstruction
- Retrofitting existing bicycle and pedestrian facilities, including signage installation and ADA compliance
- Route improvements such as signal controls for cyclists, bicycle loop detectors, rubberized rail crossings and bicycle-friendly drainage grates
- Support facilities, such as bicycle parking and pedestrian amenities

More information: http://www.dot.ca.gov/hq/MassTrans/State-TDA.html

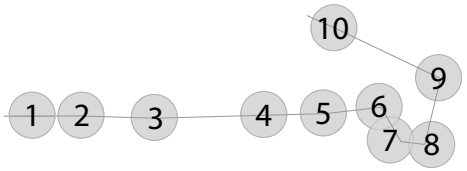
5.3 Local Funding Sources

Local Bond Measures

Local bond measures, or levies, are usually initiated by voter-approved general obligation bonds for specific projects. Bond measures are typically limited by time, based on the debt load of the local government or the project under focus. Funding from bond measures can be used for right-of-way acquisition, engineering, design, and construction of pedestrian and bicycle facilities. Bond measures are often used by cities for local match in grant applications. Transportation-specific bond measures featuring a significant bicycle/pedestrian facility element have passed in other communities, such as Seattle's "Closing the Gap" measure.

Measure I Sales Tax

Measure I is the half-cent sales tax collected throughout San Bernardino County for transportation improvements. San Bernardino County voters first approved the measure in November 1989 to ensure that needed transportation projects were implemented countywide through 2010. In 2004, San Bernardino County voters overwhelmingly



approved the extension of the Measure I sales tax, with 80.03% voting to extend the measure through 2040. SANBAG administers Measure I revenue and is responsible for determining which projects receive Measure I funding, and ensuring that transportation projects are implemented. Measure I funds are allocated based on a strategic plan.

More information: http://sanbag.ca.gov/funding/mi.html

Tax Increment Financing/Urban Renewal Funds

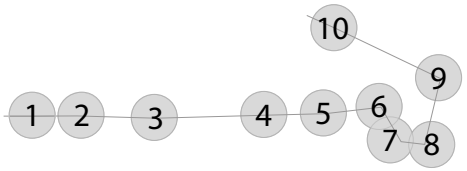
Tax Increment Financing (TIF) is a tool to use future gains in taxes to finance the current improvements that will create those gains. When a public project (e.g., sidewalk improvements) is constructed, surrounding property values generally increase and encourage surrounding development or redevelopment. The increased tax revenues are then dedicated to finance the debt created by the original public improvement project. Tax Increment Financing typically occurs within designated Urban Renewal Areas (URAs) that meet certain economic criteria and are approved by a local governing body. To be eligible for this financing, a project (or a portion of it) must be located within the URA. It should be noted that some TIF programs around the country have been performing poorly during the current economic downturn because property values have not risen steadily as expected.

Developer Impact Fees

As a condition for development approval, cities can require developers to implement specific infrastructure improvements, including bikeway projects, bicycle parking, or shower and locker facilities. The type of facility required to be provided by developers should reflect the demand for the particular project and its local area. Establishing a clear nexus or connection between the impact fee and the project's impacts is critical in avoiding a potential lawsuit.

New Construction

Future roadway widening and construction projects can be a method of providing on-street bikeways and pedestrian facilities. To ensure that these projects provide facilities where needed, it is key that the review process includes input pertaining to consistency with the proposed bicycle network. In San Bernardino County, new or widened arterials, and the bicycle facilities that accompany them, may be funded through a combination of Measure I half-cent sales tax funds, development fees, and other local funds.



Transportation System Maintenance Fee

The revenue generated by a Transportation System Maintenance Fee (sometimes called a transportation maintenance fee or a street user fee) is commonly used for operations and maintenance of the street system, including maintaining on-street bicycle and pedestrian facilities, including routine sweeping of bicycle lanes and other designated bicycle routes.

Local Improvement Districts (LIDs)

Local Improvement Districts (LIDs) are most often used by cities to construct localized projects such as streets, sidewalks, or bikeways. Through the LID process, the costs of local improvements are generally spread out among a group of property owners within a specified area. The cost can be allocated based on property frontage or other methods such as trip generation.

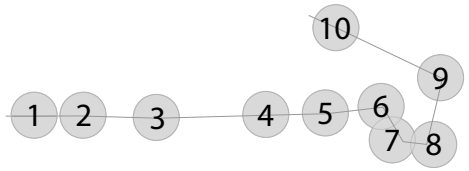
Economic Improvement Districts (EIDs)

Pedestrian improvements can often be included as part of larger efforts aimed at business improvement and retail district beautification. Economic Improvement Districts collect assessments or fees on businesses in order to fund improvements that benefit businesses and improve customer access within the district. These districts may include provisions for pedestrian and bicycle improvements, such as wider sidewalks, landscaping, and ADA compliance.

Stormwater Green Streets Funding

Municipal water quality agencies are increasingly turning to green streets projects as a promising strategy to fulfill their mission to improve water quality by minimizing and treating stormwater runoff. Green streets improvements can often serve a secondary community benefit as traffic calming by adding on-site stormwater management to traffic circles, chicanes, and curb extensions. Fees collected by stormwater management agencies are commonly applied to a variety of projects, including capital investments; depending on the agency culture, these capital investments may include green streets efforts. Non-motorized transportation projects can be used to implement green streets, such as through curb extensions with bioswales.

More information: http://www.portlandonline.com/bes/index.cfm?c=44407



5.4 Other Funding Sources

Bikes Belong Grant

The Bikes Belong Grant Program strives to put more people on bicycles more often by funding important and influential projects that leverage federal funding and build momentum for bicycling in communities across the United States. These projects include bike paths and rail trails, as well as mountain bike trails, bike parks, BMX facilities, and large-scale bicycle advocacy initiatives. Since 1999, Bikes Belong has awarded 236 grants to municipalities and grassroots groups in 46 states and the District of Columbia, investing nearly $1.9 million in community bicycling projects and leveraging more than $657 million in federal, state, and private funding. California organizations that have been awarded funds include but are not limited to the City of Oakland, the City of Modesto, CicLAvia, the American River Conservancy, and the Los Angeles County Bicycle Coalition.

More information: http://www.bikesbelong.org/grants/

REI Grants

The REI grants program makes funding available to local non-profit organizations to provide the resources and capacity to organize stewardship activities and get volunteers involved. The cities could partner with local advocacy groups to pursue these funds.

More information: http://www.rei.com/about-rei/grants02.html

Robert Wood Johnson Foundation

The Robert Wood Johnson Foundation provides grants to communities pursuing healthy lifestyles for its residents. La Jolla. CA in San Diego County, for example, received $12.5 million to conduct active living research.

More information: http://www.rwjf.org/grants/

Volunteer and Public-Private Partnerships

A public-private partnership involves an agreement between a public agency and a private party, in which the private party delivers a public service or project to the public agency. Projects can be funded solely by the private party or through a collection of private monies and taxpayer dollars.

Donations

Private companies and individuals sometimes make donations to causes they feel strongly in favor of. Though these are not a reliable source of financing since they can come about randomly and infrequently, opportunities for donations to implement recommended improvements should still be considered a potential funding source.

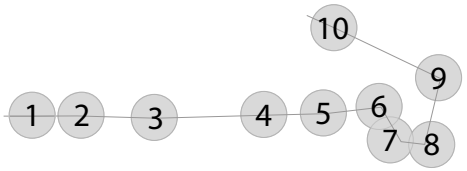


TABLE 5.1 : FUNDING SOURCE OVERVIEW BY IMPROVEMENT TYPE

IMPROVEMENT	TEA	STP	HSIP	RTP	TCSP	CMAQ	BYW	SRTS	FLH	BRI	FTA	NHS	402	JARC
Bicycle and pedestrian plan		*			*	*								
Bicycle lanes on roadway	*	*	*			*	*	*	*	*	*	*		
Paved Shoulders	*	*	*			*	*	*	*	*		*		
Signed bike route	*	*				*	*	*	*			*		
Shared use path/trail	*	*		*		*	*	*	*	*		*		
Single track hike/bike trail				*										
Spot improvement program	*	*	*			*		*						
Maps		*				*		*					*	
Bike racks on buses	*	*				*					*			
Bicycle parking facilities	*	*				*	*	*			*			
Trail/highway intersection	*	*	*	*		*	*	*	*			*		
Bicycle storage/service center	*	*			*	*		*			*			*
Sidewalks, new or retrofit	*	*	*			*	*	*	*	*	*	*		
Crosswalks, new or retrofit	*	*	*			*	*	*	*		*	*		
Signal improvements	*	*	*			*		*				*		
Curb cuts and ramps	*	*	*			*		*				*		
Traffic calming		*	*		*			*						
Coordinator position		*			*	*		*						
Safety/education position		*				*		*					*	
Police Patrol		*						*					*	
Helmet Promotion	*	*						*					*	
Safety brochure/book	*	*		*		*		*					*	
Training	*	*		*		*		*					*	

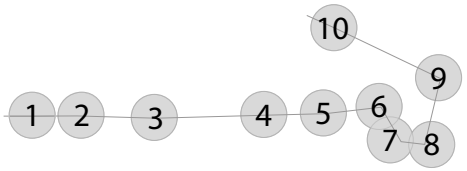
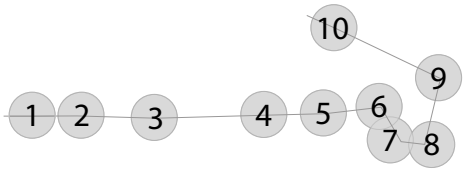
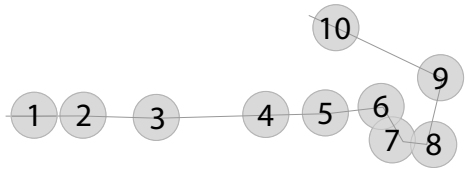


TABLE 5.2 : SURVEY RESPONDENT COMMUTE MODE TO STATION

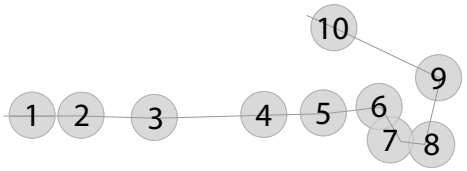
GRANT SOURCE	DUE DATE*	ADMINISTERING AGENCY	ANNUAL TOTAL	MATCHING REQUIREMENT	ELIGIBLE APPLICANTS	PLANNING	CONSTRUCTION	OTHER	NOTES
Federal Funds									
Transportation Enhancements	Summer	Federal Highway Administration/Caltrans	Approximately $19 million in San Bernardino County	25%	States and local governments	X	X	X	Can be used for bicycle and pedestrian facilities, as well as educational and safety programs.
Surface Transportation Program (STP)	October	Federal Highway Administration	Approximately $109.3 million in San Bernardino County	20%	States and local governments		X	X	Can be used for sidewalk installation, sidewalk upgrades to meet ADA requirements, shared-use paths, paved shoulders, bike lanes, and for bicycle/pedestrian educational programs.
Highway Safety Improvement Program	July	Federal Highway Administration/ Caltrans	$98 million in California in 2009	Varies between 0% and 20%	City, county or federal land manager	X	X	X	Projects must address a safety issue and may include education and enforcement programs. This program includes the Railroad-Highway Crossings and High Risk Rural Roads programs.
Recreational Trails Program	October	California Department of Parks and Recreation	$5 million in California in 2010	12%	Agencies and organizations that manage public lands	X	X	X	Funds can be used for acquisition of easements for trails from willing sellers.
Transportation, Community and System Preservation Program	Varies, generally January or February.	Federal Highway Administration	$204 million nationally in 2009	20%	States, MPOs, local governments and tribal agencies	X	X	X	Funds projects that reduce the environmental impacts of transportation and reduce the need for costly future public infrastructure investments.
Congestion Mitigation/Air Quality (CMAQ) Program		Federal Highway Administration/Caltrans	$370 million in California in 2009	20%	South Coast Air Basin, Mojave Desert Air Basin		X	X	Funds can be used to build bicycle/pedestrian facilities that reduce travel by automobile. Purely recreational facilities are not eligible.
National Scenic Byways Program	Varies by agency	Federal Highway Administration/Caltrans	$3 million annually nationwide; $740,000 in California in 2009	20%	State agencies	X	X	X	NSB funds may be used to fund on-street or off-street facilities, intersection improvements, user maps and other publications. Projects must be located along a National Scenic Byway.
Federal Safe Routes to School	Mid-July	Caltrans	$46 million	none	State, city, county, MPOs, RTPAs and other organizations that partner with one of the above.		X	X	Construction, education, encouragement and enforcement program to encourage walking and bicycling to school.



GRANT SOURCE	DUE DATE*	ADMINISTERING AGENCY	ANNUAL TOTAL	MATCHING REQUIREMENT	ELIGIBLE APPLICANTS	PLANNING	CONSTRUCTION	OTHER	NOTES
Federal Lands Highway	June	Federal Highway Administration/Caltrans	Varies (approximately $7 million in California)	20%	City, county	X	X	X	Can be used for bikeways that provide access to or within public lands, national parks, and Indian reservations.
Community Development Block Grants	Varies between grants	U.S. Dept. of Housing and Urban Development (HUD)	$42.8 million	Varies between grants (approximately 10%)	City, county	X	X	X	Funds local community development activities such as affordable housing, anti-poverty programs, and infrastructure development. Can be used to build sidewalks, recreational facilities.
Land and Water Conservation Fund	Varies	National Parks Service, California Department of Parks and Recreation	$2.3 million in California in 2009	50% + 2-6% administration surcharge	Cities, counties and districts authorized to operate, acquire, develop and maintain park and recreation facilities	X		X	Fund provides matching grants to state and local governments for the acquisition and development of land for outdoor recreation areas. Lands acquired through program must be retained in perpetuity for public recreational use. Individual project awards are not available. The Department of Parks and Recreation levies a surcharge for administering the funds.
Rivers, Trails and Conservation Assistance Program	Aug 1 for the following fiscal year	National Parks Service	Program staff time is awarded.	None	States, local agencies, tribes, non-profit organizations, or citizens' groups			X	RTCA staff provides technical assistance to communities so they can conserve rivers, preserve open space, and develop trails and greenways.
Transportation Investment Generating Economic Recovery Program (TIGER)	Varies	United States Department of Transportation	$131 million in California through 2013	20%	States, counties, cities	X	X		Can be used for innovative, multi-modal and multi-jurisdictional transportation projects that promise significant economic and environmental benefits to an entire metropolitan area, a region, or the nation. These include bicycle and pedestrian projects.
Federal Lands Highway Program	Ongoing	Federal Highway Administration	$1,019 million in 2009	Varies	States, counties, cities, tribes (projects must be open to the public)		X		Can be used for bicycle/pedestrian provisions associated with roads and parkways.
Bus and Bus Facilities Program: State of Good Repair	March	Federal Transit Administration	$650 million in 212	10%	Direct Recipients under the Section 5307 Urbanized Area Formula program, States, and Indian Tribes		X	X	Can be used for projects to provide access for bicycles to public transportation facilities, to provide shelters and parking facilities for bicycles in or around public transportation facilities, or to install equipment for transporting bicycles on public transportation vehicles.



GRANT SOURCE	DUE DATE*	ADMINISTERING AGENCY	ANNUAL TOTAL	MATCHING REQUIREMENT	ELIGIBLE APPLICANTS	PLANNING	CONSTRUCTION	OTHER	NOTES
Bus Livability Initiative	March	Federal Transit Administration	$125 million in 2012	10%	Direct Recipients under the Section 5307 Urbanized Area Formula program, States, and Indian Tribes		X	X	Can be used for bicycle and pedestrian support facilities, such as bicycle parking, bike racks on buses, pedestrian amenities, and educational materials.
Hazard Elimination and Railway-Highway Crossing Program	Not available	Federal Highway Administration	$5 million per year	10%	States	X	X		Can be used for identification and modification of areas that may create a danger to bicyclists and pedestrians, a review of hazardous sites, projects on publicly-owned bicycle/pedestrian pathways, or any safety-related traffic calming measure.
National Highway System	Not available	Federal Highway Administration	$6.3 million in 2009	20%	States		X	X	Can be used for bicycle/pedestrian facilities on NHS routes, which are arterial routes serving key population centers.
Energy Efficiency and Block Grant Program	Varies	U.S. Department of Energy	$3 million in California	None	Public agencies and Indian Tribes	X		X	Funds can be used for transportation programs that reduce energy consumption and support renewable fuel infrastructure
Sustainable Communities Regional Planning Grant Program	Ongoing	Department of Housing and Urban Development	$68 million nationwide	20%		X		X	Funds support metropolitan and multijurisdictional planning efforts that integrate housing, land use, economic and workforce development, transportation, and infrastructure investments
State Funds									
California Safe Routes to School	Varies	Caltrans	$24.5 million	10%	City, county		X	X	SR2S is primarily a construction program to enhance safety of pedestrian and bicycle facilities near schools.
Community Based Transportation Planning	March	Caltrans	$3 million	Minimum 10%	MPO, RPTA, city, county	X			Eligible projects that exemplify livable community concepts including enhancing bicycle and pedestrian access.
Environmental Justice Planning Grants	April	Caltrans	$3 million	Minimum 10%	MPO, RPTA, city, county	X			Program is intended to help low-income, minority, and Tribal communities overcome issues related to transportations, including improving bicycle and pedestrian safety.
Highway Safety Improvement Program	October	Caltrans	$1.4 million apportioned to Monterey County in 2010	Varies between 0% and 10%	City, county or federal land manager	X	X	X	Projects must address a safety issue and may include education and enforcement programs. This program includes the Railroad-Highway Crossings and High Risk Rural Roads programs.



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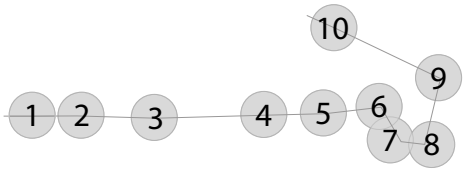
Environmental Enhancement and Mitigation Program	Varies	California Natural Resources Agency	$10 million statewide	None	Federal, State, local agencies and NPO		X	X	EEMP funds projects in California, at an annual project average of $250,000. Funds may be used for land acquisition.
State Highway Operations and Protection Program (SHOPP)	Not Available	Caltrans	$1.69 million statewide annually through FY 2013/14	Not Available	Local and regional agencies		X	X	Capital improvements and maintenance projects that relate to maintenance, safety and rehabilitation of state highways and bridges.
Petroleum Violation Escrow Account	March	Caltrans	Varies annually	None	Local and regional agencies		X	X	Funds programs based on public transportation, computerized bus routing and ride sharing, home weatherization, energy assistance and building energy audits, highway and bridge maintenance, and reducing airport user fees.
Office of Traffic Safety (OTS) Grants	January	Caltrans	Varies annually	None	Government agencies, state colleges, state universities, city, county, school district, fire department, public emergency service provider			X	Funds safety improvements to existing facilities, safety promotions including bicycle helmet giveaways and studies to improve traffic safety.
California Conservation Corps	On-going	California Conservation Corps	CCC donates labor hours	None	Federal and state agencies, city, county, school district, NPO, private industry		X	X	CCC provides labor assistance on construction projects and annual maintenance.
AB 2766 Subvention Fund Program	Varies	South Coast Air Quality Management District	Approximately $20 million in the South Coast Air Basin	None	Cities and counties in the South Coast Air Basin	X		X	Uses vehicle registration fees to fund transportation-related projects that reduce air pollution
State-Local Transportation Partnership Program	August	Caltrans/California Transportation Commission	Approximately $200 million	Dollar-for-dollar	Cities and Counties	X	X	X	Requires developer or traffic fee match
Habitat Conservation Fund	October	California Department of Parks and Recreation	$2 million	Dollar-for-dollar	Cities, counties, and districts			X	Projects can be to acquire or develop wildlife corridors and trails, and to provide for nature interpretation programs and other programs which bring urban residents into park and wildlife areas. Requires CEQA to be complete at the time of application.



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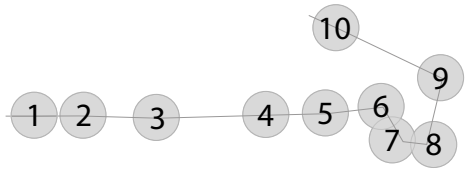
California River Parkways	Not available	California Natural Resources Agency	Not available	Not available	Public agencies and non-profits		X	X	Must satisfy two of the five requirements: Recreation, habitat, flood management, conversion to river parkways, or conversion and interpretive enhancement
Transportation Development Act Article 3 Funds	Varies	San Bernardino Associated Governments	Varies	None	Cities and counties	X	X	X	State gas tax funds allocated for bicycle and pedestrian facilities
Local Funds									
Local Bond Measures	Not applicable	SANBAG, city, or county	Varies	None	City, county	X	X	X	Can be used for engineering, right-of-way acquisition, design, or construction of bicycle/pedestrian facilities, as well as for a local match of funds.
Measure I Sales Tax	Not applicable	SANBAG	Varies	None	City, county	X	X	X	Voters approved a ½ sales tax increase through 2040 for transportation improvements.
Tax Increment Financing	Not applicable	SANBAG, city, or county	Varies	None	City, county		X	X	Projects funded by TIF should be located in urban renewal areas.
Developer Impact Fees	Not applicable	SANBAG, city, or county	Varies	None	City, county		X		Eligible projects through developer impact fees can be bicycle and pedestrian facilities, and support facilities, such as bicycle parking and shower facilities.
New Construction	Not applicable	SANBAG, city, or county	Varies	None	City, county		X		On-street bikeways and pedestrian facilities can be incorporated into new constructions or roadway widening projects.
Transportation System Maintenance Fee	Not applicable	SANBAG, city, or county	Varies	None	City, county			X	Typically used for maintenance of bicycle and pedestrian facilities, such as sweeping of on-street bike lanes.
Local Improvement Districts	Not applicable	SANBAG, city, or county	Varies	None	City, county		X		LIDs can be used construct bicycle and pedestrian facilities.
Economic Improvement Districts	Not applicable	SANBAG, city, or county	Varies	None	City, county		X		EIDs are created to increase the economic vitality of areas. Non-motorized transportation facilities and amenities that beautify an area and increase customer access, such as sidewalk improvements, can be funded through EIDs.



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Stormwater Green Streets Funding	Not applicable	SANBAG, city, or county	Varies	None	City, county		X		Non-motorized transportation projects can qualify as green streets infrastructure, such as curb extensions with bioswales to absorb stormwater.
Other Funding Sources									
Bikes Belong Grant	Multiple dates throughout year.	Bikes Belong	Not Available	50% minimum	Organizations and agencies		X	X	Bikes Belong provides grants for up to $10,000 with a 50% match that recipients may use towards paths, bridges and parks.
REI	Not applicable	REI	Varies	None	Non-profit groups		X	X	REI grants provide partner organizations with the resources and capacity to organize stewardship activities and get volunteers involved. These can include recreational trail projects.
Robert Wood Johnson Foundation	Varies	Robert Wood Johnson Foundation	Varies by program	None	Organizations			X	Provides varying grant opportunities to promote healthy communities and lifestyles.
Volunteer and Public-Private Partnerships	Not Applicable	City, county, joint powers authority	Varies	Not Applicable	Public agency, private industry, schools, community groups		X	X	Requires community-based initiative to implement improvements.
Donations	Not Applicable	Not Applicable	Varies	None	City, county	X	X	X	Funds can be used for a variety of projects supported by the donor.

* Due dates for Federal Highway Administration Programs are subject to change due to pending authorization of a new federal transportation bill.