

Final:

Bicycle and Pedestrian Master Plan

November 2004



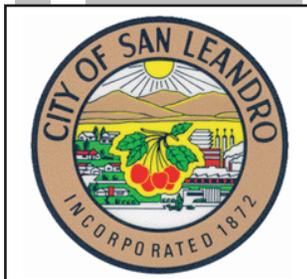
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I. INTRODUCTION

Bicycling and walking are low-cost, quiet, non-polluting, and healthy forms of transportation ideal for many trips. In 1997, the City of San Leandro adopted a *Bicycle Master Plan* to set forth a blueprint for completing a system of bikeways, support facilities (such as bicycle parking) and education programs. The *Bicycle Master Plan* is the official policy document addressing the development of facilities to enhance bicycling as an additional and appropriate transportation choice for San Leandro residents.



This document comprises the 2004 update to the *Bicycle Master Plan*, which includes a new pedestrian component. The updated *Bicycle and Pedestrian Master Plan* is divided into six chapters that address existing conditions, a recommended bicycle and pedestrian network, support facilities, bicycles and transit, pedestrian safety, education and enforcement, and a capital improvement plan to help guide implementation.

In developing the Plan, City staff worked closely with the Bicycle and Pedestrian Advisory Committee (BPAC). Three public meetings were held with the BPAC between March and May 2004, and the draft Plan was recommended for approval by the BPAC in May 2004.

Relationship to Other Plans

The following documents contain relevant policies to this plan:

Local

- *San Leandro General Plan*
- *Neighborhood Traffic Calming Plan*
- *Marina Connections Plan*
- *East 14th Street South Area Development Strategy*
- *MacArthur Boulevard Streetscape Plan*
- *West Estudillo Avenue Streetscape Plan*

Regional and State

- *The San Francisco Bay Trail*
- *Alameda County Regional Bicycle Master Plan*
- *Highway Design Manual*
- *California Vehicle Code*

Federal

- The Transportation Equity Act for the 21st Century (TEA-21)
- The Federal Highway Administration's (FHWA) Joint statement, *Accommodating Bicycle and Pedestrian Travel: A Recommended Approach*
- The American Association of Transportation Official's (AASHTO's) *Guide for the Development of Bicycle Facilities*
- The Americans with Disabilities Act (ADA)

For further information about specific policies and guidelines contained in these documents, see Appendix A.



Conformance with Funding Requirements

The *Bicycle and Pedestrian Master Plan* is in conformance with the California Bicycle Transportation Act (BTA), the Transportation Development Act (TDA), and Measure B requirements to position the City to pursue grant funds for bicycle projects from these sources. The requirements of BTA funding source are generally considered the most challenging, so satisfying the BTA will also expand the City's opportunities to pursue a variety of Federal and other state funding sources. Measure B and TDA require that the plan contain a list of prioritized projects approved by a committee. These lists may be found in Chapter VI.

Table 1-1 summarizes the 11 elements required by the BTA and their relationship to the City of San Leandro *Bicycle and Pedestrian Master Plan*.

TABLE 1-1 Relationship of California Bicycle Transportation Act (1994) to the City of San Leandro Bicycle & Pedestrian Master Plan	
California Bicycle Transportation Plan (1994)	Bicycle Master Plan
1. Estimated number of existing and future bicycle commuters	Page 22
2. Map and description of land use and settlement patterns	Description on page 26. Key land uses shown on bikeway network maps (page 29 and 33)
3. Map and description of existing and proposed bikeways	Page 29 and 33
4. Map and description of bicycle parking facilities	Description on page 35; see BART stations, schools and bike shops shown on bikeway network maps (page 29 and 33)
5. Map and description of multi-modal connections	Description on page 30; see BART stations shown on bikeway network maps (pages 29 and 33)
6. Map and description of facilities for changing and storing clothes and equipment	Description on page 36; see schools and health clubs shown on bikeway network maps (pages 29 and 33)
7. Description of bicycle safety and education programs	Page 38
8. Description of citizen and community participation	Page 1
9. Description of consistency with transportation, air quality, and energy conservation plans	Page 1 and Appendix A
10. Description of proposed bicycle projects and implementation priority	Page 57
11. Description of past expenditures and future financial needs for bicycle facilities	Pages 51



II. GOALS AND POLICIES

The *Bicycle and Pedestrian Master Plan* contains goals and policies for developing and implementing a bikeway system and pedestrian improvements that can be broken down into three general categories:

- Provide a viable transportation alternative to the automobile and thus reduce noise and improve air quality
- Improve safety conditions for bicycle riders and pedestrians
- Increase the range of recreational amenities for residents



These goals and policies are outlined below.

Goal 1: Support bicycling and walking and the development of a comprehensive bicycle and pedestrian transportation system as a viable alternative to the automobile.

Policies:

- 1.1 Develop a Bikeway and Pedestrian Plan that identifies existing and future needs and provides specific recommendations for facilities and programs phasing.
- 1.2 Update the Plan (every five years).
- 1.3 Include updates to the Bicycle and Pedestrian project lists as part of the larger annual Capital Improvement Project (CIP) update that the City undertakes for all projects.
- 1.4 As part of the next CIP update, develop criteria for ranking pedestrian projects and a project description for top priority projects.
- 1.5 Ensure that the Plan is consistent with all existing regional, state, and federal policy documents.
- 1.6 Develop a Plan that will be part of the City's *General Plan*.
- 1.7 Encourage development concepts that reduce automobile use for short commutes, errands, and recreation trips.



Goal 2: Maximize the amount of state and federal funding for bicycle and pedestrian improvements for which San Leandro is eligible.

Policies:

- 2.1 Identify current regional, state, and federal funding programs along with specific funding requirements and deadlines.
- 2.2 Pursue multi-jurisdictional funding applications with neighboring cities and other potential partners such as BART and the East Bay Regional Park district.
- 2.3 Develop a prioritized list of improvements along with detailed cost estimates, and identify appropriate funding sources.
- 2.4 Encourage the formation of reliable local, regional, and state funding sources that can be used to leverage federal funds.
- 2.5 Include bikeway and pedestrian improvements in the City's Capital Improvement Program.

Goal 3: Build upon existing bicycle and pedestrian facilities.

Policies:

- 3.1 Identify existing and proposed bike paths, lanes, and routes and develop a system to maximize their use.
- 3.2 Encourage the use of existing natural and man-made corridors such as creeks, shorelines, and other open space corridors for future multi-use trail alignments.
- 3.3 Identify existing bicycle and pedestrian education programs and target future expansions.
- 3.4 Conduct bicycle and pedestrian counts and surveys, if possible, to gauge the effectiveness of various improvements and programs.



Goal 4: Develop a bicycle and pedestrian system that meets the needs of commuter and recreation users, helps reduce vehicle trips, and links residential neighborhoods with regional destinations.

Policies:

- 4.0 Develop a bicycle commuter route system that connects residential neighborhoods to employment areas, multi-modal terminals, and schools.
- 4.1 Develop a recreational route system that uses low-volume streets, off-street multi-use trails and serves recreational destinations.
- 4.2 Develop land use policies and incentives that encourage people to bicycle or walk to work. Estimate the future benefits of reduced congestion and parking and improved air quality and health to make the City competitive in applying for grants.
- 4.3 Balance user convenience with safety concerns. Where needed, develop a dual system that serves both the experienced and inexperienced bicyclist.
- 4.4 Address barriers to bicycling, such as lack of secure bicycle parking, signals which do not detect bicycles, and bicycle prohibitions on transit.
- 4.5 Address barriers to walking such as incomplete or broken sidewalks, sidewalk obstructions, trail gaps, wide intersections, and poor connections to transit stops.
- 4.5 Encourage developments that incorporate mixed-use and neighborhood-serving-retail/employment concepts.

Goal 5: Maximize multi-modal connections to the bicycle and pedestrian system.

Policies:

- 5.1 Ensure that the bicycle and pedestrian system serves all multi-modal stations.
- 5.2 Provide bus shelters, wider sidewalks, and curb extensions at major transit stops.
- 5.3 Work with local and regional transit agencies to install bike lockers at terminals and bike storage on buses and BART.
- 5.4 Improve pedestrian connections between the San Leandro BART station and the surrounding neighborhoods, with special attention at the at-grade crossings and connections through the parking lot.



Goal 6: Improve bicycle and pedestrian safety.

Policies:

- 6.1 Continue to monitor bicycle- and pedestrian-related collisions annually and target a reduction rate over a period of time.
- 6.2 Continue the bicycle education program (“Safe Moves”) that is taught yearly to school children (kindergarten to 5th grade) and senior adults. Include bicycle rodeos where children are given actual riding lessons in school.
- 6.3 Continue the system for reporting and responding to maintenance problems on the existing bikeways and sidewalks.
- 6.4 Develop a Plan that identifies a schedule for maintenance and cleaning of bicycle facilities.
- 6.5 Using engineering judgment, utilize the guidelines for marking pedestrian crossings at uncontrolled locations detailed in Chapter V.
- 6.6 Continue to build Suggested Routes to Schools maps and construct improvements at schools throughout the City to improve pedestrian and bicycle safety.

Goal 7: Develop detailed and ranked bicycle improvements.

Policies:

- 7.1 Identify improvements to be completed in the short term based on a variety of objective criteria, including number of activity centers served, closure of critical gaps, elimination of safety hazards, level of existing use, and input from the public.
- 7.2 Develop detailed implementation information on each recommended project, including classification, length, adjacent traffic volumes and speeds, environmental impacts, activity centers served, cost, and overall feasibility.
- 7.3 Develop cross sections and plans for the design of multi-use paths and lanes that meet state and federal (including American Disability Act) standards.



Goal 8: Encourage public participation and creation of an ongoing Bicycle and Pedestrian Advisory Committee.

Policies:

- 8.1 Create a Bicycle and Pedestrian Advisory Committee (BPAC) as a forum for ongoing discussions concerning bicycle and pedestrian issues. The BPAC should be involved in the monitoring, implementation, funding, and updating of bicycle and pedestrian facilities.
- 8.2 Maximize public involvement through workshops and other means.

Goal 9: Develop a coordinated marketing strategy to encourage bicycling.

Policies:

- 9.1 Develop or update a Bikeway Map for public distribution showing bicycle facilities.
- 9.2 Sponsor annual bicycle events such as "Bike to Work Day" and offer safety courses.
- 9.3 Provide information about the advantages and opportunities afforded by the bicycle system to promotion groups who may help publicize the system.
- 9.4 Coordinate efforts with the City agencies, the Cherry City Cyclists, the East Bay Bicycle Coalition, and relevant associations.

Goal 10: Improve the Walkability of Streets in San Leandro

Policies

- 10.1 Provide compact intersections, pathways, and frequent crossing opportunities that are safe, accessible, functional, and useful.
- 10.2 Include zoning for both residential and commercial uses designed to promote pedestrian trips.
- 10.3 Improve connections in the pedestrian network, and provide a high level of service to pedestrians on all streets.
- 10.4 Where possible, adhere to the accessible signal guidelines in the Pedestrian Guidelines.



Goal 11: Provide a safe, comfortable walking environment that promotes pedestrian activity in all new developments.

Policies

- 11.1 New development should be accessible to all pedestrians with wide sidewalks, compact intersections, and integrated pedestrian circulation.
- 11.2 Provide pedestrian connections between new commercial development or tourist accommodations and surrounding residential areas.
- 11.3 Provide pedestrian connections to schools when designing circulation systems in future development.
- 11.4 When reasonable, keep block lengths 500 feet or shorter with frequent controlled intersections.
- 11.5 In new developments, avoid cul-de-sacs or maintain easement for bicycle and pedestrian right-of-way to provide connections for non-motorized users.
- 11.6 In pedestrian improvement areas where sidewalks are already established, the City should establish an in lieu fee for area-wide pedestrian improvements.
- 11.7 New intersections should minimize crossing distances for pedestrians, following the design guidelines for compact intersections, turning radii, and free-right turn lanes.
- 11.8 New development should provide an internal pedestrian circulation plan that demonstrates a connection to the public sidewalk whenever possible.
- 11.9 New commercial development in pedestrian improvement areas should have at least one major entrance on a public sidewalk whenever possible.
- 11.10 Provide a high-visibility treatment at all uncontrolled crossing locations (uncontrolled crossing locations are mid-block sites and intersections without a signal or all-way stop) where a crosswalk is scheduled for installation. Choose a crossing treatment based on crosswalk guidelines that are a function of volume, speed, and number of lanes.



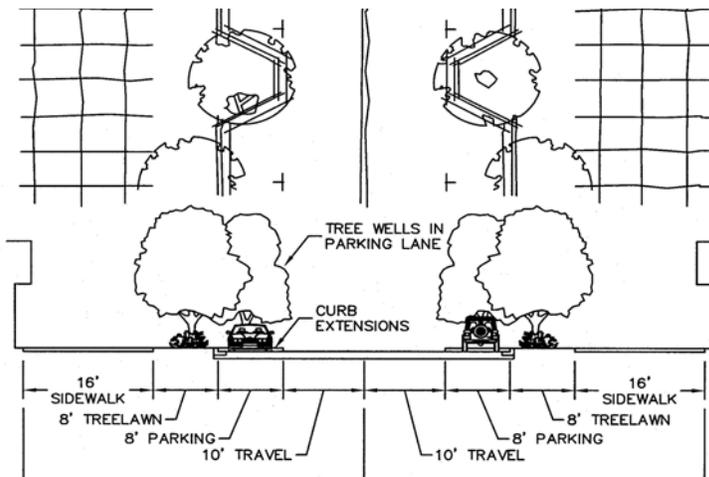
III. PEDESTRIAN NETWORK

Walkability is a qualitative measurement of the pedestrian environment. This chapter deals specifically with improving walkability throughout the pedestrian network. The pedestrian network includes sidewalks, trails, and crossing locations. It encompasses parking lot connections, transit access, and school pick-up and drop-off zones.

Walkable communities have¹:

- **Short block lengths** – no longer than 500 feet with few exceptions.
- **Frequent crossing opportunities** – at least every 300 feet near pedestrian trip generators such as schools, parks, libraries, shopping centers, and hospitals.
- **Different uses located within walking distance of one another** – neighborhoods within ¼-½ mile of shopping centers and employment centers; all neighborhoods within ¼-½ mile of a transit stop.
- **Frequent pedestrian amenities** – benches, water fountains, newspaper racks with consistent design and placement in pedestrian improvement areas.
- **Wide sidewalks with buffer zones** – sidewalks at least five to six feet wide with six-foot planting strips in pedestrian improvement areas.
- **Compact intersections** – with short crossing distances and cycle lengths for pedestrians.

Walkability is essential in pedestrian districts, or areas with multiple pedestrian trip destinations. Examples of pedestrian trip generators include restaurants, parks, schools, transit centers, and employment centers. **Pedestrian improvement areas are areas where walkability takes priority.** Factors affecting walkability include proximity of uses, the presence of buffers from traffic, and sidewalks that are wide enough to share comfortably with others.



The figure to the left shows the layout of a typical “main street.” Main Streets are neighborhood centers and downtown areas. They typically have wide sidewalks, curb extensions, medians, planter strips, and narrow travel lanes to facilitate pedestrian crossings.

¹ Ridgway, Matthew and Michelle DeRobertis, University of California Berkeley Technology Transfer course, *Bicycle and Pedestrian Planning and Design*



Pedestrian improvement areas identified initially include:

- *The East 14th Street Corridor* – Though this corridor also serves as a primary vehicle route, it provides access to employment centers as well as pedestrian generators such as schools, libraries, and parks. The corridor is identified in the City's *General Plan* as a priority for improving pedestrian safety and walkability.
- *The San Leandro BART Station* – The area surrounding the station is also identified as a pedestrian district in the City's *General Plan*. This plan identifies the district as bounded by Davis Street and Marina Boulevard to the North and South, and by East 14th Street and the existing rail lines to the East and West. It expands at its eastern boundary to include the San Leandro Main Library on Estudillo Avenue. This area has good development potential and represents an opportunity to create an excellent pedestrian district. This district encompasses the West Estudillo Historic Downtown Improvement Project. West Estudillo Avenue has a set of proposed improvements which include landscaping.
- *MacArthur Boulevard* – The City currently has plans for streetscape improvements along MacArthur Boulevard between Durant Avenue and Estudillo Avenue. The plans include special concrete pavers, curb extensions, new street furniture, and landscaping.
- *Bancroft Avenue/Dutton Avenue* – These corridors include a small commercial district which serves residences in the surrounding neighborhood as well as serving an influx of pedestrians during community events. Dowling Boulevard and 136th Avenue bound the Bancroft Avenue corridor. The Dutton Avenue corridor includes Breed Avenue to Chetland Road.
- *Manor Boulevard/Washington Avenue* – This incorporates an active commercial district with significant pedestrian traffic around Farnsworth Street. It includes the Manor Boulevard corridor from Juniper Street to Washington Avenue and the Washington Avenue corridor from 143rd Avenue to Lewelling Boulevard.
- *San Leandro Marina* – This includes the area along the Bay Trail at the Marina as well as the neighborhood around Marina Boulevard and Doolittle Drive.
- *The Bayfair BART Station* – This district encompasses the BART station, Bayfair Mall, and the area around Hesperian Boulevard and Halcyon Drive

Through Bicycle and Pedestrian Advisory Committee (BPAC) meetings, several key pedestrian spots were identified. These are locations which may not be broad enough to comprise an entire district, but which warrant special considerations for pedestrians. Many of the locations are incorporated in the pedestrian improvement areas named above but are highlighted because they pose special challenges to pedestrians or are located near significant pedestrian destinations.



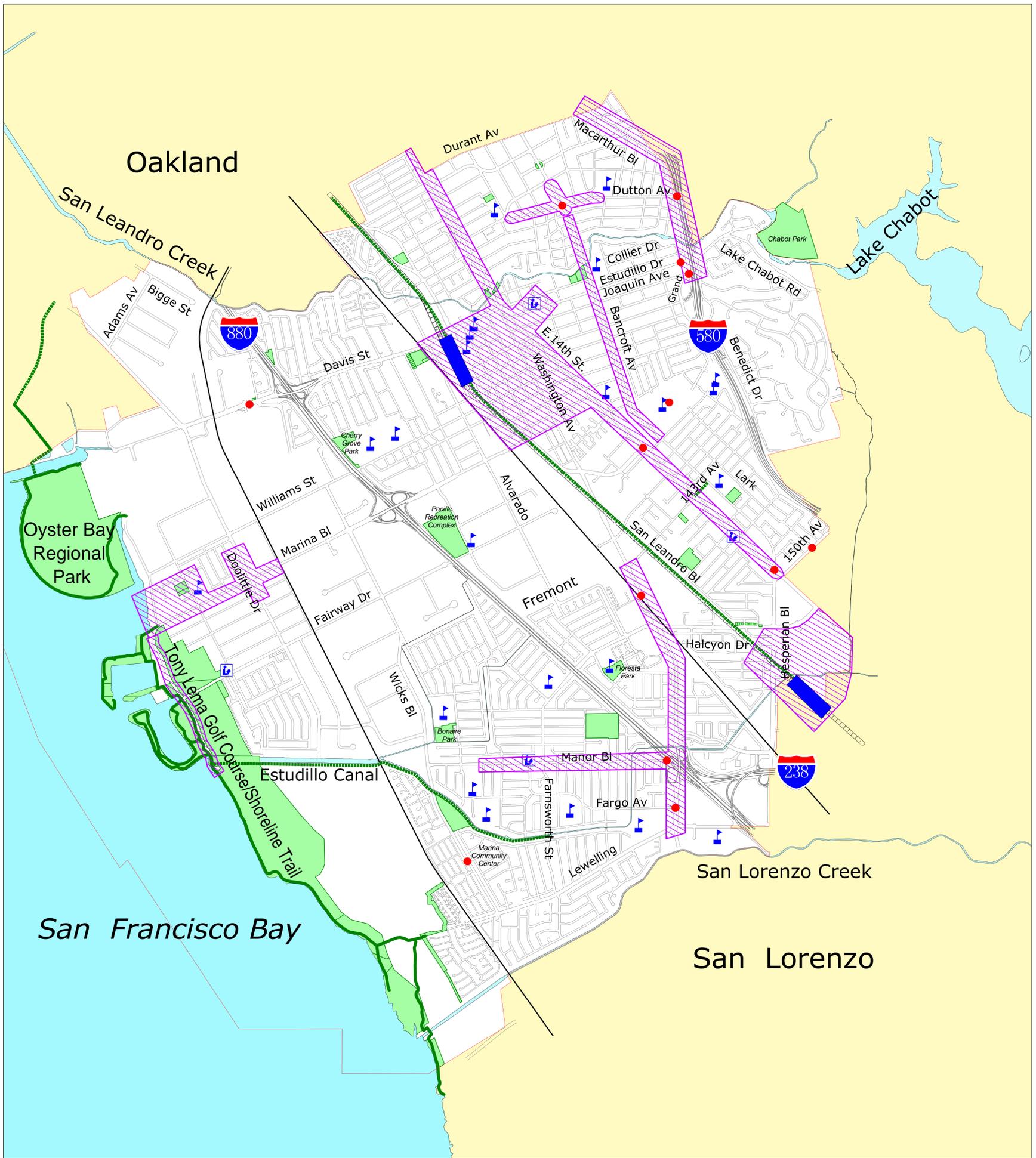
Key Pedestrian Locations
150 th Street/Lark Street
MacArthur Boulevard/Dutton Avenue
Estudillo Avenue/Collier Street
Wicks Boulevard at the Marina Community Center
Jefferson Elementary School
Corvallis Elementary School
McKinley Elementary School
Roosevelt Elementary School
Woodrow Wilson Elementary School
Washington Manor Elementary School
John Muir Middle School
150 th Avenue/Hesperian Boulevard
Bonaire Park
Washington Avenue/Lewelling Boulevard
Chabot Park
Grand Avenue/Joaquin Avenue
Cherry Grove Park
Floresta Park
Pacific Park
Garfield Elementary School
San Leandro High School
East 14 th Street/San Leandro Boulevard
Davis Street
Fargo Avenue/Washington Avenue

The map on the following page displays both the pedestrian improvement areas and key pedestrian locations, as well as schools and parks identified in the list above.



City of San Leandro

Pedestrian Improvement Areas



Legend			
<ul style="list-style-type: none"> Pedestrian Districts Key Spots BART Stations 	<ul style="list-style-type: none"> Library Schools Parks 	<ul style="list-style-type: none"> Rail Lines BART Rail 	<ul style="list-style-type: none"> Existing Class I Trail Proposed Class I Trail
			<div style="text-align: center;"> <p>N</p> </div>
			<p style="font-size: small; margin-top: 5px;">0 750 1,500 3,000 4,500 6,000 Feet</p>

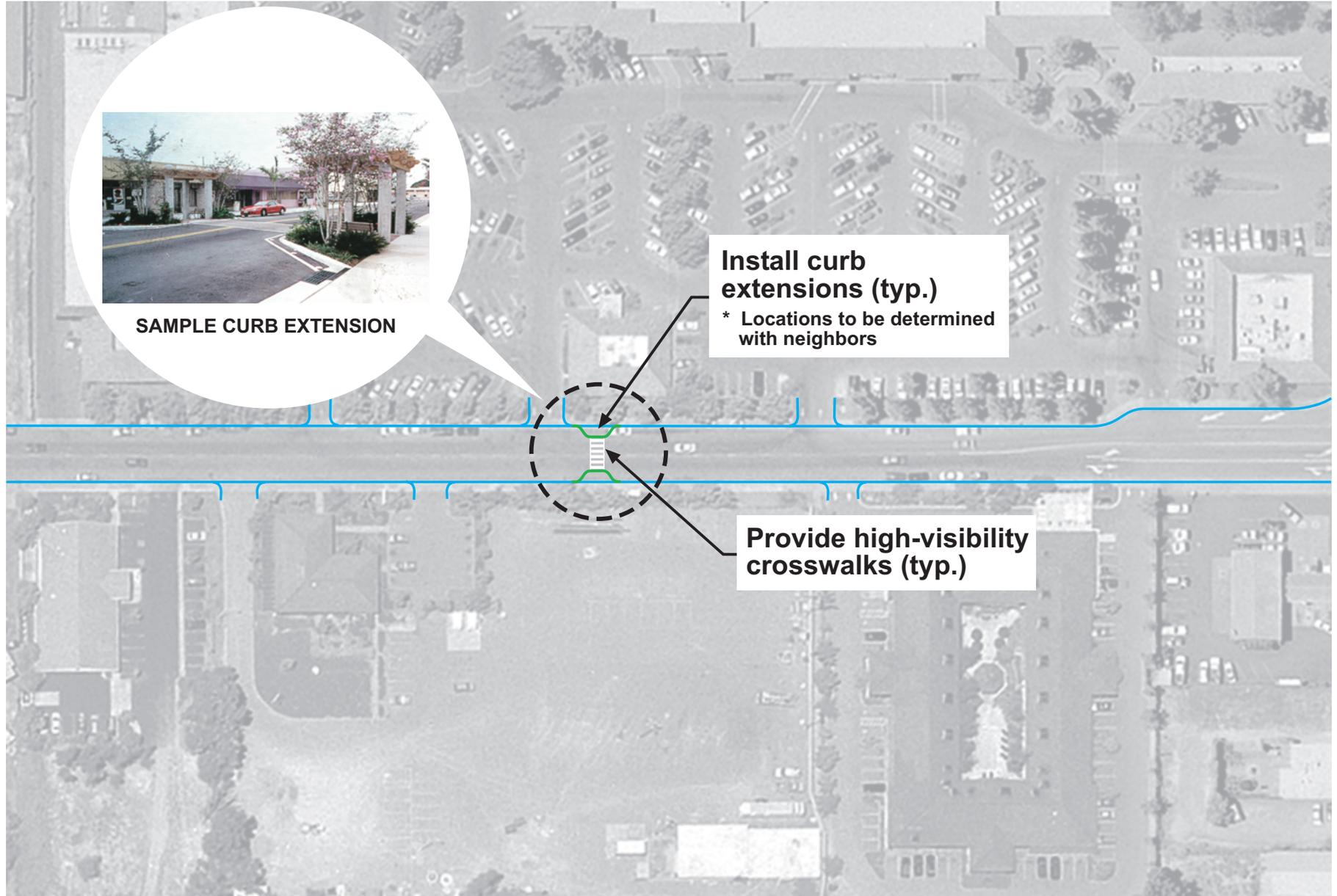
A. Prototypical Treatments

The following pages contain prototypical treatments for conditions normally found in the pedestrian environment, such as wide intersections and uncontrolled arterial crossings. While the Pedestrian Plan does not include a list of specific projects, the treatments found on the following pages are appropriate for areas in the pedestrian improvement area as well as other parts of the City with high volumes of pedestrians or special uses such as schools, senior centers, or institutional uses. Specific dimensions are addressed in the Pedestrian Design Guidelines. The prototypical treatments should be viewed as flexible concepts which may be altered to address the attributes of individual locations.



Prototypical Treatments

Mid-Block Crossing with Multiple Desire Lines



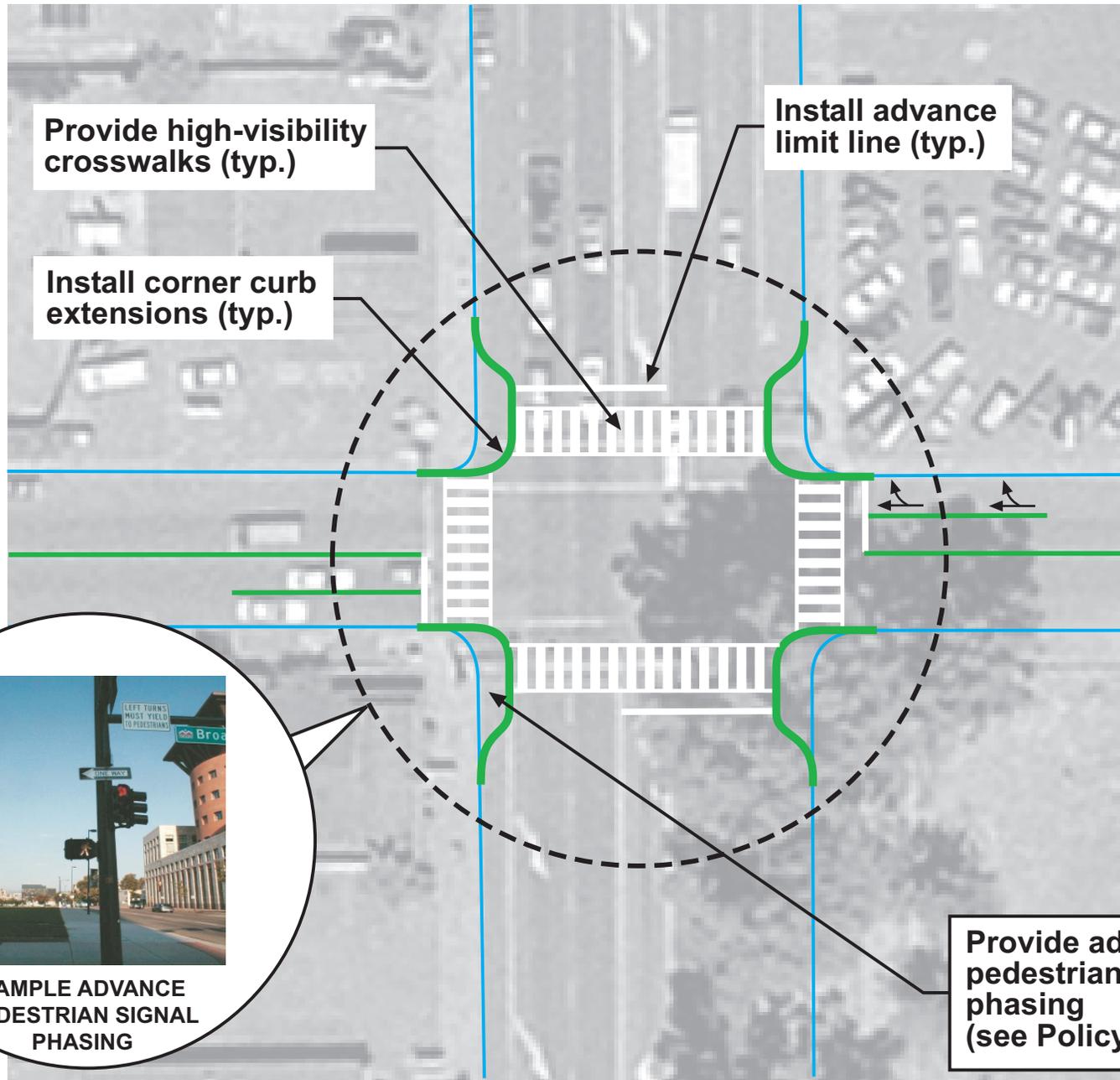
SAMPLE CURB EXTENSION

Install curb extensions (typ.)
* Locations to be determined with neighbors

Provide high-visibility crosswalks (typ.)

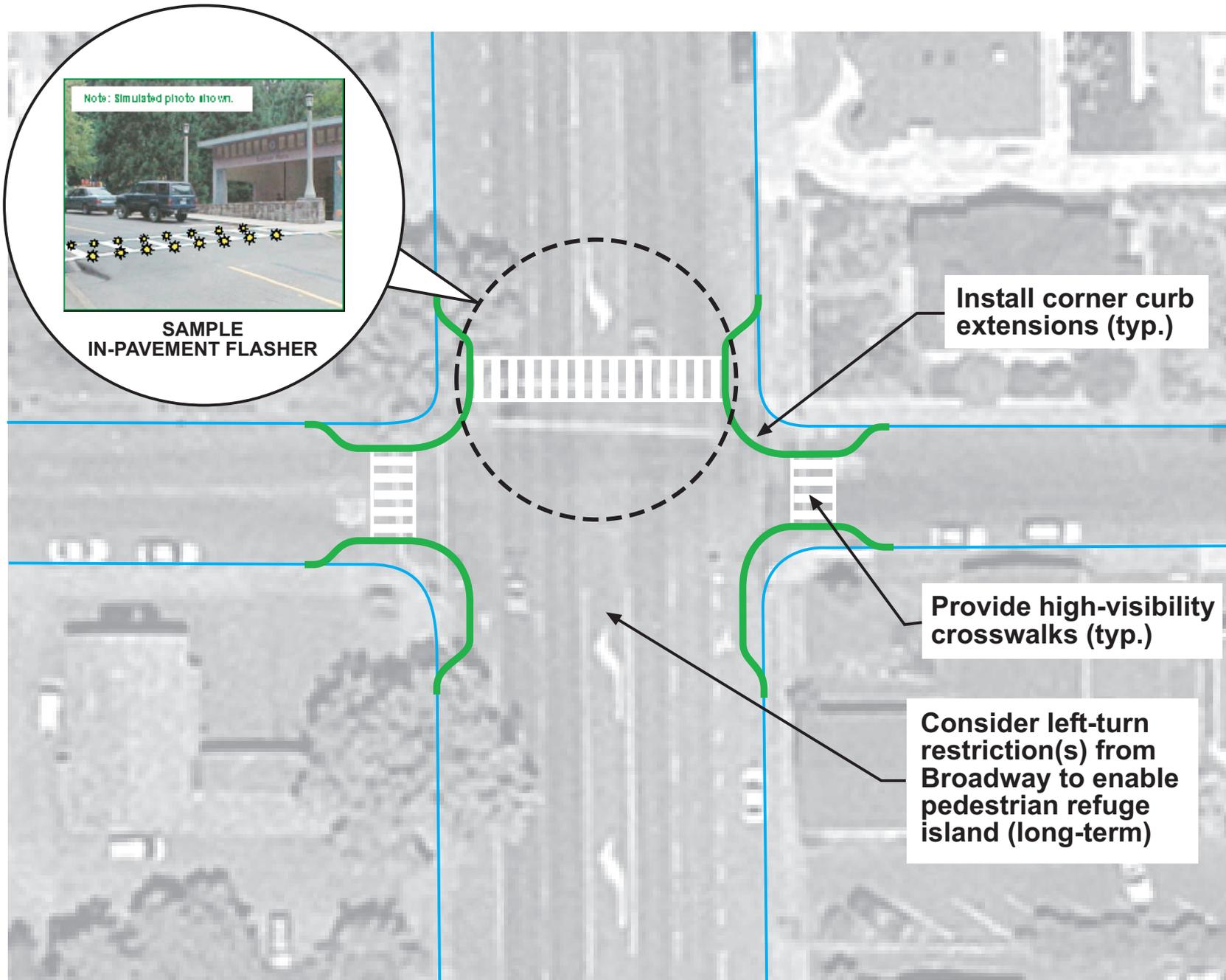
Prototypical Treatments

Wide Signalized Intersection



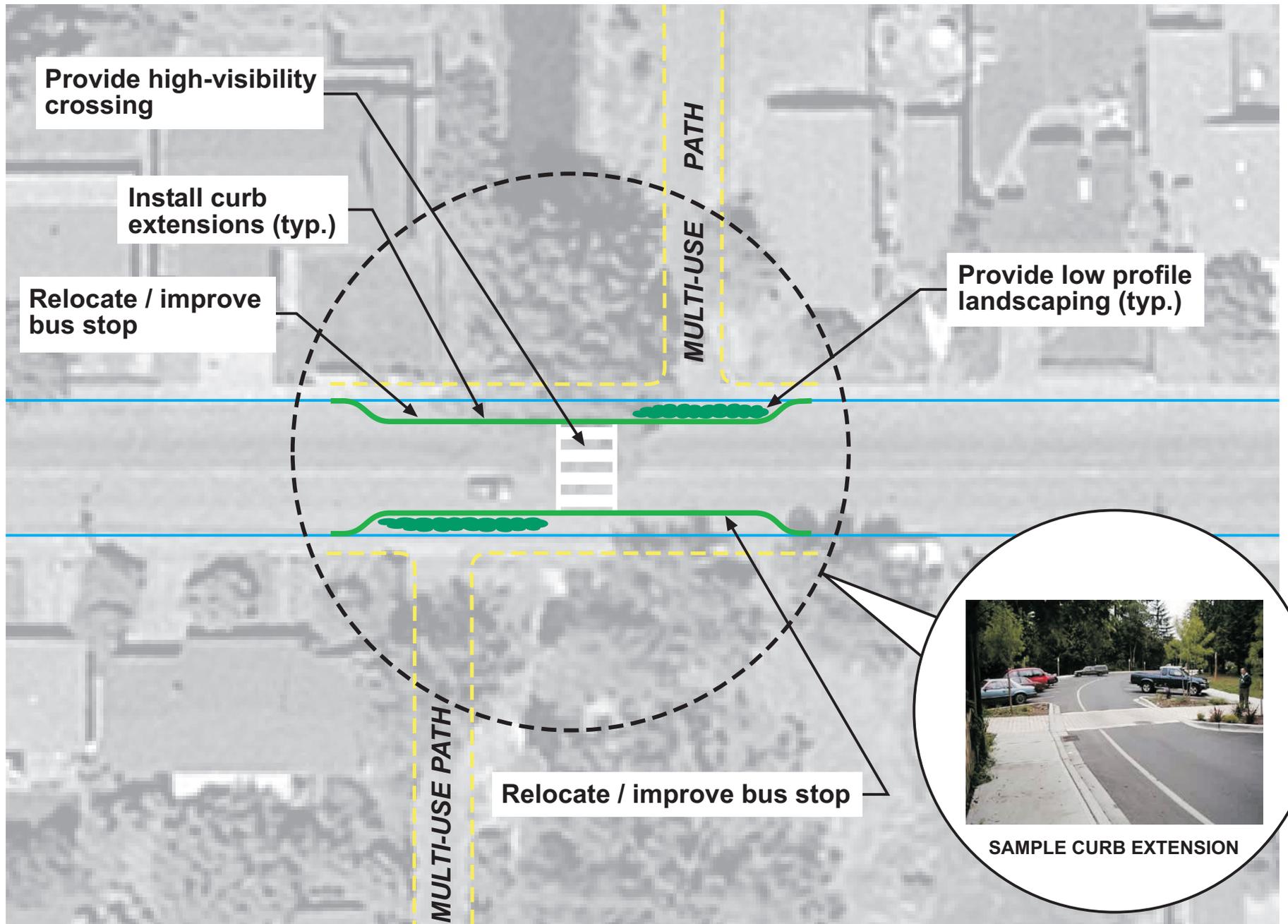
Prototypical Treatments

Uncontrolled Arterial Crosswalk



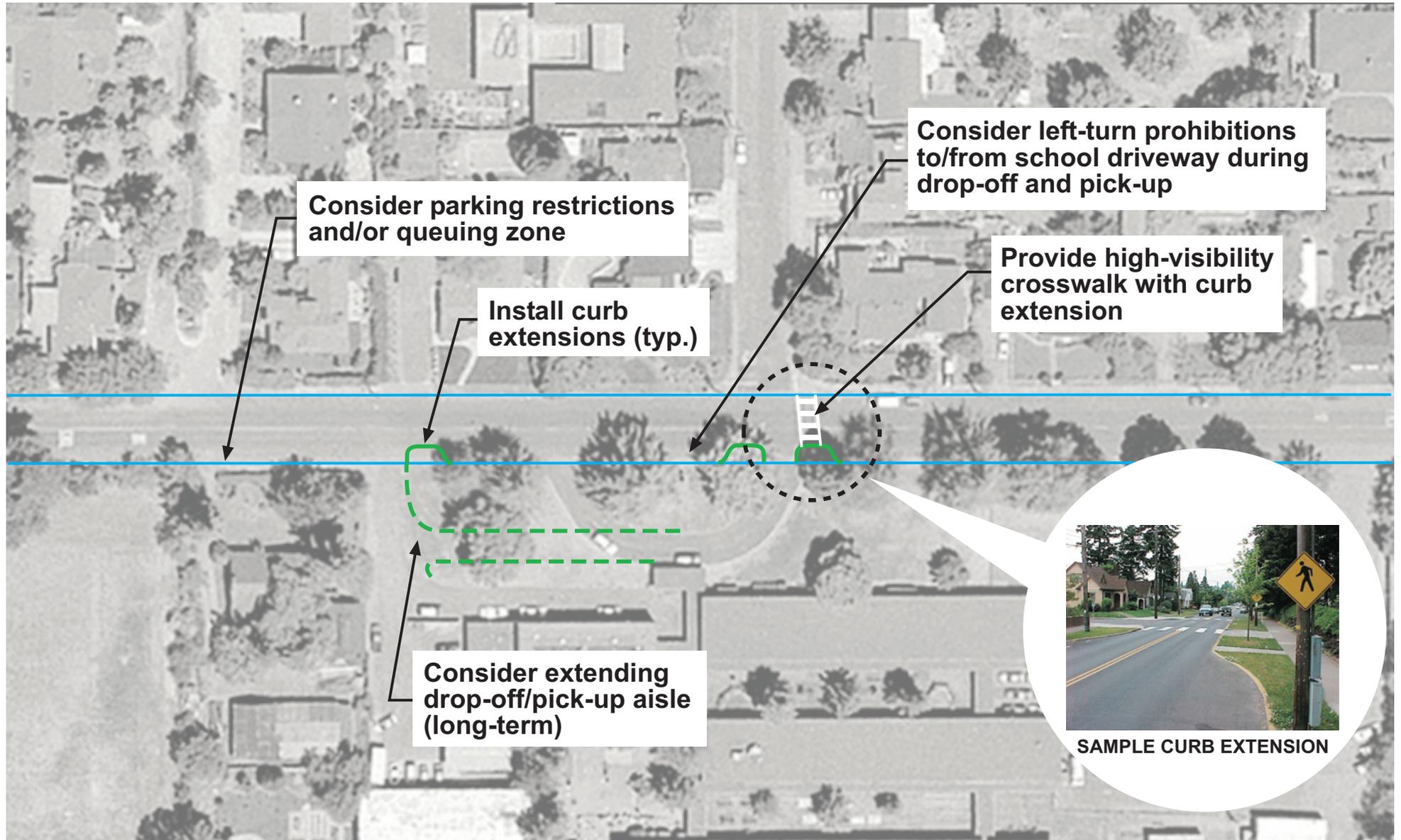
Prototypical Treatments

Trail Crossing



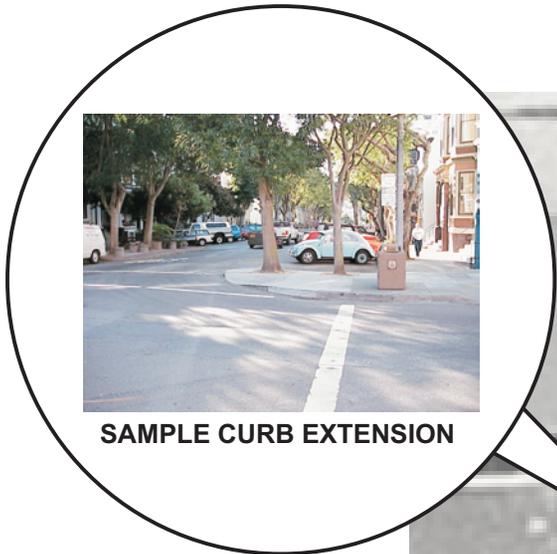
Prototypical Treatments

School Pick-Up / Drop-off Zone

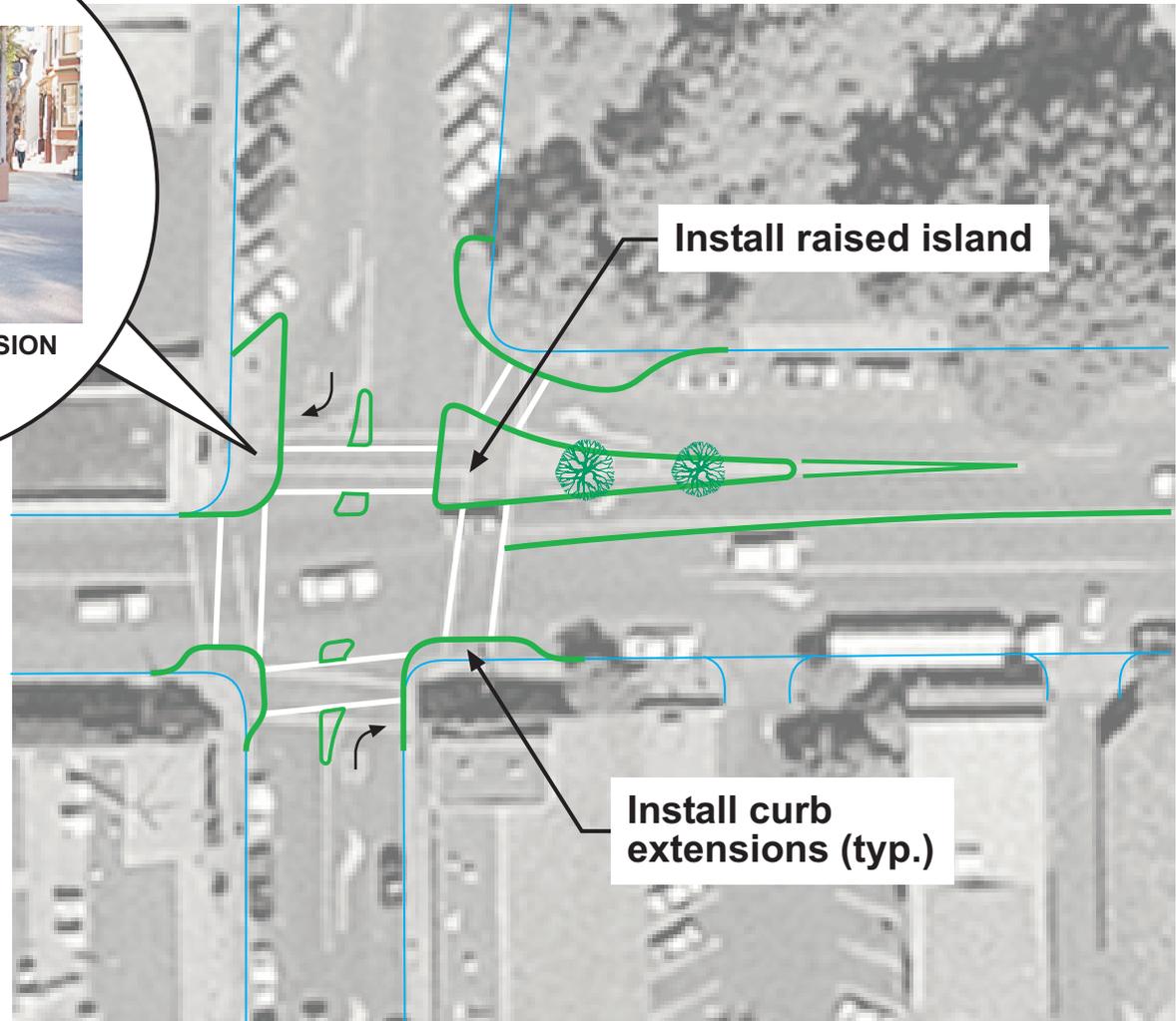


Prototypical Treatments

Wide Unsignalized Intersection



SAMPLE CURB EXTENSION



Install raised island

Install curb extensions (typ.)

IV. BICYCLE NETWORK

The *Bicycle and Pedestrian Master Plan* sets forth a blueprint for completing the system of bikeways and support facilities within the City of San Leandro. When the *Bicycle Master Plan* was first adopted in 1997, the City had just 7.4 miles of bicycle lanes on City streets. Since then, approximately nine miles of bicycle lanes have been installed and the City's bikeway network now includes 16.7 miles of bicycle lanes, 7.4 miles of bicycle paths and 1.4 miles of signed bicycle routes, for a total network of approximately 25 miles. This updated *Bicycle and Pedestrian Master Plan* builds upon existing on-street and off-street bicycle facilities throughout the City, focusing on key gaps in the network, ultimately aimed at creating a 53-mile bikeway network.

Needs Analysis

San Leandro has many qualities favorable to bicycle riding, including a temperate climate and scenic recreational resources along the Bay and in the hills. With its flat terrain and a developed street system, the most constraining element may be the heavy traffic on the major arterials. Major east-west connectors such as Davis Street, Marina Boulevard, Lewelling Boulevard, and Estudillo Avenue; and north-south connectors such as Doolittle Drive, San Leandro Boulevard, East 14th Street, Bancroft Avenue, Hesperian Boulevard, and Washington Avenue all contain many major intersections and carry high traffic volumes (10,000 to 45,000 per day) not conducive to a friendly bicycling environment.

In addition to busy streets, other constraints unique to San Leandro include numerous railroad crossings, several industrial zones (railroad crossing and on-street trailer parking), and the overpasses over Interstate 880 and Interstate 580. Typically, narrow streets present problems for bicycles; however, the City is primarily comprised of a grid street system where alternative routes could usually be found to bypass streets with insufficient widths for bicycles.



Bicycle Trip Types

Bikeways, like streets and sidewalks, are used by a wide range of people--children riding to school, commuters riding to work, people exercising, racing, or touring. This analysis takes into account the different user groups to design a comprehensive bicycle system that meets their needs in San Leandro.

Related to the user groups mentioned above is trip purpose, which helps identify common needs among the groups. In general, bicycle trips can be broken down into recreational (including all discretionary trips), commuter (whether to work or school) or shopping trips. The biggest difference between these groups is that while recreational riders may be interested in routes leading to parks or other areas of interest, commuters and shoppers are interested in the shortest and safest route between two points.



Recreation Destinations and Needs

Recreation bicycling includes children riding to a nearby park, racers riding tours, casual riders riding in the evening for exercise, and senior citizens riding to a community center. The common attribute of all of these activities is that they are generally done for the pleasure of the ride itself, they have a recreational facility as a final destination, they are discretionary by nature, and they place speed and directness as less important than surroundings or relative safety.



Recreation bicyclists can generally be categorized into two groups. The first group is casual bicyclists who typically have short trips and often include less experienced persons, particularly young children and the elderly. The second group includes more experienced and athletic riders who generally seek scenic back roads as their favorite domain.

It is important to understand these distinct types of bicyclists because the proposed system must provide opportunities for both groups. For the person riding for exercise, the needs are for a relatively quiet route with no stops, away from automobile traffic, if possible, preferably with visual interest and shades from the wind and sun. A loop configuration is preferred so that the rider ends up back at his/her starting point without backtracking. For the person going to another recreation destination (a park or a shopping mall), the route may consist of fairly direct back streets that allow arrival with reasonable time through a comfortable environment. For other casual riders, following a route that leads through interesting neighborhoods, along shorelines/creeks, and through parks offers the greatest interest.

Commuter And Student Destinations And Needs

Commuter and student destinations include downtown employment centers, office parks, industrial areas, elementary, junior high, and high schools, and colleges. Targeting bikeway improvements to commuters is important because most roadway congestion and a significant portion of air contaminants occur during the a.m. and p.m. peak periods.

In many cases, bicycling as a commuter alternative has the potential to improve traffic and air quality. For example, bicycle commuters in the City of Davis have reduced peak hour traffic volumes by over 15%--to the point that many downtown streets that would normally require four traffic lanes (with no bike lanes) have only two traffic lanes and ample room for bicyclists. While Davis may be an anomaly, national surveys have shown that about 20% of the adult population would use a bicycle to ride to work, at least occasionally, if a properly designed bikeway system existed. Roughly 15% of drive-alone trips in San Leandro are under 10 minutes. This percentage shows that there is a target group for bicycle commutes.



Commuters and students have similar travel behavior, which is typically to take the most direct route from origin to destination. For grammar school students, this may consist of residential or collector streets, with few crossings of major arterials. For junior high and high school students, riders may have to cross five or six arterials to reach school. For college students and adult commuters, rides



are most often under five miles but may be as long as 10 or 15 miles. The nearest university/community colleges are California State University Hayward and Chabot College in Oakland.

Commuters and students (in the morning) travel during peak periods of traffic to destinations that may have high levels of congestion and speeds. For example, one of the most dangerous parts of a student's commute is the drop-off zone in front of the school where many vehicles search for parking or drop-off spaces.

Commuting bicyclists have simple and obvious needs. They require bike lanes or wide curb lanes along arterials and collectors, loop detectors at signalized intersections, signals where school children need to cross busy arterials, periodic maintenance of the pavement, and adequate bicycle storage and lockers/showers at their destination points (see Page 35, End-of-Trip Facilities).

Most commute bicycle trips are under five miles and not regional trips, except for those commuters linking to another mode, such as bus stops or transit stations. Continuing to allow bicycles on other modes such as bus and BART or providing bike lockers at multi-modal stations will help extend the range of commute bicyclists in San Leandro.

Existing and Future Bicycle Commuters

A common term used in describing demand for bicycle facilities is "mode split." Mode split refers to the form of transportation a person chooses to take, such as walking, bicycling, public transit, or driving. Mode split is often used in evaluating commuter alternatives such as bicycling, where the objective is to increase the percentage of people selecting an alternative means of transportation to the single-occupant (or drive-alone) automobile. Table 4-1 presents 1990 and 2000 Census data for the journey-to-work mode split for the City of San Leandro.

TABLE 4-1 Journey-to-Work Mode Split for the City of San Leandro		
Mode (Home-based work trips)	1990	2000
Drive Alone	73.4%	70.3%
Carpool	11.7%	13.1%
Public Transit	9.2%	10.2%
Bicycling	0.6%	0.6%
Walking	2.4%	1.9%
Other Means	0.8%	1.1%
Work at Home	1.3%	2.4%
Source: 1990 and 2000 U.S. Census.		



As shown in Table 4-1, bicycle trips represent 0.6 percent of home-based work trips in San Leandro. This should not be misinterpreted as the bicycle mode share of all trips for several reasons:

- Journey-to-work data only represents commute trips that tend to be longer trips than shopping, school, recreation, and other trips and are therefore less compatible with bicycling.
- Census journey-to-work data fails to capture people who commute by bicycle one or two days per week.
- Journey-to-work data does not account for commuters with multiple modes of travel to and from work, such as commuters that ride a bicycle to a BART station before transferring to transit for the remainder of their journey to work
- No separate accounting of shopping, school, or recreational trips is made in the Census; these trips make up more than half of the person trips on a typical weekday and a significantly greater proportion on weekend. These trips also tend to be short- to medium-length, which are very well suited for bicycle trips.
- Journey-to-work reports information for adult work trips, but does not request data on school trips, which are much more likely to be bicycling trips as school-aged individuals cannot drive until the latter half of their high school years.

School trips, recreation trips and other non-work related trips make the overall bicycle mode split higher than 0.6%, and may make it as high as 3%. There are 30,642 households in San Leandro (according to the 2000 Census). Assuming approximately 10 daily person trips per household, there are a total of approximately 306,000 daily person trips in San Leandro, of which approximately 1,800 to 9,000 each day are by bicycle (assuming an overall mode share of 0.6% to 3%).

Future bicycle trips will depend on a number of factors such as the availability of well-connected facilities, and location, density, and type of future land development. With appropriate bicycle facilities in place and implementation of employer trip reduction programs, the bicycle mode split could increase above its current rate. Doubling the current mode split (to 1.2% for census journey to work trips and up to 6% for overall trips) would result in 1,800 to 9,000 additional bicycle trips daily.



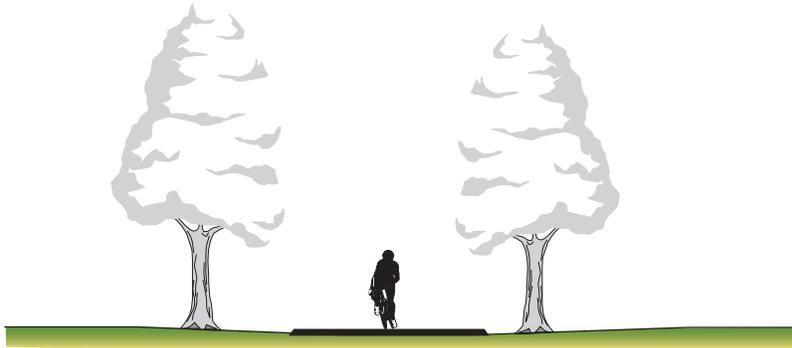
Types of Bikeway Facilities

Bikeway planning and design in California typically relies on the guidelines and design standards established by Caltrans as documented in “Chapter 1000: Bikeway Planning and Design” of the *Highway Design Manual* (5th Edition, California Department of Transportation, January 2001). Chapter 1000 follows standards developed by the American Association of State Highway and Transportation Officials (AASHTO) and the Federal Highway Administration (FHWA), and identifies specific design standards for various conditions and bikeway-to-roadway relationships.

Caltrans standards provide for three distinct types of bikeway facilities, as generally described below and shown on Figure 4-1.

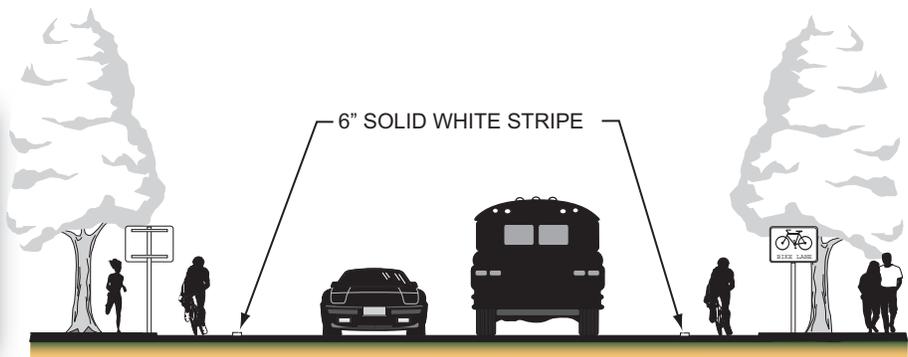
- **Class I Bikeway (Bike Path)** provides a completely separate right-of-way and is designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized.
- **Class II Bikeway (Bike Lane)** provides a restricted right-of-way and is designated for the use of bicycles with a striped lane on a street or highway. Bicycle lanes are generally five feet wide. Vehicle parking and vehicle/pedestrian cross-flow are permitted.
- **Class III Bikeway (Bike Route)** provides for a right-of-way designated by signs or pavement markings for shared use with pedestrians or motor vehicles.





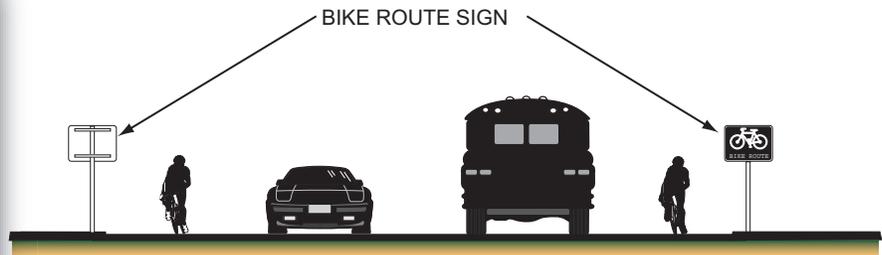
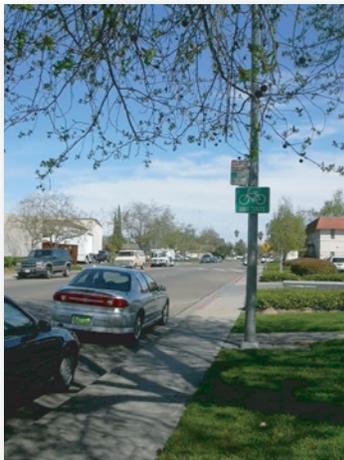
CLASS I BIKEWAY (Bike Path)

Provides a completely separated right-of-way for the exclusive use of bicycles and pedestrians with crossflow minimized.



CLASS II BIKEWAY (Bike Lane)

Provides a striped lane for one-way bike travel on a street or highway.



CLASS III BIKEWAY (Bike Route)

Provides for shared use with pedestrian or motor vehicle traffic.



FEHR & PEERS
TRANSPORTATION CONSULTANTS

June 2004
1037-0121\graphics\0121-140 bikeway class

San Leandro Bicycle Plan

GENERAL BIKEWAY CLASSIFICATIONS

FIGURE 4-1

Existing Bikeway Network

Fehr & Peers conducted an inventory of existing bikeway segments in San Leandro based on the City's current *General Plan* bikeway map, additional information obtained from the City and a field visit conducted with staff from the City's Public Works Department. Since adoption of the 1997 Bicycle Master Plan, the City installed approximately nine miles of Class II bike lanes in San Leandro. The City currently has approximately 25 miles of bikeway facilities, consisting of:

- 16.7 miles of Class II bike lanes
- 7.4 miles of Class I bike paths
- 1.4 miles of Class III bike routes

The Existing Bikeway Network map on page 29 illustrates the locations of existing bikeways.

Land Use and Settlement Patterns

In addition to showing the types and locations of existing bikeways, the Existing Bikeway Network map also locates major bicycle activity centers such as schools, parks, and libraries. The City of San Leandro has a variety of land uses including residential (29,390 households), retail (Bayfair Shopping Mall, Westgate Center, Marina Square, downtown shops), commercial (downtown offices, office parks in the southwest area), and industrial (Alvarado Street, Wicks Boulevard, etc.) The school system includes nine public elementary schools, two public junior high schools, one public high school, and seven private schools. Recreational sites include regional attractions like Oyster Bay Regional Shoreline, Lake Chabot Regional Park, and the San Leandro Marina. These activity centers throughout the City are potential generators of commute and recreational bicycle trips. Continued development of a complete bikeway system could encourage some current drivers to switch to bicycles.



Key Corridors

North-south routes:

- **Bancroft Avenue** is designated as a bikeway with Class II bike lanes for much of its length, providing a continuous north/south connection between San Lorenzo and Oakland. This project was implemented as part of a "road diet" in which segments of Bancroft were reduced from four lanes to three lanes (including a new center left-turn lane) completed with Bicycle Transportation Account (BTA) funding. The City of Oakland recently extended the project through the segment of Bancroft in Oakland. Residents and business groups in San Leandro have very well received the project.



Before (above) and after (right) pictures of Bancroft Avenue. The street was originally a four-lane street with parking. After re-striping, it became a three-lane street with bike lanes and parking.



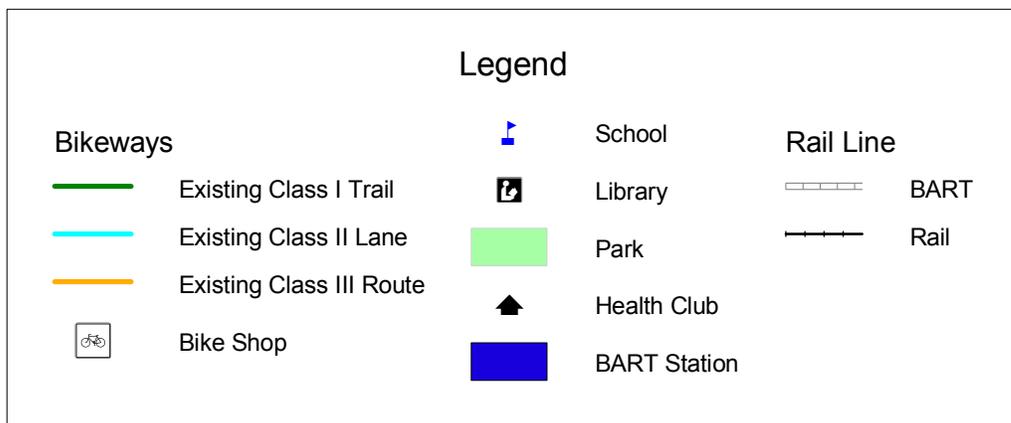
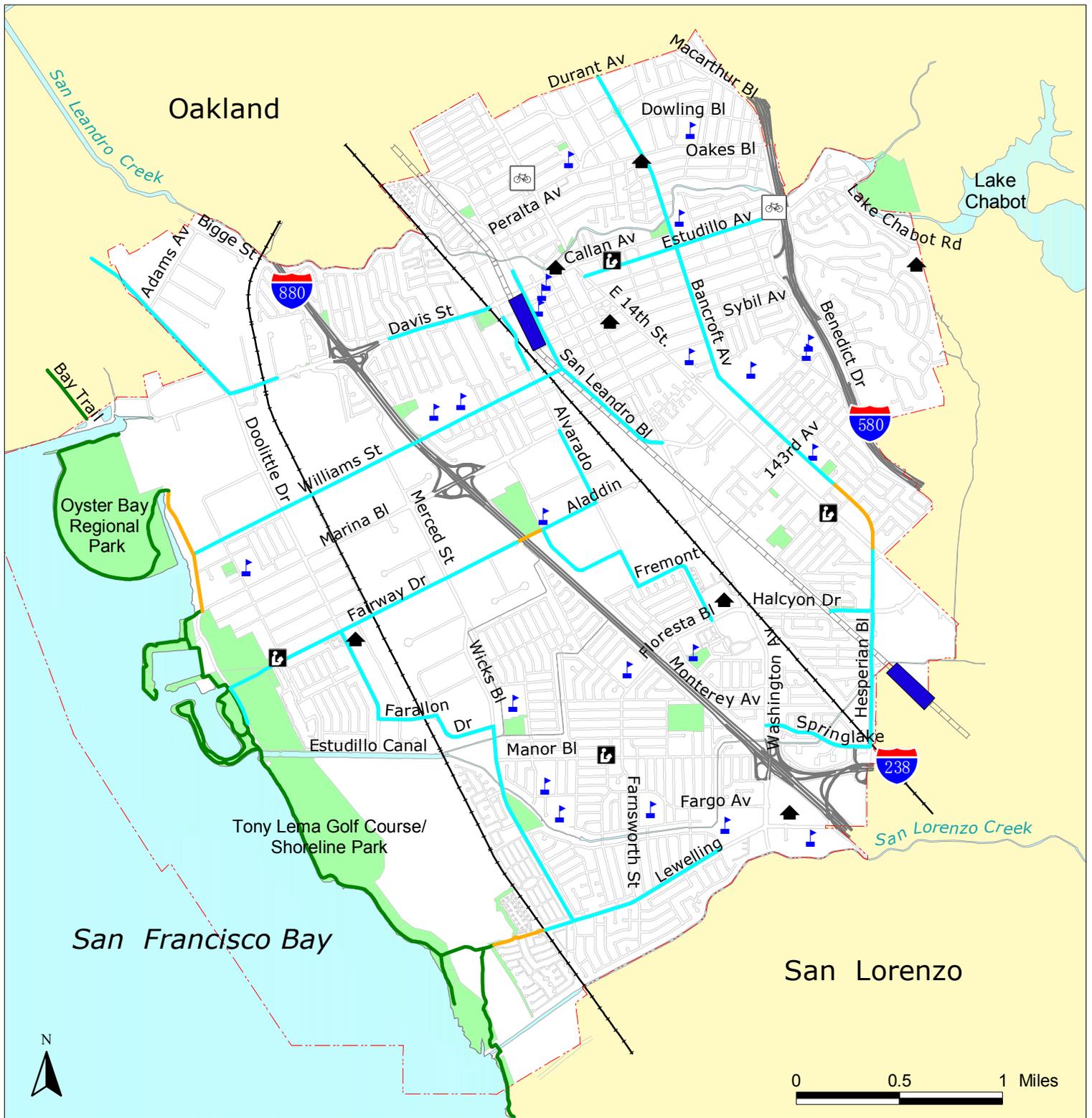
- **The San Francisco Bay Trail** is a regional hiking and bicycling trail around the perimeter of San Francisco and San Pablo bays. In San Leandro, the main component of the Bay Trail, the "spine trail", is fixed along the shoreline, including the Oyster Bay Regional Shoreline and the San Leandro Marina, supported by "spur trails" that extend to inland neighborhoods.



East-west routes:

- **Davis Street** is striped with bicycle lanes for portions (west of downtown), which could ultimately connect with bicycle lanes on **Estudillo Avenue** to provide a connection between the Bay Trail and Lake Chabot.
- **Williams Street** is designated as a bikeway with Class II bicycle lanes between Neptune and Alvarado.
- **Fairway Drive** is striped with bicycle lanes west of the Alvarado Street.
- **Lewelling Boulevard** is striped with bicycle lanes for extending from the Bay Trail nearly to Washington Street.





City of San Leandro
Bicycle Master Plan

Existing Bikeway Network

Multi-Modal Connections

Bay Area Rapid Transit (BART), the regional commuter rail transit system, provides service through San Leandro on three lines, the Richmond-Fremont Line, Fremont-Daly City Line, and the Daly City-Dublin/Pleasanton Line. Bicycles are allowed on BART trains during non-commute hours (9 AM to 3:30 PM and 6:30 PM - Closing) and all day on weekends and holidays. During peak periods (3:30 PM to 6:30 PM), bicycles are allowed from the East Bay stations, including the San Leandro and Bayfair Stations, to San Francisco. The BART stations are also used as hubs by Alameda-Contra Costa Transit (AC Transit), the local bus service provider, which operates approximately 16 routes through San Leandro and the Bay Fair Mall area, with many buses equipped with bicycle racks. The locations of the BART stations are shown on the Existing Bikeway Network map on page 29.



Key Gaps in the Bikeway Network

The Existing Bikeway Network Map shows that although significant additions have been made to the bikeway system, San Leandro still lacks a fully continuous system that provides connecting bikeways through the City. With the exception of a few corridors such as Bancroft Avenue, existing bike lanes are sporadic. Key gaps include:

- Lack of continuous east-west connections between the Bay and the hills. No bikeway exists for a continuous ride from east to west that would connect the regional parks. Completion of east/west routes should focus on connections with completed segments on Davis, Williams, Fairway and Lewelling.
- Scarcity of continuous north-south connections for neighborhoods west of Bancroft and east of the Bay Trail, such as a no north-south bikeway through western San Leandro that would connect Oakland to San Lorenzo.



Upcoming Projects

Bikeway projects that are currently planned or partially funded include:

- **Wicks Boulevard** is scheduled for the installation of bicycle lanes between Merced and Farallon in fall 2004, funded by a TDA grant received by the City.
- **MacArthur Boulevard** will be designated as a Class III bicycle route as part of a streetscape project funded by TFCA grant funds.
- **Bay Trail Slough Bridge** located at the northern edge of the Oyster Bay Regional Park at the border of San Leandro and Oakland. The \$1.6 million project will include 700 feet of trail and a 300-foot bridge that will connect the existing Bay Trail terminus at the Port of Oakland with the existing Bay Trail at Oyster Bay Regional Park. This project is ranked as the number one priority by the Alameda County Congestion Management Agency's Countywide Regional Bike Plan. The City of San Leandro and East Bay Regional Park District have developed a partnership to develop this project and the project has received grant funding in the amount of \$425,000. Design of the project and preparation of the environmental document have begun. However, the timeline for completion is dependent upon securing additional funding.
- **Timothy / Westgate Parkway** will be a new two-lane road that will include bicycle lanes to connect Davis and Williams Street, west of Interstate 880.



Proposed Bikeway Network

The recommended bikeway network is not meant to accommodate every bicyclist and bicycle trip in the City. Once completed, this network would furnish safer and more direct travel paths for a majority of those bicycling within San Leandro. A bikeway network consists of routes that are designed to be the primary system for bicyclists traveling through the City. It is important to recognize that, by law, bicyclists are allowed on all streets and roads regardless of whether they are a part of the bikeway network. The bikeway network is a tool that allows the City to focus and prioritize implementation efforts where they will provide the greatest community benefit. Streets or corridors selected for inclusion in the network should be targeted for specific improvements, such as the installation of bicycle lanes or wide curb lanes.

The proposed system was developed according to the following planning criteria:

Coverage: The system should provide equitable, reasonable access from all residential neighborhoods to both commute and recreation routes. In essence, the system should provide a bicycle facility within one-half mile of any residential street.

System Rationale: Each link in the system should serve one or a combination of these purposes: recreation, connection, and commuting. Bikeway links should be continuous with a minimal number of arterial crossings and uncontrolled intersections.

Avoidance of Arterials: Assigning bikeways on arterials with high traffic volumes, high travel speeds, or narrow right-of-ways should be avoided if at all possible.

Connection of Employment Centers: Downtown, business park, major retail, and other employment centers should be accessible from all neighborhoods by a reasonably direct system.

Connection of Schools and Parks: Schools and parks should be connected to surrounding residential neighborhoods by bikeways. While not serving every residential street, the bikeway system should serve as feeder routes where special safety features can be provided at busy intersections.

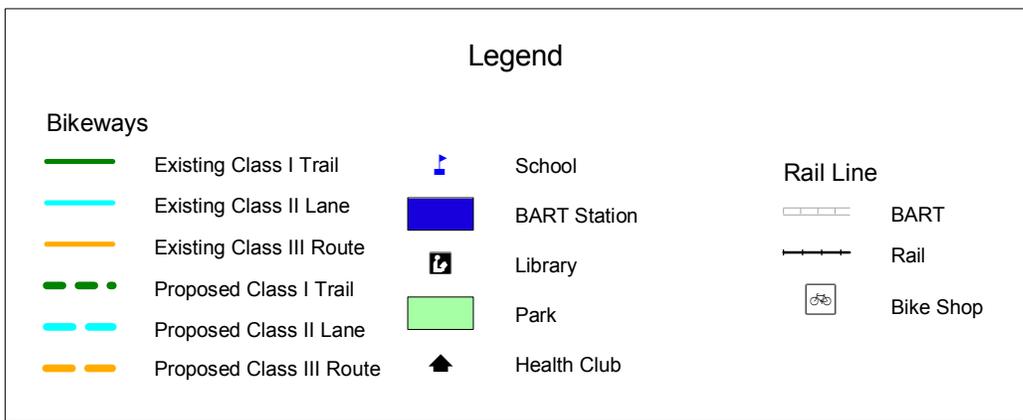
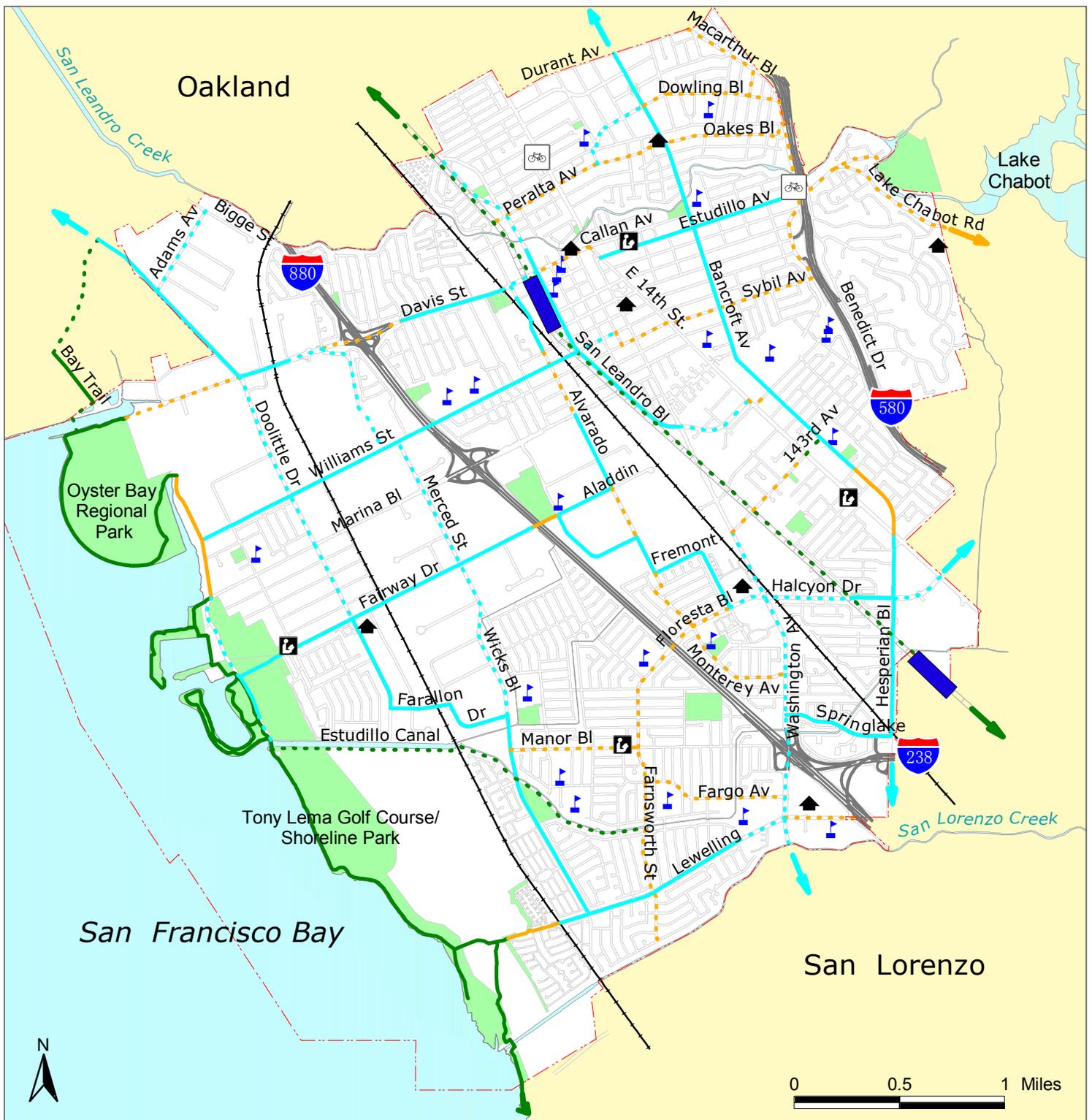
Connection to Regional Bikeways: The bikeway system should allow continuous access to potential regional bikeway routes and routes in adjacent communities.

The Proposed Bikeway Network map is illustrated on page 33. The proposed system includes a total of approximately 27.5 miles of new bikeway facilities in addition to the 25.5 miles currently in place. Table 4-2 shows the number of existing and proposed miles for each bikeway classification.

TABLE 4-2 Length (Miles) of System by Bikeway Classification			
Bikeway Classification	Existing	Proposed	Total
Class I	7.4	5.7	13.1
Class II	16.7	9.1	25.8
Class III	1.4	12.7	14.1
TOTAL	25.5	27.5	53.0

Figure 6-3 on page 60 provides a list of the proposed bikeway network projects, ranked by priority. Additionally, Appendix D provides conceptual diagrams of six key bikeway projects.





City of San Leandro
Bicycle Master Plan

Proposed Bikeway Network

End of Trip Facilities

Every bicycle trip has two components: the route selected by the bicyclist and the “end-of-trip” facilities at the destinations. Support facilities are facilities that cyclists use when they reach their destinations. They can include short and long-term bicycle parking, showers, lockers, good lighting, and even public phones. The lack of secure bicycle parking, shower, and locker facilities can be one of the largest deterrents to cycling for many riders.



Bicycle Parking at a Transit Hub in Minneapolis, Minnesota

Types of Bicycle Parking and Support Facilities

There are different types of support facilities just as there are different levels of bikeway facilities. Support facilities fall into one of three main categories:

- **Short-term Bicycle Parking:** *Bicycle Racks* are low-cost devices that provide a location to secure a bicycle. Ideally, bicyclists can lock both their frame and wheels. The bicycle rack should be in a highly visible location secured to the ground, preferably within 50 feet of a main entrance to a building or facility. Short-term bicycle parking is commonly used for short trips, when cyclists are planning to leave their bicycles for a few hours.
- **Long-term Bicycle Parking:** *Bicycle Lockers* are covered storage units that can be locked individually, providing secure parking for one bicycle. *Bicycle Cages* are secure areas with limited-access doors. Occasionally, they are attended. Each of these means is designed to provide bicyclists with a high level of security so that they feel comfortable leaving their bicycles for long periods of time. They are appropriate for employees of large buildings and at transit stations.
- **Shower and Locker Facilities:** *Lockers* provide a secure place for bicyclists to store their helmets or other riding gear. *Showers* are important for bicycle commuters with a rigorous commute and/or formal office attire.
- **Bicycle Stations:** *Bicycle Stations* provide free all-day, attended bicycle parking. Three recent bicycle station projects include one in Long Beach, the Palo Alto CalTrain station, and the Downtown Berkeley BART station. Bicycle stations can provide bicycle tune-ups, repairs, and rentals in order to sustain their operation. They are intended to serve locations with larger numbers of bicycle commuters needing long-term bicycle parking and are an excellent means of facilitating the intermodal connections between bicycles and transit.

Existing Facilities

There is currently a general lack of bicycle parking facilities in San Leandro. The 1997 *Bicycle Master Plan* stated that several businesses in San Leandro offer bike racks outside their stores, including Robinson’s Wheel Works, a bicycle shop at MacArthur Boulevard north of Estudillo Avenue, and Long’s Drugs at East 14th Street and Callan Avenue. Cycle Depot, another bicycle shop on East 14th



Street provides bicycle parking during business hours only. The Marina Community Center also provides bicycle parking. The 1997 Plan also noted that most parks lack bicycle racks and few bicycle racks are provided in the downtown area. Shower and clothes storage facilities are provided at all schools and at the Boys' and Girls' Club. Three fitness clubs in the area also offer showers and lockers for their members, including 24-Hour Fitness, Walt's Gym, and the Bay-O-Vista Club. The Police Department and Fire Stations offer showers, but these are not available for use by the public.

Key Recommendations

The following improvements and programs are recommended to increase the provision of end-of-trip facilities for bicyclists:

- The City should adopt a bicycle parking ordinance containing standards for bicycle racks and storage lockers. The bicycle parking ordinance should be administered by the Development Services department as part of the building permit process. A sample bike parking ordinance is provided in Appendix B.
- A list of suppliers who provide acceptable racks and lockers should be made available to the public.
- The City should facilitate arrangements between bicycle commuters and local health clubs that have showers and lockers. Bicycle commuters may be given discounts or be subsidized by employers. Bicycle storage arrangements should also be made in off-street parking areas.



V. SAFETY AND EDUCATION

This section identifies various bicycle and pedestrian safety improvements and recommends specific actions which are designed to enhance safety for bicyclists and pedestrians. While improving safety is extremely important and a high priority, riding a bicycle and walking involves inherent risk that no improvements, including those listed in this section, can completely eliminate.



Bicycle Collisions

On-street bicycle riding is commonly perceived as unsafe because it exposes a lightweight, two-wheeled vehicle to heavier and faster-moving automobiles, trucks, and buses. However, collision statistics show that, based on number of users and miles traveled, bicyclists face only a marginally higher degree of sustaining an injury than a motorist (Bicycle Federation of America). Death rates are essentially the same for bicycle and automobile collisions. Roughly half of reported bicycle collisions show the bicyclist to be at fault. National studies show that approximately 54% of bicycle-related collisions are caused by bicyclists.

Bicycle collision statistics taken for the years 1999-2003 indicate that the City experiences an average of around 23 bicycle collisions annually. This number indicates a drop of the average 32 annual collisions recorded in the 1997 plan.² Since its 1997 Plan, the City has implemented many new bicycle facilities. Without taking bicycle counts, it is difficult to infer if the added facilities improved safety or if the City experienced a drop in bicycling. The cyclist was at fault 52% of the time (similar to national percentage).

The most common causes of bicycle collisions include wrong-way riding and right-of-way violations by either the cyclist or the motorist. Some bicyclists believe that in the absence of bike lanes, they are more visible to motorists if they ride against the flow of automobile traffic; however, this practice results in turning conflicts between bicycles and autos and poses a danger for less experienced bicyclists who might unintentionally weave into the path of oncoming autos. Others believe that they are safer riding on sidewalks, which in fact increases their chance of being hit by a vehicle pulling out of a driveway and creates conflicts with pedestrians. In San Leandro, the legal age limit to ride a bicycle on a sidewalk is 12 years or under. The collision figures reflect reported collisions only; bicycle-related collisions tend to be under-reported especially if they do not involve bodily or property damage.

While in 1997, the location with the greatest number of bicycle collisions was East 14th Street, the new data points to Washington Street as the location with the greatest number of collisions. It is important to note that in the interim, a lane reduction and shoulder stripe on East 14th Street was implemented, perhaps accounting for the improved safety record for cyclists.

² The 1997 *Bicycle Master Plan* noted that a total of 127 bicycle collisions were recorded by the City of San Leandro between 1992 and 1995.



Bicycle Education Programs

Programs to teach current and potential bicyclists of all ages about the fundamentals of bicycle riding are important to establishing good riding skills. The following steps are recommended to build upon this effort:

- Continue the bicycle education program that is taught yearly to school children (kindergarten to 5th grade) and senior adults. Include *bicycle rodeos* where children are given actual riding lessons in school.
- Establish a bicycle helmet program through various statewide helmet programs that provides low-cost helmets to schoolchildren. Helmets should be mandatory for any student riding a bicycle to school.
- Establish an adult bicycle education program through the adult school, parks and recreation, and other departments that teaches adults how to ride defensively and encourages people to ride to work. This program may include the use of volunteers from local bicycle clubs and possibly sponsorship of bicycle tours and races.
- Educate drivers about the rights of bicyclists through a variety of means including making bicycle safety a part of traffic school curriculum, producing a brochure on bicycle safety and rights for public distribution, enforcing existing laws regarding both motorists and bicycles, encouraging the state to include questions about bicycle safety and operations on drivers license exams, and providing signs at strategic locations advising motorists to share the roadway with bicyclists.

Safe Moves, a statewide non-profit organization, has devised a bicycle and pedestrian safety education program for school children and senior adults, incorporating many of the above mentioned components. The Safe Moves program offers school workshops, bicycle rodeos, bicycle registration, helmet inspection, and traffic assessment skills.

Licensing bicycles at schools helps reduce theft by providing an identification number for the police. It can also serve as a regular forum for providing education to young riders.

- Consider establishing a bicycle licensing program for school children.

Security

Enforcement on multi-use paths should be provided by San Leandro police department. Existing vehicle statutes relating to bicycle operations and pedestrian violations will be enforced through the Police Department's normal operations. No additional manpower or equipment is anticipated.

In general, multi-use pathway undercrossings, although none are proposed in San Leandro, require special attention because they can be perceived as unsafe areas, particularly after dark. Any undercrossing over 50 feet in length should be lighted, and all approaches to the undercrossing should provide the user a clear view all the way through the undercrossing. Undercrossings should be designed to avoid areas off the path where people can loiter.

The Police Department may have to be provided with special vehicles (such as trail bikes) for patrolling the paths. It is estimated that one hour of additional police manpower is required for every 5 miles of pathway. The San Leandro Police Department already has bicycle officers.



Pedestrian Collisions

According to the California Highway Patrol's Statewide Integrated Traffic Records System (SWITRS), pedestrians comprised 30 percent of all fatalities for reported collisions in the Bay Area in 2000 with 134 deaths³. Statewide, 697 pedestrians died in reported collisions, or 21 percent of all fatalities. In 2000, 4,739 pedestrians were killed and 78,000 injured in traffic collisions in the United States⁴.



Pedestrian collisions from 1999-2003 were examined for this Plan. The City experienced an average of approximately 33 pedestrian collisions annually during this period. Most of the collisions (almost 70%) occurred at intersections. Motorists are at fault a majority of the time (60%), and the most predominant collision factor is the motorist violating pedestrian right-of-way. East 14th Street experienced the largest number of pedestrian collisions (45), but this could be due to the fact that it has a higher number of pedestrians compared to other streets.

Crosswalk Policy

Well-marked pedestrian crossings accomplish dual goals. They prepare drivers for the likelihood of encountering a pedestrian, and they create an atmosphere of walkability and accessibility for pedestrians. In California, it is legal for pedestrians to cross any street, except at unmarked locations between immediately adjacent signalized crossings or where crossing is expressly prohibited. Marked crossings reinforce the location and legitimacy of a crossing.

Why do cities mark crosswalks?

Crosswalk Function:

- Creating reasonable expectations where pedestrians may cross a roadway
- Predictability of pedestrian actions and movement
- Channelization of pedestrians to designated crossing locations

Advantages of marked crosswalks:

- Help pedestrians find their way across complex intersections

3 California Highway Patrol. Statewide Integrated Traffic Records System 2000. 2000 Annual Report of Fatal and Injury Motor Vehicle Traffic Collisions. www.chp.ca.gov/html/switrs2000.html 6/27/03.

4 United States Department of Transportation. National Highway Traffic Safety Administration. National Center for Statistics and Analysis Advanced Research Analysis. Traffic Safety Facts 2000: Pedestrians. DOT HS 809 331. www-nrd.nhtsa.dot.gov/pdf/nrd-30/ncsa/tsf2000/2000pedfacts.pdf, 6/27/03.

4 United States Department of Transportation. National Highway Traffic Safety Administration. National Center for Statistics and Analysis Advanced Research Analysis. Pedestrian Roadway Fatalities. DOT HS 809 456. April 2003. www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/Rpts/2003/809-456.pdf, 6/27/03.



- Designate the shortest path
- Direct pedestrians to locations of best sight distance

Disadvantages of marked crosswalks:

- May create a “false sense of security” for pedestrians
- At uncontrolled locations on multi-lane streets with higher traffic volumes, may result in a greater number of pedestrian collisions if additional enhancements are not provided
- Maintenance is costly

In pedestrian-friendly cities, crossing locations are treated as essential links in the pedestrian network. At mid-block locations, pedestrians cannot cross legally without a marked crosswalk. When there are pedestrian generators in these locations, it may be appropriate to create safe, convenient crossing opportunities. Without mid-block crossing locations, pedestrians face the following three choices: detour to a controlled crossing location; detour to an intersection where it is legal to cross, even if not controlled; or jaywalk (cross illegally).



Steps in identifying candidate locations for crosswalks

The first step in identifying candidate crosswalk locations is to identify the places people would like to walk (pedestrian desire lines) which are affected by local land uses (homes, schools, parks, commercial establishments, etc.) and the location of transit stops. This information forms a basis for identifying pedestrian crossing improvement areas and prioritizing such improvements, thereby creating a convenient, connective and continuous walking environment.

The second step is identifying where it is safest for people to cross. Of all road users, pedestrians have the highest risk because they are the least protected. National statistics indicate that pedestrians represent 14 percent of all traffic incident fatalities while walking accounts for only three percent of total travel trips. Pedestrian collisions occur most often when a pedestrian is attempting to cross the street at an intersection or mid-block location⁵.

Several major studies of pedestrian collision rates at marked and unmarked crosswalks have been conducted. In 2002, the Federal Highway Administration (FHWA) published a comprehensive report on the relative safety of marked and unmarked crossings. This document presents a variety of special treatment options to mitigate safety, visibility or operational concerns at specific locations. The flowchart on page 49 outlines the steps in identifying candidate locations for crosswalks based on the findings of the 2002 FHWA Study.

⁵ Pedestrian Crash Types, A 1990's Information Guide, FHWA; This paper analyzed 5,076 pedestrian crashes that occurred during the early 1990's. Crashes were evenly selected from small, medium, and large communities within six states: California, Florida, Maryland, Minnesota, North Carolina, and Utah.



CONTROLLED LOCATIONS

The following is the recommended, or best practice, for pedestrian treatments in crosswalks at signalized intersections or stop-controlled approaches (i.e., vehicles stop at approach in question).

- **Mark Crosswalks on all approaches** (i.e., legs of the intersection) using standard crosswalk markings or high-visibility markings. Where the collision data or observations of conflicts identify a crosswalk of particular concern, consider special treatments (identified below under “Solutions”)
- **Pedestrian signals should be timed per the 2004 Manual on Uniform Traffic Control Devices (MUTCD).** The most recent update of the MUTCD calls for a minimum walk time⁶ of three feet per second from top of curb ramp to top of curb ramp, with the pedestrian clearance interval, timed for a walking speed of 3.5 feet per second. If there are special land uses such as senior centers or schools within 100 feet of the intersection, slower walking speeds (3.0 feet per second) may be considered

The following two situations are **exceptions** to the policy of marking crosswalks on all approaches:

- **Crossing locations with heavy right- or left-turn volumes** that occur during the same signal phase as the conflicting pedestrian movement where protected signal phasing for the heavy movement or other solutions are infeasible⁷
- **Intersections with inadequate sight distance⁸** of pedestrians. Elimination of crosswalks in these instances should only occur after other solutions have been deemed infeasible

Specific treatments at locations with the following characteristics are addressed in the design guidelines chapter. Treatments at these locations should be chosen using engineering judgment.

- Wide Intersections
- Intersections with High Numbers of Turning Vehicles
- Intersections with High Numbers of Pedestrians

⁶ The minimum walk time is the total time allocated including the WALK and the clearance interval, or FLASHING DON'T WALK (FDW)

⁷ Alternative pedestrian crossings should be identified and it may be necessary to install barrier treatments to reinforce that pedestrian should not cross at the location without a marked crosswalk.

⁸ Unrestricted sight distance of pedestrians by motorists should be at least ten times the speed limit (for example, 250 feet for a street with a speed limit of 25 miles per hour).



UNCONTROLLED LOCATIONS

This section describes best practices for considering the installation of crosswalks at uncontrolled intersections and mid-block locations. Special treatments in locations where special consideration is recommended are detailed in the *Pedestrian Design Guidelines*.

When to Install Crosswalks at Uncontrolled Intersections

The following is the recommended, or best practice, for pedestrian treatments at uncontrolled approaches to intersections that are not controlled by traffic signals or stop signs.⁹

Crossings should be marked where all of the following occur:

- Sufficient demand exists to justify the installation of a crosswalk (see Demand Considerations below)
- The location is 300 feet or more from a controlled crossing location
- The location has sufficient sight distance (sight distance in feet should be greater than 10 times the speed limit), and/or sight distance will be improved prior to crosswalk marking
- Safety considerations do not preclude a crosswalk (see pages 49-53 for guidance in selecting the location and treatment for uncontrolled crossings)

Demand Consideration:

Uncontrolled crossings should be identified as a candidate for marking if there is a demonstrated need for a crosswalk. Need may be demonstrated by:

- 20 pedestrians per hour during the peak hour or 60 pedestrians total for the highest consecutive four-hour period

or:

- The crossing is on a direct route to or from a pedestrian generator, such as a school, library, senior center, shopping center, park, or employment center



⁹ The most common crosswalk of this type will be at intersections where a minor side street has a stop sign and a major street is uncontrolled.



When to Install Crosswalks at Mid-Block Locations

Mid-block crossings should be marked where the following occur:

- Sufficient demand exists to justify the installation of a crosswalk (see Demand Considerations below)
- The mid-block location is approximately 300 feet or more from another crossing location
- The mid-block location has sufficient sight distance (sight distance in feet should be greater than 10 times the speed limit)
- Provision of a crossing would channelize potential jaywalkers to a suitable crossing location
- Safety considerations do not preclude a crosswalk (see below, Safety Considerations at Uncontrolled Locations)

Where mid-block crosswalks are installed, the default design should be the “triple four” or high-visibility pavement treatments. The installation of mid-block crosswalks requires approval of the City Council.

Demand Considerations: Candidate locations for marked pedestrian crossings at mid-block locations should meet one of the following criteria:

- 40 pedestrians during a one-hour period or 25/hour for four consecutive hours
- A pedestrian generator is less than 300 feet away at a location mid-way between signal or stop-controlled intersections, or there are significant pedestrian trip generators on both sides of the street

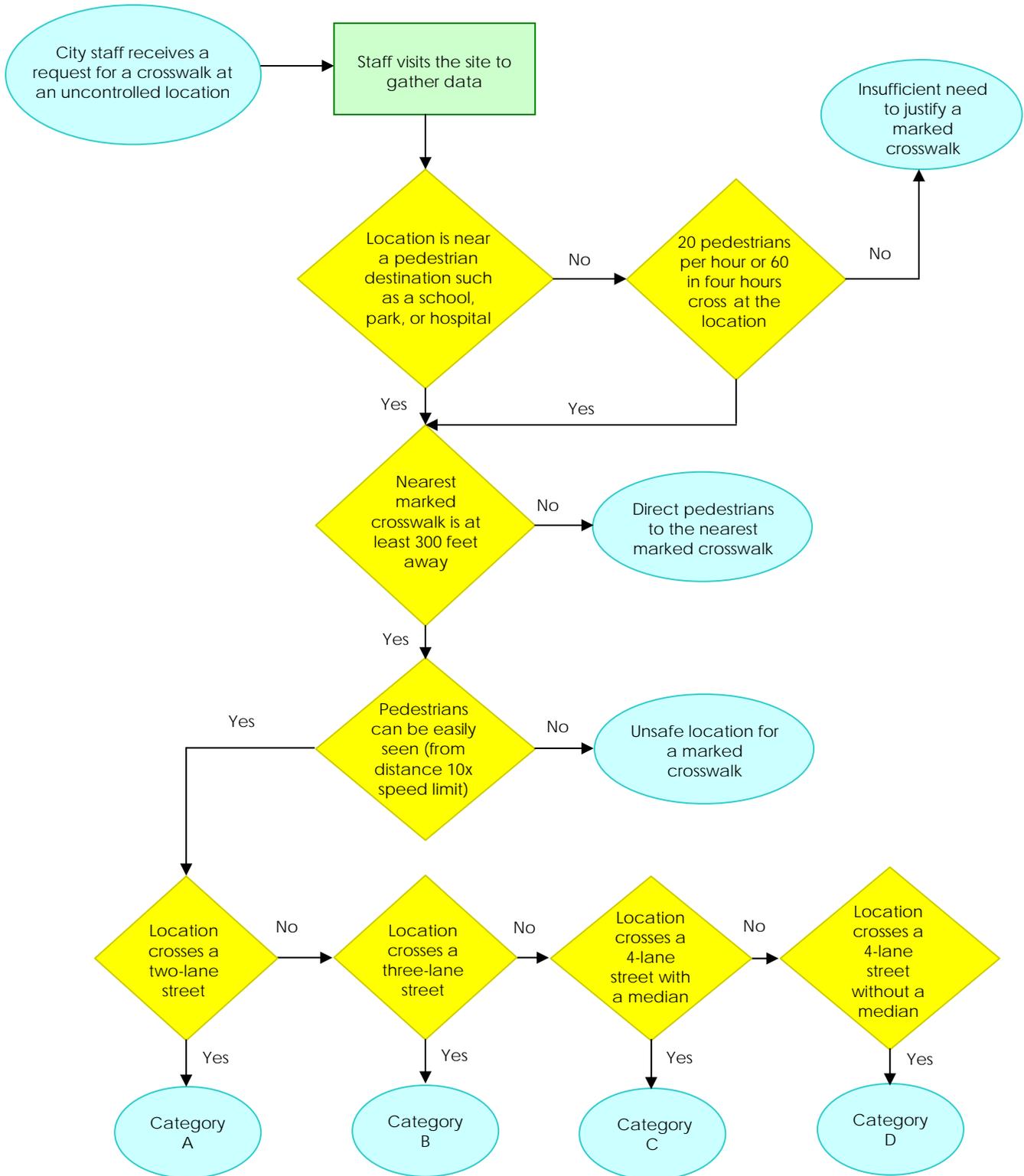
Safety Considerations at Uncontrolled Locations

The flowchart on the following page and corresponding tables should be used to determine if special treatments are needed to ensure safe crossing at uncontrolled locations (see *Pedestrian Design Guidelines* for examples of special treatments). Where safety concerns would continue even with special treatments, pedestrian signal warrants, established in Caltrans’ Traffic Manual, should be tested to determine whether the crossing warrants a signal. In the event that a signal is determined to be inappropriate or the recommended device is infeasible in the short term due to financial considerations, the crosswalk should not be marked.

A crosswalk should *not* be installed if sight distance in feet is less than ten times the speed limit. For example, if an intersection has an approach speed of 25 miles per hour, the unrestricted view of pedestrians by motorists should be at least 250 feet.



CROSSWALK PLACEMENT FLOWCHART FOR UNCONTROLLED LOCATIONS



The following charts summarize the type of crossing treatments appropriate for uncontrolled crossing locations within each category.

CATEGORY A: TWO LANE STREETS

NUMBER OF CARS (average daily traffic)	POSTED SPEED		
	30 miles per hour or less	35 miles per hour	40 miles per hour or more
9,000 cars or fewer per day	Standard crosswalk	High visibility crosswalk	High visibility crosswalk plus a pedestrian refuge, overhead flashing beacons, or other Level 1 and 2 devices
9,000-12,000 cars per day			
12,000-15,000 cars per day	High visibility crosswalk	High visibility crosswalk plus a pedestrian refuge, overhead flashing beacons, or other Level 1 and 2 devices	
15,000 cars or more per day			Pedestrian signal or bridge

CATEGORY B: THREE-LANE STREETS¹⁰

NUMBER OF CARS (average daily traffic)	POSTED SPEED		
	30 miles per hour or less	35 miles per hour	40 miles per hour or more
9,000 cars or fewer per day	High visibility crosswalk	High visibility crosswalk	High visibility crosswalk) plus a pedestrian refuge, overhead flashing beacons, or other Level 1 and 2 devices
9,000-12,000 cars per day		High visibility crosswalk plus a pedestrian refuge, overhead flashing beacons, or other Level 1 and 2 devices	
12,000-15,000 cars per day	High visibility crosswalk plus a pedestrian refuge, overhead flashing beacons, or other Level 1 and 2 devices	Pedestrian signal or bridge	Pedestrian signal or bridge
15,000 cars or more per day		Pedestrian signal or bridge	

¹⁰Refers to streets with one lane in each direction and a center two-way left-turn lane.

CATEGORY C: FOUR OR MORE LANES WITH A RAISED MEDIAN

NUMBER OF CARS (average daily traffic)	POSTED SPEED		
	30 miles per hour or less	35 miles per hour	40 miles per hour or more
9,000 cars or fewer per day	High visibility crosswalk	High visibility crosswalk	High visibility crosswalk plus a pedestrian refuge, overhead flashing beacons, or other Level 1 and 2 devices
9,000-12,000 cars per day		High visibility crosswalk plus a pedestrian refuge, overhead flashing beacons, or other Level 1 and 2 devices	Pedestrian signal or bridge
12,000-15,000 cars per day	High visibility crosswalk plus a pedestrian refuge, overhead flashing beacons, or other Level 1 and 2 devices		
15,000 cars or more per day	Pedestrian signal or bridge	Pedestrian signal or bridge	

CATEGORY D: FOUR OR MORE LANES WITHOUT A RAISED MEDIAN

NUMBER OF CARS (average daily traffic)	POSTED SPEED		
	30 miles per hour or less	35 miles per hour	40 miles per hour or more
9,000 cars or fewer per day	High visibility crosswalk	High visibility crosswalk plus a pedestrian refuge or other Level 1 device	High visibility crosswalk plus a pedestrian refuge, overhead flashing beacons, or other Level 1 and 2 devices
9,000-12,000 cars per day	High visibility crosswalk plus a pedestrian refuge or other Level 1 device	High visibility crosswalk plus a pedestrian refuge, overhead flashing beacons, or other Level 1 and 2 devices	Pedestrian signal or pedestrian bridge
12,000-15,000 cars per day	High visibility crosswalk plus a pedestrian refuge, overhead flashing beacons, or other Level 1 and 2 devices.		
15,000 cars or more per day	Pedestrian signal or pedestrian bridge	Pedestrian signal or pedestrian bridge	

Trail Crossings

At locations where a multi-use trail crosses a street, the location of the crossing (mid-block or intersection) should determine what type of safety considerations are used to determine whether or not to mark a crosswalk.

Trail crossings should be well lit and well signed. At all uncontrolled at-grade trail crossings, traffic calming and signage within 150 to 200 feet of the crossing should be considered. Warning signs should be installed within 30 to 50 feet of the crossing.

If the crossing does not meet the demand or safety considerations for installation of a marked crosswalk and the nearest signalized crossing location is: 300 feet or more away on an arterial street; 200 feet or more away on a collector street; or 100 feet or more away on a local street, signage and landscaping should be used to direct both cyclists and pedestrians to the adjacent signalized crossing. However, if the nearest signalized crossing is greater than 150 feet away and the location does not meet safety considerations for a marked crosswalk, and other at-grade treatments are infeasible, a grade-separated bicycle-pedestrian crossing should be considered.

Safe Routes to School

The City of San Leandro presently has several Safe Routes to School maps to communicate the best walking routes to various school locations. These maps are contained in Appendix C.



VI. FUNDING AND IMPLEMENTATION

Implementation of the proposed bicycle and pedestrian system will require funding from local, state, and federal sources and coordination with multiple agencies. To facilitate funding efforts, this section presents conceptual construction cost estimates for the proposed system along with a brief description of past expenditures for bicycle facilities. At the conclusion of this section, a brief overview of overall funding and implementation strategies are provided.

Current and Past Expenditures

Understanding the City's investment in the existing bikeway and pedestrian system and what is required to complete the system is important in developing a funding strategy. With an approximate length of 25 miles, the existing bikeway system represents a substantial investment.

Since 1997, an estimated \$270,000 has been expended for new or improved bikeway facilities in the City, generally as part of overall street improvement projects. This includes:

- 8.8 miles of Class II bike lanes consisting of restriping and signage installed as part of roadway resurfacing projects for an estimated cost of \$264,000¹¹
- 1.2 miles of Class III bike routes installed for an estimated cost of \$6,000¹²

This year, the City will expend approximately \$365,000 on pedestrian facilities through the Annual Sidewalk Program and grant funds. The Annual Sidewalk Program includes replacement of damaged or substandard sidewalks and sidewalks lifted by tree roots; installation of new ramps or replacement of substandard curb ramps; tree wells; curb and gutter replacement; and driveway replacements. Current expenditures include:

- The SafeMoves safety and education program received \$64,700 in funding during the 2003 calendar year
- Ongoing planning for the Bay Trail Slough Bridge, a \$1.6 million project that is partially funded with \$425,000 in grants
- Scheduled installation of bicycle lanes on Wicks Boulevard, funded by a \$70,000 TDA grant¹³
- Planned pedestrian improvements and a Class III bike route on MacArthur Boulevard funded as part of a \$450,000 TFCA grant for a streetscape improvement project.
- Curb, gutter, sidewalk, curb ramps, and tree wells for \$340,000
- A Recycled Rubber sidewalk Project on San Leandro Boulevard for \$25,000

In addition, this update to the *Bicycle and Pedestrian Master Plan* includes an allocation of City staff resources to oversee the update and \$65,000 for a project consultant.

¹¹ Installed as part of street resurfacing projects. Since a precise estimate of the portion of the overall projects devoted to the bicycle component is not available, an estimate has been derived based upon a cost of \$30,000 per mile for installation of Class II bike lanes with minimal roadway improvements.

¹² Assumes \$5,000 per mile for installation of Class III bike route.

¹³ Refer to Appendix B for descriptions of various grant funding sources.



Cost of New Bicycle Facilities

Construction Costs

Table 6-1 provides a unit cost summary for the construction of bikeway facilities in the region. These estimates are based on costs experienced in communities throughout the State. More detailed estimates should be developed following the preliminary engineering stage as individual projects advance towards implementation.

For purposes of this *Bicycle Master Plan*, conceptual construction costs for the proposed system were based on the following assumptions:

- New Class I facilities would be constructed on generally flat right-of-way with no grade separation and minimal grading needed given the existing topography within the City; cost of right-of-way acquisition is not included.
- New Class II facilities would require minimal roadway improvements
- New Class III facilities would require signing only (with optional stencils).

Facility Type	Estimated Cost per Mile
Class I Bike Path – Construct path with minimal grading needed	\$750,000
Class II Bike Lane – Signing/stripping plus minimal roadway improvements	\$30,000
Class III Bike Route – Signing plus stencils in some locations	\$5,000

A summary of system costs for each bikeway classification is presented in Table 6-2.

Bikeway Classification	Proposed Segments (miles)	Cost
Class I Bike Path ¹⁴	5.7	\$4,275,000
Class II Bike Lane ¹⁵	9.1	\$273,000
Class III Bike Route	12.7	\$63,500
TOTAL	27.5	\$4,611,500

¹⁴ Cost estimate assumes minimal grading and does not include the potential cost of property acquisition, such as for the proposed Class I path within the BART right-of-way, currently owned by the Union Pacific Railroad.

¹⁵ Short segments of proposed Class II bike lanes on Merced and Washington would require additional costs to remove existing curbs, widen roadway and install sidewalk, not included in this estimate.



Construction of the Class II and Class III system would require approximately \$336,500, which equates to an investment of approximately \$17,000 per year over 20 years. Although a portion of the proposed system would be constructed as new development or re-development occurs, a substantial amount of the total cost will rely on public funding. Appendix B provides a summary of potential funding sources at the federal, State and local levels.

It is anticipated that construction of Class I facilities would be primarily funded by outside grant sources, with land acquisition costs contributing towards local match requirements. Construction of the proposed Class I paths would require an estimated investment of approximately \$4.3 million (although actual costs will vary depending on the level of amenities, such as landscaping and lighting).

Maintenance Costs

Multi-use path maintenance includes cleaning, resurfacing, and restriping the asphalt path, repairing bridges and other structures, cleaning drainage system, removing trash, and landscaping. While this maintenance effort may not be incrementally major, it does have the potential to develop heavy expenses if it is not done periodically.

For purposes of estimating maintenance expenses for paved pathways, \$8,500 per mile per year is assumed based on information received from other similar facilities in California. This cost covers all expenses including labor, supplies, and amortized equipment costs. Tasks include trash removal, sweeping (with a mechanized sweeper), sign replacement/repair, pavement marking replacement, pavement sealing/resurfacing, and structural and drainage inspection. Underbrush and weeds should be removed to maintain a clear pathway.

Sections with narrow widths or other clearance restrictions should be clearly marked. Pathways should be designed to accommodate City maintenance vehicles and emergency vehicles.

Maintenance costs for Class II bike lanes and Class III bike routes are not provided because it is assumed that sweeping and minor repairs will be provided as part of the regular roadway maintenance. Additional costs should be minimal because, in most locations, the roadway surface area to be maintained will be the same with or without bike lanes or routes. Sidewalk maintenance is included in the annual sidewalk program.

Funding Strategy

With this understanding, the following options should be considered by the City for fulfilling the funding commitment necessary to complete the proposed system:

- Prepare joint applications with other local and regional agencies for competitive funding programs at the State and Federal levels. Joint applications often increase the competitiveness of projects for funding; however, coordination amongst the participating jurisdictions is often challenging. The City should consider acting as the lead agency, with a strong emphasis on coordination between participating jurisdictions, on important projects to ensure they are implemented as quickly as possible.
- Use existing funding sources as matching funds for State and Federal funding.
- Include bikeway and pedestrian projects in local traffic impact fee programs and assessment districts.



- Continue to include proposed bikeways and pedestrian improvements as part of roadway projects involving widening, overlays, or other improvements.

The City should also take advantage of private contributions, if appropriate, in developing the proposed system. This could include a variety of resources such as volunteer labor during construction or monetary donations towards specific improvements.

There are a variety of potential funding sources including local, state and federal. Some portions of the system can be completed as part of future development and road widening and construction projects.

Federal Funding Sources

The following federal sources provide funding that could be utilized by the City of San Leandro for implementation of bicycle projects.

Transportation Equity Act for the 21st Century (TEA- 21) - TEA-21 provides funding for roads, transit, safety, and environmental enhancements. These are generally state and local improvements for highways and bridges that accommodate additional modes of transit. Improvements include capital costs, publicly owned intercity facilities, and bicycle and pedestrian facilities. Cities, counties, and transit operators can apply for TEA-21 funds. A 20 percent local match is required for these funds.

Surface Transportation Program Fund, Section 1108 (STP) – STP are block grant funds that are used for roads, bridges, transit capital, pedestrian, and bicycle projects. Eligible bicycle projects include bicycle transportation facilities, bike-parking facilities, equipment for transporting bicycles on mass transit facilities, bike activated traffic control devices, preservation of abandoned railway corridors for bicycle and pedestrian trails, and improvements for highways and bridges. TEA-21 allows the transfer of funds from other TEA-21 programs to the STP Fund. Cities, counties, metropolitan planning organizations (MPO), and transit operators can apply for TEA-21 funds. A 20 percent local match is required for these funds when used for bicycle projects.

National Highway System Fund (NHS) – NHS funds provide for an interconnected system of principal arterial routes. The goal of the program is to afford access to major population centers, international border crossings, transportation systems, meet national defense requirements, and serve interstate and inter-regional travel. This travel includes access for bicyclists and pedestrians. Facilities must be located and designed pursuant to an overall plan developed by each metropolitan planning organization (MPO) and state, and incorporated into the RTP. Both state and local governments can apply for NHS funds. A 20 percent local or state match is required for these funds.

Congestion Mitigation and Air Quality Improvement Program, Section 1110 (CMAQ) – CMAQ funds are available for projects that will help attain National Ambient Air Quality Standards (NAAQS) identified in the 1990 Federal Clean Air Act Amendments. Projects must be located within jurisdictions in non-attainment areas. Eligible projects include bicycle and pedestrian transportation facilities intended for transportation purposes, bicycle route maps, bike-activated traffic control devices, bicycle safety and education programs, and bicycle promotional programs. Cities, counties, MPO, state, and transit operators can apply for TEA-21 funds. A 20 percent local or state match is required for these funds.

Transportation Enhancements Program, Section 1201(TE) – The TE Program is a 10 percent fund set aside from the STP. Projects must have a direct relationship to the intermodal transportation



system through function, proximity, or impact. This program has 12 activities that are eligible for funding. Two enhancement activities are specifically bicycle related: 1) provision of facilities for bicyclists and pedestrians, and 2) preservation of abandoned railway corridors (including the conversion and use thereof for bicycle or pedestrian trails). Local, regional, and state public agencies, special districts, non-profit and private organizations can apply for TE funds. Cities, counties, or transit operators must sponsor and administer the proposed projects. A 12 percent local match is required for these funds.

Bridge Repair and Replacement Program (BRRP) – BRRP funds are available for bridge rehabilitation and replacement. When a highway bridge deck is being replaced or rehabilitated with federal funds, the bridge-deck must provide bicycle accommodations, if access is not fully controlled. Bridge projects must be incorporated into the Regional Transportation Improvement Program (RTIP). Cities may apply for these funds. No local match is required specifically for bicycle accommodations.

National Recreational Trails Fund, Section 1112 – Funds are available for recreational trails for use by bicyclists, pedestrians, and other non-motorized and motorized users. Projects must be consistent with a Statewide Comprehensive Outdoor Recreation Plan (SCORP). Projects include development of urban trail links, maintenance of existing trails, restoration of trails damaged by use, trail facility development, provision of access for people with disabilities, administrative costs, environmental and safety education programs, acquisition of easements, fee simple title for property, and construction of new trails. Private individuals/organizations, cities, counties, and other governmental agencies can apply for these funds. There are no specific local match requirements for these funds.

National Highway Safety Act, Section 402 – The Highway Safety Program is a non-capital safety project grant program under which states may apply for funds for certain approved safety programs and activities. There is a priority list of projects for which an expedited funding mechanism has been developed; bicycle and pedestrian safety programs have been included on this list. Eligible states must adopt a Highway Safety Plan (HSP) reflecting state highway problems. Eligible projects include pedestrian and bicycle safety programs, program implementation, and identification of highway hazards. State departments, cities, counties, and school districts may apply for these funds. No local match is required.

Transit Enhancement Activity, Section 3003 – The Transit Enhancement Activity fund can be used for bicycle access to mass transportation, including bicycle storage facilities and installation of equipment for transporting bicycles on mass transportation vehicles. Regional transportation planning agencies, state, and local agencies may apply for these funds. A 5 percent local match is required for these funds.

Highway Safety, Research, and Development Fund, Section 2003 – This fund can be used to improve bicycle safety through education, police enforcement, and traffic engineering. Projects must be incorporated into the RTIP. Cities, counties, and state agencies can apply for these funds. A 25 percent local match is required for these funds.

Section 3 Mass Transit Capital Grants – This fund can be used for mass transit station access including bicycle access, bicycle parking facilities, bicycle racks, and other equipment for transporting bicycles on transit vehicles. States, regional, local governments, and transit operators can apply for these funds. A 10 percent local match is required for bicycle related projects using these funds.



State Funding Sources

The following State of California sources provide funding that could be applicable for the City of San Leandro.

Environmental Enhancement and Mitigation (EEM) Program – This program benefits bicycle projects that offset environmental impacts of new or modified transportation facilities. Local and non-profit agencies can apply for these funds. There is no local match required.

Flexible Congestion Relief (FCR) Program – This program is designed to reduce congestion on major transportation corridors by adding capacity to roadways. These funds can be used for bikeway projects if they are consistent with the RTP and included in the RTIP. There is no local match required for these funds.

Office of Traffic Safety (OTS) – The following is an excerpt from www.ots.ca.gov (3/16/04):

OTS grantees conduct traffic safety rodeos for elementary, middle and high schools, and community groups in an effort to increase awareness among various age groups. To boost compliance with the law and decrease injuries, safety helmets are properly fitted and distributed to children in need. Court diversion courses are established in several communities for those violating the bicycle helmet law. Other programs target high-risk populations and areas with multicultural public education addressing safer driving and walking behaviors.

A bicycle and pedestrian community program should be designed to increase safety awareness and skills among pedestrians and bicyclists and should also address driver behaviors. Two types of programs are described below. A comprehensive program should include both elements: 1) education and 2) enforcement.

Education - Educational efforts may be designed to include the entire community or specific target groups. Educational efforts may include bicycle rodeos, school presentations, public service announcements and the distribution of pamphlets and posters to increase public awareness and education.

Enforcement - Enforcement efforts can include safety helmet violations, speed enforcement and visible display radar trailer deployment near schools and areas of high pedestrian traffic. Several agencies have successfully implemented diversion programs for those cited for safety helmet violations. It is also appropriate to conduct occupant restraint and speed enforcement near schools during school commute hours.

State Highway Operations and Protection Program (SHOPP) – This program is state-funded and used by Caltrans to maintain and operate state highways. Local jurisdictions are encouraged to work with Caltrans to help define projects, including bikeway projects on state highways.

- Transportation Development Act (TDA) Article III funds are state block grants awarded annually to local jurisdictions for bicycle and pedestrian projects in California. These funds originate from the state sales tax and are distributed to local jurisdiction based on population. Historically, San Leandro has been able to obtain up to \$56,000 a year that can be used for improving bicycle facilities.
- Transportation Funds for Clean Air (TFCA, and formerly AB 434) funds are available for clean air transportation projects, including bicycle projects, in California.



- California's Bicycle Transportation Account (BLA) is an annual program that is available for funding bicycle projects. Available as grants to local jurisdictions, the emphasis is on projects which benefit bicycling for commuting purposes.

Local Funding Sources

A variety of local sources may be available for funding bikeway improvements; however, their use is often dependent on political support.

Local Transportation Fund, TDA Article 3 – This fund was established by the California legislature under the state Transportation Development Act of 1972. Revenues are derived from return of ¼-percent of the 7¼ state sales tax to the county of origin. Local jurisdictions can apply for these funds that can be used for transit and bicycle projects. Up to 2 percent of funding can be set aside for bicycle facilities and 5 percent can be used for supplementing other funds to implement bicycle safety education programs.

Transportation Fund for Clean Air – A four-dollar motor vehicle surcharge funds this program, which generates around \$20 million in annual revenue. Bicycle facility and smart growth projects are eligible for funding. Applications are submitted in June each year for consideration.

Transportation for Livable Communities (TLC) – The Metropolitan Transportation Commission (MTC) disburses these funds, which are intended to incentivize smart growth-related projects in the Bay Area. Currently, the program funds planning grants, capital grants, and a housing incentive program. While the most successful applicants have included a housing element in their applications, these grants are intended to foster transit use and mobility for bicyclists and pedestrians as well. There are presently no active TLC grant cycles as MTC is revising the funding criteria. However, the program will likely continue to include funds for non-motorized projects.

New Construction – Future road widening and construction projects are one method of providing bike lanes. To ensure that roadway construction projects provide bike lanes where needed, it is important that the review process includes a designated bicycle coordinator. Planned roadway improvements in San Leandro could provide bike lanes in the City. However, since San Leandro is a "built-out" city with sufficient roadway capacity in most areas, there are very few road widening projects being proposed in the *Draft Master Plan of City Streets*.

Assessment Districts - Different types of assessment districts can be used to fund the construction and maintenance of bikeway facilities. Examples include Mello-Roos Community Facility Districts, Infrastructure Financing Districts (SB 308), Open Space Districts, or Lighting and Landscape Districts. These types of districts have specific requirements relating to the establishment and use of funds.

Impact Fees - Another potential local source of funding are developer impact fees, typically tied to trip generation and traffic impacts as a result of proposed projects. In San Leandro, this fee is called Development Fee for Street Improvements (DFSI). A developer may help reduce the overall impact of vehicular trips by paying DFSI, which maybe used for bikeway improvements that will encourage residents to ride bicycles rather than drive. Again, to ensure that this takes place, the City should consider incorporating bikeway improvements into projects funded by DFSI.

Open Space District - Local Open Space Districts may float bonds that go to acquiring land or open space easements, which may also provide for some improvements to the local trail and bikeway system.



Other Funding Sources

Local sales taxes, developer or public agency land dedications, private donations, and fund-raising events are other local options to generate funding for bikeway projects. Creation of these potential sources usually requires substantial local support.

Prioritization of Projects

The proposed bikeway and pedestrian system, when fully implemented, will provide a comprehensive system for the City of San Leandro. However, due to limited resources, the proposed segments need to be prioritized for implementation over the next 20 years.

Bikeway Projects

The methodology employed for the prioritization of bikeway projects was developed by Fehr & Peers and has been used by other agencies in their bikeway plans, including the *1997 Bicycle Master Plan* (although for this update, transit access has been added as a specific element to consider). Each bikeway project was evaluated with a total of 12 possible points based on four elements:

- Activity Centers
- Transit Access
- Connectivity
- Relative Ability to Implement

The methodology used to score projects within each element is described below:

Activity Centers (three points): The number of local and regional activity centers on or near a proposed bikeway was counted. The activity centers include regional parks, shopping centers, schools, large employment centers, and multi-modal connections. The activity centers were weighted differently based on their ability to attract bicycle riders. For example, neighborhood parks would have less potential to attract bicycles than Lake Chabot Park; therefore, Lake Chabot Park received more weight as an activity center along a bikeway route. The total number of activity centers along a bikeway route was averaged on a per-mile basis.

- Projects with two or more activity centers per mile received three points
- Projects with between one and two activity centers per mile received two points
- Projects with less than one activity center per mile received one point

Connectivity (three points): This criterion evaluates the ability of a bicycle facility to provide a viable alternative to heavily used arterials, provide connectivity between activity centers, and connect to and expand existing bicycle facilities. Projects with high connectivity received three points, moderate connectivity received two points, and low connectivity received one point. A more detailed description of how each proposed bikeway was evaluated is shown below.

- A proposed bikeway receives three points if one of the following conditions is met:
 - connects to existing bikeways and/or activity centers on both ends
 - bridges a gap in an existing "crucial" bikeway
 - serves as a collector of other bikeways or residential streets



- passes through the entire city
- A proposed bikeway receives two points if two of the following conditions are met:
 - does not qualify for three points
 - provides a "short cut" for another bikeway
 - serves as a bypass to busy arterial streets
 - connects to potential regional routes
- A proposed bikeway receives one point if two of the following conditions are met:
 - does not qualify for two or three points
 - connects to an existing bikeway on one end and a proposed bikeway on the other end
 - connects to proposed bikeways on both ends

Transit Access (three points): The methodology for assessing transit access for each project was as follows:

- Projects that provide direct access to a BART station received three points
- Projects that provide direct access to an AC Transit bus stop receive two points
- Projects that do not provide direct access to a transit stop but are located within two miles of a transit line receive one point.

Relative Ability to Implement (three points): The relative ability to implement a project was determined through a review of existing plans, field review of the study area, and the level of construction required for implementation. In general, a project is considered to have high implementation ability if no restriping or modification of existing street layout is necessary. If restriping and minor modifications to the existing layout is required, the project is considered to have moderate implementation ability. If major construction is required, the project is considered to have low implementation ability. For ranking purpose, bikeway projects with high implementation ability were given three points, projects with moderate implementation ability were given two points, and projects with low implementation ability were given one point.

The scoring for each bikeway project and the resultant rankings are listed in Table 6-3.



**TABLE 6-3
Bikeway Projects List: Prioritization Matrix**

	Activity Centers	Access to Transit	Connectivity	Ease of Implementation	Total Points	Phase
Projects						
Davis Street (gap closures)	3	3	3	2	11	I
San Leandro Marina (network completion)	3	2	3	3	11	I
Williams Street (spot improvements)	3	2	3	2	10	I
Bay Trail Slough Bridge	2	1	3	3	9	I
Dowling Boulevard	3	2	1	3	9	I
Lake Chabot Road	3	1	2	3	9	I
Macarthur Boulevard	2	2	2	3	9	I
Timothy / Westgate Parkway	1	2	3	3	9	I
Lewelling Boulevard (gap closure)	3	2	2	2	9	II
BART Trail	2	3	3	1	9	II
San Leandro Boulevard	2	3	1	3	9	II
Farnsworth / Floresta Boulevard	2	2	2	3	9	II
Peralta / Oakes	2	2	2	3	9	II
Wicks Boulevard	1	2	2	3	8	II
Manor Boulevard	1	2	2	3	8	III
143 rd Avenue	2	2	2	2	8	III
Aladdin Overpass	1	1	3	2	7	III
Doolittle Drive	1	2	2	2	7	III
Estudillo Canal	2	2	2	1	7	III
Merced Street	1	2	3	1	7	III
Washington Avenue	2	2	2	1	7	III
Halcyon Dr	1	2	2	1	6	III

The project scoring resulted in the grouping of the projects into three implementation categories based on their relative scores. The three categories are defined as follows:

Phase I (Short-Term Projects): Projects that received the highest relative scores and are recommended for highest priority consideration for implementation. These projects would be targeted for completion within five years.

Phase II (Medium-Term Projects): Moderate relative scores and the second group of projects considered for funding and implementation. These projects would be targeted for completion within 10 years.

Phase III (Long-Term Projects): The lowest relative scores and the third group considered for funding. Although the projects in this group received relatively low scores, they are part of a plan that, when fully developed, forms a comprehensive bikeway system. These projects would be targeted for completion within 15-20 years.



Pedestrian Projects

There are several types of improvements contained on the Pedestrian Project List, as shown in Figure 6-4 on the following page. *Corridor* improvements are a mix of improvements that may include landscaping, sidewalk widening, curb extensions, crosswalks, and other pedestrian facilities along a particular route. *Key Spot* improvements may consist of any combination of pedestrian improvements at a discreet location such as an intersection or mid-block crossing. *Area-wide* improvements consist of a combination of pedestrian improvements throughout a district, which may encompass several square blocks. These improvements may include better sidewalk connections, crosswalks, and other similar improvements.

Pedestrian projects were initially classified as short term, mid term, and long term for project implementation. *Short Term* improvements may occur within the next five years; *medium term* improvements occur within a ten-year time frame; and *on-going* improvements have no projected completion date. *On-going* improvements include the ADA Ramp Program, Sidewalk Gap Program, and Pedestrian Signal Program; these are existing, on-going programs and due to their citywide nature, they are not expected to be entirely complete within the next ten years. If a particular improvement becomes eligible for funding, or receives funding from a development or other opportunistic source, it may occur within a shorter time frame than the ones specified here.

As part of the next CIP update, the City will develop more thorough criteria for ranking projects, as well as a project description for top-ranked projects (see policy 1.4).



**TABLE 6-4
Pedestrian Projects List**

	Type of Improvement	Time Frame
<i>Projects</i>		
MacArthur Boulevard	Corridor	Short Term
West Estudillo Avenue	Corridor	Short Term
150 th Street/Lark Street	Key Spot	Short Term
MacArthur Boulevard/Dutton Avenue	Key Spot	Short Term
Estudillo Avenue/Collier Street	Key Spot	Short Term
Wicks Boulevard at the Marina Community Center	Key Spot	Short Term
Farnsworth Street/Manor Boulevard	Key Spot	Short Term
Jefferson Elementary School	Key Spot	Short Term
Corvallis Elementary School	Key Spot	Short Term
McKinley Elementary School	Key Spot	Short Term
Roosevelt Elementary School	Key Spot	Short Term
Woodrow Wilson Elementary School	Key Spot	Short Term
Washington Manor Elementary School	Key Spot	Short Term
John Muir Middle School	Key Spot	Short Term
San Leandro Marina	Area-wide	Short Term
Bayfair Pedestrian District (includes BART and the Mall)	Area-wide	Short Term
150 th Avenue/Hesperian Boulevard	Key Spot	Short Term
Bonaire Park	Area-wide	Medium Term
East 14 th Street	Corridor	Medium Term
Washington Avenue/Lewelling Boulevard	Key Spot	Medium Term
Chabot Park	Area-wide	Medium Term
Grand Avenue/Joaquin Avenue	Key Spot	Medium Term
San Leandro BART Station/Downtown Area	Area-wide	Medium Term
Bancroft Avenue/Dutton Avenue	Area-wide	Medium Term
Cherry Grove Park	Area-wide	Medium Term
Floresta Park	Area-wide	Medium Term
Pacific Park	Area-wide	Medium Term
Garfield Elementary School	Key Spot	Medium Term
San Leandro High School	Area-wide	Medium Term
Manor Boulevard	Corridor	Medium Term
East 14 th Street/San Leandro Boulevard	Key Spot	Medium Term
Davis Street	Corridor	Medium Term
ADA Ramp Program	Citywide	On-going
Sidewalk Gap Program	Citywide	On-going
Bicycle and Pedestrian Safety Education Project	Citywide	On-going
Pedestrian Signal Program	Citywide	On-going
Washington Avenue	Corridor	On-going
San Leandro Main Library/Downtown	Area-wide	On-going
Marina Boulevard/Doolittle Drive	Area-wide	On-going
Fargo Avenue/Washington Avenue	Key Spot	On-going



Implementation Strategy

This section outlines various implementation actions recommended in support of the related bicycle and pedestrian improvements.

Monitoring

Whenever funding permits, the City should put a monitoring program in place and responsibility should be assigned to a bicycle coordinator. The City should designate a Transportation Engineer or Planner to hold regular meetings with the Police, Public Works Services, Development Services, and Community Services departments to coordinate all monitoring activities. Some monitoring activities are listed below.

- Plan Review: Roadway improvement plans should be routed through the bicycle coordinator to ensure that bikeway segments and pedestrian improvements are implemented, developer impact fees are identified (if applicable), and design standards are met. The review should also include an assessment of impacts to existing bicycle and pedestrian safety, access, and mobility and strategies to mitigate any impacts.
- Collision Monitoring: Bicycle and pedestrian related collision data should be collected annually from the Police Department and tabulated to show patterns by location and collision type.
- Public Involvement: The Transportation Engineer/Planner should continue to provide the Bicycle Action Committee with materials, information, and other support as the system is being implemented. Bicycle and pedestrian promotional and educational events, such as Bike to Work Day and Walk a Child to School Day, should be planned and managed by the Engineer.
- Maintenance: The Transportation Engineer/Planner should be responsible for the annual maintenance and operations budget, collaborating with the Public Works Services Department. The Engineer should keep track of long term path maintenance, schedule repairs, and respond to calls from the public or staff regarding maintenance needs.
- Funding Monitoring: The Transportation Engineer/Planner should work closely with various funding agencies such as MTC and Caltrans to keep abreast of funding opportunities and to follow up on applications to ensure maximum success.
- Operations Monitoring: The coordinator should be responsible for providing the needed enforcement along bike paths in cooperation with the Police Department. Problems regarding security, privacy, vandalism, and crime along bike paths should be addressed by the Transportation Engineer.
- Maintain surface condition, such as periodic street sweeping, to insure that existing and future bikeways are safe for bicyclists.
- Initiate a bikeway improvement and maintenance log in the Public Works department where all observed and recorded hazardous conditions are listed and scheduled for repair or replacement. This list would include all grates and railroad crossings that do not meet specific criteria. Each bikeway should be scheduled for sweeping no less than four times a year. Obstructions and potholes should be repaired as soon as possible after being reported.



- Establish a volunteer maintenance program where the City organizes regular work parties and provides support. Bikeways may be “adopted” by corporations or clubs and maintained by them in exchange for public acknowledgment.

Marketing

This section addresses actions a local jurisdiction may take to increase awareness and use of its bikeway system. Increased commuter bicycling is often one of the goals of a local Trip Reduction Ordinance (TRO) or a Transportation Demand Management (TDM) program. One of the first steps is to identify and contact those local organizations or departments that have mutual interests in promoting bicycling, such as a health organization like the American Lung Association. Not only will this coordination help gather resources and support, it will also help identify innovative techniques that have been proven successful in the past. Some common marketing techniques are described below.

Bikeway Identity

A logo for the proposed bikeway system should be developed and signed relatively inexpensively on existing segments to raise the visibility of the effort. This identity would be used on all bikeway signs, brochures, maps, and other materials. The logo will help define the bikeway routes as a cohesive system rather than a series of disconnected routes. The design may be accomplished through a contest involving local schools and bicycle clubs, with a prize awarded to the winner. Directional, informational, and warning signs should conform to Caltrans Chapter 1000 and the Manual of Uniform Traffic Control Devices unless superseded by City guidelines.



Maps and Brochures

Maps of the existing bikeway system should be produced by the City, possibly aided by advertising revenues from local bike shops and other retailers. The map should be small (8 1/2" x 11") and inexpensive to reproduce and update, and it should include safety and other information (such as City numbers to call with maintenance problems). The maps should be distributed to all local bike shops, libraries, schools, and major employers. Brochures on bikeway improvements and requirements are also effective education and marketing strategies. The City of Portland produces brochures on bicycle parking requirements for local employers and bicyclists alike. Other specialty brochures might cover steps neighborhoods and elementary schools can take to improve bicycling conditions, or introduce types of incentive programs employers can offer to encourage employees to bicycle to work.

Bicycle Safety Program

Bicycle safety programs can also benefit marketing efforts. By educating the public about riding safely and properly, the City would be promoting bicycle riding in a positive manner. The City currently has a pedestrian safety program that includes bicycle education classes for elementary school children, increased police enforcement on reckless and unlicensed driving, and traffic engineering improvements. Safe Moves, a state-wide non-profit organization, has devised a bicycle and pedestrian safety education program for school children and senior adults and offers school workshops, bicycle rodeos, bicycle registration, helmet inspection, and traffic assessment skills to San Leandro residents.



Appendix A: Existing Policy Documents



Local

San Leandro General Plan

The *City of San Leandro General Plan* contains several key goals, with related policies and actions, aimed at enhancing bicycle and pedestrian transportation. The *Bicycle and Pedestrian Master Plan* will supplement the existing provisions of the *General Plan* related to bicycling and walking, summarized below. The intent of the *Bicycle and Pedestrian Master Plan* is to enable City staff to design and construct projects and compete for funding as well as give staff guidance when dealing with bicycle and pedestrian-related issues. Additionally, the *General Plan* identifies pedestrian improvement areas which this plan expands to include additional areas. The *Bicycle and Pedestrian Master Plan* also includes a set of recommended practices in pedestrian improvement areas designed to maximize walkability.



Goal 14 of the *General Plan* states that the City will “Promote and accommodate alternative, environmentally-friendly methods of transportation, such as walking and bicycling.” Policies and actions call for the City to:

- Develop and maintain a Citywide bikeway system which effectively serves residential areas, employment centers, schools, parks, and multi-modal terminals
- Aggressively pursue state and federal funding for bicycle and pedestrian improvements, while also including funding for bicycle and pedestrian improvements in the City’s Capital Improvement Program (CIP)
- Encourage the use of natural and man-made corridors such as creeks and dormant rail lines for future bicycle and pedestrian trails
- Require new development to incorporate design features that make walking, cycling and other forms of non-motorized transportation more convenient and attractive
- Promote improvements that encourage walking and cycling to and from transit facilities
- Support greater awareness of the City’s bikeways through signage, logos and maps
- Strive to achieve a more comfortable environment for pedestrians in all area of San Leandro, with particular emphasis on BART Station areas, Downtown and major thoroughfares such as East 14th Street

Goal 19 of the *General Plan* calls for “community design principles and standards which de-emphasize automobiles.” Policies and actions encourage lower parking requirements, narrower streets, and re-designed commercial strips that create a more “human scale,” walkable environment.

The City’s *General Plan* addresses several aspects of the pedestrian environment. The Transportation Element contains several policies impacting pedestrians, as well as a description of the City’s approach to Traffic Calming and Safe Routes to School (see Appendix D). The City has specific guidelines for the installation of speed bumps on low-volume, low-speed streets in the *General Plan*. However, for more detailed information, the City has established a Neighborhood



Traffic Calming Plan. The City's *General Plan* includes a recommendation to pursue pedestrian-friendly design features, such as locating commercial parking lots away from the street and subdivisions with wide streets and driveways.

Other City Plans

The City has a *Neighborhood Traffic Calming Plan* that identifies a process for neighborhoods wishing to implement traffic calming measures. The Plan also includes a set of acceptable traffic calming tools. The Pedestrian Design Guidelines will add to the list of tools intended to improve walkability and pedestrian safety.

The *Marina Connections Plan* includes a Non-Automotive Circulation Plan that includes a portion of the Bay Trail. This Plan includes a project sheet related directly to a portion of the Non-Automotive Circulation Plan adjacent to the Monarch Bay Golf Club. The Connections Plan also includes new street cross-sections with Multi-Use Paths along Mulford Point Drive, Monarch Bay Drive, and Spinnaker Point Drive. This plan incorporates the recommendations from the Connections plan in the recommended bikeway network, which includes multi-use trails.

The City has streetscape plans for MacArthur Boulevard and West Estudillo Avenue that include significant improvements for pedestrians such as landscaping, street furniture, curb extensions, and special pavers. This plan identifies these two areas as new pedestrian improvement areas.

Finally, the City is in the process of formulating and *East 14th Street South Area Development Strategy*, which will include recommended land use, urban design, and street improvements intended to improve walkability and guide future development of the area into a vibrant commercial corridor consistent with the recommendations of the *General Plan*.

Bay Trail Plan

The *San Francisco Bay Trail* is a regional recreational corridor that, when complete, will encircle San Francisco and San Pablo Bays with a continuous 400-mile network of bicycling and hiking trails. It will connect the shoreline of all nine Bay Area counties, link 47 cities, and cross the major toll bridges in the region. To date, approximately 240 miles of the alignment—over half the Bay Trail's ultimate length—have been completed.

In San Leandro, the main component of the Bay Trail, the "spine trail", is fixed along the shoreline, including the Oyster Bay Regional Shoreline and the San Leandro Marina, supported by "spur trails" that extend to inland neighborhoods.

The *San Francisco Bay Trail Project* is administered by the Association of Bay Area Governments (ABAG) and makes available grant funds for trail construction and maintenance; participates in planning efforts and encourages consistency with the adopted Bay Trail Plan; educates the public and decision-makers about the merits and benefits of the Bay Trail; produces maps and other materials to publicize the existence of the Bay Trail; and disseminates information about progress on its development.

Regional Policies

Regional agencies such as the Metropolitan Transportation Commission (MTC), Alameda County Congestion Management Agency, and Bay Area Air Quality Management District (BAAQMD) all include bicycle elements in their adopted plans and frequently have specific requirements as part of their own funding and/or regulatory role. For example, the BAAQMD requires applicants for bikeway funding to calculate the future number of bicycle commuters, replaced vehicle trips and other benefits as part of their approval process.



State Policies

There is no statewide bicycle or pedestrian plan. However, the State has a Bicycle Advisory Committee as well as a Pedestrian Committee, and there are several state policies pertaining to bicycles and pedestrians as well as funding sources that create opportunities for local communities to implement bicycle facilities.

Caltrans recently adopted a directive entitled “Accommodating Non-Motorized Travel.” The directive states that, “The Department fully considers the needs of non-motorized travelers (including pedestrians, bicyclists and persons with disabilities) in all programming, planning, maintenance, construction, operations, and project development activities and products... (and) The Department adopts the best practice concepts in the US DOT Policy Statement on Integrating Bicycling and Walking into Transportation Infrastructure.”¹⁶

The *Highway Design Manual*, Chapter 1000: Bikeway Planning and Design, sets the basic minimums for bike lane and trail widths. It also establishes policies for the type and placement of signs. The *Project Development Procedures Manual*, Chapter 31: Non-Motorized Transportation Facilities, defines the means by which local jurisdictions may receive Caltrans approval for State-funded projects. The *Project Development Procedures Manual* includes information about State grant programs, following the State mandate in the *Streets and Highways Code* that the State disburse a *minimum* of \$7.2 million annually to bicycle projects as part of the Bicycle Transportation Account.

The *California Vehicle Code* has several sections related to bicycle and pedestrian operation, while allowing local jurisdictions leeway to create their own policies. Section 21200 establishes bicyclists’ right to share the road with vehicles, and makes them subject to the same rules and regulations as drivers. These sections also define conditions under which a bicyclist may “take the lane,” as well as instances when drivers are allowed in bicycle lanes. The Vehicle Code includes standard specifications for bicycles, including brakes and reflective devices, as well as general safety guidelines and helmet requirements for riders under 18 years of age. Finally, Sections 3900-3911 create a bicycle licensing program, through which local cities (if they choose) may request licensing forms from the State, to be distributed through local bicycle vendors at the point of sale. While few California cities currently have bicycle licensing programs, there is a well-established program in Chicago, Illinois. The success of a bicycle licensing program is dependent upon extensive public awareness, achieved through public education campaigns.

California Vehicle Code Section 467 defines a “pedestrian” as any person who is afoot or who is using a means of conveyance propelled by human power other than a bicycle. (b) “Pedestrian” includes any person who is operating a self-propelled wheelchair, invalid tricycle, or motorized quadricycle and, by reason of physical disability, is otherwise unable to move about as a pedestrian, as specified in subdivision (a). The Vehicle Code also identifies pedestrians’ rights and responsibilities when crossing the street, including where it is legal to cross the street and the amount of “due care” required of pedestrians when entering the roadway. The Code also discusses when motorists must yield to pedestrians and vice versa.

¹⁶ Caltrans Deputy Directive “Accommodating Non-Motorized Travel,” effective 3.26.01



Federal Policies

There are four key policy sources on a Federal level:

- The Transportation Equity Act for the 21st Century (TEA-21)
- The Federal Highway Administration's (FHWA) Joint statement, *Accommodating Bicycle and Pedestrian Travel: A Recommended Approach*
- The American Association of Transportation Official's (AASHTO's) *Guide for the Development of Bicycle Facilities*
- The Americans with Disabilities Act (ADA)

TEA-21

The aim of TEA-21, passed in June of 1998, is to integrate bicycle and pedestrian travel into the mainstream transportation system.¹⁷ The legislation asserts that bicycle and pedestrian facilities should offer a viable transportation choice while prioritizing the safety of all road users. TEA-21 requires that bikeways and pedestrian walkways be considered as the rule rather than the exception in all Federally funded transportation projects. At the very least, transportation projects that receive Federal dollars must assume that bicyclists and pedestrians will utilize the facilities. The design of these projects should not preclude bicycle and pedestrian access, and the Secretary of Transportation cannot approve any project that severs a major bicycle or pedestrian corridor without offering an alternative route. If bicycle and/or pedestrian access will not be provided in a federally funded project, there must be extensive documentation supporting the decision.

The TEA-21 legislation is the primary federal funding source for bicycle and pedestrian projects that are "principally for transportation, rather than for recreation, purposes;" however, "transportation purposes" are broadly defined as facilities that have an end-point that is different from their point of origin.

FHWA's Joint Statement

The Federal Highway Administration's Joint Statement, *Accommodating Bicycle and Pedestrian Travel: A Recommended Approach* offers a base for bicycle and pedestrian planning. The statement establishes overall policy as well as performance measures. Many municipalities have adopted this statement and implemented the action items as the core of their bicycle and pedestrian master plans. The three key principles contained in the statement are as follows:

- Bicycling and walking facilities will be incorporated into all transportation projects unless exceptional circumstances exist;
- Municipalities should use approaches to achieving the policy that have worked elsewhere as a model; and
- Public agencies, professional associations, or advocacy groups should adopt several action items to improve the overall conditions for bicycling and walking.

The heart of the Statement is that, "the decision not to accommodate [bicyclists and pedestrians] should be the exception rather than the rule. There must be exceptional circumstances for denying bicycle and pedestrian access." The statement recognized the intent of Congress that bicyclists and pedestrians have safe, convenient access to the transportation system. If design conditions prevent the inclusion of non-motorized facilities, the project must "allow for the future construction of bicycle

¹⁷ TEA-21 is a seven-year funding bill expiring in 2005. The legislature is currently in the process of formulating the next transportation funding bill.



and pedestrian facilities.” Furthermore, “exceptions for the non-inclusion of bikeways and walkways shall be approved by a senior manager and be documented with supporting data that indicates the basis for the decision.” The statement encourages local jurisdictions to “re-write the manuals” to provide for flexibility in infrastructure design so that bicycles and pedestrians may be accommodated. The statement identifies action items that states, local governments, professional associations, other government agencies and community organizations take when they adopt the *Joint Statement*.

Guide for the Development of Bicycle Facilities

Finally, the AASHTO *Guide for the Development of Bicycle Facilities* offers design guidance for accommodating bicycle and pedestrian facilities into transportation projects.

These documents, when taken together, offer a clear policy direction while maintaining flexibility. For instance, while TEA-21 prioritizes bicycle and pedestrian projects that will benefit the transportation system as a whole (a circular path within a park, for instance, is not used for transportation but for recreation and is not eligible for funding); it does not define “transportation” so narrowly that recreational trips are not eligible for funding. The TEA-21 legislation allows states some latitude to set their own priorities for the types of bicycle and pedestrian projects they will fund. Some states have utilized their TEA-21 dollars to fund projects that will primarily benefit commuters.

Americans with Disabilities Act

The Americans with Disabilities Act is a landmark piece of legislation enacted in 1990 that provides thorough civil liberties protections to individuals with disabilities with regards to employment, state and local government services, access to public accommodations, transportation, and telecommunications.

Title III of the act requires places of public accommodation to be accessible and usable to all people, including those with disabilities. While the letter of the law applies to “public accommodations,” the spirit of the law applies not only to public agencies but to all facilities serving the public, whether they are publicly or privately funded.

Title II of the act requires that all government services, programs, and activities be accessible to and usable by persons with disabilities. However, Title 28 of the Code of Federal Regulations, Section 35.150(a), states that if the public entity can demonstrate that modifications would fundamentally alter the nature of its service, program, or activity, or cause undue financial and administrative burdens, it is not required to make that particular modification.



Appendix B: Sample Bike Parking Ordinance



Chapter 17.117

BICYCLE PARKING REQUIREMENTS

Sections:

Article I. General Provisions

- 17.117.010 Title, purpose, and applicability.
- 17.117.020 Effect on new and existing uses.
- 17.117.030 More than one activity on a lot.
- 17.117.040 Determination by Director of City Planning.

Article II. Standards for Required Bicycle Parking

- 17.117.050 Types of Required Bicycle Parking.
- 17.117.060 Minimum Specifications for Required Bicycle Parking
- 17.117.070 Location and Design of Required Bicycle Parking.

Article III. Minimum Number of Required Bicycle Parking Spaces

- 17.117.080 Calculation rules.
- 17.117.090 Required Bicycle Parking— Residential Activities.
- 17.117.100 Required Bicycle Parking — Civic Activities.
- 17.117.110 Required Bicycle Parking — Commercial Activities.
- 17.117.120 Required Bicycle Parking — Manufacturing and All Other Activities.
- 17.117.130 Special Exemptions to Bicycle Parking Requirements.
- 17.117.140 Optional In-lieu Fee for Required Bicycle Parking.

Article I. General Provisions

- 17.117.010 Title, purpose, and applicability.

The provisions of this chapter shall be known as the bicycle parking requirements. The purpose of these regulations is to require adequate off-street parking for bicycles, thereby promoting alternative transportation, providing additional transportation choices for residents and commuters, and reducing traffic congestion and air pollution. These requirements shall apply to the indicated activities as specified hereinafter.

- 17.117.020 Effect on new and existing uses.

A. Bicycle Parking to Be Provided for New Facilities and Additions to Existing Facilities. Bicycle parking as prescribed hereafter shall be provided for activities occupying facilities, or portions thereof, which are constructed, established, wholly reconstructed, or moved onto a new lot after the effective date of the zoning regulations, or of a subsequent rezoning or other amendment thereto establishing or increasing bicycle parking for such activities, except to the extent that existing bicycle parking exceeds such requirements for any existing facilities. The required amount of bicycle parking shall be based on the cumulative increase in floor area, or other applicable unit of measurement prescribed hereafter, after said effective date.

B. Bicycle Parking to Be Provided for New Living Units in Existing Facilities. If any facility, or portion thereof, which is in existence on the effective date of the zoning regulations, or of a subsequent rezoning or other amendment thereto establishing or increasing bicycle parking requirements for an activity therein, is altered or changed in occupancy so as to result in an increase



in the number of residential living units therein, bicycle parking as prescribed hereafter shall be provided for the added units. However, such bicycle parking need be provided only in the amount by which the requirement prescribed hereafter for the facility after said alteration or change exceeds the requirement prescribed hereafter for the facility as it existed prior to such alteration or change; and such new bicycle parking need not be provided to the extent that existing bicycle parking exceeds the latter requirement.

17.117.030 More than one activity on a lot.

Whenever a single lot contains different activities with the same bicycle parking requirement, the overall requirement shall be based on the sum of all such activities, and the minimum size prescribed hereafter for which any bicycle parking is required shall be deemed to be exceeded for all such activities if it is exceeded by their sum. Whenever a single lot contains activities with different bicycle parking requirements, the overall requirement shall be the sum of the requirements for each such activity calculated separately; provided, however, that the minimum size prescribed hereafter for which any bicycle parking is required shall be deemed to be exceeded on said lot for all activities for which the same or a smaller minimum size, expressed in the same unit of measurement, is prescribed, if said minimum size is exceeded by the sum of all such activities on the lot.

17.117.040 Determination by Director of City Planning.

In the case of activities for which the Director of City Planning is required to prescribe a number of parking spaces or for which this ordinance is not clear or does not prescribe a number of spaces, he or she shall base his or her determination on the number of employees, residents or customers and the nature of the operations conducted on the site. Any such determination shall be subject to appeal pursuant to the administrative appeal procedure in Chapter 17.132.

Article II. Standards for Required Bicycle Parking

17.117.050 Types of Required Bicycle Parking.

Two types of bicycle parking are required:

A. Long-term Bicycle Parking

Each long-term bicycle parking space shall be provided by a locker, locked enclosure or supervised area providing protection for each bicycle from theft, vandalism and weather. Long-term bicycle parking is meant to accommodate employees, students, residents, commuters, and others expected to park more than two hours.

B. Short-term Bicycle Parking

Short-term bicycle parking shall be provided by a rack, stand or similar device and is meant to accommodate visitors, customers, messengers, and others expected to depart within two hours.

17.117.060 Minimum Specifications for Required Bicycle Parking.

A. All required bicycle parking spaces shall permit the locking of the bicycle frame and one wheel with a u-type lock, and support the bicycle in a stable position without damage to wheels, frame, or components.

B. Bicycle parking facilities shall be securely anchored so they cannot be easily removed and shall be of sufficient strength to resist vandalism and theft.

17.117.070 Location and Design of Required Bicycle Parking.

Required bicycle parking shall be placed on site(s) as set forth below:



- A. Long-term bicycle parking shall be located on site or within 750 feet of the site and at least fifty percent of the required long-term bicycle parking shall be covered.
- B. Short-term bicycle parking shall be placed within fifty feet of the main entrance to the building or commercial use and should be visible from the entrance and sheltered if possible. When the main entrance fronts the sidewalk, the installer may obtain an encroachment permit from the City to install the bicycle parking in the public Right of Way.
- C. Bicycle parking facilities shall not impede pedestrian or vehicular circulation.
- D. Bicycle parking shall not be placed so close to a wall as to make use difficult.
- E. Bicycle parking facilities within auto parking facilities shall be protected from damage by cars by a physical barrier such as curbs, wheel stops, poles, or other similar features.
- F. Bicycle parking facilities should be located in highly visible well-lighted areas.
- G. The location and design of required bicycle parking shall be of a quality, character and color that harmonizes with adjoining land uses. Required bicycle parking should be incorporated whenever possible into building design or street furniture.

Article III. Minimum Number of Required Bicycle Parking Spaces

17.117.080 Calculation rules.

- A. If after calculating the number of required bicycle parking spaces a quotient is obtained containing a fraction of one-half or more, an additional space shall be required; if such fraction is less than one-half it may be disregarded.
- B. When the bicycle parking requirement is based on number of employees, the number of spaces shall be based on the number of working persons typically engaging in the specified activity on the lot during the largest shift of the peak season. If the Director of City Planning determines that this number is difficult to verify for a specific facility, then the number of required long-term bicycle parking spaces shall be a minimum of two spaces or five percent of the amount of required automobile spaces for the proposed facility, whichever is greater.
- C. When the bicycle parking requirement is based on number of seats, each twenty (20) inches of pews or similar facilities shall be counted as one seat.
- D. After the first forty (40) spaces are provided for each type of required bicycle parking, additional bicycle parking spaces required are one-half (0.5) per space listed for each type.

17.117.090 Required Bicycle Parking—Residential Activities.

Subject to the calculation rules set forth in Section 17.117.080, the following amounts of bicycle parking are required for all Residential Activities and shall be developed and maintained pursuant to the provisions of Article II of this chapter:

Residential Activity	Long-term Bicycle Parking Requirement	Short-term Bicycle Parking Requirement
One-Family Dwelling.	No spaces required.	No spaces required.
One-Family Dwelling with Secondary Unit.	No spaces required.	No spaces required.
Two-Family Dwelling.	No spaces required.	No spaces required.
Multifamily Dwelling with Private Garage for each unit.	No spaces required.	One space for each twenty dwelling units. Minimum requirement is two spaces.

Multifamily Dwelling without Private Garage for each unit.	One space for each four dwelling units. Minimum requirement is two spaces.	One space for each twenty dwelling units. Minimum requirement is two spaces.
Rooming House.	One space for each eight residents. Minimum requirement is two spaces.	No spaces required.
Mobile Home.	No spaces required.	No spaces required.

17.117.100 Required bicycle parking—Civic Activities.

Subject to the calculation rules set forth in Section 17.117.080, the following amounts of bicycle parking are required for the specified Civic Activities and shall be developed and maintained pursuant to the provisions of Article II of this chapter:

Civic Activity	Long-term Bicycle Parking Requirement	Short-term Bicycle Parking Requirement
A. Essential Service. Limited Childcare.	No spaces required.	No spaces required.
B. Nursing Home.	One space for each twenty employees. Minimum requirement is two spaces.	Two spaces.
C. Community Assembly: playgrounds and playing fields; concessions located in public parks; temporary nonprofit festivals;	A number of spaces to be prescribed by the Director of City Planning pursuant to Section 17.117.040.	A number of spaces to be prescribed by the Director of City Planning pursuant to Section 17.117.040.
private non-profit clubs and lodges;	No spaces required.	Two spaces.
churches and all other.	One space for each 4,000 square feet of net building area, or one space for each forty fixed seats, whichever is greater. Minimum requirement is two spaces.	One space for each forty fixed seats, or one space for each 2,000 square feet of net building space, whichever is greater. Minimum requirement is two spaces.
D. Community Education	One space for each twenty employees plus one space for each 20 students of planned capacity. Minimum requirement is two spaces.	Two spaces.
E. Nonassembly Cultural Administrative.	One space for each twenty employees. Minimum requirement is two spaces.	Two spaces.
F. Residential Care.	No spaces required.	No spaces required.
G. Health Care.	One space for each twenty employees, or one space for each 70,000 square feet of net building area, whichever is greater. Minimum requirement is two spaces.	One space for each 40,000 square feet of net building area. Minimum requirement is two spaces.
H. Utility and Vehicular.	No spaces required.	No spaces required.
I. Extensive Impact: colleges and	One space for each twenty employees plus one space for each ten students	One space for each ten students of planned capacity.



universities.	of planned capacity; or one space for each 20,000 square feet of net building area, whichever is greater.	
all other.	A number of spaces to be prescribed by the Director of City Planning pursuant to Section 17.117.040.	A number of spaces to be prescribed by the Director of City Planning pursuant to Section 17.117.040.

17.117.110 Required Bicycle Parking—Commercial Activities.

Subject to the calculation rules set forth in Section 17.117.080, the following amounts of bicycle parking are required for the specified Commercial Activities and shall be developed and maintained pursuant to the provisions of Article II of this chapter:

Commercial Activity	Long-term Bicycle Parking Requirement	Short-term Bicycle Parking Requirement
A. General Food Sales. Convenience Market. Alcoholic Beverage Sales.	One space for each 12,000 square feet of net building area. Minimum requirement is two spaces.	One space for each 5,000 square feet of net building area. Minimum requirement is two spaces.
B. Convenience Sales and Service. Mechanical or Electronic Games. Medical Service. General Retail Sales, except when sales are primarily of bulky merchandise such as furniture or large appliances. General Personal Service.	One space for each 12,000 square feet of net building area. Minimum requirement is two spaces.	One space for each 5,000 square feet of net building area. Minimum requirement is two spaces.
Consumer Laundry and Repair Service. Undertaking Service.	One space for each 12,000 square feet of net building area. Minimum requirement is two spaces.	No spaces required.
C. Consultative and Financial Service Administrative. Business and Communication Service. Research Service.	One space for each 10,000 square feet of net building area. Minimum requirement is two spaces.	One space for each 40,000 square feet of net building area. Minimum requirement is two spaces.
D. Retail Business Supply. General Wholesale Sales, Construction Sales and Service. Automotive Sales and	One space for each 12,000 square feet of net building area. Minimum requirement is two spaces.	One space for each 40,000 square feet of net building area. Minimum requirement is two spaces.



	Service. Automotive Sales, Rental, and Delivery.		
E.	Group Assembly.	A number of spaces to be prescribed by the Director of City Planning pursuant to Section 17.117.040.	A number of spaces to be prescribed by the Director of City Planning pursuant to Section 17.117.040.
F.	Transient Habitation.	One space for each twenty rentable rooms. Minimum requirement is two spaces.	One space for each twenty rentable rooms. Minimum requirement is two spaces.
G.	General Retail Sales, whenever sales are primarily of bulky merchandise such as furniture or large appliances.	One space for each twenty employees. Minimum requirement is two spaces.	Two spaces.
H.	Automotive Servicing. Automotive Repair and Cleaning.	One space for each twenty employees. Minimum requirement is two spaces.	No spaces required.
	Automotive Fee Parking.	One space for each twenty automobile spaces. Minimum requirement is two spaces.	No spaces required.
I.	Transport and Warehousing.	One space for each 40,000 square feet of net building area. Minimum requirement is two spaces.	No spaces required.
J.	Scrap Operation.	One space for each twenty employees. Minimum requirement is two spaces.	No spaces required.
K.	Fast-Food Restaurant.	One space for each 12,000 square feet of net building area. Minimum requirement is two spaces.	One space for each 5,000 square feet of net building area. Minimum requirement is two spaces.



17.117.120 Off-street parking— Manufacturing and All Other Activities.

Subject to the calculation rules set forth in Section 17.117.080, the following amounts of bicycle parking are required for all Manufacturing Activities, Agricultural and Extractive Activities and All Other Activities and shall be developed and maintained pursuant to the provisions of Article II of this chapter:

Type of Activity	Long-term Bicycle Parking Requirement	Short-term Bicycle Parking Requirement
Manufacturing and Production	One space for each 15,000 square feet of net building area. Minimum requirement is two spaces.	No spaces required.
Agricultural and Extractive Activities	No spaces required.	No spaces required.
Transit stations	<Should be based on a percentage of passenger load or automobile parking>. Minimum requirement is ten spaces.	No spaces required.
Park-and-ride facilities	One space for each twenty automobile spaces. Minimum requirement is two spaces.	No spaces required.
Joint living and working quarters.	No spaces required.	One space for each twenty units. Minimum requirement is two spaces.
All Other Activities	A number of spaces to be prescribed by the Director of City Planning pursuant to Section 17.117.040.	A number of spaces to be prescribed by the Director of City Planning pursuant to Section 17.117.040.

17.117.130 Special exemptions to parking requirements.

When the installation of bicycle parking is physically not feasible, the requirements may be waived or reduced to a feasible level by the Director of City Planning. The submission of an in-lieu fee as described in Section 17.117.140 may be required.

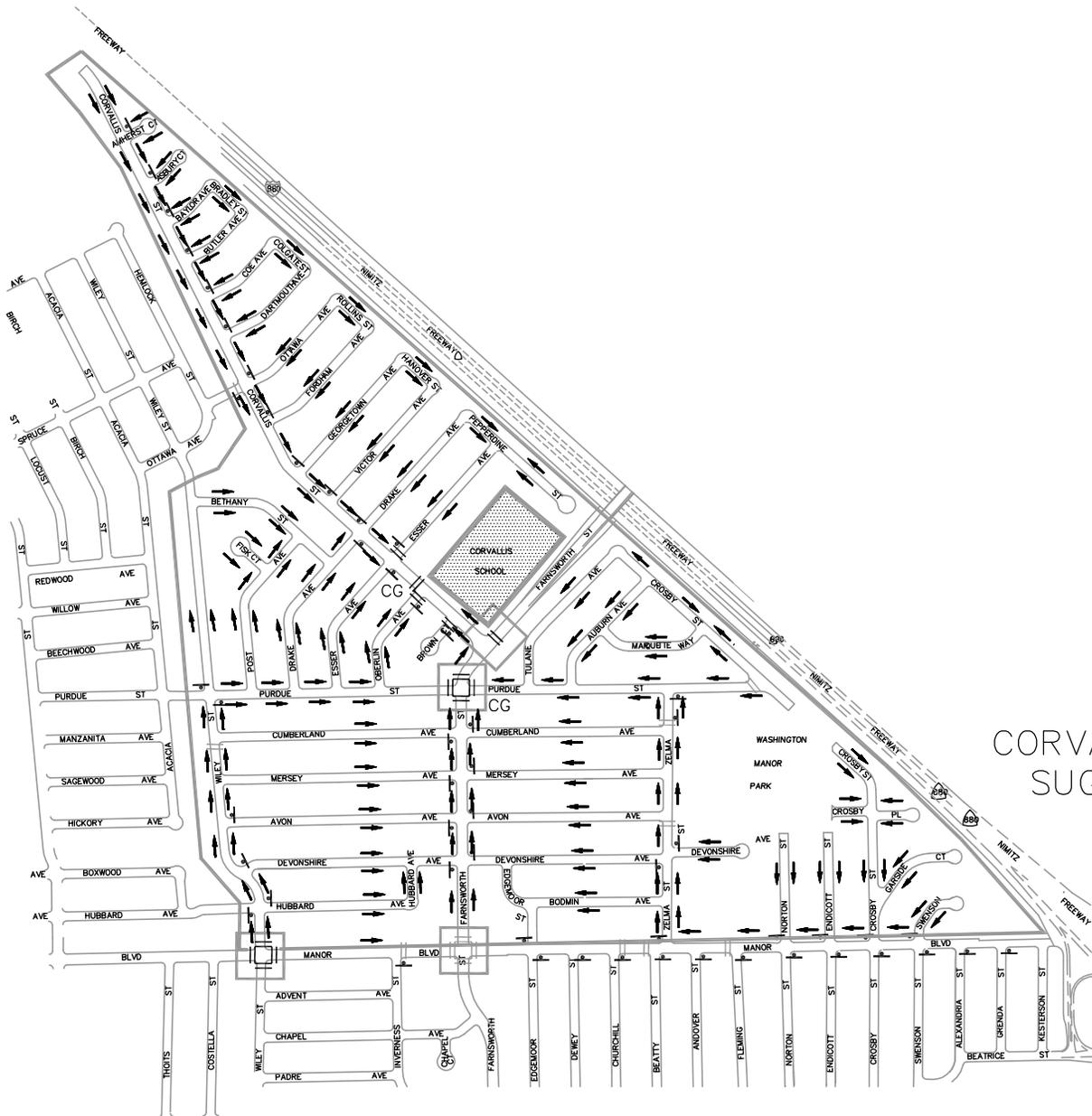
17.117.140 Optional In-lieu Fee for Required Bicycle Parking

Subject to the development of an in-lieu fee program for required bicycle parking, up to half of the required bicycle parking may be waived upon submission to the City of the adopted in-lieu fee. The amount of the in-lieu fee shall be based on the cost of providing the specified number of short-term or long-term bicycle parking spaces.



Appendix C: Safe Routes to School Maps





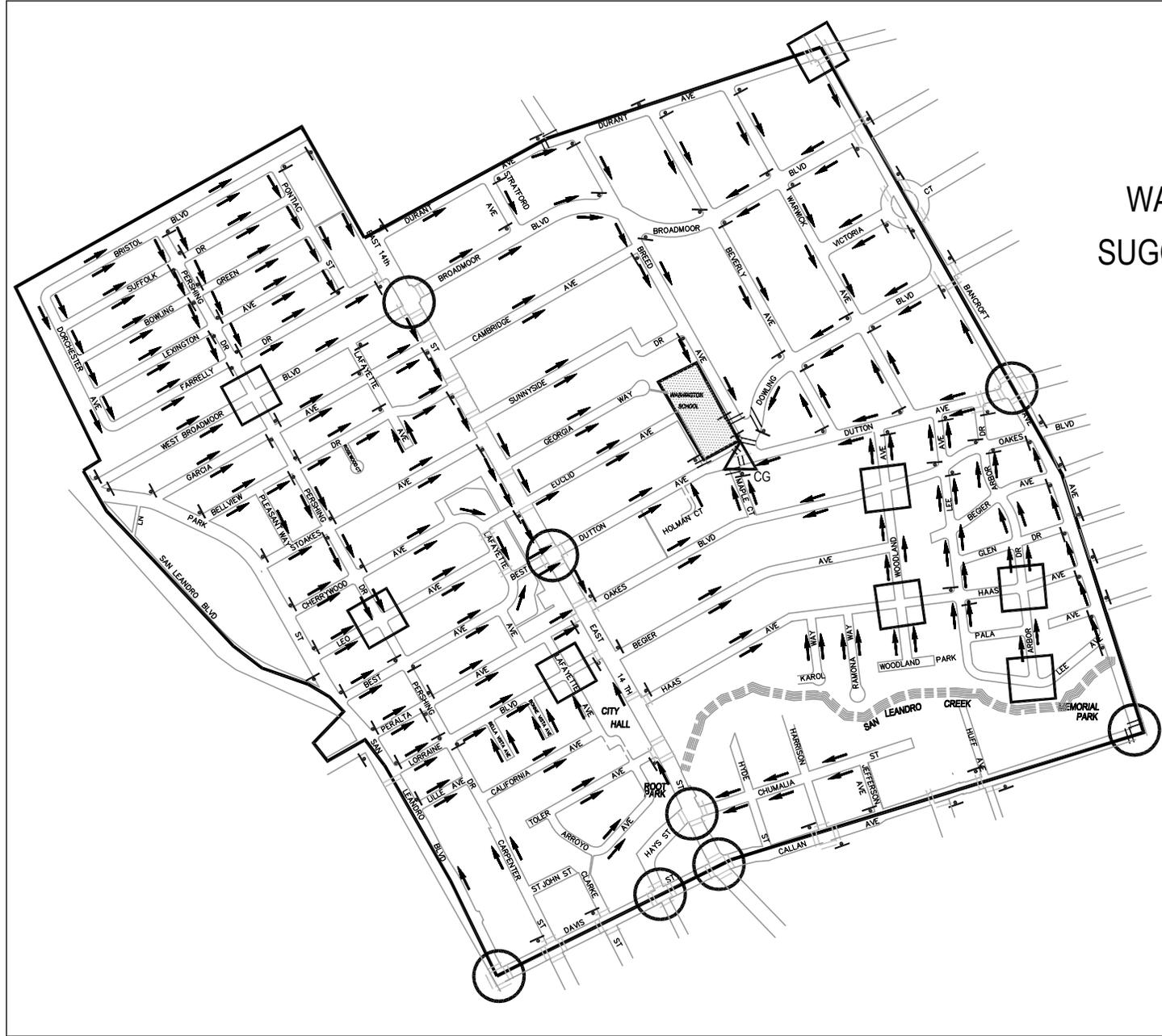
-  = ALL-WAY STOP
-  = SIGNAL
-  = STOP SIGN
-  = YELLOW CROSSING
-  = WHITE CROSSING
- CG = CROSSING GUARD



CORVALLIS ELEMENTARY SCHOOL SUGGESTED ROUTE TO SCHOOL



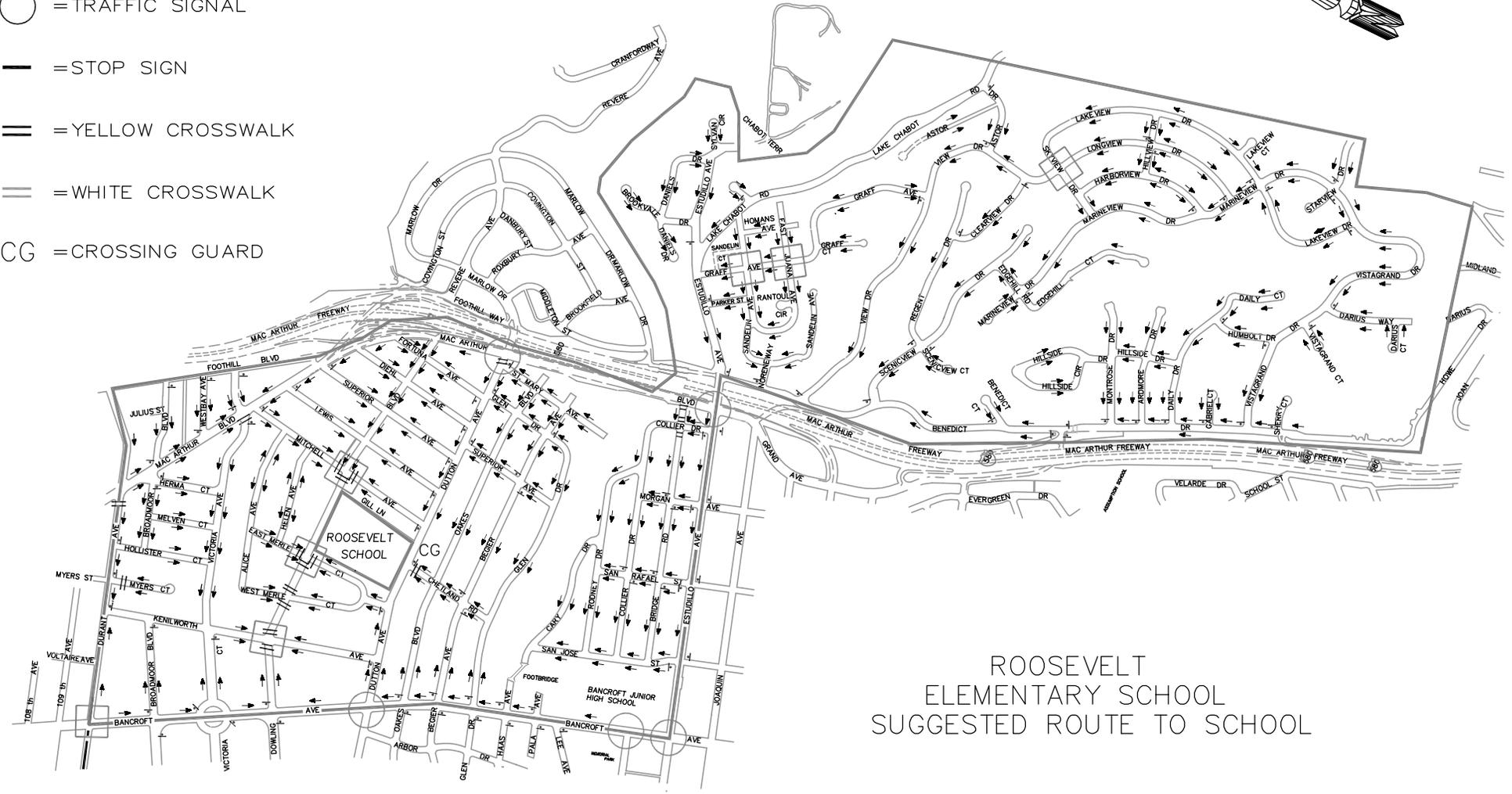
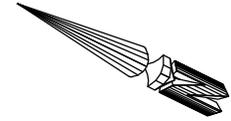
WASHINGTON ELEMENTARY SUGGESTED ROUTE TO SCHOOL



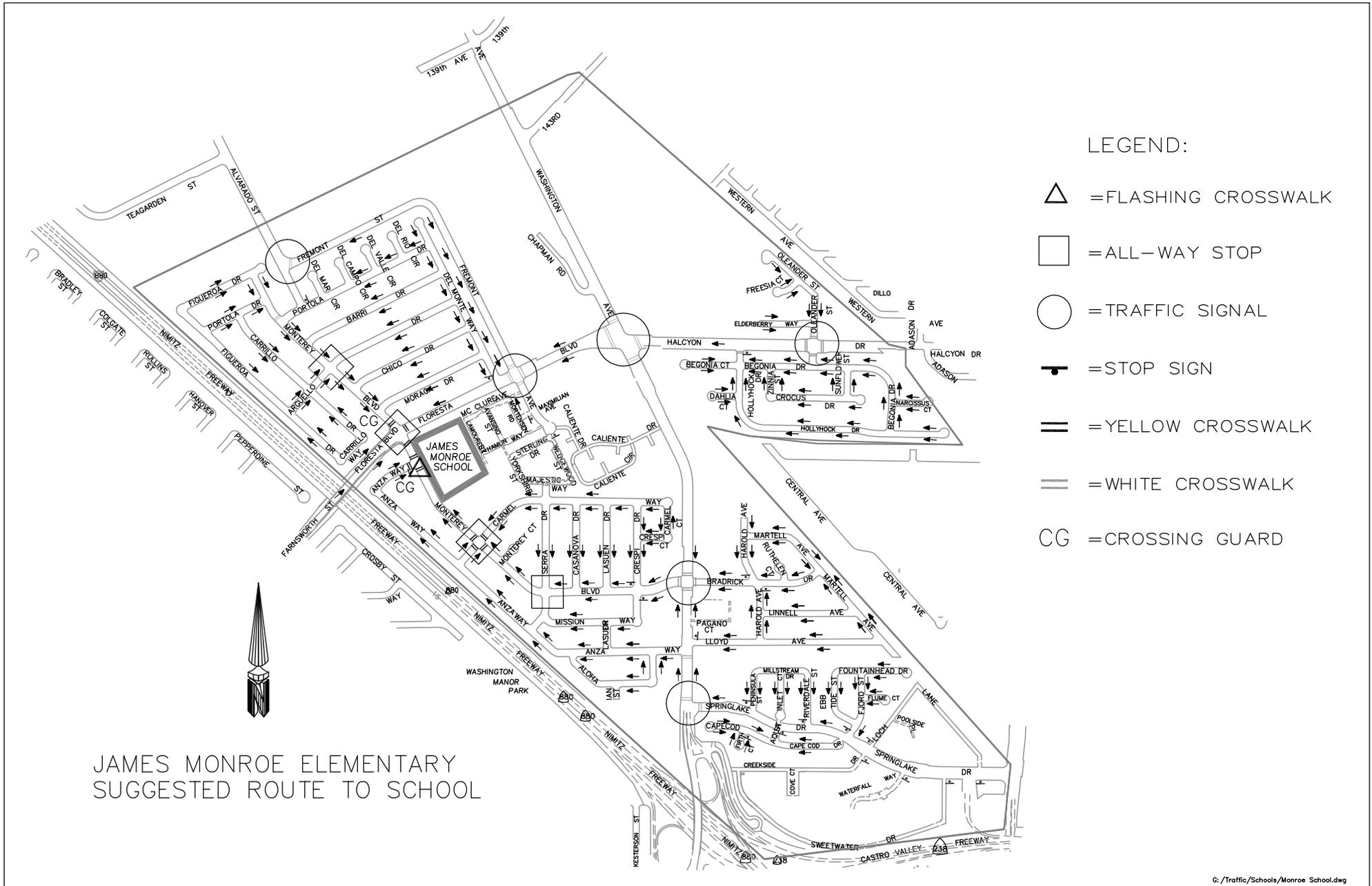
LEGEND:

-  = FLASHING CROSSWALK
-  = ALL-WAY STOP
-  = TRAFFIC SIGNAL
-  = STOP SIGN
-  = YELLOW CROSSWALK
-  = WHITE CROSSWALK
- CG = CROSSING GUARD

- = ALL-WAY STOP
- = TRAFFIC SIGNAL
- = STOP SIGN
- == = YELLOW CROSSWALK
- = WHITE CROSSWALK
- CG = CROSSING GUARD



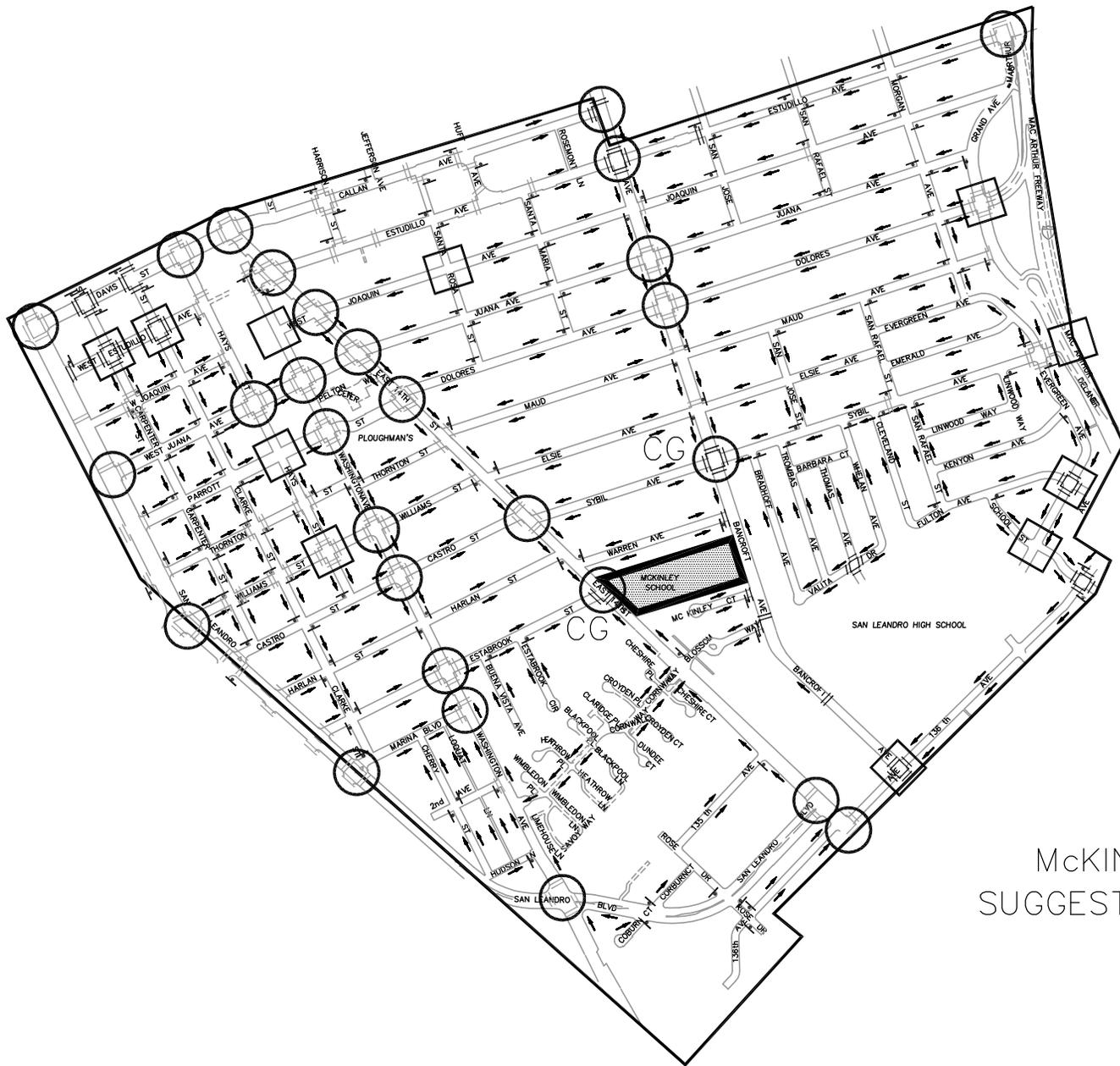
ROOSEVELT
ELEMENTARY SCHOOL
SUGGESTED ROUTE TO SCHOOL



LEGEND:

- △ = FLASHING CROSSWALK
- = ALL-WAY STOP
- = TRAFFIC SIGNAL
- T = STOP SIGN
- == = YELLOW CROSSWALK
- = = WHITE CROSSWALK
- CG = CROSSING GUARD

JAMES MONROE ELEMENTARY
SUGGESTED ROUTE TO SCHOOL



-  = ALL-WAY STOP
-  = SIGNAL
-  = STOP SIGN
-  = YELLOW CROSSWALK
-  = WHITE CROSSWALK
- CG = CROSSING GUARD



McKINLEY ELEMENTARY
SUGGESTED ROUTE TO SCHOOL

- = ALL-WAY STOP
- = TRAFFIC SIGNAL
- = STOP SIGN
- ≡ = YELLOW CROSSWALK
- ≡ = WHITE CROSSWALK
- CG = CROSSING GUARD



JEFFERSON ELEMENTARY SUGGESTED ROUTE TO SCHOOL

JAMES A. GARFIELD ELEMENTARY SCHOOL SUGGESTED ROUTE TO SCHOOL



-  = ALL-WAY STOP
-  = TRAFFIC SIGNAL
-  = STOP SIGN
-  = YELLOW CROSSWALK
-  = WHITE CROSSWALK
- CG** = CROSSING GUARD



WOODROW WILSON ELEMENTARY SCHOOL SUGGESTED ROUTE TO SCHOOL



-  = FLASHING CROSSWALK
-  = ALL-WAY STOP
-  = TRAFFIC SIGNAL
-  = STOP SIGN
-  = YELLOW CROSSWALK
-  = WHITE CROSSWALK
- CG = CROSSING GUARD

Appendix D: Diagrams of Select Projects





LOCATION MAP

Legend:	
	Existing Proposed
Bike Paths	
Bike Lanes	
Bike Routes	

Project Description

The 143rd Avenue bikeway provides a direct connection between the existing Class II bike lanes on Bancroft with proposed Class II bike lanes on Washington.

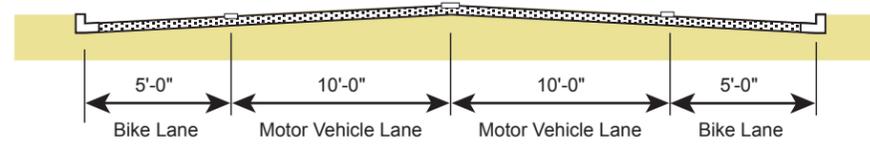
- 1** Class III bike route between Washington and East 14th (0.5 miles). Street width varies from 36' to 48'.
- 2** Class I bike path between East 14th and Bancroft (0.1 miles).
- 3** Signalized crossing at East 14th.
- 4** Unsignalized crosswalk at Bancroft.





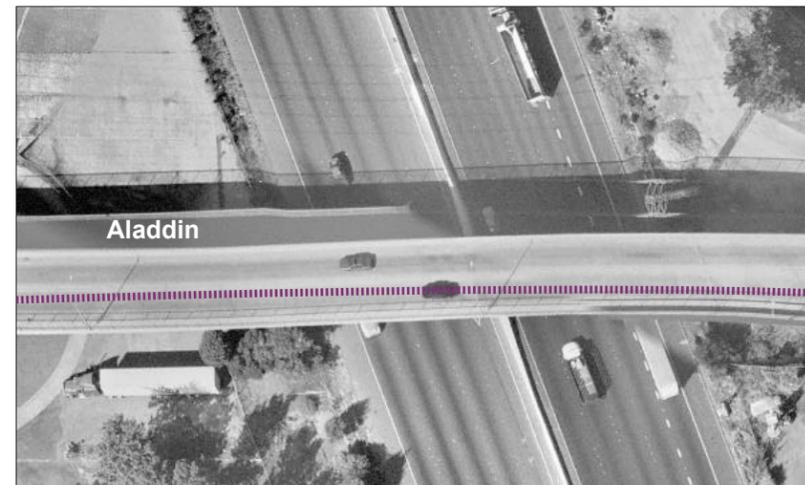
LOCATION MAP

Legend:	
	Existing Proposed
Bike Paths	
Bike Lanes	
Bike Routes	



PROPOSED CROSS SECTION (OVERPASS)

Aladdin Overpass



Project Description

The Aladdin overpass at Interstate 880 currently creates a gap between Class II bike lanes on both sides. The recommended project would consist of:

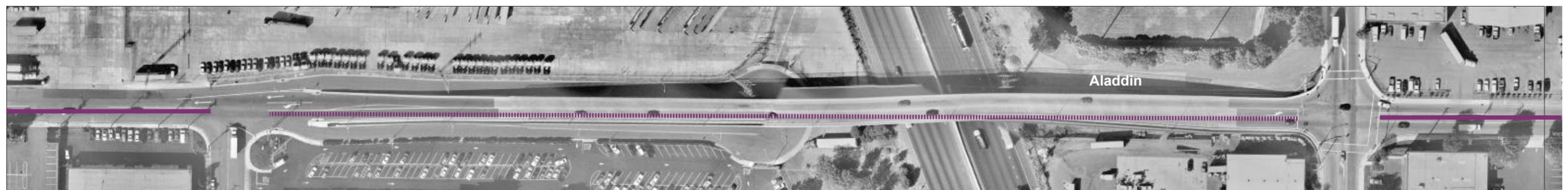
- 1** Class II bike lanes striped on the overpass; or
- 2** Creation of a Class II bike route through installation of "share the road" signs and optional bike stencils on roadway.



W79A

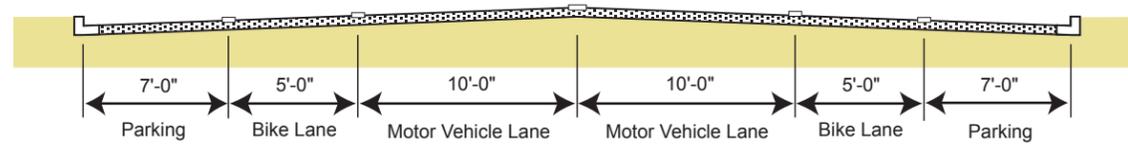


BIKE STENCIL

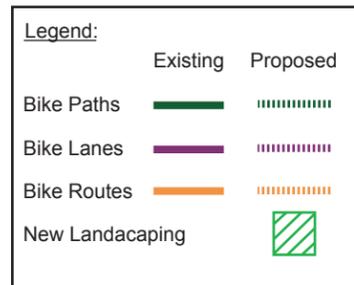




LOCATION MAP



PROPOSED CROSS SECTION (DOWLING BLVD)

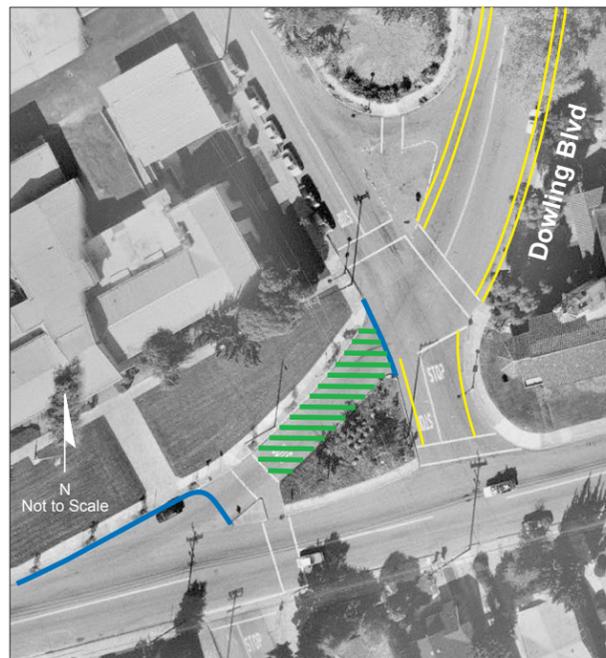


Project Description

The proposed bikeway would connect two school sites with existing bike lanes on Bancroft and proposed bikeways on MacArthur and Oaks Boulevards.

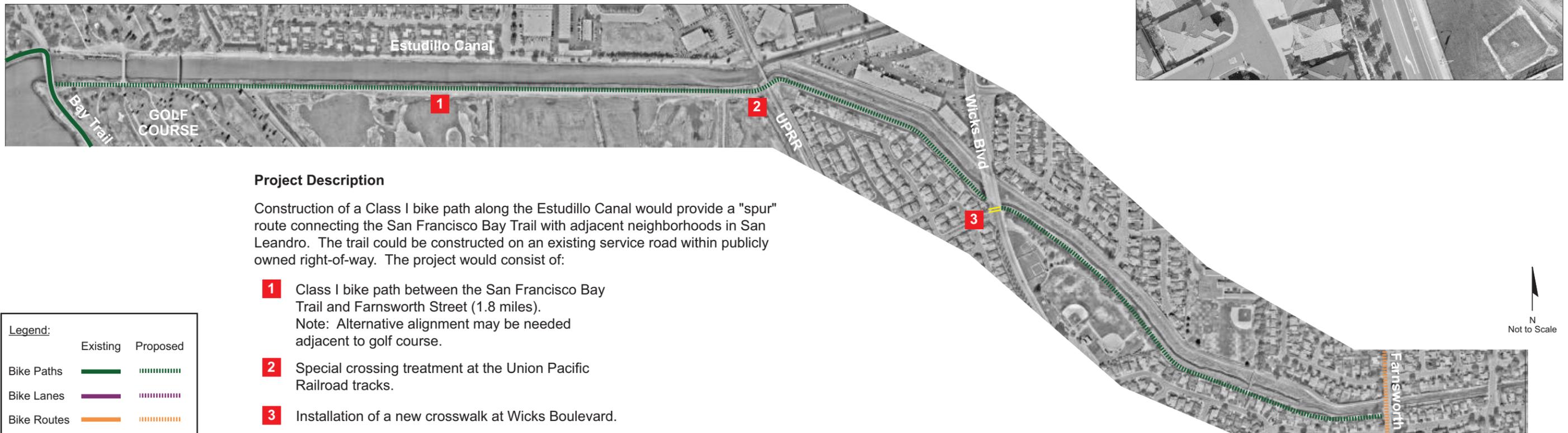
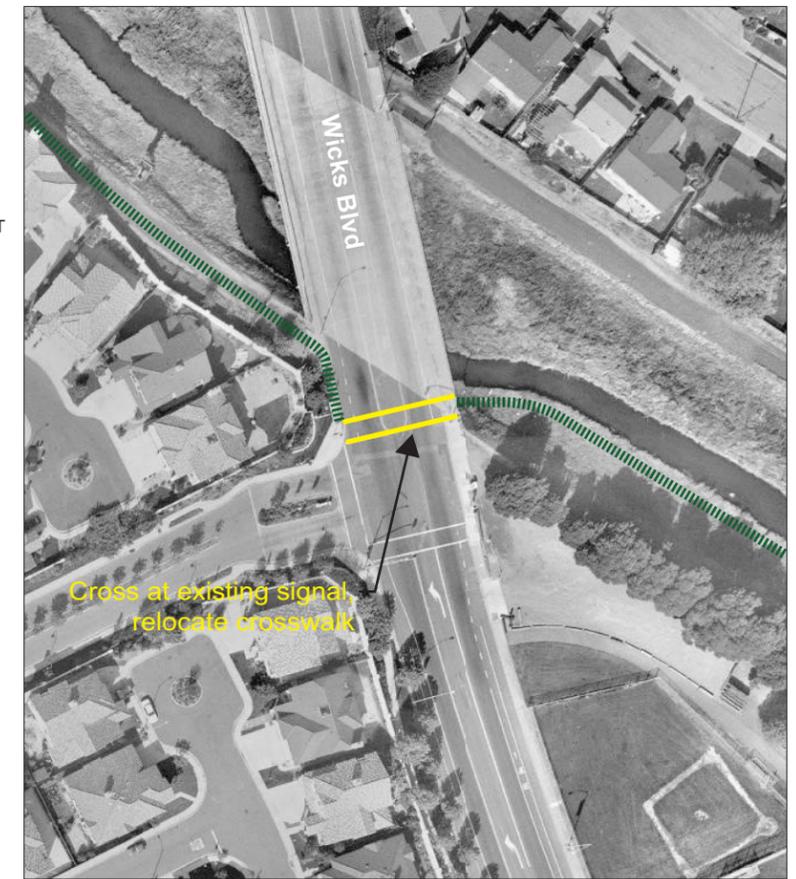
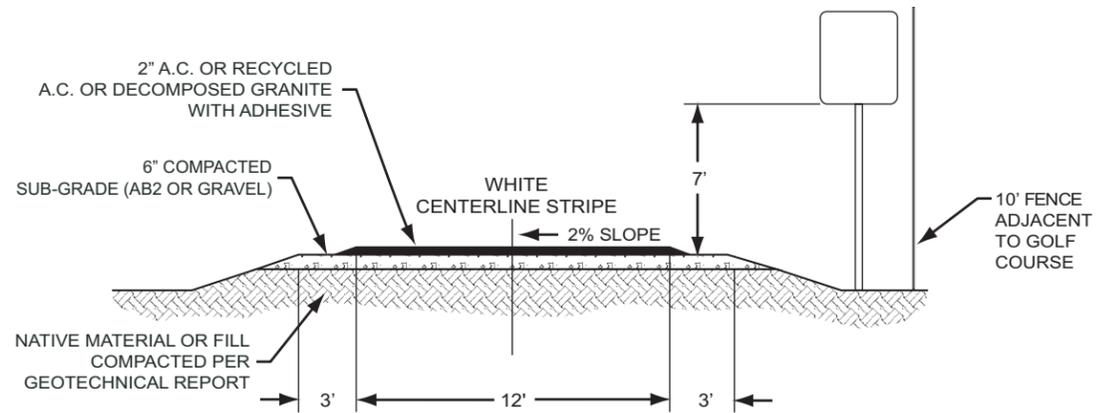
- 1** Class III bike route (east of Bancroft).
- 2** Class II bike lanes (west of Bancroft).
- 3** Pedestrian improvements adjacent to school.

Dowling Blvd





LOCATION MAP



Project Description

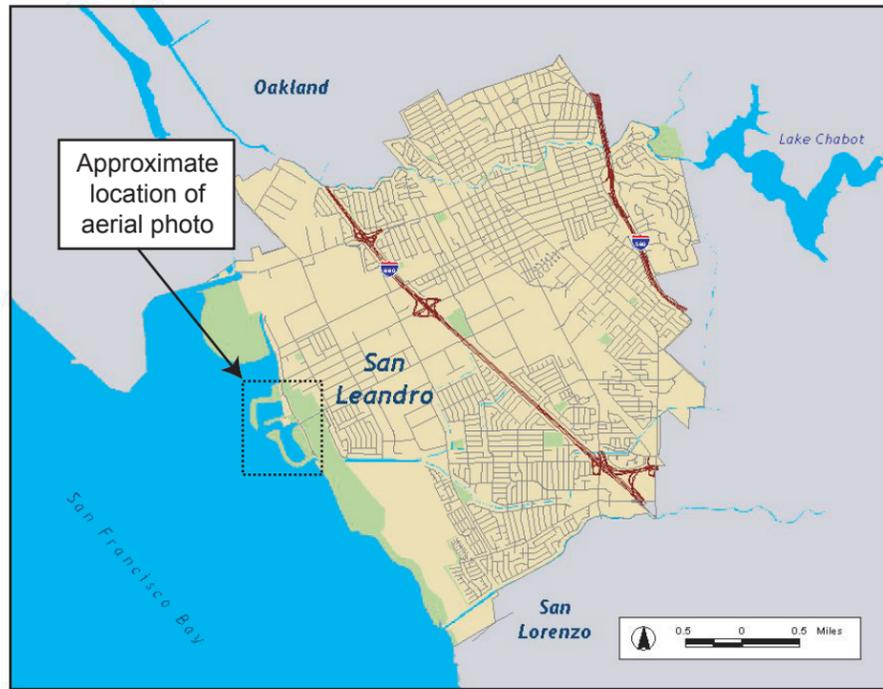
Construction of a Class I bike path along the Estudillo Canal would provide a "spur" route connecting the San Francisco Bay Trail with adjacent neighborhoods in San Leandro. The trail could be constructed on an existing service road within publicly owned right-of-way. The project would consist of:

- 1** Class I bike path between the San Francisco Bay Trail and Farnsworth Street (1.8 miles).
Note: Alternative alignment may be needed adjacent to golf course.
- 2** Special crossing treatment at the Union Pacific Railroad tracks.
- 3** Installation of a new crosswalk at Wicks Boulevard.

Legend:

	Existing	Proposed
Bike Paths		
Bike Lanes		
Bike Routes		

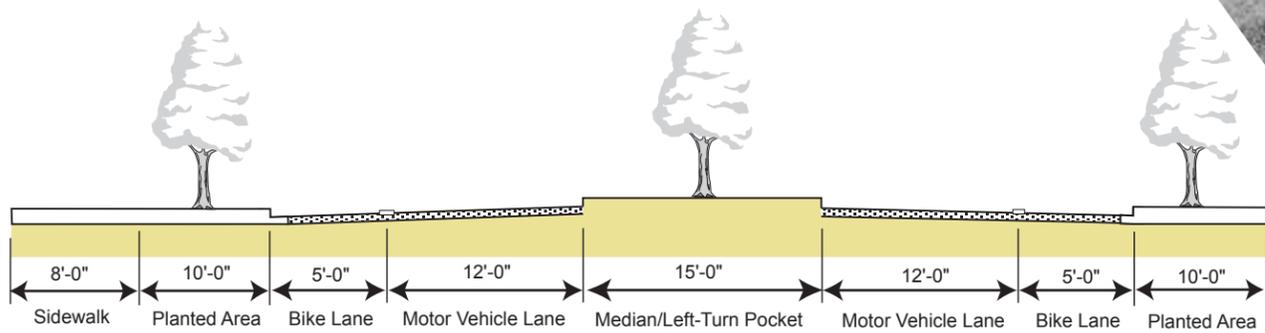




LOCATION MAP



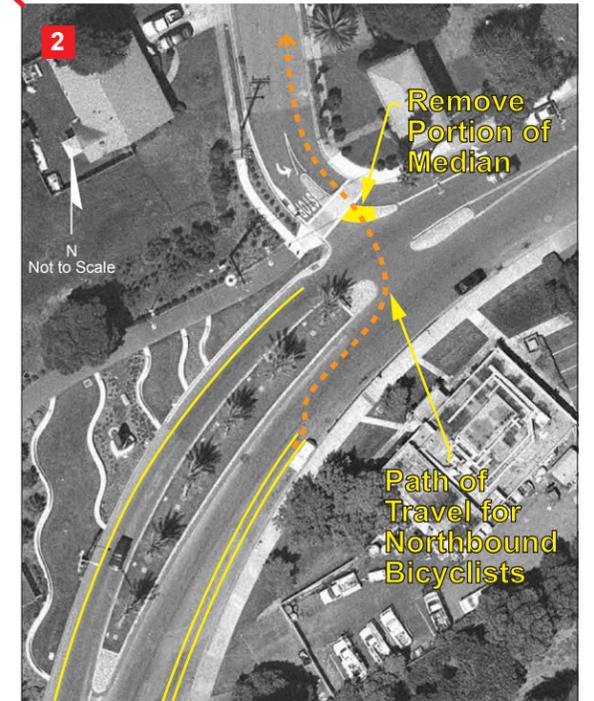
PROPOSED CROSS SECTION (MONARCH BAY DRIVE)



Project Description

The proposed bikeways would facilitate north-south travel on the San Francisco Bay Trail and would be consistent with the San Leandro Marina Connections Plan. New bikeway segments would consist of:

- 1** Complete Class II bike lanes on Monarch Bay Drive between Marina Boulevard and Estudillo Canal.
- 2** Installation of a cut-through allowing bicyclists traveling north on Monarch Bay Drive to negotiate a left turn at the intersection with Marina Boulevard.
- 3** Complete Class I segments within San Leandro Marina.
- 4** Upgrade existing segments to Class I standards.



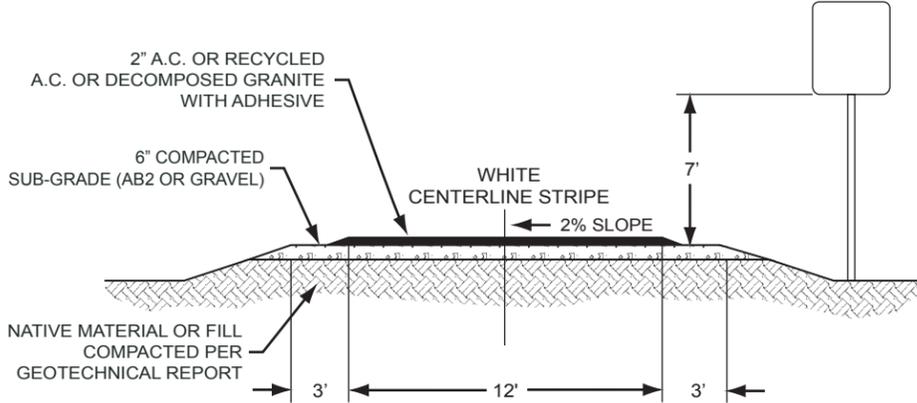


LOCATION MAP

Project Description

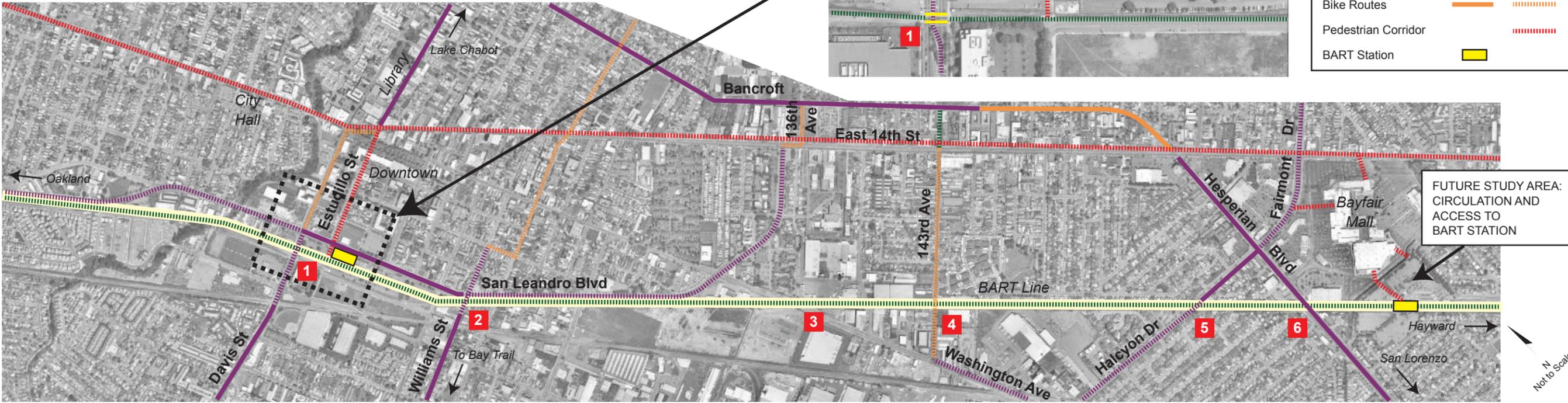
The proposed bikeway would consist of a 3.5 mile Class I path within the BART right-of-way between Oakland and unincorporated Alameda County. The project would facilitate north-south access for bicyclists and improve bicycle and pedestrian access to the BART stations and adjacent areas such as downtown San Leandro and the Bayfair Mall. The estimated construction cost is \$2.7 million. A key issue will be ensuring safe crossings at uncontrolled locations, particularly at intersections with the following streets:

- 1** Davis Street
- 2** Williams Street
- 3** Washington Avenue
- 4** 143rd Avenue
- 5** Halcyon Drive
- 6** Hesperian Boulevard



Legend:

	Existing	Proposed
Bike Paths		
Bike Lanes		
Bike Routes		
Pedestrian Corridor		
BART Station		



San Leandro Bike and Pedestrian Plan