SAN LEANDRO CREEK TRAIL MASTER PLAN

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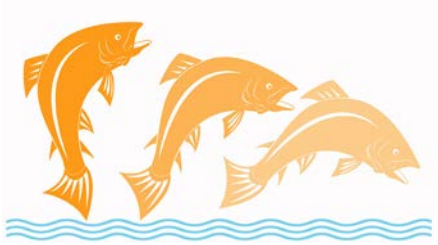

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability".

Source: CALTRANS

ACKNOWLEDGMENTS

- City of San Leandro - City Council and City Staff
- City of Oakland - City Council and City Staff
- Rails-to-Trails Conservancy
- Merritt College - Environmental Management and Technology, Faculty and Students
- San Leandro Creek Alliance
- CALTRANS District 4
- Citizen Advisory Committee
- Technical Advisory Committee
- Friends of San Leandro Creek

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EXECUTIVE SUMMARY

The San Leandro Creek offers one of the longest open stretch of creeks in the East Bay. The study area evaluated for a potential trail in this feasibility report is approximately six miles long between the Lake Chabot Dam and the San Leandro Bay. The study area location incorporates both the cities of San Leandro and Oakland. This report provides a plan, preliminary design concepts, and an implementation strategy for a multi-use path along the Creek where possible. The proposed San Leandro Creek Trail offers an opportunity to provide a multi-user amenity for area residents, employees, and visitors.

For the purpose of the study the entire length of the Creek and study area is divided into eight segments of which four segments are in the City of Oakland and four in the City of San Leandro. The final recommended route is shown in the map below. This includes Class I, Class II, Class III, and Class IV facilities and a railroad underpass. The long-term solution/alternative route is also shown on the map. The goal is to provide the neighboring communities of Oakland and San Leandro with a feasibility study to understand a route for active transportation, recreation, access to open space, and opportunities for environmental education.

The opinion of probable cost for the entire final alternative is approximately $21 Million of which the City of Oakland's portion is approximately $8.5 Million and that of San Leandro is $12.5 Million. The table below provides a snapshot of probable cost per segment and City. Potential funding sources for the development of the trail are discussed in Chapter 9. It is anticipated that majority of the funding opportunities would be from the Active Transportation Program (ATP) and Alameda County Measure BB.

City	Segment	Total
City of Oakland	Segment-2	$1,191,856
	Segment-3	$1,419,413
	Segment-4	$5,865,720
Oakland Section		$8,476,989
City of San Leandro	Segment-5	$7,617,912
	Segment-6	$1,411,979
	Segment-7	$1,569,318
	Segment-8	$1,940,473
San Leandro Section		$12,539,683
Total Cost		$21,016,671

Once the San Leandro Creek Trail Master Plan is completed, the next steps would involve securing funding and more public process. It should be noted that identifying a lead agency to manage and implement this project is a critical next step moving forward. Additional work/study would be needed at various locations, as mentioned in Chapter 6 and 7, where physical feasibility of construction needs to be determined. Additional study will also be needed in the segments where there are no consensus established. Once the project is approved, environmental documentation would be needed. The project then enters the design stage and necessary permitting is acquired. Once the engineering documents are in place, the project would enter the construction phase.

The following chapters are included in this report:

Chapter 1 Project Overview: This chapter provides a description of the study area as well as its history. It Introduces the groups that have collaborated to make the trail possible and the benefits that creating the trail would bring to the surrounding communities and the San Leandro Creek.

Chapter 2 Public Outreach: This chapter outlines the public outreach process used to engage the community , and summarizes the input collected through this process. The summary of each meeting that was held for the public are included in this section.

Chapter 3 Existing Conditions: This chapter reviews the characteristics of the community in the project vicinity, including population density, household income, poverty levels, school age population, senior population, recreational areas, property ownership, and land use. This section also describes how the San Leandro Creek Trail would connect to other bicycle facilities.

Chapter 4 Segment Analysis: This chapter gives a description of each segment of the trail and analyzes each one to break down their strengths, weaknesses, opportunities, and concerns.

Chapter 5 Best Practices: This chapter provides a guide for potential facility designs that could be incorporated into the San Leandro Creek Trail. Included are different facility types for pedestrians and bicyclists, as well safety measures and amenities that could improve the development of the trail.

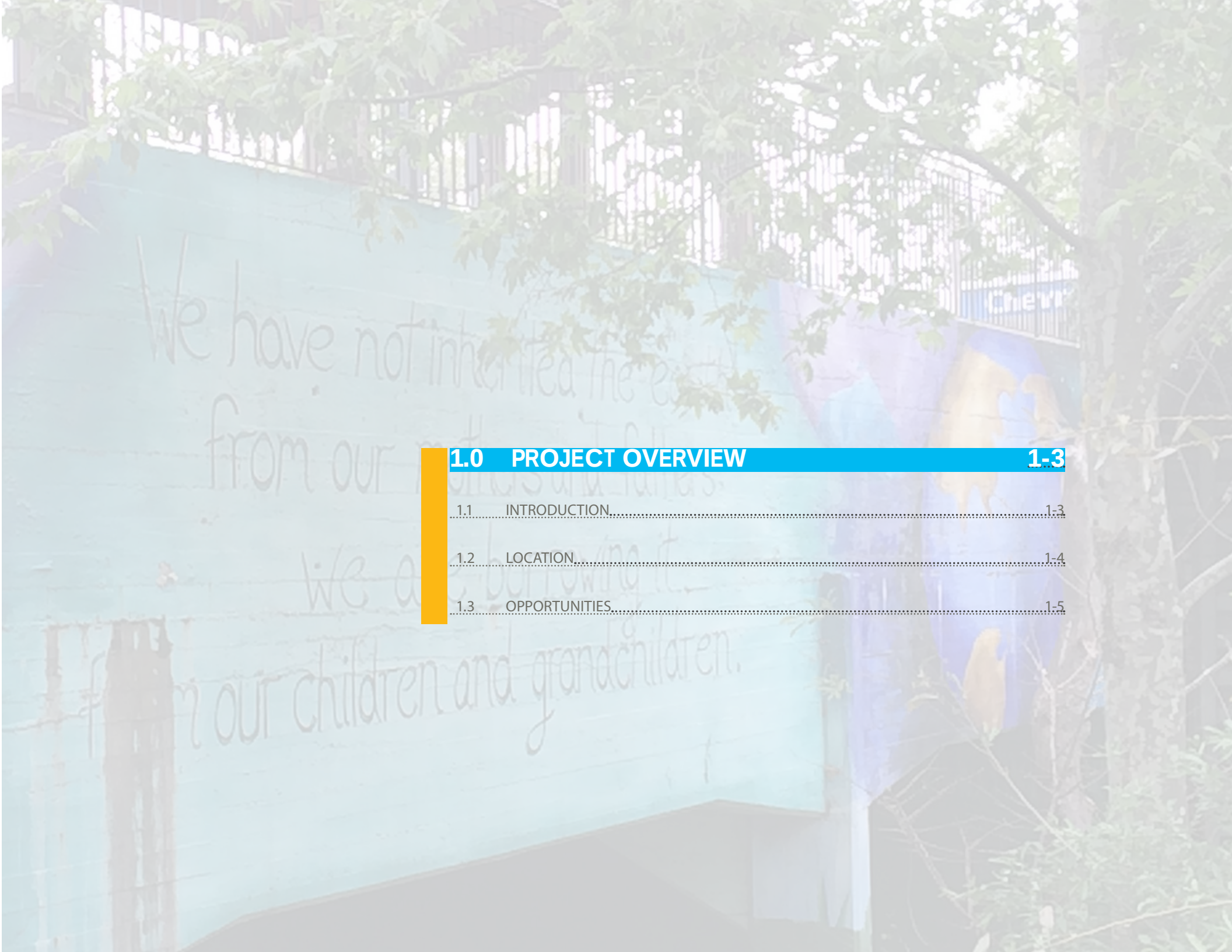
Chapter 6 Route Alternatives: This chapter explains the alternative routes that were drafted for each segment and lists their pros and cons.

Chapter 7 Final Recommended Alignment: This chapter focuses on the final recommended alignment and provides selected alternative routes that could be considered. This chapter also discusses the environmental impact and provides an overview of the culture and history of the project segment. A cost estimate is also provided.

Chapter 8 Wayfinding: This chapter explains the benefits of providing a wayfinding system consisting of maps, markers, and signs, and provides standards for each sign.

Chapter 9 Plan Execution: This chapter outlines methodology once the project is ready for development and construction and provides a recommendation on what order the segments should be constructed. This chapter also provides information on funding resources that are available.

1 Project Overview



1.0 PROJECT OVERVIEW

1.1 INTRODUCTION

As communities grow and develop, opportunities to connect them by means other than paved roads becomes increasingly important, not only for recreational purposes but also for commuting. Trails are a vital form of connector. Numerous projects implementing trails through rural and urban areas across the country have found positive results including:

- supporting an active lifestyle that improves health
- enhancing the quality of life
- attracting tourists
- encouraging new trail-related business development
- helping revitalize business districts
- inspiring renewed civic pride
- providing a fresh focus for community activities
- helping conserve and appreciate the environment

The San Leandro Creek Trail Master Plan aims to provide the neighboring communities of Oakland and San Leandro with a feasibility study to create a route for active transportation, recreation, access to open space, and opportunities for environmental education. Additionally, as an active transportation route, the trail is expected to provide a range of benefits including connections to: the San Francisco Bay Trail, the proposed East Bay Greenway, Lake Chabot Regional Park and all associated trails; Downtown San Leandro; Bay Area Rapid Transit (BART) station in San Leandro; several schools; residential neighborhoods; and the Airport-Coliseum business district.

The intent of this project is to develop a master plan for a multi-use corridor including as much Class I multi-use trail as is feasible along San Leandro Creek between Chabot Dam and the San Francisco Bay. The trail alignment will provide an east-west route while the Bay Trail, East Bay Greenway and Ridge Trail all provide North South connections.

1.1.1 PROJECT ORIGIN AND PARTNERS

Work around restoration and enhancement of San Leandro Creek began with the formation of Friends of San Leandro Creek (FSLC) in 1998. FSLC is a non-profit organization and community group made up of dedicated citizens, students, and businesses interested in the protection and enhancement of San Leandro Creek, and in learning more about the San Leandro Creek's ecology. The Friends have contributed to City and County decisions affecting the San Leandro Creek and the surrounding watershed and have planned Creek-related activities such as Creek walks and clean-ups.

Later, in 2012, the San Leandro Creek Alliance was formed to restore the San Leandro Creek and research the potential of the San Leandro Creek Trail. The Alliance is an informal group that includes the Cities of San Leandro and Oakland, Rails-to-Trails Conservancy, East Bay Regional Parks District, Friends of San Leandro Creek, BART, Merritt College, Alameda County Flood Control and Water Conservation District, and East Bay Municipal Utility District.

A key effort leading to the Master Plan effort has been the work of Merritt College's Environmental Management Program, which has worked with the community in neighborhoods including Sobrante Park, Brookfield Village and Columbia Gardens for the past eight years. This work included holding community listening sessions, creek walks, visioning charrettes, and surveys and discussions on how to connect the proposed Creek greenway to on-going neighborhood plans and interests.

In 2015, City of San Leandro (grantee), City of Oakland (sub grantee), and Rails-to-Trails Conservancy (sub grantee) applied for and received a "Partnership Planning for Sustainable Transportation" grant from the State of California Department of Transportation (Caltrans) for completing a master plan study for a multi-use trail along San Leandro Creek. The Sustainable Transportation Planning Grant Program was created to support Caltrans' mission to ***"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability".***

1.2 LOCATION

San Leandro Creek is a year-round stream in Northern California that runs through the Upper San Leandro Reservoir, Lake Chabot and finally flows into the San Leandro Bay. It passes through Alameda County during the course of its flow. The project area covers an approximately 6-mile segment of the San Leandro Creek corridor between Chabot Dam and the San Francisco Bay as shown on Figure 1-1. This portion of the San Leandro Creek corridor is located in the communities of San Leandro and Oakland. The Creek is an open creek and is channelized in Oakland while natural in San Leandro. The City of Oakland is the largest city in Alameda County with a population of 400,000. The City of San Leandro claims the fifth position in the County with 85,000 people calling it home.

The San Leandro Creek runs generally east-west; although there are portions that turn north or south for short distances; therefore, the sides of the San Leandro Creek will be referred to as "north side" or "south side" throughout the report.

FIGURE 1-1 PROJECT LOCATION

1.3 OPPORTUNITIES

San Leandro Creek is known for having been the site of the first rainbow trout hatchery in the world, drawing on the locally native variety of the species. The fish raised in this hatchery were sent as far away as New York. The site has been declared a California Historical Landmark.

1.3.1 RESTORATION OF SAN LEANDRO CREEK

The San Leandro Creek segment in the City of San Leandro in general is naturalized with steep slopes that drop to as much as 50 feet below the street level in certain areas. The banks are inundated with a plethora of invasive vegetation. The presence of large Blue Gum Eucalyptus trees pose a threat to the neighboring development as they have been known to fall, especially during El Nino storms, which can lead to power outages, interrupt traffic, damage Creek banks, and impede flows.

Any kind of restoration of the San Leandro Creek might have to deal with the removal of the eucalyptus trees as well as other invasive vegetation. The trail project is seen as a first step towards the long-term goal of Creek restoration and reintroduction of Steelhead fish in the San Leandro Creek.

1.3.2 REEMERGENCE OF RAINBOW TROUT

In 1855, William P. Gibbons, founder of the California Academy of Sciences discovered a new species of trout in San Leandro Creek, which he named Salmo iridea. The San Leandro Creek site was declared a California Historical Landmark thereafter. The locally native variety of trout was traded in different parts of the Country. This variety of Steelhead trout spawn in gravel-bottomed, fast-flowing, well-oxygenated rivers and streams, some stay in fresh water all their lives. However, a study on historical distribution and current status of Steelhead/rainbow trout reported a decline in their population and only anecdotal evidence of their existence has been sited in the project. A survey of San Leandro Creek between Interstate 880 and 2.3 miles above Lake Chabot in December 1982 concluded that Lower San Leandro Creek could provide good spawning habitat for Steelhead except for siltation problem areas (Leidy, 2005). Once the San Leandro Creek is restored, various stakeholder groups think that the re-emergence of Steelhead trout will take place in these reaches of the Creek.

FIGURE 1-2 BLUE GUM EUCALYPTUS TREES

FIGURE 1-3 INVASIVE VEGETATION

1.3.3 CONNECTIVITY TO SURROUNDING NEIGHBORHOODS AND RECREATIONAL AREAS

The direct benefits of the trail development will be to the surrounding neighborhoods. It is important to make as many connections as possible to residential neighborhoods, shopping areas, schools and employment centers.

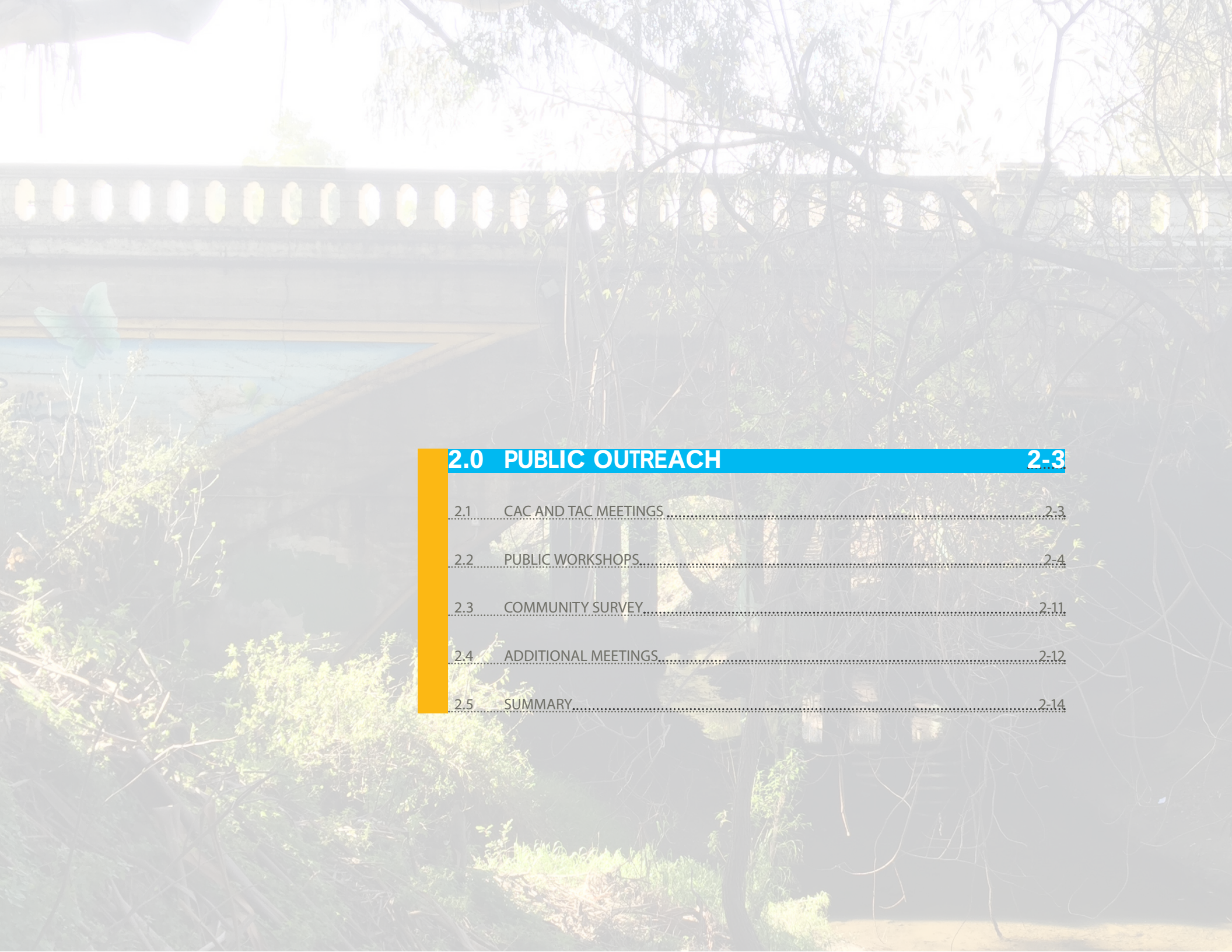
1.3.4 ECONOMIC OPPORTUNITIES

Various studies have shown that a well-planned strategic trail development can lead to economic benefits to the community. Bicycle and pedestrian facilities are proving to be a wise economic investment for communities. Studies have shown that these facilities can stimulate local economies in a number of ways. Along the San Leandro Creek there are numerous food and retail businesses that can benefit from spending by trail users, and the trail would link residents to education and workforce development opportunities with neighboring residents and boating along the inter-tidal first mile of the Creek. This in turn attracts and revitalizes businesses, creates jobs, and increases public revenue. Trails can also have a positive effect on nearby properties as home buyers and business owners realize the value that such facilities bring to a community (Active Living Research, 2010).

1.3.5 EDUCATIONAL OPPOTUNITIES

The proposed San Leandro Creek Trail could provide educational opportunities that aim to strengthen connections between the users and nature. Educational efforts can be focused on enhancing their environmental awareness, and encourage them to make active and healthy lifestyle choices. The proposed trail passes through a variety of landscapes and hence provides opportunity to study habitats in a variety of settings.

2 Public Outreach



2.0 PUBLIC OUTREACH

The San Leandro Creek runs through highly varied environment in San Leandro and Oakland, with neighborhoods representing a range of ethnicities and income levels. While the physical conditions dictated if and how a trail could be implemented along the creek, input from the public was an essential part of the planning process and the final recommendations of this Plan. The outreach efforts undertaken through the Plan provided important insights into the needs and desires of the neighborhoods adjacent to the proposed Trail, how they felt that a trail could benefit their community, and also important concerns about the potential impacts of a trail. The project team utilized several strategies to solicit input from neighborhood stakeholders, and the information collected through this process was critical in determining the recommended alignment for the Trail and identifying major issues to be addressed in the design and operations of a future trail along the corridor.

The public outreach process for the San Leandro Creek Trail Master Plan included local business owners, developers, government agency staff, city officials, nonprofit organizations, neighborhood groups, and other interested residents of San Leandro and Oakland. The community was engaged in many different ways:

- Citizens Advisory Committee
- Technical Advisory Committee
- Public Workshops
- Community survey

2.1 CAC AND TAC MEETINGS

Four Citizens Advisory Committee (CAC) meetings and four Technical Advisory Committee (TAC) meetings were held during the development of the Plan. The CAC meetings attracted participation from people that represented a wide variety of stakeholders, including students, business owners, property owners and residents from several neighborhoods, bicycle and pedestrian advocates, and neighborhood organizations.

The Technical Advisory Committee (CAC) included representatives of a range of agencies that have some regulatory responsibility or other stake in the creek corridor, including Caltrans, California Department of Fish and Wildlife, East Bay Municipal Utility District, Alameda County Flood Control and Water Conservation District, San Francisco Regional Water Quality Control Board, Merritt College Environmental Management Program, as well as departmental staff from the cities of San Leandro and Oakland. These agencies were invited to participate to help identify potential regulatory issues, constraints, and operational issues that would need to be considered in developing the Plan's final recommendations.

The CAC and TAC meeting dates are indicated in Table 2-1 For both committees, meetings were held at key milestones of the project so that their input could be considered as the analysis progressed. The discussion points at each of the four meetings were similar for the CAC and TAC, as follows:

Meeting Number	CAC	TAC
Meeting-1	April 5, 2016	April 5, 2016
Meeting-2	May 25, 2016	May 25, 2016
Meeting-3	August 4,2016	August 4,2016
Meeting-4	December 13, 2016	December 13, 2016

TABLE 2-1: LIST OF CAC AND TAC MEETINGS

- **Meeting #1:** This meeting provided an introduction to the project. This included the project origin, potential benefits of developing the Trail, examples of best practices from trails in other communities, and an overview of each segment of the corridor.
- **Meeting #2:** Committee members were asked to provide their initial input on the potential alignments for the Trail. Since the project team had determined that the Trail could probably not be constructed along the creek for the entire length of the corridor, participants were invited to review on-street alternatives to ensure east-west connectivity along the corridor. The input received at the May 11th and May 12th public workshops were presented to inform this discussion.

- **Meeting #3:** The purpose of this meeting was to review the potential alignment options to be analyzed by the consultant for each segment and to receive input from the committee members regarding the feasibility and desirability of each option.
- **Meeting #4:** The final draft recommended alignment was presented for review by both committees. This included both short-term and long-term options, as well as those which required additional study or community input to make a determination.

2.2 PUBLIC WORKSHOPS

Public workshops were held in both cities at two different points in the project. The first set of workshops was designed to introduce the project to the public and solicit initial input. The second set of workshops presented attendees with the range of alignment options under study to help inform the selection of the final recommended alignment.

Notification about the workshops was provided to the public in several ways. Property owners and business owners in both San Leandro and Oakland – those most directly impacted by a potential trail – were sent postcards to ensure that they were made aware of the project; due to the ethnic make-up of the neighborhoods, the Oakland postcards included translations into Spanish and Mandarin. Other stakeholders were identified through postings on both City websites, e-mails to a project interest/notification list.

2.2.1 May 2016 workshops

May 11, 2016 (San Leandro Main Library, San Leandro) and May 12, 2016 (Madison Park Academy, Oakland) – The San Leandro workshop was attended by approximately 49 people while the Oakland workshop was attended by approximately 14 people.

Opportunities

- Walking trails, public access to the Creek, rest areas, benches
- Locations for urban farming (since farming was a historic use) and gardens, partnering with Planting Justice (organization based near the Creek in Oakland)
- Job training and employment opportunities for residents
- Native plant restoration
- Restoration of the Creek corridor and habitat
- Create access points along the creek for residents and connections to businesses
- Youth leadership programs to help with creek stewardship
- Afterschool bicycle program to engage local youth
- Address illegal dumping problem with beautification, public art, and enhanced access to the Creek

Challenges

Oakland

- Safe crossing of Hegenberger Road
- Safe crossing of 98th Avenue
- Illegal dumping along the Creek (especially at end of 105th Avenue)
- Providing lighting along the Creek
- Perception that the area along the creek is scary/unsafe

FIGURE 2-1: SAN LEANDRO WORKSHOP PICTURE

FIGURE 2-2: SAN LEANDRO WORKSHOP MAP MARKINGS

San Leandro

- Maintenance of healthy plant / animal life when people constantly use the trail
- Keeping water in Creek year-round
- Safety for users and landowners, crime prevention
- Obtaining required right-of-way
- Illegal dumping, debris from trees, falling trees
- Homeless encampments along Creek near downtown San Leandro
- Pedestrian safety to be addressed if / when making path accessible to higher speed bicyclists
- Varying Creek width; no room for trail
- Lack of privacy, noise, smoking, vandalism, fire, liability for injuries
- Cost of building fence for security

Places to which a trail would provide access

Oakland

- Walk to coffee shop from Martin Luther King Jr. shoreline (San Fransisco Bay Trail)
- Access to Brookfield Village and Columbia Gardens neighborhoods
- Access to Sobrante Park neighborhood
- Safe way to schools
- Access to Coliseum BART station

San Leandro

- Access point at San Leandro Boulevard
- East 14th Street
- Parks / rest areas
- Major intersections: Bancroft and East 14th Street

On-street alternatives to a trail adjacent to the creek

Oakland

- Short-term Hegenberger Road crossing needed to provide access to Martin Luther King Jr. shoreline
- Long-term 98th Avenue overcrossing needed

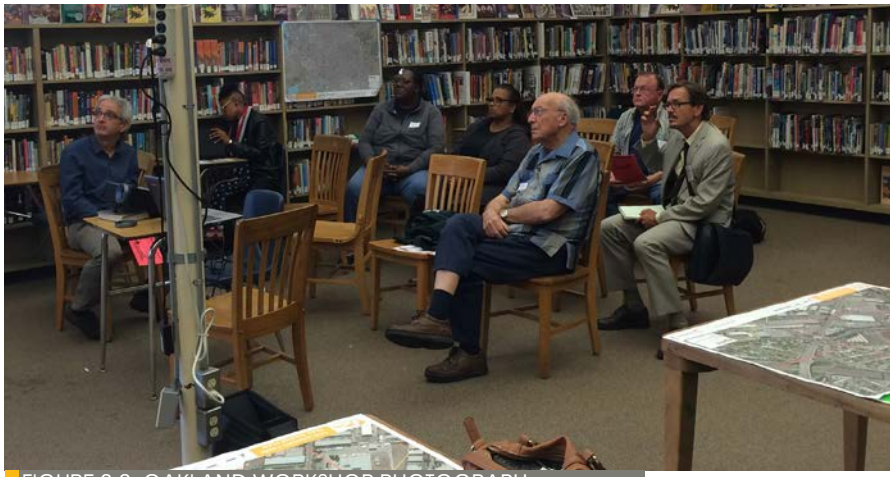


FIGURE 2-3: OAKLAND WORKSHOP PHOTOGRAPH

FIGURE 2-4: SAN LEANDRO WORKSHOP PICTURE

FIGURE 2-5: OAKLAND WORKSHOP MAP MARKINGS

San Leandro

- Haas Avenue footbridge to Cary Drive to Collier Drive to Bridge Road
- Downtown San Leandro to Martin Luther King Jr. shoreline
- Use on-street alternatives to maintain backyard privacy
- Davis Street
- Haas Avenue between Bancroft Avenue and East 14th Street could be a bicycle route. Then it could pass by City Hall and California Avenue. On the east end the route can continue on Cary Drive to Rodney Drive to Collier Drive

2.2.2 September 2016 and October 2016 workshops

September 21, 2016 (San Leandro Civic Center) and October 13, 2016 (Madison Park Academy, Oakland). The San Leandro workshop was attended by approximately 44 people while the Oakland meeting was attended by approximately 10 people.

The workshop was focused on soliciting input from attendees on the potential routes identified by the consultant. Stations were set up with maps for participants to review the options and provide their comments directly onto the maps. As indicated in Figure 2-7, each alignment option was split into sub-segments. Participants provided their recommendations by selecting a series of sub-segments to complete their preferred route. The responses were then mapped with Geographic Information System (GIS) to produce a map with the most popular alternatives, with the thicker lines representing the highest scoring routes (Figure 2-8).

Aside from the discussion of the route alternatives, the following issues were raised:

- Potentially making connections with other streets, such as Dutton Avenue and 105th Avenue
- Challenges transitioning from trail to on-street facility
- Concerns about the homeless that live in the Creek and near I-580
- Connection from Segment 7 to Segment 8 under I-580 where the Creek passes under the highway
- Lack of privacy from trail users
- Crime

FIGURE 2-6: WORKSHOP 2 MEETING PHOTOS

Recommended Paths

C,F,G,O,P,V,W,X

A,E,N,O,Q,S,T,X

Unacceptable Paths

J – too narrow

FIGURE 2-7: PUBLIC WORKSHOP MAP EXAMPLE

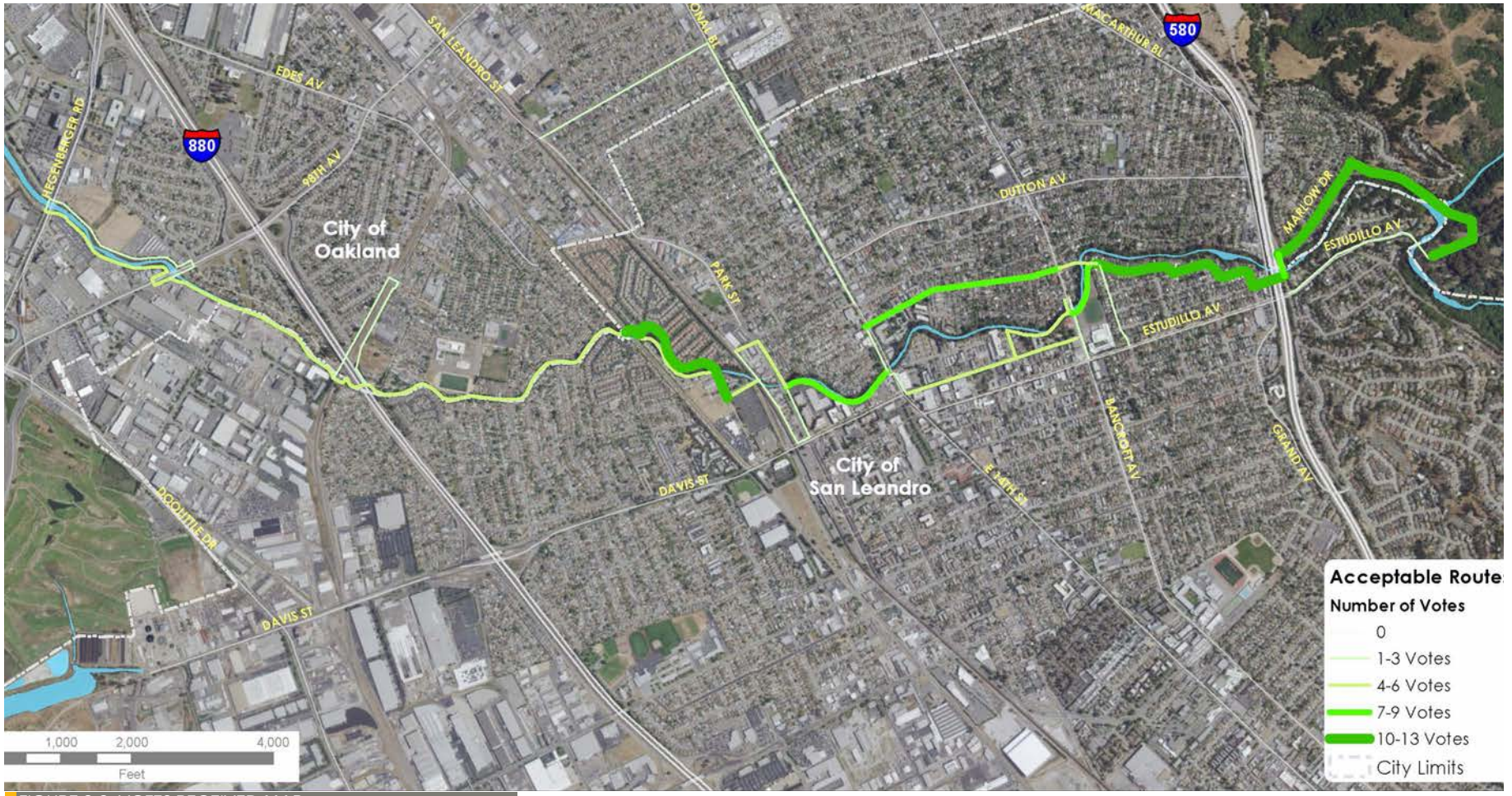


FIGURE 2-8: VOTES RECEIVED MAP

2.3 COMMUNITY SURVEY

A brief survey was prepared to solicit input from residents about the project. The survey was primarily made available online, and was also distributed to attendees at the San Leandro Creek and Watershed Earth Day Festival (held on April 9, 2016 at Root Park in San Leandro). A total of 157 responses was received between April 9 and October 4, 2016. Some of the key subjects of the survey are listed below:

- Frequency of biking and walking/impact of proximity to trails on behavior
- Potential trail benefits/uses
- Factors discouraging trail use
- Level of support for trail
- Concerns about development of trail
- Age of survey respondents

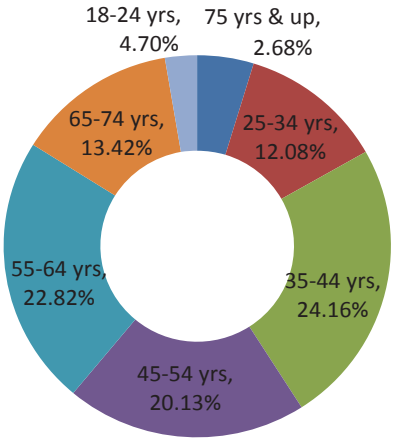


FIGURE 2-9: SURVEY PARTICIPANTS AGE GROUP

Most participants walked or bicycled a few times a week but 21% walked or bicycled on a daily basis (Refer to Figure 2-10). The majority (69%) agreed that they would go out for a walk or ride a bicycle more often, either for recreation or to go to work, if they were closer to trails, or if there were more of them. The biggest factors that discouraged the trail usage were identified as personal safety concerns and lack of safe connections. These and other factors are shown in Figure 2-11.

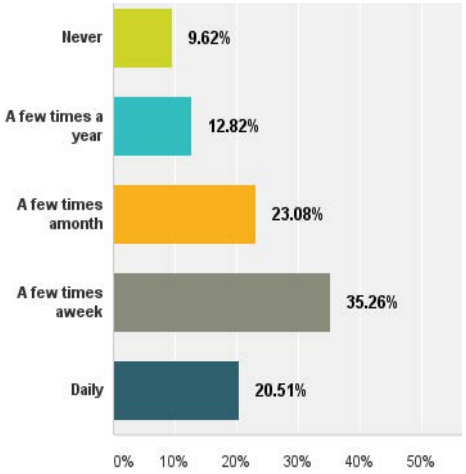


FIGURE 2-10: BIKING/ WALKING FREQUENCY

According to the survey contributors, the most important benefits and uses of a trail or greenway system were Recreation/Fitness, Access to Nature/ Outdoors and Improved Quality of Life. Figure 2-12 depicts how various benefits of trails ranked based on participants' input.

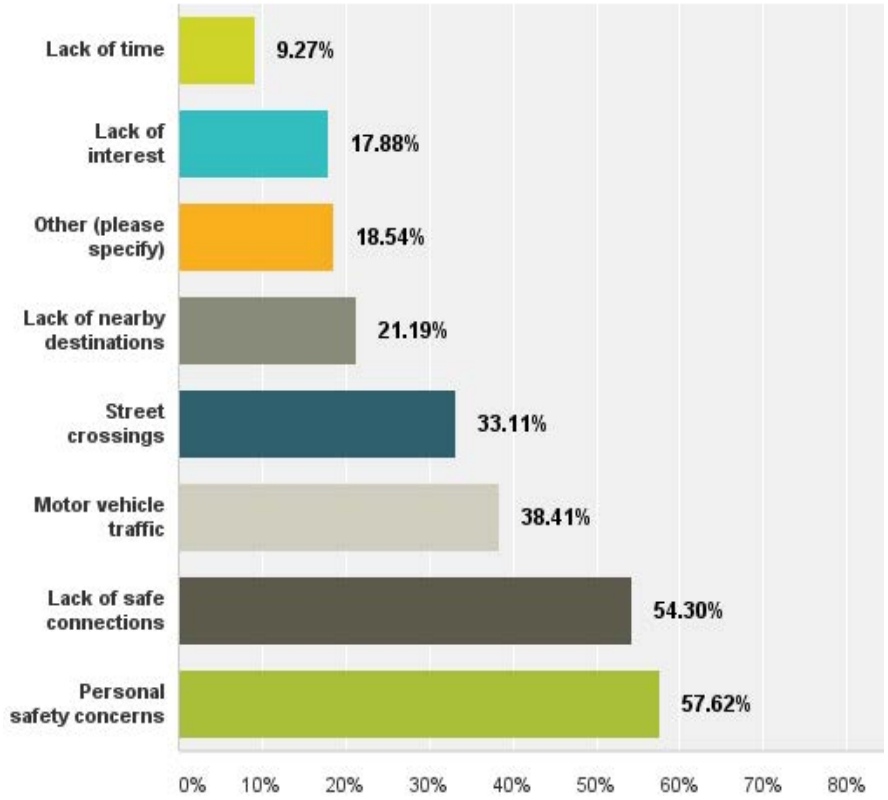


FIGURE 2-11: FACTORS DISCOURAGING TRAIL USAGE

Most participants view the proposed San Leandro Creek Trail as a recreational amenity compared to mode of transportation. They would like to access natural, open spaces, other greenways, and parks and playgrounds via the proposed Trail. Very few people see it as a mode of commute to work or school. Commute to school could have received fewer votes given the

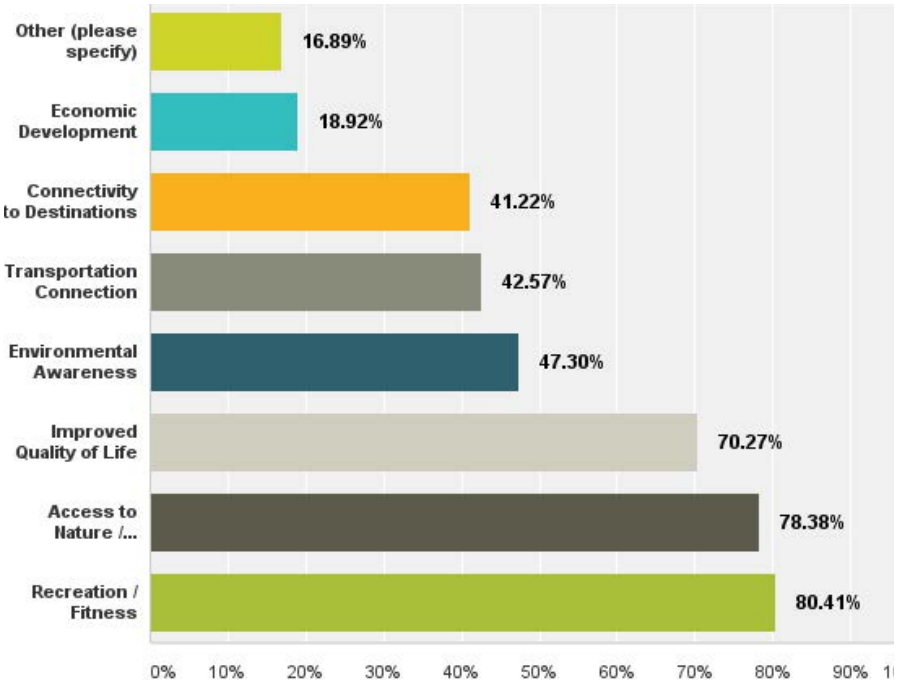


FIGURE 2-12: BENEFITS OF TRAIL

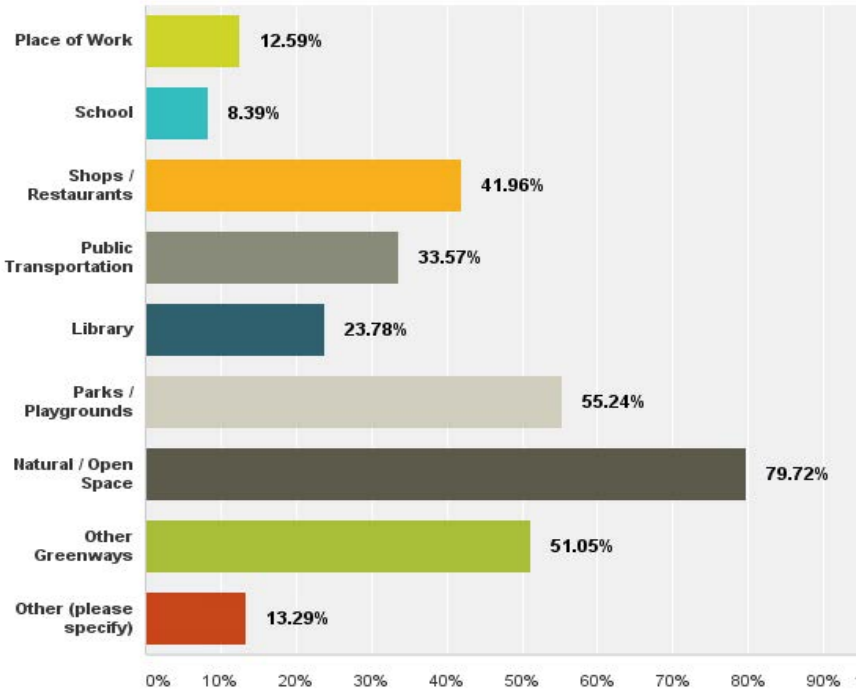


FIGURE 2-13: DESTINATIONS TO ACCESS BY PROPOSED TRAIL

fact that there was less participation in the survey from people belonging to the age of under 34 who might have children going to elementary or middle school or attend school themselves. Figure 2-13 shows the destinations participants would most like to get to by the proposed Trail.

Most participants supported the San Leandro Creek Trail project and are excited to see more connectivity and access to a new bicycle facility. Those who oppose the project have raised concerns regarding the potential increase in crime, decrease in privacy, and environmental impacts. Studies have shown a decrease in crime statistics in neighborhoods with trail connections. According to a study done by Rails-to-Trails of 372 trails nationwide, the crime rate was reduced significantly in the areas with trails. The study also found that trail managers often employ preventative design strategies and patrols to reduce the possibility of crime and improve the efficient management of the trail.

2.4 ADDITIONAL MEETINGS

To solicit additional input on the proposed trail, the project team conducted smaller scale neighborhood workshops and delivered several presentations. Public workshops only reach a small subset of the population, and by seeking out venues for more localized workshops, the project team was able to receive more targeted input on the proposed trail. These workshops were focused on stakeholder groups in the vicinity of the creek, several with a focus on youth. Much of the input received at these workshops and presentations echoed the comments provided by the public workshop attendees as well as the survey. The list of presentations, including some of the major comments provided, is listed in this section.

Group: Oakland Bicycle Pedestrian Advisory Committee
Location: Oakland City Hall
Date & Time: 2/18/16
Contact: Jennifer Stanley, city staff
Population: BPAC and members of the public
Reach: 29 attendees
Information Covered: Project overview and work scope.

Event: Earth Day Festival
Location: Root Park, San Leandro
Date: 4/9/16
Contact: Susan Levenson, Friends of San Leandro Creek
Population: general public
Reach: 40 people
Information covered: Overview of the project, opinions on the potential benefits and concerns
Recommendations: Members of the project team discussed the project with attendees. 22 people completed surveys. There was a range of opinions about the project – many were enthusiastic about the prospect of a biking and walking trail in their community, while some who lived near the creek expressed concerns about the potential impacts of a trail near their homes. Several individuals raised concerns about personal safety in the corridor.

Audience: 2 science classes
Location: Madison Park Business and Art Academy, Oakland (Sobrante Park neighborhood)
Date: 6/3/16
Contact: Jovel Queirolo, teacher
Population: high school students
Reach: 25 students
Information covered: Overview of project, discussion potential community benefits and concerns related to development of a trail
Recommendations: A number of the students indicated that they liked the idea of being able to use a trail along the creek to go for a ride or walk to school. Some indicated that they currently go into the creek although it is prohibited, and they did not want to see any changes. Concerns were identified about potential crime and safety, though a couple of students expressed wariness of having police safety patrols along the creek.

Audience: East Oakland Boxing Association
Location: 816 98th Ave, Oakland, CA 94603
Date: 7/29/16
Contact: Libni Gamez, staff
Population: 11-14 year olds
Reach: 35 kids
Information covered: Project information, benefits of trails, and types of bike lanes.
Recommendations: Participants were very excited about the prospect of a trail. They came up with a list of elements they would like to see as part of the project, include lighting, linear parks (including play and exercise equipment), dog poop stations, water fountains, emergency phones, art on the stairs, bathrooms, murals throughout, benches, recycling bins, bike share programs, ADA accessibility, maps along the trail with information about the local animals.

Audience: Cherry City Cyclists
Location: San Leandro Manor Library
Date & Time: 8/10/16
Contact: Vicky Ma
Population: Easy Bay bicyclists
Reach: 10 adults
Information Covered: Project background, alignment options
Recommendations: Participants identified their preferences for the on-street alignments in San Leandro. They also expressed their interest in having the Trail improve access to recreational trails in the area, especially at Chabot Regional Park.

Audience: East Oakland Sobrante Park
Location: Madison Park Academy
Date & Time: 9/14/16
Contact: Cynthia Arrington
Population: Sobrante Park
Reach: 20 residents

Information Covered: Reviewed the overall project, the potential alignments under consideration, with a focus on the Sobrante Park segment.
Recommendations: People were very interested in the project and its potential as an asset to the community. They also expressed concerns about public safety, noting that many people currently access the creek, even though the gates are locked, through holes in the fence.

Audience: San Leandro Senior Commission
Location: San Leandro
Date & Time: 10/20/16
Contact: Diane Atienza
Population: Seniors
Reach: 10 attendees
Information Covered: Project background and San Leandro segments
Notes: Commissioners currently use the San Leandro Marina Trail. Elements they would like to see on the trail included seating (such as benches) and restroom facilities. Also recommended providing connections to local business and parks and access to bike share program. For rail crossing, suggesting going over the tracks as it is safer than going under. Question raised about homeless encampments in the creek, staff indicated that there are currently no encampments in the Creek.

Audience: Estudillo Estates Homeowners Association
Location: San Leandro Main Library
Date & Time: 10/11/16
Contact: Bahar Navab
Population: Residents of Estudillo Estates neighborhood (San Leandro)
Reach: 10 residents
Information Covered: Overview of project and potential alignments under consideration, focus on portion of the corridor in their neighborhood.
Notes: Once it was clear that the trail would not be located on private property in the community there were no concerns about potential problems in their neighborhood.

Group: San Leandro Bicycle Pedestrian Advisory Committee
Location: San Leandro Civic Center
Date & Time: 11/9/16
Contact: Reh-Lin Chen, city staff
Population: BPAC and members of public
Reach: 15 attendees
Information Covered: Overview of project and draft recommended trail segment alignments.

Group: Oakland Bicycle Pedestrian Advisory Committee
Location: Oakland City Hall
Date & Time: 12/15/16
Contact: Jennifer Stanley, City staff
Population: BPAC and members of the public
Reach: 20 attendees
Information Covered: Overview of project and draft recommended trail segment alignments.

Group: Sheffield Village Homeowners Association (upcoming)
Location: TBD
Date & Time: January 2017
Contact: Greg Novak
Population: Residents of Sheffield Village neighborhood (Oakland)
Reach: TBD
Information Covered: Overview of project and draft recommended trail segment alignments.

2.5 SUMMARY

The comments provided by attendees of the public workshops and the neighborhood workshops, as well as those provided by the survey respondents, were quite consistent. Many participants in the planning effort expressed strong opinions about the potential benefits as well as their concerns about the development of a trail along the Creek. The nature of the comments varied considerably along different segments of the Creek, and were generally related to the character of the Creek corridor at that location, proximity to residential areas, and potential public safety issues.

Residents of Oakland in the vicinity of the portion of the proposed trail with the existing maintenance road (Segments 2, 3 and 4) expressed excitement

about many of the potential benefits that the trail had to offer – including transportation, recreation, as well as opportunities to create economic benefit and beautify the community. At the same time, they remarked that there are currently numerous trespassers along the creek area and there are significant public safety concerns there. People indicated that it would be extremely important to address these concerns if a trail were to be implemented in this area.

The portion of the proposed trail further to the east (Segments 5 to 8) is very different in character and the project generated very different types of comments. Initially, a large number of comments were received reflecting concerns that the trail might be developed on their property, as many of the property lines extend to or near the center of the Creek. As a result, the comments focused on potential impacts to their privacy and concerns about trespassing and crime. Once it became clear that the proposed routes along these segments would largely consist of on-street facilities, the types of comments focused more on which streets might provide the most desirable connections and could best accommodate trail users.

3 Existing Conditions

3.0 EXISTING CONDITIONS

3.1 GENERAL CHARACTERISTICS

In order to study the general characteristics of the neighborhoods in the immediate vicinity of the San Leandro Creek, a one mile buffer was created from the San Leandro Creek alignment. The census block groups that intersected with this buffer were used as the study area. Figure 3-1 depicts the study area overlaid with the one-mile buffer.

3.1.1 POPULATION DENSITY

(Population Per Acre)

Trails within urban areas serve a wide variety of users because of the high population density. They have the ability to serve recreational, commuting and transportation functions. There is a very strong correlation between population density and trail usage. It is evident from various studies that higher population density leads to higher trail usage. Likewise, living close to parks and other recreation facilities is consistently related to higher physical activity levels for both adults and youth (American Trails, 2007).

The surrounding neighborhoods around San Leandro Creek are dense, especially in the central portion of the study area. This is also an area that is least served by green space. With a population density ranging from 12 to 23 individuals per acre, it is likely that a trail in this area would be well used.

There is a very strong correlation between population density and trail usage. Higher population density leads to higher trail usage.

FIGURE 3-1: STUDY AREA

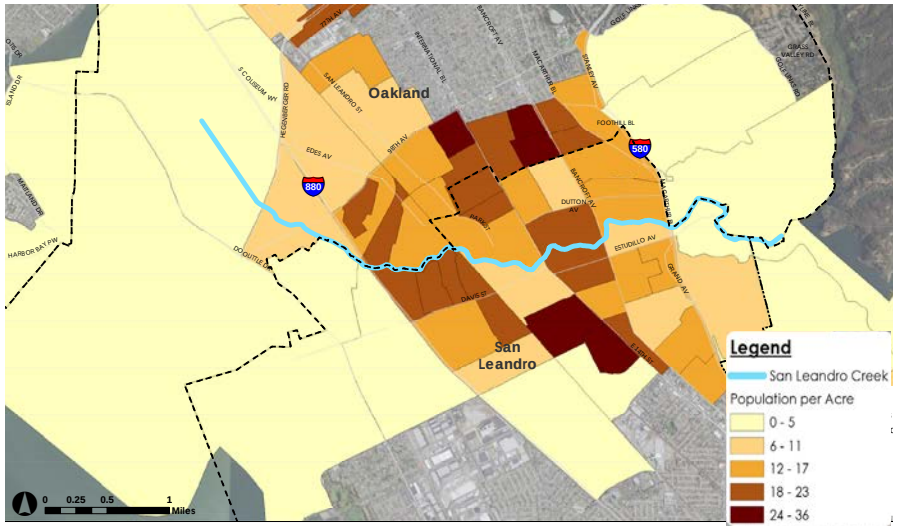


FIGURE 3-2: POPULATION DENSITY (POPULATION PER ACRE)

3.1.2 ECONOMIC CHARACTERISTICS

The quality of place is one of the important factors in the places people choose to live, work, and invest. Furthermore, access to trails is a key component in the quality of place equation. It can also be important to look at economic factors when planning transportation systems, as lower-income areas may have less access to transportation choices, and many have limited access to motor vehicles.

Figure 3-3 depicts the number of families below poverty level in the study area. Poverty level thresholds are established by Census Bureau each year based on number of people forming a family unit. For year 2014 the poverty threshold for a family of four was $24,230 while that with six people was $32,473 (Census, 2014). A study of this map reveals that there are clusters with a very high number of families below the poverty line.

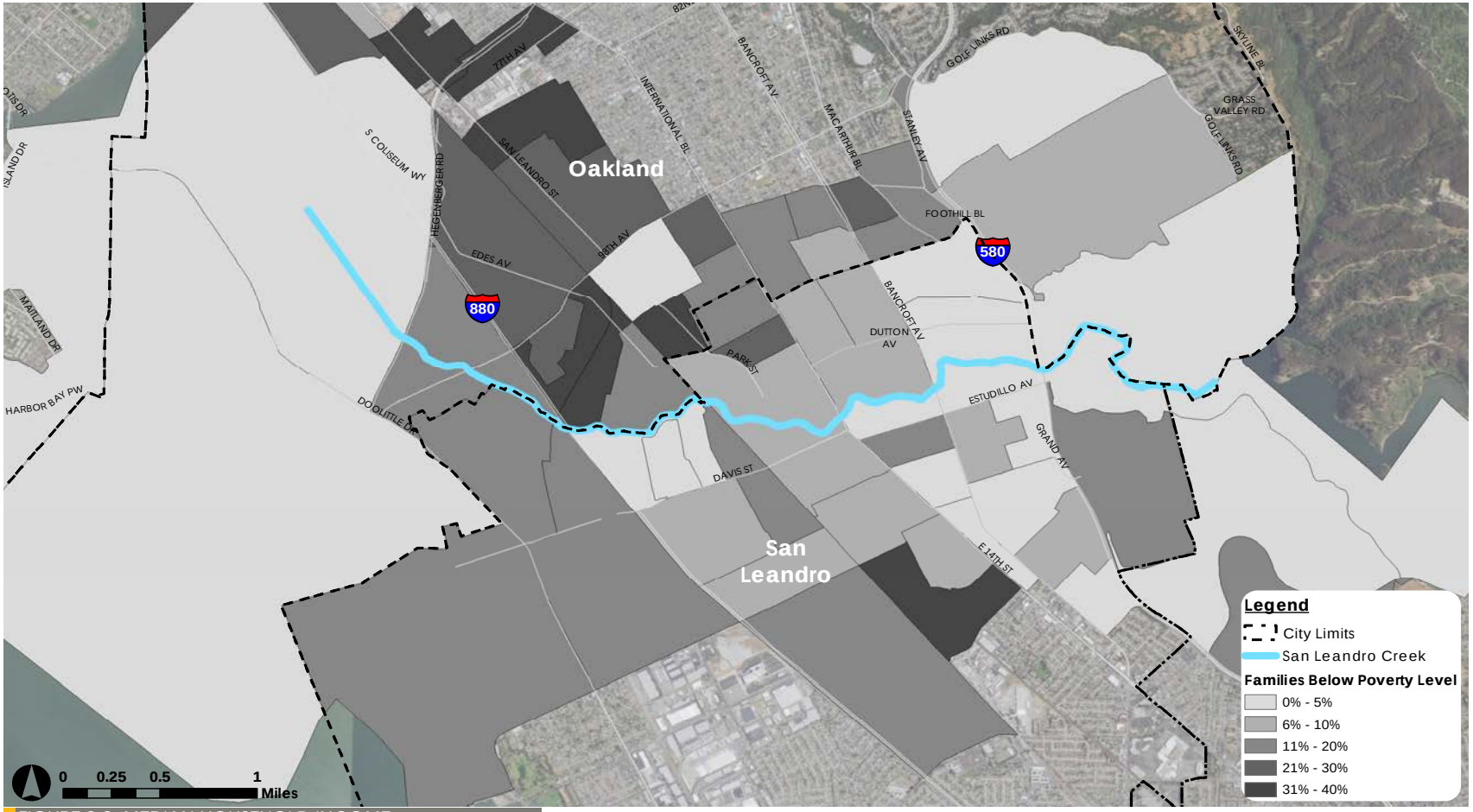


FIGURE 3-3: MEDIAN HOUSEHOLD INCOME

Figure 3-4 depicts Metropolitan Transportation Commission's (MTC's) Communities of Concern (COC) locations. Eight variables are used to map COC. These are Minority, Low-Income, Level of English Proficiency, Elderly, Zero-Vehicle Households, Single Parent Households, Disabled and Rent-Burdened Households. Thresholds are established for each of these variables. If a particular census tract exceeds both threshold values for Low-Income and Minority shares OR exceeds the threshold value for Low-Income AND also exceeds the threshold values for three or more variables, it is a Community of Concern. It can be observed that many communities in the project area are COC, including most of the City of Oakland Communities.

Often families below poverty level or that are in a COC have limited means of transportation and are therefore more dependent on walking and biking as a means of commuting to work or making local trips such as to drug stores, grocery stores and other daily needs. These places connected by the potential Trail are explained in detail under segment descriptions in Chapter 4 Segment Analysis. There are also industrial and high employment areas in the western end of the project area. A trail connection to this area could increase the connectivity and might help with alleviating poverty from these areas. Also, connecting two major regional assets, such as the Chabot Park and the San Francisco Bay Trail, could spur economic development in the areas that are in need of revitalization.

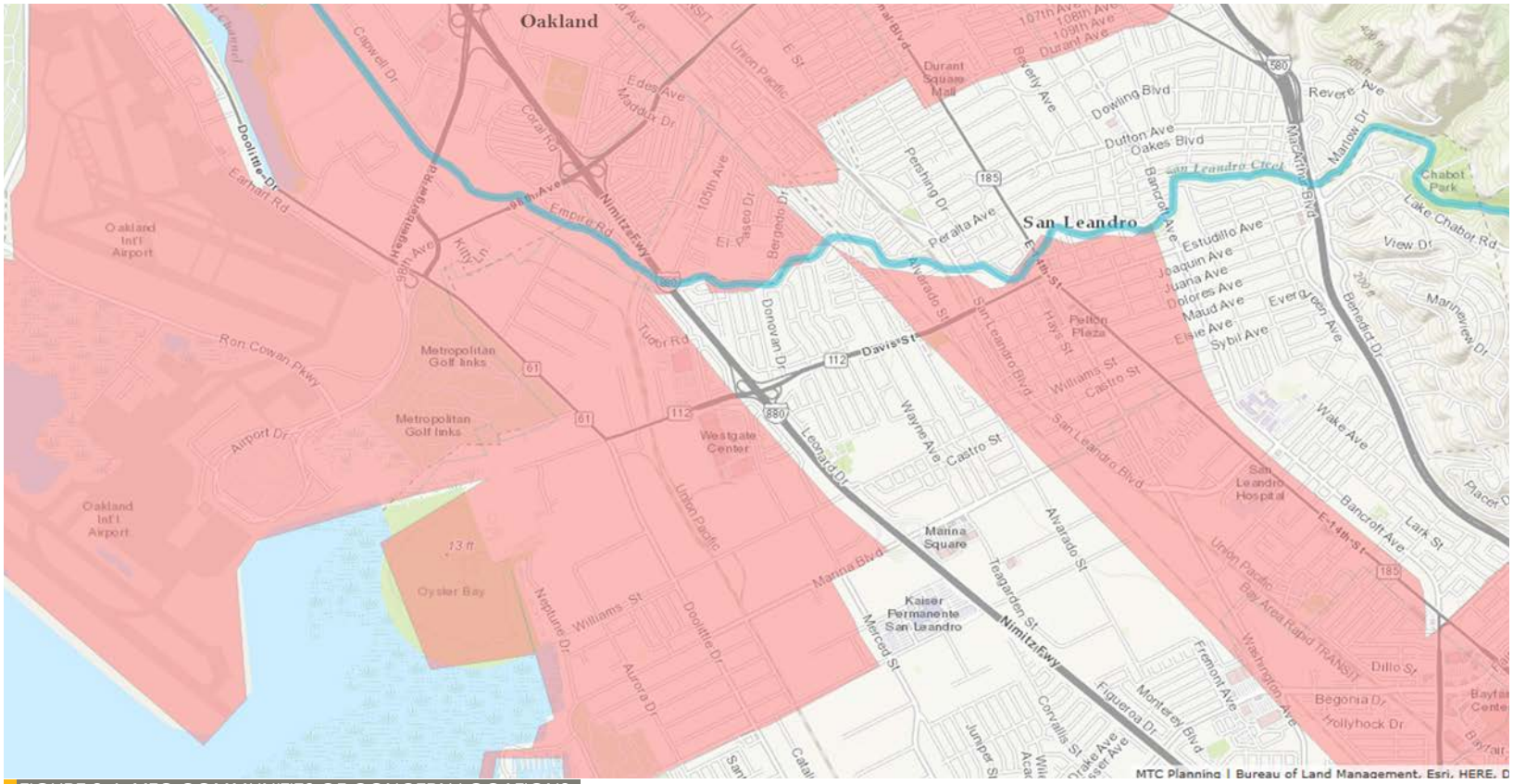


FIGURE 3-4: MTC COMMUNITIES OF CONCERN LOCATIONS

3.1.3 SCHOOL AGE POPULATION

Students are most likely to walk to school, and trails can provide an important way to safely reach their schools. There are several schools in the study area, including two middle schools (Madison Park Academy and Bancroft Middle School) and one elementary school (Sobrante Park Elementary School) that are located adjacent to the San Leandro Creek. Approximately 17,000 students are enrolled in Kindergarten to 12th grades within the study area.

Figure 3-5 and Figure 3-6 show the concentration of students in the study area enrolled in Kindergarten to 7th grades and 8th to 12th grades. A trail development could be beneficial in connecting the schools to the neighborhoods and thus, reducing traffic on the streets while promoting a healthy lifestyle for children.

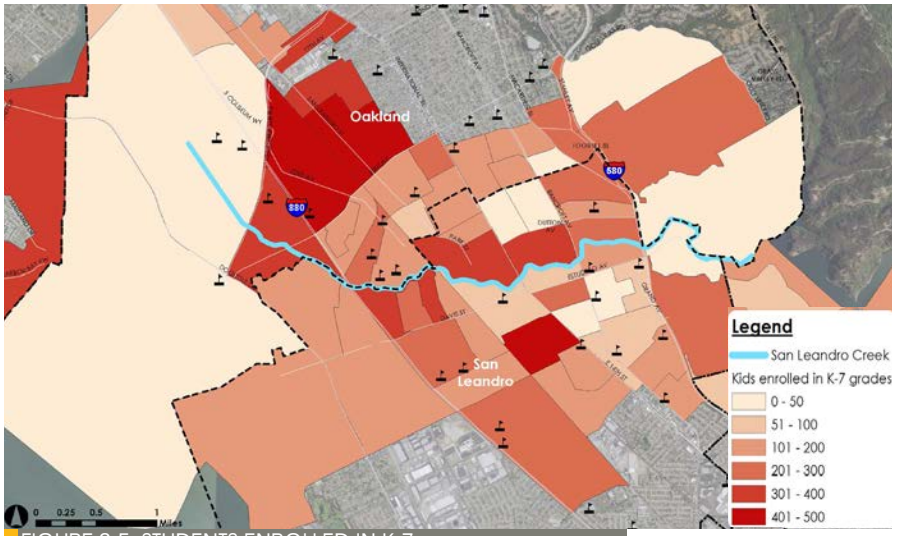


FIGURE 3-5: STUDENTS ENROLLED IN K-7

3.1.4 SENIOR POPULATION

Based on 2014 Census estimates there are approximately 10,500 households in the study area that have one or more household members who are 60 years and over. Figure 3-7 depicts households with seniors in the study area by census block groups. This population may be retired and tend to stay local and may choose not to drive motor vehicles. Therefore, safe mobility choices for non-motorized means of travel such as walking and biking could become an important element in their daily lives.

3.1.5 RECREATIONAL AREAS

With a population of 89,930 and approximately 1,000 acres of recreational land (not counting Lake Chabot Regional Park) in the study area, the ratio of greenspace to population is 1.1 acres per 100 people. In comparison, City of San Leandro's requirement for park land is 4.86 acres per1,000 residents while it is 4.0 acres per 1,000 residents in the City of Oakland. The study area has more recreational land compared to these requirements, however, as seen in Figure 3-8, the major acreage is concentrated in the eastern and western ends of the study area, leaving the central portion with comparatively less green space. A trail development might help create much needed recreational space while also connecting the large recreational areas on either ends of the study area.

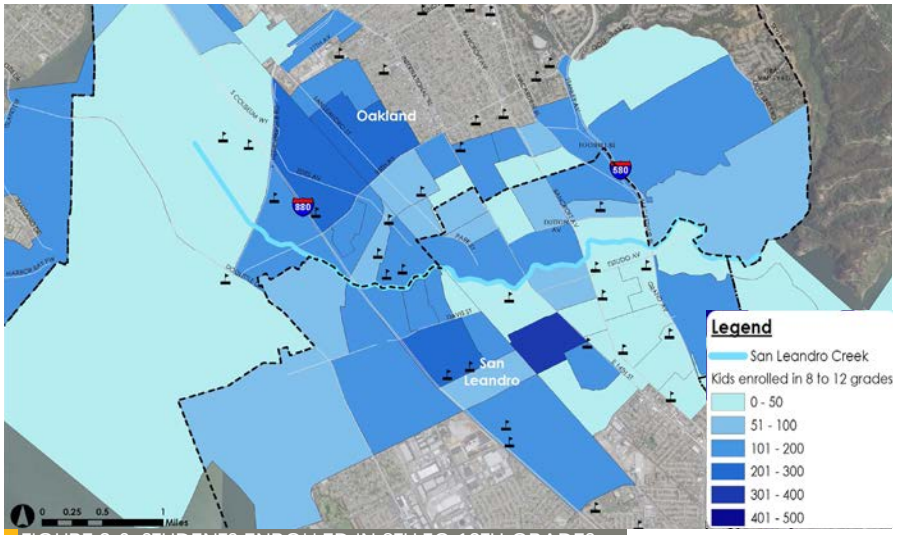


FIGURE 3-6: STUDENTS ENROLLED IN 8TH TO 12TH GRADES

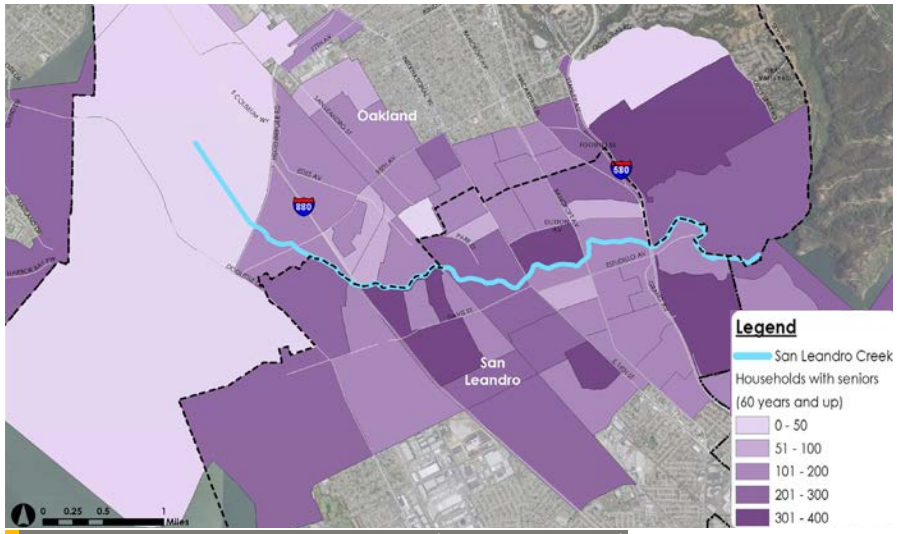


FIGURE 3-7: HOUSEHOLDS WITH SENIORS (60 YEARS AND UP)

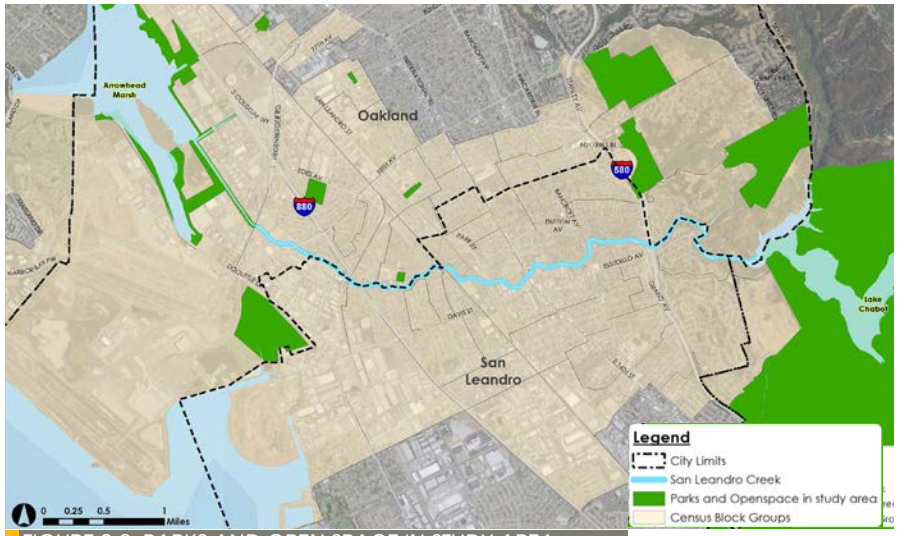


FIGURE 3-8: PARKS AND OPEN SPACE IN STUDY AREA

3.1.6 PROPERTY OWNERSHIP

Figure 3-9 shows the publicly owned land in the study area. These are the parcels that are either owned by the City of Oakland, City of San Leandro, Alameda Flood Control and Water Conservation District, Alameda-Contra Costa Transit District (AC Transit), City of Oakland Housing, East Bay Regional Park District, East Bay Municipal Utility District or Oakland and San Leandro Unified School Districts.

FIGURE 3-9: PUBLICLY OWNED LAND

3.1.7 OTHER LAND USES

Figure 3-10 shows various land uses in the study area. Most of these places are within one half-mile or 10-minute walking distance from the San Leandro Creek alignment (linear distance). A trail in this area will provide connectivity to these land uses and reduce the dependability on motor vehicles.

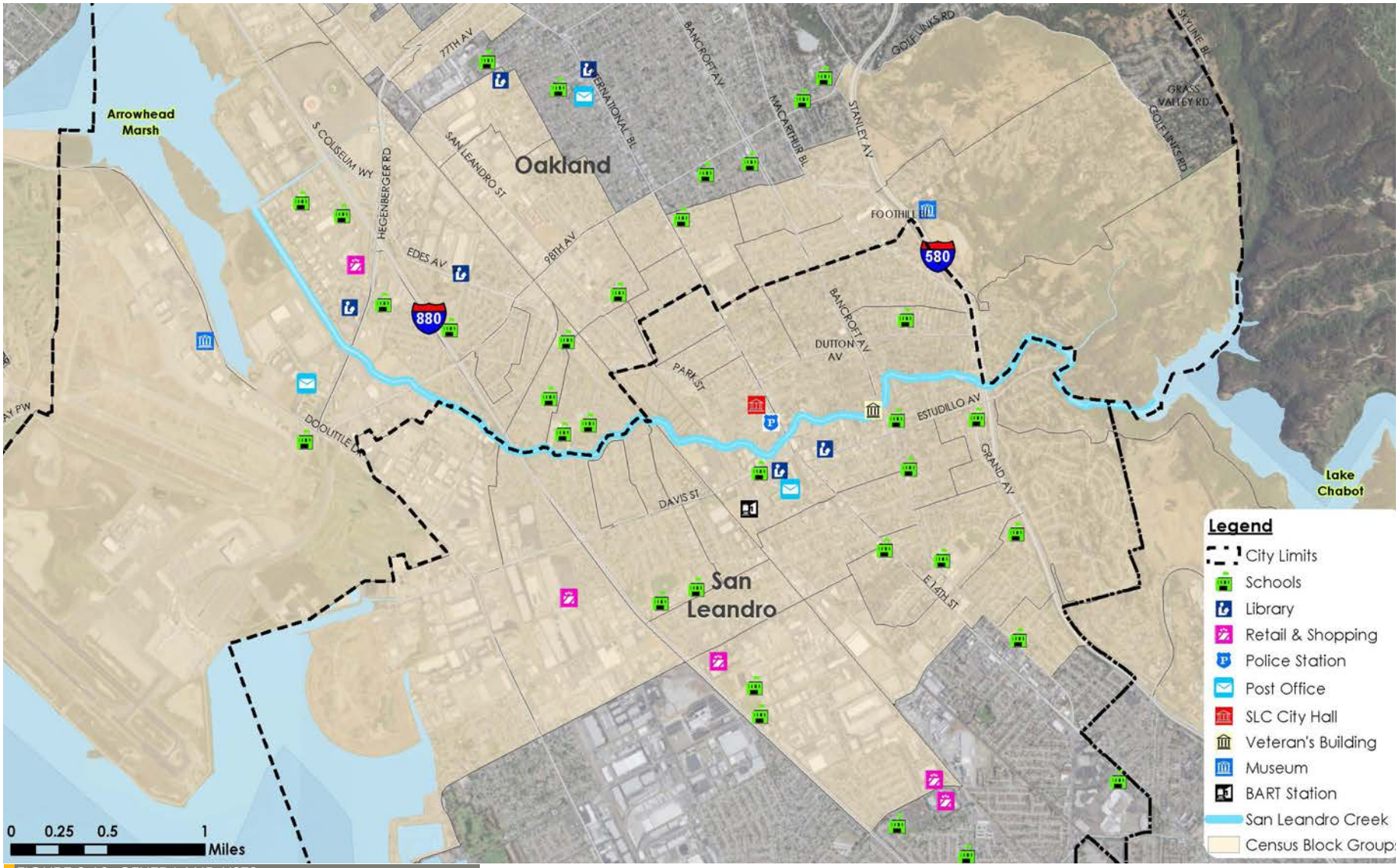


FIGURE 3-10: OTHER LAND USES

3.2 CONNECTIVITY TO BICYCLE FACILITIES

The proposed trail would improve access to neighborhoods that are extremely isolated due to the railroad, creek, and highways. Also, it would establish connectivity to downtown San Leandro and businesses in the area. It could be an important route to school for Madison Park Academy students coming from Columbia Gardens. These connections are explained in previous sections of this chapter as well as in the next chapter. This section however focuses on connectivity with the bicycle network in the region and vicinity.

There are several trail systems in the project area including San Francisco Bay Trail, the proposed East Bay Greenway, and trails in Chabot Park. The proposed San Leandro Creek Trail aims to link these systems and provide wider connectivity to the neighborhoods it serves.

San Francisco Bay Trail is one of the largest trail systems in the Bay Area. As of 2016, 345 miles of trail have been completed. When finished, the Bay Trail will extend over 500 miles to link the shoreline of nine counties and pass through 47 cities, as shown in Figure 3-11. The trail along the San Leandro Creek between Hegenberger Road and Arrowhead Marsh is part of this system. On the other hand, Chabot Park is a regional attraction with its own trail system. A trail along or near San Leandro Creek will help link these two regional attractions, thus creating a well-connected network of trails and, in turn, benefiting the communities of Oakland and San Leandro. Chabot Park and East Bay Regional Park trails also link to the Bay Area Ridge Trail which link to the East Bay Municipal Utility District Mokelumne Coast to Crest Trail planned to the Sierra Nevada Mountains which, in turn, links to the Pacific Crest Trail from Canada to Mexico.

Preliminary engineering and environmental analysis of East Bay Greenway - a Class I multi-use path is underway. The trail alignment is below the elevated tracks in the BART right-of-way in the north and San Leandro and Bay Fair Stations in the south. When completed, this facility, in conjunction with the proposed San Leandro Creek Trail, is expected to tremendously increase the connectivity of the neighborhoods in the study area to the San Leandro BART station south of the Creek, which is currently not easily accessible by non-motorized means of transportation.

FIGURE 3-11: SAN FRANCISCO BAY TRAIL AND CHABOT PARK LINKAGE

Other important connections include connectivity to existing and planned Class II bicycle lanes on Davis Street, Estudillo Avenue, Doolittle Drive, Hegenberger Road, San Leandro Street, International Boulevard and Bancroft Avenue. Figure 3-12 depicts the existing and planned bicycle facilities in the area. A study of this map reveals a scarcity of east-west bikeway connections in the area making the potential San Leandro Creek Trail a very important connecting element.

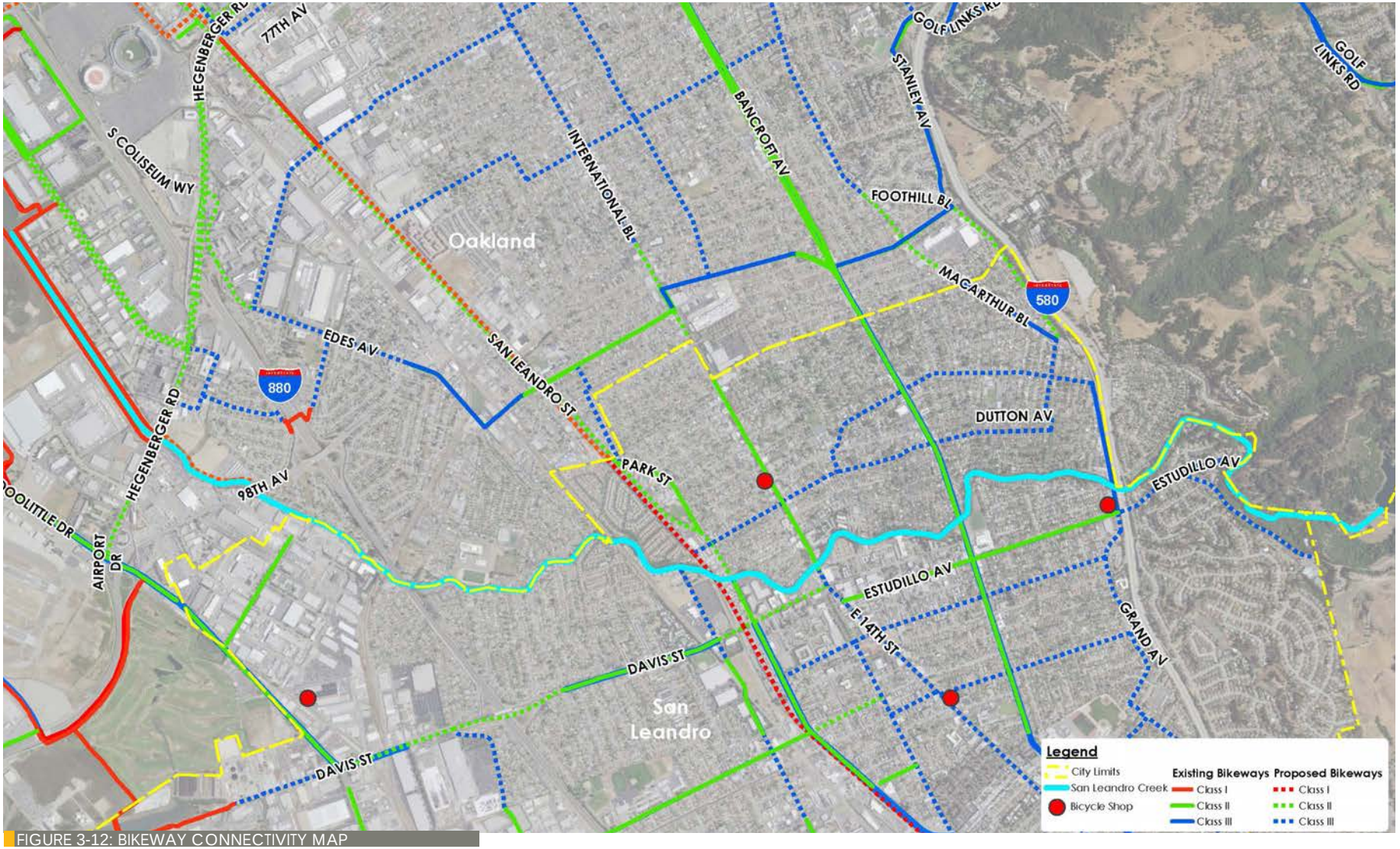


FIGURE 3-12: BIKEWAY CONNECTIVITY MAP

4 Segment Analysis

4.0 SEGMENT ANALYSIS

This report is organized into eight segments that highlight opportunities and challenges for construction of the potential trail. The potential trail runs through differing jurisdictions and terrains. Therefore, while the corridor must be looked at in its entirety, it is also helpful to look at specific areas differently. Consequently, the document will be organized into the following segments from west to east:

- **Segment 1: San Leandro Bay to Hegenberger Road**
- **Segment 2: Hegenberger Road to 98th Avenue**
- **Segment 3: 98th Avenue to I-880**
- **Segment 4: I-880 to Railroad**
- **Segment 5: Railroad to East 14th Street**
- **Segment 6: E. 14th Street to Bancroft Avenue**
- **Segment 7: Bancroft Avenue to I-580**
- **Segment 8: I-580 to Chabot Park**

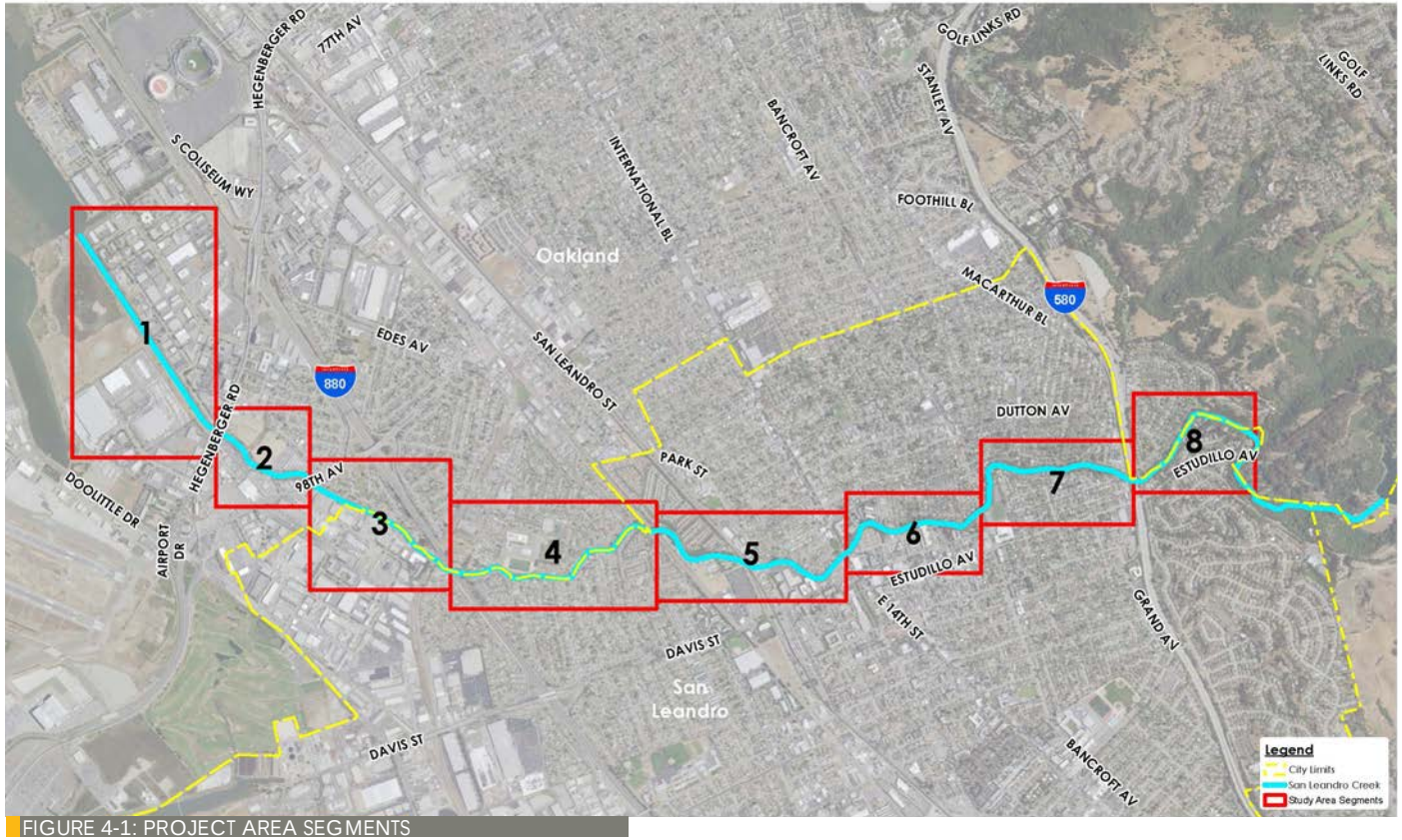


FIGURE 4-1: PROJECT AREA SEGMENTS

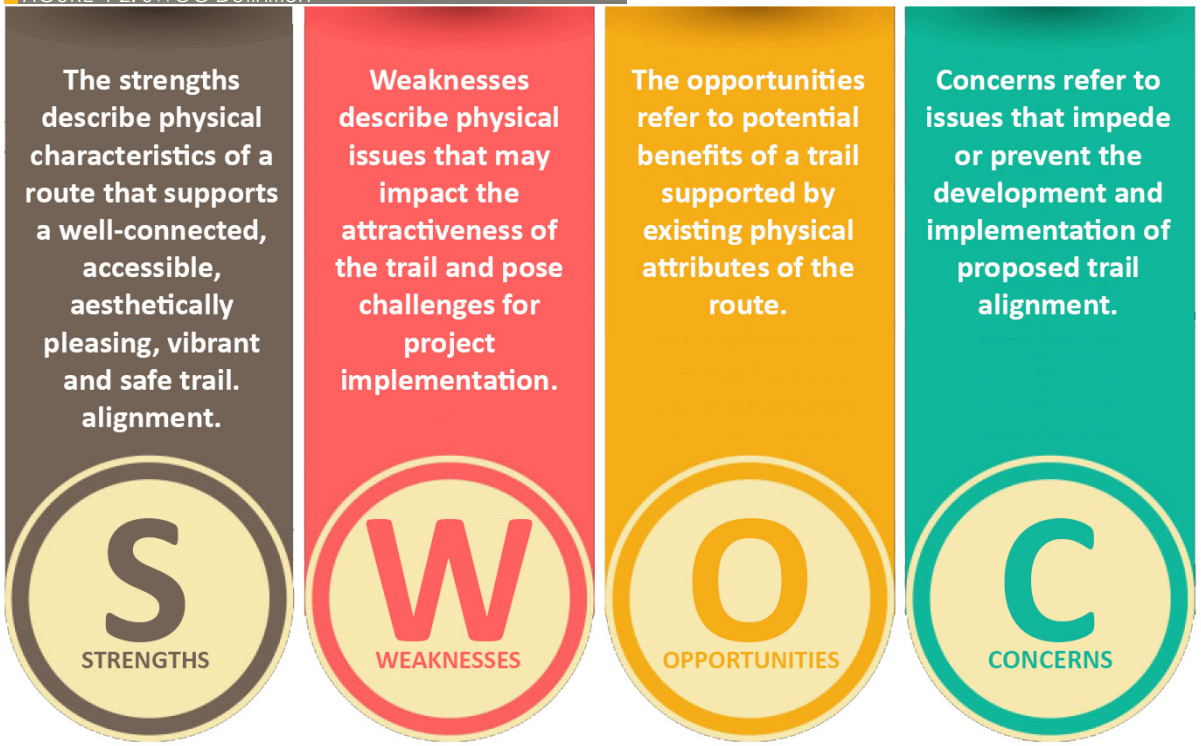
STRENGTHS, WEAKNESSES, OPPORTUNITIES, CONCERNS (SWOC)

Assessment of each segment is concluded by a SWOC analysis of that segment. SWOC is an acronym for Strengths, Weaknesses, Opportunities, and Concerns, and is an extremely useful tool for understanding and decision-making.

Strengths and weaknesses discuss internal aspects of each area that can be controlled at the site by infrastructure improvements, funding and/or investment and project improvement. Opportunities and Concerns evaluate external influences that can affect the project and project area, but are not as easily controlled by the lead agency, such as surrounding communities, economic factors, etc. The individual four components of a SWOC analysis are depicted in Figure 4-2.

The SWOC analysis presented in this document is based on physical characteristics of the study area. It is an assessment of information gathered from field visits as well as data gathered as a part of initial existing conditions analysis. This information is organized by the SWOC format into a logical order that helps in understanding, presentation, discussion and decision-making. An overall SWOC analysis of the entire project area is presented here.

FIGURE 4-2: SWOC Definition



SWOC ANALYSIS OF PROJECT STUDY AREA

STRENGTHS

- Existing maintenance roads
- Existing and proposed, on and off road bicycle facilities in the vicinity
- Existing trailhead north of Hegenberger Road
- Views of the San Leandro Creek
- Programmable space
- Existing pedestrian bridges

WEAKNESSES

- Maintenance road below top of bank in certain areas and lack of maintenance roads in some areas
- Crossings required at high-speed, high-volume roads such as Hegenberger Road, 98th Avenue, Bancroft Avenue
- Privately owned land abutting the Creek and private ownership of Creek itself in the eastern portion of the San Leandro Creek
- 3 railroad crossings in the project area
- Existing at-grade railroad crossings are far from Creek

OPPORTUNITIES

- Connecting San Francisco Bay Trail to Lake Chabot Regional Park
- Access to jobs, schools, parks, airport area businesses, Downtown San Leandro, City Hall, and the library
- Potential for restoration of the San Leandro Creek and its banks
- Connection to BART & increased connectivity between neighborhoods
- Additional green space / recreational opportunities
- Higher physical activity levels for both adults and youth
- Probable economic benefits to the community due to increased connectivity

CONCERNS

- Limited potential access points
- Homeless encampments and concerns about trespassing
- Getting an agency to take responsibility for maintenance
- Limited space on roads for bicycle lanes or widened sidewalks
- Private or residential property lines abutting the San Leandro Creek bank or in the San Leandro Creek itself
- Invasive vegetation and large eucalyptus trees
- Steep creek banks
- Coordination and agreement with multiple agencies
- Cost of construction and responsibility for maintenance and repair
- Need for additional police enforcement

4.1 SEGMENT 1: SAN LEANDRO BAY TO HEGENBERGER ROAD

This segment is a part of the existing San Francisco Bay Trail. It starts in Martin Luther King Jr. Regional Park at San Leandro Bay and continues to Hegenberger Road, a major arterial. It is a well used, developed multi-use trail with alignment on both sides of the San Leandro Creek. The two sides are connected with a pedestrian bridge at the mouth of the Bay and provide access to the Martin Luther King Jr. Regional Shoreline. Other land uses around this segment are mostly industrial and office type developments. A trailhead is located at the west of Hegenberger Road, on the south side of the San Leandro Creek. The trail is maintained by the East Bay Regional Park District. Oakland International Airport which is a major employer in the region is half a mile south of the trailhead.

The trail on the north side of the San Leandro Creek merges into the Elmhurst Creek Trail at the mouth of the bay which further connects to Garretson Point Trail. The south side of the trail loops around the Martin Luther King Jr. Regional Shoreline and connects to the Alameda County Bicycle Route 5, finally terminating at the intersection of Swan Way and Doolittle Drive. There is a viewing platform and picnic benches at the trail end.

The condition of the pavement is fairly good on the south side of the San Leandro Creek but has some cracks and shows signs of needing repairs in the north. The San Leandro Creek itself is channelized with grassy vegetation on the banks.

FIGURE 4-3: SEGMENT 1 PICTURES

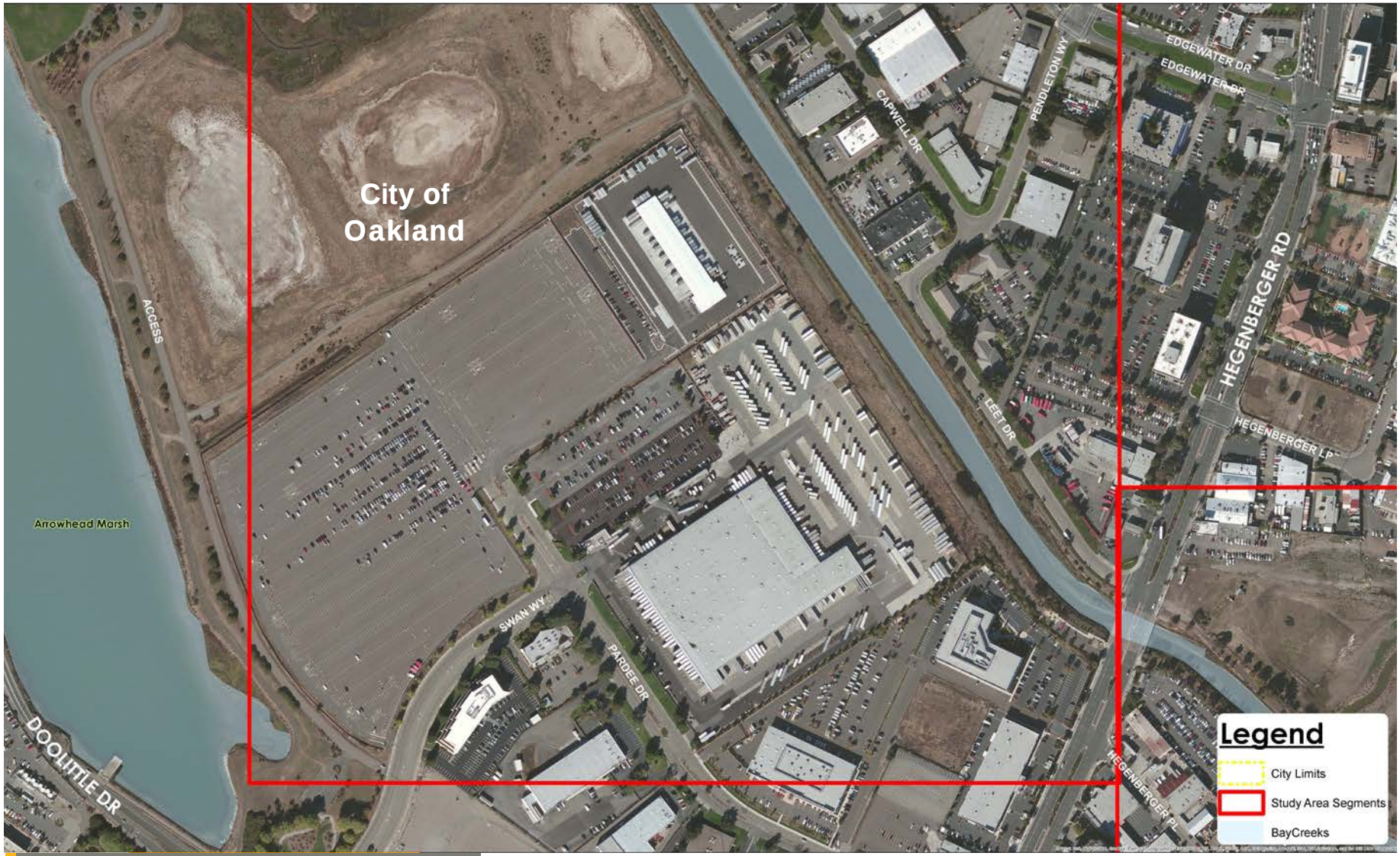


FIGURE 4-4: SEGMENT 1 LOCATION

SWOC ANALYSIS OF SEGMENT 1

STRENGTHS

- Existing multi-use trail
- Existing trail head
- Connection from Bay Trail
- Provides direct connection with MLK Regional Park and indirect connection with Oyster Bay Regional Park

WEAKNESSES

- Pavement conditions

OPPORTUNITIES

- Access to industrial and commercial land uses
- Restoration of the San Leandro Creek and banks
- Opportunity to educate people about marshlands and ecological importance
- Connection from Bay Trail to Coliseum BART

CONCERNS

- Limitations in terms of viewpoints and attractiveness due to surrounding industrial land uses
- Responsibility for maintenance and repair

4.2 SEGMENT 2: HEGENBERGER ROAD TO 98TH AVENUE

Segment 2 runs from north of Hegenberger Road to north of 98th Avenue. It is located within the City of Oakland. There are approximately 13-foot wide maintenance roads on both sides of the channelized Creek. The surface of the maintenance road is gravel and slopes down to the San Leandro Creek. There is vegetation on the slopes. The route is relatively shaded with fully-grown trees along the maintenance roads on both sides of the San Leandro Creek. Recently, wetland restoration efforts on the banks and desilting of the channel led to the change in the configuration of the banks from a direct slope to a stepped slope in certain parts of this segment as shown in Figure 4-4. This enables better growth of vegetation on the banks. The channel is designed with a 100-year flood capacity.

The location of the Airport Plaza on the south side of the San Leandro Creek at the end of this segment is a strong opportunity for the trail users. This plaza has businesses, restaurants and coffee shops that are conducive to such a development. On the north side of the San Leandro Creek, there are large parcels of open land and a large parking area used for airport parking. A walkway through an open field could connect this segment to Brookfield Village, a neighborhood build during the 1940s. It is located north of the project area near I-880 in the City of Oakland.

Crossing at Hegenberger Road is a challenge as it is a major arterial with high speeds, heavy traffic volumes, and elevated BART tracks. The closest existing signalized at-grade crossing is 800 feet northeast of the trailhead at Hegenberger Loop. A relatively straight crossing of Hegenberger Road from the trailhead will require dealing with a left-turn lane that currently provides access to a large airport parking area on the east side of the roadway.

FIGURE 4-5: PROFILE- PREVIOUS AND CURRENT

FIGURE 4-6: CREEK MAINTENANCE ROAD

FIGURE 4-7: HEGENBERGER ROAD

FIGURE 4-8: SEGMENT 2 LOCATION

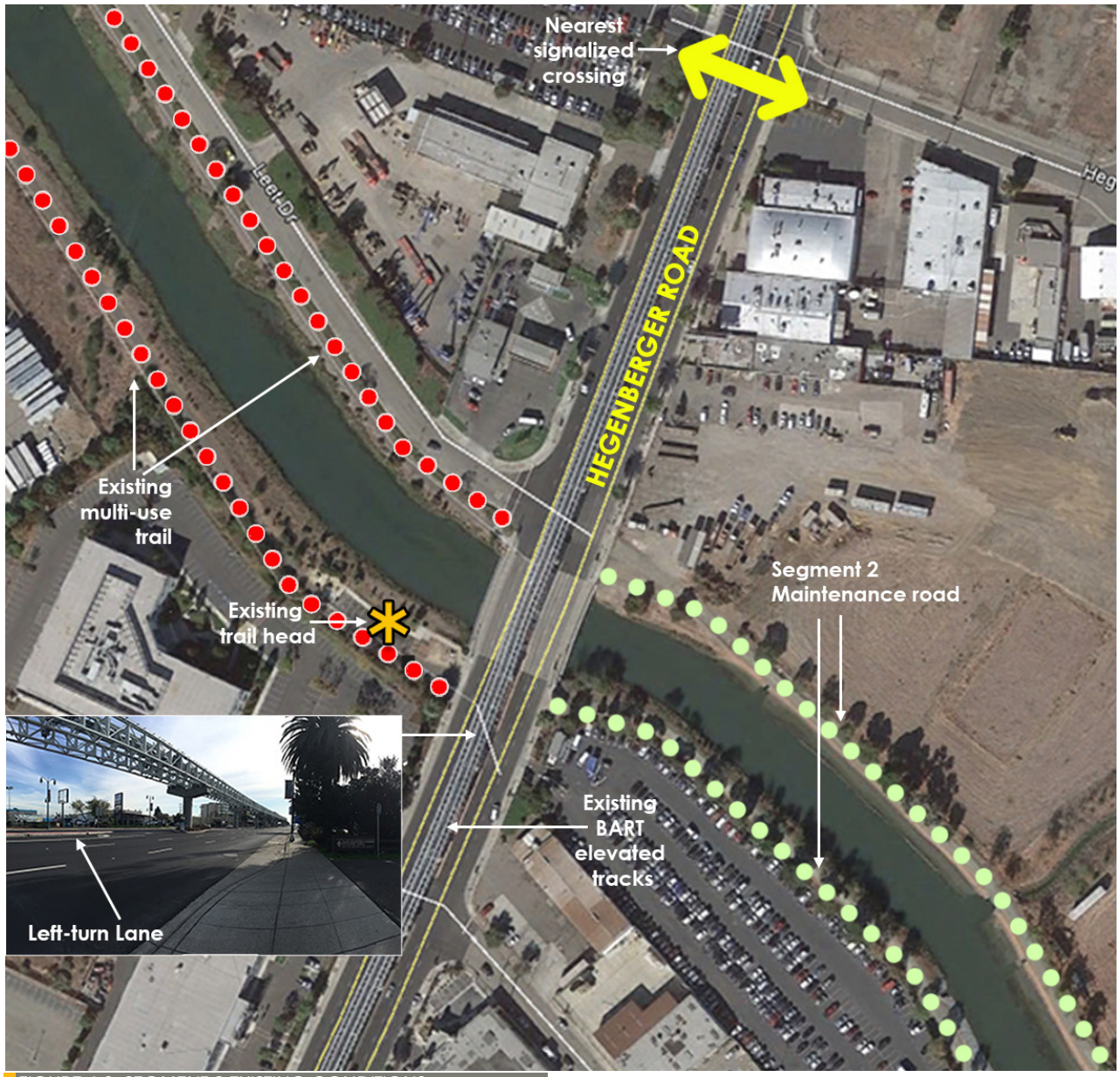


FIGURE 4-9: SEGMENT 2 EXISTING CONDITIONS

4.2.1 SEGMENT 2 - RELEVANT ROADWAYS

Hegenberger Road has a pavement width of approximately 93 to 107 feet with a 12 to 14 foot wide median and three travel lanes in each direction. There is no on-street parking and the sidewalk width is between 13 to 15 feet. However at the bridge over the San Leandro Creek, the sidewalk width reduces to approximately five feet with a street buffer of approximately an additional four to six feet. The existing street section can be found in Appendix 1.

SWOC ANALYSIS OF SEGMENT 2

STRENGTHS

- Existing maintenance roads with adequate width for a multi-use trail
- Existing trailhead

WEAKNESSES

- Crossing the intersection at Hegenberger Road safely

OPPORTUNITIES

- Access to industrial and commercial land uses
- Restoration of the San Leandro Creek and banks
- Connectivity to Airport Plaza
- Possible connection to Brookfield Village
- Potential complementary development of parcel on north side, such as dense housing development

CONCERNS

- Limited space on roads for bicycle lanes and wide sidewalks
- Limitations in terms of viewpoints and attractiveness due to surrounding industrial land uses
- Responsibility for maintenance and repair

4.3 SEGMENT 3: 98TH AVENUE TO RAILROAD/ I-880

Segment 3 runs from 98th Avenue to west of the railroad tracks and Interstate 880 overpass. The segment changes from vegetated channel to a rectangular open concrete channel. The maintenance road is on the top of the bank on the south side of the channel, with width ranging from 16 to 20 feet. Some repairs have been done to the channel in this segment in the recent past, and the maintenance road seems to be in good condition. The route is well shaded and ends at the railroad tracks at the end of this segment. The San Leandro Creek is flanked by residential land use on the north side and industrial uses on the south. Columbia Gardens Park is also located on the north side of the Creek. There is open space in the eastern end of the segment and can be accessed via Empire Road.

Similar to the previous segment, this segment has an important crossing at 98th Avenue. With three lanes of traffic in each direction and a raised median, 98th Avenue is a major arterial in the City of Oakland, providing access to I-880 in the north. The nearest at-grade crossing is approximately 270 feet west of the maintenance road at the entrance of the Airport Plaza.

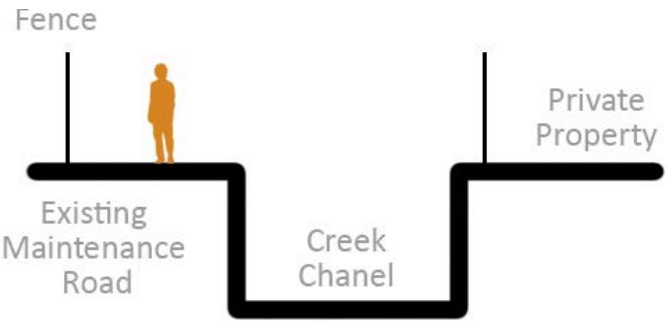


FIGURE 4-10: SEGMENT 3 PROFILE

FIGURE 4-11: CREEK MAINTENANCE ROAD

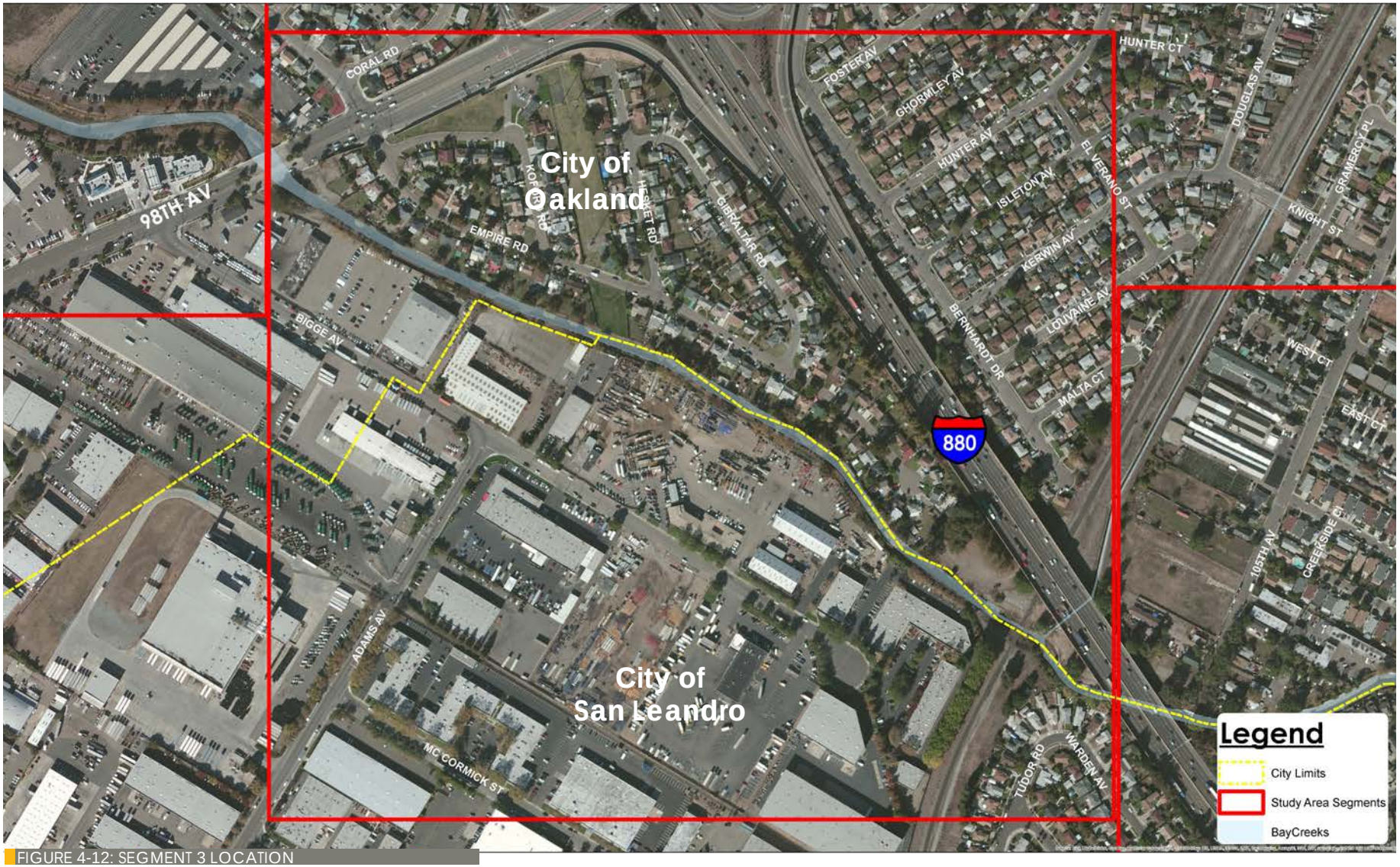


FIGURE 4-12: SEGMENT 3 LOCATION

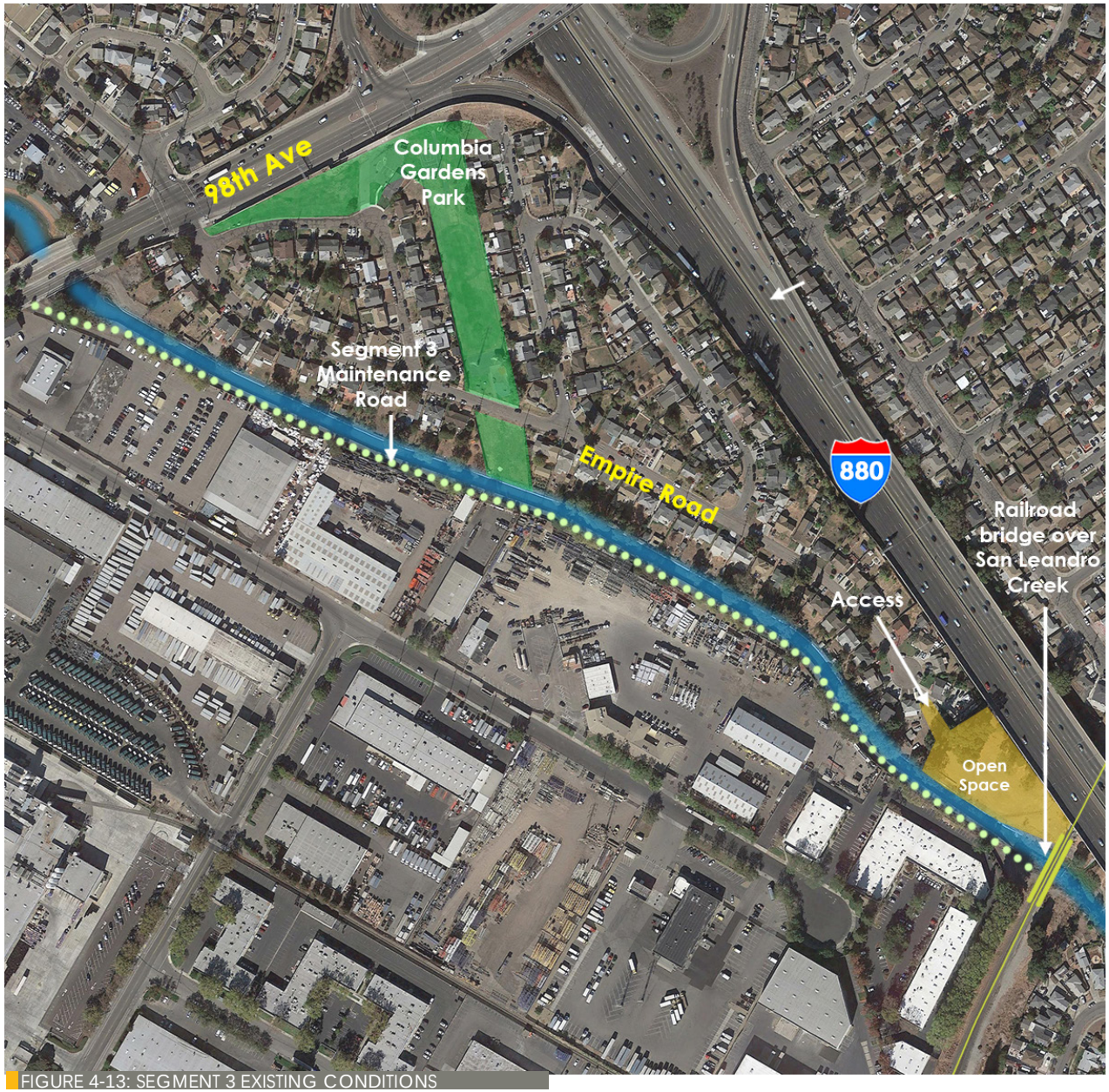


FIGURE 4-13: SEGMENT 3 EXISTING CONDITIONS

4.3.1 SEGMENT 3 - RELEVANT ROADWAYS

The roadways in the vicinity are also under review to determine potential alternatives or additional connections to the trail. The roadways under review for Segment 3 are 98th Avenue and a residential street named Empire Road. The street sections can be found in Appendix 1.

98th Avenue has a pavement width of approximately 84 to 94 feet and ROW of 104 feet. It has a 12-foot wide center turn lane/ marked median and three travel lanes in each direction. There is no on-street parking. Sidewalk area consists of approximately 4 to 6 feet of planting between the road and sidewalk pavement and approximately five feet of sidewalk paving. However, over the San Leandro Creek, the sidewalk width reduces to approximately 5.5 feet with around five to six feet of marked buffer on the street, and the center turn lane converts to a 14-foot wide planted median.

Empire Road starts at Coral Road in a neighborhood north of 98th Avenue and traverses east, ending into a cul-de-sac, west of the railroad tracks. The part of the roadway south of 98th Avenue is under review and has a 30-foot wide pavement with no sidewalks. While parking is allowed except at certain times, the pavement itself does not have marked parking. The street provides access to Columbia Gardens Park and also to the open space at the eastern end of the street.

SWOC ANALYSIS OF SEGMENT 3

STRENGTHS

- Existing maintenance roads with ample width for a multi-use trail
- Existing signalized intersections

WEAKNESSES

- Need to cross 98th Avenue
- Trail potentially passing through residential neighborhood with limited right-of-way to accommodate Class II facility
- Narrow sidewalks to get to the crossings

OPPORTUNITIES

- Access to employment/ industrial land uses
- Access to Airport Plaza
- Potential for restoration of the San Leandro Creek and banks
- Increased connectivity to neighborhood, including the currently isolated Columbia Gardens Community

CONCERNS

- Residential property lines abutting the San Leandro Creek bank on the north side
- Limited space on roads for bicycle lanes or widened sidewalks
- Limitations in terms of viewpoints and green space due to surrounding industrial land uses
- Responsibility for maintenance and repair

4.4 SEGMENT 4: RAILROAD / I-880 TO AMTRAK RAILROAD

Segment 4 runs from west of the railroad tracks and Interstate 880 overpass to west of the existing Amtrak railroad tracks. This segment of the San Leandro Creek is relatively challenging compared to previous sections. There is an existing active railroad and an overpass for I-880 near the western end of this segment. The railroad is located approximately 15 feet above the San Leandro Creek bed.

FIGURE 4-14: RAILROAD WEST OF SEGMENT 4

There is also an open concrete stormwater channel that runs parallel to the train tracks on the east side of the track and ends one block short from Edes Avenue. The maintenance road on the east side of this channel owned by City of Oakland, is approximately 16 feet wide, more than wide enough to potentially act as an alternative route for the trail alignment.

The San Leandro Creek configuration changes drastically in this segment. The maintenance road is no longer located on the top of the bank, but approximately two to three feet above the bed of the San Leandro Creek. It ends a couple of blocks before the railroad tracks in the east. The maintenance road is approximately ten feet wide and is a rough paved concrete road. The channel itself is trapezoidal in shape. The maintenance road is in the floodplain and may need to be restricted for walking or biking during the rainy season or during floods. Various environmental agencies that have jurisdiction over this area typically restrict any kind of development below an existing top of bank in a riparian corridor such as this one.

FIGURE 4-15: STORMWATER CHANNEL

FIGURE 4-16: SEGMENT 4 PROFILE

FIGURE 4-17: CREEK MAINTENANCE ROAD

There is a large open space below I-880 that could be used creatively. Survey records show that the right-of-way under 880 is owned by Alameda County Flood Control but Caltrans, does have an easement for maintenance. While there are a variety of land uses in this segment, the majority of the land use is residential, especially on the south side of the Creek. The Madison Park Academy, Sobrante Park Elementary School, Sobrante Park and Aspire Lionel Wilson College Preparatory Academy are located on the north side of the Creek. However, there is no direct access to the San Leandro Creek. There are also two cut-through routes in this segment: one connecting 105th Avenue to Madison Park Academy and the other connecting 105th Avenue

FIGURE 4-18: SEGMENT 4 LOCATION

FIGURE 4-19: SEGMENT 4 EXISTING CONDITIONS

to Capistrano Drive. A trail on the north side of Sobrante Park connects Madison Park Academy to Bergedo Drive.

The possibility of developing a trail other than on the maintenance road in this segment is meager due to private property abutting the San Leandro Creek. There is publicly owned land that may be able to accommodate a multi-use trail in Madison Park Academy and Sobrante Park. However, this will require permission and agreement with the Oakland Unified School District and the City of Oakland, respectively.

There are drainage pipes crossing the San Leandro Creek, supported by a steel structure, at the east end of Segment 4 on the west of the railroad tracks (Refer to Figure 4-16). Any alignment through this section will need to consider the pipes. Due to the disconnected nature of trail development feasibility along the San Leandro Creek in this segment, neighboring streets need to be explored for possible trail alignment.

FIGURE 4-16: PIPES SUPPORTED BY STRUCTURE

4.4.1 SEGMENT 4 - RELEVANT ROADWAYS

The roadways under review for Segment 4 include Knight Street, 105th Avenue, Topanga Drive, Bergedo Drive and Catron Drive. The street sections can be found in Appendix 1.

Knight Street has a signalized at-grade railway crossing. It is a short street that starts at Douglas Avenue and ends at 105th Avenue, providing access to Aspire Lionel Wilson College Preparatory Academy. The pavement width is 38 feet with one travel lane each direction. It also has six-foot sidewalk space in some areas. While parking is allowed except at certain times as restricted by signs, the pavement itself does not have marked parking.

105th Avenue is a residential roadway starting at the San Leandro Creek and running north east to just past East 14th Street. It provides 38 feet of pavement width with one travel lane in each direction. Parking is allowed except at certain times, restricted by signs. The street has four to six-foot wide sidewalks in each direction.

Topanga Drive is a residential street with a pavement width of 29 feet and one travel lane in each direction. It has four to five foot sidewalks in each direction and has a bus stop. It also provides additional 23 feet of landscaped space between the sidewalk and the street. While parking is allowed except at certain times as restricted by signs, the pavement itself does not have marked parking.

Bergedo Drive is a residential street starting at Catron Drive and ending at Robledo Drive. It provides 36 feet of pavement width with one travel lane in each direction. Parking is allowed except at certain times as restricted by signs. The street has four to six-foot wide rolled sidewalks in each direction.

Catron Drive is an east-west residential street starting in a cul-de-sac west of Bergedo Drive and ending at Robledo Drive to the east. It provides 24 feet of pavement width with one travel lane in each direction. Parking is allowed except at certain times as restricted by signs. The street has four to seven-foot wide rolled sidewalks on both sides of the roadway.

SWOC ANALYSIS OF SEGMENT 4

STRENGTHS

- Existing maintenance road
- Attractiveness of alignment if developed along the San Leandro Creek

WEAKNESSES

- Crossing the San Leandro Creek and railroad in the west of the segment
- Maintenance road in the San Leandro Creek channel (below top of bank)
- Existing at-grade railroad crossings in the west of the segment are far from Creek alignment
- Existing pipes crossing the San Leandro Creek

OPPORTUNITIES

- Connection to Madison Park Academy and Sobrante Park Elementary School
- Connection to Sobrante Park
- Connection to Aspire Lionel Wilson College Preparatory Academy
- State owned parcel possible for development between Creek and 105th Avenue
- Increased connectivity to neighborhoods
- Explore trail crossing under railroad trestle

CONCERNS

- Alternatives to Creek require the use of relatively narrow residential streets
- Limited space on roads for bicycle lanes or widened sidewalks
- Property lines abutting the San Leandro Creek bank
- Limited views and lack of green space
- Use of existing railroad crossing will compromise directness of trail
- Lack of land for trail development along the top of the bank
- Responsibility for maintenance and repair

4.5 SEGMENT 5: RAILROAD TO EAST 14TH STREET

Segment 5 to 8 are in the City of San Leandro. Segment 5 runs from west of the Amtrak railroad to west of East 14th Street / International Boulevard *(called International Boulevard in Oakland and East 14th Street in San Leandro)*. The street is also State Route 185 (SR185). The character of San Leandro Creek changes from Segment 5 to Segment 8. The banks of the Creek are no longer cemented but natural. The San Leandro Creek banks are steep, often 10 to 15 feet between top and bottom of the bank.

The closest at-grade crossing of the railroad tracks is at Davis Street, approximately 2,500 feet from the San Leandro Creek. Another at-grade railroad crossing is located at 105th Street, approximately 3,000 feet from the San Leandro Creek. On the east side of the railroad tracks and south of the Creek is a firefighting training facility on land owned by the City of San Leandro. Cherrywood, a private residential development, is located on the north side of the San Leandro Creek. A private linear park called Creekside Park and a small trail segment along the San Leandro Creek are part of this development.

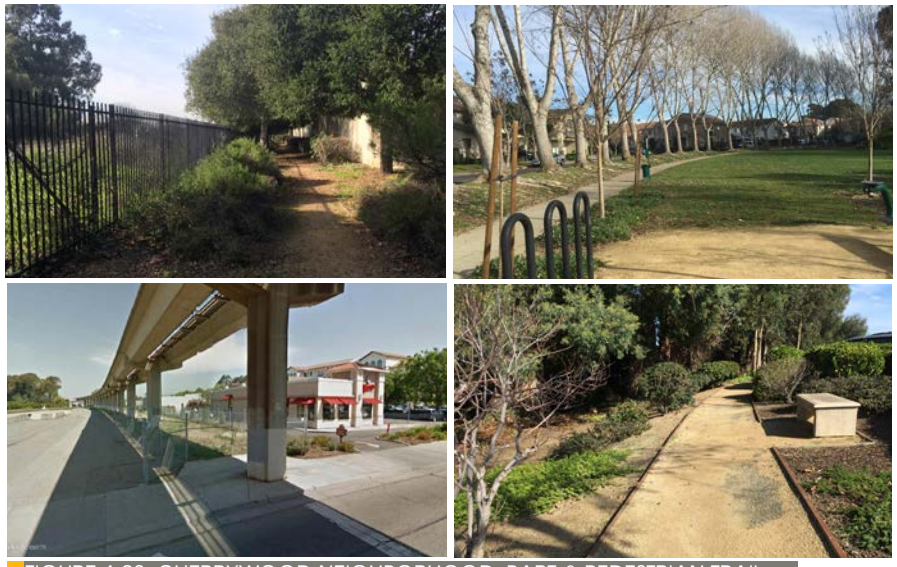


FIGURE 4-20: CHERRYWOOD NEIGHBORHOOD, BART & PEDESTRIAN TRAIL

The elevated BART tracks provide ample right-of-way for a trail alignment. Based on the Alameda Countywide Bicycle Plan (2012) East Bay Greenway Route, there is a proposed Class I bicycle facility in the BART right-of-way, under the tracks, connecting with 85th Avenue in the City of Oakland. San Leandro Boulevard / San Leandro Street *(called San Leandro Street in Oakland and San Leandro Boulevard in San Leandro)*, runs parallel to the BART tracks in this segment and can be crossed at the Creekside Plaza signal leading to an existing pedestrian trail in the San Leandro Creekside Plaza office development. However, the small stretch between the BART tracks and San Leandro Boulevard can only be crossed over via Davis Street in the south or Peralta Avenue in the north. While there is an existing signalized crossing on San Leandro Boulevard, the commercial properties between BART and San Leandro Boulevard prevent direct access from Proposed East Bay Greenway. Figure 4-18 explains this scenario.

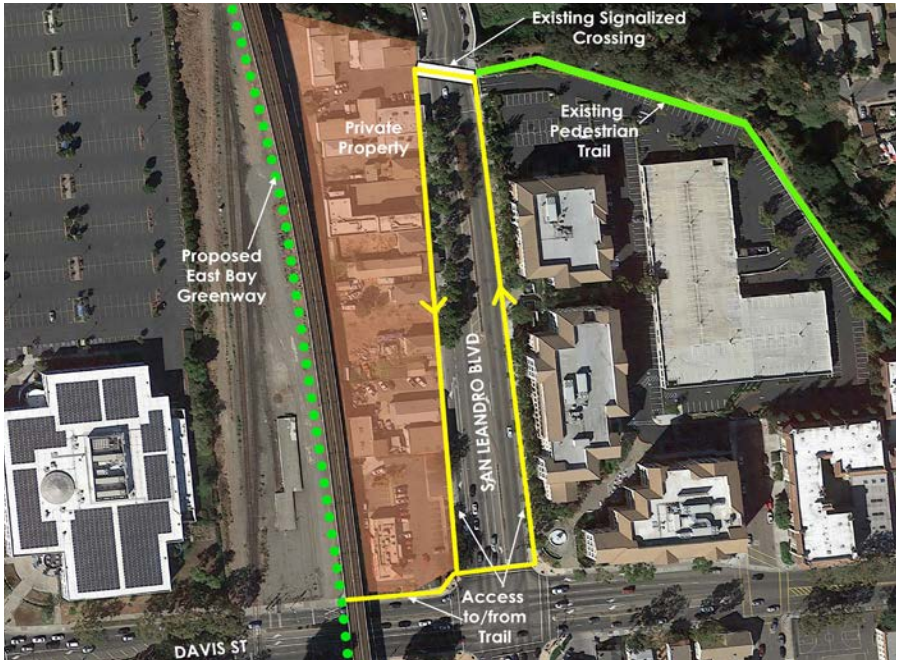


FIGURE 4-21: EAST BAY GREENWAY CONNECTION TO PEDESTRIAN TRAIL

FIGURE 4-22: SEGMENT 5 LOCATION

FIGURE 4-23: SEGMENT 5 EXISTING CONDITIONS

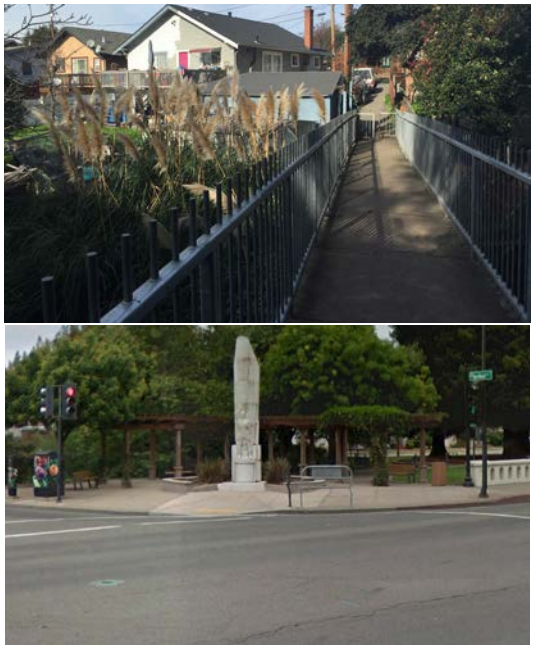


FIGURE 4-24: FOOTBRIDGE & ROOT PARK

There is an existing pedestrian bridge connecting the neighborhoods on the north side of the San Leandro Creek to Clarke Street on the south and a multi-family residential development on the west of Clarke Street. There is space to develop a potential trail through this development to connect to Clarke Street and the pedestrian bridge. However, as this is a private development, the HOA's/ property owner's approval would be required.

Root Park is located at the eastern end of this section. The park features art and green space in downtown San Leandro. In addition to park amenities, it provides access to San Leandro Creek.

The commercial development between Clarke Street and Dan Niemi Way abuts the San Leandro Creek, leaving no space for the trail alignment, unless such an alignment takes place on the commercial property. The City of San Leandro is currently exploring the feasibility of converting Dan Niemi Way between East 14th Street and Davis Street into a non-vehicular street or a one-way street.

4.5.1 SEGMENT 5 - RELEVANT ROADWAYS

Nearby roadways are also under review in the project area, if they can serve as a potential alternative or provide additional connections to the trail. The roadways under review for Segment 5 include Alvarado Street, Antonio Street, East 14th Street/International Boulevard, Peralta Avenue, Davis Street, San Leandro Boulevard, Lorraine Boulevard, Clarke Street, and Dan Niemi Way. The street sections can be found in Appendix-1.

Alvarado Street originates in the residential neighborhood of Cherrywood and runs south before ending near Fremont Avenue. While the character of the street changes drastically, the section in the north of the project area has a pavement width of approximately 33 feet with one travel lane in each direction. It also has additional 11 to12 feet of right-of-way on either side with sidewalks and landscaped area. South of the project area, close to the commercial land uses, the pavement width increases to approximately 48 feet with six-foot wide sidewalks. A portion of this section also has a missing sidewalk on the west side of the street. Parking is allowed except at certain times as restricted by signs. Alvarado Street provides access to various office and commercial uses in the project area.

Antonio Street is also a short side street approximately 350 feet long starting at Alvarado Street and ending in a cul-de-sac. This street provides 34 feet of pavement width with one travel lane in each direction and a six-foot wide sidewalk on the north side of the street. No sidewalk is provided on the south side. Parking is allowed except at certain times as restricted by signs

East 14th Street/ International Boulevard (SR 185) is one of the major north-south connectors in the Cities of San Leandro and Oakland and provides access to various commercial and institutional land uses, including Durant Market Place. It is called International Boulevard in Oakland and East 14th Street in San Leandro. It is also State Route 185 (SR 185). The character of this street and width of pavement changes drastically in its course including in the section that falls under the project area. Table 4-1 provides a snapshot of these changes in the street character.

E 14th St / International Blvd Segments	Approx. ROW	Approx. Pavement Width	Approx. Sidewalk+ Landscape Width	Median Type	NB Lanes	SB Lanes	On-Street Parking	NB Bicycle Facility	SB Bicycle Facility
105th to 107th	103 feet	80 feet	11.5 feet	2-way turn lane	2	2	None	None	None
Stoakes to Georgia	92 feet	70 feet	11 feet	2-way turn lane	1	1	Both Sides	7 feet-Class II	7 feet-Class II
Durant to Broadmoor	88 feet	60 feet	North: 10 feet South: 18 feet	Raised Landscape Median	2	2	None	None	Sharrow
Begier to Haas	82 feet	61 feet	10.5 feet	None	2	1	Both Sides	7 feet-Class II	7 feet-Class II

TABLE 4-1: EAST 14TH STREET CHARACTERISTICS

Peralta Avenue is north of the San Leandro Creek and provides a signalized at-grade railroad crossing. The street begins at East 14th Street and ends in a cul-de-sac just west of the Amtrak tracks. It provides a pedestrian connection to the Cherrywood neighborhood but vehicular access is prohibited. The section of street in the project area changes from west to east. In the west side of project area, the pavement width is approximately 29 feet with one travel lane in each direction and a five-foot sidewalk on the south side of the street. No sidewalk is provided on the north side in this section. In the east side of the project area, the width of pavement increases to approximately 37 feet with one travel lane in each direction and a six-foot sidewalk on both sides of the street. Parking is allowed except at certain times as restricted by signs.

Davis Street (SR 112) is one of the major east-west thoroughfares in the City of San Leandro providing access to various commercial and institutional land

uses. It is also State Route 112 (SR 112). The character of this street and width of pavement changes drastically in its course, including in the section that falls under the project area. Table 4-2 provides a snapshot of these changes.

Davis Street Segments	Approx. ROW	Approx. Pavement Width	Approx. Sidewalk+ Landscape Width	Median Type	NB Lanes	SB Lanes	On-Street Parking	NB Bicycle Facility	SB Bicycle Facility
Alvarado to San Leandro	111.5 feet	88.5 feet	10-13 Feet	Tree lined	2	2	None	None	10 feet-Class II
San Leandro to Carpentier	96 feet	78 feet	9 feet	Paved	2	2	None	None	None
Dan Niemi Way	91 feet	71 feet	10 feet	Paved	2	2	None	None	None

TABLE 4-2: DAVIS STREET CHARACTERISTICS

San Leandro Boulevard is one of the major north-south thoroughfares in the City of San Leandro and provides access to various commercial, industrial and institutional land uses. It also provides access to the Creekside Plaza Office Development and existing pedestrian trail in the development. While there are Class II bicycle lanes on the majority of the street, there is no bicycle facility in the section that falls under the project area. The street cross-section in the project area has a pavement width of approximately 62 feet with two travel lanes and marked parking in each direction. The sidewalks area is 12 to 13 feet in each direction, but the effective walking area is often reduced due to landscaping and utility poles.

Lorraine Boulevard is a residential street starting at San Leandro Boulevard and ending at East 14th Street. It provides 36 feet of pavement width with one travel lane in each direction. It also has an eight-foot sidewalk in each direction with an additional four feet, often used by landscaping. Parking is allowed except at certain times as restricted by signs.

Clarke Street originates at Marina Boulevard and ends at the San Leandro Creek in the north. The section of street in the project area provides access to a multi-family residential development on the west side of the street and a retail development on the east. It provides 34 feet of pavement width with one travel lane and a six-foot wide sidewalk in each direction. Parking is allowed except at certain times as restricted by signs.

Dan Niemi Way originates at the northern end of Hays Street. Hays Street starts at Castro Street and runs north to Davis Street, where it curves and becomes Dan Niemi Way, subsequently connecting to East 14th Street. The portion of street in the project area has approximately 36 feet of pavement width with one travel lane in each direction and a seven-foot wide sidewalk on both sides in the western most areas and on the south side only in the northeastern area. Some of the sidewalk width is obstructed by utility poles. Parking is allowed except at certain times as restricted by signs. Dan Niemi Way provides access to commercial developments along Davis Street and East 14th Street.

SWOC ANALYSIS OF SEGMENT 5

STRENGTHS

- Existing Creekside Plaza trail (private) and on-road bicycle facilities
- Root Park providing access to the Creek
- Planned additional bicycle facilities based on San Leandro Bicycle and Pedestrian Master Plan (2010 update) - San Leandro Blvd, Davis Streets and other local streets
- Ample right-of-way for a trail alignment under elevated BART tracks - proposed East Bay Greenway Trail
- Attractiveness of alignment if developed along the San Leandro Creek

WEAKNESSES

- Crossing San Leandro Creek and railroad would be difficult along the western portion of this segment
- Need to cross at San Leandro Boulevard and Davis Street
- Private property restrictions
- At-grade railroad crossing is located far from Creek alignment
- Trail potentially passing through residential neighborhood with limited right-of-way to accommodate Class II facility

OPPORTUNITIES

- Connection to commercial, institutional and industrial uses along Davis Street and San Leandro Boulevard
- Connection to Downtown San Leandro
- Connection to potential trail from Root Park
- Connection to Root Park and Siempre Verde Park
- Connection to existing pedestrian bridge located at Clarke Street
- Potential conversion of Dan Niemi Way to a non-vehicular street

CONCERNS

- Property lines abutting the San Leandro Creek bank
- Invasive vegetation and large eucalyptus trees
- Steep edges of trail along San Leandro Creek
- Limited views and green space if developed away from the San Leandro Creek alignment
- Lack of land for trail development along top of the bank
- Responsibility for maintenance and repair

4.6 SEGMENT 6: EAST 14TH STREET TO BANCROFT AVENUE

Segment 6 runs west of East 14th Street to west of Bancroft Street. This section of the San Leandro Creek has a commercial development on the west end of the segment and the Memorial Park and the Veterans Memorial Building on the east end. The central portion is residential with property lines close to the middle of the creek and across the San Leandro Creek bank. The banks are steep and drop to as much as 30 feet from top of the bank to the bottom of the San Leandro Creek. This leaves no room for trail development other than in Memorial Park. Hence, neighboring streets such as Haas Avenue, Chumalia Street, Callan Avenue and Estudillo Avenue must be explored for trail connectivity.

There are existing Class II bicycle lanes on Estudillo Avenue and on East 14th Street north of the San Leandro Creek. A Class III bicycle facility is proposed by the San Leandro City Bicycle Master Plan Update (2010), on East 14th Street south of the San Leandro Creek.

FIGURE 4-25: ESTUDILLO AVENUE

There are land uses such as the Main Library, San Leandro Veterans Memorial Building and the Memorial Park in this segment that will benefit from a trail alignment via streets on the south side of the San Leandro Creek. Callan Avenue and Estudillo Avenue also provide direct access to the Bancroft Middle School in Segment 7. A trail alignment may be feasible via Memorial Park and the Veterans Memorial Building. The multi-family housing development west of Memorial Park also has some space for trail development, but it is a private property and will need the owner's approval for such an alignment. A vacant parcel owned by the County is also located east of Huff Avenue and provides an opportunity.

An existing stairway via Chumalia Street at the Root Park in the west of the segment provides access to the San Leandro Creek. However, the access is not compliant with the Americans with Disabilities Act (ADA).

FIGURE 4-26: VACANT PARCEL

FIGURE 4-27: MEMORIAL PARK

FIGURE 4-28: STAIRWAY VIA CHUMALIA STREET

FIGURE 4-29: SEGMENT 6 LOCATION

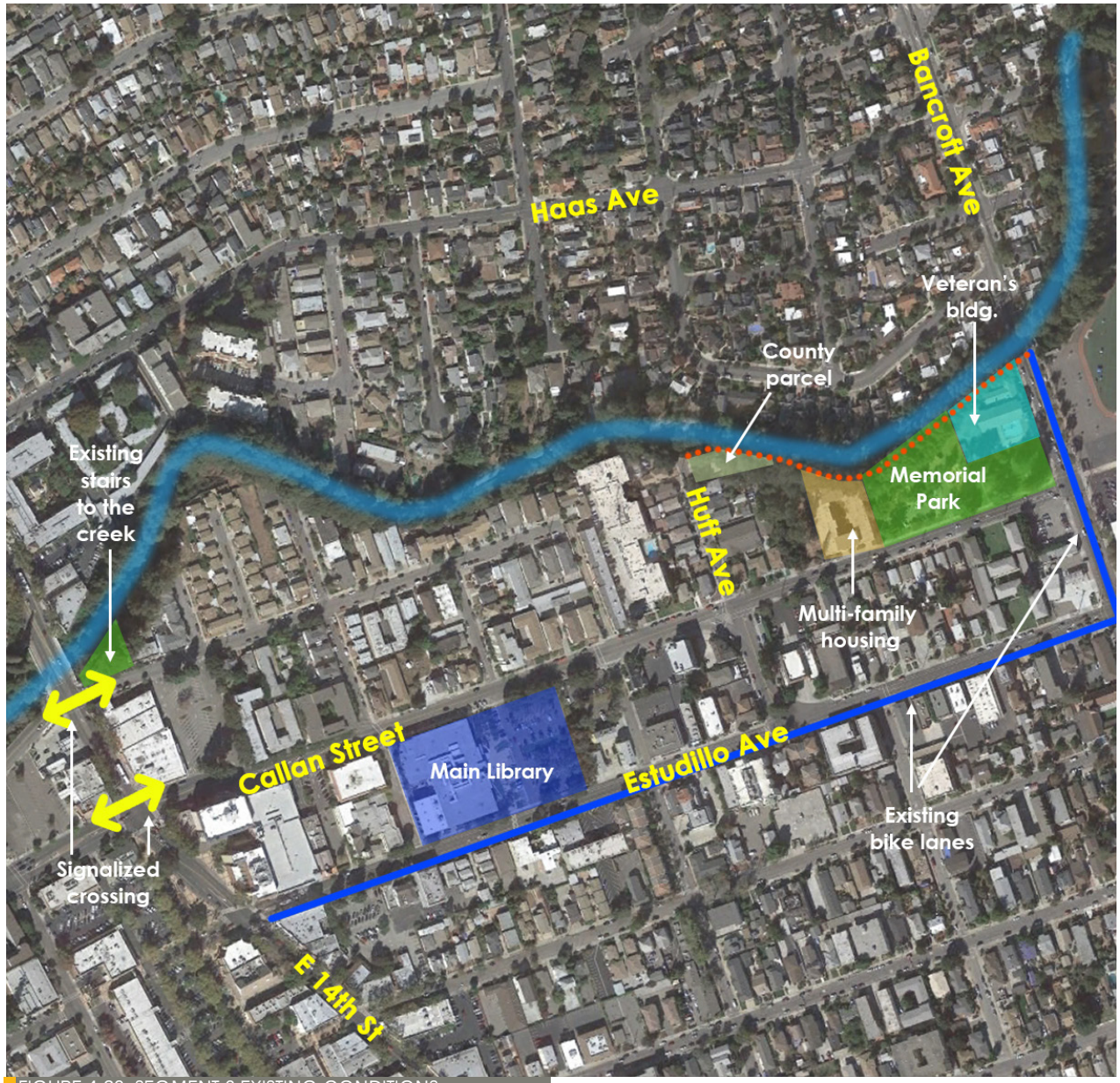


FIGURE 4-30: SEGMENT 6 EXISTING CONDITIONS

4.6.1 SEGMENT 6- RELEVANT ROADWAYS

The roadways under review for Segment 6 include Haas Avenue, Callan Avenue, Estudillo Avenue and Huff Avenue. The street sections can be found in Appendix 1.

Haas Avenue is a residential street that starts at East 14th Street and ends at the San Leandro Creek. The street provides access to the existing footbridge that spans the San Leandro Creek. It provides 34 feet of pavement width with one travel lane in each direction, including a six-foot sidewalk in each direction. Parking is allowed on both sides of the street.

Callan Avenue is a continuation of Davis Street past East 14th Street, ending at Bancroft Avenue. The street provides access to residential, recreational, commercial and institutional uses including the Main Library, Veterans Memorial Building, Memorial Park and Bancroft Middle School. The western portion of the street has a pavement width of approximately 49 feet with one travel lane in each direction and marked angled parking in the south side of the street. It has eight to nine-foot sidewalks in each direction although the width is obstructed by signs, utility poles and trees. While parking is allowed on the north side of the street, except at certain times as restricted by signs, the pavement itself does not have marked parking. Towards the east end of the street, the configuration changes as the width of the pavement reduces to 37 feet with one travel lane in each direction and an eight-

foot sidewalk area (including obstructions such as utility poles) on both sides of the street. Parking is allowed at certain times.

Estudillo Avenue is an east-west connector providing access to residential as well as commercial and institutional uses including the Main Library, San Leandro Chamber of Commerce, Alameda County Fire Station 9 and Bancroft Middle School. There are existing Class II bicycle lanes on this street in the portion of street under Segment 6. The total pavement width is approximately 46 feet with one travel lane, Class II bicycle lane and marked parking in each direction. The street also provides an eight-foot sidewalk area in both directions although the effective sidewalk width is reduced by parking meters, bus stop and trees as shown in Figure 4-31.

Huff Avenue is a short street that begins at Estudillo Avenue and terminates at the San Leandro Creek. With a span over two blocks, the southern block is wider than the northern block. In the southern block, it provides a pavement width of approximately 50 feet and one travel lane in each direction. It also has an eight-foot sidewalk in both directions. While parking is allowed except at certain times as restricted by signs, the pavement itself does not have marked parking. The northern portion of the street has a pavement width of approximately 22 feet with one travel lane in each direction and an eight-foot wide sidewalk area with obstructions. Parking is only allowed on one side of the street.

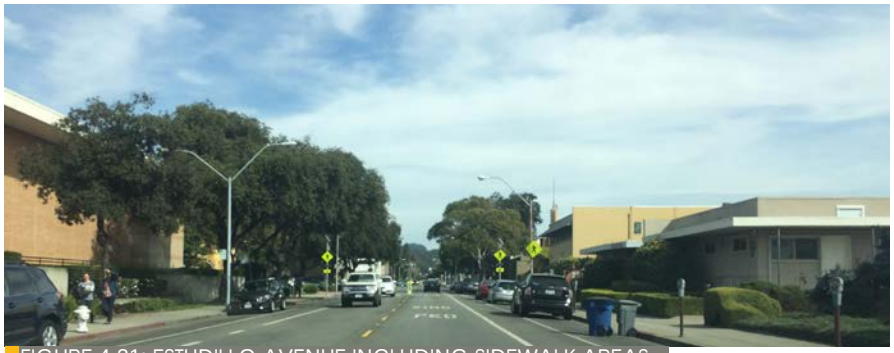


FIGURE 4-31: ESTUDILLO AVENUE INCLUDING SIDEWALK AREAS

SWOC ANALYSIS OF SEGMENT 6

STRENGTHS

- Use of existing or proposed bicycle facilities where feasible based on San Leandro Bicycle and Pedestrian Master Plan (2010 update) - Estudillo Avenue and Callan Street
- Attractiveness of alignment if developed along the San Leandro Creek

WEAKNESSES

- Need to cross East 14th Street at Davis Street and Haas Ave.
- Trail potentially passing through residential neighborhood especially in the north of the San Leandro Creek, with limited right-of-way to accommodate Class II facility
- Private property restricts access to the San Leandro Creek

OPPORTUNITIES

- Connection to commercial, institutional and industrial and uses along Estudillo Avenue and Callan Avenue including San Leandro Main Library
- Connection to Memorial Park
- Connection to Bancroft Middle School

CONCERNS

- Property lines abutting the San Leandro Creek bank
- Invasive vegetation and large eucalyptus trees in the San Leandro Creek area
- Steep creek edges
- Limited viewpoints and green space if developed away from the San Leandro Creek alignment
- Lack of land for trail development at top of the bank
- Responsibility for maintenance and repair

4.7 SEGMENT 7: BANCROFT AVENUE TO I-580

Segment 7 runs from west of Bancroft Avenue to west of the I-580 overpass. Bancroft Middle School anchors the west end of this segment. The rest of the segment is essentially residential with commercial development just west of I-580. This segment goes through Estudillo Estates. Signalized crossings are available on Bancroft Avenue at Estudillo Avenue and Callan Avenue. Estudillo Avenue also has existing Class II bicycle lanes. The residential property abuts the San Leandro Creek and the edges are steep. This leaves no room for trail development along the San Leandro Creek other than on school property. There is an existing pedestrian bridge over the San Leandro Creek connecting Cary Drive to Haas Avenue. The streets that cross I-580 in this segment within a mile from the San Leandro Creek are listed in Table 4-3.

Street Name	Direction relative to the Creek	Approximate distance from the Creek edge (feet)	Nature of crossing	Remarks
Estudillo Ave	South	500	Underpass	Existing bicycle lanes
Grand Ave	South	3,500	Overpass	Limited right-of-way, barrier separated sidewalk on south of the roadway
Dutton Ave	North	1,200	Underpass	Ample right-of-way, residen-tial street
Foothill Way	North	2,800	Underpass	Primary purpose-off ramp; one-way traffic.

TABLE 4-3: CROSSING OF I-580

FIGURE 4-32: BANCROFT MIDDLE SCHOOL

4.7.1 SEGMENT 7 - RELEVANT ROADWAYS

The roadways under review for Segment 7 include Estudillo Avenue, Cary Drive, Rodney Drive, Collier Drive and San Jose Street. The street sections can be found in Appendix 1.

Estudillo Avenue continues from Segment 6. In addition to the residential uses found within this street, it also provides access to Bancroft Middle School in the west end of the segment and commercial development in the east. There are existing Class II bicycle lanes on this street in the portion of street under Segment 7. The bicycle lanes do not exist and the roadway converts to a Class III shared facility in the next segment. The total pavement width is approximately 46 feet with one travel lane, Class II bicycle lane and marked parking in each direction. The street has eight-foot sidewalks (including obstructions and landscaped area) in both directions.

Cary Drive is a residential street with a pavement width of approximately 35 feet and one travel lane in each direction and seven to eight-foot sidewalks (including obstructions and landscaped area) in both directions. Parking is allowed except at certain times as restricted by signs. Cary Drive also provides access to an existing footbridge in the west end of the street.

FIGURE 4-33: FOOTBRIDGE ACCESSED FROM CARY DRIVE

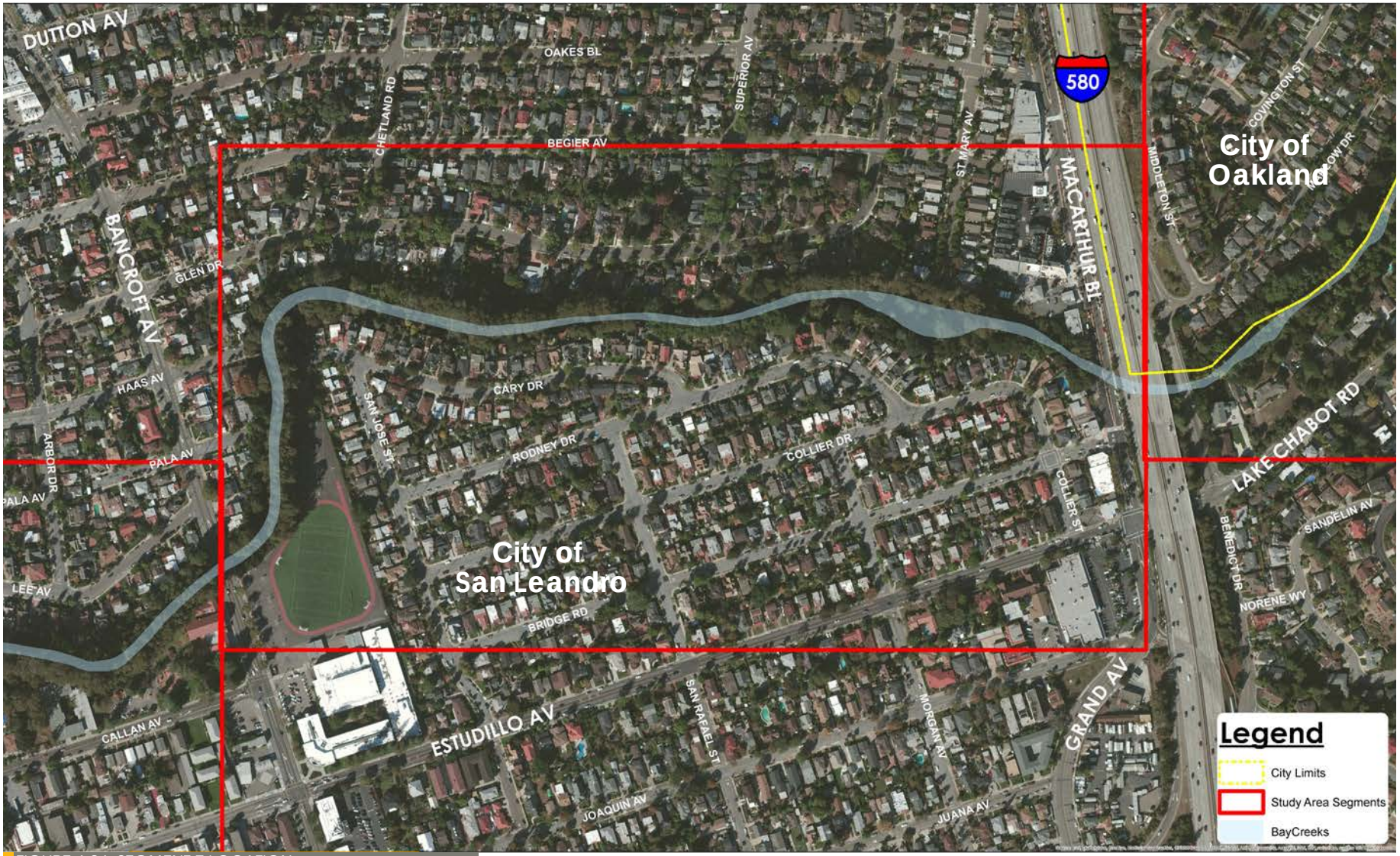


FIGURE 4-34: SEGMENT 7 LOCATION

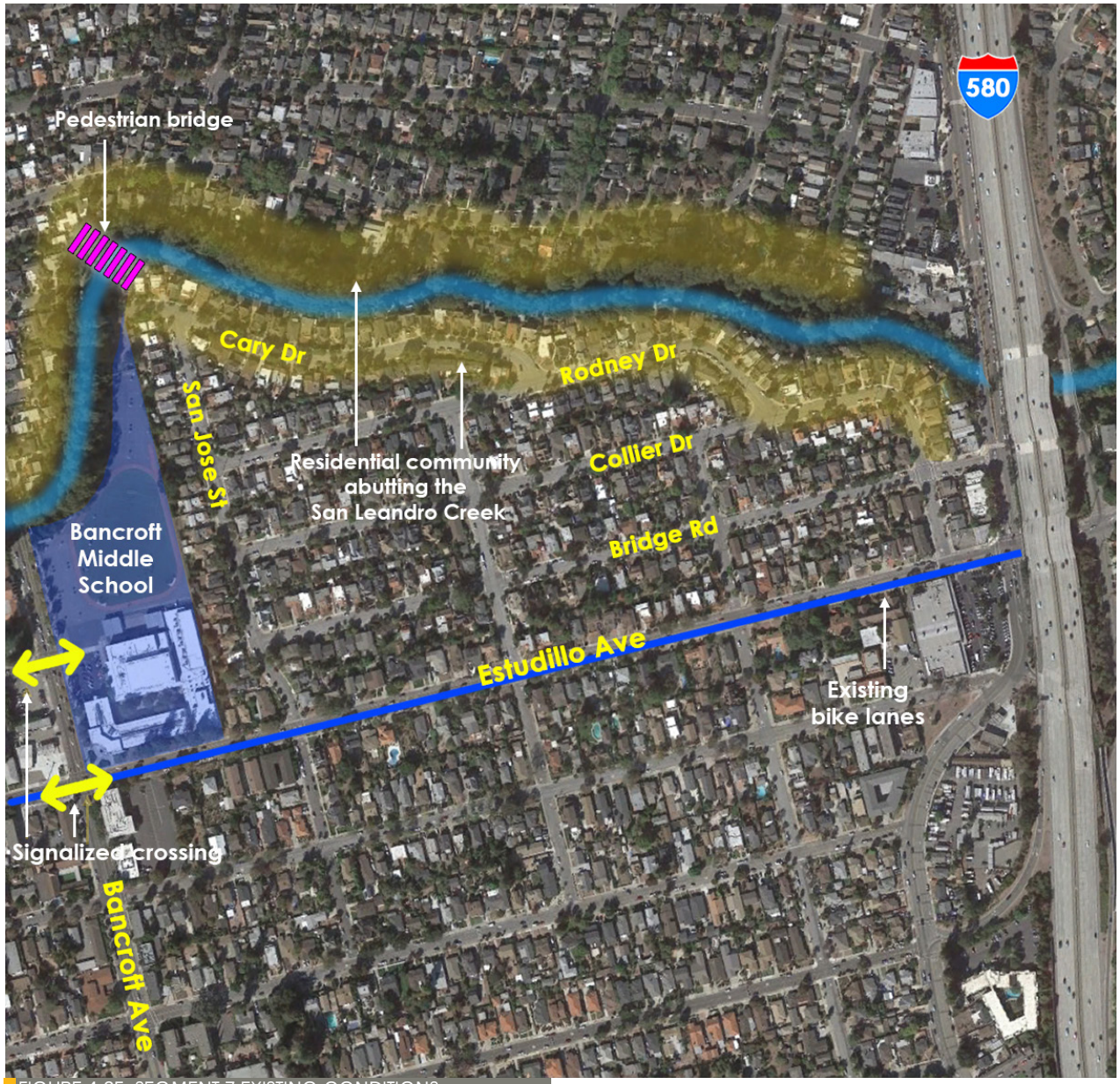


FIGURE 4-35: SEGMENT 7 EXISTING CONDITIONS

Rodney Drive is a residential street similar to Cary Drive with a pavement width of approximately 36 feet and one travel lane and eight-foot sidewalk area including landscaping in each direction. Parking is allowed except at certain times as restricted by signs.

Collier Drive is also a residential street similar to Cary Drive and Rodney Drive with a pavement width of approximately 36 feet and provides one travel lane and seven-foot sidewalk areas in each direction. Parking is allowed except at certain times as restricted by signs.

San Jose Street is a residential street that starts at Cary Drive and ends at Juana Street. The street has a pavement width of approximately 36 feet with one travel lane and seven-foot sidewalk area in each direction. Parking is allowed except at certain times as restricted by signs.

SWOC ANALYSIS OF SEGMENT 7

STRENGTHS

- Use of existing bicycle facilities where feasible based on San Leandro Bicycle and Pedestrian Master Plan (2010 update) - Estudillo Avenue
- Attractiveness of alignment if developed along the San Leandro Creek near the Bancroft Middle School
- Existing footbridge

WEAKNESSES

- Need to cross Bancroft Avenue at Estudillo Avenue, Callan Avenue and Haas Avenue
- Trail potentially passing through residential neighborhood with limited right-of-way to accommodate Class II facility

OPPORTUNITIES

- Connection to commercial uses
- Connection to Bancroft Middle School
- Large area under I-580 for both park and trail development

CONCERNS

- Private ownership of the San Leandro Creek
- Invasive vegetation and large eucalyptus trees
- Steep stream banks along San Leandro Creek
- Limited viewpoints and green space if developed away from Creek alignment
- Lack of land for trail development at top of the bank
- Responsibility for maintenance and repair

4.8 SEGMENT 8: I-580 TO LAKE CHABOT REGIONAL PARK

Similar to the previous segment, this segment is primarily residential, with Lake Chabot Regional Park anchoring the east end of the segment. The segment passes through the Sheffield Village and Bay-O-Vista. The San Leandro Creek in this segment is owned by the surrounding residential properties. Direct access to Lake Chabot Regional Park is provided by Estudillo Avenue. There are sharrows (Share the Road symbols on the pavement) on Estudillo Avenue making it a Class III bicycle facility. However, the right-of-way is limited for potential trail development and some portions of the street have missing sidewalks. Lake Chabot Road runs on the south of the park and could also be explored for potential trail development and access to the park. However this is a longer route and also has limited right-of-way. There are existing trails in the park that connect to Lake Chabot and the Dam.

FIGURE 4-35: LAKE CHABOT REGIONAL PARK

4.8.1 SEGMENT 8 - RELEVANT ROADWAYS

The roadways under review for Segment 8 include Estudillo Avenue, Lake Chabot Road and Marlow Drive. The existing street sections can be found in Appendix 1.

FIGURE 4-36: LAKE CHABOT ROAD

Estudillo Avenue in Segment 8 has a drastically different configuration compared to Segment 7. It converts from a street with one travel lane in each direction, marked parking, bicycle lane and sidewalks in each direction in Segment 7, to one travel lane with sharrows in each direction and no sidewalks. The street pavement is 30 feet wide and parking is not restricted on the street except at certain times.

Lake Chabot Road in the project area has a pavement width of 34 feet with one travel lane in each direction and marked parking as well as a six-foot sidewalk on the north side of the street. No sidewalk or parking is provided on the south side of the street. The street also has sharrows in both directions. As the street advances towards Lake Chabot Regional Park, the parking lane drops and converts to shoulder space.

FIGURE 4-37: MARLOW ROAD

Marlow Drive is a residential street with a pavement width of approximately 29 feet with one travel lane and eight to nine-foot rolled sidewalk width including landscaping in each direction. Parking is allowed on the street.

FIGURE 4-38: SEGMENT 8 LOCATION

FIGURE 4-39: SEGMENT 8 EXISTING CONDITIONS

SWOC ANALYSIS OF SEGMENT 8

STRENGTHS

- Use of existing Class III bicycle facilities on Estudillo Avenue
- Existing trails in the park that connect to Lake Chabot and the Dam

WEAKNESSES

- Crossing of Interstate 580
- Limited right-of-way on Estudillo Ave
- Missing sidewalks on Estudillo Ave
- Trail potentially passing through residential neighborhood with limited right-of-way to accommodate Class II facility

OPPORTUNITIES

- Connection to Lake Chabot Regional Park
- Connection to Sheffield Village Recreation Center

CONCERNS

- Private ownership of the San Leandro Creek
- Invasive vegetation and large eucalyptus trees
- Steep Creek edges
- Limitations in terms of viewpoints if developed away from Creek alignment
- Lack of land for trail development on top of the bank
- Responsibility for maintenance and repair

5 Best Practices

5.0 BEST PRACTICES 5-3

5.0 BEST PRACTICES

There are many possible facility designs that may be appropriate for the potential San Leandro Creek Trail. Each segment along the corridor has its own unique characteristics, opportunities and constraints, and the selected facility designs will need to reflect that. While a primary goal of the San Leandro Creek Trail Master Plan is to develop a project strategy that meets Caltran's Class I guidelines, there are some sections of the corridor where this is not feasible; in such cases, the Plan recommends facilities that would provide trail users with the greatest protection from motor vehicle traffic while meeting the other goals of the project. The following chapter illustrates many of the facility types that could be considered, including some examples of projects with similar characteristics that may serve as useful examples as the proposed Trail moves forward into the design phase.

Note: Certain facilities and amenities such as crosswalks, grade separated crossings, signals, median islands, curb ramps and so on, are common for both bicycle and pedestrian facilities. However, these are covered under pedestrian facilities in this document.

5.1 PEDESTRIAN FACILITIES

Walking is the most basic form of transportation. Creating an attractive and safe pedestrian environment is a critical part of developing more livable communities. Pedestrian facilities should be safe, accessible to all types of users, connect to places where people want to go, encourage interaction, be attractive and of pedestrian scale, easy to use, economical to build and easily maintainable. The main forms of pedestrian facilities are sidewalks and trails including street crossings. Enhancements include curb ramps, pedestrian signals (including countdown signals and lights embedded in crosswalks), raised crosswalks, street furniture, lighting and landscaping.

5.1.1 MULTI-USE TRAILS

Trails are off-street pedestrian and bicycle facilities that offer opportunities not provided by the road system. Multi-use trails are used for walking and biking including wheelchair users, skaters and skateboarders. San Fransisco Bay Trail is an example of multi-use trail in the study area.

Caltrans' Highway Design Manual provides guidelines for Class I bikeways, which are paved multi-use (bicycling and walking) paths that conform to these guidelines. The recommended width for Class I facilities is ten feet, although they can be as narrow as eight feet where necessary and should be 12 feet or more where heavy use is anticipated. Other characteristics of these paths are a clear vertical space of eight feet and two feet of horizontal clearance from the edge of the path to any obstructions (such as signs or other stationary objects such as lighting).

FIGURE 5-1 CANALWAY TRAIL, NEW YORK

FIGURE 5-2 SAN FRANSISCO BAY TRAIL

5.1.2 SIDEWALKS

Paved sidewalks are constructed alongside motorized vehicle travel ways to provide a safe, attractive environment for walking, separated from motor vehicles. The California Highway Design Manual updated in 2015 indicates that the minimum width of a sidewalk should be eight feet between a curb and a building when in commercial districts like urban and rural main streets. For all other locations the minimum width of sidewalk should be six feet when contiguous to a curb or five feet when separated from the street by a planting strip. Sidewalk width does not include curbs. The Americans with Disabilities Act (ADA) provisions such as minimum clearances from structures must be followed to ensure that all pedestrians, including wheelchair users and other people with disabilities can avoid obstructions such as sign poles, bus shelters or mailboxes.

5.1.3 CURB RAMPS

Curb ramps are an important feature of sidewalks, street crossings, and the other pedestrian routes accessible to people using wheelchairs, walkers, scooters and people with strollers. Title II of the ADA requires state and local governments to make pedestrian crossings accessible to people with disabilities by providing curb ramps based on ADA Standards for Accessible Design (ADA Standards) or the Uniform Federal Accessibility Standards (UFAS). The most common type of curb ramp is the perpendicular curb ramp, which intersects the curb at a 90-degree angle. Curb ramps must have flared sides if people are required to walk across them. The Standards also require that curb ramps include features called “detectable warnings.” Detectable warnings consist of a series of small truncated domes that contrast in color with the surrounding sidewalk or street. (ADA, 2008)

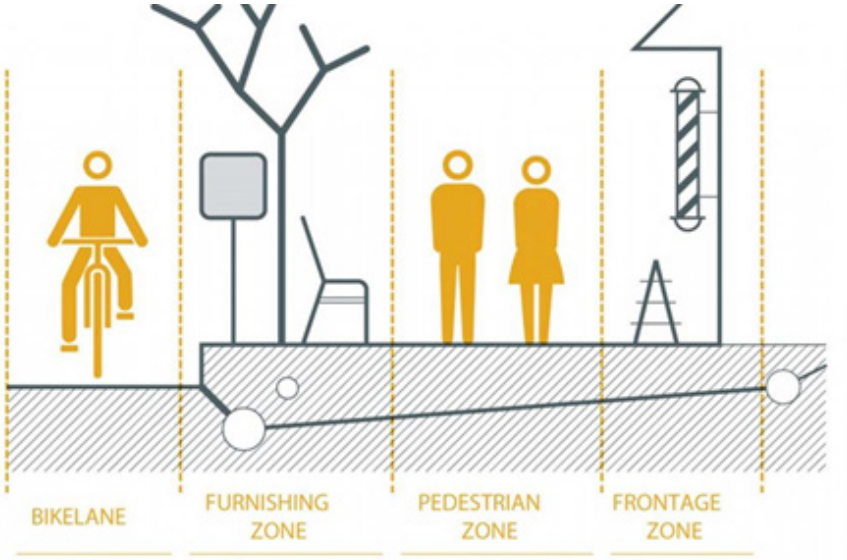


FIGURE 5-3 STREETSCAPE

FIGURE 5-4 CURB RAMPS

5.1.4 ROADWAY CROSSINGS

5.1.4.1 AT-GRADE CROSSINGS

At-grade crossings is a term used to describe street crossings that are at street level and are a critical part of both bicycle and pedestrian networks. Marked crosswalks are most effective crossings when they can be identified easily by motorists as well as pedestrians. They should provide visual contrast with the surface of the street. Curb extensions can be effective in reducing crossing times and increasing visibility between pedestrians and motorists. Crossing-related traffic calming can help make crossing streets at-grade less of a barrier for pedestrians.

Pedestrian-actuated traffic controls are used to stop traffic on high-speed, high-volume arterials. These will be well suited for arterials such as Hegenberger Road or 98th Avenue. Pedestrian-actuated traffic controls require the user to push a button to activate a walk signal. These signals are often inaccessible to people with limited mobility and visual impairment. In order to overcome this issue, traffic controls need to be located as close as possible to the curb ramp without reducing the width of the path. They also need to be mounted low enough to permit people in wheelchairs to reach the buttons. When pedestrian change intervals are over seven seconds long, countdown timers are provided to indicate the time remaining to cross. To accommodate visually impaired pedestrians, pedestrian signals may include audio cues such as recorded speech instructions or tones. These acoustic features of accessible pedestrian signals are still the subject of ongoing standards development and are not yet required at all pedestrian signal locations. Special crosswalk treatments such as flashing beacons can also enhance pedestrian travel and safety.

FIGURE 5-5 AT-GRADE CROSSING

5.1.4.2 DECORATIVE CROSSWALK

Decorative crosswalks provide for the crosswalk to be painted with specialty markings, or created from special materials (typically bricks or other specialty paving). They make the crosswalk more visible to on-coming traffic. The cost starts at approximately $5 per square foot for lower cost applications.


FIGURE 5-6 DECORATIVE CROSSWALK


FIGURE 5-7 CROSSWALK WITH PIANO PATTERN IN DENISON, TX

5.1.4.3 RAISED CROSSWALKS

Raised crosswalks help make pedestrians more visible to oncoming traffic and also reduce vehicle speeds. The elevation of the crosswalk acts similar to a speed hump, while the textured material helps draw the attention of drivers as they pass by. Raised crosswalks are considered a high cost measure, and can cost approximately $25,000 per location.

FIGURE 5-8 RAISED CROSSWALK

5.1.4.4 LIGHTED CROSSWALKS

Crosswalks can be lighted in two ways – via in-ground flashers or overhead flashing lights. In-ground lights are installed in the pavement along the entire length of both crosswalk lines, and the lights blink when activated by a pedestrian (typically through pedestrian push-button or motion activation). Overhead flashing lights are yellow lights located above the crosswalk. The flashing yellow lights raise motorists' awareness to the presence of pedestrians crossing the roadway.

Lighted crosswalks are considered a high cost measure, and can cost approximately $25,000 to $30,000 for in-roadway and approximately $7,000 to $10,000 for a Rectangular Rapid Flashing Beacon (RRFB) System.

5.1.4.5 HIGH-INTENSITY ACTIVATED CROSSWALK (HAWK)

High-Intensity Activated crosswalk (HAWK) beacons are used at crosswalks to help create greater safety for pedestrians, especially at crossings of high-speed or wide arterial streets. The beacon is activated by pedestrians crossing the street, and includes a red phase to stop traffic, creating a safer crossing than a marked crosswalk alone. When pedestrians are not present, the beacon is not illuminated, so the HAWK beacon is especially useful at locations with high traffic volumes that would be adversely impacted by a conventional traffic signal. The phases of the HAWK beacon are illustrated in Figure 5-9, and Figure 5-10 is an example of the beacon in the City of Chula Vista, CA. The City of San Leandro has installed a HAWK beacon at the corner of Davis Street and Carpentier Street.

FIGURE 5-9 HAWK PHASES

FIGURE 5-10 HAWK SIGNAL

5.1.4.6 CURB EXTENSIONS (BULB-OUTS)

Curb extensions are locations where the curb is extended into the roadway, reducing the pedestrian crossing distance and increasing the visibility of pedestrians to approaching drivers. Space can be created for curb extensions by eliminating non-travel space (such as parking areas along the outside of a roadway) or by reducing the number of travel lanes.

FIGURE 5-11 CURB EXTENSIONS

5.1.4.7 MID-BLOCK CROSSINGS

Mid-block crossings are pedestrian and bicycle crossing points that do not occur at intersections. They are particularly useful along trails to provide a direct, continuous route rather than requiring trail users to veer off their path to the nearest intersection. Since it is difficult for visually impaired people to detect mid-block crossings, an audible or vibrating alerting system is desirable. Just like at-grade crossings at intersections, these crossings should be highly visible and should provide visual contrast with the surface of the street. The mid-block crossings can be dangerous on high-speed / high-volume streets and hence careful engineering review for safety is required.

FIGURE 5-12 MID-BLOCK CROSSING

5.1.4.8 GRADE-SEPARATED CROSSINGS

Grade-separated crossings can reduce pedestrian-vehicle or bicycle-vehicle conflicts and potential collisions while limiting vehicle delay and increasing roadway capacity. They fall into two categories

1. Overpasses - bridges, elevated walkways, and skywalks or skyways
2. Underpasses - pedestrian tunnels and below-grade pedestrian networks

Grade-separated crossings provide great benefit for pedestrians and bicyclists who must cross freeways, heavily traveled arterial streets, or railroads. However if they are not in-line with an established travel way and if too constrained or not properly lighted, bicyclists may find them inconvenient, leading them in some cases to opt for a more direct, but less safe route. Where overpasses must be built high to achieve sufficient clearance over a highway or railroad, making overpasses universally accessible can be a challenge, as ramps cannot exceed the ADA guidelines for maximum slopes. Overpasses and underpasses must also be carefully designed to facilitate maintenance and should include features such as lighting for visibility and security. These facilities also tend to be extremely expensive. Generally speaking, overpasses and underpasses should be avoided (unless necessary) to cross significant barriers.

For the potential San Leandro Creek Trail, two new railroad crossings are required, at locations where at-grade crossings would require a significant diversion away from the San Leandro Creek. Railroads are typically reluctant to permit crossings of active lines due to liability concerns; however, there are examples where such crossings have been successfully implemented. Figure 5-13 (right) shows a tunnel constructed under a Union Pacific line in Truckee,

FIGURE 5-13 PEDESTRIAN/BICYCLE OVERPASS AND UNDERPASS

CA, where the existing roadway was too narrow to accommodate the trail running along this corridor.

5.1.5 MEDIANS AND PEDESTRIAN REFUGE ISLANDS

Medians and pedestrian refuge islands allow pedestrians to cross one direction of traffic at a time. This significantly reduces the complexity of the crossing.

A median is the portion of the roadway separating opposing directions of the roadway, or local lanes from through travel lanes. Medians may be depressed, raised, or flush with the road surface. Medians are generally linear and continuous through a block and generally allow vehicles to travel at increased speeds. They can also encourage pedestrians to cross at marked crosswalks thus increasing safety for pedestrians and bicyclist.

Pedestrian refuge islands are generally located at marked crosswalks. These are a small section of pavement, completely surrounded by asphalt or other road materials, where pedestrians can stop before finishing crossing a road. According to National Association of City Transportation Officials, "Pedestrian safety islands limit pedestrian exposure in the intersection. While safety islands may be used on both wide and narrow streets, they are generally applied at locations where speeds and volumes make crossings prohibitive, or where three or more lanes of traffic make pedestrians feel exposed or unsafe in the intersection".

According to a report by Federal Highway Administration (FHWA) published in 2013, providing raised medians or pedestrian refuge islands at marked crosswalks has resulted in a 46 percent reduction in pedestrian/vehicle collisions, while at unmarked crosswalk locations, pedestrian collisions were reduced by 39 percent. Installing raised pedestrian refuge islands on the approaches to unsignalized intersections has had the large impact in reducing pedestrian collisions.

5.1.6 SIGHT DISTANCES

Sight distance is defined as "the distance a person can see along an unobstructed line of sight." Adequate sight distances between pedestrians/ bicyclists and motorists increases safety. Sidewalk design should take line of sight into consideration while planning for landscaping, signage, bollards and lighting.

5.1.6 LIGHTING

Illuminating the trail greatly reduces the possibility of collisions or falls due to deformities and unevenness in the path. According to Rails to Trail Conservancy, there are several options for trail lighting. Factors that influence lighting choices include soil content, overhead clearance, trail location, trail features, types of trail users and weather. Wired, solar powered, battery powered and LED are various options that are available. American Association of State Highway and Transportation Officials' (AASHTO) can provide guidance for lighting along shared-use paths.

5.2 BICYCLE FACILITIES

Caltrans has defined classes of bikeways which are used throughout the State for project description, design standards, and other purposes. The different bikeway types, described below, include both trails and on-street bikeways.

5.2.1 CLASS I BIKEWAYS – BIKE PATH

Class I bikeways provide a paved right-of-way that is physically separated and independent from the street or highway. An example of Class I trail in the study area is the portion of San Francisco Bay Trail - a multi-use trail west of Hegenberger Road to the Bay. Bikeways provide recreational and commuter bicycling opportunities as well as a path for walkers and joggers.

FIGURE 5-14 CLASS I BIKEWAYS

Class I bikeways are commonly found along rivers, ocean fronts, canals, utility rights-of-way, adjacent to railroad rights-of-way, and on abandoned railroad rights-of-way (like the Iron Horse Trail which is a "rail trail"). Class I facilities can also close gaps in a bicycle network caused by the construction of freeways or the existence of natural barriers (such as rivers, hills, mountains). Class I bikeways prohibit motorized traffic but are often shared with pedestrians and other non-motorized users.

5.2.2 CLASS II BICYCLE LANES – MARKED BICYCLE LANES

Class II facilities are on-street bicycle lanes delineated by traffic striping and marking to create separate portions of the roadway available to bicyclists and motorists, providing for more predictable movements by each. Class II facilities include a striped lane that allows for one-way bicycle travel normally on the right side of a street or highway. These facilities are located adjacent to the curb or they can provide for a parking lane or right turn lane to the right of the bicycle lane. An example of a Class II facility in the project area is the bicycle lanes on Estudillo Avenue.

FIGURE 5-15 CLASS II BICYCLE LANES

5.2.2.1 BUFFERED BICYCLE LANE

Another treatment to provide greater separation between bicyclists and the adjacent general purpose lane is the buffered bicycle lane. A buffered bicycle lane is a Class II bicycle lane that is paired with a buffer space delineated by normal white pavement markings that separate the bicyclists from the adjacent vehicle traffic or parked cars without raised barriers or pavement markers.

5.2.2.2 COLORED BICYCLE LANES

Recently, agencies have started providing special paving or color treatments on striped bicycle lanes to make them more visible to motorists. Colored treatment can be applied to the entire width of the bicycle lane for the entirety of the facility or before and after critical conflict zones where bicyclists and motorists must yield to one another - typically at intersections where motorists may turn right across the bicycle lane.

Green, blue, and red are among the colors that have been tested across the world for this purpose. Because these colored pavements are intended to regulate, warn, or guide traffic (motorists and bicyclists) and thus are serving as more than just an aesthetic treatment, they are considered to be traffic control devices. In the United States, green has been the only color that has received official FHWA approval for colored pavement experiments on bicycle facilities as blue and red are used for different purposes. Green colored pavement can be used in marked bicycle lanes by any jurisdiction that requests and obtains interim approval from the FHWA (FHWA, 2011).

FIGURE 5-16 CLASS II BUFFERED BIKE LANES

FIGURE 5-17 CLASS II COLORED BICYCLE LANES

5.2.3 CLASS III BICYCLE ROUTES – SHARED STREETS

Class III facilities are designated routes that provide for shared use with motor vehicle traffic and are identified by signage, but do not provide a designated area for bicycles and non-motorized users. These facilities can provide continuity to other bicycle facilities or to designate preferred routes through high-demand corridors. Bicycle routes are established by placement of "Bicycle Route" guide signs. Some Class III facilities are supplemented by bicycle "sharrow" markings which indicate that travel lanes are intended for the shared use of both bicycles and motor vehicles. Sharrows are a visual reminder for cyclists and cars to share the road and may be used where there is insufficient width to add a bicycle lane. The sharrow, when implemented correctly, shows the rider where to travel to increase maximum visibility of the cyclist and move the cyclist out of the "door zone" of parked cars. Sharrow markings and signs may be applied to Class III bicycle routes to inform motorists that cyclists are allowed and to share the road. Examples of such facilities can be found in the project area on Estudillo Avenue east of MacArthur Boulevard and Lake Chabot Road. Sharrows can also be supplemented by additional signs indicating "Bicycles May Use Full Lane."

FIGURE 5-18 CLASS III ROUTES

5.2.3.1 BICYCLE BOULEVARDS

Bicycle boulevards, also known as neighborhood bikeways or greenways, are low-speed streets that have been optimized for bicycle traffic. They provide safer and more comfortable bicycling environments than facilities such as striped bicycle lanes on major streets, and they are often located to provide routes parallel to collector or arterial streets. Bicycle boulevards typically provide traffic devices that are also used for neighborhood traffic calming, such as raised medians, landscaped bulb-outs, roundabouts, and other measures that discourage speeding and non-local traffic. According to the National Association of City Transportation Officials (NACTO), bicycle boulevards should have a maximum posted speed of 25 mph. Green infrastructure and stormwater management can be combined with bicycle boulevard treatments. The net effect of either improvement is to transform a street into a facility where bicyclists have equal or priority use of the street with

FIGURE 5-19 BICYCLE BOULEVARD WITH DIVERTER ISLANDS

motorists. The Neighborhood Greenways Assessment Report recommends operational performance guidelines for neighborhood greenways (PBOT, 2015):

- Vehicle speeds of 20 mph at the 85th percentile
- Automobile volume target of 1,000 ADT, with 1,500 ADT acceptable and 2,000 ADT maximum

Bicycle and pedestrian crossing opportunities, measured as a minimum of 50 crossing opportunities per hour, with 100 crossing opportunities per hour the preferred level of service.

5.2.4 CLASS IV BIKEWAYS – CYCLE TRACKS

In addition to the standard Class I, II, and III bicycle facilities, an additional bicycle treatment is now being implemented in select bicycle-friendly cities across the country. Class IV Bikeways, also known as cycle tracks, separated bikeways, or protected bikeways are similar to Class I facilities in that they feature a dedicated bicycle right-of-way. Rather than being independent from a street or highway, Class IV facilities are located inside the road right-of-way. Cyclists are typically separated from motor vehicles by a barrier such as a curb, delineator posts, a lane of parked cars, or median. A variation is a parking protected bicycle lane where the bicycle path is situated alongside the curb and the parking spaces are moved over to serve as a barrier between bicycle and automobile traffic.

The Protected Bikeways Act of 2014 (Assembly Bill 1193 – Ting, Chapter 495) established Class IV bikeways and tasked Caltrans to prepare design criteria for their proper development. This law also allows for use of design criteria in the Urban Bikeway Design Guide, published by NACTO (2013). Elements of Class IV facilities were formerly considered to be contrary to State design standards until the passage of this law. They are now permitted and are encouraged where feasible by Caltrans.

Cycle tracks are also safer for users as they are protected by a physical barrier and reduce overall confusion and tension for all users of the road. A study conducted by the National Institute for Transportation and Communities (NITC) that examined protected bicycle lanes in five cities including San Francisco, observed an increase in ridership on all facilities after the installation of the protected cycling facilities, ranging from 21 percent to 171 percent. Buffers constructed using flexible posts received very high ratings even though they provide little actual physical protection from vehicle intrusions— because cyclists perceive them as an effective means of positive separation (NITC, 2014).

Cycle Tracks can provide opportunities for aesthetic improvements in addition to mobility improvements. They can provide opportunities for landscaping or other decorative features in the roadway. Drainage should be maintained

FIGURE 5-20 CLASS IV CYCLE TRACKS

on both sides of the cycle track. Examples of Class IV Bikeways in California include cycle tracks in Alameda, Temple City, Long Beach, Redondo Beach, Santa Monica, Carlsbad, and San Francisco. The City of Alameda opened a Class IV facility on Shore Line Drive / Westline Drive in March 2015. They are being implemented in major cities throughout the U.S., often following the criteria found in the Urban Street Design Guide (NACTO, 2013). FHWA has recently published a Planning and Design Guide for separated bicycle lanes (FHWA, Seperated Bicycle Lane Planning Design Guide, 2015), that reflects encouragement of their use by the Federal Government.

5.2.4.1 ELEVATED OR RAISED BICYCLE LANES

Another treatment that falls under Class IV category and provides additional protection from motor vehicles is elevating the bicycle lane from the grade of the roadway. Slightly elevating the bicycle lane from the travel lane can provide additional visibility, a clearer demarcation of the space as dedicated for bicyclists, and a slight physical barrier in contrast to a typical bicycle lane into which motorists may stray haphazardly. Typical treatments include raising the bicycle lane only slightly over the pavement or to the same level as the sidewalk. This treatment is relatively new in the United States and is not yet widely accepted. It is being tested now in San Francisco, and other agencies are considering the treatment.

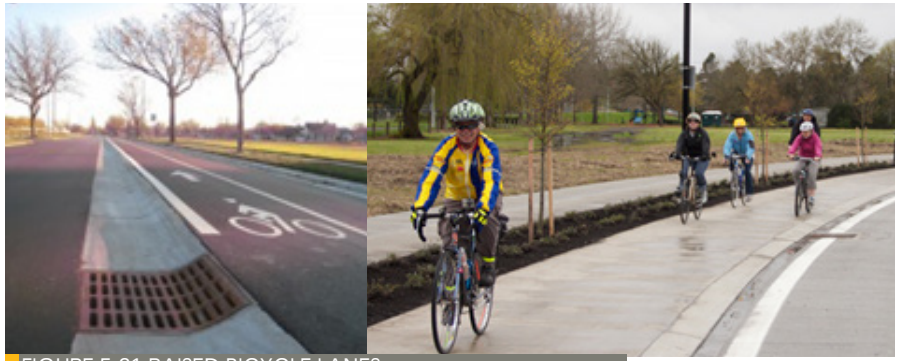


FIGURE 5-21 RAISED BICYCLE LANES

5.2.5 ADDITIONAL ENHANCED BICYCLE TREATMENTS

5.2.5.1 BICYCLE BOXES

A bicycle box is the extension of the bicycle lane into the intersection itself. Bicycle boxes are designed to prevent bicycle and car collisions, especially between drivers turning right and bicyclists traveling straight or turning left. It is intended to make cyclists more visible and to give cyclists a head start when turning. A striped box with a white bicycle symbol inside is painted on the road before a stop light or sign. The boxes include the bicycle lanes approaching the box. Bicyclists stop in the bicycle box to be most visible to motorists while they wait for the signal.

The use of bicycle boxes is currently experimental under the FHWA. Along with other requirements such as setbacks, pavement marking, full-time turn on red prohibition, FHWA requires that pedestrian countdown signals must be present or installed for the contiguous crosswalk movement if the bicycle box is installed laterally across more than one approach lane. Active official experiments in California are being performed at Davis and Santa Monica (FHWA, 2015).

FIGURE 5-22 BICYCLE BOX

5.2.5.2 DEDICATED BICYCLE SIGNALS AND SIGNAL PHASES

Providing a dedicated bicycle signal can move bicyclists through an intersection safely, before allowing motor vehicles to create a potential conflict. Alternatively, traffic signals can be timed to allow priority for bicycles or pedestrians, encouraging these non-motorized uses and improving safety. A signal phase is defined as the signal cycle length allocated to a traffic movement at an intersection receiving the right-of-way, or to any

combination of traffic movements receiving the right-of-way simultaneously. The combination of all phases is equal to one cycle length. Providing dedicated signal phases for bicycles and/or pedestrians separates them from automobile traffic. This reduces potentially dangerous conflicts and makes bicycling a less stressful and more welcoming alternative to driving. Although rare in the U.S., they have been approved for usage in the U.S and in California at this time. They exist in Davis, Long Beach, and Redondo Beach, and additional cities are considering their use.

FIGURE 5-23 DEDICATED BICYCLE SIGNALS

5.3 CREEK TRAILS AND WATER SAFETY

When designing trails along creek corridors, it is preferable to locate the trail along the top of the bank, to keep the trail at or above the San Leandro Creek's high water level. However, for some sections of the recommended alignment for the proposed San Leandro Creek Trail, a top of bank alignment is not feasible, so the preferred alignment is in the San Leandro Creek channel. As a result, these segments of the trail would occasionally be under water, which would require the trail to be closed during high water events or seasonally, and the designation of an alternate route. There are examples of trails that have been developed in creek channels as well as in other locations that flood periodically. With careful design and rules regarding usage, trails can be viable in certain circumstances. For example, if a trail is located below the level of high water events, a seasonal or event-related closure may be an option. The following are examples of trails in locations that are underwater at times.

5.3.1. ARROYO SECO BICYCLE PATH

The Arroyo Seco in Los Angeles County is a seasonal river, of which the lower portion is channelized into a flood control channel. A 2-mile trail runs through the channel from Highland Park to South Pasadena. When rain is predicted or a water release is expected from the upstream dam, the gates into the channel are locked and the trail is closed. This project requires cooperation between the City of Los Angeles, which maintains the bicycle path, and the Los Angeles County Department of Public Works, which maintains the flood control channel.

FIGURE 5-24 ARROYO SECO BICYCLE PATH

5.3.2 GUADALUPE RIVER TRAIL

San Jose's 11-mile Guadalupe River Trail is located at or above the top of the bank of the Guadalupe River, with the exception of selected locations where the trail is routed into the channel at underpasses to provide sufficient clearance. To address this issue the City has developed signage to raise the awareness of users to the potential for flooding on certain sections of the trails. By warning trail users of this potential problem they can avoid the challenges associated with implementing the closure of part of the trail.

To avoid the operational challenges of physically closing the trail during these high water episodes, and to address the City's liability concerns, they post signs for trail users to warn them of the potential for high water events at these locations.

The City plans to supplement the signs with messages on the trail surface using hydrophobic concrete to provide additional messages to trail users about the potential for high water events. The images in the hydrophobic concrete are visible only when wet, as illustrated in Figure 5-27.

FIGURE 5-25 GUADALUPE RIVER TRAIL DURING / AFTER FLOODING

FIGURE 5-26 BICYCLE PATH FLOOD WARNING

FIGURE 5-27 HYDROPHOBIC CONCRETE WARNING

5.4 PERSONAL SAFETY AND SECURITY

Safety and security of trail users and of nearby neighborhoods is of paramount concern for any trail project. Many of these concerns can be addressed through an approach known as Crime Prevention Through Environmental Design (CPTED), which employs strategies such as increasing visibility along the trail by lighting and carefully controlling access to a trail through the use of fencing and other techniques. See the National Institute for Crime Prevention's web site (http://www.cptedtraining.net/) for information about CPTED training for public agency staff and others.

In addition to design strategies, many trail managers address safety issues through their trail management strategy, by incorporating activities such as trail patrols. Such programs are typically run by police, park staff, volunteers, or some combination. For example:

- **Three Rivers District Park Police:** The park district police in the Minneapolis area have been very involved in developing protocols related to trail safety, including trail educational efforts and enforcement. The District oversees over 100 miles of trail and has set up a trail patrol consisting of two sworn police officers and three non-sworn park service officers who work full-time dealing with trail-related issues and enforcement. This has included participating in community events where they distribute information about bicycle safety. The agency has reported dramatic decreases in vandalism, minimal incidents of serious crime, and the development of positive community relationships (IPMBA News, Summer 2010).
- **City of San Jose:** San Jose has an extensive program focused on security for its trail network. The Police Bicycle Unit works with volunteers to greet users and enforce trail rules. The City has also provided call boxes along trails and is also installing mile markers to facilitate access for emergency personnel.

5.4.1 TRAIL DESIGN – FENCING

Where trails abut private property, a common concern from neighbors is how the trail might impact their sense of privacy. Communities and residents have utilized a wide varieties of fencing and other visual barriers to provide some level of separation from trails. The Lafayette-Moraga Trail in the East Bay features a variety of fencing installed by neighbors of the trail. The design and height of the fencing varies considerably, and some residents have installed very minimal fencing. Other strategies for increasing privacy for neighbors of

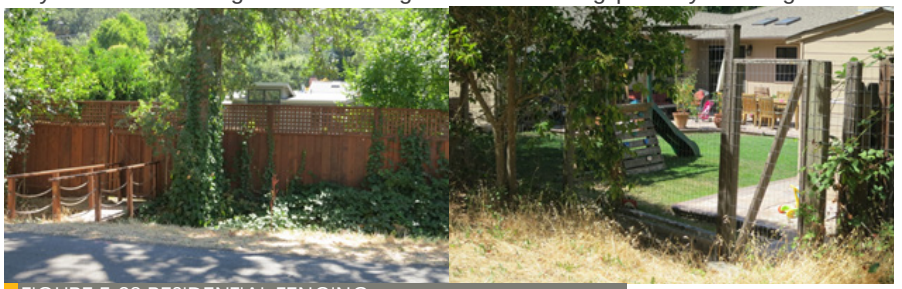


FIGURE 5-28 RESIDENTIAL FENCING

a trail include planting trees or vegetation, which provides greenery and a visual screen from the trail.

5.4.2 HOMELESS ENCAMPMENTS

The homeless issue in the San Leandro Creek is a current concern, and while improved access to the corridor could exacerbate the problem, increased activity could also have the opposite effect by creating an environment in which the Creek is no longer a quiet out-of-the-way place to sleep. This is a challenging issue faced by many cities, and new approaches are being developed in communities across the country. The City of San Leandro has recently been implementing an effort with local partner groups to help address problems associated with the homeless population along San Leandro Creek. Portland State University published a study, *Homeless Encampments on Public Rights-of-Way* (http://pdxscholar.library.pdx.edu/usp_fac/29/), which outlines best practices and strategies to help address these issues. The study found that two-thirds of the formerly homeless residents who accepted case management assistance were in permanent or transitional housing 16 months after the completion of the project. Nearly half of those who were in unstable living situations had experienced a period of stability before relapsing, primarily due to addictions. The homeless encampment was gone as of May 1, 2010, and although some people used the area for overnight sleeping after that deadline, they were not a permanent presence during the day. More information can be found at http://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1073&context=trec_reports.

5.5 OTHER AMENITIES AND ELEMENTS

5.5.1 COMMUNITY GARDENS

The Richmond Greenway is notable for extensive community gardens. The organization Urban Tilth (http://www.urbantilth.org) has led the gardening efforts, which have been a key element in activating the community in the development of and caring for the Greenway. The annual Martin Luther King Day Jr. Day of Service has been a signature event on the Greenway, attracting hundreds of participants to celebrate the Greenway, and the gardening work is a major focus of the event.

FIGURE 5-29 COMMUNITY GARDEN

5.5.2 PARKS AND FITNESS FACILITIES

Trails can often provide opportunities to develop other community amenities along a corridor, such as neighborhood parks, play equipment, or community gardens either within the trail right-of-way or on adjacent or nearby properties. This helps to make a trail more than just a linear facility by incorporating it into the broader scheme of community development. In Los Angeles County, the organization Amigos de los Rios (http://www.amigosdelosrios.org) has developed numerous projects along trails as part of

FIGURE 5-30 PARK ALONG TRAIL IN EL MONTE

FIGURE 5-31 FITNESS EQUIPMENT ALONG A TRAIL, COMPTON, CA

the growing Emerald Necklace greenway. This includes the site in El Monte, located adjacent to Madrid Middle School and the San Gabriel River Trail (see Figure 5-30). Similarly, the guidebook Pathways for Play (http://www.pathwaysforplay.org), developed by American Trails, the Natural Learning Initiative at North Carolina State University, and PlayCore, demonstrates how parks and playgrounds can be integrated with trails. While trails are often thought of as linear facilities, they can also be designed to integrate with adjacent public spaces, linking the trail into other recreational spaces.

5.5.3 HISTORY

Many communities have used their trails as a site for highlighting local history and the significance of the trail corridor. In this a trail can be used to help give the trail a sense of place. Figure 5-32 shows an example from the Rancho Cucamonga, California, segment of the Pacific Electric Trail, which was developed along a former railroad corridor. Ohlone villages were the first inhabitants of the San Leandro Watershed. Their history can be entwined in the graphics developed for the trail or trailhead.

FIGURE 5-32 SIGN DISPLAYING RAILROAD HISTORY

5.5.4 PUBLIC ART

Washington, D.C. developed a Public Art/Civic Design Sketchbook for the Metropolitan Branch Trail (http://metbranchtrail.com). This could be a useful guide in developing something locally-oriented for the San Leandro Creek Trail. Figure 5-33 is an example of murals installed to beautify a wall along a section of the trail.

The Richmond Greenway (http://www.richmondgreenway.org) is a prime example of community involvement to support the development of a trail project (refer to Figure 5-34). Perhaps the most striking feature of the Greenway is the series of murals on many of the buildings lining the greenway. Community members have been active participants in creating the murals, and this has been a contributing factor in cultivating a sense of pride and ownership in the Greenway.

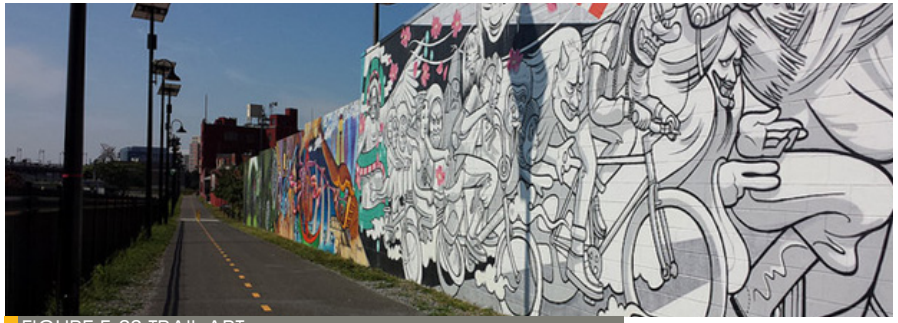


FIGURE 5-33 TRAIL ART

FIGURE 5-34 COMMUNITY MURAL

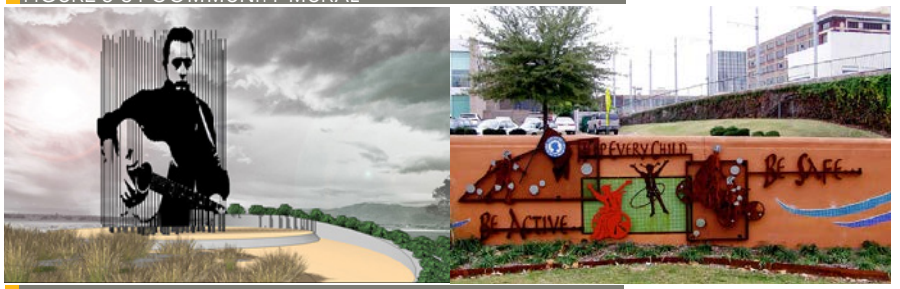


FIGURE 5-35 ART IN RECREATIONAL AREAS

The City of Folsom's Johnny Cash Trail (http://www.folsomcasharttrail.com) has developed an art plan to construct eight public art pieces that will be a centerpiece of the trail and honor and tell the story of Johnny Cash (refer to Figure 5-35).

The Medical Mile Greenway is a section of the Arkansas River Trail (http://arkansasrivertrail.org) renowned as the nation's first "outdoor linear health museum." The Medical Mile features health-themed art, including a mural wall and Body-Mind-Spirit plaza. The project was realized as a result of a partnership between Heart Clinic Arkansas, Little Rock Parks and Recreation, and the National Park Service's Rivers, Trails, and Conservation Assistance Program.

5.5.5 TRAIL STEWARDSHIP AND EVENTS

Community based organizations play a critical role in building support and a sense of pride and ownership in trails. There are groups across the country that have taken on this role, which includes activities such as cleaning up trash, landscaping, opportunity for job training/creation for adjacent neighborhoods and leading community events.

Hub City Teens: Hub City Teens (https://www.facebook.com/Hub-City-Teens) is a group that leads youth-focused activities in Compton, CA. Founded by a group of teens to develop youth activities in the area, the group is led by staff of El Nido Family Centers, a local social service organization. Hub City Teens have adopted a section of the Compton Creek Bicycle Path, where they conduct regular trail cleanups, plantings to beautify the corridor, and lead bicycle rides. Trained as "trail ambassadors" through Rails-to-Trails Conservancy's earn-a-bike program. Group members also help educate other teens in the community about the Compton Creek and encourage healthy and active lifestyles.

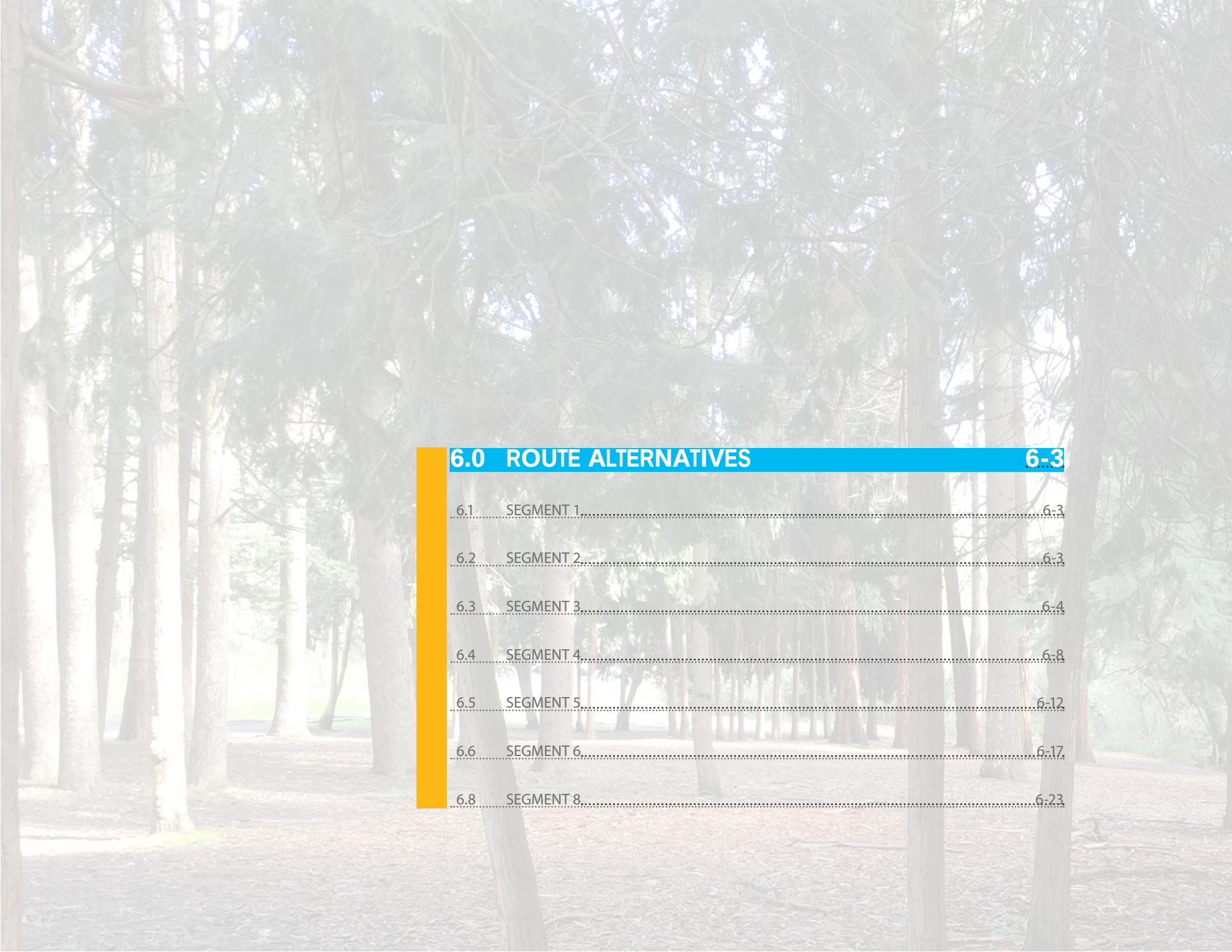
Metropolitan Branch Trail: Washington, D.C. has included the Metropolitan Branch Trail as a site in its annual National Night Out events. This includes participation by elected officials, local police, and community leaders to help cultivate a community commitment to safety along the trail.

5.5.6 RESTORATION

Trail development can often be a great opportunity to link with river/creek restoration efforts. This enables the two efforts to be coordinated and completed in a way that achieves the goals of both projects. Figure 5-36 shows a section of the San Gabriel River in Los Angeles County before and after a restoration and trail development project. This type of effort is being undertaken in many other locations as well, such as the ambitious plans to revitalize the Los Angeles River.

FIGURE 5-36 TRAIL RESTORATION- BEFORE AND AFTER

6 Route Alternatives



6.0 ROUTE ALTERNATIVES

Route alternatives have been developed for each segment in order to be consistent with the Existing Conditions and Segment Analysis Chapters. While there are multiple alternatives for each segment, certain alternatives might not be as feasible as others due to various reasons such as jurisdictional issues, floodplain restrictions, property ownership, neighborhood opposition and so on. A combination of these alternatives will lead to the most feasible route for the trail/path along or near San Leandro Creek.

This chapter documents all alternatives developed for the San Leandro Creek Trail. Alternatives are named based on the segment containing these alternatives and do not suggest preference or ranking in any form. Each alternative was developed by using the criteria listed below. The alternatives may or may not satisfy all the criteria listed below and may satisfy one criterion to a greater extent than another.

- The route will traverse alongside San Leandro Creek and takes advantage of scenic views where feasible
- The route will avoid utilization of privately owned land
- The route will utilize existing bikeways, maintenance roads, trails and public land
- The route will connect maximum destinations, businesses and schools along its way

6.1 SEGMENT 1

Segment 1 starts at the San Leandro Bay and continues to the west of Hegenberger Road. It is a part of San Francisco Bay Trail and is a well established 10 to 12-foot wide trail on both the north and south sides of the San Leandro Creek. A trailhead is located on the west side of Hegenberger Road and has 11 parking spots, a water fountain and seating. This well used trail is in good condition and might only need resurfacing and landscape upgrades. There are no other alternatives proposed for this segment as the existing alternative is well suited for the final route.

Pros

- Directness of the route
- Use of existing path connectivity to the businesses on the west side of the path leading to employment opportunities
- Connectivity to San Leandro Bay and San Francisco Bay Trail

Cons

- Trail might need resurfacing and landscaping

6.2 SEGMENT 2

Segment 2 runs from west of Hegenberger Road to north of 98th Avenue and is located within the City of Oakland. There are maintenance roads on either side of the San Leandro Creek alignment and either can be used to develop a trail. However, the most challenging part will be to provide a safe crossing of Hegenberger Road in order to connect to the maintainable roads. This is a high-speed/high-volume road with an existing signalized crossing located 1,000 feet south from the trailhead in Segment 1. Alternatives 2a and 2b suggest creating new signalized crossing that might effect flow of traffic on this heavily used roadway. However, 2a is the most direct and 2b is a relatively direct route to connect to the maintenance roads in this segment. Alternative 2c on the other hand is the most indirect route but uses an existing signalized crossing. Connectivity to the Airport Plaza as well as Brookfield Village in the north of the Creek were explored in the alternatives discussed here. More details regarding existing conditions of Segment 2, as well as description of relevant streets in this segment, can be found in Chapter 4 and Appendix A.

6.2.1 ALTERNATIVE 2A

Crossing Hegenberger Road is the biggest challenge to developing the trail in Segment 2. A signalized intersection will be needed to create a safe pedestrian and bicycle connection from the existing trailhead entrance to the entrance of the existing maintenance road on the south side of Hegenberger Road. There is a gap in the median at this location along with the left turn lane. Further analysis is needed to develop a safe pedestrian and bicycle crossing at this location.

Pros

- Directness of the route
- Connectivity to the businesses in the south of the path leading to employment opportunities
- Connectivity to Airport Plaza

Cons

- Crossing of Hegenberger Road (needs further analysis)

6.2.2 Alternative 2B

The proposed path connects to the trail on the north side of San Leandro Creek in Segment 1. However, the existing trailhead is on the south side of the Creek in Segment 1, and hence a connection to the existing trailhead is desirable. If the path originates at the trailhead it will need to travel 200 feet north along the sidewalks on Hegenberger Road and cross the road at Leet Drive taking advantage of gap in the median. Whether the path originates on the north or south side of the Creek, the current crossing will need to be upgraded to a signalized crossing. However, more analysis of right-of-way and traffic conditions is needed to determine the nature of potential upgrades. After crossing Hegenberger Road, the path then runs on an existing maintenance road on the north side of the San Leandro Creek. A bridge is proposed to cross the Creek and connect to the businesses at the Airport Plaza. This path, excluding the bridge, is proposed as a Class I facility based on City of Oakland Bicycle Master Plan - 2007.

Pros

- Use of proposed bicycle facilities where available based on City of Oakland Bicycle Master Plan - 2007
- Direct route if the path originates on the north side of the Creek
- Connectivity to the businesses in the south of the path leading to employment opportunities
- Could connect to Brookfield Village in the future
- Bridge across Creek can be an exciting feature

Cons

- Need to utilize an existing narrow sidewalk (part of San Francisco Bay Trail) on Hegenberger Road if the path originates on the south side of the Creek
- Crossing of Hegenberger Road (needs further analysis)
- Bridge across the San Leandro Creek may be expensive or environmentally challenging

6.2.2 Alternative 2C

This path originates at the trailhead and travels approximately 1,000 feet south to the intersection of Hegenberger Road and Airport Access Drive to take advantage of existing signalized crosswalks. However, the user will need to cross the street three times to get to the other side of Hegenberger Road. The path then travels north to the maintenance road entrance on the south side of the San Leandro Creek to connect to Alternative 2a. Class-II bicycle lanes are proposed on Hegenberger Road according to the City of Oakland Bicycle Master Plan - 2007.

Pros

- Uses proposed bicycle facilities
- Utilize existing crosswalks
- Traffic flow is relatively unaltered
- Potential near-term, low cost alternative

Cons

- Adds more than 2000 feet to the path creating an indirect route
- Need to utilize narrow sidewalks to get to the crossings

6.3 SEGMENT 3

Segment 3 is in the City of Oakland and runs from 98th Avenue to west of the railroad tracks and I-880 overpass. Similar to the previous segment, this segment has a maintenance road in the south that can be used to develop a trail, but crossing 98th Avenue is the challenge in this segment. Unlike the

FIGURE 6-1: SEGMENT-2 ALTERNATIVES

previous segment though, the existing signalized intersections, both north and south of the Creek are not more than 300 feet away. Alternatives discussed below explore the possibility of using these existing signalized crossings as well as creating a direct crossing at Airport Plaza to connect to the maintenance road in this segment. Connecting Columbia Gardens neighborhood (one of the Communities of Concern per MTC) to an alternative mode of transportation will be important. One of the alternatives discussed here explores the possibility of creating a route through this neighborhood. More details regarding existing conditions of Segment 3, as well as descriptions of relevant streets in this segment, can be found in Chapter 4 and Appendix A.

Alternative 3A-1

As with Segment 2, the main challenge in Segment 3 is the crossing at 98th Avenue to access the maintenance road on the south side of the San Leandro Creek. However, since the existing crosswalks are relatively close, the path is proposed to begin at the end of Alternative 2a and travel south (approximately 250 feet) along sidewalks to cross 98th Avenue at the Bigge Street intersection. The path then travels north (approximately 250 feet), to access the existing maintenance road.

The maintenance road in this section is nearly 15 feet wide and can easily accommodate a multi-use trail. However, a barrier will be needed between the San Leandro Creek and path for safety reasons since the channelized Creek in this segment is approximately 8 feet deep. The path is well shaded but will need landscaping on the south of the route to make it inviting and attractive for users.

Pros

- Relatively direct route
- Utilizes existing crosswalks
- Traffic flow is relatively unaltered
- Provides access to Airport Plaza
- Width of the maintenance road
- Shaded pathway

Cons

- Directness of route is compromised at the intersection
- Need to utilize narrow sidewalk to get to the 98th Avenue crossing
- Pedestrian upgrades such as high visibility crosswalk might be needed to allow for safe crossing of 98th Avenue
- Requires a barrier on the north side and landscaping enhancements on the south side of the proposed route

ALTERNATIVE 3A-2

This alternative is essentially a variation of Alternative 3a-1. It begins at the end of Alternative 2b and travels north (approximately 220 feet). It uses the existing crosswalk at the intersection of 98th Avenue and Empire Road to get to the other side of 98th Avenue. From there, it then travels south (approximately 350 feet) along the sidewalks to the entrance of the maintenance road at the south of the San Leandro Creek and connects to Alternative 3a-1.

Pros

- Relatively direct route
- Utilizes existing crosswalks
- Traffic flow is relatively unaltered

Cons

- Need to utilize narrow sidewalk to get to the crossings
- Pedestrian upgrades might be needed to allow for safe crossing of 98th Avenue
- Does not provide access to Airport Plaza
- Has to cross the Airport Parking driveway

ALTERNATIVE 3A-3

This alternative is essentially a variation of Alternative 3a-1. It begins at the end of Alternative 2a and uses a proposed crosswalk to get to the other side of 98th Avenue and connect to Alternative 3a-1.

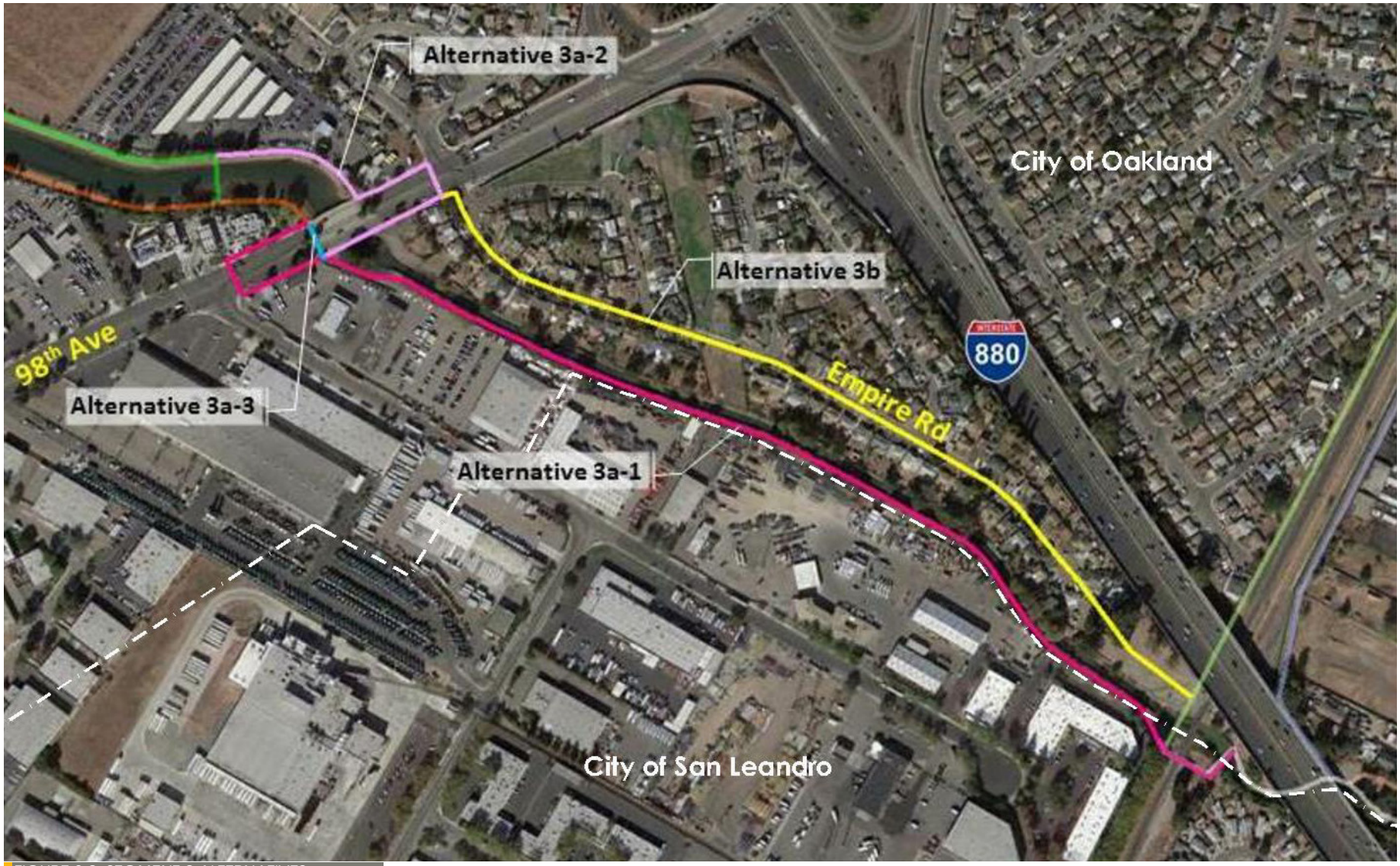


FIGURE 6-2: SEGMENT-3 ALTERNATIVES

Pros

- Directness of route
- Provides access to Airport Plaza

Cons

- Traffic flow might be altered since it is located close to the existing crossing
- Pedestrian upgrades will be needed to allow for safe crossing of 98th Avenue
- Too close to existing crossing

ALTERNATIVE 3B

The route picks up at the 98th Avenue crossing from Alternative 3a-2 and traverses along Empire Road. This is a 30-foot wide residential street with no sidewalks and parking on either sides of the street. The street provides access to the Columbia Gardens Park (refer to Figure 4-10). It is proposed that the path will be marked as a bicycle boulevard. The path travels east to the end of the cul-de-sac and uses an existing maintenance road to connect to Alternative 4e (described in the next segment alternatives).

Pros

- Connects to Columbia Gardens Park

Cons

- Limited right-of-way for pedestrian as well as bicycle facility
- Path passes through residential street that can only accommodate Class III, share-the-road facility

6.4 SEGMENT 4

Segment 4 is in the City of Oakland and runs from the west side of the railroad tracks and I-880 overpass to the west side of the existing Amtrak railroad tracks. This segment of the San Leandro Creek is relatively challenging compared to previous segments. There is an existing active railroad line located approximately 15 feet above the San Leandro Creek bed. A study of various alternatives discussed below has indicated that crossing the Creek and the railroad tracks in the west end of the segment is inevitable. The only way to avoid crossing the Creek is to utilize Alternative 3b along Empire Road in the previous segment and connect it to Alternative 4e that runs along the west side of the active railroad in Segment 4. As the railroad is above the Creek, an underpass is a good solution.

The segment has an existing maintenance road that runs along the Creek, although portions run below the top of the bank. There are two existing cut-through routes - one connecting 105th Avenue to Madison Park Academy, and the other connecting 105th Avenue to Capistrano Drive. A trail along the north side of Sobrante Park connects Madison Park Academy to Bergedo Drive. The alternatives have tried to use these opportunities, as well as to connect to places of interest such as Madison Park Academy, Sobrante Park, Sobrante Park Elementary School and Aspire Lionel Wilson College Preparatory Academy. It is important to note that this segment is in the neighborhood that is one of the Communities of Concern according to MTC, and providing alternative modes of transportation connecting various land uses will be beneficial to the community as a whole. More details regarding existing conditions of Segment 4, as well as descriptions of relevant streets in this segment, can be found in Chapter 4 and Appendix A.

6.4.1 ALTERNATIVE 4A

The path originates at the end of Alternative 3a-1. The west side of this segment has a railroad bridge crossing San Leandro Creek. The easiest way to get across the bridge is to develop the trail passage under the bridge crossing the San Leandro Creek and connecting to the maintenance road on the north side of the San Leandro Creek in Segment 4.

The discussions with authorities at Union Pacific Corporation have revealed that undercrossings have been allowed in the past, but such crossings must meet the clearances as outlined in their undercrossing guidelines. Additionally, a detailed hydrology study of the site will be required to determine the feasibility of building an undercrossing below the railroad bridge. Any undercrossing design would need to include a canopy above in order to protect trail users from debris falling from tracks. Discussion and approval will also be required

FIGURE 6-3: SEGMENT-4 ALTERNATIVES

from the Alameda County Flood Control and Water Conservation District. Once the San Leandro Creek and railroad are crossed, a maintenance path is available for trail development. However, as explained within the Existing Conditions section of this report, this path is below the top of the San Leandro Creek bank and any use or alteration of this path will need approval from Alameda County Flood Control and Water Conservation District. Another way of developing a trail over this maintenance path is by elevating the trail to street level so it is above the floodplain. However, this option will need significantly more capital investment in the project and will still need approval from Alameda County Flood Control and Water Conservation District.

Though Alternative 4a is a direct route, it might not work throughout the year if a flooding situation arises. An alternative path will need to be determined in the event of flooding.

Pros

- Directness of route
- Proximity to the San Leandro Creek
- Use of the existing maintenance path (If path is not elevated)
- Potential to program land under the highway for highest and best use
- Access could be created to Madison Park Academy and Sobrante Park

Cons

- Cost of infrastructure (if path is elevated)
- Building below top of the bank (if path is not elevated)
- Provision for alternative on-street path during flooding events

6.4.2 ALTERNATIVE 4B

Alternative 4b also requires crossing the San Leandro Creek and railroad. Alternative 4b picks up from Alternative 4a at the entrance of the existing maintenance road to the San Leandro Creek. The path travels on 105th Avenue for approximately 400 feet before it meets the existing cut-through access on the east. 105th Avenue has a 50 foot right-of-way and is a two-way street with five to six foot sidewalks, parking on both sides of the street, a speed limit of 25 mph and speed humps reducing the speed to 15mph. It is proposed that the portion of the street serving the path be retrofitted with bulb-outs, marked parking, or other appropriate traffic calming devices, and sharrows on the street.

The cut-through discussed earlier is 15 feet wide, and its conversion to a trail will provide a direct access to the Madison Park Academy. The path further continues east along the edge of school property and provides access to Sobrante Park and the Sobrante Park Elementary School. This portion of the path would use the school property and would require approval from the Oakland Unified School District. The Oakland Unified School District might have some safety and security issues, and an appropriate barrier between the school and the trail will be needed to address real and perceived danger to the students from strangers using the trail and have secured access to and from the school property.

As the route furthers, it connects to an existing path along Sobrante Park before traversing south on Bergedo Drive and east on Catron Drive. These streets are 48 and 40-foot wide roadways, respectively, with sidewalks and parking on both sides of the street. It is proposed that the portion of the street in Alternative 4b (approximately 1,700 feet in length) be retrofit with sharrows creating a Class III facility.

Existing access to the Creek maintenance road at the intersection of Acalanes Drive and Catron Drive is used to connect the path to Alternative 4a.

Pros

- Relatively direct route
- Provides access to schools and park
- Leads to cleanup and upgrading of cut-through and roadways
- Lower construction cost due to existing infrastructure

Cons

- Path passes through residential street that can only accommodate Class III, share-the-road facility

- Uses school property

6.4.3 ALTERNATIVE 4C

Similar to the previous alternative, this option sprouts from Alternative 4a at the maintenance road entrance in Segment 4 and traverses alongside an existing canal traveling northeast. A bridge will be needed to cross the Creek from the end of the proposed trail in Segment 3 to the canal. The path uses the existing 15 to 20-foot wide maintenance road on the east of the canal, north of the San Leandro Creek. This maintenance road stops just one block short of Edes Avenue. It is proposed that the route be continued alongside the railroad track until it reaches Edes Avenue. The path travels south on Edes Avenue and continues east along 105th Avenue until it crosses the railroad line. This portion of Edes Avenue and 105th Avenue are existing Class III bikeways (Refer to Figure 3-12: Bikeway Connectivity Map). The proposed route then traverses south along the railroad right-of-way to Davis Street. This portion of the path is proposed as a Class I multi-use trail. However, it should be noted that even though there is approximately 100 foot right-of-way along the railroad tracks, this is an active rail line. Current discussions show that this line is planned to be double tracked and there would likely not be space for a Class I bicycle facility.

Pros

- Uses existing maintenance roads
- Provides access to jobs on the east side of the railroad
- Uses existing signalized crosswalks at the intersections
- Uses existing at-grade railroad crossing

Cons

- Directness of route is compromised
- Will need a bridge over San Leandro Creek
- Will require approval from railroad (may be difficult)
- Will need pedestrian and bicycle safety improvements at intersection and railway crossing
- Portion of the path proposes on-road facility instead of off-road facility

6.4.4 ALTERNATIVE 4D

This path is essentially a variation of Alternative 4c. It picks up at Alternative 4b and continues north along 105th Avenue until it reaches Alternative 4c to further continue along that route. 105th Avenue is a two-way street with five-foot wide sidewalks, parking on either side of the street and a 25 mph speed limit. It is proposed that the portion of the street serving the path be retrofit with bicycle sharrows. There are 12 intersections along this stretch and pedestrian and bicycle safety improvements along with traffic calming improvements such as bulb-outs would need to be implemented along this alternative.

Pros

- Improvements and upgrading of neighborhood roadways might help build social-equity
- Provides access to some institutional uses including Aspire Lionel Wilson College Preparatory Academy

Cons

- Passes through residential street that can only accommodate Class III share-the-road facility
- Will require approval from railroad (may be difficult)
- Safety improvements are needed on 12 intersections along this route
- Majority of the path proposes on-road facility

6.4.5 ALTERNATIVE 4E

The path extends north from Segment 3. A bridge is proposed in order to cross the San Leandro Creek at this location and the path then runs along an active railroad track on the west side until it reaches an at-grade railroad crossing at Knight Street. This portion of the path is proposed as a Class I multi-use trail. However, it should be noted that even though there is approximately 100 feet of right-of-way along the railroad tracks, this is an active rail line and a trail next to it might not be allowed. Further discussions with the railroad authorities are needed to determine the feasibility of this option.

The route turns east on Knight Street to 105th Avenue, then continues east along an existing cut-through on the south side of Aspire Lionel Wilson College

Preparatory Academy all the way to Capistrano Drive. This cut-through is 15 to 20 feet wide and can be converted to a multi-use trail. It also connects to the Community Reformed Church. The path jogs along Capistrano Drive, Topanga Drive and El Paseo Drive before it intersects with Alternative 4b. These streets are residential streets and will only accommodate Class III shared facilities. It is proposed that these streets be converted into bicycle boulevards. Pedestrian improvements, such as curbed sidewalks (instead of rolled) and high visibility crosswalks and additional improvements can be included, if desired. This option intersects Alternative 4c and 4d in the north and can continue on these routes if opted.

Pros

- Lower construction cost due to existing infrastructure
- Provides access to schools, parks, Aspire Lionel Wilson College Preparatory Academy and Community Reformed Church
- Allows crossing of railroad tracks at existing at-grade intersection

Cons

- Path passes through residential street that can only accommodate Class III, share-the-road facility
- Runs along an active railroad line.
- Building bridge to cross the San Leandro Creek will lead to extra cost
- Requires upgrading of neighborhood roadways

6.5 SEGMENT 5

Segment 5 is in the Cities of San Leandro and Oakland, and runs from west of the Amtrak railroad to west of East 14th Street/ International Boulevard *(called International Boulevard in Oakland and East14th Street in San Leandro)*. The street is also State Route 185 (SR 185). This segment is one of the most complicated segments in terms of exploring alternatives. This is partly due to the fact that developments are very close to the Creek, and creating a trail on private properties, such as Creekside Park, multi-family housing, and commercial development in the east of the segment, might pose challenges and will need agreements between the owner and implementing agencies. A trail development through these areas might take time or may not be feasible. Therefore, a variety of on-street options have been explored that might work as final or interim routes.

The four alternatives discussed below suggest crossing the railroad tracks in the west of the segment. This is one of the biggest physical challenges in developing a trail in this segment. More detailed feasibility study will be required to further determine the nature of the crossing if one of these four alternatives is selected as a final alternative for proposed trail.

Alternative 5a explores the possibility of using an existing pedestrian trail in the Creekside Plaza development, as well as potential conversion of Dan Niemi Way to a pedestrian street, while Alternative 5d utilizes proposed East Bay Greenway Trail under the elevated BART tracks. There are a variety of commercial and institutional land uses along East14th Street and Davis Street that are connected using Alternatives 5g and 5e, respectively.

More details regarding existing conditions and land uses in Segment 5 as well as description of relevant streets in this segment, can be found in Chapter 4 and Appendix A.

6.5.1 ALTERNATIVE 5A-1

The route alignment through Segment 5 is the most complicated of all the segments. The biggest challenge is crossing the railroad tracks in the west of this segment. In order to not deviate greatly from the San Leandro Creek alignment, crossing of the railroad is proposed in Alternative 5a-1. However, a more detailed feasibility study will be required to further determine the nature of the crossing. Once across, the path path leaves below the bank facility and traverses on top of the bank. It uses the sidewalks along existing Creekside Park (linear park along the Creek in Cherrywood neighborhood). This linear park is owned by the Cherrywood Home Owner's Association (HOA) and is a private park. Using the sidewalks along the linear park to create a Class I multi-use trail would be ideal as it provides scenic views as well as connects to the neighborhood. However, it is possible that this might not be feasible due to ownership/ jurisdictional issues. Additional discussions will be needed with the Cherrywood HOA to implement this part of the route.

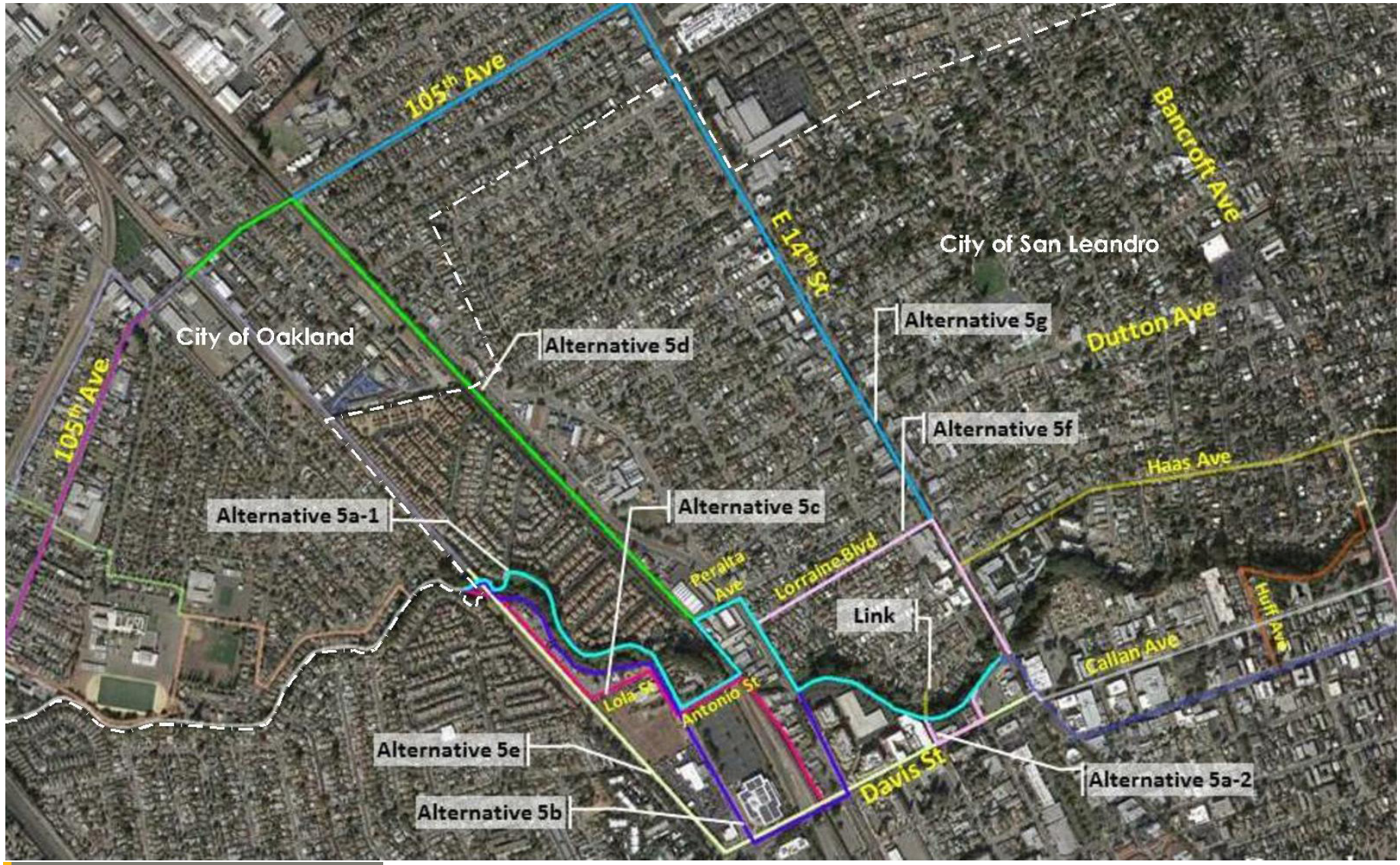


FIGURE 6-4: SEGMENT-5 ALTERNATIVES

The path travels south from the Creekside Park to Alvarado Street and turns east at Antonio Street. Sharrows on Alvarado Street and Antonio Street are recommended to accommodate bicyclists. Antonio street is a cul-de-sac street, and connecting to the BART right-of-way would require creating a path from the cul-de-sac to the BART right-of-way. There is an active railroad line below the BART right-of-way; however, the frequency of usage of these tracks is minimal and hence, it can be a viable trail route if developed on the west. An appropriate barrier between the tracks and multi-use trail will be necessary to make this facility safe. Additionally, the path utilizes the proposed East Bay Greenway route under the BART tracks, based on the Alameda Countywide Bicycle Plan - 2012. Discussions and approvals from railroad and BART authorities will be required.

The path then travels north along the railroad tracks under the elevated BART tracks to Peralta Avenue. There is an existing signalized railroad crossing at Peralta Avenue. The path would use this crossing to travel east on Peralta Avenue and south on San Leandro Boulevard until it meets the existing trail alignment in the Creekside Plaza development. Class II and Class III bicycle facilities are proposed on Peralta Avenue and San Leandro Boulevard, respectively, in this portion of the proposed route based on the San Leandro Bicycle and Pedestrian Master Plan - 2010 update.

Another way to reach from Creekside Park (a linear park in Cherrywood neighborhood) to San Leandro Boulevard is to utilize Raineer Center. The recommended path travels east from the linear park to the Raineer Center connecting to Peralta Avenue. Raineer Center is a cul-de-sac street but there is an existing pedestrian connection to Peralta Avenue. This connection could be utilized to create a relatively direct route to reach San Leandro Boulevard. It then travels south along San Leandro Boulevard to reach Creekside Plaza development. While this is a desired route compared to the route described in the previous paragraph, Raineer Center is a private property. Hence, discussions and approval from Cherrywood HOA as well as from the land owners in the Raineer Center, will be required to determine its feasibility.

The path would use the existing signalized crossing on San Leandro Boulevard at the Creekside Plaza development. The existing Creekside Plaza trail is an approximately 800-foot long pedestrian trail and provides scenic views of the San Leandro Creek. While the trail is private, it is open to the general public. There is space along this six-foot wide pedestrian trail for widening, in order to accommodate bicyclists. The Creekside Plaza development is very supportive of the proposed San Leandro Creek Trail project. However, discussions and approval from developers will be needed to widen the trail in order to convert it from pedestrian to multi-use trail.

The Creekside Plaza trail ends right before the multi-family development located at the intersection of Davis Street and Clarke Street. The development has land adjacent to the San Leandro Creek that has enough width to accommodate a multi-use trail, provided an agreement is reached with the owner of the property. While not a part of the proposed San Leandro Creek Trail project, the existing pedestrian footbridge adjacent to the multi-family development provides access to the residential neighborhood on the north side of San Leandro Creek. Additionally, it provides stunning views of San Leandro Creek. Additional study would be needed to determine if the bridge could accommodate bicyclists.

As the trail progresses east, it is proposed that the trail alignment be developed adjacent to San Leandro Creek, in keeping with the spirit of the project. This will require use of private property that belongs to the commercial development between Clarke Street and Dan Niemi Way. Currently, this land is used for parking. The City has a future plan to convert Dan Niemi Way between Davis Street and East 14th Street into pedestrian space. Depending on an agreement with the City of San Leandro, part of this proposed pedestrian space could be used to make up the lost parking by the aforementioned commercial development. A detailed feasibility study and agreement between property owner and the City will be required to implement this plan. Dan Niemi Way is a wide underutilized street that can accommodate a multi-use trail adjacent to San Leandro Creek before crossing East 14th Street.

Pros

- Use of existing or proposed bicycle facilities where feasible based on San Leandro Bicycle and Pedestrian Master Plan - 2010 Update and Alameda Countywide Bicycle Plan - 2012

- Provides access to various commercial and institutional land uses along San Leandro Boulevard and Davis Street.
- Path is in close proximity to the San Leandro Creek alignment
- Connects to existing pedestrian bridge at Clarke Street

Cons

- Proposes use of private property and passes through residential neighborhood
- Higher cost due to the construction of proposed railroad crossing
- Portion of the path proposes on-road facility instead of off-road facility

6.5.2 ALTERNATIVE 5A-2

This alternative is a slight variation of Alternative 5a-1. The path is proposed to jog around the commercial development north of Davis Street, between Clarke Street and Dan Niemi Way. The reason for this route is that it avoids the use of private property to develop a continuous trail. The San Leandro Bicycle and Pedestrian Master Plan - 2010 Update, proposes Class II bicycle lanes on Davis Street.

Pros

- Use of proposed bicycle facilities based on San Leandro Bicycle and Pedestrian Master Plan - 2010 Update
- Avoids the use of private property

Cons

- Interrupts a continuous scenic trail by creating a small jog in the alignment

6.5.3 ALTERNATIVE 5B

Similar to Alternative 5a-1, this alternative begins at the end of Alternative 4a. A crossing option will need to be further studied in order to cross the tracks and San Leandro Creek to land at the existing fire training facility property owned by the City of San Leandro. The proposed path traverses along the edge of the fire training facility along San Leandro Creek. It then travels south on Alvarado Street all the way until Davis Street before turning north on San Leandro Boulevard to join Alternative 5a-1 at the Creekside Plaza development. Alvarado Street has right-of-way of approximately 55 feet and one through lane on each side. A portion of this street has a walkable sidewalk on only one side of the street. Sidewalks for pedestrians and sharrows are recommended for this portion of the path. This recommendation complies with the San Leandro Bicycle and Pedestrian Master Plan- 2010 update. Discussion will be needed with the City of San Leandro to develop a trail along San Leandro Creek on fire training facility property in order to implement this part of the route.

The San Leandro Bicycle and Pedestrian Master Plan - 2010 Update, proposes Class II bicycle lanes on Davis Street, and has bicycle lanes on San Leandro Boulevard in this portion of the path. Intersection enhancements will be needed to make it safer for pedestrians and bicyclists to navigate this path.

Pros

- Uses Proposed Alameda Countywide Bicycle Plan (2012) East Bay Greenway Route under the BART tracks (Refer to Figure 3-12)
- Avoids residential neighborhoods
- Keeps the route relatively direct

Cons

- Higher cost due to the construction of proposed railroad and San Leandro Creek crossing
- Portion of the path proposes on-road facility instead of off-road facility

6.5.4 ALTERNATIVE 5C

The route starts at the end of Alternative 4a and is similar to Alternative 5b as it crosses the railroad tracks and San Leandro Creek to land on the east of the railroad tracks, south of San Leandro Creek. This is one of the most expensive options and will require a detailed feasibility study to determine the nature of the proposed crossing. Additionally, discussions with Alameda County Flood Control and Water Conservation District and railroad authorities and their approval will be needed to implement this option. The route traverses

south along the railroad and turns east on Lola Street until Alvarado Street. This will require passing through the fire training facility property owned by the City of San Leandro and bicycle/pedestrian improvements on Lola Street. It follows Alternative 5a-1 until it crosses the BART tracks. Unlike Alternative 5a-1 that turns north, this route travels south under the elevated BART tracks until it reaches Alternative 4c or 5b. Based on the Alameda Countywide Bicycle Plan (2012) East Bay Greenway Route, a Class 1 multi-use path is proposed under the BART tracks as a part of the proposed East Bay Greenway.

Pros

- Uses proposed Alameda Countywide Bicycle Plan (2012) East Bay Greenway Route under the BART tracks
- Avoids residential neighborhoods
- Keeps the route relatively direct

Cons

- Higher cost due to the construction of proposed railroad and San Leandro Creek crossing
- Portion of the path proposes on-road facility instead of off-road facility

6.5.5 ALTERNATIVE 5D

This alternative picks up on Alternative 4c and continues on 105th Avenue until it reaches the BART tracks. It takes advantage of the proposed East Bay Greenway Trail under the elevated BART tracks to travel south until it joins Alternative 5a-1/2 at Peralta Avenue. A portion of 105th Avenue in this option between Pippin Street and BART tracks is equipped with bicycle lanes. However, the rest of the street is narrow and will only be able to accommodate sharrows. Sidewalks in this entire section will need an upgrade and so will the crossings to make it pedestrian and bicycle friendly.

The path travels under the elevated BART tracks to Peralta Avenue. Based on the Alameda Countywide Bicycle Plan- 2012, a Class I multi-use path is proposed under the BART tracks as a part of East Bay Greenway Project.

Pros

- Use of existing or proposed bicycle facilities, where available, based on San Leandro Bicycle and Pedestrian Master Plan - 2010 Update and Alameda Countywide Bicycle Plan (2012) East Bay Greenway Route
- Provides access to various commercial and institutional land uses
- Avoids construction of crossing railroad tracks

Cons

- Very indirect
- Portion of the path proposes on-road facility instead of off-road facility
- Relatively monotonous feel of trail

6.5.6 ALTERNATIVE 5E

This alternative is an extension of Alternative 4c. Alternative 5e picks up at the end of 4c, crosses San Leandro Creek, and continuous south along the railroad right-of-way to Davis Street. Understandably, discussion and approval for use of railroad right-of-way will be needed from railroad authorities. The path travels east along Davis Street until it meets Alternative 6a or 6b in Segment 6 (described in subsequent section of this chapter). Class II bicycle lanes are proposed on this portion of Davis Street based on the San Leandro Bicycle and Pedestrian Master Plan - 2010 Update.

Pros

- Minimum disturbance to the residential neighborhoods
- Provides access to businesses on Davis Street, thus increasing potential for employment opportunities and connections
- Uses existing signalized crosswalks at the intersections
- Uses existing signalized railroad crossing

Cons

- Will need pedestrian and bicycle safety improvement at five intersections along its path
- Will need to cross San Leandro Creek

- Deviates from provision of trail facility to shared or separated use of roadway space at certain location
- Path does not traverse along the San Leandro Creek alignment

6.5.7 ALTERNATIVE 5F

Alternative 5f is a derivation of Alternative 5a-1. It picks up at the intersection of Lorraine Boulevard and San Leandro Boulevard and traverses east along Lorraine Boulevard until it reaches East 14th Street. It then traverses south along East 14th Street until it intersects with Alternative 5a-1.

Pros

- Provides access to businesses, institutional and recreational uses on East 14th Street, potential for employment opportunities and connections
- Uses existing signalized crosswalks at the intersections

Cons

- Path passes through residential street that can only accommodate Class III, share-the-road facility
- Will need pedestrian and bicycle safety improvement at six intersections along its path
- Portion of the path proposes on-road facility instead of off-road facility
- Path does not traverse along the San Leandro Creek alignment

6.5.8 ALTERNATIVE 5G

Alternative 5g is one of the longest route alternatives and also the farthest from the San Leandro Creek alignment. This alternative is an alteration of Alternative 5d and continues east along 105th Avenue until it reaches East 14th Street/ International Boulevard. At this point, it runs south to meet Alternative 5f. 105th Avenue, between International Boulevard and San Leandro Street, is proposed as a Class II facility based on City of Oakland Bicycle Master Plan (2007).

Pros

- Use of proposed bicycle facilities where available based on City of Oakland Bicycle Master Plan - 2007
- Provides access to businesses, institutional and recreational uses on East 14th Street, potential for employment opportunities and connections
- Uses existing signalized crosswalks at the intersections

Cons

- Path passes through residential street that can only accommodate Class III, share-the-road facility
- Will need pedestrian and bicycle safety improvement at numerous intersections along its path
- Portion of the path proposes on-road facility instead of off-road facility
- Path does not traverse along the San Leandro Creek alignment

6.6 SEGMENT 6

Segment 6 is in the City of San Leandro and runs from west of East 14th Street to west of Bancroft Street. There are several commercial and institutional land uses including San Leandro Main Library, Veterans Memorial Building and Memorial Park that could benefit from alternative transportation. Most of the parcels in this segment abut the Creek and in case of some areas, the Creek is part of their private property. This leaves no space for trail development. Hence, on-street alternatives are explored except in case of Alternative 6c which utilizes Memorial Park and Veterans Memorial Building. Alternative 6a utilizes existing bicycle lanes on Estudillo Avenue but it carries more traffic compared to Callan Avenue (Alternative 6b) which will require reconfiguration of lanes and parking to accommodate bicycle lanes. Haas Avenue (Alternative 6c) on the other hand passes through a residential neighborhood and can accommodate only a Class III shared facility, but connects the trail to the neighborhoods on the north side of the Creek and to the existing footbridge in the next segment.

More details regarding existing conditions and land uses in Segment 6, as well as description of relevant streets in this segment, can be found in Chapter 4 and Appendix A.

ALTERNATIVE 6A

The path can either begin at the end of Alternative 5a-1/2 or 5e. It travels south along East 14th Street and turns east on Estudillo Avenue. The portion of the path located on East 14th Street is proposed as a Class III facility based upon the San Leandro Bicycle and Pedestrian Master Plan - 2010 Update. Crossing at Chumalia Avenue will need to be appropriately enhanced to make it safer for pedestrians and bicyclists. The crossings at intersections with Davis Street/Callan Avenue and Estudillo Avenue are pedestrian friendly and highly visible. The intersections are well designed with pedestrian signals, ramps, and the sidewalks are designed to be wide, attractive plaza-like spaces making it inviting for pedestrians. However, in order to accommodate a bicycle facility higher than a Class III facility, more investigation is needed.

Estudillo Avenue currently has existing bicycle lanes and wide sidewalks all the way until the end of Segment 6. The path along Estudillo Avenue also connects various commercial and institutional land uses including the San Leandro Main Library. There are eight intersections along the way in this alternative and will need to be studied for pedestrian and bicycle safety enhancements.

This portion of the trail alignment provides access to numerous commercial and institutional land uses which in turn might increase job and educational opportunities for populations that are unable to afford cars.

Pros

- Use of existing or proposed bicycle facilities where available based on San Leandro Bicycle and Pedestrian Master Plan - 2010 Update
- Provides access to various commercial and institutional land uses including the Bancroft Middle School and San Leandro Main Library

Cons

- Might need pedestrian and bicycle safety improvements at eight intersections along its path
- Deviates from provision of Class-I multi-use trail facility to Class II and Class III on-road facility
- Path does not traverse along San Leandro Creek alignment

ALTERNATIVE 6B

The path picks up at the end of Alternative 5e at the Davis Street/Callan Avenue and East 14th Street intersection and runs east along Callan Avenue - a street with a 65 to 70-foot right-of-way and one through lane in each direction. Parts of this street have angular parking. The street can be reconfigured to accommodate eight-foot sidewalks, parking, bicycle lanes, and one through traffic lane in each direction. However, a detailed study will establish its feasibility. There are seven intersections along the way in this alternative and will need to be studied for pedestrian and bicycle safety enhancements.

Pros

- Provides access to various commercial and institutional land uses including Bancroft Middle School, Memorial Park and San Leandro Main Library

Cons

- Will need major reconfiguration of street right-of-way and pedestrian enhancements
- Existing angular parking might be compromised
- Might need pedestrian and bicycle safety improvements at seven intersections along its path
- Deviates from provision of Class-I multi-use trail facility to Class II and Class III on-road facility
- Path does not traverse along the San Leandro Creek alignment

ALTERNATIVE 6C

Alternative 6c originates from either Alternative 6a or 6b at Huff Avenue and travels north to the end of the street. It is proposed that this street be retrofitted with a Class III bicycle boulevard treatment. Pedestrian enhancements are needed at the intersection of Callan Avenue and Huff Avenue. An empty parcel belonging to the Alameda County Flood Control and Water

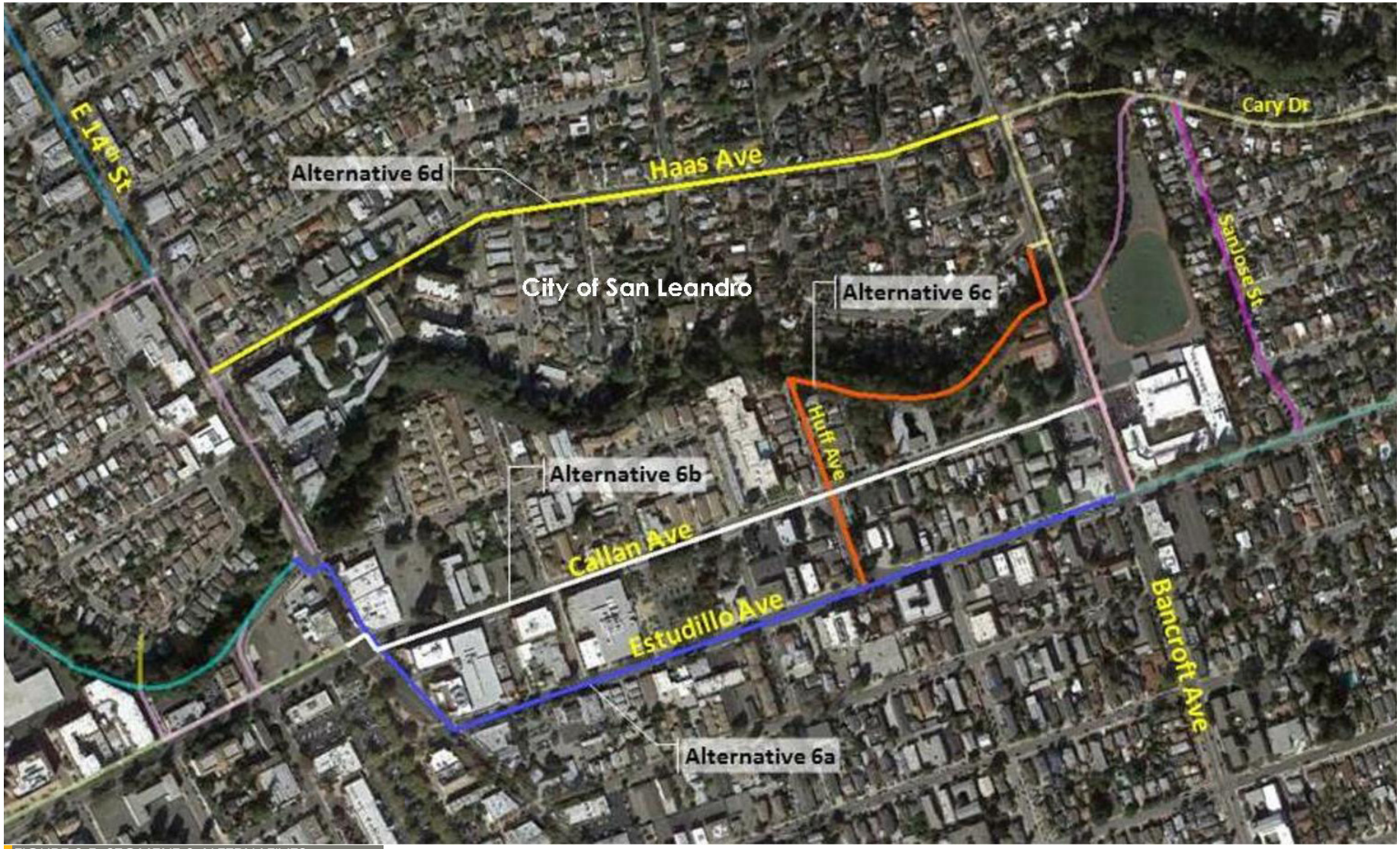


FIGURE 6-5: SEGMENT-6 ALTERNATIVES

Conservation District at the end of Huff Avenue on the east side of the street can accommodate a trail. It is proposed that the trail continue east and will need to use private property before it reaches Memorial Park. The multi-family development has ample space to accommodate a trail provided an agreement is reached with the property owner. The path continues east along the edge of Memorial Park and behind the Veterans Memorial Building.

The path travels north along Bancroft Avenue with Class II bicycle lanes to cross at the Lee Avenue intersection where it joins Alternative 7b (described in the next section).

Pros

- Provides access to Bancroft Middle School, Memorial Park and Veterans Memorial Building
- Traverses along the Creek alignment for the majority of the route

Cons

- Proposes use of private property and passes through residential neighborhood that can only accommodate Class III facility
- Portion of the path proposes on-road facility

ALTERNATIVE 6D

Alternative 6D starts at Haas Avenue, a residential street, and traverses east until it reaches the end of the segment. It joins Alternative 7b in the next segment and takes advantage of the existing footbridge in this segment. A Class III facility is proposed on Haas Avenue based on San Leandro Bicycle and Pedestrian Master Plan - 2010 Update.

Pros

- Enables connection to the existing foot bridge
- Use of proposed Class III bicycle facilities where available based on San Leandro Bicycle and Pedestrian Master Plan - 2010 Update

Cons

- Path passes through residential street that can only accommodate Class III, share-the-road facility
- Deviates from provision of trail facility to shared or separated use of roadway space
- Path does not traverse along the San Leandro Creek alignment

6.7 SEGMENT 7

Segment 7 is in the City of San Leandro and runs from west of Bancroft Avenue to west of the I-580 overpass. Connectivity to Bancroft Middle School is most important in this segment and all alternatives explored here suggest some degree of connection to the school. The alternatives discussed here are in direct response to the alternatives suggested in Segment 6. Similar to the previous segment, existing bicycle lanes are used in Alternative 7a, while Alternative 7b traverses along residential neighborhood streets allowing for Class III facility but connects to the existing footbridge. Alternative 7c traverses along the Creek utilizing school property and therefore, concerns regarding type of barrier, and safety and security of the students will need to be discussed with the San Leandro Unified School District. It is a partial route that connects to other alternatives to cover the entire segment. There are commercial land uses in the east of the segment and both Alternatives 7a and 7c connect to these land uses.

More details regarding existing conditions and land uses in Segment 7, as well as description of relevant streets in this segment, can be found in Chapter 4 and Appendix A.

ALTERNATIVE 7A

The proposed route traverses east along Estudillo Avenue. Estudillo Avenue currently has existing bicycle lanes and wide sidewalks all the way until the end of Segment 7. No major changes are required in this section except at the intersections that might need to be enhanced with pedestrian and bicycle safety features. These enhancements will need to be more pronounced around Bancroft Middle School. The path provides access to commercial and institutional land uses especially at the bookends of the segment.

FIGURE 6-7: SEGMENT-8 ALTERNATIVES

Pros

- Lower cost due to the use of existing bicycle facilities
- Path does not use private property
- Provides access to various commercial and institutional land uses including Bancroft Middle School

Cons

- Path does not traverse along San Leandro Creek
- Cost of upgrading the intersection with pedestrian enhancements and safety
- Proposed path is developed as an on-road facility

ALTERNATIVE 7B

Alternative 7b can originate at one of the three locations depending on the alternative chosen in Segment 6. Depending on the alternative it connects to from Segment 6, one or more crossings along Bancroft Avenue will need to be studied for pedestrian and bicycle safety. These are crossings at Estudillo Avenue, Callan Avenue and Lee Avenue.

The path travels north along Bancroft Avenue with Class II bicycle lanes until it reaches Haas Avenue. It then traverses east on Haas Avenue to continue on an existing pedestrian bridge that also offers beautiful views of San Leandro Creek. The bridge leads to Cary Avenue on the south side of San Leandro Creek. The path traverses east along Cary Drive, Rodney Drive and Collier Drive before it joins Alternative 7a. These are residential streets with sidewalk, parking and through traffic lanes in each direction. A Class III facility is proposed along with pedestrian enhancements at the intersections.

Pros

- Path uses existing bicycle facilities
- Path does not use private property
- Provides access to Bancroft Middle School

Cons

- Directness of path is compromised
- Path does not traverse along San Leandro Creek
- Path passes through residential street that can only accommodate Class III, share-the-road facility
- Proposed path is developed as an on-road facility

ALTERNATIVE 7C

Similar to Alternative 7b, Alternative 7c also originates from one of the three locations depending on the alternative chosen in Segment 6. Depending on the alternative it connects to from Segment 6, one or more crossings along Bancroft Avenue will need to be studied for pedestrian and bicycle safety. These are crossings at Estudillo Avenue, Callan Avenue and Lee Avenue.

The path travels either north or south depending on the alternative it originates from traveling along Bancroft Avenue with Class II bicycle lanes until it reaches the Bancroft Middle School property just south of the San Leandro Creek. It is proposed that the trail be developed along the edge of Bancroft Middle School south of the San Leandro Creek all the way until it reaches Cary Drive to join Alternative 7b. This trail will also pass through the empty property belonging to the school district, north of the school. Discussions with school district and their approval will be needed. There might be some safety and security issues that will need to be dealt with.

Pros

- Path traverses along San Leandro Creek
- Provides access to Bancroft Middle School

Cons

- Uses school property
- Portion of the path proposes on-road facility

ALTERNATIVE 7D

Alternative 7d creates a connection between Alternative 7b and Alternative 7a utilizing San Jose Street - a 38-foot wide residential street with sidewalks on either sides of the roadway. A bicycle boulevard will be an appropriate facility on this roadway. The street provides access to Bancroft Middle School.

Pros

- Provides access to Bancroft Middle School

Cons

- Path passes through residential street that can only accommodate Class III, share-the-road facility
- Path proposes on-road facility
- Unsignalized intersection at Estudillo Avenue

ALTERNATIVE 7E

Alternative 7e begins at the intersection of Bridge Road and Collier Drive and traverses east to I-580. The alternative suggests the use of the Creek alignment under the freeway to get to the other side of the freeway. Currently, it seems that there is enough head-space to do the same, but a detail engineering study is needed to validate its feasibility.

Pros

- Avoids traffic below the I-580
- Directly connects to Alternative 8b

Cons

- Might be an expensive option

6.8 SEGMENT 8

Segment 8 is the last segment of the project and is in the City of San Leandro and Oakland. It runs from west of the I-580 overpass to Chabot Park. Two alternatives are proposed for this segment and both traverse via residential neighborhoods allowing for a Class III facility. While Alternative 8a is a more direct route compared to Alternative 8b and has existing sharrows marked on the street, Alternative 8b connects to the Sheffield Village Recreational Center. However, this alternative would use private property on three parcels owned by US Bank.

More details regarding existing conditions and land uses in Segment 8 as well as description of relevant streets in this segment can be found in Chapter 4 and Appendix A.

ALTERNATIVE 8A

As with Segment 7, it is proposed that the path continue east along Estudillo Avenue all the way until the entrance of the Lake Chabot Regional Park. The bicycle lanes on Estudillo Avenue end right before the I-580 underpass and the character of the road changes to a purely residential street on the east of I-580. However, there are sharrows on this portion of Estudillo Avenue, and it is recognized by the City of San Leandro as a Class III facility. Continuous sidewalks are missing on this residential street. Reconfiguring this street with sidewalks and traffic calming techniques, as well as crossing enhancements will be essential to implement this path.

Pros:

- Lower cost due to the use of existing bicycle facilities
- Provides access to Lake Chabot Regional Park

Cons:

- Path does not traverse along San Leandro Creek
- Path passes through residential street that can only accommodate Class III, share-the-road facility
- Limited right-of-way likely to limit facilities and users
- Proposed path likely to be developed as an on-road facility

FIGURE 6-7: SEGMENT-8 ALTERNATIVES

ALTERNATIVE 8B

Alternative 8b starts at Alternative 8a and traverses north on Benedict Drive until it reaches Marlow Drive in the City of Oakland. It then traverses east along Marlow Drive for approximately 1,700 feet until it reaches the Sheffield Village Park. This is also access to Sheffield Village Recreational Center. A multi-use trail will need to be carved through this area to reach Lake Chabot Regional Park.

Pros:

- Provides access to Sheffield Village Recreational Center
- Provides access to Lake Chabot Regional Park

Cons:

- Path does not traverse along San Leandro Creek
- Directness of route is compromised
- Path utilizes private commercial property (US Bank)
- Path passes through residential street that can only accommodate Class III, share-the-road facility
- Limited right-of-way likely to limit facilities and users
- Proposed path likely to be developed as an on-road facility

7 FINAL RECOMMENDED ROUTE

7.0 FINAL RECOMMENDED ROUTE 7-3

7.0 FINAL RECOMMENDED ROUTE

As documented in Chapter 6 of this report, a variety of alternatives were studied and pros and cons for each alternative were looked at in detail. Discussions were held with various agencies to understand feasibility based on jurisdictional restrictions. Public opinion was considered and professional judgment was applied. The final alignment for the San Leandro Creek Trail is a result of a variety of factors listed below:

- Physical feasibility of trail construction (space availability, slope, traffic)
- Nearness to the San Leandro Creek alignment
- Jurisdictional regulations and restrictions
- Environmental impact
- Public land availability
- Public support and opposition

The chapter focuses on the final recommended alignment for the trail as well as alternative routes that are equally good options in case the first alternative is not feasible. This could be due to various reasons revealed during the engineering design stage, jurisdictional issues, or funding availability. It is also understood that certain sections, such as those with railroad crossings or along certain roads, might be more challenging than others and might take longer to implement. Other alignments may require additional work with the residents to determine if going forward is in the best interest of the community. Hence, interim routes are proposed until the final route is implemented in these sections.

Figure 7-1 shows the final route as well as interim routes. These routes are further explained in the next section of this chapter. The final path uses the alternatives from the previous chapter. However, in some instances alternatives are fused together to create a new alternative for that segment.

Figure 7-2 gives a snapshot of the type of bicycle facility that will be provided ranging from Class I multi use trails to Class IV cycle tracks. Details about each facility type can be found in Chapter 5 - BEST PRACTICES.

Segment descriptions in this chapter also discuss the opinion of probable cost (capital cost only) for implementation of trail in that segment. This includes all Class I, Class II, Class III, and Class IV facilities, bridges, and railroad overpasses. These are color-coded to match the map and show final recommended routes, long-term solutions and interim routes if suggested for the segment. The probable cost for the entire final alternative is approximately $21 Million. ($8.5 Million - City of Oakland and $12.5 Million - City of San Leandro). Overall opinion of probable cost is provided in Table 7-1.

City	Segment	Final Recommended Route	Long-term Solution	Intereim Alternative	Total
City of Oakland	Segment-2	$973,485		$218,371	$1,191,856
	Segment-3	$1,369,413	$50,000		$1,419,413
	Segment-4	$3,823,106	$2,042,614		$5,865,720
Cost of Proposed Trail - Oakland Section					$8,476,989
City of San Leandro	Segment-5	$2,895,241	$4,677,367	$45,303	$7,617,912
	Segment-6	$670,691	$741,288		$1,411,979
	Segment-7	$615,057	$954,261		$1,569,318
	Segment-8	$248,011	$1,692,462		$1,940,473
Cost of Proposed Trail - San Leandro Section					$12,539,683
Total Cost					$21,016,671

TABLE 7-1 OVERALL OPINION OF PROBABLE COST

7.1 RECOMMENDED TRAIL ROUTE

7.1.1 SEGMENT 1 SAN FRANCISCO BAY TO TRAILHEAD

Segment 1 has a well-developed and well-used trail on both sides of San Leandro Creek in the City of Oakland. This trail is part of the existing San Francisco Bay Trail and the proposed final route recommends the use of the existing trail. As stated in the previous chapter, the pavement might be in need of minor repairs and the trail could benefit from additional landscaping. In addition, the trail is recommended to continue through the existing parking lot for the trailhead. Roadway sharrows are recommended in this parking lot. Branding and wayfinding is also recommended for this area to highlight the San Leandro Creek Trail.

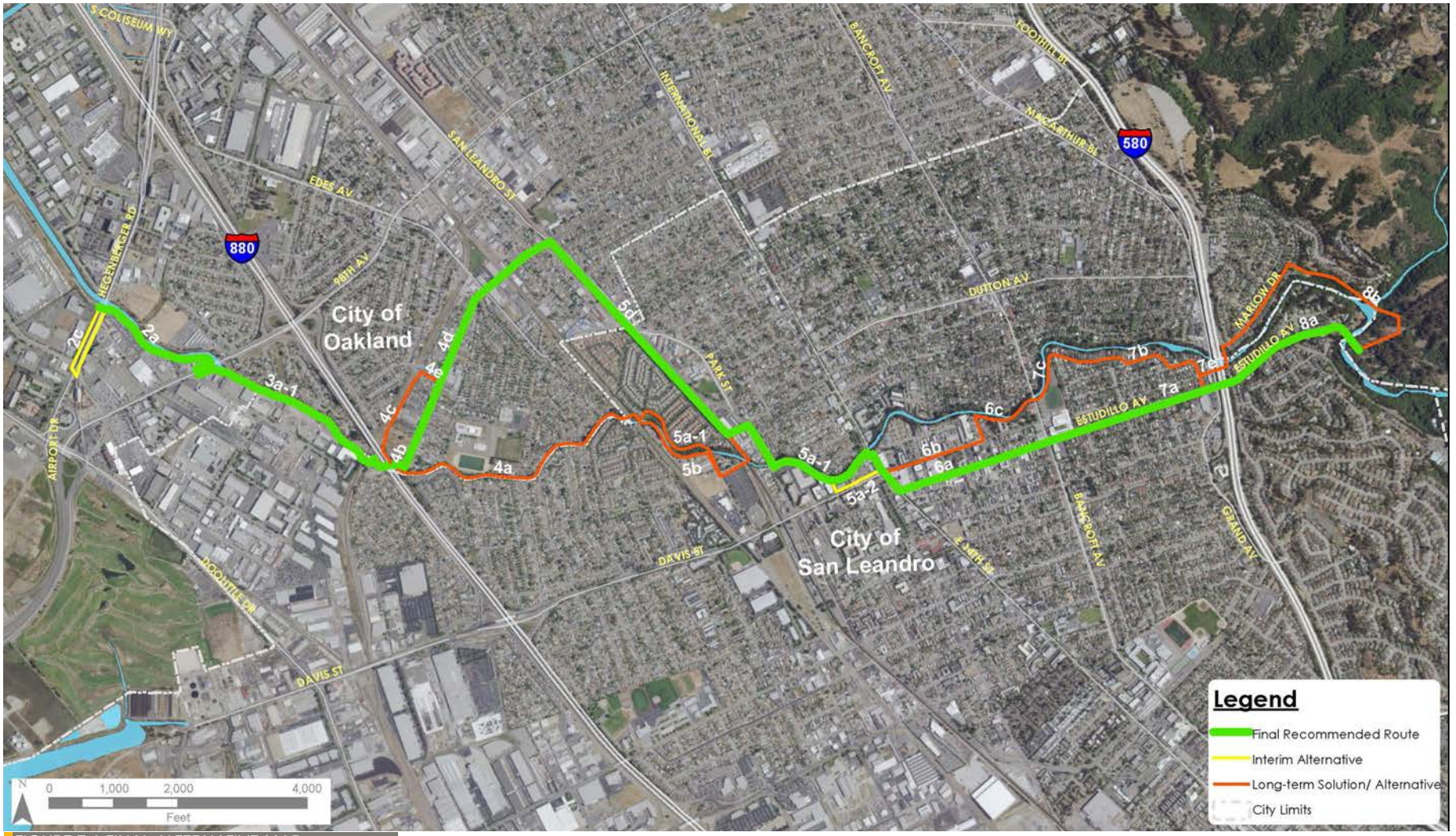


FIGURE 7-1 FINAL ALTERNATIVE MAP

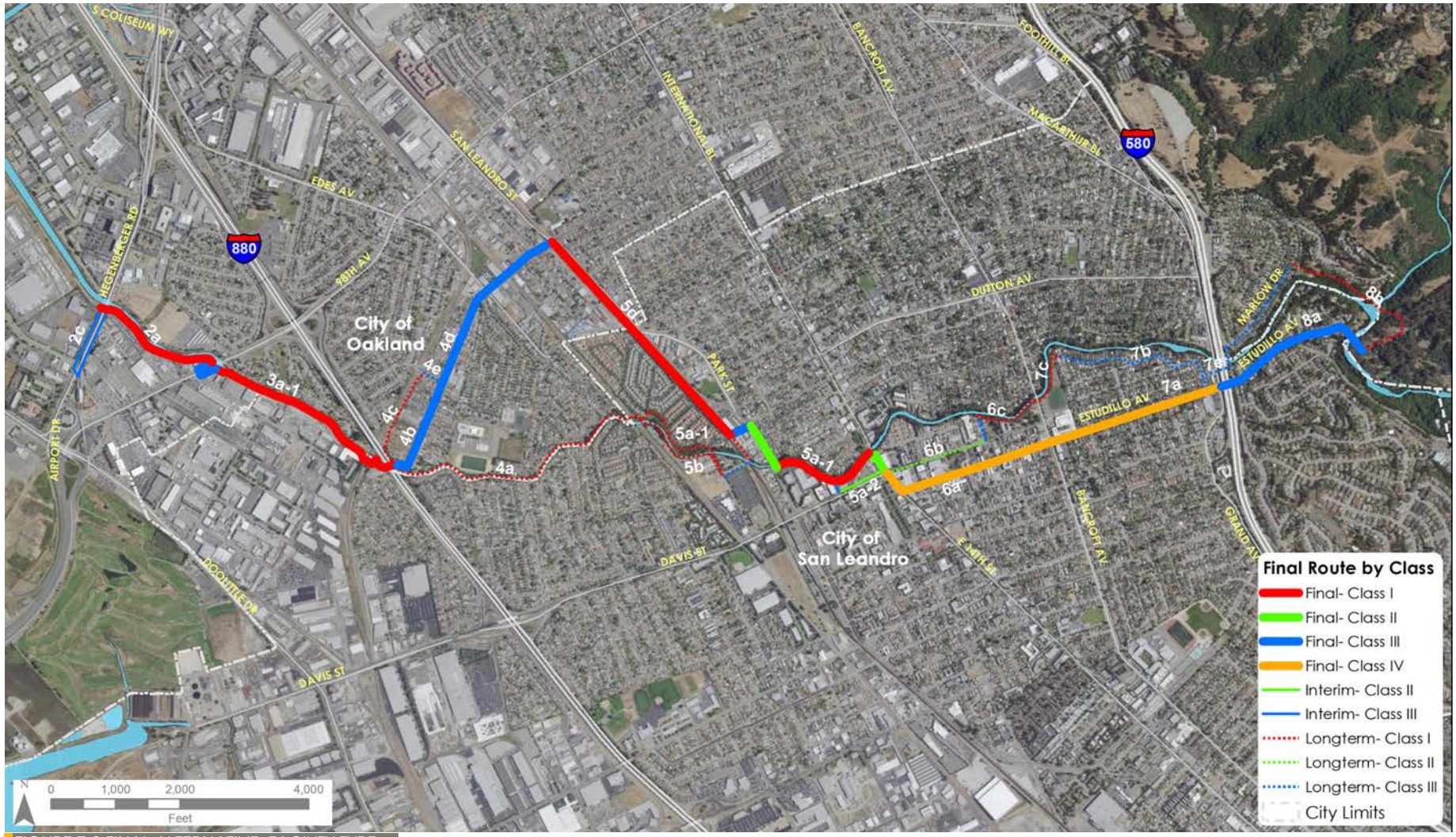


FIGURE 7-2 FINAL ALTERNATIVE FACILITY TYPE

7.1.2 SEGMENT 2 HEGENBERGER ROAD TO 98TH AVENUE

As previously discussed, crossing Hegenberger Road safely is the biggest challenge in this segment in the City of Oakland. Three alternatives were discussed in Chapter 6. The most preferred alternative is Alternative 2a as this is the most direct route and avoids using an on-street facility. However, to make this alternative feasible a new signalized intersection will be needed to cross this high-volume/high-speed roadway. The introduction of a new signalized intersection could affect the flow of traffic. On the other hand, while Alternative 2b uses an existing three-legged intersection at Leet Drive, it will need to be converted to a signalized intersection. The overall impact on traffic flow will not be much different from Alternative 2a. Additionally, Alternative 2a provides direct access to businesses at the Airport Plaza which could be designed to become a trailhead. Alternative 2b which runs on the north side of the Creek will need a bridge to connect to Airport Plaza. This would make it a more expensive option compared to Alternative 2a.

Alternative 2c is the most indirect route of the three. While it uses existing signalized crossings, one will have to utilize either the sidewalks or on-street facility to get to the intersection at Airport Access Road. Being a high-speed/ high-volume roadway, this option might not be perceived as safe as the other alternatives discussed previously. However, it can be used as an interim solution until the intersection suggested for Alternative 2a is implemented.

Hence, considering the outreach results, safety, directness of route, connectivity to business and capital costs of the alternatives Alternative 2a is preferred over Alternatives 2b and 2c. This alternative will require coordination with the City of Oakland and may require a traffic study for a new signal across Hegenberger Road. The segment will also require coordination with Alameda County Flood Control District and Army Corps of Engineers due to the proximity to the Bay.

7.1.2.1 SEGMENT 2- OPINION OF PROBABLE COST

Table 7-2 gives an opinion of cost for the final recommended route for Segment 2 discussed above. The interim solution using Alternative 2c is also shown here.

SEGMENT- 2 FINAL RECOMMENDED ROUTE - OPINION OF PROBABLE COST						
Route	**Length (feet)**	**Length (miles)**	**Limits**	**Class**	**Cost/Mile**	**Cost of Segment**
2a	2,056	0.39	Creek between Hegenberger Road and 98th Avenue	Class I	$ 2,500,000	$ 973,485
Final Recommended Route - Opinion of Cost						**$ 973,485**

SEGMENT-2 INTERIM ROUTE - OPINION OF PROBABLE COST						
Route	**Length (feet)**	**Length (miles)**	**Limits**	**Class**	**Cost/Mile**	**Cost of Segment**
2c	2,306	0.44	Hegenberger Road south of the San Leandro Creek	Class III	$ 500,000	$ 218,371
Interim Alternative Cost						**$ 218,371**

TABLE 7-2 SEGMENT 2 OPINION OF PROBABLE COST

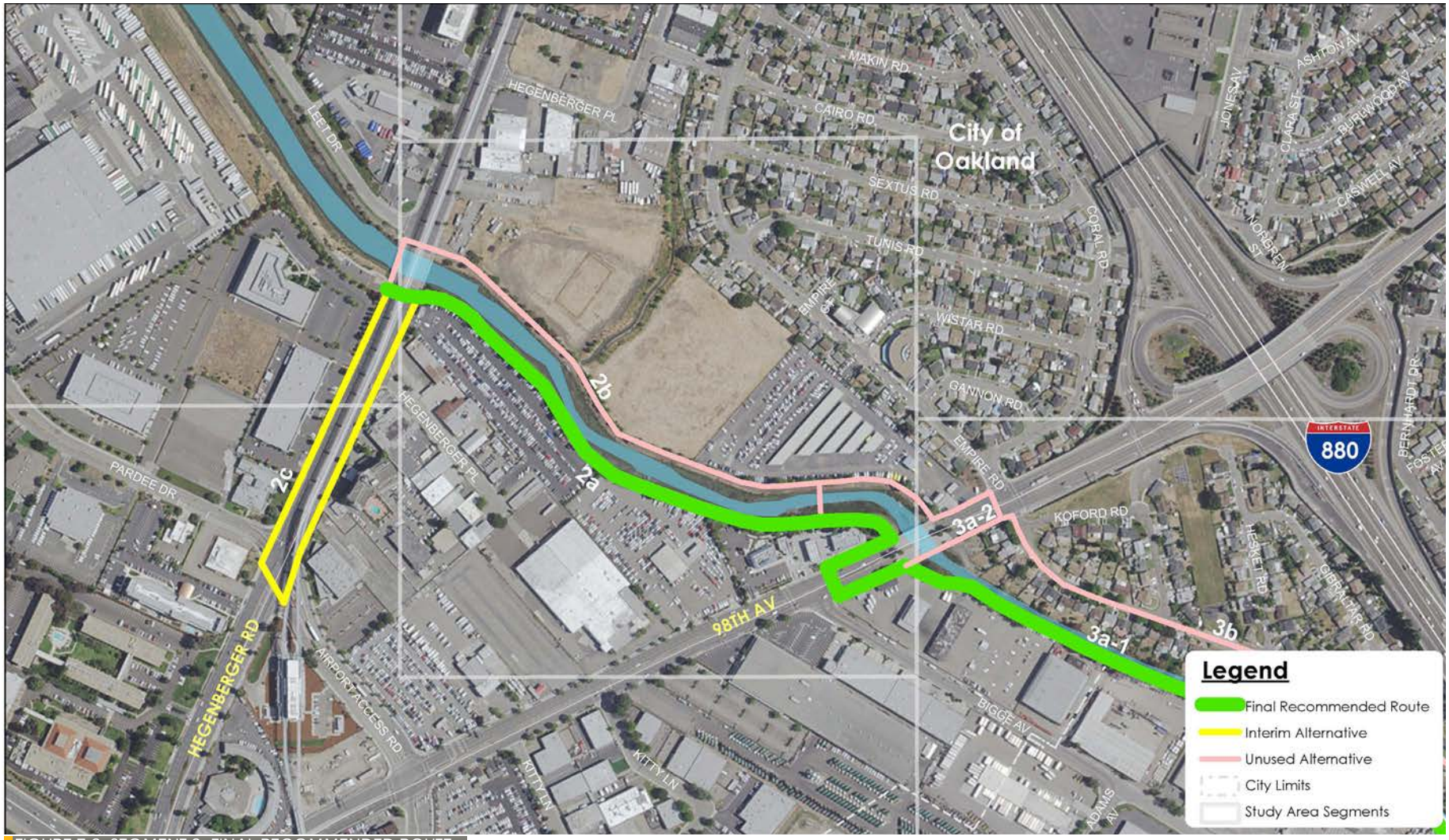


FIGURE 7-3: SEGMENT 2- FINAL RECOMMENDED ROUTE

7.1.3 SEGMENT 3 - 98th AVENUE to RAILROAD/ I-880

Two Alternatives are explored for Segment 3 in the City of Oakland. There are two challenges in this section

- Crossing 98th Avenue
- Connecting the Columbia Gardens neighborhood

Alternative 3a is the only off-street option along the Creek and utilizes an existing maintenance road. It has two variations 3a-1 and 3a-2 and explores two different locations to cross 98th Avenue - a high- speed/high-volume roadway at existing signalized crossings. Alternative 3a-1 is recommended as the final route as it provides a direct access to Airport Plaza and connects to the preferred alternative from Segment 2. This was also the preferred option based on the public engagement results discussed in Chapter 2.

Alternative 3b passes through Columbia Gardens neighborhood and establishes direct connectivity. However, the street has no sidewalks and very limited right-of-way and will not be able to accommodate a pedestrian facility. The bicycle facility would be a Class III shared facility compared to Class I facility in Alternative 3a. A bridge connection could be provided from Alternative 3a (multi-use trail along the Creek) to Columbia Gardens Park to connect the proposed trail to the neighborhood.

Alternative 3a-1 is recommended as the final route for this segment and a bridge connection to Columbia Gardens Park is a long-term recommendation. A before and after photo simulation for a Class I trail in this segment is shown in Figure 7-4. The segment will also require coordination with Alameda County Flood Control District.

7.1.3.1 SEGMENT 3 - OPINION OF PROBABLE COST

The Table 7-3 gives an opinion of probable cost for the final recommended route discussed above. A bridge from the proposed trail to Columbia Gardens Park is shown a long-term solution.

SEGMENT 3 FINAL RECOMMENDED ROUTE - OPINION OF PROBABLE COST

Route	Length (feet)	Length (miles)	Limits	Class	Cost/Mile	Cost of Segment
3a-1	601	0.11	This segment crosses 98th Avenue parallel to the Creek	Class III	$ 500,000	$ 56,913
3a-1	2,772	0.53	Creek from 98th Avenue to the train tracks near the I-880 freeway	Class I	$ 2,500,000	$ 1,312,500
			Final Recommended Route - Opinion of Cost			**$ 1,369,413**

SEGMENT 3 LONG-TERM SOLUTION - OPINION OF PROBABLE COST

Route	Length (feet)	Length (miles)	Limits	Class	Cost/Mile	Cost of Segment
3a-1	20		10 foot wide bridge connecting trail to Columbia Gardens Park	Class I	50,000 (Lump sum Cost)*	$ 50,000
			Final Long-term Solution - Additional Cost			**$ 50,000**

* Note: Assumes construction with the rest of the segment. If constructed later the cost could be considerably higher.

TABLE 7-3 SEGMENT 3 OPINION OF PROBABLE COST

FIGURE 7-4 SEGMENT 3- BEFORE AND AFTER

FIGURE 7-5: SEGMENT 3- FINAL RECOMMENDED ROUTE

7.1.4 SEGMENT 4: RAILROAD / I-880 TO AMTRAK RAILROAD

All alternatives suggested for Segment 4, and that connect to the final recommended route in Segment 3, would require an underpass for the trail under the existing railroad tracks on the west side of this segment in the City of Oakland. As stated in the previous chapter under section 6.4.1, Union Pacific Corporation would likely allow the railroad undercrossing as long as the crossing meets the clearances as outlined in their undercrossing guidelines. Hydrology of the site would also need to be reviewed and any underpass design would need to have a protected canopy above it to protect trail users from debris falling from tracks.

Alternative 4a, running along the Creek and using the existing maintenance road, is the preferred route in this segment based on the public engagement process and desire to be near the Creek. A before and after photo simulation for a Class I trail in this section is shown in Figure 7-6.Another concern is that the maintenance road is located below top of bank, only two to three feet above the Creek. During flooding an alternate route will be necessary to provide connectivity year-round. As the route would require a seasonal alternative to flooding, it is recommended as a long-term alternative to give time for additional community engagement. The proposed final route explained in the next paragraph will also be able to act as an alternate route during flooding events.

The recommended final route in Segment 4 utilizes a combination of Alternatives 4a, 4b, 4c and 4d (as shown in Figure 7-7). The route uses Alternative 4a to cross the railroad tracks on the west side of Segment 4 and connects with Alternative 4b. The path traverses north on 105th Avenue, and then connects to Alternative 4c at Edes Avenue. This route utilizes the existing signalized intersection at Edes Avenue to connect with the final route in the next segment. The route could also serve as an alternate route for high water events since the long-term Alternative 4a located in the creek channel, below the bank facility. Although this route is farther from the Creek, it uses existing roadway infrastructure and public property.

Most of the final recommended route in Segment 4 is on 105th Avenue, which is a residential street with a speed limit of 25 mph (15mph at speed humps) and a 36 foot pavement width. Since the pavement width includes one travel lane and parking in each direction, this street would accommodate a Class III share-the-road facility. A bicycle boulevard is recommended on this street. The street has 12 intersections and would require traffic-calming improvements such as bulb-outs and mini traffic circles to encourage motorists to reduce vehicle speeds and enhance safety for bicyclists and pedestrians.

A potential enhancement is to utilize an existing maintenance road parallel and northwest of 105th Avenue (Alternative 4c). This alternative would provide a Class I path between the Creek trail and Knight Street, and further connect to 105th Avenue (Alternative 4d).

Alternatives 4b, 4e and 4c are utilized in parts to create the final route but not in their entirety. Even though Alternative 4b connects to Madison Park Academy and Sobrante Park, it is not recommended, since it utilizes school property and could create safety issues. Additionally, it would finally connect to Alternative 4a, which is established as a long-term alternative and would require a further study where the trail crosses the railroad tracks on the east end of this segment. Furthermore, Alternative 4a can connect to both the school and park while creating a Class 1 facility.

Alternative 4e from the north side of the Creek to Knight Street uses the railroad right-of-way. This is an active rail line and based on discussions with Union Pacific Corporation, trails running next to the active railroad will not be permitted in this area. Therefore, this alternative is not recommended. Further it only reaches halfway through the segment and connects to Alternative 4b and Alternative 4a. Thus, in order to traverse from east to west using Alternative 4e would mean using Alternatives 4b and 4a as well. Hence, the argument of 4a being a long-term solution will also hold true as a reason for not selecting this option.

Under Alternative 4c, the maintenance road ends one block south of Edes Avenue, and the route would require running next to an active railroad line in order to reach Segment 5. As specified earlier, according to the Union Pacific Corporation, trails running next to the active railroad will not be permitted,

FIGURE 7 6: SEGMENT 4- BEFORE AND AFTER

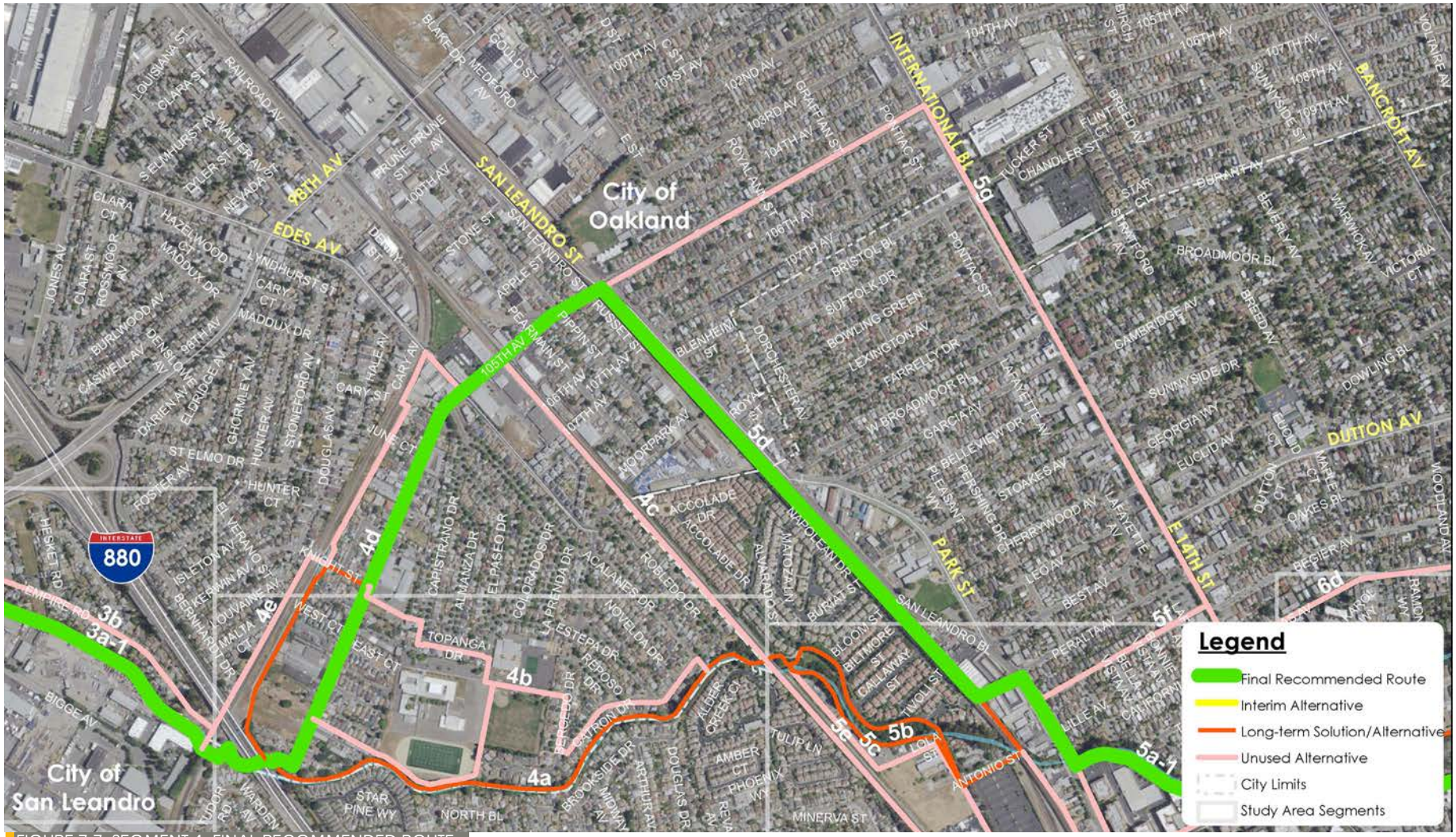


FIGURE 7-7: SEGMENT 4- FINAL RECOMMENDED ROUTE

and therefore, this alternative is not recommended.

This segment will require coordination with Union Pacific Corporation, to obtain the permission for an underpass. It will also require coordination with the City of Oakland, and may require traffic studies to determine if any mitigation or improvements are necessary along the recommended roadways. The long-term alternative may require additional coordination with Water Quality Control Board due to construction below top-of-the-bank. However, preliminary conversations with the staff have indicated that existing service roads are an "existing condition," so using those as a multi-use trail should not cause a problem.

7.1.4.1 SEGMENT 4 - OPINION OF PROBABLE COST

Table 7-4 gives an opinion of probable cost for the final recommended route discussed above as well as additional cost required to implement the long-term solution. The final recommended route is relatively expensive due to the construction of an underpass. Also traffic calming improvements are proposed on 105th Avenue.

The long-term solution, either Alternative 4a or 4c, can be used based on the results of a detailed feasibility analysis of an underpass in the west side of Segment 5 as well as consensus established to implement Alternative 4a along the Creek.

SEGMENT-4 FINAL RECOMMENDED ROUTE- OPINION OF PROBABLE COST

Route	Length (feet)	Length (miles)	Limits	Class	Cost/Mile	Cost of Segment
4a	-	-	Railroad Underpass/ Intersection of 880 freeway	Class I	-	$ 2,500,000
4a	599	0.11	Creek crossing over the railroad and under 880 freeway	Class I	$ 2,500,000	$ 283,617
4b	547	0.10	105th Avenue from 880 freeway to cut-through connecting school	Class III	$ 500,000	$ 51,799
4d	2,659	0.50	105th Avenue from cut-through to Edes Avenue	Class III	$ 500,000	$ 251,799
4c	379	0.07	105th Avenue from Edes Avenue to train tracks	Class III	$ 500,000	$ 35,890
4b, 4c and 4d			Traffic Calming Improvements on 105th Ave- 12 intersections			$ 700,000
			Final Recommended Route- Opinion of Cost			**$ 3,823,106**

SEGMENT-4 LONG-TERM SOLUTION-ALTERNATIVE 4A OPINION OF PROBABLE COST

Route	Length (feet)	Length (miles)	Limits	Class	Cost/Mile	Cost of Segment
4a	4,314	0.82	Creekside trail from train tracks near the I-880 to the Amtrak train tracks	Class I	$ 2,500,000	$ 2,042,614
			Final Long-term Solution- Additional Cost			**$ 2,042,614**

SEGMENT-4 LONG-TERM SOLUTION-ALTERNATIVE 4C OPINION OF PROBABLE COST

Route	Length (feet)	Length (miles)	Limits	Class	Cost/Mile	Cost of Segment
4c	1,641	0.31	Trail adjacent to Amtrak train tracks, from the I-880 to Edes Avenue	Class I	$ 2,500,000	$ 776,989
4e	342	0.06	Knight Street between train tracks and 105th Avenue	Class III	$ 500,000	$ 32,386
			Final Long-term Solution- Additional Cost			**$ 809,375**

TABLE 7-4: SEGMENT 4 OPINION OF PROBABLE COST

7.1.5 SEGMENT 5: RAILROAD TO EAST 14TH STREET

As discussed in Chapter 6, this segment is a complicated segment in terms of exploring alternatives because developments are built up to the edge of the Creek limiting available right-of-way in the Cities of Oakland and San Leandro. Two alternatives (5d and 5a-1) are fused together to create the final recommended route for this segment.

Alternative 5a-1 in its entirety as described in the previous chapter is the most ideal route for this segment due to its closeness to the Creek, scenic views, and existing pedestrian trail in the Creekside Plaza development. This was also the most preferred route based on public engagement. However, there are two major challenges in recommending this alternative as a final recommended route. Firstly, the route recommends crossing railroad tracks in the west of the segment. This is one of the biggest physical hurdles in this segment. More detailed feasibility study will be required to further determine the nature of the crossing. Secondly, it passes through the Creekside Park - a private linear park owned by the Cherrywood HOA. An agreement with Cherrywood HOA will be needed to proceed with this option. It should be noted that the portion of Alternative 5a-1through Creekside Park received the positive feedback in this segment during public outreach; however, no agreement with the HOA has been made at this time.

Since the above mentioned challenges are likely to take time to overcome, this part of Alternative 5a-1 from the beginning of the segment to Peralta Avenue is recommended as a long-term solution. If an agreement cannot be reached with the HOA, Alternative 5b is suggested as a long-term alternative, routing the Trail through the City of San Leandro fire training facility to Antonio Street. While not as scenic as Alternative 5a-1, Alternative 5b allows for a Class-I facility close to the Creek.

The final recommended route as shown in Figure 7-8 in this segment must join the final recommended route in the previous segment and is possible using Alternative 5d or 5g. Alternative 5d is preferred as it utilizes proposed East Bay Greenway Trail under elevated BART tracks creating a Class I facility while Alternative 5g recommends an on-street facility. Alternative 5d joins Alternative 5a-1 at Peralta Avenue and continues to the end of the segment. One of the major advantages of using this route is the existence of a pedestrian trail through the Creekside Plaza development near the Creek which could potentially be expanded to accommodate bicyclists with the consent of the property owner. Discussions with the owner have been positive so far. It also provides direct access to commercial development in the east end of the segment along Davis Street. It should be noted that agreement with the commercial property owners in the east end of the segment, between Clarke Street and Dan Nieme Way will also be required. The commercial property has limited space close to the Creek and might need to relocate approximately 10 parking spaces to develop a trail. While it may take time to reach an agreement with the property owner and/or to buy the required land, an interim route is proposed as Alternative 5a-2. Alternative 5a-1 also takes advantage of the proposed conversion of Dan Niemi Way to a pedestrian street/plaza or a one-way street.

Alternatives 5c and 5e were dropped as part of these routes as they utilize active railroad right-of-way. Based on discussion with railroad officials, a trail development along active railroad tracks will not feasible. Alternative 5f was also dropped as it creates only a Class III facility as opposed to a Class I facility in the recommended solution.

The recommended final route (Alternatives 5d and 5a-1) will require coordination with the City of San Leandro and may require traffic studies to determine if mitigation or improvements are necessary. Alternative 5a-1 will also require coordination with the Cherrywood HOA. Alternatives 5b and 5c will require coordination with the railroad to approve the undercrossing.

7.1.5.1 SEGMENT 5 - OPINION OF PROBABLE COST

Table 7-5 gives an opinion of cost for the final recommended route discussed above as well as additional costs required to implement the long-term solution. The final recommended route is relatively expensive due to the construction of an underpass depending on the feasibility study suggested for this option.

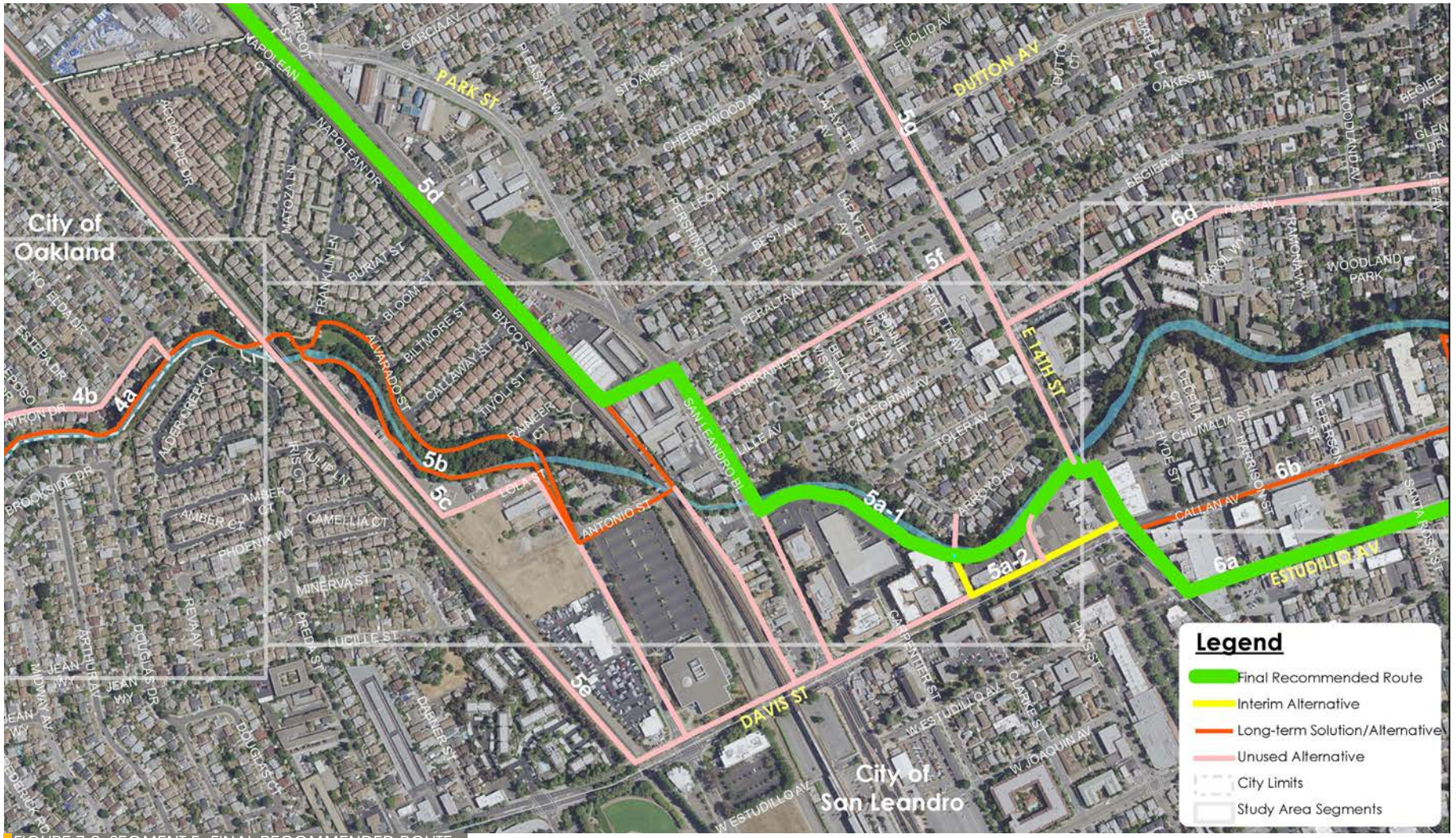


FIGURE 7-8: SEGMENT 5- FINAL RECOMMENDED ROUTE

SEGMENT-5 FINAL RECOMMENDED ROUTE- OPINION OF PROBABLE COST						
Route	Length (feet)	Length (miles)	Limits	Class	Cost/Mile	Cost of Segment
5d	902	0.17	105th Avenue from train tracks to San Leandro Street	Class III	$ 500,000	$ 85,417
5d	4,089	0.77	BART Tracks from 105th Avenue to Peralta Avenue	Class I	$ 2,500,000	$ 1,936,080
5a-1	366	0.07	Peralta Avenue from San Leandro Creek to San Leandro Boulevard	Class III	$ 500,000	$ 34,659
5a-1	762	0.14	San Leandro Boulevard from Peralta Avenue to the San Leandro Creek	Class II	$ 187,500	$ 27,060
5a-1	1,715	0.32	Creek from San Leandro Boulevard to E. 14th Street	Class I	$ 2,500,000	$ 812,027
Final Recommended Route- Opinion of Cost						**$ 2,895,241**

SEGMENT-5 LONG-TERM SOLUTION- OPINION OF PROBABLE COST						
Route	Length (feet)	Length (miles)	Limits	Class	Cost/Mile	Cost of Segment
5a-1	-	-	Railroad Underpass-Intersection of San Leandro Creek and Amtrak Railroad West of San Leandro Street and North of Davis Street	Class I	-	$ 2,500,000
5a-1	2,182	0.41	Creek via Cherrywood Park, from begininng of segment to Alvarado Street	Class I	$ 2,500,000	$ 1,033,144
5a-1	508	0.10	Alvarado Street to BART	Class III	$ 500,000	$ 48,106
5a-1	550	0.10	BART railroad to Peralta Avenue	Class I	$ 2,500,000	$ 260,417
Final Long-term Solution- Additional Cost						**$ 3,841,667**

SEGMENT-5 INTERIM ROUTE- OPINION OF PROBABLE COST						
Route	Length (feet)	Length (miles)	Limits	Class	Cost/Mile	Cost of Segment
5a2	194	0.04	Clarke Street from San Leandro Creek to Davis Street	Class III	$ 500,000	$ 18,371
5a2	368	0.07	Davis Street from Clarke Street to Dan Niemi Way	Class II	$ 200,000	$ 13,939
5e	343	0.06	Davis Street from Dan Niemi Way to E. 14th Street	Class II	$ 200,000	$ 12,992
Interim Alternative Cost						**$ 45,303**

TABLE 7-5: SEGMENT 5 OPINION OF PROBABLE COST

7.1.6 SEGMENT 6: EAST 14TH STREET TO BANCROFT AVENUE

Segment 6 has several feasible options in the City of San Leandro. Based on public input, Alternative 6d, which utilizes Haas Avenue, was the preferred route in this segment. Alternative 6b along Callan Avenue and Alternative 6c along Huff Avenue and the Creek were also received positively. There was no opposition agains Alternative 6a which utilizes Estudillo Avenue.

Estudillo Avenue (Alternative 6a) connects to a variety of land uses in this segment including Bancroft Middle School and San Leandro Main Library. This alternative has Class II bicycle lanes in addition to one travel lane in each direction, and parking on both sides of the street. However, it did not receive votes in the public engagement process. It could be possible that a bicycle facility next to a travel lane on a high-volume and high-speed roadway, such as Estudillo Avenue, could intimidate users. To make this path safer for the users, it is recommended to move the bicycle lanes between the existing sidewalk and parking, creating a Class IV cycle track. Figure 7-10 shows a before and after photo simulation of the segment. Alternative 6a is also recommended as a final recommended alternative for this segment. The reasons for not choosing other options in this segment as final recommended option are discussed below.

While Haas Avenue (Alternative 6d) had maximum votes, it is a narrow residential street with on-street parking residential street and can therefore only accommodate a Class-III share-the-road facility. Moreover, compared to other alternatives in Segment 6, this alternative does not connect to commercial or institutional land uses which is one of the criteria in selecting the recommended route.

Alternative 6b along Callan Avenue connects to a variety of land uses and has a pavement width ranging from 37 feet to 57 feet. It has one through lane in each direction and on-street parking. Based on the current configuration of Callan Avenue, only a Class III share-the-road facility could be accommodated on this street. Callan Avenue from Huff Avenue to East 14th Street has a wider pavement cross-section ranging from 49 to 57 feet and has anguled parking. While this section of street could accommodate bicycle lanes, it would need conversion of the angled parking to parallel parking resulting in a loss of much needed on-street parking.

The total right-of-way, which includes sidewalks, of Callan Avenue from East 14th Street to Huff Avenue ranges from 66 feet to 73 feet. If the street were to be completely reconfigured to accommodate six-foot sidewalks, it could accommodate Class II bicycle lanes and maintain angular parking as shown in Figure 7-9. This option is projected to be a long-term solution. The route then uses Huff Avenue (Alternative 6c) to traverse north on Huff Avenue and travels along the Creek to reach Bancroft Avenue. Huff Avenue in Alternative 6c would be a Class III share-the-road facility leading to a Class I multi-use trail along San Leandro Creek. The advantage of using Alternative 6c over the other alternatives is that it utilizes a vacant parcel owned by the Alameda County Flood Control District at the end of Huff Avenue and connects to Memorial Park and Veterans Memorial Building. This route is considered a long-term solution since it requires complete reconfiguration of Callan Avenue, and Alternative 6c passes through a multi-family property which would require permission from the property owner to make this route feasible.

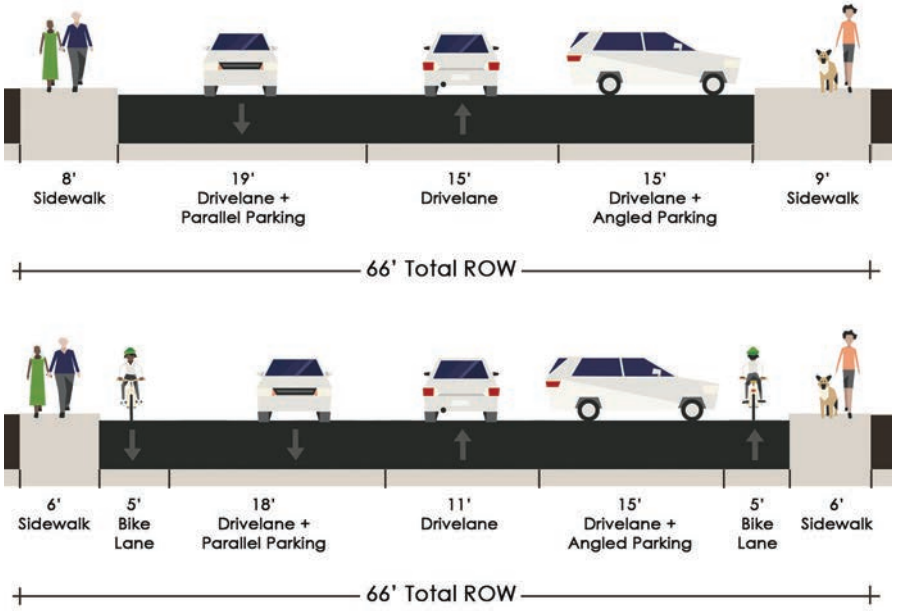


FIGURE 7-9: CALLAN AVENUE RECONFIGURATION

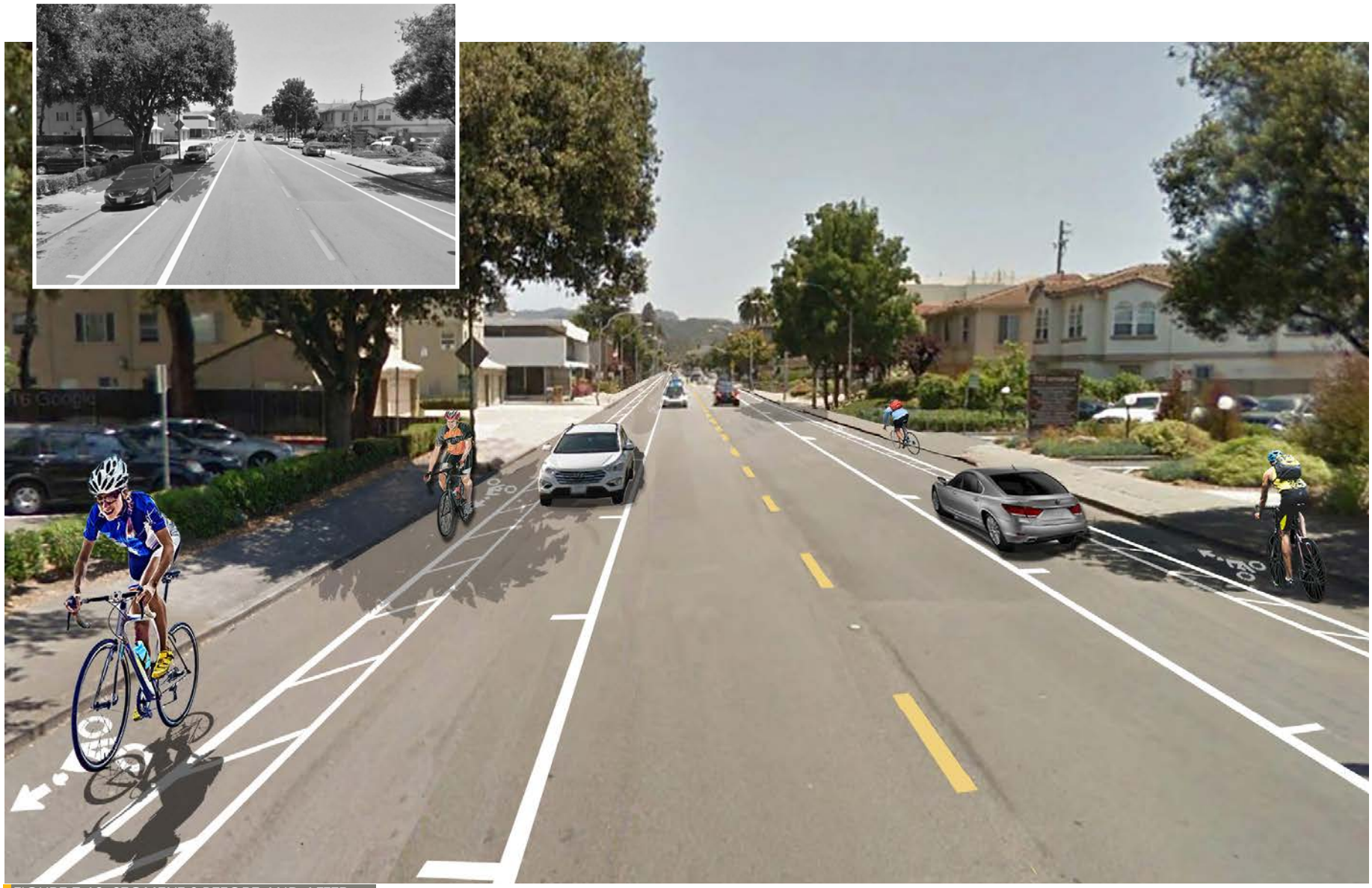


FIGURE 7-10: SEGMENT 6 BEFORE AND AFTER

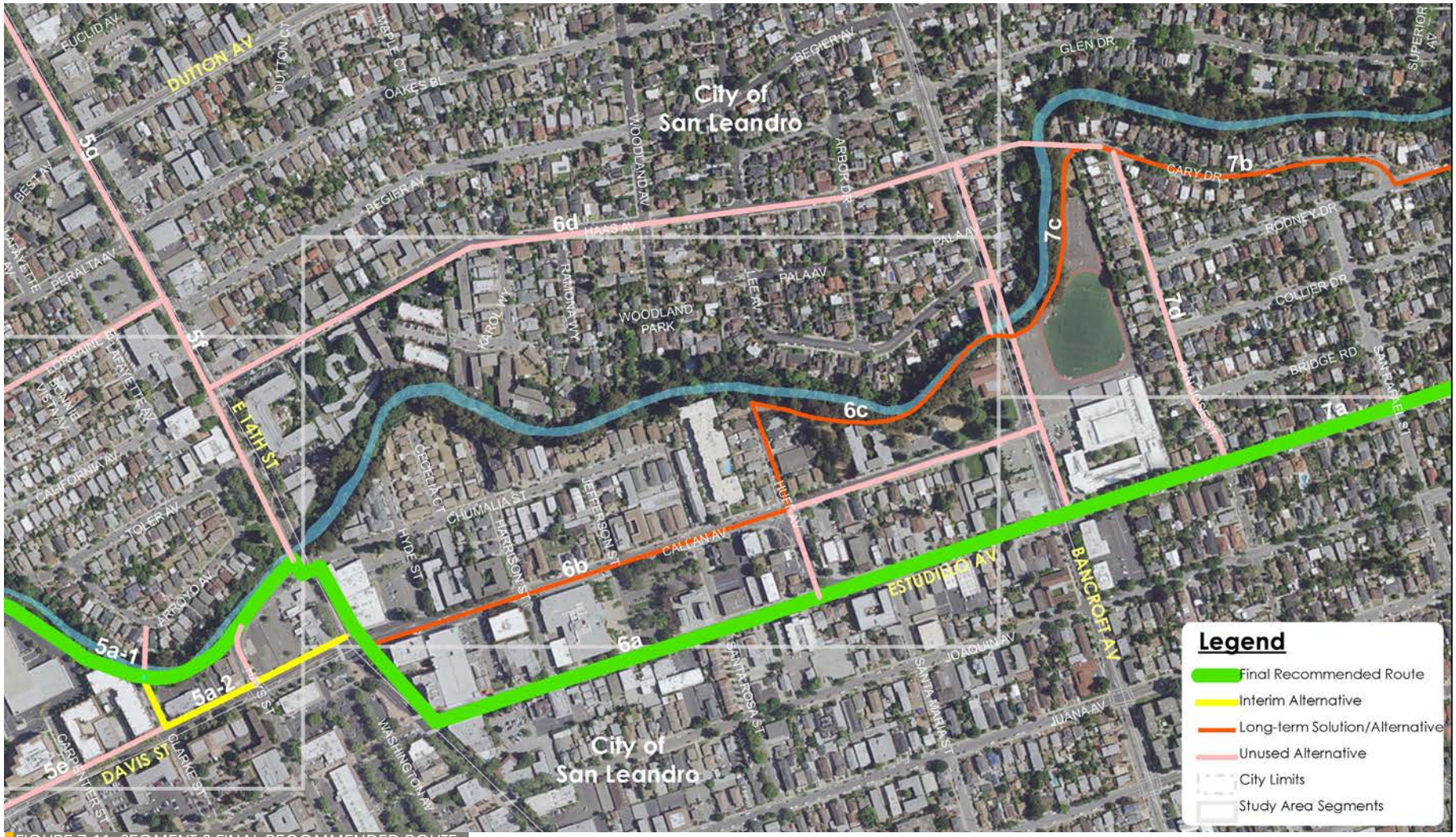


FIGURE 7-11: SEGMENT 6 FINAL RECOMMENDED ROUTE

7.1.6.1 SEGMENT 6 - OPINION OF PROBABLE COST

Table 7-6 gives an opinion of probable cost for the final recommended route discussed above as well as the additional cost required to implement the long-term solution.

SEGMENT-6 FINAL RECOMMENDED ROUTE- OPINION OF PROBABLE COST						
Route	Length (feet)	Length (miles)	Limits	Class	Cost/Mile	Cost of Segment
6a	475	0.09	E. 14th Street from San Leandro Creek to Davis Street	Class II	$ 200,000	$ 17,992
6a	2,757	0.52	Davis Street, along E. 14th street onto Estudillo Avenue to Bancroft Avenue	Class IV	$ 1,250,000	$ 652,699
Final Recommended Route- Opinion of Cost						$ 670,691

SEGMENT-6 LONG-TERM SOLUTION- OPINION OF PROBABLE COST						
Route	Length (feet)	Length (miles)	Limits	Class	Cost/Mile	Cost of Segment
6b	1,770	0.34	Callan Avenue from E. 14th Street to Huff Avenue and on Huff Avenue	Class II	$ 200,000	$ 67,045
6c	1,424	0.27	Creek between Huff Avenue and Bancroft Avenue	Class I	$ 2,500,000	$ 674,242
Final Long-term Solution- Additional Cost						$ 741,288

TABLE 7-6: SEGMENT 5 OPINION OF PROBABLE COST

7.1.7 SEGMENT 7: BANCROFT AVENUE TO I-580

The final recommended route in Segment 7 is Alternative 7a along Estudillo Avenue in the City of San Leandro. This is not only because it connects to the final recommended route in Segment 6, but also because Estudillo Avenue has existing Class II bicycle lanes. Similar to the previous segment, this alternative did not receive any votes during public outreach, but conversion of Class II bicycle lanes to a Class IV cycle track, similar to the previous segment, could help the users feel safe while using the bicycle facility in this segment.

A route behind the school and along Cary Drive, Rodney Drive and Bridge Road (combination of Alternative 7c, 7b and 7e) was the preferred route based on the public engagement process. This alternative is viewed as a long-term alternative due to several reasons discussed below. In order to create a direct connection, Alternative 7c must cross Bancroft Avenue at the Veterans Memorial Building to reach the Bancroft Middle School. This will require creating a signalized crossing near Veterans Memorial Building and warrants further traffic analysis. School property on the top of the Creek bank is used to create a Class I facility under this option so feasibility of this route will depend on discussions and agreements with the San Leandro Unified School District regarding not only the use of school property to create a trail but also regarding safety of the students. Alternative 7c connects to Alternative 7b, which passes through residential streets and can only accommodate a Class III share-the-road facility. Figure 7-12 depicts a before and after photo simulation of the same. It connects to Bancroft Middle School and the existing footbridge at Cary Drive, thus creating connectivity with the residential neighborhood on the north side of the Creek. Alternative 7b further connects with Alternative 7e, which traverses east along Bridge Road and uses the

FIGURE 7-12: SEGMENT 7- BEFORE AND AFTER

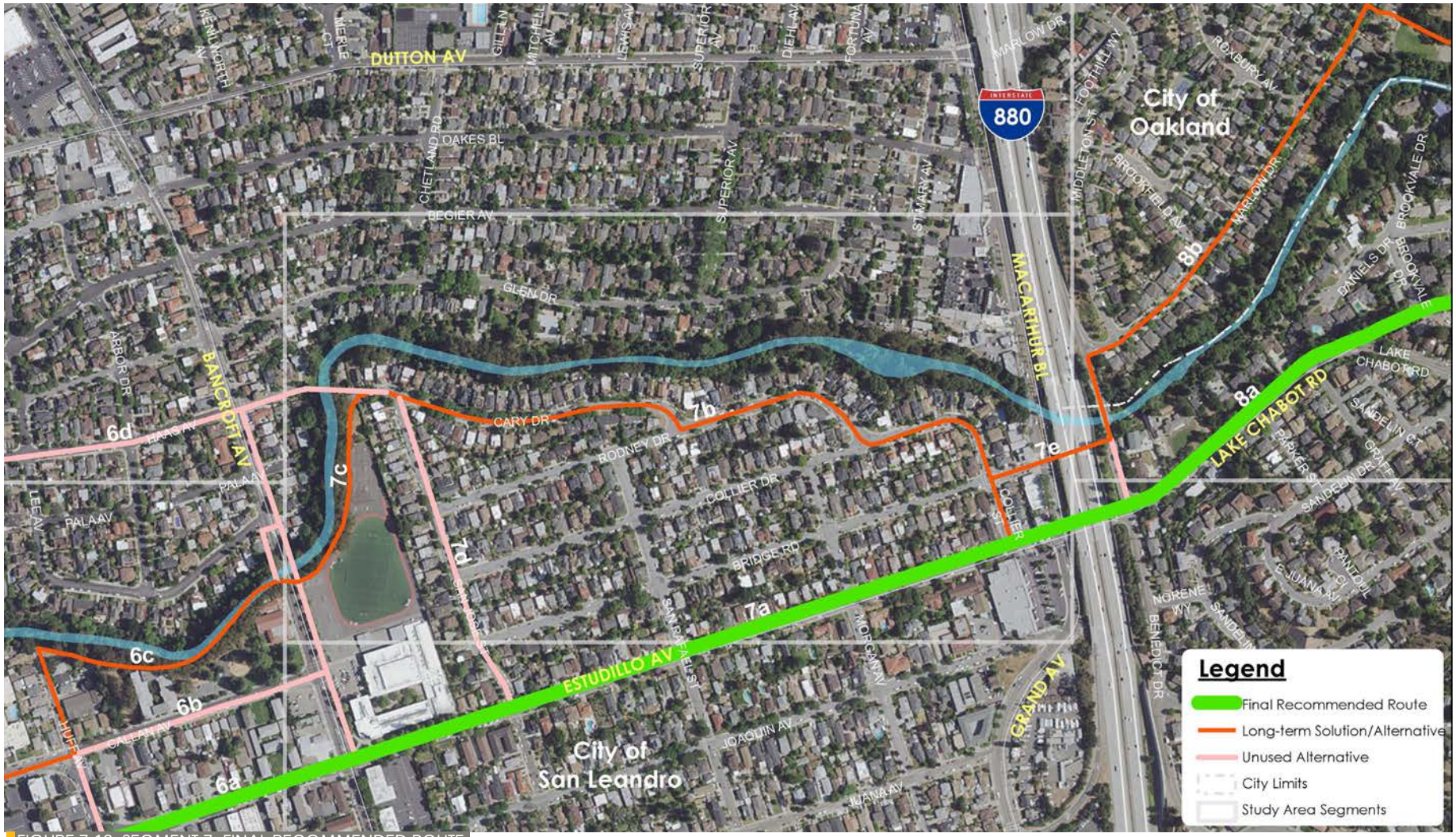


FIGURE 7-13: SEGMENT 7- FINAL RECOMMENDED ROUTE

Creek alignment under the freeway to get across. Currently, there are homeless encampments under the freeway.

7.1.7.1 SEGMENT 7 - OPINION OF PROBABLE COST

Table 7-7 gives an opinion of probable cost for the final recommended route discussed above as well as additional cost required to implement the long-term solution.

SEGMENT-7 FINAL RECOMMENDED ROUTE- OPINION OF PROBABLE COST						
Route	Length (feet)	Length (miles)	Limits	Class	Cost/Mile	Cost of Segment
7a	2,598	0.49	Estudillo Avenue from Bancroft Avenue to Collier Drive	Class IV	$ 1,250,000	$ 615,057
Final Recommended Route- Opinion of Cost						$ 615,057

SEGMENT-7 LONG-TERM SOLUTION- OPINION OF PROBABLE COST						
Route	Length (feet)	Length (miles)	Limits	Class	Cost/Mile	Cost of Segment
7c	995	0.19	Behind Bancroft Middle School field from Bancroft to Cary Drive	Class I	$ 2,500,000	$ 471,117
7b	2,526	0.48	Bancroft Avenue, Cary Drive, staggering down to Rodney Drive then Collier Drive ending at Estudillo Avenue	Class III	$ 500,000	$ 239,205
7b	246	0.05	Haas Avenue from Bancroft Avenue to San Leandro Creek	Class III	$ 500,000	$ 23,295
7e	466	0.09	Bridge Road from Collie Drive to Benedict Drive. The segment would pass underneath the 580 freeway	Class I	$ 2,500,000	$ 220,644
Final Long-term Solution- Additional Cost						$ 954,261

TABLE 7-7: SEGMENT 7 OPINION OF PROBABLE COST

7.1.7 SEGMENT 8: I-580 TO LAKE CHABOT REGIONAL PARK

Similar to Segments 6 and 7, the final recommended route in Segment 8 follows Estudillo Avenue (Alternative 8a) due to its connectivity to the final recommended route in previous segments in the City of San Leandro. Additionally, this residential street has existing Class III sharrow markings and is the most direct route to Lake Chabot Regional Park.

The preferred alternative based on public engagement was Alternative 8b in the City of Oakland. This route is seen as a long-term solution. This route uses Marlow Drive until it reaches Sheffield Village Park. Marlow Drive is a residential street and can accommodate a Class III share-the-road facility. The trail would provide access to Sheffield Recreational Center but would pass through various properties connecting from the recreation center to the dam including three private properties belonging to US Bank to finally reach the park. Either acquiring the land or agreement to use the private property to create a Class I multi-use trail would be needed to proceed with this option. There are also likely to be environmental challenges, steep grades, and existing infrastructure from the dam that will need to be reviewed closely.

7.1.8.1 SEGMENT 8 - OPINION OF PROBABLE COST

Table 7-8 gives an opinion of probable cost for the final recommended route discussed above as well as additional cost required to implement the long-term solution.

SEGMENT-8 FINAL RECOMMENDED ROUTE- OPINION OF PROBABLE COST						
Route	Length (feet)	Length (miles)	Limits	Class	Cost/Mile	Cost of Segment
8a	2,619	0.50	Estudillo Avenue from the 580 freeway into the residential neighborhood to Lake Chabot Regional Park	Class III	$ 500,000	$ 248,011
Final Recommended Route- Opinion of Cost						$ 248,011

SEGMENT-8 LONG-TERM SOLUTION- OPINION OF PROBABLE COST						
Route	Length (feet)	Length (miles)	Limits	Class	Cost/Mile	Cost of Segment
8b	4,803	0.91	Marlow Drive from 580 freeway to Sheffield Village Recreation Center	Class III	$ 400,000	$ 363,864
8b	2,806	0.53	Sheffield Village Recreation Center to Chabot Park	Class I	$ 2,500,000	$ 1,328,598
Final Long-term Solution- Additional Cost						$ 1,692,462

TABLE 7-7: SEGMENT 7 OPINION OF PROBABLE COST

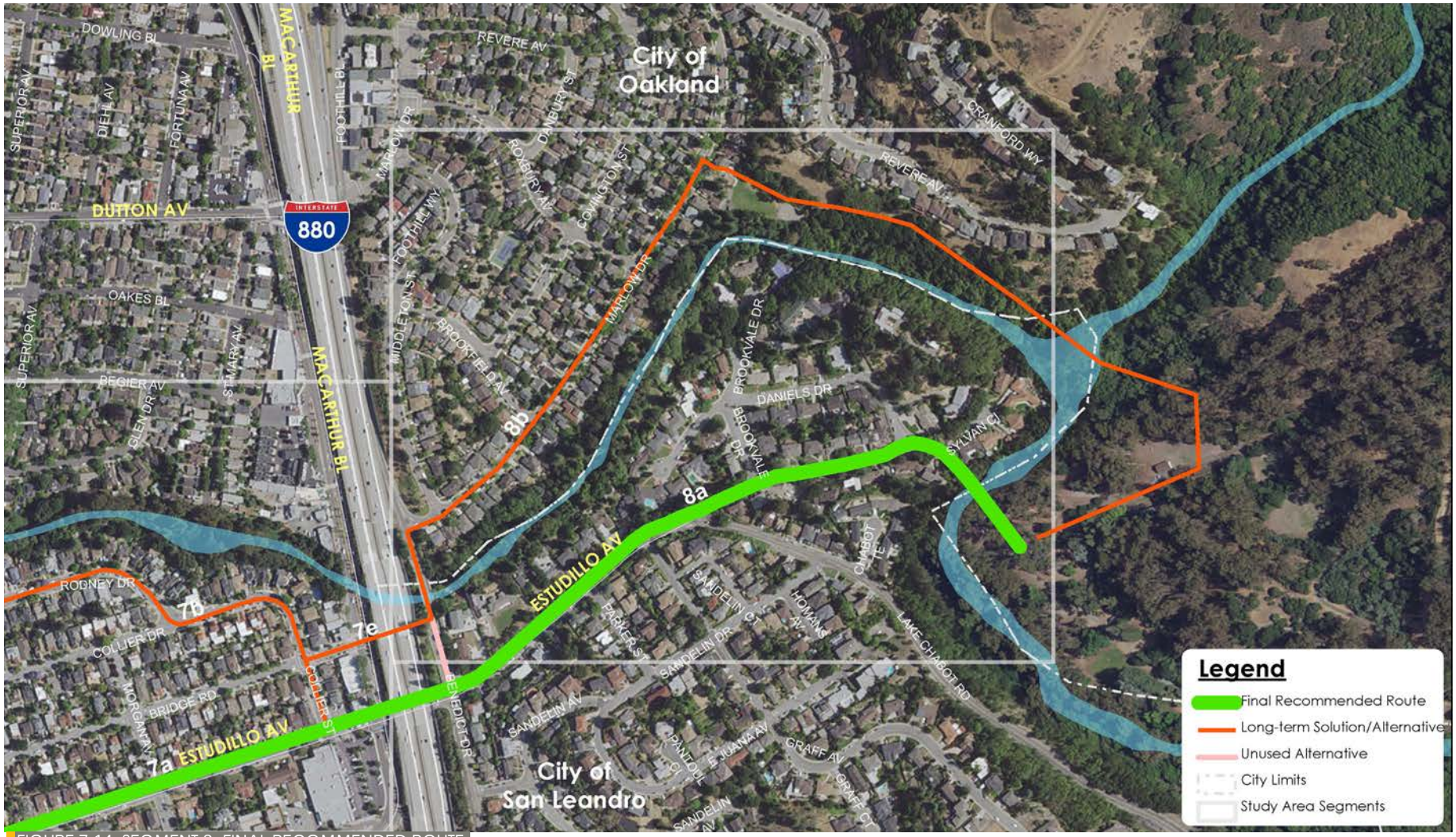


FIGURE 7-14: SEGMENT 8- FINAL RECOMMENDED ROUTE

7.2 ADDITIONAL CONNECTION OPPORTUNITIES

The goal of the proposed San Leandro Creek Trail development is to not only provide a connection from San Francisco Bay Trail to the Lake Chabot Regional Park but also provide connections to various land uses and neighborhoods in the vicinity. The final recommended trail route and long-term route explained previously in this chapter make direct connections to a variety of land uses. Some of them are the trailhead west of Hegenberger Road, Airport Plaza, various industrial uses in Segments 2 and 3, Aspire Lionel Wilson College Preparatory Academy, Creekside Park, Creekside Plaza, Downtown San Leandro, Root Park, commercial & institutional uses along Davis Street and Estudillo Avenue, San Leandro Main Library, Bancroft Middle School, Estudillo Center, and Lake Chabot Regional Park.

During the study of the proposed trail route, it was acknowledged that by way of the development of this trail a variety of other connection opportunities could arise that would enhance the connectivity of neighborhoods in the vicinity of this trail. Some of these neighborhoods are extremely isolated and landlocked due to the existence of highways, major thoroughfares and rail lines rendering minimum opportunity for connection. Other neighborhoods, while currently connected, could provide relatively easily implementable additional connection opportunities. While these connections are not a part of the trail itself they can certainly be largely beneficial to the community. Figure 7-15 gives a snapshot of these recommended connections. These connections are numbered on the map and explained below.

1) A connection from Segment 2 could be provided to Edgewater neighborhood in the north of the Creek. Since the recommended final route is on the south side, a bridge will be needed to cross the Creek.

2&3) Columbia Gardens Neighborhood is located on the north side of the Creek. This is recognized as one of the Communities of Concern by MTC. The south side of this neighborhood is landlocked and has only one exit point to 98th Avenue via Empire Road. A bridge connection to Columbia Gardens Park (shown as Point 2 - Figure 7-15) will connect this neighborhood to the trail. Also, Empire Road ends into a cul-de-sac in the east end of Segment 3 with an access to the Creek. A connection is recommended here as well (shown as Point 3 - Figure 7-15).

4) Brookfield Village is also located on the north side of the Creek. The final recommended route runs on 105th Avenue. A connection via Knight Street is recommended to this neighborhood.

5) There is a connection opportunity to Madison Park Academy via a cut-through that connects 105th Avenue to Madison Park Academy. In addition, the Madison Park Academy could also be connected through the long-term route that runs along the maintenance road located below the top of the bank. Steps and a ramp will be needed to make this connection.

6) There is an existing maintenance access to the Creek at the Catron and Acalanes Drive intersection in Segment 4. This can be opened to provide access from the Sobrante Park neighborhood to the trail.

7) There is an existing pedestrian bridge in Segment 5 connecting Clarke Street to the North Area neighborhood. The final recommended route passes through this portion of Clarke Street and connects to the bridge. Feasibility of accommodating a bicycle facility either by expansion of existing bridge or addition of parallel bridge should be reviewed to make a Class I connection to the North Area neighborhood.

8) Similar to Segment 5, there is an existing pedestrian bridge in Segment 7 connecting Cary Drive to the Estudillo Estates neighborhood. The long-term route in Segment 7 passes through Cary Drive and connects to the bridge. The feasibility of accommodating a bicycle facility either by expansion of existing bridge or addition of parallel bridge will be needed to make a Class I connection to the Estudillo Estates neighborhood.

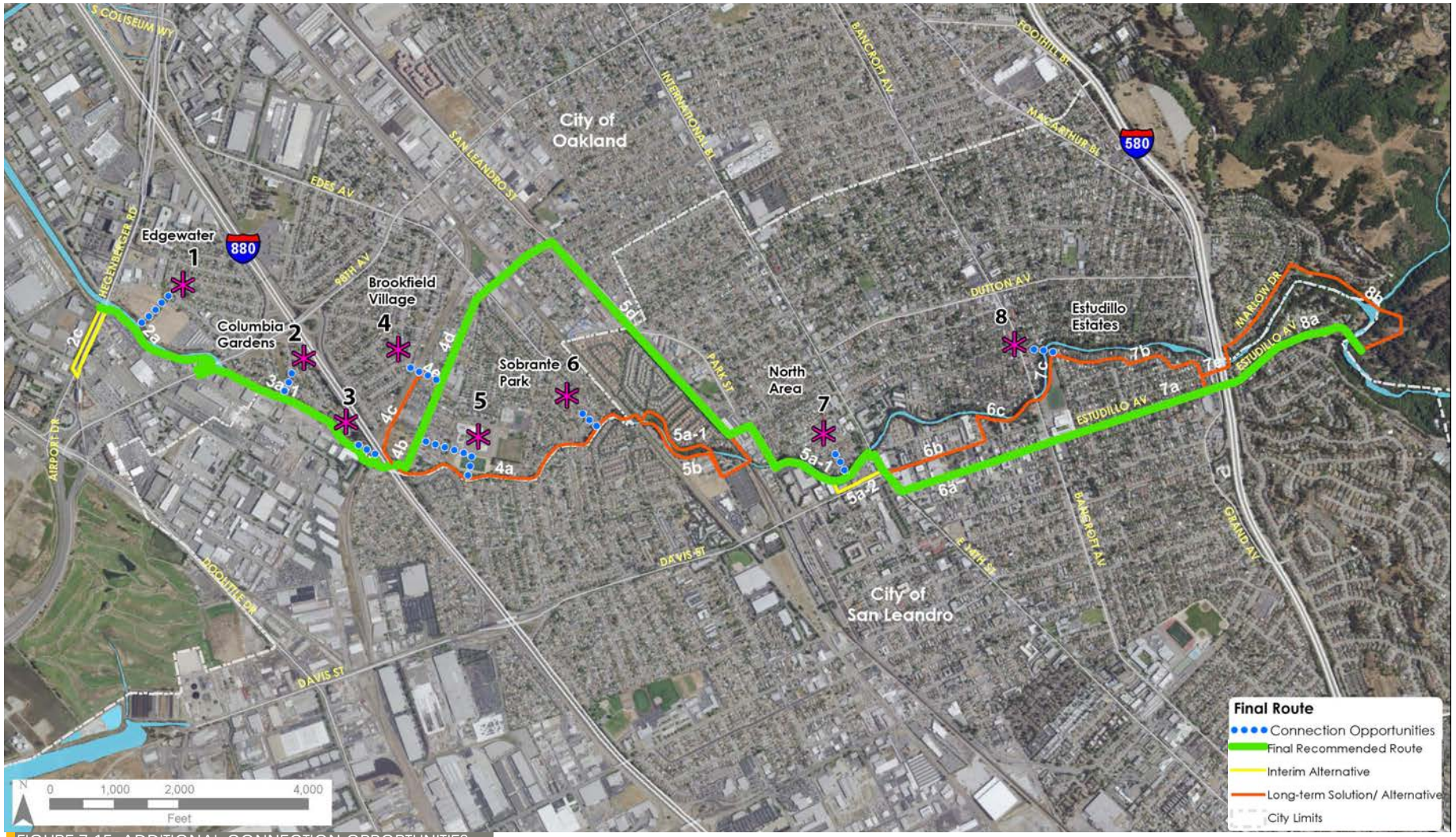


FIGURE 7-15: ADDITIONAL CONNECTION OPPORTUNITIES

7.3 ENVIRONMENTAL IMPACT

Based on the trail alignment discussed under this final alternative, the trail in large part utilizes existing infrastructure such as maintenance roads, trails, or streets. Maintenance roads in Segments 2, 3 and 4 are asphalt, concrete or dirt roads. These areas have some invasive vegetation that will need to be cleared in order to build the trail. Additionally, the banks could be naturalized in Segment 2 thus, reducing current environmental impacts.

Other segments from Segment 5 to 8 (both the final alternative as well as interim solutions) either utilize an existing trail alignment or roadways. In some instances, the trail development utilizes commercial parking areas or other public property, such as parks and a fire training facility. These areas are already developed as urban areas and an addition of the trail will merely enable adding biking as a mode of transportation, in turn enabling the use of the trail for short distance commuting as well as for recreation by connecting it to the San Francisco Bay Trail, proposed East Bay Greenway, and Lake Chabot Regional Park. Additionally, based on space available along the trail, environmentally sensitive landscaping could be done along the trail. Depending on the final engineering of the trail alignment, there might be removal of certain invasive species of plants and trees, including Blue Gum Eucalyptus trees. In such an instance, native varieties would be replanted in these areas.

Certain areas, such as the trail crossing at railroads at the end of Segments 3 and 4, might need a more thorough environmental analysis.

It is suggested that throughout this alignment, environmentally sustainable materials and planting be used for trail construction. At this point, no significant negative impacts are determined. However, based on the implementation phases of the trail, each segment will need to be studied for environmental impacts to the natural environment, including wildlife habitat, natural hazards, and resources in the area affected by the potential San Leandro Creek Trail.

7.4 TRIBAL CONSULTATION PRELIMINARY REPORT

OVERVIEW OF CULTURE AND HISTORY

"I am very proud to be an Ohlone. I'm also very lucky that my grandmother, aunt, and cousins are involved with our Ohlone culture, so that my generation can also keep it alive."

--David Anthony Morris, Jalquin/ Saclan Ohlone/Bay Miwok, as told to Beverly R. Ortiz when he was ten

The San Leandro Creek watershed is located within the homeland of the Jalquin (aka Yrgin), a tribe so intermarried among speakers of Chochenyo, a dialect of six Ohlone languages, and speakers of the Bay Miwok language, that today we do not place them into either modern, grouping category. The headwaters of San Leandro Creek are located in the homeland of the Saclan, a Bay Miwok-speaking tribe, whose members sometimes married Jalquins.

At one time, there were about 58 Ohlone tribes. Their collective population in 1770 was about 17,000. There were about six Bay Miwok tribes, their collective population before 1770 was about 1,800 to 2,000. Tribes were communities of villages who governed themselves, each tribe with a homeland of about 8 to 12 square miles in extent. Each had a population of between 200 and 300 people, who lived in some three to five villages for most of the year.

Ohlones and Bay Miwoks believed, and continue to believe, that everything in the world needed, and needs, to be respected and taken care of. They believed, and continue to believe, that everything in the world had, and has, a spirit or life, whether plant, animal, rock, fire, or water. Throughout the year, they honored and gave thanks for everything in this world through adherence to cultural proscriptions, rules, and laws for proper behavior; by doing good acts, praying, and giving back for what was taken; and by participating in religious ceremonies at set times of the year.

Jalquins and Saclans thrived in this area for untold generations, because the members of these tribes knew how to balance human needs with that of the land and all of its other inhabitants. Jalquins and Saclans had an encyclopedic

knowledge of the plants and animals in their homeland, whether insect or grizzly bear. They lived in balance with the land for eons, using specialized burning, cultivation, and pruning techniques to increase the numbers and health of the plants, and, in turn, the animals on which they relied. These and other Native land management techniques are often referred to today as "Traditional Ecological Knowledge" or TEK.

The arrival of the Spanish Fages expedition in 1772 signaled a time of tremendous disruption, dislocation, and suffering for Jalquins, Saclans, and their neighbors. Their world began to collapse when the 1776 de Anza expedition passed through on its way to establish Mission San Francisco de Asís (aka Mission Dolores) and El Presidio Real de San Francisco, both in present-day San Francisco. While some Jalquins joined a 1795 missionization resistance effort by Saclans, between 1801 and 1803, 77 Jalquins were baptized at Mission Dolores, their choice to resist the mission increasingly limited. At Mission San Jose in Fremont, established in 1797, another 177 Jalquins were baptized as Yrgins between 1797 and 1804. Between 1794 and 1810, 168 Saclans were baptized at Mission Dolores, three others at Mission San Jose.

Under Mexican governance of Alta California after 1821, the mission lands were liquidated, with no Jalquins or Saclans ever receiving any of their lands back, as had been promised. Instead, Native people became serf-like laborers on large Mexican land grants, including the 6,830-acre Rancho San Leandro granted to Jose Joaquín Estudillo in 1842, which included present-day San Leandro and the bayshore from San Leandro Creek to San Lorenzo Creek, the heartland of the Jalquin/Yrgin people.

In 1850, the same year that California became a state, the state legislature passed a series of laws that made it legal to auction off of Native people, including Jalquins and Saclans, as laborers on farms and ranches. Under one law, orphaned Native children could become wards of Euro-American citizens until adulthood. In 1851 and 1852, eighteen treaties with the United States government were signed by California Indians, although the treaties were never ratified. Some Jalquin/Saclans were sent to segregated boarding schools where, in addition to reading and writing, they received training in becoming maids and ranch hands. In 1924, American Indians became the last group of people in the United States to be granted citizenship.

Despite these events, an astonishing amount of ancestral knowledge about the cultures and language of Chochenyo-speaking peoples has been preserved, due to the courage, bigheartedness and profound determination of elders to share that knowledge with their children, their people, and the broader world. Today's Jalquin/Saclans have maintained cultural communities, are involved in protecting ancient sacred, village, and burial sites, and find pride in preserving traditional beliefs, values, arts, skills, languages, foods, and spiritual traditions by bringing those traditions forward into the future in both old and new ways.

PRIMARY CONCERNS OF JALQUIN (YRGIN) AND SACLAN PEOPLES

- Protection of Tribal Cultural Places
  The most important concern for local tribal peoples will center on the locations of any tribal cultural places in the project area, such as sacred, village, burial, and/or mortar locales, and provisions for their protection and stewardship.
- Representation of Local Native History and Cultures Past to Present as Part of Interpretive Signage, Programs, and/or Web Content about the Project

  Contemporary Jalquin/Saclans will appreciate the inclusion of the following themes in any multimedia interpretive material about the project:

  1. The type of Traditional Ecological Knowledge they employed when stewarding the watershed area in ancestral contexts;
  2. Their history in relation to the present-day San Leandro Creek watershed area;
  3. Their use of Native plants still growing in the riparian zone;
  4. Some level of inclusion of the local Chochenyo language, the first language of the land.
- Consideration of the Possible Inclusion of Art by Local Jalquin/Saclans or

Other Ohlone/Bay Miwoks, or Art Inspired by Their Ancestral Cultures

Such art might include murals, three-dimensional installations, quotations or other content on plaques embedded in walkways, and/or art incorporated into web content about the project.

- Consideration of the Incorporation of Traditional Ecological Knowledge in Any Restoration Efforts

8 Wayfinding

8.0 WAYFINDING 8-3

8.0 WAYFINDING

A wayfinding system consists of maps, markers, and signs. Successful wayfinding creates awareness for a bikeway and walkway system, helps users get to and navigate the path way, and directs users to nearby points of interest. Uniformity of basic elements of wayfinding supports recognition and consistency of facility. The following is the comprehensive wayfinding guide system recommended for the potential San Leandro Creek Trail.

The benefits of this wayfinding system include:

- A consistent identity for the potential San Leandro Creek Trail
- Improved awareness of the bikeway, leading to increased use
- Greater ease of use: helping the public follow the bikeway and use it to arrive at destinations
- Consistent aesthetics and perceived upkeep, improving bikeway security and user comfort
- Increased numbers of bicycle and walking trips
- Standardized location markings to help coordinate emergency and maintenance access

The six-mile potential San Leandro Creek Trail is a bikeway system that would run through two cities. As the individual cities have unique characteristics and provide the operational oversight of the bikeway through their jurisdiction, this wayfinding plan provides guidance for implementing a cohesive sign system while providing flexibility for both cities to choose wayfinding elements that fit within the local community context. To accommodate the changes in context, a family of wayfinding elements have been identified including a range of sign types and materials. The wayfinding system also provides opportunities to incorporate City names and logos. This plan provides guidance for cities to select and install wayfinding elements unique to each community.

8.1 BRANDING

Stantec Consulting Services Inc has produced a San Leandro Creek Trail logo that serves as the basis of the way-finding design. Consistent use of the logo is important in maintaining the San Leandro Creek Trail brand through both communities. The square proportions and approved colors of the logo are suggested guidelines and should not be altered if possible. The following logo is approved for use on the wayfinding elements.

8.2 SIGN STANDARDS

The San Leandro Creek Trail way-finding sign colors and font are established by this master plan. See color palette (Figure 8-2) for color specifications using RGB (Red, Green Blue) color model. All fonts included on the off-street signs should use the Univers LT font family. On-street bikeway sign guidance is provided by the latest California Manual on Uniform Traffic Control Devices (CA MUTCD). The Caltrans Highway Design Manual (HDM) establishes standards for sign placement from the edge of the bikeway.

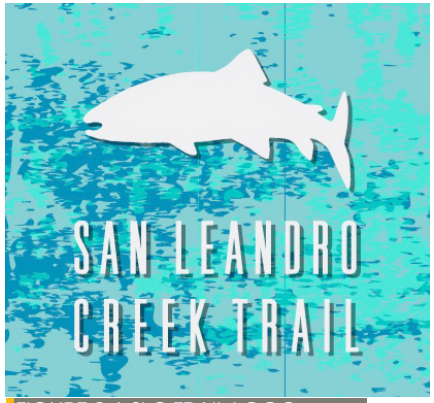


FIGURE 8-1 SLC TRAIL LOGO

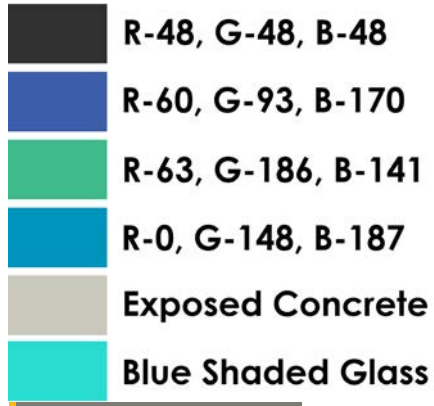


FIGURE 8-2 COLOR PALLET

8.3 QR CODES

Quick response (QR) codes are a smartphone technology that dynamically connects mobile users with digital content by taking a picture of a two dimensional square bar code. Incorporating QR codes into way-finding signs allow people to access digital information such as bikeway maps, park information or interpretive information. The wayfinding elements allow for the opportunity to add QR codes.

FIGURE 8-3: QR CODES

Software to deliver information from a QR code can be set up in two ways. The first alternative is to develop a custom application that would enable use without an Internet connection. The second alternative is to link users to the San Leandro Creek Trail project website, or existing East Bay Regional Park District website, by launching an Internet browser. Before launching a QR code program it is important that it be designed to be easy to use and add value to the user's experience.

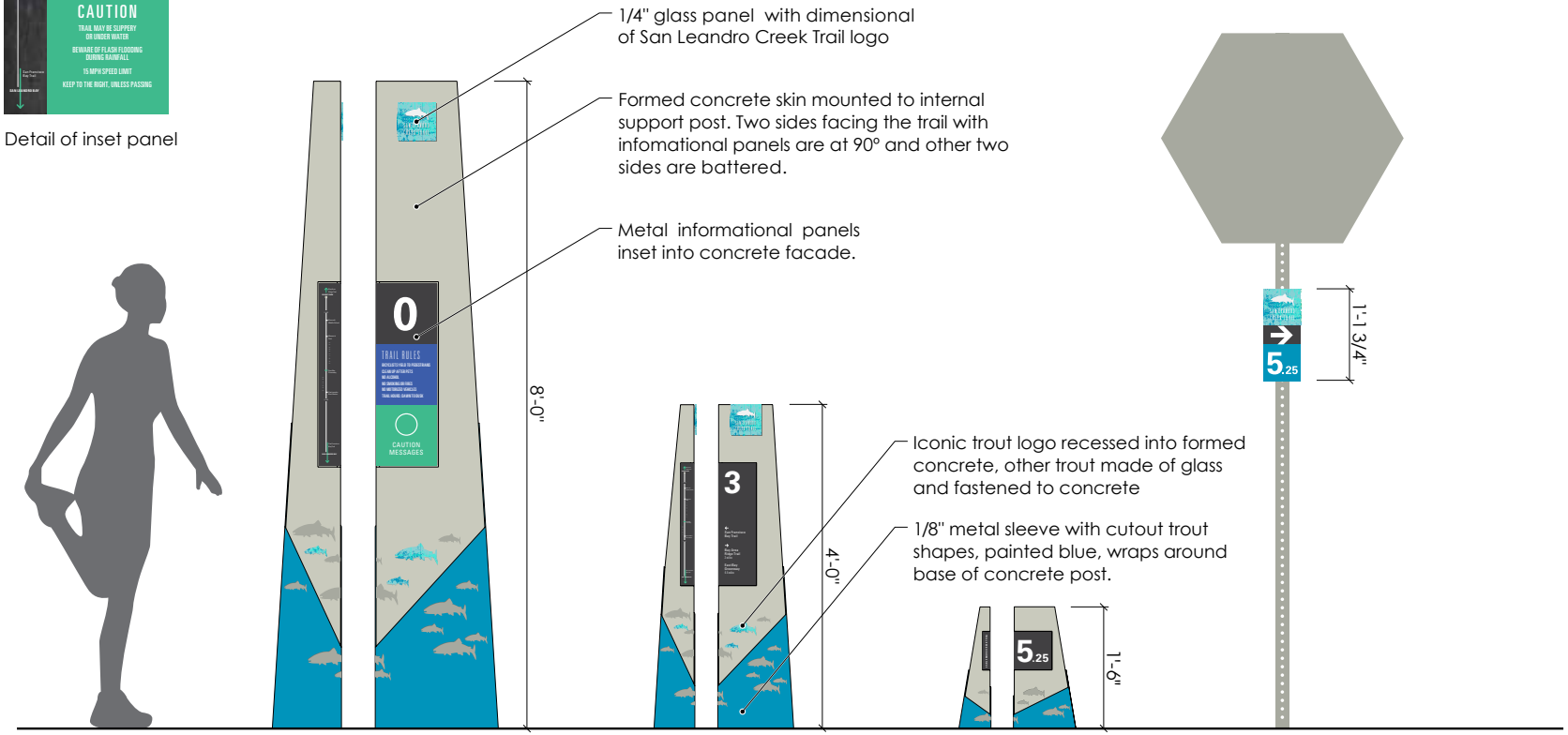
8.4 WAYFINDING SIGN FAMILY

This section provides an overview of the San Leandro Creek Trail wayfinding family and planning level design guidance for sign production. The way-finding program includes the elements listed below and are depicted in Figures 8-5 and 8-6. The description, placement and materials of these signs are also given in the following pages.

- Trail ID - One sign located at each end of trail
- Mapboard- Appearing at the trailhead locations
- Trail Directory - Located at major decision points along trail
- Mile Marker - Appearing every 1/2-mile along trail
- Street Sign - Appearing on City Street signs when off designated path
- Undercrossing Street Signs
- On-Street Bike Guide Sign
- Pavement Markings - Appearing on trail pavement

FIGURE 8-4 SIGNS ON TRAIL

Detail of inset panel



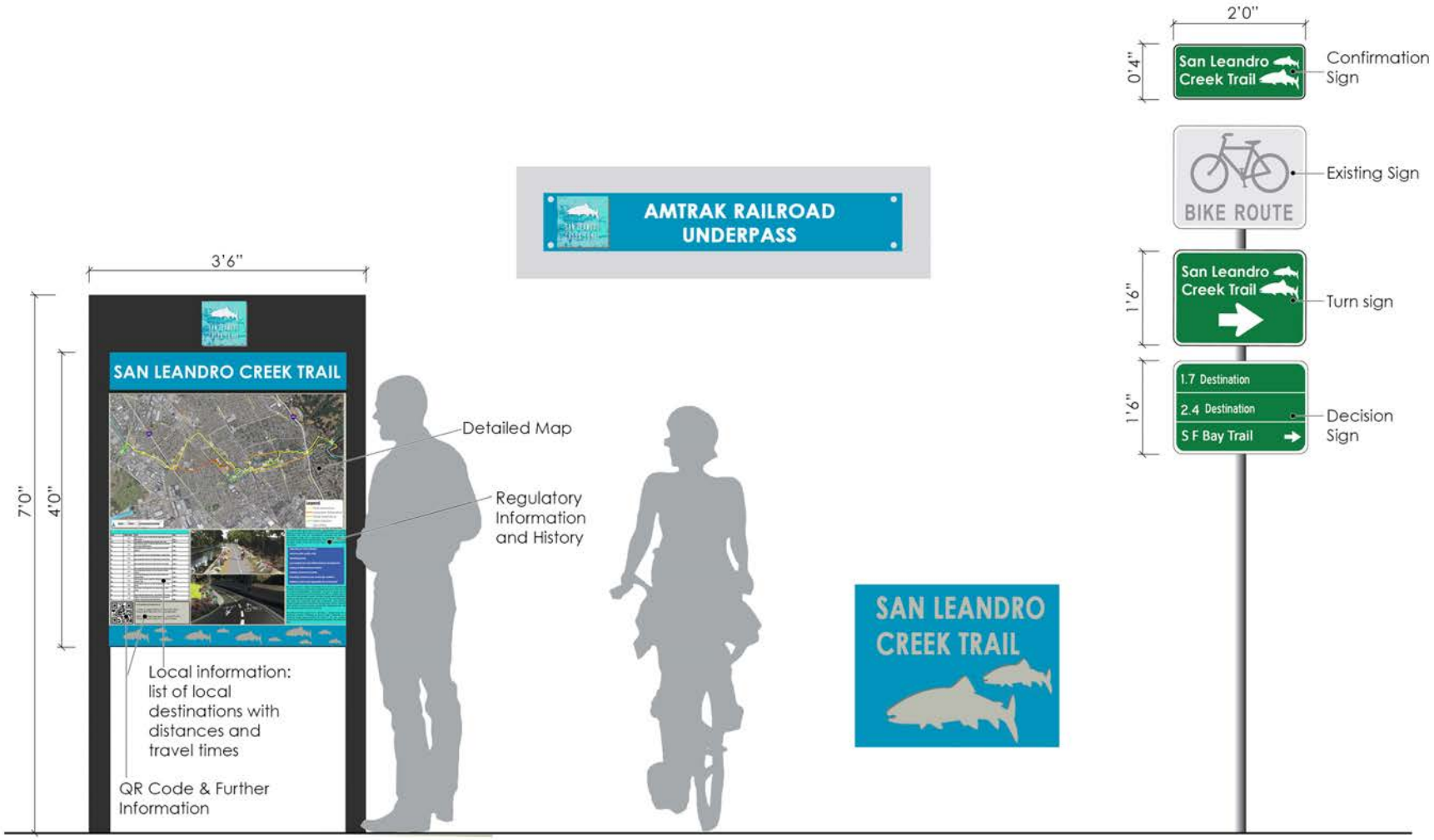
Trail ID
One sign located at each end of trail

Trail Directory
Located at major decision points along trail.

Mile Marker
Appearing every 1/2 mile along trail.

Street Sign
Appearing on city street signs when off designated path.

FIGURE 8-5 WAYFINDING SIGNAGE- 1



Mapboards
Located at trailheads, bikeway access points and selected public gathering spaces

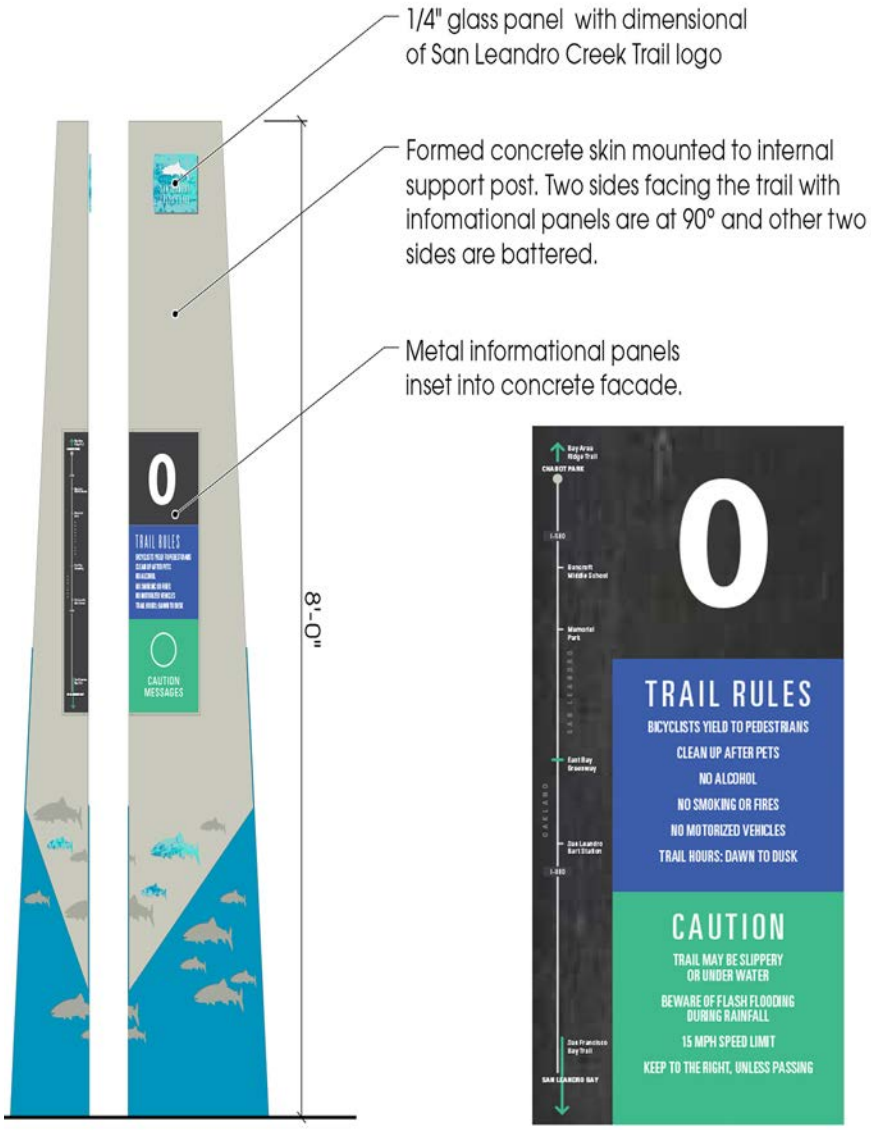
Undercross Sign
Identifies major road names on bridges.

Pavement Marking
Reinforce users are on the San Lerandro Creek Trail. Locate on paved trails and sidewalks.

On-street Guide Sign
Appearing on existing bike route signs to identify the route.

FIGURE 8-6 WAYFINDING SIGNAGE- 2

Trailhead ID



Description

Trailhead IDs serve as landmarks. Their large scale provides identity to the trail and they act as a meet-up spot for group or family rides, walks or strolls. The insert also has the schematic diagram of the trail pathway and major trails intersecting with San Leandro Creek Trail. There is space to include rules and cautionary notes. QR code can be included in bottom right hand corner of the panel.

Placement

Consider placing at trailheads at the beginning and end of the trail or major access points. They are recommended to be used in conjunction with additional bikeway amenities such as mapboards, bicycle racks, drinking fountains, landscaping and/or restrooms.

Materials

- 1/4” glass panel logo
- Formed concrete skin mounted to internal support post
- 1/8” metal sleeve with cutout trout shapes, painted blue
- Metal informational panels inset into concrete facade

Mapboard

Description

Mapboards are freestanding one or two-sided information displays that orient users to the potential San Leandro Creek Trail, its destinations, rules of use, and safety information. Mapboards should provide a detailed map showing the potential San Leandro Creek Trail, indicating "you are here", highlight access points, landmarks, restrooms and services, and other bikeway and on-street bikeway networks. The mapboad could provide detailed information on local destinations within a five minute ride or ten minute walk (1/2 mile to 3 miles) to the current location. The mapboard is also an opportunity to detail bikeway etiquette and could illustrate ecological or cultural interpretive information on the back side of the map.

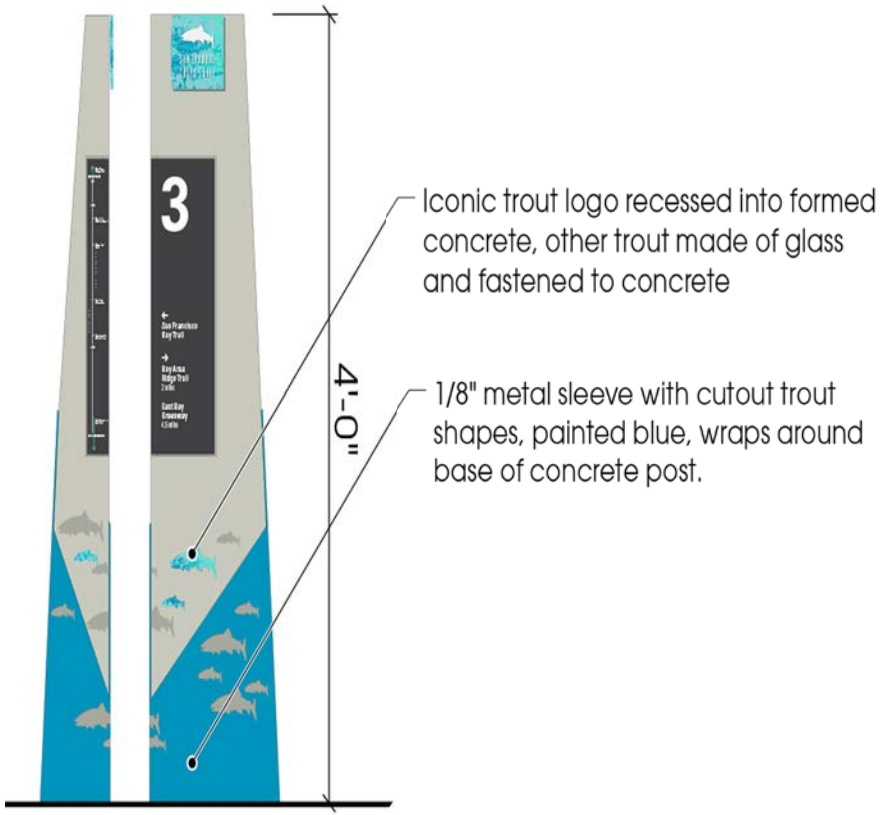
Placement

Mapboards can be located at trailheads, bikeway access points and selected public gathering spaces. The mapboard should be setback from the path a minimum of 3 feet to provide space for people to read and consider the information without blocking the trail. A minimum of 3' should also be provided for each side of the mapboard per accessibility guidelines. They are recommended to be used in conjunction with additional bikeway amenities such as bicycle racks, drinking fountains, landscaping and/or restrooms.

Materials

- Phenolic Resin Panel (high pressure laminate)
- Mount to powder coated steel frame with 3"x 3" posts and custom header

Trail Directory



Description

A Trail Directory provides directional and distance information to major destinations and bikeway amenities. Supplementary decals indicating services (such as restroom, drinking fountain, etc.) can be added to destinations at the discretion of individual city. Direction signs can list up to three destinations.

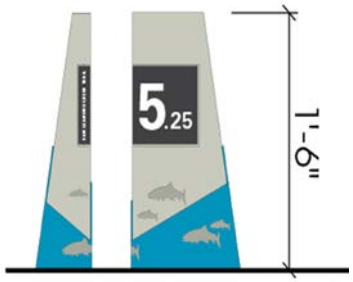
Placement

Install direction signs along the bikeway prior to decision making points and at major bikeway intersections. Allow for sufficient distance prior to the intersection to provide safe recognition and response to information provided.

Materials

- 1/4” glass panel logo
- Formed concrete skin mounted to internal support post
- 1/8” metal sleeve with cutout trout shapes, painted blue
- Metal informational panels inset into concrete facade

Mile Marker



Description

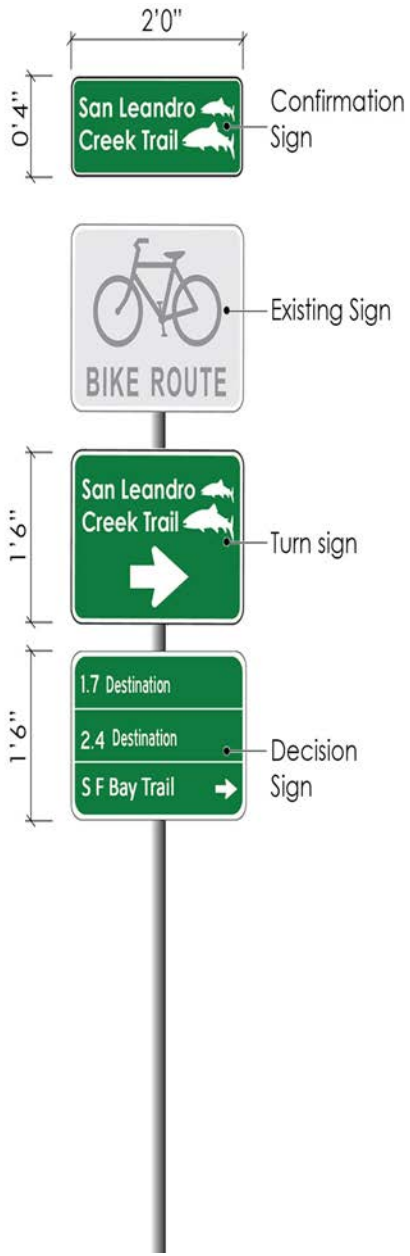
Measuring distance along trails and greenways is important in order to state more accurate locations along a trail. Mileage can be marked off on signs, posts, stones, or stencils on the pavement. Knowing mileage can also help with emergency response.

Placement

Mile markers appear every 1/2-mile along trail.

Materials

- Metal informational panels inset into concrete facade
- 1/8” metal sleeve with cutout trout shapes, painted blue



On-Street Guide Sign

Description

On-street bicycle signs guide bicyclists to their destinations along the on-street portions of the San Leandro Creek Trail route. The following plaques can be used individually or in conjunction with one another. San Leandro Creek Trail confirmation plaques indicate to bicyclists that they are on the designated San Leandro Creek Trail bikeway and makes motorists aware of the bicycle route. Turn signs indicate where the San Leandro Creek Trail turns from one street onto another street and can be used with pavement markings. Decision signs mark the junction of two or more bikeways and inform bicyclists of a designated bike route to access key destinations.

Placement

San Leandro Creek Trail plaques can be placed on existing bike route signs to identify the route. The plaques serve as confirmation signs and should be placed soon after turns to confirm the San Leandro Creek Trail route. Turn signs are placed at the nearside of intersections where the San Leandro Creek Trail route turns. Decision signs are placed at the nearside of intersections in advance of a junction to indicate a nearby destination.

Follow CA MUTCD standards (Section 9B.01 – Application and Placement of Signs), including mounting height and lateral placement from edge of path or roadway. Additional standards and guidance are found in Section 9B.20 – Bicycle Guide Signs.

Materials

- 0.080" aluminum sign panel, 1/4" corner radius, typical
- Front of sign to be screened, all exposed surfaces to be painted
- Mount to 2" square perforated unistrut post or existing post adjacent to road where available. Follow local standards

Pavement Markings

Description
Pavement markings reiterate that users are on the San Leandro Creek Trail. They serve as a way-finding tool as well as a subtle marketing tool for the trail system.

Placement
Pavement markings can be used on paved pathways, city sidewalks, or on-street bikeways that connect segments of the San Leandro Creek Trail.

Materials
Paint or thermoplastic stencils - surface material and level of use should be considered when selecting an appropriate pavement marking material. Thermoplastic stencils have a higher up front cost but require less maintenance and are preferred for areas with high use and or tire abrasion.

Undercrossing Street Signs

Description

Street signs identify major road crossings or railroad crossings when there is an underpass or overpass situation and serve as a point of reference for users along the San Leandro Creek Trail. These are fastened directly to the facade of the structure using stainless steel rivets.

Placement

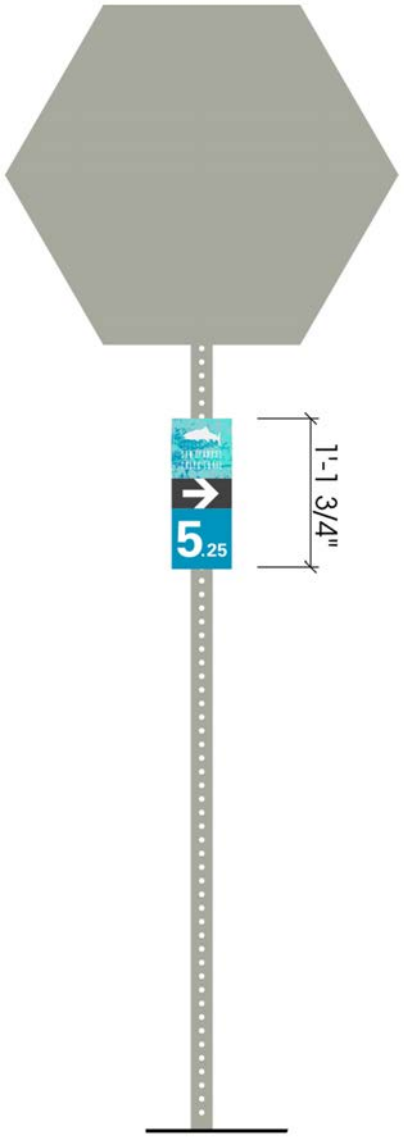
Street signs can be placed on bridge structures over bikeway undercrossings and should be located on both sides of the structure.

Note: Some facilities likely already have street name signs, and they can either be replaced or have additional San Leandro Creek Trail signage added. Replacement is recommended.

Materials

- 0.080” aluminum sign panel, 1/4” corner radius, typical
- Front of sign to be screened, all exposed surfaces to be painted
- Mount to bridge overpass structures, centered above the path

Street Sign



Description

Street signs are attached to existing sign poles in the on-street section of the trail pathway and indicate the mileage and direction. They can be used instead of mile marker when space is limited and facility is on street.

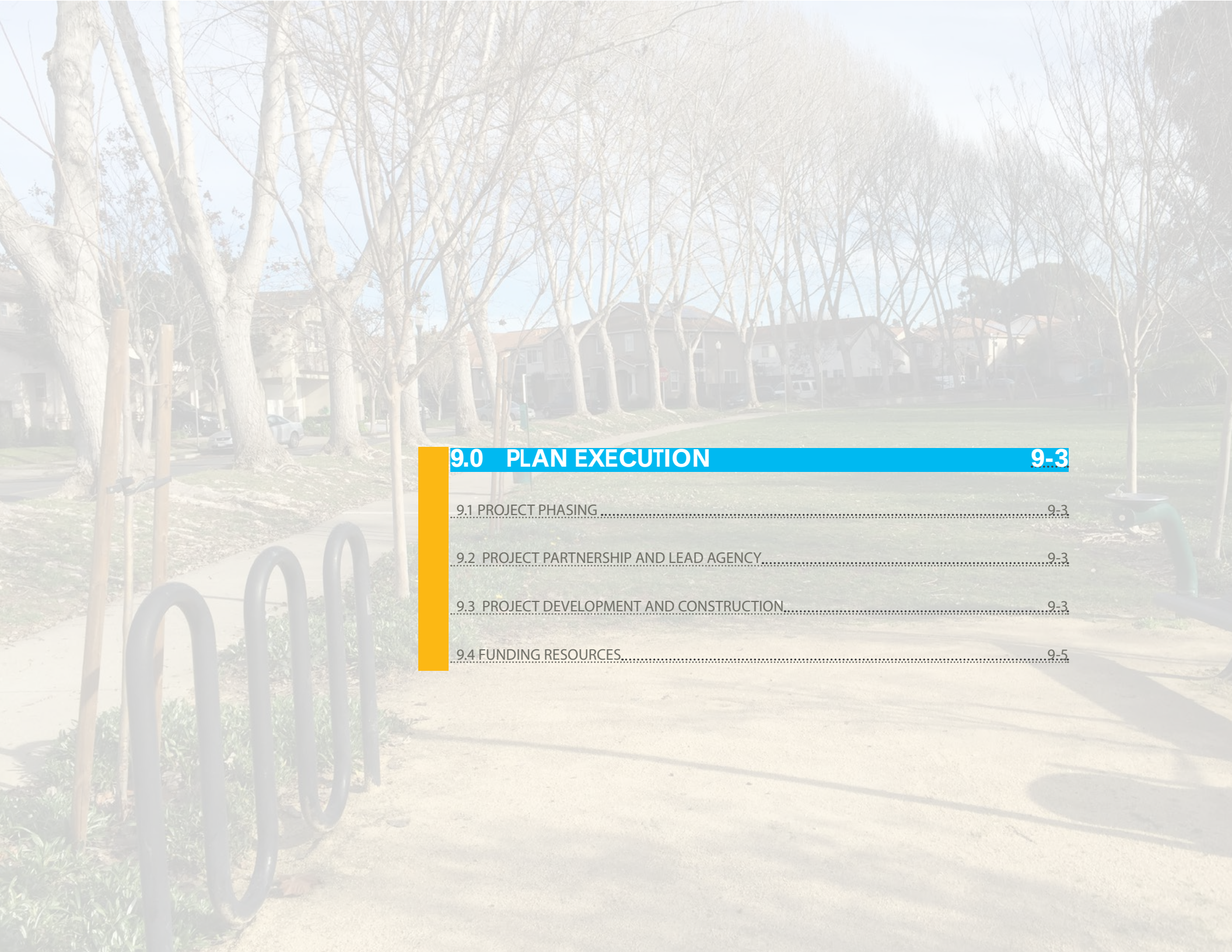
Placement

Fastened to existing signs such as stop signs in five minute walking distance without turns or on route with existing street signs.

Materials

- Metal informational panels

9 Plan Execution



9.0 PLAN EXECUTION

The implementation plan is intended to help the cities of Oakland and San Leandro, and the determined lead agency to make San Leandro Creek Trail Master Plan into a reality and will require four key factors:

- A commitment on the part of decision makers and the public to improving the bicycling and walking environment
- Project development and construction
- Funding
- Maintenance and repair

As the feasibility of the final alternative is established the agencies will need to look for funding opportunities to secure funds for further feasibility studies, traffic studies, environmental studies, and then detailed design and construction of the trail. This will include conceptual as well as engineering design to make the project shovel ready as well as funding for construction of the project. This chapter will consider stages of project development from design to construction as well as various funding resources.

Before embarking on design and construction of the trail it is important to adopt or incorporate this plan as a part of the Bicycle Master Plan of the individual cities. It is also advisable that the route gets included in the General Plans of the cities and other regional plans. The inclusion of the route as a part of these plans would be helpful in seeking funding for the project.

9.1 PROJECT PHASING

The project is divided into eight segments. Segments 1 to 4 are in the City of Oakland and Segment 5 to 8 are in the City of San Leandro and Oakland. Segment 1 is largely complete. It is recommended that the trail construction follow the final recommended route and begin simultaneously at Segment 2 and Segment 5. The construction will progress east from these two segments to Segment 4 and Segment 8. This is due to ease of implementation and public support in the western most segments of the Cities.

9.2 PROJECT PARTNERSHIP AND LEAD AGENCY

A critical next step in the trail implementation process is to clarify and formalize jurisdictional responsibilities for each trail segment. Regular maintenance of the trail and associated support facilities contribute to successful operation of the trail. However, with multiple jurisdictions, agency involvement and ownership of land along the proposed route, it is necessary to have a clear understanding with written agreement between the agencies at onset of the project with respect to the roles and responsibilities of each agency related to the trail. Because the project crosses jurisdictions, it will be important to have each agency understand their role and who will take the lead and when. The Alameda Flood Control District will require an agency with a Police department to take the lead, which would mean the City of Oakland, the City of San Leandro or East Bay Regional Park District, which manages the adjacent section of Bay Trail.

9.3 PROJECT DEVELOPMENT AND CONSTRUCTION

Once the project is deemed feasible and there is political will as well as public support for the project, it enters a project development and construction stage, which consists of eight broad steps.

9.3.1 Funding

In order for any project to move forward, funding must be secured. This can include being included in the City's budget and Capital Improvement program. Funding can be sought for the project as a whole, or for each phase of the project. Due to time limits and limited funds, typically funding for only the next phase of the project is sought at one time. There are various sources of funding for these types of projects, which are detailed in the following section.

9.3.2 Feasibility Analysis

Some of the more challenging portions of the project, including the areas with railroad crossings or the area behind Sheffield Village, may benefit from

a more detailed feasibility analysis. The purpose of a feasibility study is to determine the best path forward for a particular segment, and determine the best alignment, with greater detail than this master plan. It often includes concept drawings to scale showing the proposed trail. For most segments this can be handled in the phase of Project Approval and Environmental Document. For sections with significant on-street portion, the City may request that traffic studies be performed prior to the PA & ED phase also.

9.3.3 Preliminary Design

Preliminary design can be completed as a part of the feasibility analysis, or on its own. This typically includes a more detailed map of the project, with various key issues identified, depending on the project (such as structural feasibility for structures). These plans are often prepared to approximately 30% completion, with relatively accurate dimensions, showing the location, dimensions, and materials of the proposed project. These plans allow for more refined cost estimates, but do not provide the detail required for construction. These preliminary plans serve as the basis for environmental documentation (PA&ED). Although permitting is discussed in a later phase, this can also begin preliminary agency review.

9.3.4 Project Approval and Environmental Document (PA & ED)

This first stage of engineering design deals with creating a project report (an engineering document) and environmental documentation (disclosure document) or an exception to environmental documents requirement under California Environmental Quality Act (CEQA) guidelines. The Project report evaluates various alternatives from an engineering perspective for the selection of the final alternative.

9.3.5 Design Stage (PS & E)

Following PA & ED, Plans, Specifications, and Estimates (PS & E) and Clear right-of-way must be prepared. This step involves creating fully developed construction plans, specifications, and detailed cost estimates.

9.3.6 Right-of-Way / Permitting

The right-of-way needed to complete the construction of the trail is then obtained. In certain cases, an agreement between the agencies implementing and owning property might be needed. For example, an agreement might be needed with the Alameda County Flood Control and Water Conservation District to use the maintenance roads or agreement with Union Pacific Corporation might be needed to build an underpass. Permits that may be required, or agencies that have jurisdiction over a portion of the trail and may require approvals, include:

- California Coastal Commission: The California Coastal Act policies are applicable to all state agencies, including the Federal Highway Administration and Bureau of Land Management (BLM). A federal review may be required if any Federal funds are used. In addition, a coastal land use permit may be required, especially in Segments 1 and 2.
- California Department of Fish and Game: The California Department of Fish and Game will require coordination, especially since one of the long-term goals of the creek is to reintroduce native fish. A Section 1602 Lake or Streambed Notification/Application for a Streambed Alteration Agreement needs to be submitted to CDFG for any work that may impact a stream or related riparian habitat.
- Caltrans: Coordination will be required with Caltrans for any portions on state right-of-way, under the existing freeways, or on state highways. Encroachment permits are required to construct anything on Caltrans jurisdiction.
- Regional Water Quality Control Board: The project may require permits, such as a Water Quality Certification, which may include a Storm Water Pollution Prevention Plan application to the local water quality control board.
- Union Pacific Railroad: Any under crossings of the existing rail lines will require close coordination with Union Pacific and approvals from them.
- U.S. Army Corps of Engineers: Although the project is using mainly existing service roads near the channel, permits (including a Section 404 Permit for placement of fill), may be required.

9.3.7 Construction

Once the engineering documents are in place and detailed estimates are

drawn, various construction firms might be invited to bid on the project, and the project will be awarded to the firm that best fits the criteria set by the agency. Construction would begin after awarding the construction contract in the previous stage. It involves all activities from approval of the contract through transfer of the facility to maintenance. The steps involved are:

- Building the project
- Opening the facility to the public
- Settling remaining right-of-way actions, if any
- Archiving as-builts and project files
- Completing environmental commitments
- Resolving all claims

9.3.8 Trail Management Program

A comprehensive Trail Management Program with specific required tasks should be implemented that will provide long-term stewardship of the San Leandro Creek Trail Project. The purpose of the Program is to outline the specific tasks, priorities, schedules, responsible parties, and budget needed to keep the trail in the desired condition. Responsible officials and agencies should embrace the Program, and the community stakeholders should be engaged in the effort. Guiding principles for a successful Program include: sound planning and design; annual updates of tasks, operational policies, standards, and maintenance goals; involvement of field crews, police, and fire/rescue personnel in the process; performing quality control and regular inspections; protection of life, property, and environment; preserving a quality outdoor recreation experience; developing an effective public feedback system; and maintaining a good neighbor relationship with adjacent properties.

Maintenance activities are generally classified as:

- **Custodial Maintenance** – Includes routine tasks like picking up litter, emptying trash cans, and trimming shrubs and trees.
- **Preventative/Corrective Maintenance** – Preventative maintenance includes routine maintenance tasks to preserve the life of existing structures, such as annual inspections and asphalt patching and resealing. Corrective maintenance includes responses to structural emergencies, such as irrigation breaks, and other maintenance tasks that might not be anticipated.
- **Capital Maintenance** – Includes major work efforts to rehabilitate a deteriorated facility to its original condition.
- **Emergency Access** – Includes maintenance of the trail in a manner that ensures that emergency vehicles have access to the trail. Emergency access will be based on protocol to be established between the parks, fire, and police departments and an Emergency Plan developed by each department.
- **Risk Management** – To minimize liability, established standards in trail design, signage, and maintenance will be followed. Measures to minimize liability will be adhered to, such as posting trail regulations, providing enforcement, posting warning signs for known hazards, keeping accurate routine maintenance records, inspecting and evaluating the trail regularly for hazards, addressing hazards and maintenance problems reported by trail users as soon as possible, and ensuring adequate emergency access points along the entire trail corridor.

9.4 FUNDING RESOURCES

Trail projects are designed, constructed, and therefore funded, through a number of avenues. Funding resources can be used at various stages of project implementation from PA&ED to construction depending on the availability of funding and can be divided into three categories: Federal and State, Regional and Local, and Private/nontraditional/in-kind. The implementing agencies should tap into these sources in order to take maximum advantage of the funds that are available.

To access transportation funds, the San Leandro Creek Trail includes a number of key characteristics that would enable it to be highly competitive for grant funds. For example, the Active Transportation Program scores projects more

favorably if they serve disadvantaged communities, and several of the neighborhoods along the creek would meet the criteria established by ATP.

There are a numbers of potential funding sources listed and discussed in this chapter. Implementing agencies can use a combination of these sources to implement the potential San Leandro Creek Trail project. Regional ATP and Measure BB are the most recommended funding sources for this project. Both of these sources fall in the Regional / Local category and have a history of funding similar projects in the region. These and other sources are listed and discussed below.

Potential Funding Sources

FEDERAL / STATE

- **A.** TIGER
- **B.** ATP / TAP
- **C.** RTP
- **D.** AHSC
- **E.** Urban Greening
- **F.** EEMP
- **G.** HSIP
- **H.** California State Coastal Conservancy
- **I.** CMAQ
- **J.** STIP
- **K.** LWCF
- **L.** HCF
- **M.** Wildlive Conservation Board Public Access Program
- **N.** CDBG
- **O.** OTS grants

2. REGIONAL / LOCAL

- **A.** Regional ATP
- **B.** TDA Article 3
- **C.** Alameda County Measure B & BB
- **D.** Alameda County VRF (Vehicle Registration Fee) – started in 2011, after passage of measure in 2010.
- **E.** SRTS
- **F.** TFCA (run by BAAQMD)
- **G.** Regional Measure AA – Passed June 2016

3. PRIVATE / NON-TRADITIONAL/IN-KIND

- **A.** CCC
- **B.** People for Bikes
- **C.** Benefit Assessments
- **D.** Special Taxes and Fees
- **E** Quimby Act
- **F.** Transient Occupancy Tax

9.4.1 FEDERAL AND STATE SOURCES

A. Transportation Investments Generating Economic Recovery (TIGER)

Congress designed TIGER grants to incentivize innovative, collaborative solutions to difficult transportation problems and generate economic development. Since 2009 when it was launched, the TIGER grant program has funded $5.1 billion to 421 projects in all 50 states, DC, Puerto Rico, Guam the Virgin Islands and tribal communities. The seventh round of TIGER grants in 2015 generated 625 applications requesting $9.8 billion worth of projects of which bicycle and pedestrian projects made up six percent. There was an eighth round of funding in July 2016

For more information: https://www.transportation.gov/tiger

B. Active Transportation Program (ATP) and Transportation Alternatives Program (TAP)

The ATP was created in 2013 by legislation which merged most of the major bicycle, pedestrian and trail funding programs -- including California's entire share of the federal Transportation Alternatives Program (previously known as Transportation Enhancements), Safe Routes to School, Bicycle Transportation Account and a portion of the Recreational Trails Program. The goals of the program include: increasing biking and walking trips; improving safety and mobility of non-motorized users; reducing greenhouse gas emissions; and enhancing public health. There is a strong focus on projects that benefit disadvantaged communities. The current funding level is approximately $140 million per year, and is programmed as follows:

- Regional share: 40% to Metropolitan Planning Organizations (MPOs), distributed based on total county population;
- Rural Share: 10% to small urban and rural regions with populations of 200,000 or less; and
- Statewide share – 50% for a statewide competition for projects anywhere in the state.

Eligible Applicants: Local, regional or state agencies; transit agencies; natural resource or public land agencies; tribal governments; school districts or schools. A private non-profit tax-exempt organization is eligible to apply independently for Recreational Trails Program funded projects (only about $2.8 million available per year within the ATP); otherwise, for trails or any other eligible projects, non-profits must partner with another eligible applicant.

Application Process: The California Transportation Commission will program the Statewide and Rural shares; the Metropolitan Transportation Commission (MTC) will program the regional share for the Bay Area. The next call for projects will be in 2018, and they will be programming for FY 21/22 and 22/23.

For more information: http://www.catc.ca.gov/programs/ATP.htm

C. Recreational Trails Program (RTP)

The Recreation Trails Program is a federal program that has been part of the federal transportation bill for many years, including the current FAST Act (Fixing America's Surface Transportation) signed into law in December 2015. It funds recreation trails and trails-related projects. California's current annual allotment is approximately $5 - 6 million, of which 40% is included in the Active Transportation Program (see above) and the balance or approximately, $3 million is administered by the California Department of Parks and Recreation. Half of the $3 million goes to non-motorized projects, programmed through the Department's Office of Grants and Local Services, and half goes to motorized projects, programmed through the Department's Off-Highway Motor Vehicle Recreation Division. There are no set minimum and maximum grant amounts. The program funds up to 88% of the total project cost and requires that the applicant match at least 12% of the total project cost.
Eligible match sources include state, local, or private funds, donated materials and services, or other federal funds. Projects must comply with the National Environmental Policy Act (NEPA) and the National Historic Preservation Act and be listed on the State Transportation Improvement Plan (STIP) or a local Transportation Improvement Plan (TIP).

Eligible Applicants: Cities, counties, districts, state, and federal agencies and non-profit organizations with management responsibilities of public lands.

Previously Funded Trail Projects: In December 2015, the East Bay Regional Park District secured $1.3 million for a San Francisco Bay Trail segment from Pinole Shores to Bay Front Park.

Application Process: A portion of the funds are included in the ATP, so applicants must apply through that program (see above). The other portion of the non-motorized component is administered by State Parks. The next cycle has not yet been scheduled, but will likely be in 2018.

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

D. Affordable Housing and Sustainable Communities (AHSC) Grant Program

Administered by the Strategic Growth Council, and implemented by the Department of Housing and Community Development, the AHSC Program funds land-use, housing, transportation, and land preservation projects to support infill and compact development that reduce greenhouse gas ("GHG") emissions. Funding for the AHSC Program is provided from the Greenhouse Gas Reduction Fund (GGRF), an account established to receive Cap-and-Trade auction proceeds. The AHSC Program will assist project areas by providing grants and/or loans, or any combination thereof, that will achieve GHG emissions reductions and benefit Disadvantaged Communities through increasing accessibility of affordable housing, employment centers and key destinations via low-carbon transportation resulting in fewer vehicle miles traveled (VMT) through shortened or reduced trip length or mode shift from Single Occupancy Vehicle (SOV) use to transit, bicycling or walking. 50% of the available funds are set aside for Affordable Housing Developments, and 50% of the available funds are set aside for projects benefiting Disadvantaged Communities.(Note: a single project can address both set-asides above, and are not mutually exclusive.) This is a very complex program, and only a small proportion of the funded projects funded to date contained bikeways or walkways. Here is a breakdown of the active transportation components for the 2014-15 round: http://sgc.ca.gov/pdf/AHSC%20Data1415%20Transpo%20Related%20Infra%20Detail.pdf

Application Process: the AHSC has a two-step process. Applications are invited through the issuance the Notices of Funding Availability (NOFA). Applicants must submit a concept proposal for review and evaluation. HCD will notify and invite select applicants to submit a full application based on the ranking of concept proposals and available funds.

For more information: http://www.hcd.ca.gov/financial-assistance/affordable-housing-and-sustainable-communities/

E. Urban Greening Grant Program

Administered by the Strategic Growth Council, the Urban Greening Grant Program funds projects that transform the built environment into places that are more sustainable, enjoyable, and effective in creating healthy and vibrant communities by establishing and enhancing parks and open space, using natural solutions to improving air and water quality and reducing energy consumption, and creating more walkable and bikeable trails. Grants will be awarded on a competitive basis. This program emphasizes, and gives priority to, projects that are proposed by and benefit the State's disadvantaged communities. All projects are required to show a net GHG benefit and provide multiple other benefits. In order to quantify GHG emission reductions, projects must include at least one of the following project activities –

- Sequester and store carbon by planting trees
- Reduce building energy use from strategically planting trees to shade buildings
- Reduce commute, non-recreational and recreational vehicle miles traveled by constructing bicycle paths, bicycle lanes, or pedestrian facilities

The Legislature recently approved $80 million for this program from the Greenhouse Gas Reduction Fund, and the new guidelines should be finalized in early 2017. There is no minimum or maximum project size, and no match is required, although having a match makes an application more competitive. In previous rounds, typical project grants ranged from $75,000 to $1 million.

Eligible Applicants: Public agencies, special districts, and nonprofit organizations. The grant awards must be used for the preparation, adoption and implementation of an urban greening project that provides multiple benefits.

Previously Funded Trail Projects: Refurbishing and creating four miles of trails in San Diego that link schools, neighborhoods, and parks; creating a ¾ mile bicycle and pedestrian path that connects low-income neighborhoods to a Metro Station in Burbank; preparing a plan that links greenway corridors in San Pedro.

Application Process: The next call for projects will likely be in 2017. There were three funding cycles in 2010, 2012 and 2013. Check website for lists of previously funded projects.

For more information: http://www.sgc.ca.gov/Grant-Programs/UGG-Program.html

F. Environmental Enhancement and Mitigation Program (EEMP)

The Environmental Enhancement and Mitigation Program, managed by the Natural Resources Agency, funds projects that reduce environmental impacts of modified or new public transportation facilities such as streets, highways, park and ride facilities, or transit stations. The three categories of projects that are eligible for funding are: "Urban Forestry Projects", "Resource Lands", and "Mitigation Projects Beyond the Scope of the Lead Agency". Although the separate trail category has been removed, trail improvement projects are still eligible for funding if they are combined with an urban forestry or resource lands project. All projects must be directly or indirectly related to offsetting environmental damage and should provide multiple benefits that reduce impacts of climate change. In 2013, the funding level was reduced from $10 million to $7 million annually. Project funding is allocated 40% to projects in northern California, and 60% to projects in southern California. Individual project grants do not exceed $350,000.

Eligible Applicants: Nonprofit organizations and local, state, and federal

agencies. Joint projects between multiple agencies are accepted only if one agency leads.

Previously Funded Trail Projects: Homewood Bicycle Trail Project in Tahoe City; Knickerbocker Channel Multi-use Trail in the City of Big Bear Lake; Lacks Creek Recreational Trail System project in Humboldt County.

Application Process: Applications must be submitted to the office of the California Natural Resources Agency. The 2015-16 grant cycle is closed; the awardees will be announced in March 2017.

For more information: http://resources.ca.gov/bonds_and_grants/eemp/

G. Highway Safety Improvement Program (HSIP)

The Highway Safety Improvement Program funds construction projects that reduce traffic fatalities and serious injuries on public roads or public bicycle and pedestrians paths or trails. Eligible projects must identify a specific safety problem that will be corrected. A minimum of 90% of the project cost must be safety-related construction items and a maximum of 10% of the project cost can be used for non-safety construction items, such as landscaping. The maximum for individual project grants is $1.5 million and the minimum is $100,000. Projects are evaluated based on the Benefit/Cost ratio and the projects with the highest B/C ratio are selected for funding. Proposed projects first go through Statewide Project Selection, which allocates 70%-80% of HSIP funds. Projects that are not selected then go through District Project Selection, which allocates the remaining 20%-30% of HSIP funds. High Risk Rural Road Projects have a lower statewide B/C ratio cutoff.
Eligible applicants: City, county, or tribal government federally recognized with the State of California.

Previously Funded Trail Projects: Installed guardrail along various sections of Silverado Trail in Napa County; widened shoulder and upgraded drainage along Old Oregon Trail in Redding; installed a concrete abutment on a grade separated crossing on the Clovis Old Town Trail in Clovis.

Application Process: Calls for projects are generally made every 1-2 years. Applications must be submitted to the respective Caltrans District Local Assistance Office and directed to the attention of the District Local Assistance Engineer.

For more information: Information on Cycle 8, the most recent call for projects (May 2016) can be found here: http://www.dot.ca.gov/hq/LocalPrograms/HSIP/apply_now.htm

H. California State Coastal Conservancy

The Coastal Conservancy funds property acquisition, project planning, design, and/or construction projects that increase public access to and along the coast, protect and restore natural resources in the coastal zone, restore coastal urban waterfronts, protect coastal agriculture land, and resolve land use conflicts. The conservancy is also the lead agency in implementing the California Coastal Trail. Projects must meet the 15 goals and objectives in the Conservancy's Strategic Plan. Priority is given to projects that address landscape/habitat linkages, watershed protection, and climate change impacts other than sea level rise. There are no set minimum and maximum grant amounts. The awarded funds are based on the project needs, benefits and competing demands for existing funding.

E***ligible Applicants:*** Cities, counties, districts, state, and federal agencies, and non-profit organizations that are compatible with the Coastal Conservancy's enabling legislation.

Previously Funded Trail Projects: Design and construction of Truesdale Vista Point trailhead and feasibility study of additional trail development in Eureka; plan and design of two trails in Mendocino County; maintenance and improvement of the Heritage Trail in Mendocino County.

Application Process: Prior to submitting an application, prospective applicants must discuss their projects with a Conservancy Program Manager, who will determine whether or not an application should be submitted. In most cases, projects that receive funding are developed over time by potential grantees

working with Conservancy staff. Application submissions are accepted at any time. Periodically, there are also competitive grant rounds to fund particular projects and/or projects in specific locations.

For more information: Bay Area locations: Matt Gerhart: matt.gerhart@scc.ca.gov or 510-286-0317. http://scc.ca.gov/applying-for-grants-and-assistance/forms/

I. Congestion Mitigation and Air Quality (CMAQ) Program

The Congestion Mitigation and Air Quality Improvement (CMAQ) program was established by Congress as part of that national transportation bill called ISTEA in 1991. The CMAQ program provides a flexible funding source to state and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. For the Bay Area, Metropolitian Transportation Commission (MTC) allocates some of its CMAQ funds to support the Regional Safe Routes to School Program (see Regional and Local Funding Sources, below) and some CMAQ funds are included in the One Bay Area Grant (OBAG) Program, which was established in 2012. OBAG includes both a regional and county program; funds are targeted to Priority Development Areas (PDAs) and Priority Conservation Areas (PCAs). Cities and counties can use OBAG funds for a variety of projects that improve air quality, including bicycle and pedestrian improvements. In late 2015 MTC adopted a framework for OBAG 2, the updated program, which will contain about $800 million to fund projects from 2017-2022.

For more information: Additional information can be found on the MTC website: http://mtc.ca.gov/our-work/fund-invest/federal-funding/obag-2

J. State Transportation Improvement Program (STIP)

The STIP is a five-year investment plan for state transportation funding. It is updated every two even years. The STIP is funded from the State Highway Account (SHA), the primary funds of which are the $0.18 per gallon state gasoline tax and Federal (primarily STP) funds. The Bay Area creates a Regional TIP which is incorporated into the STIP. The RTIP is created by MTC in cooperation with the County Congestion Management Agencies (CMAs) and Caltrans.

The program provides funding for capital acquisition and construction of State highways and freeways, carpool lanes, local roads, public transit, pedestrian and bicycle facilities, grade separations, TDM, sound walls, and safety projects.

More information: To get a project included for funding in the RTIP, local agencies should work with their CMA.

For more information: Kenneth Kao at MTC: kkao@mtc.ca.gov or (415) 778-6768.

K. Land & Water Conservation Fund (LWCF)

The Land and Water Conservation Fund provides grants for acquiring and developing public outdoor recreation areas and facilities, with trails being one of the priority development projects. The National Parks Service allocates LWCF grants to state agencies and, in California, the Office of Grants and Local Services within the California Department of Parks and Recreation allocates LWCF grants to local agencies. In April 2016 the Interior Department announced $95 million for stateside funding for all 50 states. The maximum grant amount is $2,000,000 and the minimum is $100,000. Applicants must provide a grant request range for the highest desired and lowest acceptable amount of funding the project requires. Project planning costs incurred up to three years before the application is submitted are eligible for reimbursement. Land that is acquired or developed through LWCF is placed under federal protection to be preserved in perpetuity for public outdoor recreational use.

Eligible Applicants: Cities, counties, and districts that are authorized to acquire, develop, operate, and maintain park and recreation facilities.

Previously Funded Trail Projects: Projects recommended in previous cycles include construction of multi-use bicycle trails in San Francisco County and a walking trail loop in the City of Farmersville.

Application Process: Application packets must be sent to State Parks Office of Grants and Local Services (OGALS). They do not anticipate holding an

application cycle in 2017; it is not yet determined when the next cycle will be.

For more information:For updates, consult the OGALS website: http://www.parks.ca.gov/?page_id=1008

L. Habitat Conservation Fund (HCF)

The Habitat Conservation Fund (HCF), authorized through the California Wildlife Protection Act in 1990, provides grants to programs that bring urban residents into parks, and to trail construction projects that protect wildlife corridors. Funds can be used either for site acquisition or enhancement, restoration, and development, not for both. The California Department of Parks and Recreation allocates $2 million annually through the Office of Grants and Local Services (OGALS). There are no set minimum and maximum grant amounts, but there is a 50% required match which cannot come from other state funding sources.

Eligible Applicants: Cities, counties, and districts.

Previously Funded Trail Projects: Projects recommended for 2013/2014 funding cycle include construction of the Buckeye Trail in Monterey County, restoration of Sibley & Huckleberry Regional Preserves Trail in the East Bay Regional Parks District, and construction of the Palos Verdes Nature Preserve Trails in the City of Palos Verdes.

Application Process: The application deadline is the first workday in October. Applications must be sent to the Office of Grants and Local Services.
For more information: https://www.parks.ca.gov/?page_id=21361

M. Wildlife Conservation Board (WCB) Public Access Program

The Public Access Program, a Wildlife Conservation Board (WCB) program established by the Wildlife Conservation Law of 1947, funds projects that improve public access to hunting, fishing or other wildlife-oriented recreation, including trails for hiking and bird watching. Applicants must demonstrate that projects address an existing wildlife-oriented public access need in the area and demonstrate an ability to manage and maintain improvements for 25 years. The Wildlife Conservation Board allocates approximately $1 million annually. Projects with 50% match are preferred.

Eligible Applicants: Federal, state agencies, cities, counties, special districts, and nonprofit organizations and corporations that manage and operate wildlife oriented public access properties or programs.

Previously Funded Trail Projects: Public access to Cosumnes River Reserve in Sacramento County; public access to Rio de Los Angeles State Park in Los Angeles County; Replacement of bridge at Battle Creek Wildlife Area in Shasta and Tehama Counties.

Application Process: Applications are accepted on a year-round basis. The WCB meets in February, May, August, and November to determine which projects to fund. Prior to submitting an application, prospective applicants must discuss their projects with Wildlife Conservation Board staff, who will determine whether or not an application should be submitted and what project features need further development.

For more information: Public Access Program Manager Peter Perrine; (916) 445-1109; Fax (916) 323-0280; peter.perrine@wildlife.ca.gov; https://wcb.ca.gov/Programs/Public-Access

N. Community Development Block Grants (CDBG)

The Community Development Block Grant (CDBG) program is a flexible program that provides communities with resources to address a wide range of unique community development needs. Beginning in 1974, the CDBG program is one of the longest continuously run programs at Housing and Urban Development (HUD). The CDBG program works to ensure decent affordable housing, to provide services to the most vulnerable in our communities, and to create jobs through the expansion and retention of businesses. CDBG is an important tool for local governments to tackle serious challenges facing their communities. “The annual CDBG appropriation is allocated between States and local jurisdictions called “non-entitlement” and “entitlement” communities respectively. Entitlement communities are comprised of central

cities of Metropolitan Statistical Areas (MSAs); metropolitan cities with populations of at least 50,000; and qualified urban counties with a population of 200,000 or more (excluding the populations of entitlement cities). States distribute CDBG funds to non-entitlement localities not qualified as entitlement communities. HUD determines the amount of each grant by using a formula comprised of several measures of community need, including the extent of poverty, population, housing overcrowding, age of housing, and population growth lag in relationship to other metropolitan areas."

Eligible Applicants: Counties with fewer than 200,000 residents in unincorporated areas and cities with fewer than 50,000 residents that do not already participate in the U.S. Department of HUD Community Development Block Grant (CDBG) entitlement program.

Application Process: Each year, generally in January, the CDBG program releases one combined Notice of Funding Availability (NOFA) encompassing all CDBG-eligible activities, including Community Development, Economic Development, and the Native American and Colonia Set-Asides.

For more information: http://www.hcd.ca.gov/financial-assistance/community-development-block-grant-program/

O. Office of Traffic Safety – Pedestrian and Bicycle Safety Program

The Office of Traffic Safety manages a program to increase awareness of traffic rules, rights and responsibilities among various age groups, and to ensure that drivers of motor vehicles understand their need to share the road with pedestrians and bicyclists. These programs are developed to be attractive and interactive in an effort to truly impact students. At the elementary school level, parents and teachers are drawn into the programs as active role models and mentors in traffic safety. Grantees conduct traffic safety rodeos and presentations in an effort to build students' skills and demonstrate proper practical application of those skills. To boost compliance with the law and decrease injuries, safety helmets are properly fitted and distributed to children in need for use with bicycles, scooters, skateboards, and skates. There is a special emphasis on programs designed exclusively for the hard-to-reach population at the middle and high school levels. Additional outreach endeavors include programs targeting the senior population along with a multicultural approach to address safer driving and walking behaviors.
The goals of the Pedestrian and Bicycle Safety Program are:

- To reduce the total number of pedestrians killed
- To reduce the total number of pedestrians injured
- To reduce the total number of bicyclists killed in traffic related collisions
- To reduce the total number of bicyclists injured in traffic related collisions
- To increase bicycle helmet compliance for children aged 5 to 18

Application Process: Applications are due January 31 for grants that begin October 1st of that year. Grant applications for FFY 2018 will be available after December 1, 2016.

For more information: (916) 509-3030; ContactOTS@ots.ca.gov; http://www.ots.ca.gov/Grants/

9.4.2 REGIONAL AND LOCAL FUNDING SOURCES

A. Regional ATP

This program is described above under Federal and State Funding Sources. This section addresses the Bay Area Regional Share, which is implemented by the Metropolitan Transportation Commission (MTC).

Eligible Applicants: These are the same as in the statewide share: Applicants and/or implementing agencies must be able to comply with all the federal and state laws, regulations, policies and procedures required to enter into a Local Administering Agency-State Master Agreement (Master Agreement). The following entities in California are eligible to apply for Active Transportation Program funds: local, regional or state agencies, Caltrans, transit agencies, natural resources of public land agencies, public schools or school districts, tribal governments, private non-profit tax-exempt organizations, and any

other entity with responsibility for oversight of transportation or recreational trails that the Commission determines to be eligible.

Previously Funded Trail Projects: Cycle 2 of the ATP funded $133 million for trail-related projects including the Napa Valley Vine Trail and the Coyote Creek Trail in San Jose.

Application Process: Any project interested in applying to the ATP Regional Share must first apply to the Statewide Share, and must also fill out a Supplemental Application available on the MTC website: http://mtc.ca.gov/tools-and-resources/digital-library/regional-atp-cycle-3-supplemental-application. Projects that are not funded in the statewide share then compete in the regional share.

For more information: For additional program information, contact Laurie Waters (Laurie.Waters@dot.ca.gov, 916-651-6145). http://www.catc.ca.gov/programs/ATP.htm

B. Transportation Development Act Article 3 (TDA)

TDA allows counties to implement a quarter-cent sales tax to finance a wide variety of transportation projects, including: transit operation, bus and rail projects, special transit services for disabled riders, pedestrian and bicycle facilities, and transportation planning. TDA 3 provides funding annually for bicycle and pedestrian projects. From the overall TDA funding, 59% of funds are collected in the county for use in bicycle and pedestrian projects.

Eligible Applicants: City and county government entities with bicycle and pedestrian projects.

Application Process: An applicant must submit a resolution from its governing body approving its proposed project(s) and application(s). The applicant must also certify that their bicycle and pedestrian project(s) have been reviewed by the Bicycle Advisory Committee of the county and the project is included in the Bicycle Master Plan. The applicant must also certify that the project is in compliance with Article 3, Section 99234 of the Transportation Development Act, regarding claims for pedestrian and bicycle facilities. All request for allocation of TDA Article 3 funding must be submitted as part of single, countywide coordinated claim from each county in the SF Bay region.

For more information:Contact Cheryl Chi, TDA Program Manager, at cchi@mtc.ca.gov or (415) 778-5339

C. Alameda County Measures B & BB

Alameda County voters approved Measure B on November 2000, a continuation of the county's half-cent transportation sales tax through 2022. Alameda County voters extended this policy and approved Measure BB on November 2014, authorizing an extension and augmentation of the existing transportation sale tax (Measure B). Measure BB can generate approximately $8 billion in revenues from April 2015 to March 2045 for transportation improvements in Alameda County. The Alameda County Transportation Commission (ACTC) established an expenditure plan to: expand mass transit programs, fix aging highways, maintain and improve local streets and roads, improve bicycle and pedestrian safety, and expand special transportation services for seniors and people with disabilities.

Eligible Applicants: The measure B and Measure BB Bicycle/Pedestrian Direct Local Distribution (DLD) funds may be used for capital projects, programs, or plans that directly address bicycle and pedestrian access, convenience, safety, and usage.

Application Process: ACTC sends a call for projects notice with application.

For more information: More information about Measures B and BB is available at www.alamedactc.org;; http://www.alamedactc.org/files/managed/Document/19032/BikePed_Implementation_Guidelines_FINAL_20160225.pdf

D. Alameda County Vehicle Registration Fee (VRF)- Measure F

The Measure F Alameda County Vehicle Registration Fee (VRF) Program generates approximately $11 million per year by a $10 per year vehicle registration fee. VRF aims to reduce traffic congestion, vehicle related pollution, and sustain the County's transportation network. The program

includes four categories of projects: Local Road Improvement and Repair Program (60 percent), Transit for Congestion Relief (25 percent), Local Transportation Technology (10 percent), and pedestrian and Bicyclist Access and Safety Program (5 percent).

Eligible Applicants: Alameda CTC will distribute an equitable share of the funds among the four planning areas of the county. This program would seek to improve the safety of bicyclists and pedestrians by reducing the conflicts with motor vehicles and to reduce congestion in areas such as schools, downtowns, transit hubs and other high activity locations. It also seeks to improve bicyclist and pedestrian safety on arterials and locally-maintained roads and reduce occasional congestion that may occur with incidents. Projects eligible could include: Improved access and safety to schools, "Greenways to Schools Programs," and improvements for students, parents and teachers, improved access and safety to activity centers, transit hubs, improved bicycle and pedestrian safety on arterials, locally-maintained roads and multi-use trails parallel to congested, and highway corridors.
Application Process: Measure F Direct Local Distribution funds are administered through ACTC, and follows the same process as Measure B and BB.

For more information: http://www.alamedactc.org/files/managed/Document/14521/VRF-Expenditure_Plan.pdf

E. Safe Routes to School

The Metropolitan Transportation Commission (MTC) aims to reduce the number of short car trips by parents dropping their children at school by making it safer and easier for students and teachers to walk or bicycle to school instead. The Bay Area Regional Safe Routes to School (RSRTS) program taps federal money to provide about $5 million each year for grants to cities, counties and congestion management agencies to fund: Bicycle and pedestrian paths that connect with schools, on-street bicycle lanes, bicycle racks or other secure bicycle parking, traffic calming projects, bicycle safety programs, and education and outreach for students and families.

Eligible Applicants: The RSRTS program has no limitations on grade levels or non-infrastructure uses of funds, as compared to the state and federal programs. The program uses CMAQ funds, and there are some limitations using CMAQ funds to support RSRTS activities, given that the main purpose of CMAQ is to address reduction of federally recognized pollutants. Being the first MPO in the country to fund a RSRTS program using CMAQ funds, MTC worked through a number of CMAQ eligibility questions during Cycle 1.
Application Process: Once a call for projects has been set, applicants must submit the following: project title, agency sponsor, detailed RSRTS project description, scope of work/schedule, approach to project evaluation, project budget/funding, project milestones under the federal-aid process, and all necessary documentations.

For more information: MTC Regional Safe Routes to School Program, please contact (510) 817-5837 or cgoldblatt@mtc.ca.gov. http://mtc.ca.gov/sites/default/files/RSR2S_Guidelines.pdf

F. Transportation Fund for Clean Air

In 1996, the California State Legislature authorized the Air District to impose a $4 surcharge on motor vehicles registered within the San Francisco Bay Area to fund projects that reduce on-road motor vehicle emissions. The Air District has allocated funds to its Transportation Fund for Clean Air (TFCA) program to fund eligible projects. Sixty percent of TFCA funds are awarded by the Air District through a competitive grant program, the Regional Fund. The remaining forty percent of TFCA funds are forwarded to the designated agency within each Bay Area county and distributed by these through the Program Manager.

Eligible Applicants: Only projects that result in the reduction of motor vehicle emissions within the Air District's jurisdiction are eligible. Projects must achieve surplus emission reductions, beyond what is currently required through regulations, contracts, or other legally binding obligations at the time the Air District Board of Directors approves a funding allocation and at the time of the execution of a funding agreement. All project categories must comply with the transportation control measures and mobile source measures included in the Air District's most recently approved strategy for State and national

ozone standards and, with other adopted State, regional and local plans and programs.

Application Process: In order to qualify for funding, projects must meet the Transportation Fund for Clean Air (TFCA) Regional Fund policies and eligibility criteria approved by the Air District Board of Directors. BAAQMD staff may request additional documentation to verify the information provided in applications. Complete applications received after the initial review date will be evaluated on a first-come-first-serve basis.

For more information: Karen Schkolnick, District Grant Programs Manager Strategic Incentives Division, BAAQMD- 939 Ellis Street, San Francisco, CA 94109
http://www.baaqmd.gov/~/media/files/strategic-incentives/tfca/tfca-regional-fund-guidance-fy10-11-july2010.pdf?la=en

G. Regional Measure AA- San Francisco Bay Restoration Authority "Clean and Healthy Bay" Parcel Tax

The San Francisco Bay Restoration Authority presented a $12 per year parcel tax measure, known as Measure AA, on the June 2016 ballot with revenue earmarked for the restoration of wetlands surrounding the San Francisco Bay. This measure was passed by voters in the nine counties surrounding the San Francisco Bay, which includes Alameda County. The tax would generate approximately $25 million per year for 20 years, totaling $500 million. The proceeds of the tax would fund shoreline projects that protect and restore San Francisco Bay. One of the stated objectives is increasing shoreline public access and recreational areas. Proceeds would be disbursed via competitive grants. The Authority shall ensure that 50% of the total net revenue generated during the 20-year term of the special tax is allocated to the four Bay Area regions in proportion to each region's share of the Bay Area's population, as determined in the 2010 census. The East Bay region which consists of Alameda and Contra Costa Counties would be allocated a minimum of 18%.

Eligible Applicants: The Authority may award grants to public and private entities, including owners and operators of shoreline parcels in the San Francisco Bay Area, and federal, state, local, and nonprofit entities.

Project Eligibility: Projects must be located along the Bay shoreline within one of the nine Bay Area counties. Projects cannot be located in the Delta Primary zone. Eligible projects shall:

- Restore, protect, or enhance natural habitats, such as tidal wetlands or managed ponds, on the San Francisco Bay area shoreline, excluding the Delta Primary zone;
- Build or enhance flood management features that are part of a project to restore, protect, or enhance natural habitats as identified above; or
- Improve or provide public access or recreation features that are part of a project to restore, protect, or enhance natural habitats as identified above.

Application Process: At least once each year, and twice each year subject to the availability of and demand for funds, a Request for Proposals will be posted on the Authority's website and sent out to the Authority's mailing lists. Applicants are strongly encouraged to consult with Authority staff prior to submitting their applications. Applications will be screened to ensure the project and applicant meets the Authority's eligibility requirements and is consistent with supporting the programs and priorities and other purposes set forth in Measure AA. Complete applications that have passed the screening process will be reviewed and evaluated by a minimum of three professionals with relevant expertise in the Authority's program areas. Authority staff will determine which qualified application to recommend to the Authority's Governing Board for funding and the amount of funding.

For more information: More information about Measure AA is available at http://sfbayrestore.org/docs/SFBRA_Grant_Guidelines_FINAL.pdf

9.4.3 PRIVATE/ IN-KIND/ NON-TRADITIONAL SOURCES

A. California Conservation Corps (CCC)

The CCC is not a funding source per se, but is included here because some funding programs, including the Active Transportation Program (described above), provide bonus points in their application process for projects that will use the CCC or a California Association of Local Conservation Corps (CALCC) on their project.

The CCC and CALCC are programs that employs young people ages 18-24 to work on improving California's natural resources. The local corps work on projects that conserve or enhance natural resources or provide another public benefit, including construction of trails. The project site must be public land or be publically accessible. CCC crews can be contracted on an hourly basis, an annual basis, or a per-project basis. The CCC can also be listed as a project partner in grant applications.

Eligible Applicants: Non-profits and local, state and federal agencies.

Previous Trail Projects: Constructed and maintained miles of trails in Six Rivers National Forest, the King Range National Conservation Area, and the Headwaters Forest Reserve.

Application Process: Call the local CCC center and discuss the project and needs with a project coordinator to determine if CCC crews can be of assistance and in what capacity.

For more information: California Conservation Corps: Wei Hsieh (916-341-3154) or California Association of Local Conservation Corps (info@calocalcorps.org CALCC: http://calocalcorps.org/

B. People For Bikes Community Grant Program

The People For Bikes Community Grant Program supports bicycle infrastructure projects and targeted advocacy initiatives that make it easier and safer for people of all ages and abilities to ride. The program has awarded 356 grants to non-profit and local governments in the United States since 1999 for a total of $3 million.

Eligible Projects: People For Bikes accepts grant applications from non-profit organizations with a focus on bicycling, active transportation, or community development, from city or county agencies or departments, and from state or federal agencies working locally. People For Bikes only funds projects in the United States. Requests must support a specific project or program; program must not include general operating costs.

Application Process: People For Bikes generally holds 1-2 open grant cycles every year on-line. The grant program has two parts: (1) letter of interest and (2) full application. The letter of interest should include basic information about the organization and contact person, and an overview of the project proposed for funding. The full application is opened to a limited invited organization after reviewing the letter of interest and will have access to the on-line application.

Previously Funded Trail Projects: John Campbell Memorial Greenway and Strongs Creek Trail Master Plan for the construction of bicycle paths and rail trails and advocacy campaigns to build bikeways. Grants range from $5,000 to $10,000.

For more information: Please contact Zoe Kircos, Director of Grants and Partnerships, at 303-449-4893 x106 or zoe@peopleforbikes.org or check the website: http://www.peopleforbikes.org/pages/community-grants

C. Benefit Assessments

Local governments, special districts, and park and recreation districts may create a benefit assessment district as a revenue source to pay for services and improvements in that district. Only properties that directly benefit from the services or improvements can be assessed and the assessment must be proportional to the special benefit provided to the property. Charges appear annually on property tax bills.

Implementation Process: Prior to creating a new assessment, the local agency must prepare a report outlining the project, cost, and the benefit formula, and conduct a public hearing to solicit feedback.

D. Special Taxes

A municipality can impose a special tax for a specific purpose, such as park and recreation or transportation and infrastructure improvements. In order to levy a special tax, a 2/3-voter approval is required.

E. Quimby Act

The Quimby Act allows California public agencies to impose an in-lieu of parkland fee on developers of new residential subdivisions. Quimby Act fees can be used to develop or rehabilitate parkland and recreational facilities in the neighborhood where the developer's subdivision is located or in neighborhoods elsewhere based on demonstrated need for open space (calculated as a ratio of acres per 1,000 residents). A city can also enter into a joint or shared use agreement with other public districts to create additional park and recreation access funded by Quimby Act fees.
In Alameda County, the Quimby Act made funding provisions available to parks and recreation facilities in the Eden Area, mainly in the Hayward Area Recreation & the Park District, East Bay Regional Park District and the Bay Trail. Areas in San Leandro, however slightly further from the Eden Area, are also considered under the Quimby Act.

Eligible Projects: The Quimby Act provides funds for acreage/population standards and formulas for determining the exaction and the exaction must be closely tied to a project's impact as identified through traffic studies.

Application Process: The City/County Planning staff develops Quimby Act ordinances with the assistance from the City/County Attorney. Implementation of an ordinance begins once a developer files an application for a development project with a tentative subdivision parcel map. The tentative map goes to a review committee that makes recommendations on the proposed map. Comments are sent to the planning department that will provide information for a public hearing that result in a recommendation action for the city council or county board of supervisors.

For more information: https://www.acgov.org/cda/planning/generalplans/documents/05_ParksandRec.pdf

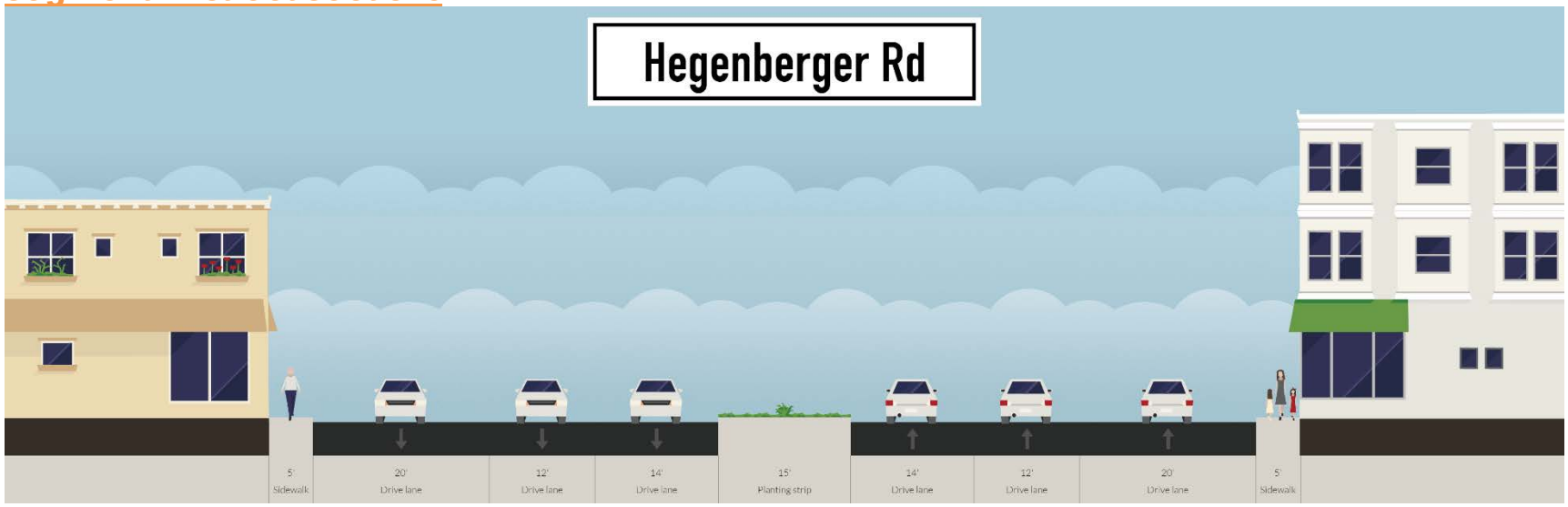
F. Transient Occupancy Tax

Transient Occupancy Tax (TOT) is a fee that is charged for staying at a hotel, an inn, or other temporary lodging for less than 30 days. TOT is levied by a municipality and can be used for transportation and park and recreation facilities and maintenance. A measure to increase the tax in the City of San Leandro for General Fund purposes from 10% to 14% was approved in November 2016 election (Measure PP). This may be a potential funding source.

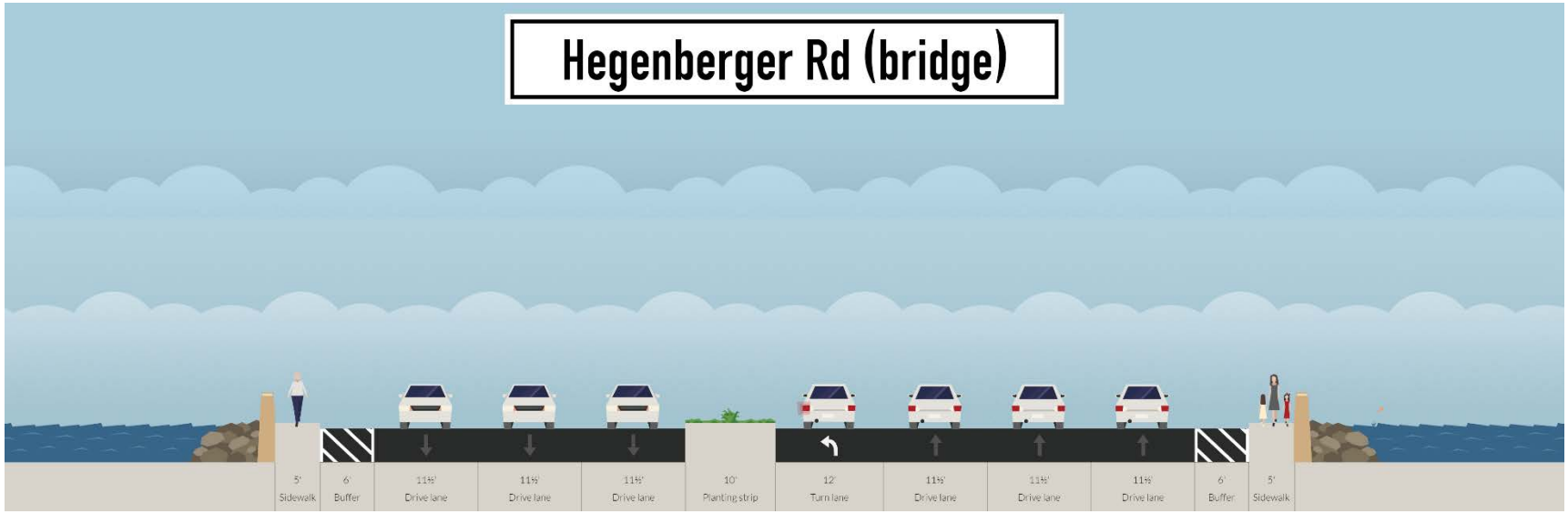
APPENDIX A

EXISTING STREET SECTIONS

Segment- 2 Street Sections



ROW= 117 Feet approximately; Pavement width= 107 Feet approximately. Speed limit = 35 mph



ROW= 113 Feet approximately; Pavement width= 103 Feet approximately. Speed limit= 35 mph

Segment- 3 Street Sections

ROW= 104 Feet approximately; Pavement width= 84 Feet approximately. Speed limit= 35 mph

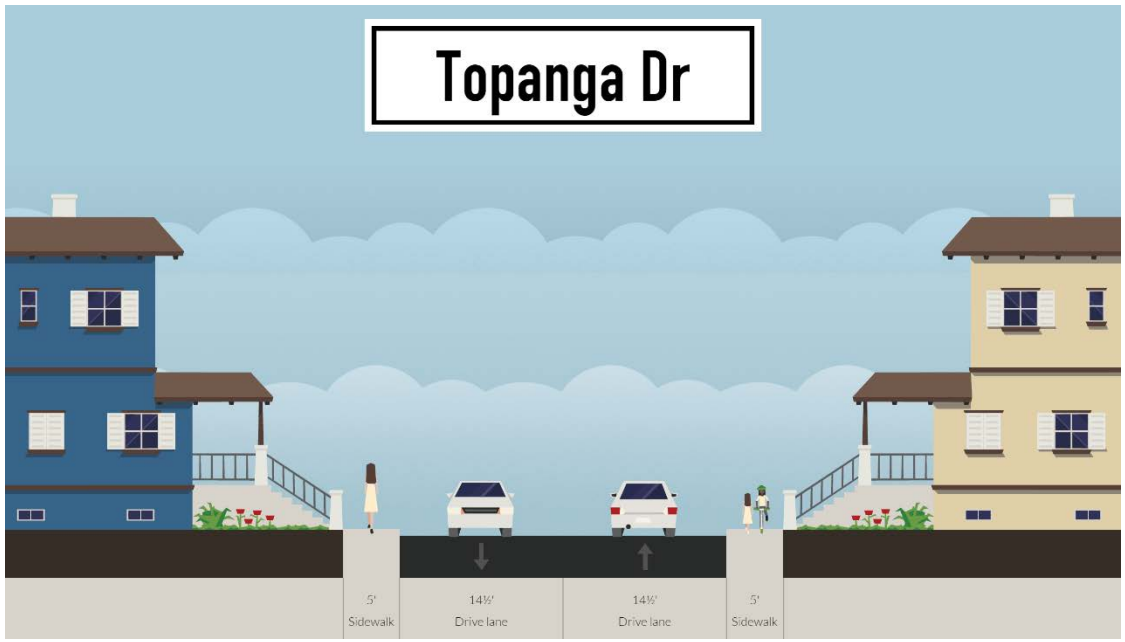
ROW= 100 Feet approximately; Pavement width= 89 Feet approximately. Speed limit= 35 mph

ROW= 30 Feet approximately; Pavement width= 30 Feet approximately. Speed limit= 15 mph

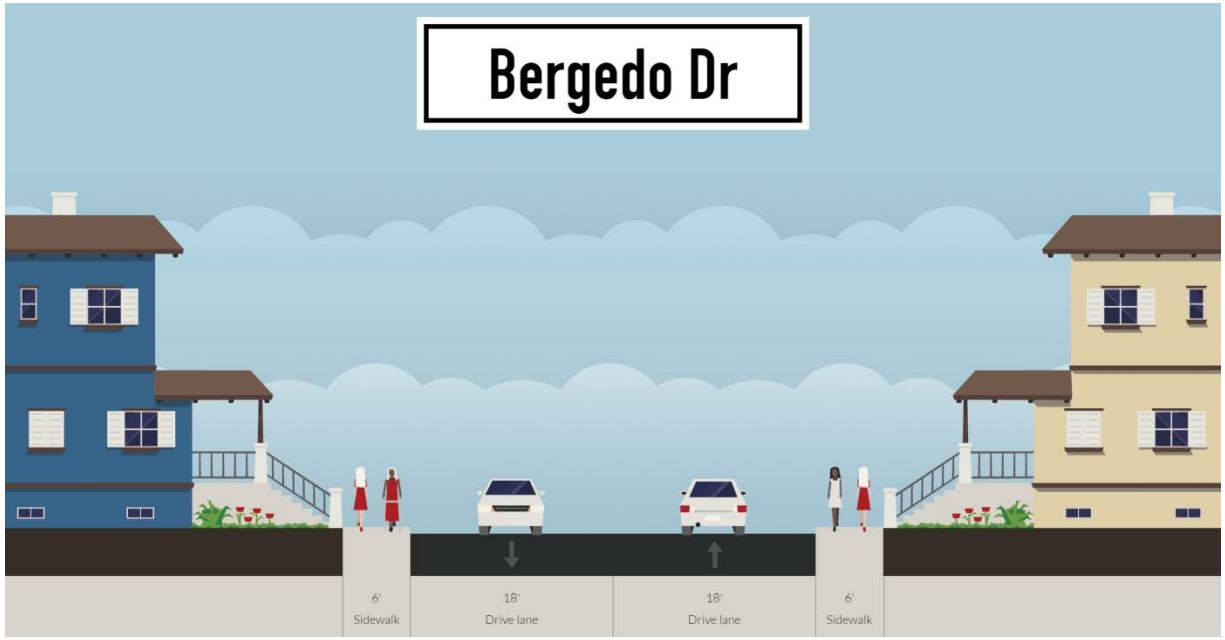
Segment- 4 Street Sections

ROW= 50 Feet approximately; Pavement width= 38 Feet approximately. Speed limit = 25 mph

ROW= 50 Feet approximately; Pavement width= 36 Feet approximately. Speed limit = 25 mph



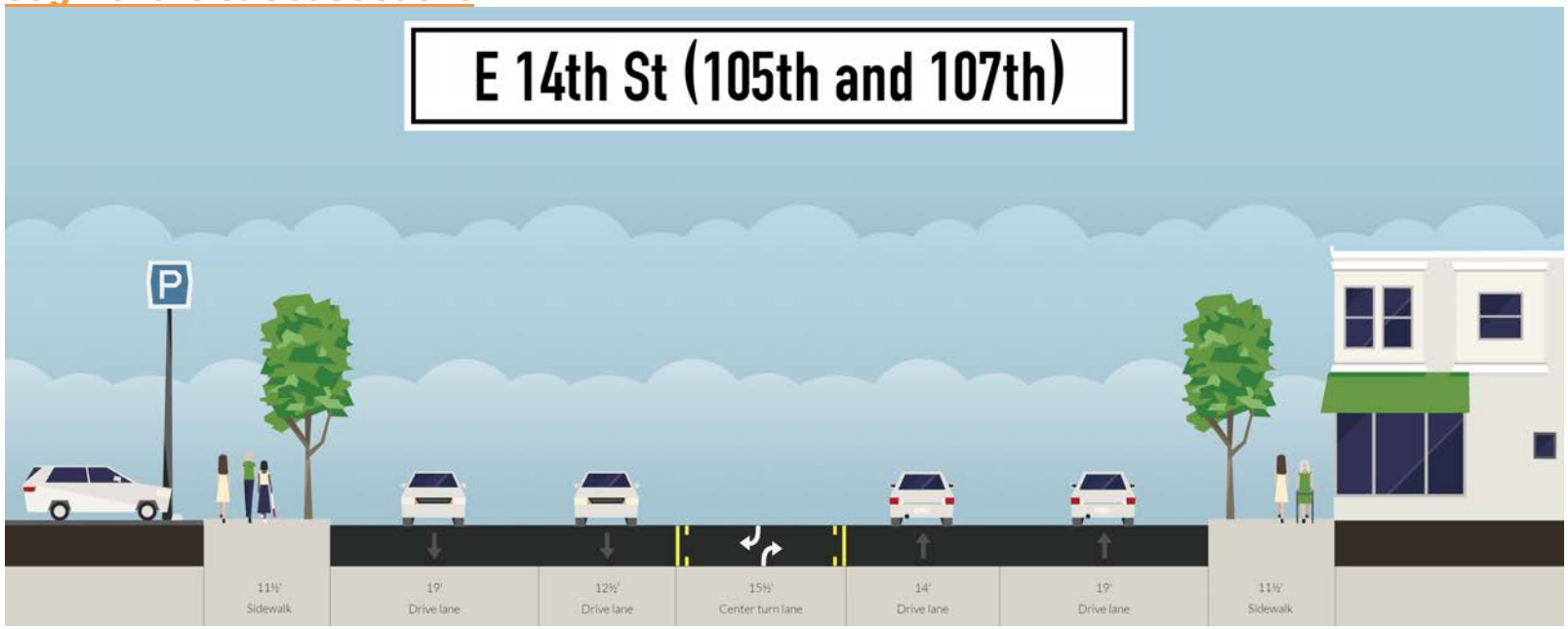
ROW= 39 Feet approximately; Pavement width= 29 Feet approximately. Speed limit = 15 mph



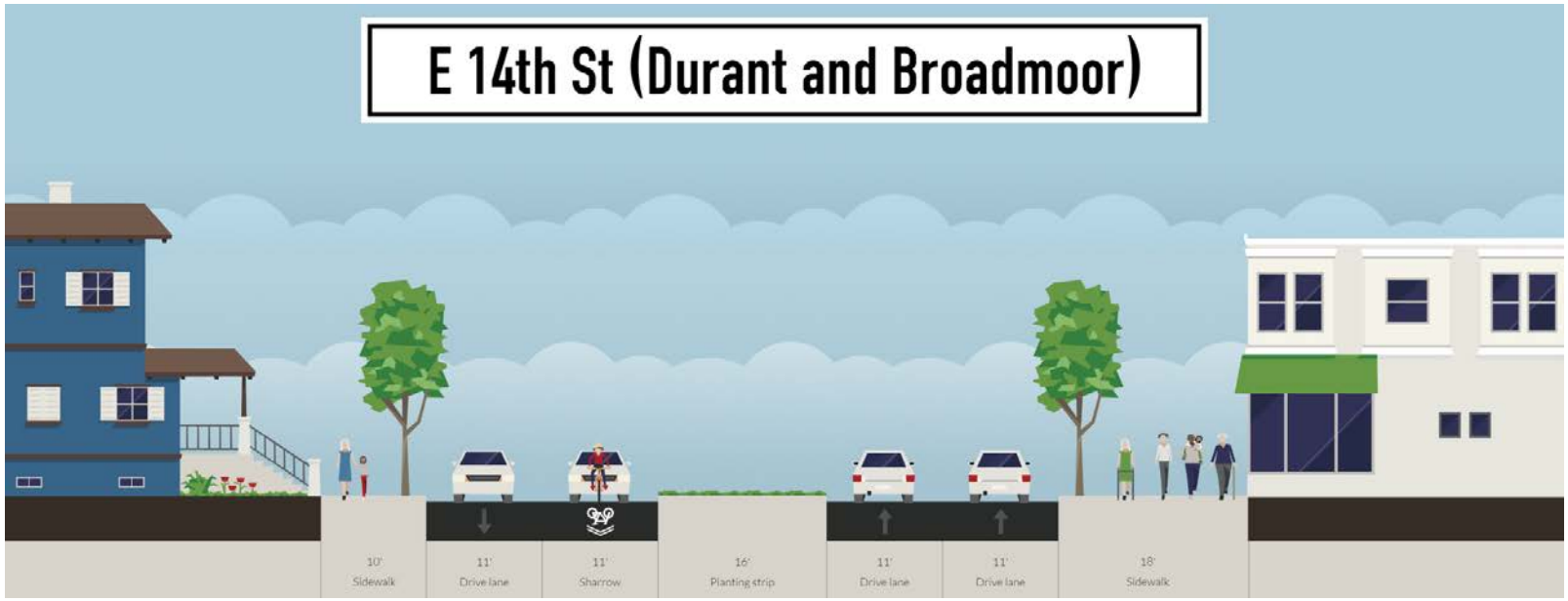
ROW= 48 Feet approximately; Pavement width= 36 Feet approximately. Speed limit = 15 mph

ROW= 40 Feet approximately; Pavement width= 24 Feet approximately. Speed limit = 25 mph

Segment- 5 Street Sections

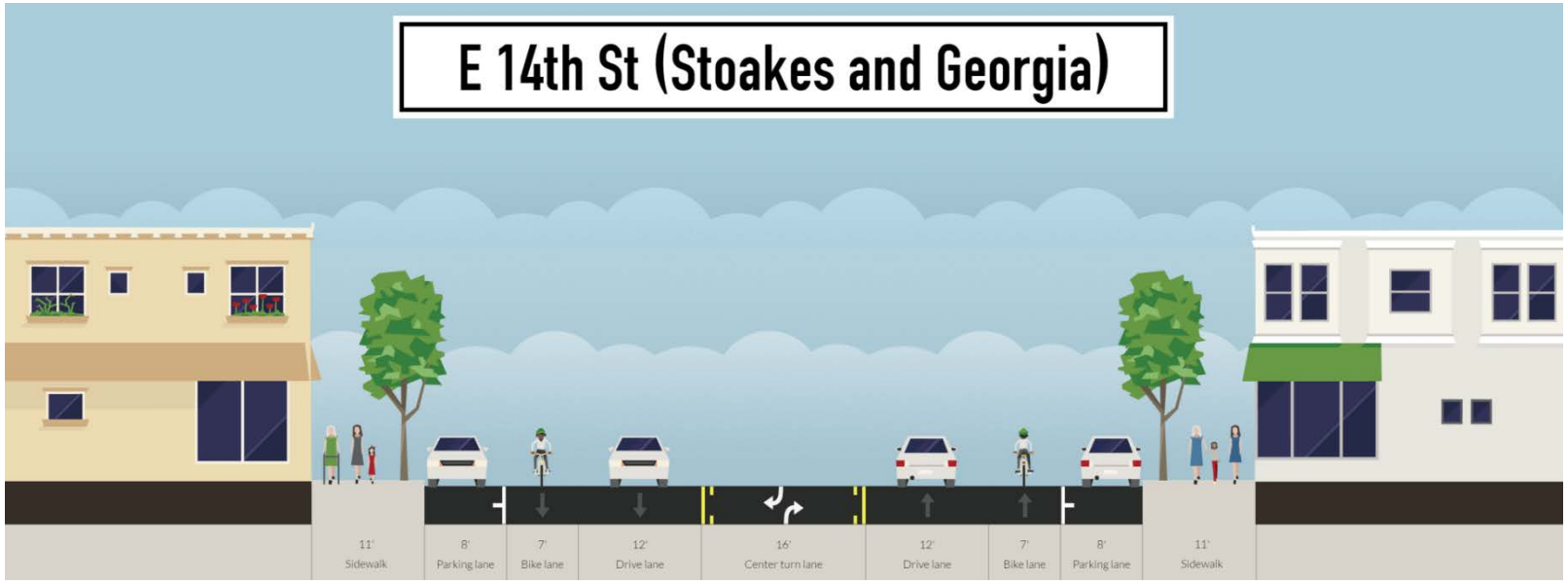


ROW= 103 Feet approximately; Pavement width= 80 Feet approximately. Speed limit = 30 mph

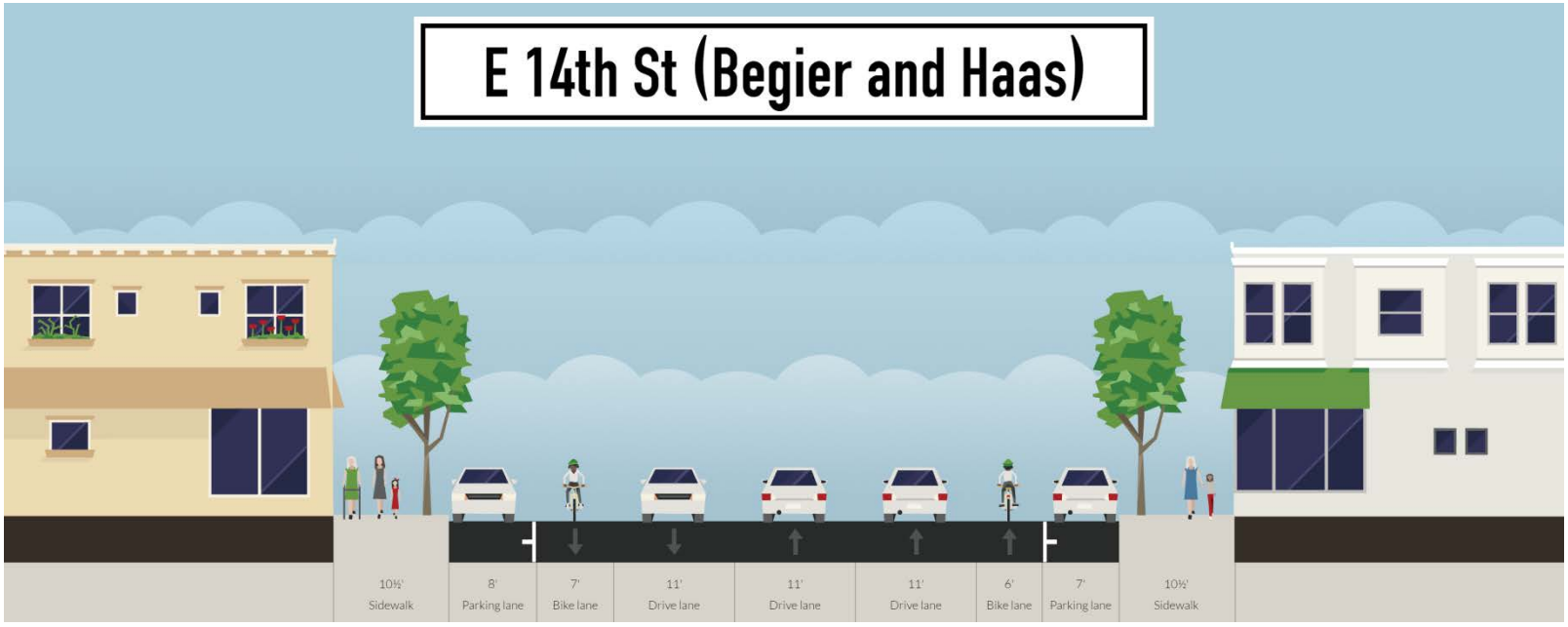


ROW= 88 Feet approximately; Pavement width= 60 Feet approximately. Speed limit = 30 mph

*E. 14th Street (State Route 185) is known as E. 14th Street in the City of San Leandro and International Boulevard in the City of Oakland



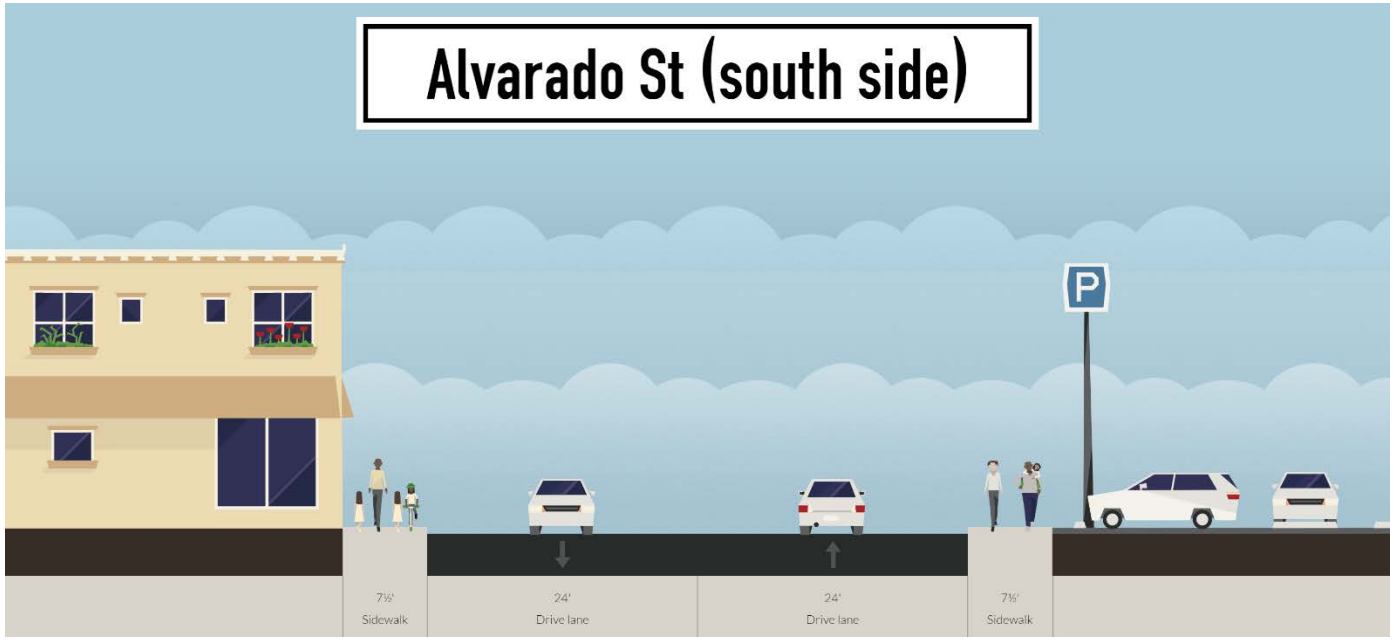
ROW= 92 Feet approximately; Pavement width= 70 Feet approximately. Speed limit= 30 mph



ROW= 82 Feet approximately; Pavement width= 61 Feet approximately. Speed limit = 30 mph

*E. 14th Street (State Route 185) is known as E. 14th Street in the City of San Leandro and International Boulevard in the City of Oakland

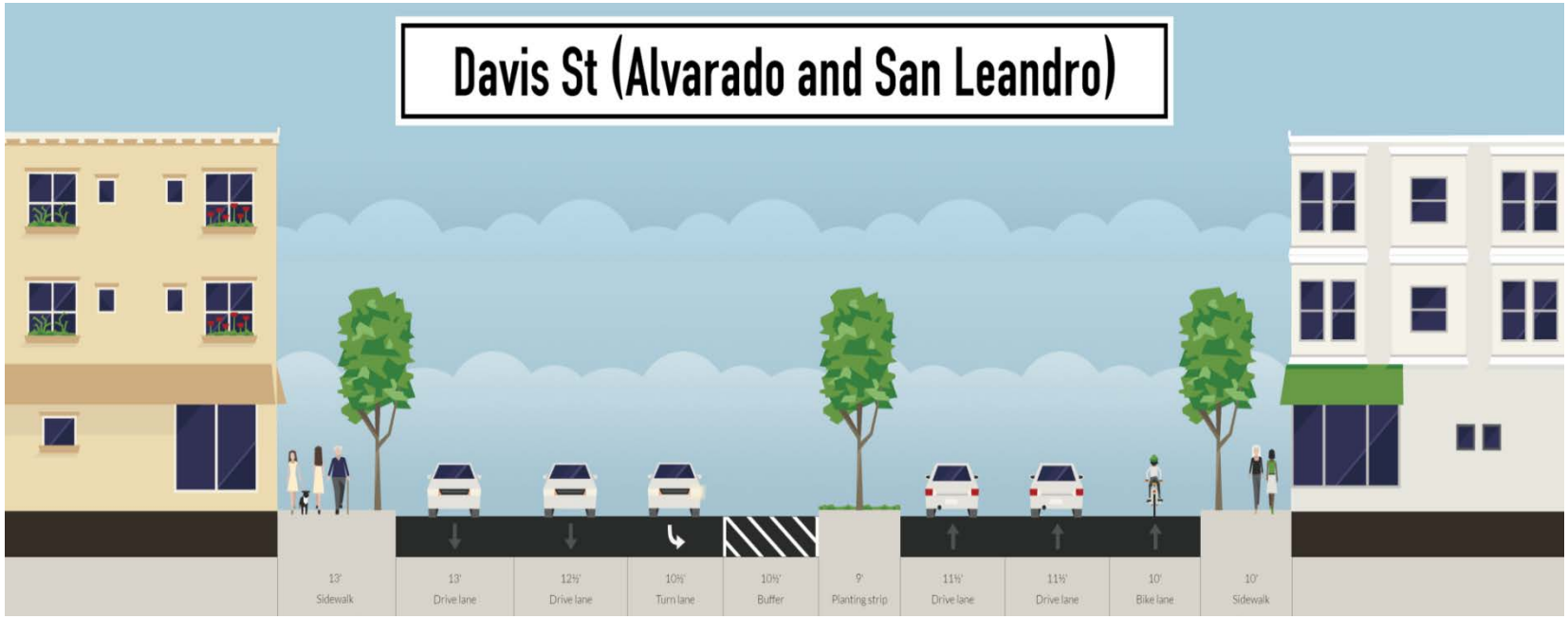
ROW= 56 Feet approximately; Pavement width= 33 Feet approximately. Speed limit = 35 mph



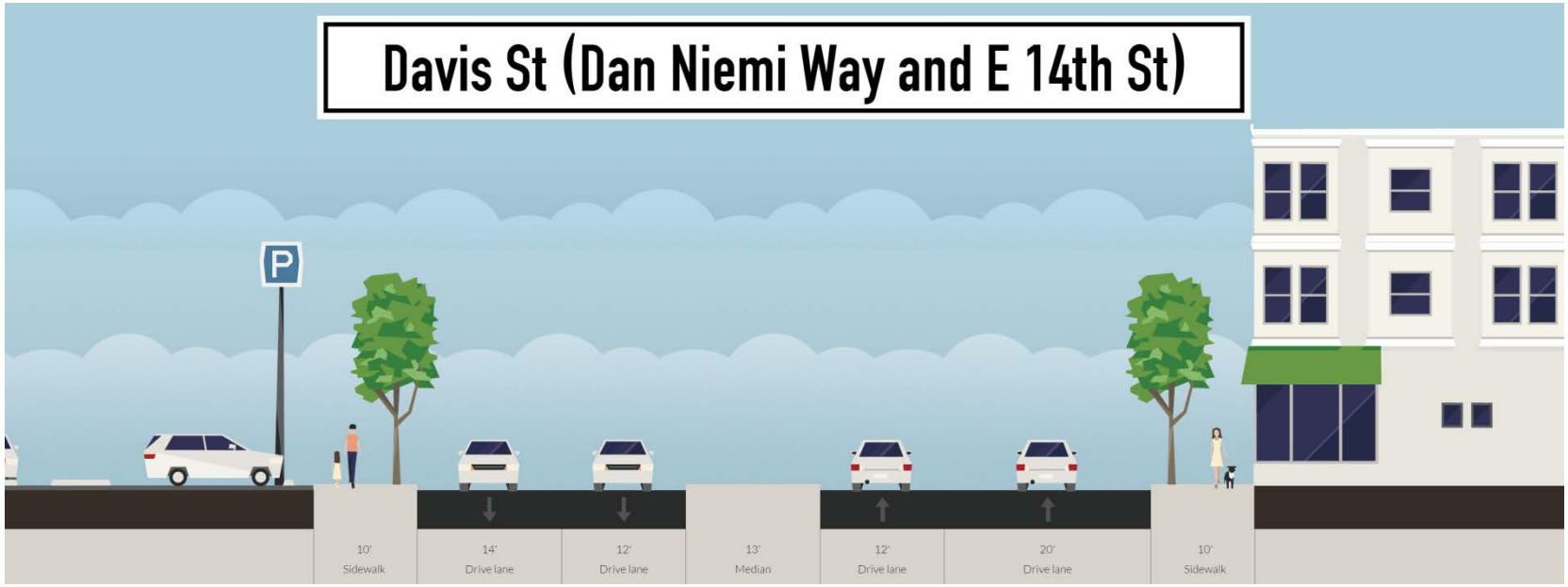
ROW= 63 Feet approximately; Pavement width= 48 Feet approximately. Speed limit = 35 mph

ROW= 20 Feet approximately; Pavement width= 20 Feet approximately. Speed limit = 15 mph

ROW= 40 Feet approximately; Pavement width= 34 Feet approximately. Speed limit = 25 mph



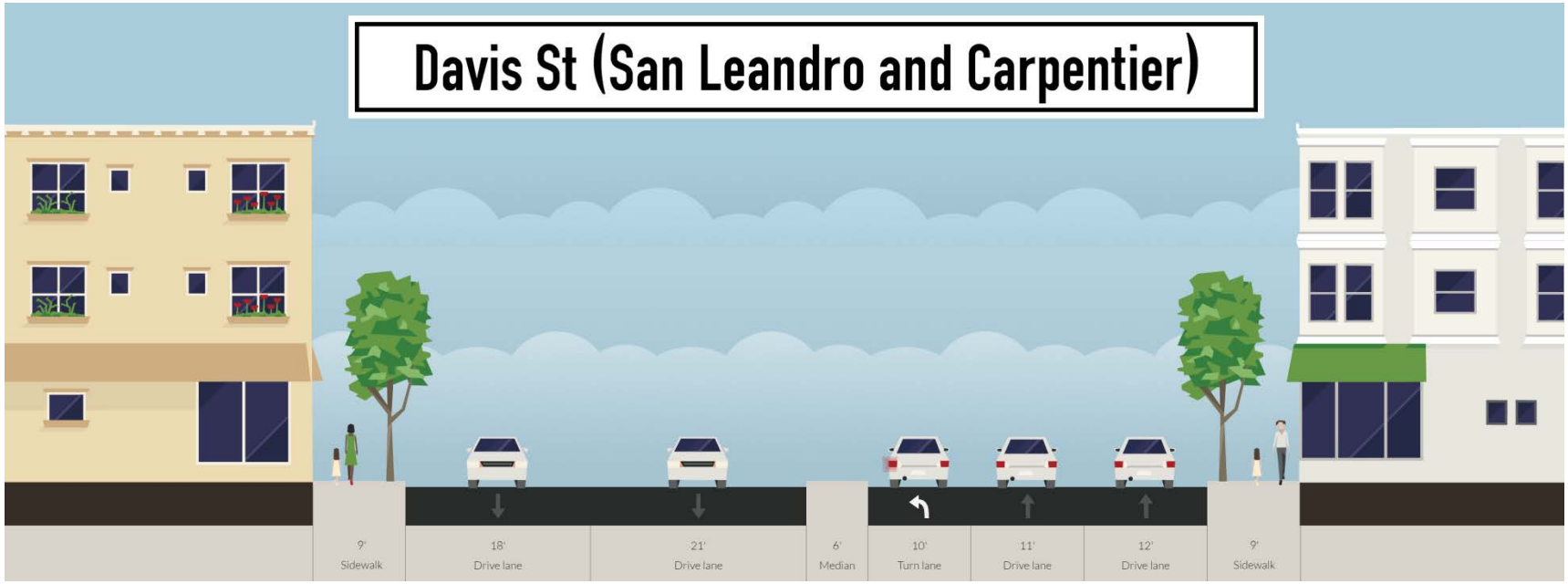
ROW= 111.5 Feet approximately; Pavement width= 88.5 Feet approximately. Speed limit = 30 mph



ROW= 91 Feet approximately; Pavement width= 71 Feet approximately. Speed limit = 30 mph

* Davis Street is also known as State Route 112

Disclaimer: The street sections are not to scale and are provided for reference purposes only.

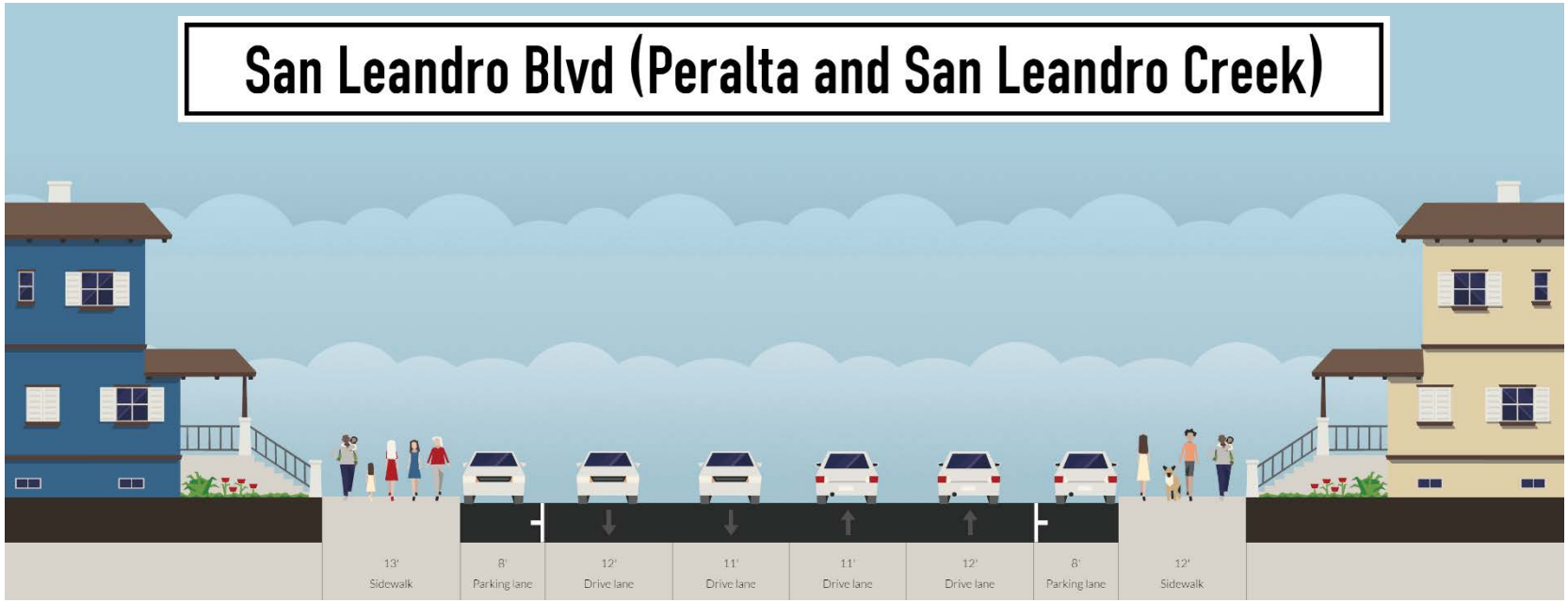


ROW= 96 Feet approximately; Pavement width= 78 Feet approximately. Speed limit = 25 mph

* Davis Street is also known as State Route 112

ROW= 48 Feet approximately; Pavement width= 36 Feet approximately. Speed limit = 25 mph

Disclaimer: The street sections are not to scale and are provided for reference purposes only.



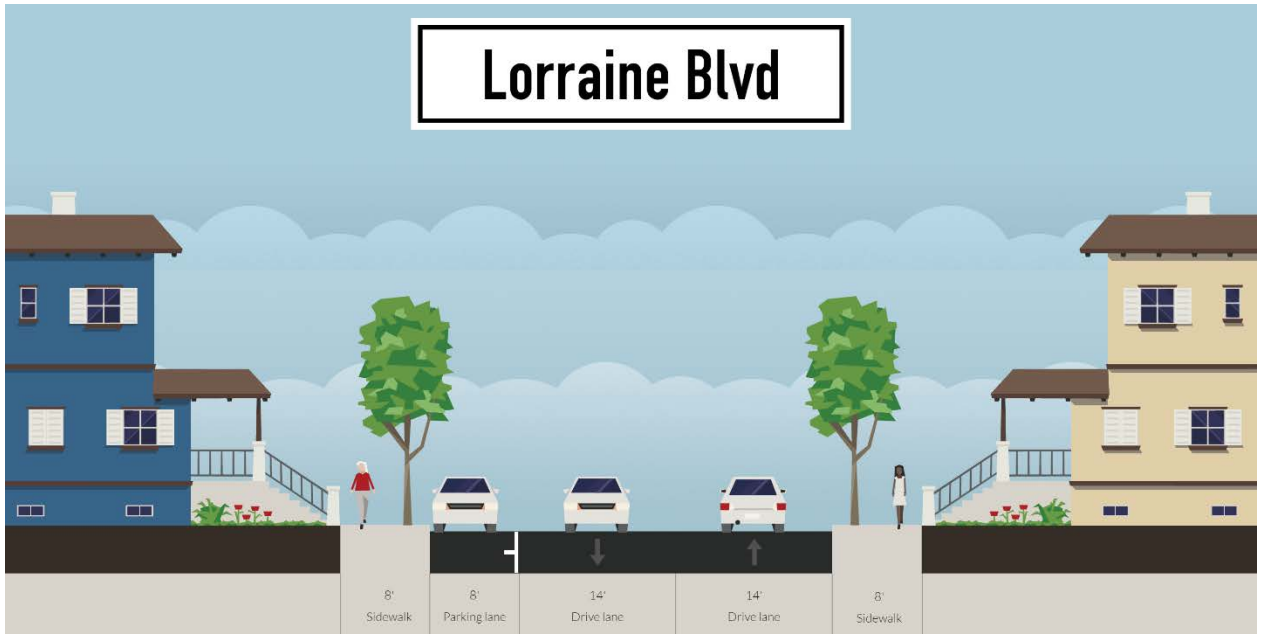
ROW= 87 Feet approximately; Pavement width= 62 Feet approximately. Speed limit = 40 mph

ROW= 102 Feet approximately; Pavement width= 82 Feet approximately. Speed limit = 40 mph

*San Leandro Boulevard is known as San Leandro Boulevard in the City of San Leandro and San Leandro Street in the City of Oakland

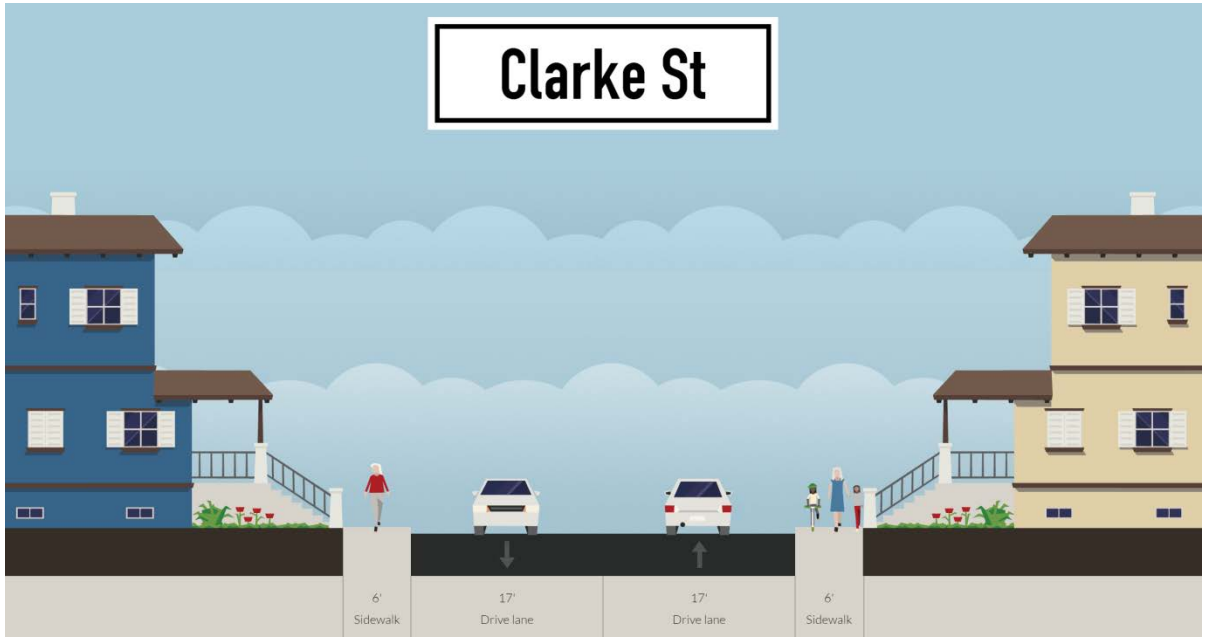
Disclaimer: The street sections are not to scale and are provided for reference purposes only.

ROW= 42 Feet approximately; Pavement width= 36 Feet approximately. Speed limit = 25 mph

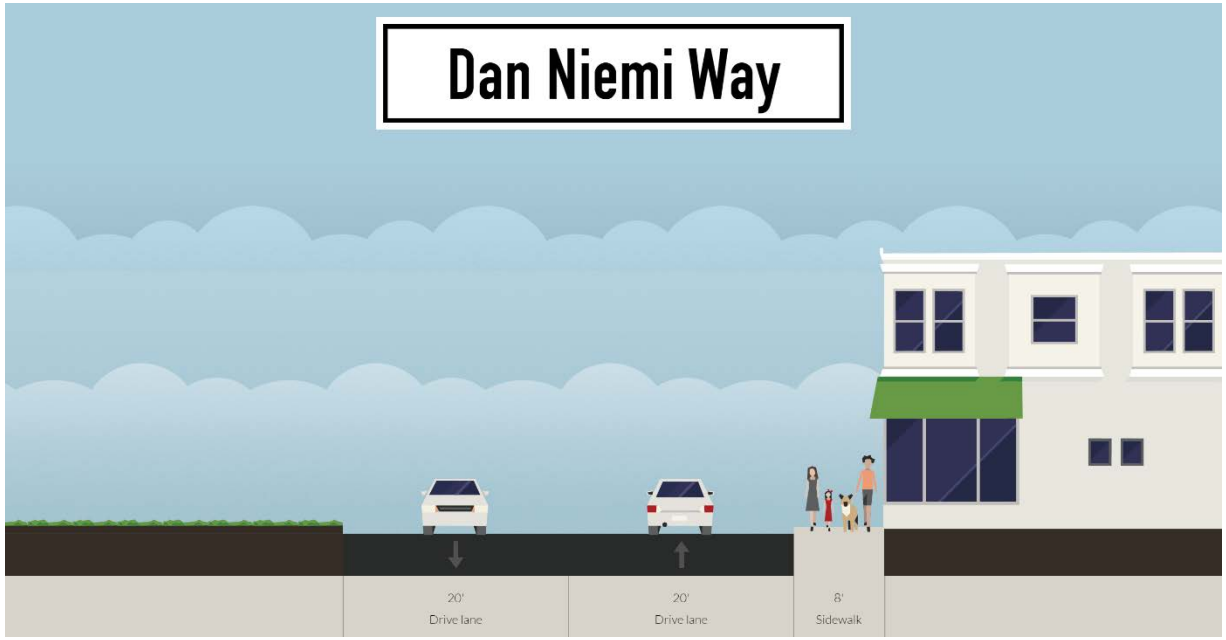


ROW= 52 Feet approximately; Pavement width= 36 Feet approximately. Speed limit = 25 mph

Disclaimer: The street sections are not to scale and are provided for reference purposes only.

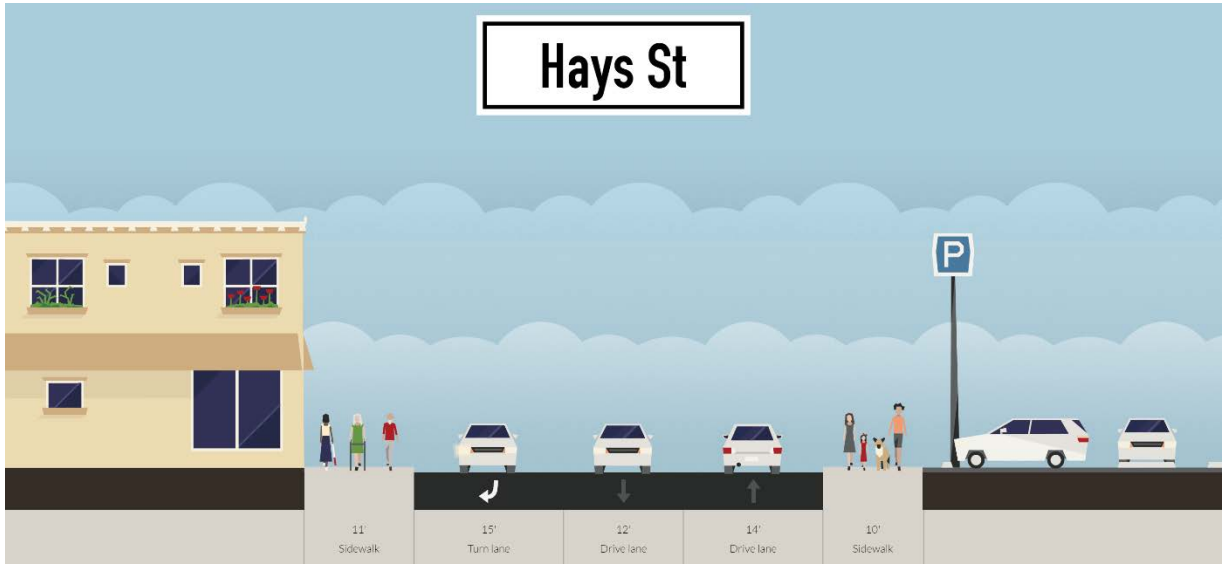


ROW= 46 Feet approximately; Pavement width= 34 Feet approximately. Speed limit = 15 mph



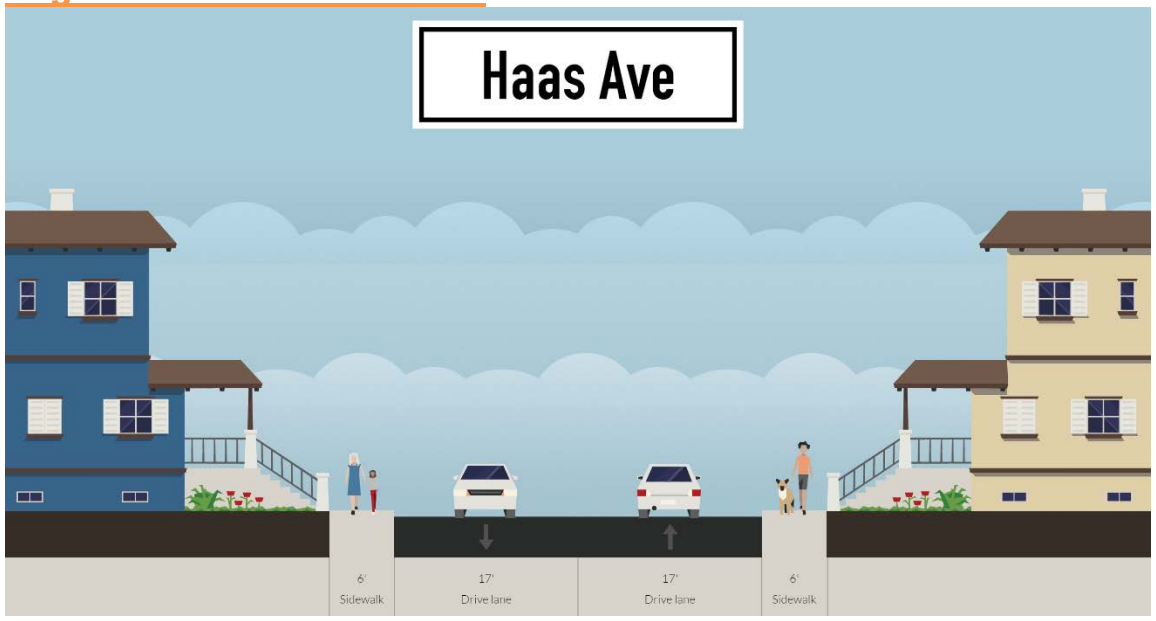
ROW= 48 Feet approximately; Pavement width= 40 Feet approximately. Speed limit = 25 mph

Disclaimer: The street sections are not to scale and are provided for reference purposes only.



ROW= 62 Feet approximately; Pavement width= 41 Feet approximately. Speed limit = 25 mph

Segment- 6 Street Sections



ROW= 46 Feet approximately; Pavement width= 34 Feet approximately. Speed limit = 25 mph

ROW= 62 Feet approximately; Pavement width= 46 Feet approximately. Speed limit = 30 mph

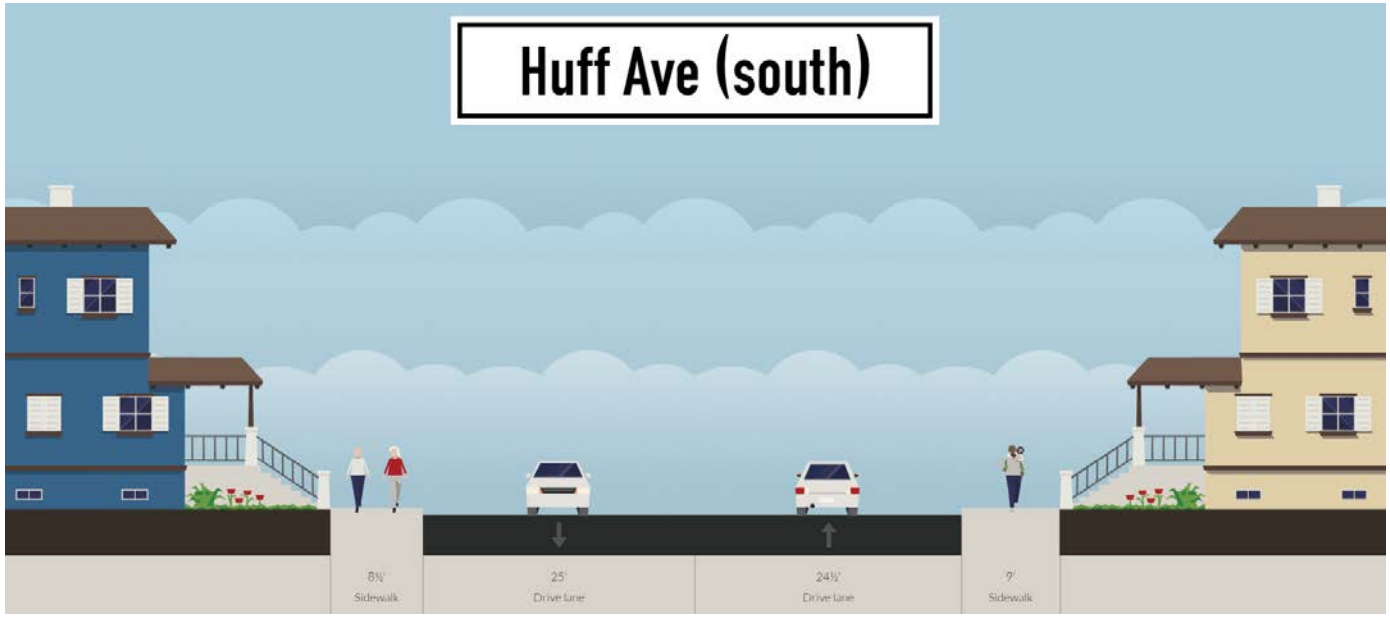
ROW= 53 Feet approximately; Pavement width= 37 Feet approximately. Speed limit = 30 mph

Disclaimer: The street sections are not to scale and are provided for reference purposes only.

ROW= Ranges from 66 to 73 Feet approximately; Pavement width= Ranges from 49 to 57 Feet approximately. Speed limit = 30 mph

ROW= 38 Feet approximately; Pavement width= 22 Feet approximately. Speed limit = 25 mph

Disclaimer: The street sections are not to scale and are provided for reference purposes only.

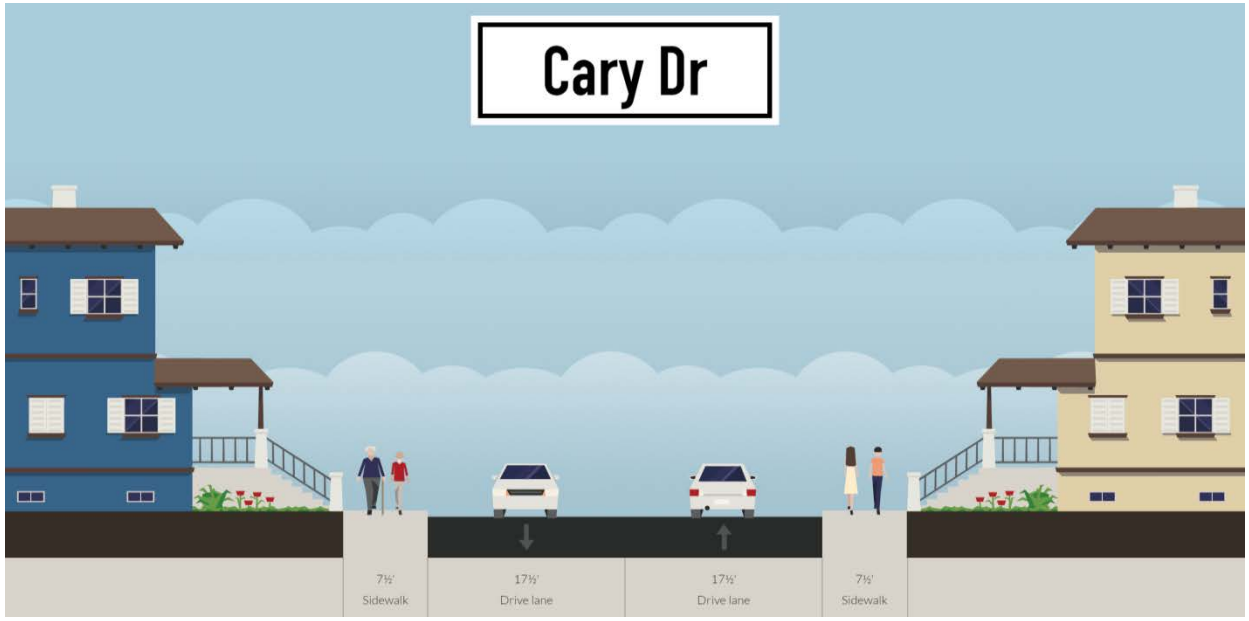


ROW= 67 Feet approximately; Pavement width= 49.5 Feet approximately. Speed limit = 25 mph

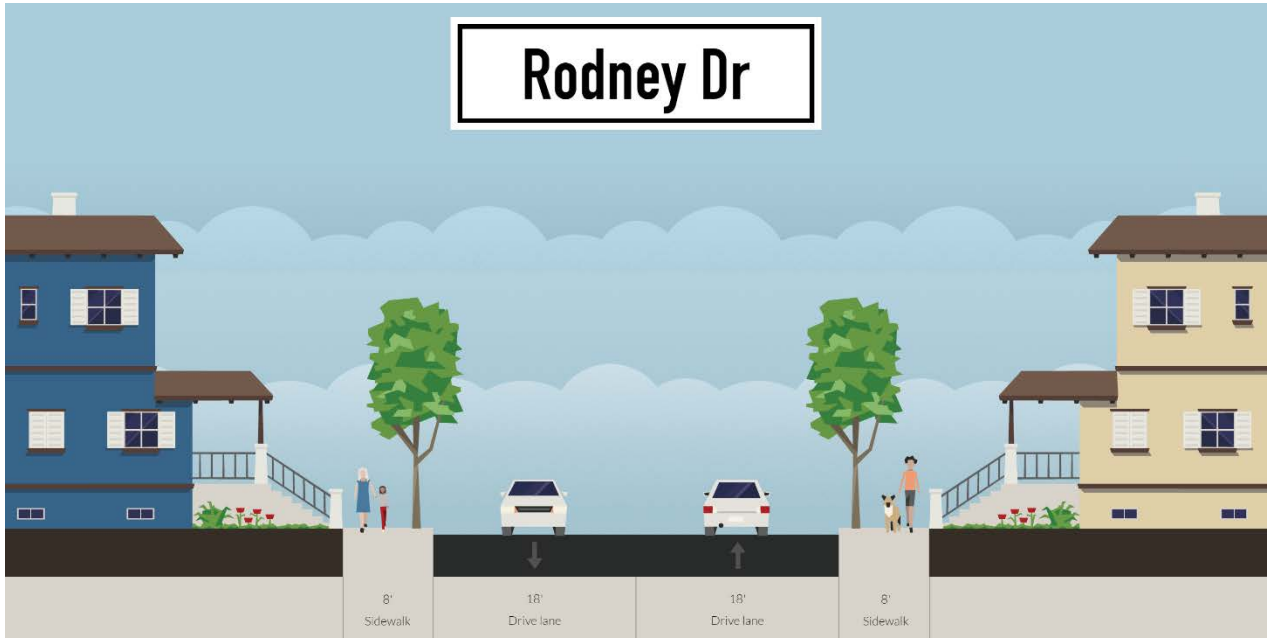
Segment- 7 Street Sections

ROW= 62 Feet approximately; Pavement width= 46 Feet approximately. Speed limit = 30 mph

Disclaimer: The street sections are not to scale and are provided for reference purposes only.

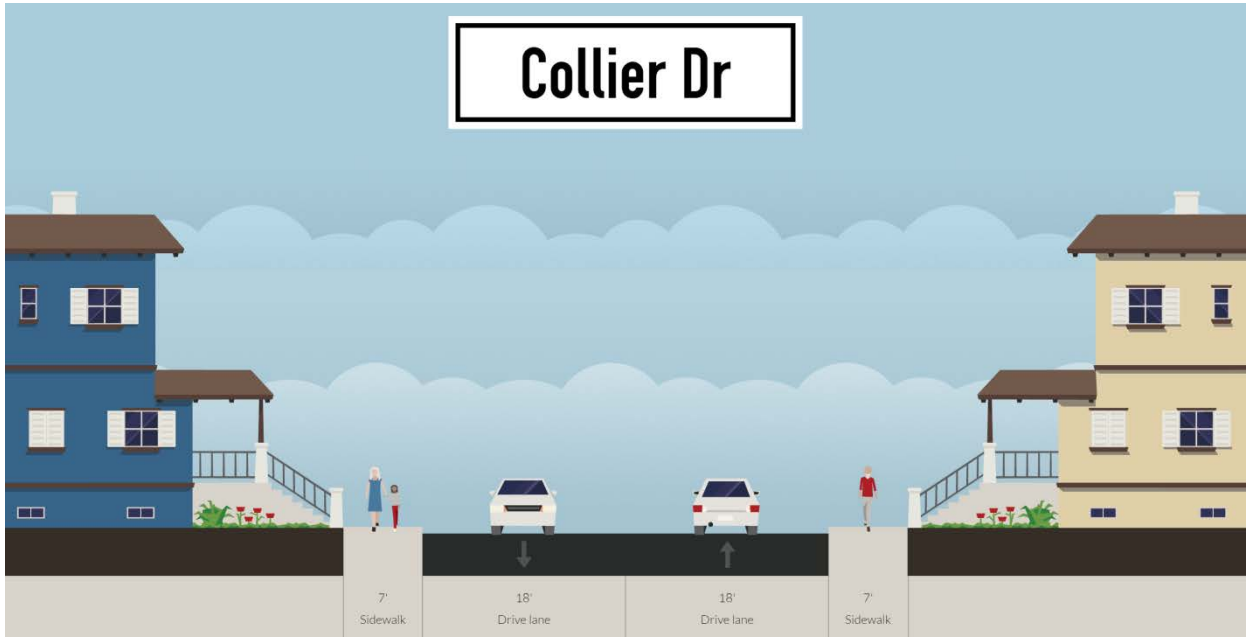


ROW= 50 Feet approximately; Pavement width= 35 Feet approximately. Speed limit = 25 mph



ROW= 52 Feet approximately; Pavement width= 36 Feet approximately. Speed limit = 25 mph

Disclaimer: The street sections are not to scale and are provided for reference purposes only.



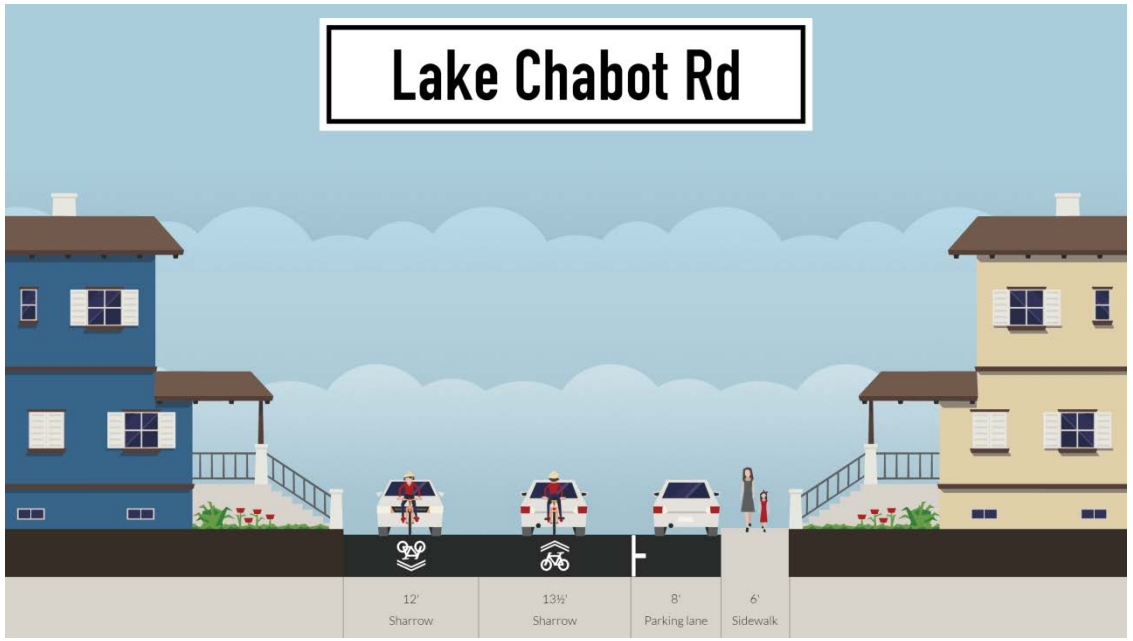
ROW= 50 Feet approximately; Pavement width= 36 Feet approximately. Speed limit = 25 mph

ROW= 51 Feet approximately; Pavement width= 38 Feet approximately. Speed limit = 25 mph

Disclaimer: The street sections are not to scale and are provided for reference purposes only.

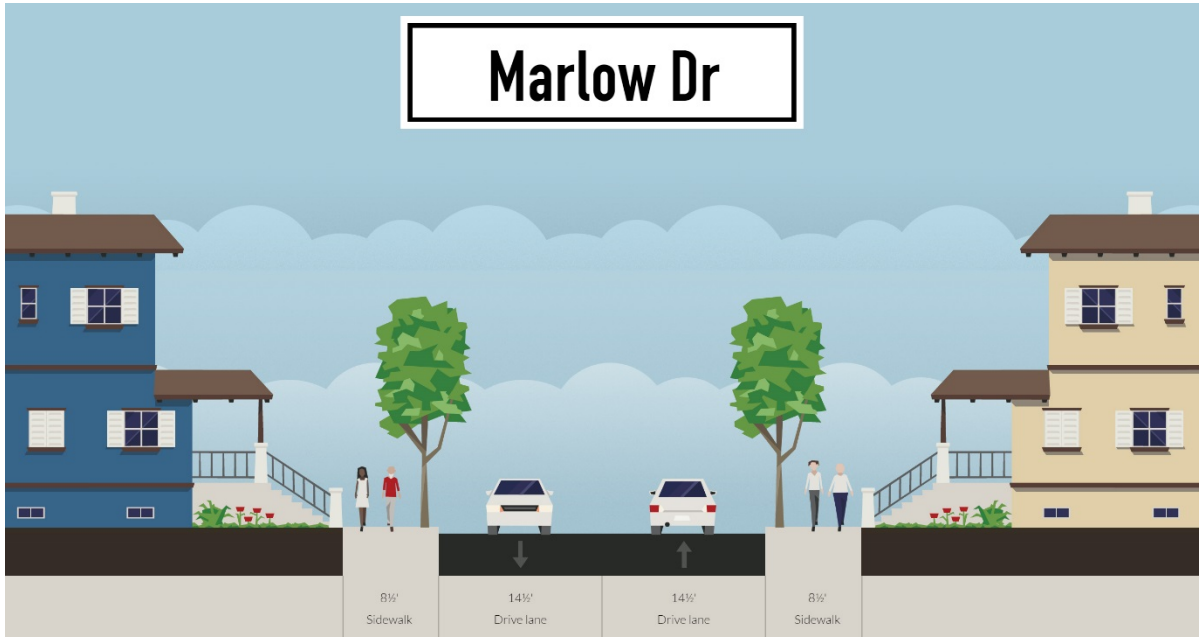
Segment- 8 Street Sections

ROW= 30 Feet approximately; Pavement width= 30 Feet approximately. Speed limit = 35 mph



ROW= 39.5 Feet approximately; Pavement width= 33.5 Feet approximately. Speed limit = 25 mph

Disclaimer: The street sections are not to scale and are provided for reference purposes only.



ROW= 46 Feet approximately; Pavement width= 29 Feet approximately. Speed limit = 15 mph where noted, 25 mph