Photo credit: Fehr & Peers

City of Emeryville Pedestrian and Bicycle Plan

Adopted: May 15, 2012

May 2012

PREPARED BY:
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City of Emeryville Pedestrian and Bicycle Plan

May, 2012

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Executive Summary

Introduction

Emeryville is well-positioned to become one of the Bay Area's top walking and bicycling cities due to the city's location, small size, dense development patterns, mix of land uses, and access to local and regional transit. Emeryville benefits from a well-connected network of existing sidewalks and an evolving network of bikeways, including the Bay Trail. The City is commited to developing pedestrian and bicycle infrastructure, investing in infill developments, and engaging with the community to support in-town and inter-jurisdictional walking and bicycling.

Emeryville has the potential to further encourage residents and visitors to walk and bicycle to and through the city for work, shopping, school, and recreational trips. Bicycle commuters from other communities and visitors traveling on the Bay Trail may stop in Emeryville to shop, eat, or play. As the East Bay's portal to the Bay Bridge into San Francisco, Emeryville will be the bicyclist gateway to San Francisco once the Bay Bridge bicycle path is completed.

Purpose

The City has a long history of supporting walking and bicycling. Many of the projects recommended in the City's first Bicycle and Pedestrian Plan in 1998 have been constructed, and others are included in the *Emeryville General Plan*.

This updated *Pedestrian and Bicycle Plan* leverages the work completed to date and details recommended improvements, implementation strategies, and project prioritization, enabling the City to focus on projects that will have the most impact on improving safety and mobility for pedestrians and bicyclists. This Plan is a blueprint for improving pedestrian and bicycle infrastructure and programs over the next ten years. The document complements the *Emeryville General Plan* and guides the implementation of general plan policies that support walking and bicycling.

Why Walking & Bicycling?

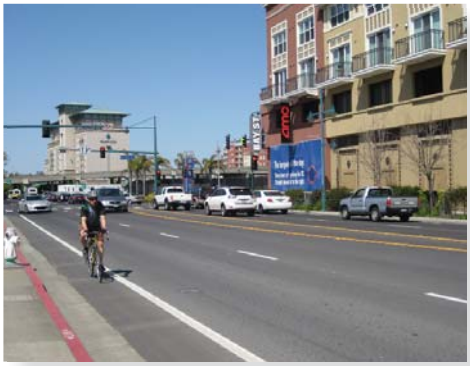
Bicycling and walking are low-cost and healthy transportation options that provide economic and livability benefits to communities. When Emeryville residents or visitors choose to walk or bicycle the number of cars on the road is reduced, congestion is alleviated, and greenhouse gas emissions are reduced. Families that can replace some of their driving trips with walking or bicycling trips reduce household expenses.

Replacing one daily car trip with a walking or biking trip can help Emeryville residents, workers or visitors get physical activity, reducing their risk of obesity, cardiovascular disease, diabetes, cancer, and osteoporosis.[1,2] The health benefit of bicycling for exercise can reduce the cost of employer spending on health care, which provides a financial incentive to businesses.

1 *Centers for Disease Control and Prevention, How much daily physical activity do you need? http://www.cdc.gov/physical activity/everyone/guidelines/index.html accessed August 2, 2011.*

2 *U.S. Department of Health and Human Services. Surgeon General's Vision for a Healthy and Fit Nation. 2010.*

The Bay Trail is a multi-use path running through Emeryville, and is intended to encircle San Francisco and San Pablo Bays.



Bike lane striping on Shellmound Street provides dedicated space for bicyclists.

Doyle Street has bicycle boulevard markings and signs indicating that bicyclists share the travel lane with cars.

Public Outreach

Emeryville's citizen-based Bicycle and Pedestrian Advisory Committee (BPAC) closely guided the Plan's development through monthly meetings which were open to the public. Residents, property owners, business owners, and employees were invited to participate via the plan website, a community survey, walking and bicycling tours, and two community workshops.

The City also led classroom discussions with students at Emery Secondary School to consider walking and biking issues and to identify potential improvements that would benefit students' travel to and from school. Input from these sources was used to understand barriers to walking and bicycling, and to identify projects and programs for inclusion in the Plan.

Emeryville Pedestrian and Bicycle Plan Vision

The Guiding Principles of the Emeryville General Plan articulate a vision of a livable and diverse city. Those principles are echoed in this Plan's vision statement:

Emeryville is a livable city, with a connected network of green streets and a fine-grained transportation network that emphasizes and supports an active and healthy lifestyle. There are new, safe, and enticing pedestrian and bicycle linkages within the City and to the San Francisco Bay and surrounding communities. Community members have a diversity of transportation choices. Walking and bicycling are integral to daily life.

The goals that support this vision are drawn directly from the general plan, and supported by more detailed policies and actions.

Plan Goals

- **Goal 1: Multi-modal:** A transportation system that eliminates the necessity of owning and/or driving personal vehicles because of the availability of convenient and accessible alternative modes of transportation.
- **Goal 2: A walkable city:** A universally accessible, safe, pleasant, convenient, and integrated pedestrian system that provides links within the city and to surrounding communities, and reduces vehicular conflicts.
- **Goal 3: A safe, comprehensive, and integrated bicycle system:** Develop a safe, comprehensive, and integrated bicycle system — a system and support facilities throughout the city that encourage accessible bicycling for all community members.
- **Goal 4: A regional bicycle and pedestrian network:** Collaborate with countywide regional agencies to coordinate planning and development of County bikeways and trails to support a regional bicycle and pedestrian network.
- **Goal 5: Education, encouragement and enforcement to support walking and bicycling:** Increase the safety of bicyclists and pedestrians and the health of the community through education, encouragement and enforcement to promote walking and bicycling.
- **Goal 6: Funding for pedestrian and bicycle projects and programs:** Fund pedestrian and bicycle projects and programs through existing and new sources of local, regional, state, and federal funding programs.

Existing Conditions and Needs

Pedestrian activity in Emeryville is oriented around major shopping destinations and transit hubs, while bicycling activity is evenly spread along multiple corridors. The Bay Trail is a major attractor and is almost continuous from Richmond to Emeryville. In Emeryville, the existing trail uses both on-street and off-street alignments and could be significantly improved.

The Union Pacific railroad tracks and Interstate 80 present major barriers to east-west travel, with few bicycle and pedestrian crossings. The Powell Street interchange, the only freeway crossing in Emeryville, is a challenging environment due to high speeds and low motorist yielding rates. Future plans for this area will provide better amenities for pedestrians, bicyclists and transit users, as well as additional pedestrian and bicycle connections. Oakland and Berkeley are closely integrated with Emeryville, and the bicycle plans for both cities include connections to employment and shopping destinations in Emeryville.

Education, Encouragement, and Enforcement Programs

Pedestrian and bicycle programs support and encourage walking and biking and complement Emeryville's investments in pedestrian and bicycle infrastructure. The City currently supports Bike to Work Day; solicits public involvement in pedestrian and bicycle planning; maintains facilities and pavement at a high quality; and has strong, supportive design guidelines as well as policies and regulations that support walking and bicycling.

Bicycle tour participants discuss a crossing.

Emeryville supports bicycling by sponsoring events such as Bike to Work Day.

Implementation Strategy

Pedestrian and Bicycle Programs

The following recommended programs will support a pedestrian and bicycle friendly culture and encourage more people to walk or bike in Emeryville:

- **Encouragement programs** provide incentives for people to try walking or bicycling. Examples include car-free street events, applying for Bicycle Friendly Community recognition,[3] establishing a Safe Routes to School Program,[4] and developing a walk/bike to work program.

- **Enforcement programs** enforce legal and respectful walking, bicycling, and driving. The Plan recommends a bicycle patrol, a community-based traffic program, and targeted enforcement.

- **Education programs** seek to improve safety and awareness. The Plan recommends pedestrian and bicycle safety campaigns and adult bicycling skills classes to provide educational opportunities.

- **Evaluation programs** provide support for investments and help secure additional funding. The Plan recommends counting pedestrians and bicyclists annually and publishing a report card with the results.

- **Maintenance** issues can pose safety hazards to pedestrians and bicyclists or make a route inaccessible. The Plan recommends establishing a maintenance schedule for pedestrian and bicycle facilities.

- **Bike sharing** is a system that allows users to check out bikes from publicly accessible stations and return them to other locations within the service area. It may be appropriate for Emeryville due to the city's small size and high concentration of workplaces. A proposed system in San Francisco could support bike sharing in Emeryville through reciprocal memberships.

Bike sharing is increasing in popularity as many cities, including San Francisco, plan to pilot systems.

San Francisco parklet
Source: http://sfpavementtoparks.sfplanning.org/

Citywide Improvements

Improvements to citywide systems are recommended to facilitate and encourage walking and bicycling throughout Emeryville. These range from updating signals to include countdown and audible signal heads, to developing destination signage for both pedestrians and bicyclists. Key citywide recommendations include the following:

- **Signal detection for bicyclists:** Provide all signals with functioning bicycle detection and sufficient signal timing for bicyclists to clear the intersection, and mark loop detectors with a bicycle stencil.

- **Pedestrian directional signage and maps:** Develop a pedestrian signage program that provides information on direct and safe routes between key origins and destinations.

- **Bikeway destination signage:** Install signs with direction and distance to destinations on all bikeways, particularly on bicycle boulevards.

- **Parklets:** Establish a parklet program to temporarily repurpose underused street parking space creating space for pedestrian amenities or outdoor seating for adjacent restaurants and cafes.

- **Bike parking:** Continue enforcing the bicycle parking ordinance and City bike rack and locker programs; expand bicycle parking in public spaces.

3 *The League of American Bicyclists' BFC award program recognizes the efforts cities have made to improve the bicycling environment, including programs.*

4 *Safe Routes to School (SR2S) is a program to help children to get to school by walking and bicycling through education, encouragement, enforcement, and engineering.*

Confirmation signs display mileage to destinations to help route finding.

Pedestrian improvements recommend pavement markings, signs, beacons, and signals to enhance major street crossings.

Bicycle Boulevards include signs and pavement markings, as well as crossing treatments and traffic calming to accommodate all types of bicyclists.

The Emeryville Greenway is a north-south linear park and pedestrian and bicycle path woven through commercial and residential areas utilizing an abandoned railroad.

Site-Specific Improvements

Pedestrian Infrastructure

Upgrades to pedestrian infrastructure for specific locations around the city include sidewalk gap closures, sidewalk upgrades, and new pedestrian-only paths. Pedestrian crossing improvements are recommended along San Pablo Avenue, Powell Street, and 40th Street, as well as selected locations on smaller roadways.

Recommended corridor enhancements on 53rd Street and San Pablo Avenue could entail significant modifications and incorporate a variety of techniques to enhance the pedestrian environment. The Plan recommends transit stop improvements that would provide appropriate amenities for each transit stop, according to ridership, surrounding land uses, and available space.

Bikeways

Once completed, the bikeway network envisioned in the Plan will provide a comprehensive, safe, and logical network of facilities where all types of bicyclists can ride to destinations within the city or seamlessly connect into Oakland or Berkeley.

Emeryville's recommended bikeway network consists of multi-use paths, bike lanes, signed bike routes, bicycle boulevards, and streets with shared lane markings.

Bicycle Boulevards

The Plan provides design guidelines and policies for improving bicycle boulevards in the city. Bicycle boulevards are streets with low traffic volume that are optimized for bicycle travel through signage, pavement markings, intersection crossing treatments, traffic calming, and traffic diversion. They address the needs of those who are interested in bicycling but concerned about riding in traffic.

Improvements are recommended on sections of 45th Street, 53rd Street, Doyle Street, Horton Street/Overland Avenue, Stanford Avenue, and 59th Street.

Multi-use Paths

Multi-use paths permit both bicyclists and pedestrians. Twelve multi-use path projects are recommended, totaling 2.04 miles.

Recommendations include completing the Bay Trail within Emeryville as a multi-use path with appropriate width, signs, and crossings along its length. Recommendations also include completing the north-south Emeryville Greenway to provide a seamless bicycle-pedestrian corridor from 9th Street in Berkeley to 40th Street, and creating an east-west Temescal Greenway as prescribed in the general plan.

Overcrossings

Bicycle and pedestrian travel in Emeryville is significantly limited by two major north-south barriers, Interstate 80 and the Union Pacific railroad tracks.

Recommended overcrossing improvements include the South Bayfront Bridge from Horton Landing Park to Ohlone Way over the railroad tracks, the 65th Street Bridge spanning Interstate-80, and a feasibility study to evaluate options for improving the pedestrian and bicycle access on the Powell Street Pedestrian/Bicycle Bridge over the railroad tracks.

Funding and Implementation

The total cost of implementing the recommendations in this Plan is estimated at $59.1 million including the construction of two major pedestrian/bicycle bridges. As the costs of these projects and programs exceed the City's anticipated bicycle and pedestrian funding, the Plan lays out a strategy that will help the City pursue high-priority projects and projects that cost little but have a big impact, and integrate projects into larger planned roadway and development projects.

The City of Emeryville has been extremely resourceful and strategic in pursuing funding for pedestrian and bicycle expenditures. City staff have successfully secured funds from a number of sources, including the redevelopment funds and the existing Transportation Impact Fee program. Emeryville has also implemented pedestrian and bicycle facilities through a variety of means including redevelopment and private development, and other mechanisms. The City will continue to fund pedestrian and bicycle projects through these sources and explore new sources, such as grant funding and inclusion in the Regional Transportation Plan, and in the Measure B sales tax expenditure plan.

Action Plan

To fully achieve the vision set forth in this Plan, close coordination among City departments, neighboring jurisdictions, and the community-at-large will be required. The Plan defines specific action steps for implementation of Pedestrian and Bicycle Plan goals and policies, as well as identifying the department or agency responsible for implementing each action and a timeframe to strategically develop the City's pedestrian and bicycle network and support programs. Some action items will be completed in the short term—within 2 years of adoption of the Plan, whereas others will be completed within the mid-term—2 to 5 years, or long term—5 to 10 years.

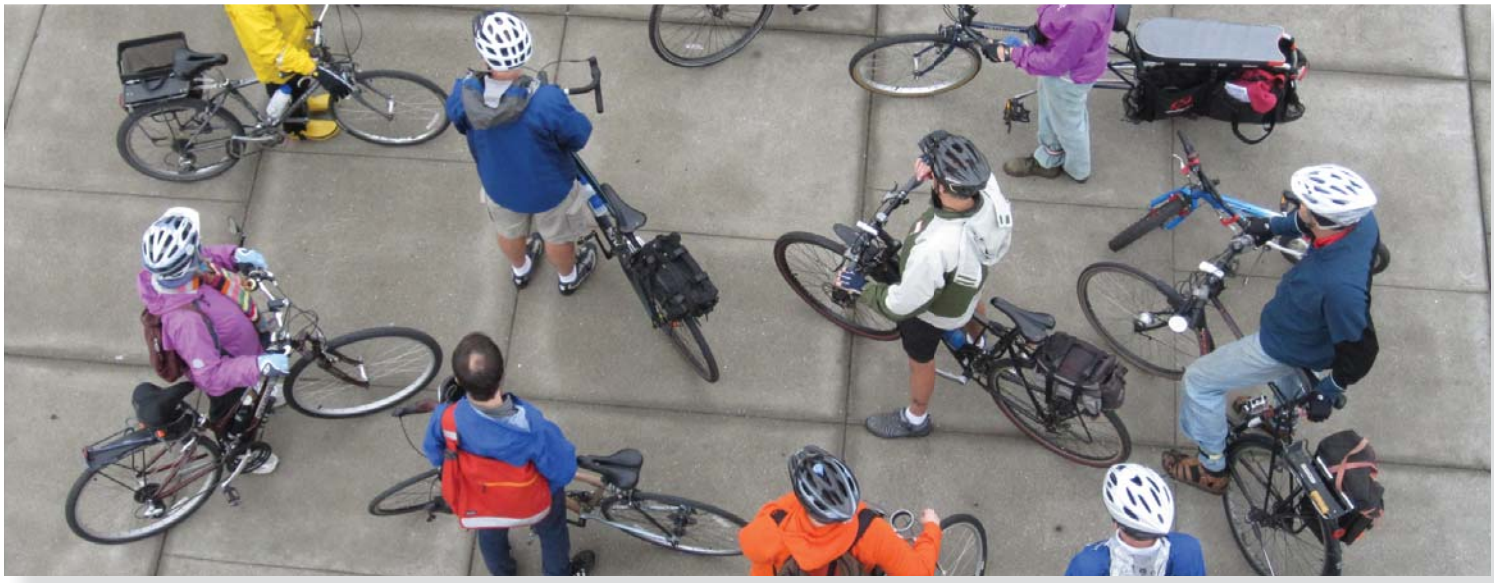
Conclusion

This Pedestrian and Bicycle Plan provides Emeryville with a targeted strategy to build upon the significant work and planning that has already been completed, and primes the city to become the foremost walking and bicycling community in the East Bay.

As the Plan is implemented, Emeryville will become a **more livable city** with a **connected network of green streets** and a **fine-grained transportation network** that emphasizes and supports an active and healthy lifestyle.

The City will have new, safe, and enticing **pedestrian and bicycle linkages** within the City and to the San Francisco Bay and surrounding communities. Community members will have a **diversity of transportation choices**, and **walking and bicycling will be integral to daily life**.

The innovative new strategies and dedication to encouraging non-motorized transportation will make the City a model for pedestrian and bicycle planning.



This Plan is for people of all ages who walk or bicycle in Emeryville and anyone interested in the City's efforts to make these modes safer and more enjoyable.

City of Emeryville Pedestrian and Bicycle Plan

Adopted: May 15, 2012

PART 1: PURPOSE, VISION AND EXISTING CONDITIONS

May 2012

PREPARED BY:
Alta Planning + Design
IN ASSOCIATION WITH:
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Part 1: Purpose, Vision and Existing Conditions

Part 1 of this Plan sets the background for the improvements recommended in Part 2 of the Plan. Part 1 outlines the importance of walking and bicycling, describes the City's ongoing efforts to support walking and bicycling, and sets a vision, goals and policies to guide the City's future actions. It also summarizes the current conditions for walking and bicycling in Emeryville, including physical conditions, collision statistics, the number of people walking and bicycling, and the community's opinions, needs, and desires related to walking and bicycling.

Part 1 consists of the following chapters:

Chapter 1: Introduction

This chapter describes the purpose of the Plan, summarizes the numerous benefits of walking and bicycling, describes the process of developing the Plan, and provides an outline of the Plan's organization.

Chapter 2: Vision, Goals, and Policies

This chapter sets forth a vision of the City of Emeryville that expresses what walking and bicycling will be like in the City upon implementation of the programs and projects recommended in this Plan. The chapter includes goals and supporting policies that describe ways in which the City can realize the Plan's vision. Action items supporting these policies are listed in Part 2 of the plan, in Chapter 8.

Chapter 3: Existing Conditions and Needs Analysis

This chapter describes physical opportunities and barriers to walking and bicycling in the city, summarizes travel patterns for Emeryville's residents and workers, analyzes the past five years of pedestrian and bicyclist related collisions, and describes the key findings of the extensive outreach process that was undertaken during the development of this Plan.

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1. Introduction

Walking and bicycling are enjoyable, energizing, environmentally friendly, and low-cost forms of transportation. In a dense, urban community like Emeryville, walking and bicycling are often the quickest and most efficient ways to travel between destinations.

Emeryville has a good network of sidewalks, particularly in areas of newer development.

Since the late nineties, the City of Emeryville has been committed to improving transportation choices by developing the pedestrian and bicycle infrastructure, as recommended in the City's 1998 *Bicycle and Pedestrian Plan*, encouraging mixed use development, and engaging with the community to address concerns related to walking and biking. The City has a growing network of sidewalks, parks and open spaces, and an evolving network of bikeways. Emeryville is also in the process of designing and constructing major pedestrian and bicycle projects, which will significantly improve connectivity and enhance walking and bicycling.

This updated *Pedestrian and Bicycle Plan* (Plan) continues the City's work and leverages previous investments by taking stock of current conditions and identifying opportunities for improvements. This Plan sets forth a vision for an Emeryville where walking and biking are integral to daily life.

Emeryville has invested significantly in infill developments, resulting in large employers and major retail centers in a dense urban environment that can support walking and bicycling. The city's location, small size (1.2 square miles), development patterns, and access to local and regional transit, support both in-town and inter-jurisdictional bicycling and walking.

Emeryville has further potential to encourage residents and visitors to walk and bicycle to and through the city for work, shopping, and recreational trips. Bicycle commuters from other communities and visitors traveling on the Bay Trail may stop in Emeryville to shop, eat, or play. As the East Bay's portal to the Bay Bridge into San Francisco, Emeryville will be the bicyclist gateway to San Francisco once the Bay Bridge bicycle path is completed.

1.1. Purpose of Plan

This Plan provides a blueprint for improving pedestrian and bicycle infrastructure and programs in Emeryville over the next ten years. The document complements the *Emeryville General Plan* (2009) and guides the implementation of *General Plan* policies that support walking and bicycling. The improvements recommended in this Plan will ultimately be implemented through the City's Capital Improvement Program (CIP).

1.2. Benefits of Walking and Bicycling

Walking and biking help address increasing traffic congestion and deteriorating air quality, and improve public health.

Supporting walking and bicycling makes environmental sense. When Emeryville residents or visitors choose to walk or bicycle the number of cars on the road is reduced, congestion is alleviated, and greenhouse gas emissions are reduced.

Supporting walking and bicycling makes economic sense. The average cost of owning and operating a new car is almost $8,000 per year.[5] Pedestrian and bicycle infrastructure provides transportation choices to those who cannot or do not drive, such as people with disabilities, youth, seniors, and people with limited incomes. Families that can replace some of their driving trips with walking or bicycling trips spend a lower proportion of their income on transportation, compared to households that rely on cars, freeing additional income for local goods and services.[6] In addition, patrons who walk and bike to local stores have been found to spend more money at local businesses than patrons who drive.[7]

Supporting walking and bicycling makes public health sense. Replacing one daily car trip with a walking or biking trip can help Emeryville residents, workers or visitors get the recommended 150 minutes of weekly physical activity, and reduce their risk of obesity, cardiovascular disease, diabetes, cancer, and osteoporosis.[8,9] The health benefit of bicycling for exercise can reduce the cost of employer spending on health care by as much as $500 a year (by decreased sick leave and compensation), which provides a financial incentive to businesses that provide health coverage to their employees.[10]

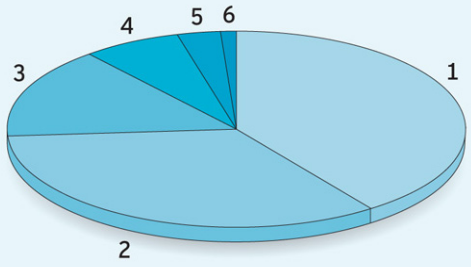
Can Walking and Bicycling Improve Air Quality?

The San Francisco Bay Area has adopted challenging but critical greenhouse gas emissions targets: 7 percent per capita reduction by 2020 and 15 percent per capita reduction by 2035. Walking and bicycling can help realize these goals by replacing short trips and trips to transit.

Most trips in the Bay Area are short; according to the Bay Area Air Quality Management District (BAAQMD), 40 percent of trips are two miles or less. Pollution doesn't increase directly with trip length; a one-mile trip emits up to 70 percent as much pollution as a 10-mile excursion due to cold starts (i.e., when a car hasn't been driven in a few hours and the engine is cool).

BAAQMD estimates that 75 percent of air pollution emissions in the Bay Area are from mobile sources, particularly cars and light duty trucks. Reducing reliance on motor vehicles, particularly for short trips, can significantly reduce greenhouse gas emissions.

CO_2-Equivalent Emissions in the Bay Area, by Major Categories



	Pollution Source	CO_2-Equivalent	Percent
1	Transportation	42	40%
2	Industrial/Commercial	35	34%
3	Electricity/Co-Generation	15	15%
4	Residential Fuel Usage	7	7%
5	Off-Road Equipment	3	3%
6	Agriculture	1	1%
Total		103	100%

Source: BAAQMD, 2007 Source Inventory of Greenhouse Gas Emissions

Emissions in million metric tons/year; data is for 2007

[5] *Livable Places. (No Date). The Cost of Car Ownership. http://www.livableplaces.org/policy/carownership.html*

[6] *Center for Neighborhood Technology. (2005). Driven to Spend: Pumping Dollars out of Our Households and Communities.*

[7] *The Clean Air Partnership. (2009). Bike Lanes, On-Street Parking and Business: A Study of Bloor Street in Toronto's Annex Neighborhood.*

[8] *Centers for Disease Control and Prevention, How much daily physical activity do you need? http://www.cdc.gov/physicalactivity/everyone/guidelines/index.html accessed August 2, 2011.*

[9] *U.S. Department of Health and Human Services. Surgeon General's Vision for a Healthy and Fit Nation. 2010.*

[10] *Feifei, W., McDonald, T., Champagne, L.J., and Edington, D.W. (2004). Relationship of Body Mass Index and Physical Activity to Health Care Costs Among Employees. Journal of Occupational and Environmental Medicine. 46(5):428-436*

1.3. History of Bicycle and Pedestrian Planning in Emeryville

The City adopted its first *Bicycle and Pedestrian Plan* in 1998 and has since constructed many of the recommended facilities. The pedestrian and bicycle projects identified in the 1998 plan were reevaluated and incorporated into the *Emeryville General Plan.* The status of the projects in the 1998 Bicycle and Pedestrian Plan is summarized in **Appendix F**.

Proposed pedestrian pathway along Powell Street.
Source: Powell Street Urban Design Plan

The *General Plan* provides the framework for the projects and programs described in **Chapters 4 through 7**. This Plan adds detail to the *General Plan* projects by designating specific facility type classifications for bikeways and by identifying specific sidewalk and crossing treatments within the *General Plan*'s pedestrian priority zones. The recommended projects include some projects not identified in the *General Plan* and exclude or modify others.

Several other plans are closely related to this Plan. Components of these plans have been incorporated into the improvement strategy contained in **Part 2** as follows:

- The City's ***Capital Improvement Program*** (CIP) lists specific infrastructure projects that the City will pursue over a five-year timeframe. All pedestrian and bicycle projects identified in the 2006-2011 CIP have been incorporated into this Plan. New projects identified here will need to be incorporated into future CIPs for implementation. **Chapter 8, Funding and Implementation,** discusses project implementation in more detail.
- In 2010, the City completed an **Americans with Disabilities** (ADA) ***Self Survey*** identifying locations in the public rights-of-way that do not meet the Americans with Disabilities Act (ADA). The survey considers midblock locations, intersections, and pedestrian signals, and it establishes priorities for improvements. The issues identified in the Survey are currently being incorporated into an *ADA Transition Plan*, which will guide the planning and implementation of program, facility, and sidewalk modifications to meet ADA standards. This Plan incorporates ADA-related improvements into the recommendations, but defers to the *Self Survey* and the *ADA Transition Plan* for a comprehensive list of ADA-related right-of-way improvements.
- The ***Powell Street Urban Design Plan*** presents conceptual streetscape designs for Powell Street from Frontage Road to Christie Avenue, one of the most challenging locations in the city for pedestrians and bicyclists. The improvements would be implemented in phases. This Plan incorporates the pedestrian and bicycle-related improvements put forth in the *Powell Street Urban Design Plan*.
- **County and Regional Plans:** Recommendations from several county and regional plans have been incorporated into this plan: the *Alameda Countywide Strategic Pedestrian Plan* (2006), the *Alameda Countywide Bicycle Plan* (2006), and the *Metropolitan Transportation Commission Regional Bicycle Plan for the San Francisco Bay Area* (2009).

The City is also developing a *Sustainable Transportation Plan* and updating the *Traffic Facilities Impact Fee.*

1.4. Summary of Public Outreach

Public outreach was essential to developing this Plan. Emeryville's citizen-based Bicycle and Pedestrian Advisory Committee (BPAC) closely guided the Plan's development, through monthly meetings which were open to the public. In addition, the broader community was invited to participate through several outlets, which were publicized through postcards sent to every resident, property owner, and business in the City.

Postcards announcing public outreach events and resources were sent to every resident, property owner and business in Emeryville.

Components of the public outreach included:

- **Website** to keep the Emeryville community informed at every stage of Plan development and to invite comments.
- **Survey.** Nearly 120 community members responded to a walking and bicycling survey.
- **Tours.** The City hosted one walking and one biking tour with City staff, elected officials, and interested community members.
- **Outreach to Students.** The City led classroom discussions with 6th through 9th grade students at Emery Secondary School to consider walking and biking issues and to identify potential improvements that would benefit students' travel to and from school.
- **Community Workshops.** The City publicized and held two citywide public workshops to provide additional opportunity for comment.

Insights and recommendations from outreach have informed all aspects of the Plan. Findings from these efforts are summarized at the end of Chapter 3.

1.5. Who is This Plan For?

This Plan is for people of all ages that walk or bicycle in Emeryville and anyone interested in the City's efforts to make these modes safer and more enjoyable. Community members may be most interested in **Chapters 4 through 7**, which describe improvement projects and programmatic recommendations.

Developers and designers of private property will also be interested in **Chapters 4 through 7**, and Priority Project Sheets in **Chapter 8**, to identify projects that may be required as a condition of development, and **Appendices A and B**, which provide resources for the design of pedestrian and bicycle infrastructure.

The Emeryville City Council and committee members will be interested in the recommendations contained in **Chapters 4 through 7**, as well as the prioritization and phasing also included in **Chapter 4**, and the funding and implementation plan described in **Chapter 8**.

City staff, who are ultimately responsible for the Plan's implementation will be most interested in **Chapters 4 through 8** and **Appendices A and B**.

1.6. Plan Organization

This Plan is divided into two parts. Part 1, Purpose, Vision, and Existing Conditions, sets the background for the recommendations contained in Part 2: Implementation Strategy.

Part 1 consists of the following chapters:

- **Chapter 1, Introduction**, describes the purpose of this Plan, the history of pedestrian and bicycle planning in the City of Emeryville, and describes the overall structure of this Plan.
- **Chapter 2, Vision, Goals, and Policies**, describes the future vision for walking and bicycling in Emeryville and supportive goals and specific policies that the City will take to meet this vision.
- **Chapter 3, Existing Conditions**, describes existing pedestrian and bicycle infrastructure; summarizes transit counts and travel patterns; presents a historical analysis of pedestrian and bicycle-related collisions; and identifies gaps in pedestrian and bicycle infrastructure. Chapter 3 also includes a summary of the results of the public outreach program, documenting insights, concerns, and suggestions provided by community members.

Part 2 consists of the following chapters:

- **Chapter 4, Pedestrian and Bicycle Programs**, describes programmatic improvements, such as education and enforcement programs, that are essential to increasing the desirability and safety of walking and biking.
- **Chapter 5: Citywide Improvements**, describes citywide infrastructure projects that should be implemented throughout the city to improve pedestrian and bicycle travel.
- **Chapter 6: Bicycle Boulevards**, describes the City's policy for designating, constructing, and monitoring bicycle boulevards. It includes infrastructure improvements that will enhance the City's bicycle boulevard network.
- **Chapter 7: Site-Specific Projects**, describes specific infrastructure projects that are needed to make it safer and more convenient to walk and bike in Emeryville. The chapter includes maps of projects and a prioritized list of recommendations, including cost estimates for individual projects.
- **Chapter 8 Funding and Implementation**, presents a discussion of the tools for implementing the plan including a funding strategy, phasing and grouping of projects, and an action plan to help the City achieve this Plan's goals.

This Plan is supported by the following appendices that provide information for implementing the recommendations enumerated in the Plan:

- **Appendix A, Resources for the Design of Pedestrian Facilities**, provides guidelines for streets, sidewalks and intersection crossing treatments. The appendix also suggests a design review and implementation checklist for providing pedestrian facilities.
- **Appendix B, Resources for the Design of Bicycle Facilities**, outlines design standards and best practices for bicycle facilities, including on-street bikeways, intersections, innovative facilities, and

bicycle parking. The appendix also suggests a design review and implementation checklist for providing bicycle facilities.

- **Appendix C, Bicycle Boulevard Treatments,** provides the bicycle boulevard best practice research and recommendations for Emeryville's bicycle boulevard network.
- **Appendix D, BTA Compliance**, outlines the information required for the Caltrans Bicycle Transportation Account for funding eligibility.
- **Appendix E, Consistency with the General Plan**, summarizes how this Plan's recommendations differ from the recommendations presented in the Emeryville General Plan.
- **Appendix F, Status of Bikeways from 1998 Plan,** summarizes the implementation status of bikeways recommended for the 1998 Bicycle Plan.

2. Vision, Goals and Policies

The vision, goals and policies presented in this Plan are drawn largely from the *Emeryville General Plan*, which contains numerous policy statements that are supportive of walking and bicycling. The *General Plan*'s Guiding Principles articulate a vision of a livable and diverse city. Four of these principles directly relate to the encouragement of walking and bicycling as everyday activities.

General Plan Guiding Principles related to pedestrian and bicycle connectivity are paraphrased as follows:

- **A connected place**: New and safe bicycle and pedestrian linkages to the San Francisco Bay
- **Enhanced and connected open space network and green streets**: Building on the strength and connectivity of the city's greenways
- **A walkable, fine-grained city, emphasizing pedestrians**: Through improved sidewalks, pathways and streetscapes
- **A diversity of transportation modes and choices**: Fosters and provides incentives for alternative transportation modes.

2.1. Vision Statement

The vision statement expresses what walking and bicycling will be like in Emeryville in the future if the City successfully implements this *Pedestrian and Bicycle Plan*. The vision statement is:

> *Emeryville is a livable city, with a connected network of green streets and a fine-grained transportation network that emphasizes and supports an active and healthy lifestyle. There are new, safe, and enticing pedestrian and bicycle linkages within the City and to the San Francisco Bay and surrounding communities. Community members have a diversity of transportation choices. Walking and bicycling are integral to daily life.*

2.2. Goals and Policies

Goals expand on the vision with more detail, while policies provide more specific direction to implement the goals. Most of the goals and policies identified here are from the *General Plan*'s Transportation Element and are noted with the specific *General Plan* Goal and Policy numbers. <u>New goals and policies that supplement the *General Plan* policies are underlined</u>. All projects and programs recommended by this Plan flow from these vision, goals and policies. An action plan to implement these goals and policies is provided in Chapter 8: Funding and Implementation.

Goal 1: Multi-modal

A transportation system that eliminates the necessity of owning and/or driving personal vehicles because of the availability of convenient and accessible alternative modes of transportation. (*General Plan* T-G-3)

Policies:

P1.1 The design, construction, operation, and maintenance of city streets shall be based on a "complete streets" concept that enables safe, comfortable, and attractive access and travel for pedestrians, bicyclists, motorists, and transit users of all ages and abilities. (*General Plan* T-P-2)

P1.2 To the extent allowed by law, the City's Traffic Impact Fee shall include bicycle, pedestrian, transit, and road improvements so that development pays its fair share toward a circulation system that optimizes travel by all modes. (*General Plan* T-P-6)

P1.3 The City will strive for most trips within Emeryville to occur on foot, on bike, or on transit by providing enticing, safe, and direct pedestrian and bicycle connections to all major destinations and transit, and by making bicycling and walking the easiest and least expensive way to travel within the city.

P1.4 The City will strive to balance the needs of pedestrians, bicyclists, and motorists in all roadway and reconstruction projects.

P1.5 The City will consider health issues in the community design process and in promoting walking and biking as a form of transportation and recreation.

P1.6 The City will implement strategies that manage traffic speed in order to improve safety for pedestrians, bicyclists, and motorists.

P1.7 The City will evaluate the suitability of providing a citywide bicycle sharing system and if feasible, work with local employers, transit agencies, and neighboring communities to plan, fund, and implement a bicycle sharing system.

P1.8 Emeryville will remain up to date on new laws and practice pertaining to pedestrian and bicycle transportation.

P1.9 The City will seek to develop San Pablo Avenue as a green, multi-modal corridor.

Goal 2: A walkable city

A universally accessible, safe, pleasant, convenient, and integrated pedestrian system that provides links within the city and to surrounding communities, and reduces vehicular conflicts. (*General Plan* T-G-4)

Policies:

P2.1 The pedestrian circulation system shall be as set forth in this Plan and the *General Plan* and based on the typologies described in the *General Plan*. (*General Plan* T-P-10)

Crosswalks with good pedestrian access are critical to the pedestrian environment.

P2.2 Sidewalks shall be provided on both sides of all streets; pedestrian connections between new and existing development is required. (*General Plan* T-P-11)

P2.3 Sidewalks shall be safe, comfortable, and accessible for pedestrians. (*General Plan* UD-P-42)

P2.4 The City will plan, upgrade, and maintain pedestrian crossings at intersections and mid-block locations by providing safe, well-marked crosswalks with audio/visual warnings, bulb-outs, and median refuges that reduce crossing widths. (*General Plan* T-P-12)

P2.5 Pedestrian routes will be provided across large blocks, pursuing creative options if necessary such as purchasing private alleys, designating pathways through buildings, and acquiring public access easements. (*General Plan* T-P-13)

P2.6 Establish Pedestrian Priority Zones in Neighborhood Centers, around schools, and in other locations as indicated in the *General Plan*, where wider sidewalks, street lighting, crosswalks, and other pedestrian amenities are emphasized. Link these zones to adjacent land uses to ensure that building frontages respect pedestrians and truck loading takes place on adjacent streets wherever possible. (*General Plan* T-P-14)

P2.7 Walking will be encouraged through building design and ensuring that automobile parking facilities are designed to facilitate convenient pedestrian access within the parking area and between nearby buildings and adjacent sidewalks. Primary pedestrian entries to nonresidential buildings should be from the sidewalk, not from parking facilities. (*General Plan* T-P-15)

P2.8 Safe and direct pedestrian access to Aquatic Park and the peninsula will be provided and maintained. (*General Plan* T-P-20)

P2.9 Safe pedestrian walkways that link to streets and adjacent bus stops will be required of new development. (*General Plan* T-P-16)

P2.10 The City will require new development to minimize the number and width of curb cuts for vehicles to reduce vehicle conflicts with pedestrians. (*General Plan* T-P-17)

P2.11 The City will use the best possible technology as feasible to create the shortest possible wait time for pedestrians at signalized intersections. Particularly, where pedestrian volumes are high, automatic pedestrian walk signals will be provided, where timing allows. Where activation is needed to get a walk signal, a mechanism will be provided to show activation and pedestrian countdown.

P2.12 Where feasible, the City will provide drinking fountains, public toilets, benches, and other pedestrian amenities on public property.

P2.13 The City will evaluate and improve existing and proposed uncontrolled marked crosswalks with the purpose of improving pedestrian safety and, in doing so, enhance pedestrian accessibility and mobility.

P2.14 The City will provide pedestrian-oriented destination signs and walking maps, especially at the transit hubs.

Goal 3: A safe, comprehensive, and integrated bicycle system

Develop a safe, comprehensive, and integrated bicycle system— A system and support facilities throughout the city that encourage accessible bicycling for all community members. (*General Plan* T-G-5)

Policies:

P3.1 The City will develop the bicycle circulation system set forth in the *General Plan* and based on the typologies described in the *General Plan.* (*General Plan* T-P-21)

P3.2 On-street bike routes in the City's *Bicycle and Pedestrian Plan* shall be designated as either Class II (bike lanes) or Class III (signed routes without lanes), as appropriate. (*General Plan* T-P-23)

P3.3 The City will construct the network of bicycle boulevards and monitor them for performance goals, as indicated in Chapter 6 of this Plan.

Pedestrian and bicycle facilities can be integrated to improve awareness and visibility of all modes.

P3.4 Safe, secure, and convenient short- and long-term bicycle parking shall be provided near destinations for all users, including commuters, residents, shoppers, students, and other bicycle travelers. Retail businesses in regional retail areas are encouraged to provide valet bicycle parking. (*General Plan* T-P-24)

P3.5 The City will provide showers and changing facilities in civic buildings for employees and, where practical, support the development of such facilities in commercial buildings.

P3.6 A numbered bike route system with destination signs, consistent with the regional bike route numbering system, shall be developed and implemented with clear signage to bicycle boulevards. (*General Plan* T-P-25)

P3.7 The City will seek to attract a bicycle store, community bicycle shop, bicycle station, and/or other gathering/retail/shop space for bicyclists.

P3.8 The City will improve intersection crossings of bikeways and busy streets and ensure bicycle paths, lanes and routes have good accommodations for crossing high-volume or high-speed roadways.

P3.9 All signals shall have functioning bicycle detection and signal timing should be long enough to allow bicyclists to clear the intersection. The City will use the best technology as feasible to create the shortest possible delay for bicyclists.

Goal 4: A regional bicycle and pedestrian network

Collaborate with countywide regional agencies to coordinate planning and development of County bikeways and trails to support a regional bicycle and pedestrian network.

Policies:

P4.1 The City's preferred Bay Trail route through Emeryville is set forth in the *General Plan*, including the main trail between Frontage Road in Berkeley and Mandela Parkway in Oakland, and spur trails to the Marina along Powell Street and to the Bay Bridge along the east side of Interstate 80. (*General Plan* T-P-22)

The Emeryville Greenway is a north-south linear park and pedestrian and bicycle path woven through commercial and residential areas utilizing an abandoned railroad.

P4.2 The City will provide bikeways, bike parking, and pedestrian walkways to support connections with transit, including Amtrak, Emery Go Round, AC Transit, and MacArthur, West Oakland, and Ashby BART Stations.

P4.3 The City, in collaboration with stakeholders and interested agencies and parties, will study the feasibility of a pedestrian/bicycle trail along the west side of I-80, east of the Emeryville Crescent, to provide access from the Bay Trail to the eastern span of the Bay Bridge. (*General Plan* T-P-18)

P4.4 Following completion of the new east span of the Bay Bridge, the west span should be retrofitted with a pathway to provide continuous pedestrian and bicycle access between San Francisco and the East Bay. (*General Plan* T-P-19)

Goal 5: Education, encouragement and enforcement to support walking and bicycling

Increase the safety of bicyclists and pedestrians and the health of the community through education, encouragement and enforcement to promote walking and bicycling.

Policies:

P5.1 Bicycling will be promoted through public education, including the publication of literature concerning bicycle safety and the travel, health and environmental benefits of bicycling. (*General Plan* T-P-26)

P5.2 The City will promote programs that teach people good walking and bicycling habits to last a lifetime. Examples include "Safe Routes to School," children's bicycle safety rodeos, adult bicycle education courses, and traffic citation diversion programs.

P5.3 The City will continue to develop materials that increase public awareness of available facilities for safe walking and bicycling, such as a walking/biking map, walking tours/bike tours of the city, street

fairs, and pedestrian/bicyclist safety pamphlets, and promote these materials on the City website and at special events.

P5.4 The City will support special events that encourage people to bike or walk instead of drive, such as Bike to Work Day, International Walk and Bike to School Day, and the Bike Commute Challenge.

P5.5 The City will establish a bicycle/pedestrian route around the city, which highlights locations relevant to Emeryville's history and art.

Goal 6: Funding for pedestrian and bicycle projects and programs

Fund pedestrian and bicycle projects and programs through existing and new sources of local, regional, state, and federal funding programs

Policies:

P6.1 The City will continue to apply for county, regional, state and federal funding opportunities, continue to collect Transportation Improvement Fees, include pedestrian and bicycling facilities as conditions of development, and include pedestrian and bicycle projects and programs in the City *Capital Improvement Program.*

P6.2 The City will update its *Pedestrian and Bicycle Plan* at least every ten years, or as changing conditions warrant, to maintain eligibility for Caltrans funding.

3. Existing Conditions and Needs Analysis

This chapter describes and analyzes the existing conditions for walking and bicycling in Emeryville. It begins by discussing pedestrian facilities, multi-use paths and overcrossings, and on-street bikeways, and then presents travel patterns of pedestrians, bicyclists, and transit users in Emeryville. It summarizes pedestrian and bicyclist collision data, key network gaps and opportunities, and the City's existing education, encouragement, and enforcement programs that support walking and bicycling. It concludes with a summary of insights, concerns, and suggestions identified by community members during the development of this Plan.

3.1. Walking Conditions in Emeryville

Emeryville's small size makes it an ideal city for walking. This section reviews the existing pedestrian facilities and amenities and identifies opportunities for improvement. The following review of walking conditions is drawn from fieldwork, the draft *ADA Transition Plan* (2010), and input from City staff, the Bicycle and Pedestrian Advisory Committee, and members of the public. **Map 3-1** shows Emeryville's existing pedestrian conditions.

San Pablo Avenue provides wide sidewalks with retail, trees, lights, and transit accommodations.

3.1.1 Sidewalks

Sidewalks exist along both sides of most streets in Emeryville, with the exception of a few locations in the northeast industrial area of the city, on one side of Shellmound Street, and in the Park Avenue District. Sidewalk design varies from wide sidewalks with street trees— such as along San Pablo Avenue— to narrow sidewalks cluttered with facilities—such as along 40th Street and the North Bayfront area. Traditional residential neighborhoods and areas that have seen recent redevelopment generally have street trees and landscaping, while other areas provide only basic pedestrian amenities.


Sidewalk blocked by building face and parked vehicles.

In some locations sidewalk design is governed by area plans including the *Shellmound Streetscape Design Guidelines* (2007), *Park Avenue District Plan* (2006), *North Hollis Urban Design Program* (2002), and the *Powell Street Urban Design Plan* (2010). In 2010 the City adopted citywide design guidelines, the *Emeryville Design Guidelines*, which include guidelines for sidewalk design for all areas of the city. Off-street pathways provide additional pedestrian connections through the city, and are described in **Section 3.3.**

3.1.2 Intersections

There are a variety of intersection and mid-block crossing treatments throughout Emeryville, including parallel striped crosswalks at signals, countdown signals, pedestrian-actuated signals with audio/visual warnings, bulb-outs, and median refuges that reduce crossing distances.

Prior to the development of this Plan, Emeryville did not have an established crosswalk policy for when, where, and how to mark crossings. However, the City has been generally consistent in marking crosswalks at intersections and key mid-block locations. For busier intersections or mid-block crossings, continental-style crosswalks are often used. These consist of two-foot bars spaced two feet apart. At schools, crosswalks are yellow, as required by the California Department of Transportation (Caltrans).

The Powell Street Interchange presents long crossing distances and high vehicle speeds.

Marked vs. Unmarked Crossings

In California, it is legal for pedestrians to cross at any intersection, whether or not a crosswalk is painted, except where crossing is expressly prohibited. Marked crossings reinforce the location and legitimacy of a crossing.

Innovative Intersection Treatments

The traffic signals at the intersections of Powell Street and Christie Avenue and Shellmound Street and Ohlone Way include a leading pedestrian interval. At these intersections, pedestrians are given a walk signal before parallel traffic is given a green light, which allows pedestrians to enter the crosswalk before the turning vehicles may proceed, thereby reducing the chance that pedestrians will be cut off by turning motorists.

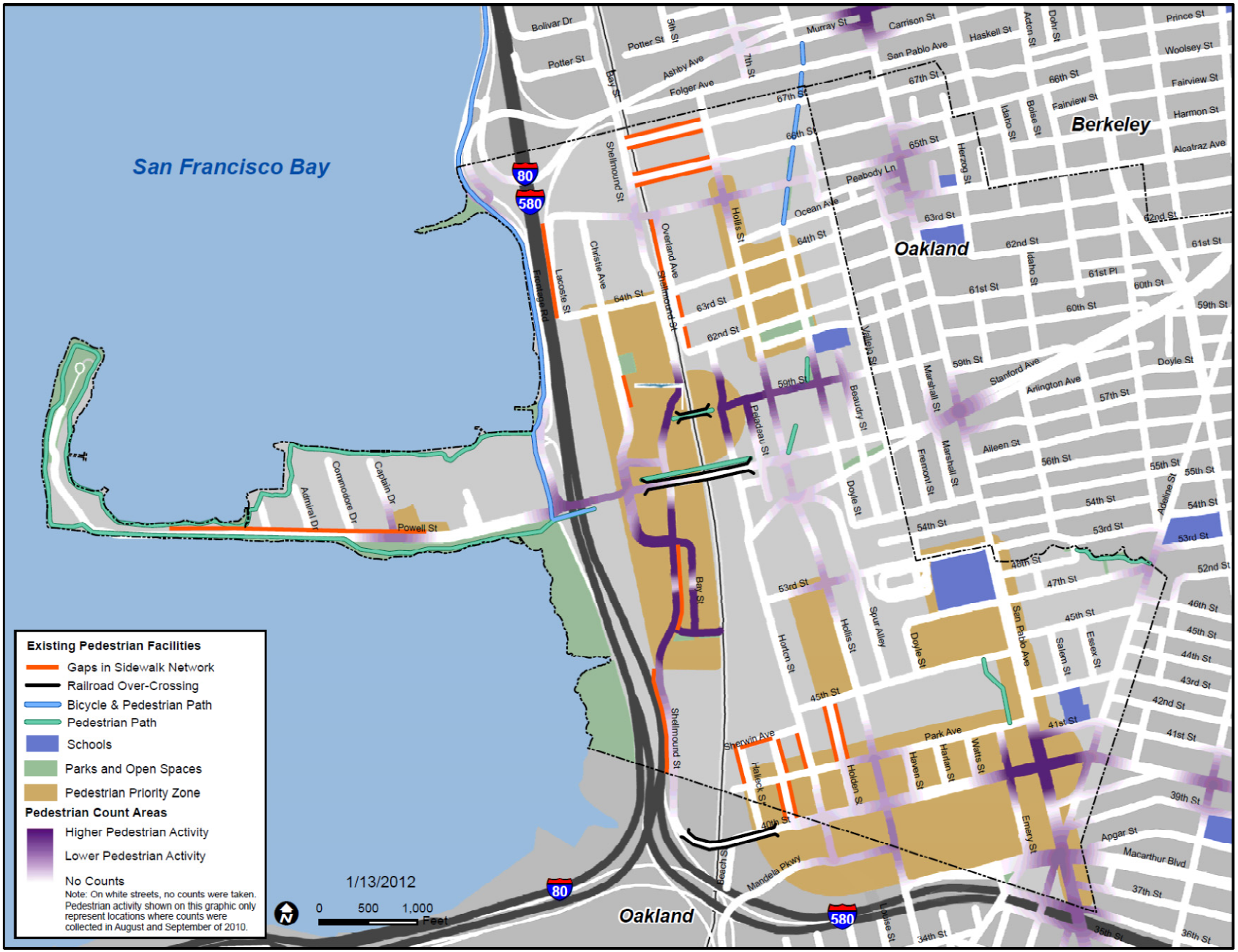
The City has installed an all-way pedestrian phase at the intersection of Christie Avenue and Shellmound Street. While this phase is typically used as a pedestrian scramble, where pedestrians can cross in all directions at once including diagonally, diagonal crossing is not permitted at the Christie Avenue/Shellmound Street intersection. While this treatment allows safer pedestrian movements by limiting conflicts with turning motor vehicles, it also increases the time a pedestrian must wait before they are given a walk signal.

A high-visibility continental-style crosswalk for the Emeryville Greenway crossing at 66th Street.

Traffic Signals

All of the traffic signals in Emeryville require pedestrians to push a button to activate the walk signal. At most signals, a pedestrian arriving immediately after the light turns green must wait a full cycle to get a walk signal. Most pedestrian crossings at signalized intersections use an audible beeper to guide pedestrians with visual impairments across the intersection.

Map 3-1 shows the existing and proposed pedestrian circulation system and identifies sidewalk gaps.



Map 3-1. Existing Pedestrian Conditions

3.2. Connections across Barriers

Because the railroad tracks and I-80 present major barriers to east-west travel in Emeryville, pedestrian and bicycle crossings are especially important. Grade-separated railroad crossings are located at 40th Street, Powell Street, and the Amtrak station. At-grade railroad crossings are located at 65th, 66th, and 67th Streets. The proposed South Bayfront Bridge would connect 53rd Street with Ohlone Way and Bay Street and provide a much-needed connection across the railroad tracks in southern Emeryville. Plans for a transit center (Emery Station West) include improvements to the approach to the existing Amtrak overcrossing.

Currently there is only one freeway crossing in the city, at Powell Street. The Powell Street interchange is a challenging environment for pedestrians and bicyclists due to the on- and off-ramps, high speeds and limited visibility throughout the area. Fortunately, the City has extensive plans to redesign the area to provide better amenities for pedestrians, bicyclists and transit users. The City also has plans to construct a bicycle and pedestrian bridge over I-80, connecting 65th Street with the Bay Trail. Emeryville is working with Caltrans and the City of Oakland to develop a pedestrian and bicycle undercrossing of I-80 connecting the Bay Trail on Shellmound Street at the IKEA entrance to the proposed pathway to the Bay Bridge East Span. This project would be built within Oakland city limits.

Table 3-1 summarizes existing crossings of the railroad tracks and freeway.

Table 3-1. Existing Crossings of Railroad Tracks and I-80

Name	Type of Crossing	Notes
Railroad Crossings		
40th Street	Roadway Crossing	• Buffered bike lanes provided on both sides • Sidewalk provided on north side
Powell Street Bridge	Roadway Crossing Pedestrian-Only Overcrossing	• Roadway crossing has no bike lanes or sidewalks • Pedestrian-only overcrossing only accessible by several flights of stairs, making it inaccessible to bicyclists, people using mobility assistive devices (e.g. wheelchairs) • Can be difficult to find; personal safety concerns due to the poor lighting and sightlines
Bridge at Amtrak Station	Ped/Bike Overcrossing	• Connects Horton Street with the Public Market on Shellmound Street • Has stairs and an elevator • Not easily identifiable from 59th and Horton Streets • Connection to Shellmound Street passes through a parking lot • Plans for the Emery Station West transit center and the Market Place include improvements to the approaches
65th Street	At-Grade	• Class II bike lanes provide bicycle access • Sidewalks on both sides
66th Street	At-Grade	• No sidewalks
67th Street	At-Grade	• No sidewalks
I-80 Crossings		
Powell Street	Undercrossing	• Narrow sidewalks provided on north side, bike path on south side • Ramp and intersection modifications to improve pedestrian and bicycle safety are currently under construction. The *Powell Street Urban Design Plan* (2010) proposes comprehensive redesign of the area to provide better amenities for pedestrians, bicyclists and transit users

3.3. Paths

Paths include pedestrian-only paths, which are intended only for pedestrians—including people using wheelchairs or other assistive devices—and multi-use paths, which permit bicyclists, pedestrians and other non-motorized uses. Pedestrian-only paths can be paved, hard-packed dirt or decomposed granite, while multi-use paths must be paved, and may include a yellow striped centerline or other pavement markings. Multi-use path design should meet Caltrans standards, which are described briefly in Section 3.4.

Table 3-2 lists Emeryville's existing paths. The City's two major paths, the Bay Trail and the Emeryville Greenway, are described in more detail below.

Table 3-2. Emeryville Existing Pedestrian Paths and Multi-Use Paths

Name	Type of Path	Location	Mileage	Notes
Bay Trail	Multi-use	Along bay side of Frontage Road from north city limit to Powell Street, then to Shellmound St	1.2	• Continues north into Berkeley • The entire Bay Trail alignment through Emeryville includes both multi-use paths and bike lane segments. See **Map 3-2** for the alignment.
Joseph Emery Park Path	Multi-use	West of San Pablo Avenue from Park Avenue to 45th Street	0.2	
Marina Park Path	Pedestrian Path	Along Powell Street on peninsula	2.8	
North-South Greenway	Multi-use/ Pedestrian Path	Along former railroad right of way from north city limit to Powell Street at Hollis Street	0.5 (0.2 multi-use)	• Alignment follows railroad right of way and includes Doyle Street Bicycle Boulevard • Between Ocean Avenue and 59th Street, bicyclists are routed to Doyle Street Bicycle Boulevard and pedestrians use sidewalk. • Between 59th Street and Powell Street, the path becomes pedestrian-only and is incomplete • Plans are in place to continue the path to the south
Temescal Creek Park Path	Pedestrian Path	Along Temescal Creek from 48th Street to Adeline Street	0.2	

Bay Trail

Textured pavement on the Bay Trail at Frontage Road.

The Bay Trail is a planned recreational corridor that is intended to encircle San Francisco and San Pablo Bays, with 500 miles of continuous off-street trails. Within Emeryville, the Bay Trail includes both on-street bikeways and off-street paths. Along Powell Street and north of Powell Street, the Bay Trail is a multi-use path that continues north into Berkeley and provides access to Point Emery, the Berkeley Marina, and The Towers office complex. South of Powell Street, the Bay Trail transitions to bike lanes and a sidewalk and travels along Shellmound Street and 40th Street and connects to Mandela Parkway in Oakland. The connection between the multi-use path on Powell Street and the bike lanes on Shellmound Street is convoluted and includes a segment along an easement through the Sheraton Four Points Hotel parking lot.

Emeryville Greenway

Sections of the Emeryville Greenway include a soft-surface pedestrian path and adjacent paved multi-use path.

The City has plans to complete a Greenway composed of paths, green streets, bicycle boulevards and parks which would extend from the 9th Street bicycle boulevard connection in Berkeley to the Bay Trail at the southern City limits. The Greenway is a Rails-to-Trails project that follows the alignment of former railroad right of way. The City has constructed portions of this greenway, including a multi-use path extending from Ocean Avenue at the terminus of the Doyle Street Bicycle Boulevard north to the Berkeley border above 67th Street. The path continues in Berkeley to Murray Street. South of Doyle Street, the Greenway continues as a pedestrian-only pathway to the intersection of Powell and Hollis Streets.

The multi-use path includes separate bicycle and pedestrian paths, landscaping, pedestrian-scale lighting, benches and bicycle racks. Adjacent apartments front the greenway, providing "eyes on the street." Crossings at 65th, 66th, and 67th Streets include curb extensions, advance yield markings, and striped crosswalks.

The path will connect north across Ashby Avenue to the 9th Street Bicycle Boulevard in Berkeley and south to the planned Horton Landing Park and then to Bay Street via the planned South Bayfront bridge. In Emeryville, the long-term plan is to extend the pedestrian-only path south to Horton Street (adjacent to bike lanes on Stanford Avenue), then continuing it as a multi-use path to Halleck or Hubbard Streets at Sherwin Avenue.

3.4. Bikeways and Bike Parking

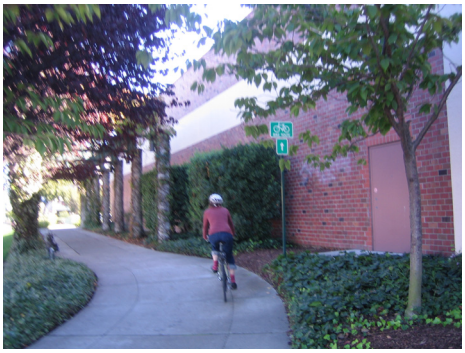
The California Highway Design Manual (HDM) and the California Manual of Uniform Traffic Control Devices (CA MUTCD) present standards that the City of Emeryville is required to follow when designing bikeways. The term "bikeways" refers to three Caltrans defined classifications: Class I bike paths/multi-use paths, Class II bike lanes, and Class III bike routes. Existing bikeways are listed in **Table 3-3** and shown in **Map 3-2**.

Designated Bikeways

In California, unless it is expressly forbidden, bicyclists are legally allowed to ride on any roadway, regardless of whether that roadway has bike lanes or bike route signs.

3.4.1 Class I Multi-Use Paths

Class I bikeways or multi-use paths provide bicycle travel on a paved right of way completely separate from any street or highway. These paths are commonly used by bicyclists, pedestrians, joggers, in-line skaters, and others. Multi-use paths are separated from roadways, paved and at least eight feet wide. Emeryville has 1.6 miles of Class I multi-use paths. The city's multi-use paths are described in **Section 3.3**.



Class I Multi-Use Path.

3.4.2 Class II Bicycle Lanes

Class II bike lanes are striped lanes on roadways for one-way bicycle travel. Bike lanes are at least five feet wide and also include bicycle lane signage. Bike lanes are primarily striped along streets with higher traffic volumes. The buffered bike lane on the 40th Street Bridge is the only one of its kind in the city. It provides crucial protection for bicyclists travelling between destinations along Shellmound Street and residential neighborhoods. Emeryville has 4.0 miles of striped bike lanes.

Class II Bike Lane striping.

3.4.3 Class III Bike Routes

Class III bike routes are roadways where bicyclists and motorists share a travel lane, and are designated by bike route signs. Bicycle routes typically fill in the bicycle network where Class II facilities or bicycle boulevards may not be appropriate. Shared lane markings may be used on Class III bike routes. Emeryville has 0.4 miles of Class III bike routes.

Class III Bike Route sign.

3.4.4 Bicycle Boulevards

Bicycle boulevards are streets with low traffic volume that have been optimized for bicycle travel through traffic calming, diversion, signage, pavement markings, and intersection crossing treatments. When correctly implemented, they are shared roadway facilities that are comfortable and attractive to bicyclists with a wide range of abilities and ages. Through automobile use is discouraged on bicycle boulevards. Bicycle boulevards are not recognized by Caltrans. Emeryville has 2.0 miles of bicycle boulevards.

Bicycle Boulevards include signs and pavement markings.

Table 3-3. Existing On-Street Bikeways

Name	Start	End	Mileage
Class I Multi-Use Paths			
See Table 3-2 on page 3-5			1.6
Class II Bike Lanes			
40th Street	Shellmound St	San Pablo Ave	0.6
65th Street	Shellmound St	Greenway	0.3
Adeline Street	N. City Limit	S City Limits	0.7
Emery Street	40th Street	Macarthur Blvd	0.2
Powell Street	Frontage Rd	Marina Area	0.6
Shellmound Street	N City Limits	S City Limits	1.5
Stanford Avenue	Horton St	Hollis St	0.1
Class II Bike Lanes Total			4.0
Class III Bike Routes			
Spur Alley	53rd Street	45th Street	0.2
Hollis Street	40th St	S. City Limit	0.1
53rd Street	Horton St	Hollis Street	0.1
Class III Bike Routes Total			0.4
Bicycle Boulevards			
45th Street	Hollis St	San Pablo Ave	0.3
59th Street	Horton St	Doyle St	0.2
Doyle Street	59th St	Ocean St	0.3
Horton Street/ Overland Avenue	65th St	40th St	1.2
Bicycle Boulevards Total			2.0
Bikeways Total			**8.2**

3.4.5 Signage

Emeryville uses standard Caltrans signage on bike lanes and bike routes, as well as purple bicycle boulevard signage along the bicycle boulevards. The bicycle boulevard signing conforms with signs used on bicycle boulevards in Berkeley, which indicate direction and distance to key destinations. With the exception of the bicycle boulevard signage, the City has not installed bicycle destination signage. There are no walking maps or pedestrian-oriented destination signs.

Bicycle boulevard signs are purple to correspond with the Berkeley signs.

3.4.6 Connections to Adjacent Communities

Oakland and Berkeley are closely integrated with Emeryville and the bicycle plans for both cities include connections to employment and shopping destinations in Emeryville, shown in **Table 3-4**. Routes identified as countywide corridors in the *Alameda Countywide Bicycle Plan* (2006) are noted in the table.

Table 3-4. Bikeway Connections to Adjacent Communities

Road in Emeryville	Road in Adjacent Community	Notes
Connections in Berkeley		
Shellmound Street (Class II)	Bay Street in Berkeley (no facility)	Access to the Berkeley Aquatic Park, the ped/bike bridge over I-80, and west Berkeley
Hollis Street (no facility)	Folger Avenue (Class III)	Route somewhat confusing. The 9th Street Bikeway will provide a better connection along this corridor
Bay Trail (Class I)	Bay Trail (Class I)	Alameda Countywide Corridor 5 Planned to encircle the San Francisco and San Pablo Bays
Greenway (Class I), 59th Street, Horton Street Bicycle Boulevard	9th Street Bicycle Boulevard	Alameda Countywide Corridor 25
Connections in Oakland		
40th Street (Class II)	40th Street (proposed Class III)	Connects Emeryville to the MacArthur BART station and is slated for restriping in the *Oakland Bicycle Master Plan.*
65th Street (Class II)	Mabel Street (proposed Class III)/ Russell Street Bicycle Boulevard	Alameda Countywide Corridor 45 connecting Russell Street to the Bay Trail
Bay Trail (Class I) & Horton Street(Class II)	Mandela Parkway (Class II)	Access to the Port of Oakland and the West Oakland BART station
Adeline Street (Class II)	Adeline Street (proposed on-street)	Oakland plans to install bike lanes similar to Emeryville's at some point in the future
Hollis Street (Class III)	Hollis Street (proposed on-street)	
53rd Street (Bicycle Boulevard)	53rd Street (proposed Bicycle Boulevard)	Crosses San Pablo Avenue at a traffic signal. Connects with Oakland bike route on 55th St which goes to Rockridge BART
Regional Connections		
Bay Trail (Corridor 5)	Bay Trail (Class I) in Berkeley and Mandela Parkway (Class II) in Oakland	Connections to Albany, San Leandro, Alameda Countywide corridors, Hayward, Union City, Newark, and Fremont. Partially connected segments
66th and 65th Street, planned I-80 Overcrossing	Russell Street Bicycle Boulevard to the Bay Trail	Via the Emeryville Greenway and 9th Street

3.4.7 Bicycle Parking

A staple-style bicycle rack provides two points of contact.

Bicycle parking is provided at many destinations in Emeryville. Parks and public buildings have bicycle racks, though they may be undesirable models in some cases. Most new multi-unit residential buildings and mixed-use or commercial developments include facilities for cyclists pursuant to the City's Bicycle Parking Ordinance. The City has a free bike rack installation program for businesses and a street furniture catalog was recently approved.

Community members have expressed concern about the lack of bicycle parking in Emeryville, in some neighborhood locations as well as at large retail areas such as the East BayBridge Shopping Center and Powell Street Plaza and recently opened cafes. Community members noted that more bike parking was needed at Bay Street.

Map 3-2. Existing Bicycle Conditions

3.5. Walking, Biking, and Transit Patterns in Emeryville

Understanding transportation trends and travel patterns enables the City of Emeryville to craft policies and identify priority projects that will best serve pedestrians and bicyclists. This section incorporates information from the City's 2010 multimodal counts, the *Walking and Biking Survey* conducted for this Plan, the U.S. Census and American Community Survey, and transit ridership data.

3.5.1 Walking and Bicycling Demand

Existing bicycling and walking levels are estimated from available Census data and from counts of motor vehicle traffic and bicycles and pedestrians that were performed in August and September 2010.

Emeryville Residents Journey to Work Mode Split

Table 3-5 presents journey to work data for Emeryville and compares it to Alameda County, California, and the United States. In 2000, approximately 56 residents in Emeryville bicycled to work and approximately 268 residents walked to work. This represents 1.4 percent and 6.7 percent of commuters, respectively. Emeryville's bicycle commuting rate is similar to Alameda County's, and its pedestrian commuting rate is much higher than Alameda County.

Table 3-5. Journey to Work (Place of Residence)

Location	Bike	Walk	Drive Alone	Transit	Carpool and Other
Emeryville	1.4%	6.7%	60.1%	20.1%	11.7%
Alameda County	1.3%	3.4%	68.8%	11.0%	15.5%
California	0.9%	3.0%	74.7%	5.3%	16.1%
United States	0.4%	3.0%	78.2%	4.9%	13.5%

Source: US Census 2000

Given the high level of transit use among Emeryville residents, improving pedestrian and bicycle connections to transit will sustain the high level of transit ridership. Providing convenient and safe bicycle connections to employment in downtown Oakland, south Berkeley, and other nearby employment centers may further improve the bicycle and walking mode share.

Emeryville Workers Journey to Work Mode Split

The 2000 Census also provides data according to employment locations. The data show that Emeryville workers are less likely to use alternative forms of transportation than Emeryville residents. Of 18,100 workers in Emeryville, 250 (1.4 percent) bicycled to work and 505 (2.8 percent) walked. **Table 3-6** shows Journey to Work data for workers in Emeryville and nearby cities. Emeryville workers are more likely to bicycle than Oakland workers, but both walking and biking are much more common in Berkeley. This data suggests that there is potential for Emeryville to shift people toward walking and biking, as has been done in neighboring communities.

Table 3-6. Journey to Work (Place of Work)

Location	Bike	Walk	Drive Alone	Transit	Carpool and Other
Emeryville	1.4%	2.8%	75.2%	6.0%	14.6%
Berkeley	5.0%	10.7%	54.4%	11.8%	18.1%
Oakland	0.8%	3.2%	64.1%	5.3%	26.6%

Source: US Census 2000

3.5.2 Pedestrian Activity

Pedestrian activity in Emeryville is oriented around major shopping destinations and transit hubs: Bay Street, the 40th Street Transit Hub (between San Pablo Avenue and Adeline Street), Hollis Street, Shellmound Street and 59th Street. Count results are shown in **Map 3-3.**

Providing higher quality pedestrian and bicycle connections between activity centers and constructing new connections across barriers will encourage residents and non-residents alike to consider alternate modes of transportation to their shopping and transit destinations.

3.5.3 Bicycle Activity

As shown in **Map 3-4**, most of the bicycling activity is evenly spread along several corridors. This pattern is likely due to less bicycling activity in Emeryville as compared to walking and longer trip lengths for bicycle trips; bicyclists primarily travel cross-town and between neighboring cities.

It is likely that as bicycle connections to neighboring communities are improved, bicyclists will concentrate along specific corridors. In the meantime, improvements should address bicycling throughout the city, with particular attention paid to the corridors that connect across barriers—40th Street, 59th Street, 65th Street—and those that connect to adjacent communities: San Pablo Avenue and Adeline Street.

Pedestrian and Bicycle Counts

The City conducted pedestrian and bicycle counts at 47 intersections in Emeryville in August and September, 2010.

Areas with the most weekday pedestrians include:

- Ohlone Way at Bay St (833 peds)
- 40th St at San Pablo Ave (217 peds)
- Ashby Ave at San Pablo Ave (160 peds)

Areas with the most weekday bicyclists include:

- 40th St at San Pablo Ave (95 bikes)
- Adeline St at San Pablo Ave (78 bikes)
- 40th St at Adeline St (76 bikes)

Map 3-3. Weekday Peak Hour Pedestrian Counts

Map 3-4. Weekday Peak Hour Bicycle Counts

3.5.4 Transit Trips

High-quality, high-frequency, dense transit supports walking and bicycling. Transit extends the reach of pedestrians and bicyclists, and makes it easier for people to live their day-to-day life without needing to drive. Emeryville's transit services are summarized below.

- **Alameda-Contra Costa Transit District (AC Transit)** provides local and transbay buses, including the 72R Rapid along San Pablo Avenue. All buses have bike racks and wheelchair lifts.
- **Bay Area Rapid Transit (BART)** stations do not directly serve Emeryville, but MacArthur Station on 40th Street in Oakland is only two-thirds of a mile from Emeryville. Electronic bicycle lockers are available for rent.
- The **Emery Go-Round** is a free shuttle that operates three routes in Emeryville, connecting the MacArthur BART with the city's employers and shopping centers. Buses have a front-mounted bicycle racks, and bicycles are permitted inside buses at the driver's discretion if the rack is full.
- The **Emeryville Amtrak Station** at Horton and 59th Streets serves four Amtrak routes, including Capitol Corridor trains connecting to Sacramento and San Jose. Passengers traveling to San Francisco transfer to Amtrak busses at this station. Bicycles are permitted on cars and lockers are available at the station. The approved Emery Station West project will include a multi-modal transit center serving the Amtrak station, AC Transit, and Emery Go-Round. A bike station will also be included on-site.

Table 3-7 provides ridership data for primary stops—those with the highest transit ridership, multi-modal transit connections or key shopping and work destinations within the City of Emeryville. (Table C in Appendix D defines bus stops in more detail.)

Table 3-7. Primary Transit Stops

Location	Description	Daily Ridership
40th Street Transit Hub and Rapid Bus Stop on San Pablo Avenue (two stops)	Transit Hub	1,230
Bay Street / Shellmound Street / Ikea (two stops)	Shopping Center	1,100
Amtrak Station / 59th Street / Horton Street /Hollis (three stops)	Transit Hub	620
Towers / Hilton Garden Inn (two stops)	Offices / Hotel	480
40th Street / Emery Street	Shopping Center / Transit Hub	418
Christie Avenue / Shellmound Way / Public Market (four stops)	Offices / Retail	424
Shellmound Street / Christie Avenue / Bay Street / Hotel (3 stops)	Shopping Center/ Retail	440
65th Street / Shellmound Street (three stops)	Housing/College	300

3.6. Collision Analysis

An understanding of pedestrian and bicycle collisions enables the City to identify hot spots and implement countermeasures that will improve pedestrian and bicyclist safety. The most readily available historical collision data is available through the California Highway Patrol's Statewide Integrated Traffic Records System (SWITRS). This database provides detailed information about all types of traffic collisions, but only includes collisions on public roadways reported by police officers. Near misses and unreported collisions, and collisions on private property or on paths are not included, thus under-representing the true number of incidents.

Figure 3-1 shows pedestrian- and bicycle-related collisions in Emeryville between 2004 and 2009. While there were approximately the same number of pedestrian and bicyclist collisions over the study period, pedestrian collisions tended to be more severe, resulting in three fatalities and 36 injuries. The number of bicycle collisions is trending upward, but there is no clear trend to pedestrian-related collisions.

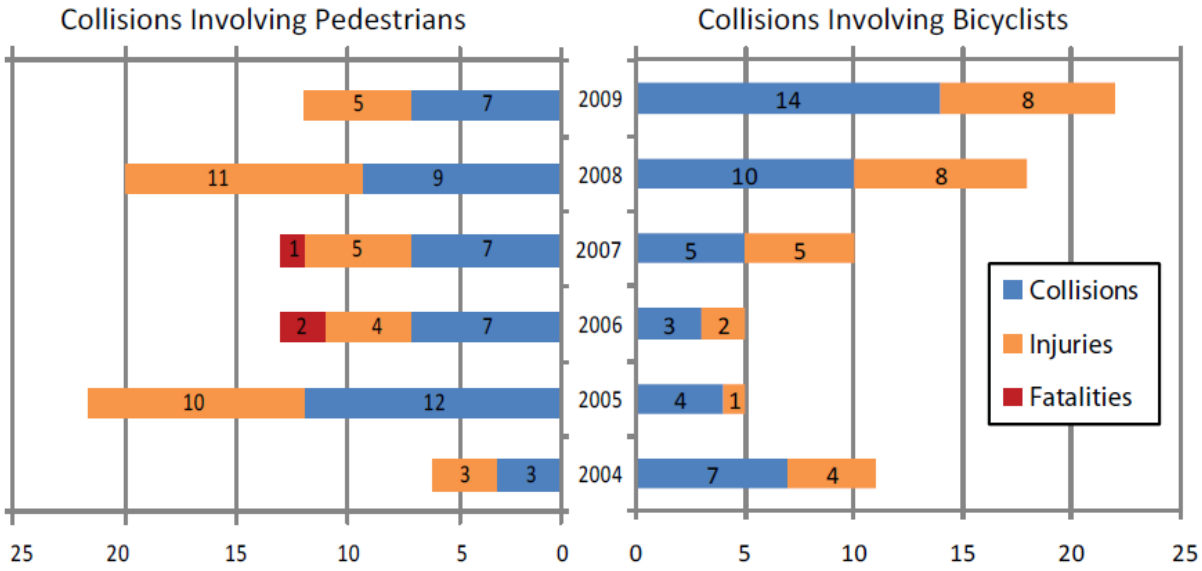


Figure 3-1. Collisions Involving Pedestrians and Bicyclists, 2004-2009

Figure 3-2 shows pedestrian and bicycle collision rates per 1,000 population in Emeryville and neighboring cities. Rates are calculated from the population of each city and therefore do not account for the generally higher rates of walking and biking that occur in Berkeley or the significant number of workers in Emeryville. However, the rates do provide a general comparison of pedestrian and bicycle safety. Emeryville's pedestrian and bicycle collision rates are somewhat higher than those of Oakland and Albany, and lower than those of Berkeley.

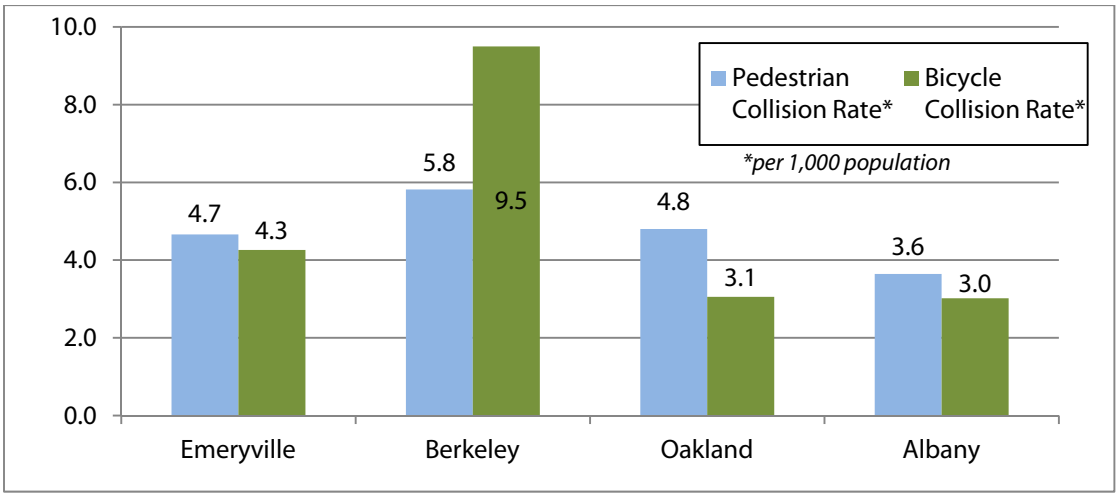


Figure 3-2. Collision rates in Emeryville and nearby cities

3.6.1 Fault of Collisions Involving Pedestrians and Bicyclists

In 67 percent of pedestrian-related collisions in Emeryville, the motorist was deemed to be at fault. For 17 of the 27 such collisions, the motorist was cited for violation of the pedestrian right-of-way. In 12 of the 13 collisions where the pedestrian was deemed responsible, the officer cited a pedestrian violation.

Bicyclists and motorists were deemed to be at fault equally. The most common violation among bicyclists was wrong-way riding, which occurred in 44 percent of bicyclist-at-fault collisions. Improper turning was the most common violation among motorists at fault in a bicycle collision, accounting for 41 percent of motorist-at-fault collisions.

3.6.2 Location of Pedestrian and Bicycle Collisions

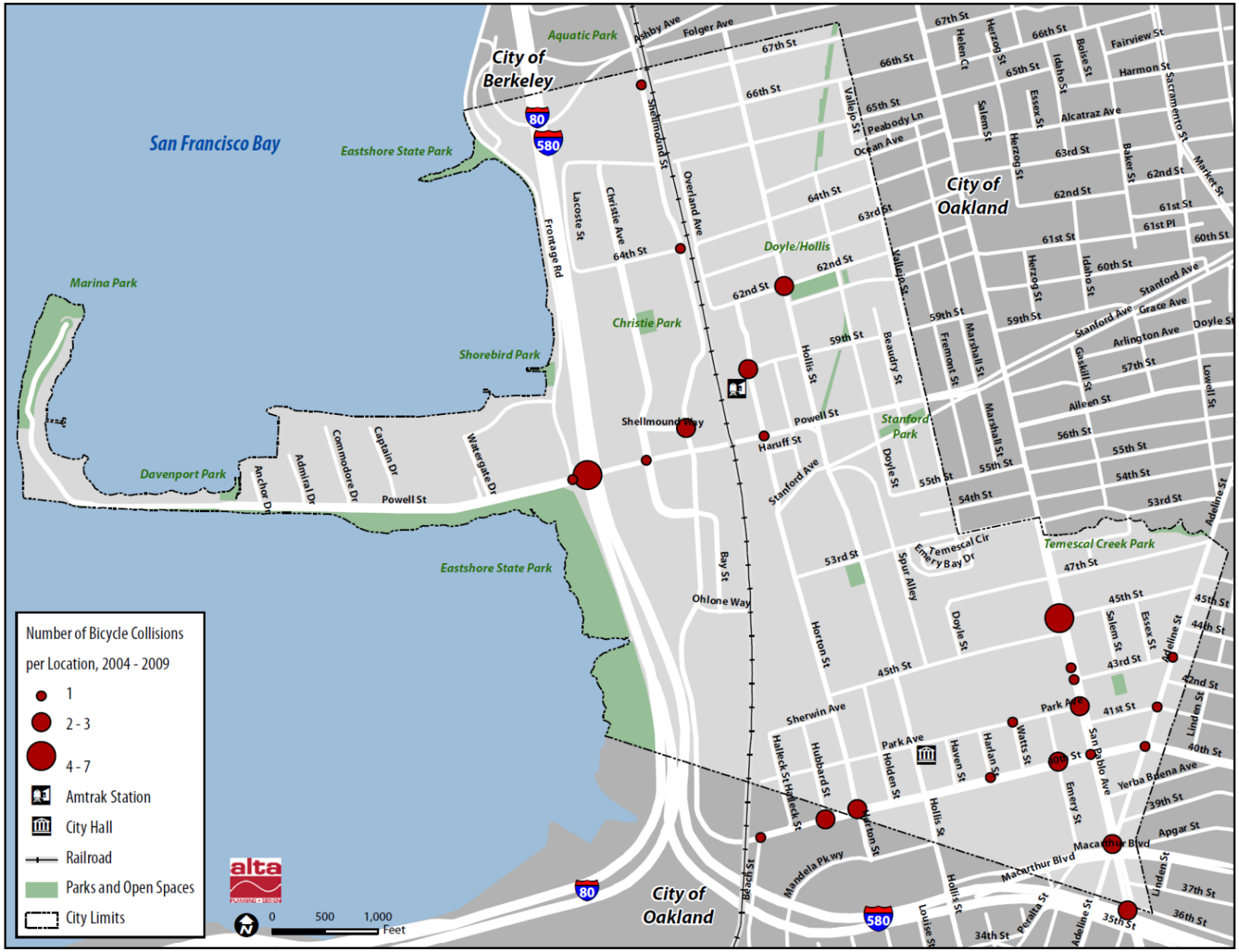
Maps 3-5 and 3-6 show the locations with the most collisions involving pedestrians or bicyclists. Many intersections along San Pablo Avenue have experienced crashes involving both types of users. Fortieth Street also has several high-frequency collision intersections, including at Horton Street and at Harlan Street. Several bicycle collisions have been reported adjacent to underpasses and may be a result of reduced visibility.

Table 3-8 compares the number of pedestrian and bicycle collisions on San Pablo Avenue to neighboring jurisdictions from 2004 – 2009. While Emeryville and Berkeley have a similar number of pedestrian collisions per mile, Emeryville has more bicycle collisions, perhaps due to a lack of alternative routes. Oakland, where traffic volumes are generally lower, has fewer pedestrian and bicycle crashes than either neighboring city.

Table 3-8: San Pablo Avenue Collisions

City	Pedestrian Crashes	Bicycle Crashes	Length (miles)	Ped. Crashes per Mile	Bicycle Crashes per Mile
Emeryville	17	18	0.71	23.9	25.4
Berkeley	58	49	2.35	24.7	20.9
Oakland	41	38	2.44	16.8	15.6

Map 3-5. Pedestrian Collisions (2004-2009)



Map 3-6. Bicycle Collisions (2004-2009)

3.6.3 Collision Risk

The total number of collisions at a location only tells one part of the story. To fully understand pedestrian and bicycle collision risk, one must also take into account the total number of pedestrians and bicyclists at a particular intersection. Risk can be quantified by the total number of collisions divided by the estimated number of pedestrians and bicyclists using the intersection. The volumes shown in **Table 3-9** have been extrapolated from peak hour counts using factors obtained from 24-hour counts on the Horton-Overland bicycle boulevard to provide a reasonable estimate of weekday and weekend bicycle and pedestrian volumes at each intersection. While it is important to provide pedestrian and bicycle facilities where walking is very popular, the City should also prioritize safety improvements in lesser-used areas that have high collision risk.

Table 3-9. Intersections with the Highest Pedestrian or Bicyclist Collision Risk

Location	Estimated Peds/Bikes 2004 – 2009 (thousands)	Collisions, 2004 -2009	Collisions per million exposures
Pedestrian Risk			
40th Street at Harlan Street	494	2	4.0
Christie Avenue at Powell Plaza	895	2	2.2
Powell Street at Vallejo Street	945	2	2.1
40th Street at Horton Street	989	2	2.0
36th Street at San Pablo Avenue	1,796	3	1.7
Stanford Avenue at Hollis Street	1,277	2	1.6
40th Street at San Pablo Avenue	10,408	4	0.4
Bicyclist Risk			
Powell Street at I-80 Off Ramp	600	4	6.7
45th Street at San Pablo Avenue	1,346	7	5.2
Christie Avenue at Powell Street	209	1	4.8
Shellmound Way at Shellmound Street	431	2	4.6
40th Street at Hubbard Street	683	3	4.4
40th Street at Emery Street	1,017	2	2.0
62nd Street at Hollis Street	1,136	2	1.8
36th Street at San Pablo Avenue	1,051	2	1.9
Powell Street at Frontage Road	567	1	1.8
40th Street at Horton Street	1,366	2	1.5

3.7. Education, Encouragement, and Enforcement Programs

Pedestrian and bicycle programs support and encourage walking and biking and complement a community's investments in pedestrian and bicycle infrastructure. There are a variety of existing bicycle and pedestrian-related programs in Emeryville. The City's current programmatic strengths, areas for enhancement and opportunities are summarized below.

The City is exceeding best practices in several areas. These key strengths include: City support of Bike to Work Day; public involvement in pedestrian and bicycle planning; high quality maintenance of facilities; high pavement quality; strong, supportive design guidelines; and policies and regulations that support walking and bicycling.

An energizer station in Emeryville on Bike to Work Day.

There are several areas where the City is meeting some best practices but could do more. These enhancements include: expanded bicycle education, more special events to promote walking and biking, development of a traffic calming program; continued implementation of ADA improvements; improved inventories of pedestrian and bicycle system facilities and gaps; improvements to traffic signals to facilitate pedestrian and bicycle travel; standardized design of pedestrian crossings; and increased collection of traffic speed and bicycle, pedestrian, and motor vehicle volumes.

The City appears not to meet best practices in a handful of areas, and could do much to improve. Examples of these opportunities include: pedestrian and motorist education; safe routes to schools; pedestrian and bicycle safety campaigns; collision reporting; traffic control devices; speed limits and surveys; bicycle parking inventory; and staffing a pedestrian and bicycle coordinator.

3.8. Key Findings from Outreach

In order to serve the residents, workers, and visitors of Emeryville, the development of this Plan included extensive outreach to the community. Individuals had the opportunity to provide general comments or comment on draft documents through the City's website, the community walking and bicycling survey, city-sponsored walking and biking tours, outreach to Emery Secondary School students, and two community workshops. In addition, all interim materials were presented at the public Bicycle and Pedestrian Advisory Committee meetings throughout the development of this Plan.

3.8.1 Summary of Outreach Methods

This section provides a brief discussion of each outreach method and individuals invited to participate.

Website

Interim materials and Bicycle and Pedestrian Advisory Group (BPAC) meeting notes were available on a dedicated website (www.emeryvillepedbikeplan.org). The survey was posted on the website, as well as related background information.

Walking and Bicycling Survey

The 20-question survey was made available online and in paper form. Postcards publicizing the survey were sent to all residents, property owners and businesses in Emeryville, and paper copies were available at City Hall, Golden Gate Library, the Recreation Center, the Senior Center, the Child Development Center, and by request. The survey was open between mid-October and late November 2010. A total of 119 people responded to the survey.

Walking and Biking Tours

The City hosted one walking and one bicycling tour with City staff, elected officials, and interested community members. During the walking tour the group walked along several roadway segments to provide a snapshot of pedestrian conditions in Emeryville. These segments included San Pablo Avenue between 40th Street and 53rd Street, the area around the Amtrak station, and from the intersection of Shellmound Street and Shellmound Way to Powell Street under I-80 via Christie Avenue.

Eighteen people participated in the bike tour. The Project Team briefly presented background on this Plan's planning process and bicycle planning generally. The group toured all areas of Emeryville and made several predetermined stops to discuss opportunities and constraints. Key topics included the future access to the Bay Bridge Path at the Ikea entrance along Shellmound Way, the Bay Trail, the Amtrak overcrossing, Spur Alley, and several others.

Bicycle tour participants discuss a crossing.

Student Outreach

The City led classroom discussions in Emery Secondary School in June 2011 with students in 6th through 9th grades to consider walking and biking issues and to identify potential improvements that would benefit students' travel to and from school. Participating students were able to provide feedback in one or more of the following ways.

- By writing about pedestrian and bicycle use in Emeryville during class exercises,
- By writing on and marking-up Emeryville maps during class exercises,

- By talking with the City of Emeryville and Alta Planning + Design staff during class, and
- Via homework survey questions asking students about their commutes to and from school.

Public Workshops

The City publicized and held two citywide public workshops to provide additional opportunity for comment. At the first workshop in November 2010, participants were invited to share their experiences of walking and bicycling in Emeryville. Eighteen community members attended, representing most residential areas in Emeryville. The meeting began with an introduction to the plan and an overview of existing conditions, followed by an open house in which participants could discuss a variety of bicycling and walking topics at stations. Several large-scale maps were provided to mark up, and community members, City staff and consultants had informative discussions around these maps. Community input from the meeting was used to inform recommended projects and programs.

The second public workshop was held in May 2011. The meeting began with an overview of draft recommended projects and programs. Following this presentation, participants were asked to mark their support for specific projects by placing a dot sticker on a map or list of recommendations. Responses were used to refine the prioritization of projects.

3.8.2 Key Findings from Public Outreach

This section summarizes key findings from the various public engagement elements. The findings include identification of pedestrians and bicyclists, as well as barriers to walking and bicycling, and improvements participants desired to see.

Who Walks and Bicycles in Emeryville?

Primarily, people responding to the *Walking and Biking Survey* shop in Emeryville (66 percent), while many live (56 percent) socialize (39 percent), work (37 percent), or commute through the City (31 percent).

Students: The classroom outreach found that, while some students at Emery Secondary only need to walk a few blocks to school, many students live far from school and depend on public transit or rides from their parents. While most students have experience walking in Emeryville, very few (if any) bicycle to school. In Emeryville, students specifically mentioned walking across and along San Pablo Avenue (to get home, to bus stops or stores), and along 40th Street and Shellmound Street (to get to Bay Street).

Emeryville Residents: Emeryville residents walk and bike to work less than neighboring communities, suggesting that there is room for Emeryville to shift people toward walking and biking. According to census data, for residents that work outside of the city, 28 percent take transit, 10 percent carpool and less than one percent walk or bike. For this group, improving bicycle and pedestrian connections to transit will sustain the high level of transit ridership, and providing convenient and safe bicycle connections to employment in downtown Oakland, south Berkeley, and other nearby employment centers may improve the bicycle and walking mode share.

Emeryville residents who work within the city have much higher walking and biking mode shares than those working elsewhere, with 37 percent walking and five percent bicycling. Still, 49 percent of these people drive to work. Encouragement campaigns geared toward residents, outreach during the planning phase of

developing major bicycle and pedestrian improvements, and publicity celebrating new bicycle and pedestrian infrastructure may encourage this group to walk and bike more.

Emeryville Workers: Twenty-one percent of survey respondents who work in Emeryville indicated that they drive to work because there is free parking available to them. Charging for parking may be one method of encouraging people to bicycle rather than drive to work.

Major Barriers to Walking

Public outreach respondents generally felt that the length of trips, barriers to pedestrian circulation, and both personal and traffic safety were major factors that kept them from walking in Emeryville more often (See **Figure 3-3**).

- The *Walking and Biking Survey* found that the major barriers to walking in Emeryville are trip distance, safety from cars, and crime. Due to the city's small size, all of the activity nodes are within walking distance to each other (0.5 to 1 mile). However, pedestrians may have to travel further because of circuitous routes to cross railroad tracks, freeways, and major arterials. Concerns about safety from crime ranked high among barriers to walking, with 32 percent of respondents citing it.
- Students at Emery Secondary consistently identified the following barriers to walking to school: crossing San Pablo Avenue at 47th and other intersections, the speed and amount of traffic, and the narrowness of the sidewalk on the 40th Street Bridge.
- Several workshop participants cited major streets as being barriers to crossing, including San Pablo Avenue.
- Some noted that sidewalk obstructions, such as poles, newspaper racks, and driveways are a detriment to walking conditions, and that they have difficulty using the Amtrak overcrossing.

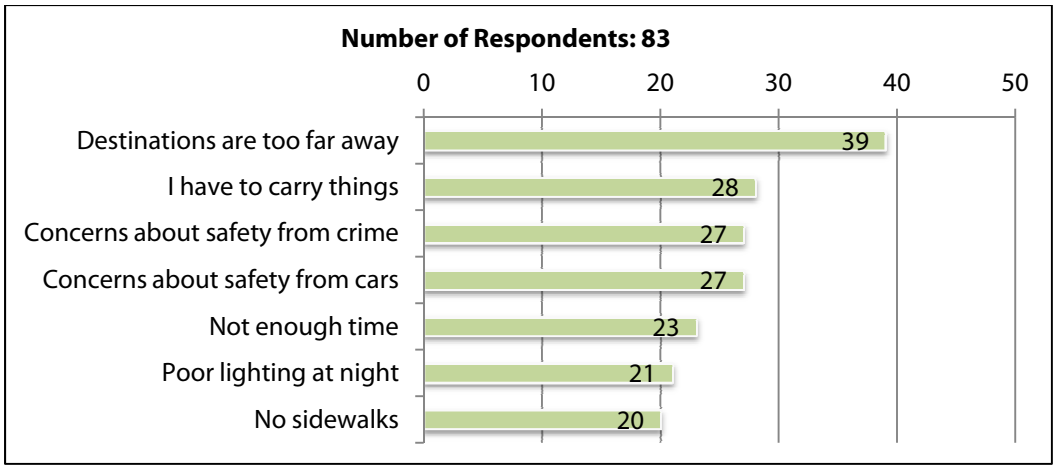


Figure 3-3. Barriers to walking (Source: Emeryville Pedestrian and Bicycle Plan survey)

Major Barriers to Bicycling

A primary barrier to bicycling identified in the public outreach was the lack of signal detection, including existing signals without detection, ineffective or unreliable detection, and signals lacking detection.

Survey respondents cited safety issues such as concerns about safety from cars, lack of bikeways, or poor road conditions as primary factors preventing them from bicycling more. (See **Figure 3-4**)

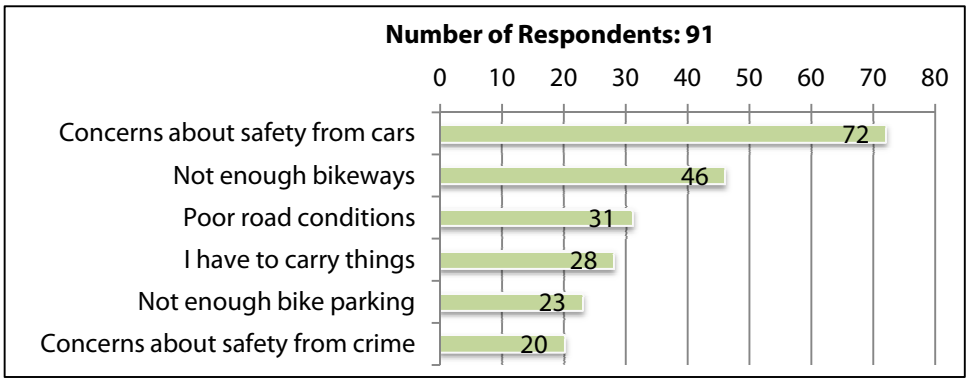


Figure 3-4. Barriers to bicycling

Pedestrian Improvements

In general, public comments about pedestrian facilities involved signal optimization, overcrossings, intersections, and sidewalk width.

Signal Optimization: Several people noted a desire for improved intersections, including countdown signals, reduction of pedestrian wait time, and increasing the pedestrian walk phase. It was recommended that countdown signals be used at more intersections and that pedestrian crossing time be lengthened. The crossing of San Pablo Avenue, particularly at 47th Street received the most complaints due to the long wait between pushing the crosswalk button and the light actually changing. Some students end up walking against the light, or going out of their way to cross at other intersections. There are concerns about routes to schools that require crossing San Pablo Avenue.

Overcrossings: A high level of dissatisfaction was expressed in relation to overcrossings and crosswalks. One survey respondent wrote, "I am apprehensive about walking along the Powell Street pedestrian bridge because it is so deserted and poorly lit." Other survey write-in comments described uncomfortable intersections, particularly along Powell Street, the I-80 ramps, Christie Avenue, and Shellmound Street.

Intersections: A need was expressed for treatments at intersections to increase motorist yielding behavior, ADA accessible curb ramps and more visible crossings. Specific intersections noted to be in need of improvements include along San Pablo Avenue, Shellmound at Christie, Shellmound at Bay, and other locations. Bicyclists expressed a desire for beacons, actuated by loop detectors or infrared posts that register bicyclists in advance of intersection, as well as signs on the cross-streets so pathway users know what street they are crossing.

Sidewalks: Shellmound Street, San Pablo Avenue, 59th Street and 40th Street have the highest pedestrian use. Survey data indicate that better pedestrian access is desired to destinations, including Berkeley Bowl West and the transit hub at San Pablo Avenue and 40th Street, as well as better pedestrian circulation throughout the Amtrak-Powell Street-Bay Trail area. There is also a need for additional sidewalks in industrial areas and along Shellmound Street, as well as access in the commercial shopping area.

Multi-Use Paths

The community suggested improvements to multi-use paths including a desire for improved intersections along existing shared-use paths, as well as connections to the network when the paths end, such as the northbound Bay Trail connection from Shellmound Street to Powell Street. Crossing improvement recommendations for the Emeryville Greenway included higher-visibility crossings (beacons, advance actuation), right-of-way for bicyclists, and street signs at cross streets.

There are concerns about the lack of visibility and awareness of the Bay Trail through Emeryville (particularly connections through the Sheraton parking lot). Recommended improvements include pavement markings separating pedestrians and bicyclists, as well as signs indicating the route.

There was significant support for providing new crossings of major barriers including the planned South Bayfront Bridge at 53rd Street and the proposed 65th Street Bridge.

Bicycling Improvements

The bicycling community recommended improvements to bicycle detection, better bicycle access and more bicycle parking. It was suggested that existing loop detectors be checked and that the City provide additional detection while improving how quickly the signals respond to a bicyclist.

It was noted that at 65th and Hollis Streets bicycle detection stencils are placed at the edge of the roadway, rather than in the location where bicyclists would need to wait to have the signal detect them.

Improving bicycle access to Emeryville's shopping areas, recreational amenities, and employment centers is important. Several survey respondents desired seeing "bicycle highways" where bicyclists can travel for long distances without having to stop and without significant motor vehicle traffic. Others generally recommended more bike paths and bike lanes, and better connections to Berkeley and Oakland. Bicycle detection at intersections was a particularly important improvement for several respondents.

It is notable that survey respondents reported primarily riding on Hollis Street, Shellmound Street, 40th Street, Horton Street, and San Pablo Avenue. While Shellmound and 40th Streets have bike lanes, and Horton Street is a bicycle boulevard, Hollis Street and San Pablo Avenue do not have designated bicycle facilities. Several comments refer to the popularity of roads without formal bikeways, as well as improvements to other existing corridors.

The need for more bicycle parking was cited by survey and workshop participants alike. There is interest in automated bicycle parking and bike corrals. Suggested locations for bike racks include new cafés, Bay Street, Trader Joe's, Pak n Save, malls, movie theaters, and new developments. Convenience, visibility and security of bicycle parking are important.

Programmatic Improvements

Recommendations for programs included prioritizing bicycle and pedestrian road repairs before motorized traffic road repairs. A participant at the first open house recommended that potholes and ruts on the right side of the road be repaired in a timely fashion as a high priority. Two survey respondents noted that glass in the bikeways is a challenge for them. A few respondents recommended developing a pedestrian and bicycle respect campaign. Others noted a desire that the Emeryville Police Department be trained on safe bicycle riding rules and laws.

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City of Emeryville Pedestrian and Bicycle Plan

Adopted: May 15, 2012

PART 2: IMPLEMENTATION STRATEGY

May 2012

PREPARED BY:
Alta Planning + Design
IN ASSOCIATION WITH:
Fehr & Peers

alta PLANNING + DESIGN

FEHR & PEERS

Part 2: Implementation Strategy

Part 2 of this Plan provides solutions for improving pedestrian and bicycle travel in Emeryville. It contains a comprehensive set of programmatic and infrastructure improvements that will bring Emeryville closer to the vision of a community where walking and bicycling are a convenient, safe, and integral part of daily life.

Improvements are presented in the following chapters:

Chapter 4: Pedestrian and Bicycle Programs

This chapter describes programmatic improvements, such as education and enforcement programs, that are essential to increasing the desirability and safety of walking and biking.

Chapter 5: Citywide Improvements

This chapter describes citywide infrastructure projects, such as parklets, pedestrian and bicycle signage, and bicycle parking, which should be implemented throughout the city to improve pedestrian and bicycle travel.

Chapter 6: Bicycle Boulevards

This chapter describes the City's policy for designating, constructing, and monitoring bicycle boulevards. It includes infrastructure improvements that will enhance the City's bicycle boulevard network.

Chapter 7: Site-Specific Infrastructure Projects

This chapter describes specific infrastructure projects that are needed to make it safer and more convenient to walk and bike in Emeryville. Projects include pedestrian improvements, overcrossings, paths, and the recommended bikeway network. The chapter includes maps of projects and a prioritized list of recommendations, including cost estimates for individual projects.

Chapter 8: Funding and Implementation

This chapter summarizes how the City has historically funded pedestrian and bicycle projects and describes potential new funding sources. It summarizes costs for the recommended programs and infrastructure projects described in Chapters 4 through 7. It also includes two key tools for implementing the recommendations of this Plan: the Action Plan, which includes specific action items the City will take to implement the policies described in Chapter 2; and the Priority Project Sheets, which present this Plan's high-priority projects in more detail.

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4. Pedestrian and Bicycle Programs

Pedestrian and bicycle programs, such as education and enforcement programs, are essential in increasing the desirability and safety of walking and biking. Programs support a pedestrian and bicycle friendly culture, and encourage more people to walk or bike. Many programs can be categorized according to the "Four E's":

- **Encouragement** programs provide incentives and support to help people leave their car at home and try walking or bicycling instead. Bicycle encouragement programs, in particular, target "interested but concerned" bicyclists who would like to ride a bike but who may not be confident in their skills or in their interactions with motorists.
- **Enforcement** programs enforce legal and respectful walking, bicycling, and driving. They include a variety of tactics, ranging from police enforcement to neighborhood signage campaigns.
- **Education** programs are designed to improve safety and awareness. They can include in-classroom or after school programs that teach students how to safely cross the street or bicycle in the road. They may also include brochures, posters, or other information that targets pedestrians, bicyclists, or drivers.
- **Evaluation** programs are an important component of any engineering or programmatic investment. They help the City to measure its success at meeting the goals of this plan and to identify adjustments that may be necessary.

The "Four E's" simply provide a convenient framework for programmatic recommendations. Many programs encompass more than one of these categories.

In addition to these "Four E's" programs, this chapter includes recommendations for maintenance of pedestrian and bicycle infrastructure, and recommendations for establishing a bicycle sharing program in the City of Emeryville.

4.1. Encouragement

4.1.1 Car-Free Street Events

Car-free street events promote health by creating a safe and attractive space for physical activity and social contact and are cost-effective compared to the cost of building new parks for the same purpose. These events have many names: Sunday Parkways, Ciclovias, Summer Streets, and Sunday Streets. Car-free street events temporarily close streets to motor vehicles and open them to the public for walking, bicycling, dancing, hula hooping, roller-skating, or other activities. They have been very successful internationally and are rapidly becoming popular in the United States. Events can be regularly scheduled or one-time occasions and are generally very popular and well attended.

Closing streets for a car-free community event like Oaklavia creates a temporary space for walking, cycling, skating, dancing, etc. (Image: Tina Tamale via Flickr)

Recommendation

The City should support a regular, recurring car-free street event. While specific locations and times for these events can be developed through community outreach and support, one possibility for the City of Emeryville would be to combine a car-free street event with its Art in Public Places program. Possible locations include Park Avenue, Doyle Street/Greenway, Hollis Street, and Horton Street. Measure B funds could be used for general outreach and marketing.[11]

4.1.2 Bicycle Friendly Community

The League of American Bicyclists has a well-respected Bicycle-Friendly Communities award program. Communities fill out a detailed application that covers bike-related facilities, plans, education efforts, promotion initiatives, and evaluation work that has been completed by the jurisdiction. The award is designed to recognize progress that has been made, as well as assist communities in identifying priority projects to improve bicycling conditions. Receiving the award is a media-worthy event, and may give elected officials the opportunity to receive media coverage for the positive work they are doing. Awards are granted for Bronze, Silver, Gold and Platinum bicycle-friendly communities.

Receiving a Bicycle Friendly Community designation affirms a city's support for bicycling

Recommendation

As part of this Plan, the City has evaluated the potential of applying to become a designated bicycle-friendly community. The City should apply for Bicycle Friendly Communities designation after several of the improvements recommended in this Plan have been implemented.

4.1.3 Safe Routes to School Programs

Safe Routes to School (SR2S) is a program that helps children to get to school by walking, bicycling, carpooling, or transit. It envisions active kids using safe streets, helped by engaged adults including teachers, parents, and police officers, complemented by responsible drivers. Every state has a SR2S coordinator and grant program. The City of Emeryville does not currently have any existing Safe Routes to School programs.

Emeryville is unique in that the schools are located in close proximity to one another. Emery Secondary (grades 6-12), Anna Yates Elementary (grades K-5), the private Escuela Bilingue (pre-K to 8th grade, opening fall 2011), the City's Child Development Center (a preschool), and the planned Emeryville Center for Community Life are all within a few blocks of San Pablo Avenue between 41st and 53rd Streets. San Pablo Avenue is a major impediment to pedestrian travel in the area, and many students have to cross to access their schools.

Example Safe Routes to School programs that could be implemented in Emeryville include:

- **School Travel Plans** – Travel plans are collaborative efforts between school administrators, parents, students, and the City to identify issues related to walking and biking to school and brainstorm

[11] *Sample programs include San Francisco Sunday Streets: http://sundaystreetssf.com and Oakland's Oaklavia: http://oaklavia.org/media.*

solutions. Planners and engineers can assist with identifying and prioritizing projects to improve conditions around the school.

- **Walking Audits** –Walking Audits are often the starting point of a Safe Routes to School Program as they help students, parents, and neighbors assess routes to schools and identify safety considerations. Stakeholders walk the main routes to school to discuss safety issues and develop possible short-term and long-term solutions. Stakeholders may also use walking audits to evaluate the effectiveness of engineering improvements.
- **Bicycle Rodeos** – Bicycle rodeos are events where police officers or bicycling instructors teach children safe bicycling skills and the rules of the road. The Emeryville Police Department conducts bicycle rodeos. The East Bay Bicycle Coalition offers free bicycle rodeos, which could supplement the City's efforts.[12]
- **Youth Bicycle Safety Education Classes** – Typical school-based bicycle education programs educate students about the rules of the road, proper use of bicycle equipment, biking skills, street crossing skills, and the benefits of biking.[13]
- **Walking School Buses** – Walking School Buses are formed when a group of children walk together to school and are accompanied by one or two adults (usually parents or guardians). The walking school bus picks up students at designated meeting locations. Walking School Buses can be implemented informally among parents or neighbors or as official school-wide endeavors with trained volunteers and structured meeting times and locations.
- **Student Safety Patrols** – Safety Patrols consist of specially trained students, usually 5th grade and above, who escort students to buses and assist adult crossing guards in helping students cross streets.

Bike rodeos (top) and youth bicycle safety classes provide children with knowledge and training about safe and proper bicycle use.

- **Friendly Walking/Biking Competitions** – Walking and biking competitions track and reward kids for the number of times they walk, bike, carpool, or take transit to school. Contests can be individual, classroom competitions, or interschool competitions. Local businesses may be willing to provide incentive prizes for these activities.

[12] *An application to have the East Bay Bicycle Coalition hold a Bike Rodeo can be found here: http://www.ebbc.org/rodeoapplication.*

[13] *Sample programs include League of American Bicyclists: http://www.bikeleague.org/programs/education/courses.php#kids1 and Bicycle Transportation Alliance – Portland, OR: http://www.bta4bikes.org/resources/educational.php.*

Recommendation

The City should collaborate with the Emery Unified School District and Escuela Bilingue to establish a formal Safe Routes to School program. This program can take advantage of existing resources, such as Alameda County's ongoing Safe Routes to School Program, currently implemented by the non-profit TransForm.

4.1.4 Walk and Bike to Work Programs

Emeryville's large employment base means that working with employers may be an effective means of achieving the goals of this Plan. Walking and biking to work has many benefits, including reducing the stress associated with driving in rush-hour traffic, reducing health costs by improving worker health, and helping businesses market their environmental sustainability.

The City already supports alternative commute modes. Every year, the City sponsors Bike to Work Day and contributes to the East Bay Bicycle Coalition's promotion of this event. The City also provides incentives to developers to encourage walking and bicycling to work. Emeryville currently has policies that require bicycle parking and is developing more flexible automobile parking requirements.

Recommendation

The City should continue to work with or provide information to employers about alternative commute options, with the intention of reducing the number of Emeryville workers to drive alone to work. It should continue to support Bike to Work Day and explore additional policies and programs that can encourage walking and biking to work.[14]

The City should serve as a role model by actively promoting alternative commute modes for City employees.

The City of Portland, OR makes yard signs available for $25 or in exchange for five completed "I Share the Road" pledges.

4.2. Enforcement

4.2.1 Bicycle Patrol

Police bicycle patrols not only increase the mobility of officers in dense areas but also provide law enforcement officers with an opportunity to display safe and legal bicycle skills. Furthermore, bicycle patrols show the community that the City actively supports sustainable transportation.

Recommendation

The Emeryville Police Department should establish a bicycle patrol. Given Emeryville's small area and numerous paths, this may be an effective way to police the community.

[14] *Information about the commuter choice program can be found here: http://www.fta.dot.gov/news/colleague/news_events_4627.html*

4.2.2 Community-Based Traffic Program

Community-based traffic programs are focused on developing relationships between a city's Public Works and Police Departments and its residents. Residents work with City staff to identify problem areas to target for police enforcement, community policing, and potential infrastructure priorities. For example, in response to mounting complaints about speeding and commute traffic, the City of Sacramento implemented a Neighborhood Traffic Management Program.[15] The program also informs the community about how Public Works operates to encourage community members to be proactive about the problems they see in their community.

One possible outcome of the community-based process is the deployment of mobile speed feedback signs or yard signs in response to concerns about traffic speed. Speed feedback signs display the speed of passing motor vehicles, with the intent that motorists will slow down if they are aware of their speed. These can either be permanent signs or trailers that can be periodically moved to new locations.

Recommendation

The City should establish a community-based traffic program that formalizes the way in which the community and the City can work together to identify traffic-related problems, and create effective, low-cost solutions to those problems.

4.2.3 Targeted Enforcement

Targeted enforcement refers to focused efforts of police officers. For example, the Police Department may conduct pedestrian stings at locations where there is a history of pedestrian-motorist conflicts. Similar strategies may be applied to areas with bicycle traffic, perhaps focusing on citation of issues deemed to cause most accidents. In the case of bicyclists, the most dangerous violation is wrong-way riding and for motorists, improper turning and crosswalk violations.

Recommendation

The Police Department should conduct targeted enforcement at locations known for noncompliance with traffic laws and at high conflict or high pedestrian- or bicycle-related collision areas. The Department currently targets enforcement on San Pablo Avenue at 43rd, 45th, and 47th Streets when school is in session. Possible additional locations include minor street crossings of 40th Street, which are uncontrolled intersections with high collision rates.

Road safety campaigns increase the general public's awareness of bicycling and walking and can be used to promote safe roads by and for all users.

4.3. Education

Education programs are recommended to inform motorists and bicyclists of the rights and responsibilities of bicyclists and pedestrians. This section describes strategies to achieve this.

[15] *Information about the Neighborhood Traffic Management Program is available at: http://www.ite.org/traffic/documents/CCA96B62.pdf*

4.3.1 Pedestrian and Bicycle Safety Campaign

A well-produced safety campaign will memorably and effectively highlight walking and bicycling as viable forms of transportation and reinforce safety for all road users. One good example is Sonoma County Transit Agency's "You've got a friend who bikes!" campaign. It combines compelling ads with an easy-to-use website focused at motorists, pedestrians, and bicyclists. Safety and awareness messages should be displayed near high-traffic corridors, printed in local publications, broadcast as radio and/or television ads and be available in Spanish and other languages.

The City of San Jose created a pedestrian and bicycle safety campaign called Street Smarts. The program emphasizes the shared responsibilities of all road users, incorporating a website, flyers, and billboards that remind pedestrians, bicyclists, and motorists of safe travel behaviors.

Recommendation

The City should consider developing a pedestrian and bicycle safety campaign.[16] The campaign could be based on the successful Street Smarts program, or other local efforts.

4.3.2 Adult Bicycling Skills Classes

Adult bicycling skills classes enable community members to learn safe bicycling skills. The most common program is the League of American Bicyclists courses, taught by League Certified Instructors. Courses cover bicycle safety checks, fixing a flat, on-bike skills, crash avoidance techniques, and traffic negotiation.[17]

Adult bicycle skills courses can help bicyclists have the information and skills they need to avoid hazards and follow the law.

Recommendation

The Police Department currently conducts bicycle skills classes. Bicycle skill classes can be taught by other qualified instructors in addition to the Police Department. To supplement existing efforts, the City should find funding to support classes through the East Bay Bicycle Coalition or other qualified instructors (in addition to the police).

4.3.3 Citation Diversion Program

A diversion class can be provided to motorists in lieu of a citation and/or fine. Individuals would have the option of taking a onetime, free or inexpensive class instead. In Marin County, interested citizens can take the class even if they did not receive a ticket. This program is a good way to educate road users about bicycle rights and responsibilities, and can also increase public acceptance of enforcement actions.

Recommendation

The City should pursue establishing a Citation Diversion Program to educate drivers who drive unsafely about safe driving around pedestrians and bicyclists.

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[16] *Sample program: Sonoma County (CA) Transit: http://www.sctransit.com/bikesafe/bikes.htm and San Jose Street Smarts: http://www.getstreetsmarts.org/.*

[17] *Information about this program is available here: http://www.ebbc.org/safety*

4.4. Evaluation

Evaluation programs measure and evaluate the effectiveness of projects, policies and programs. They may include comparing travel mode data over time, collecting bicycle and pedestrian counts, and administering community surveys.

4.4.1 Annual Traffic Counts

Pedestrian and bicycle counts and community surveys act as methods to evaluate not only the effectiveness of specific pedestrian and bicycle improvement projects but can also function as way to measure progress towards reaching City goals. The City of Emeryville has recently adopted a policy requiring all new large developments to conduct pedestrian and bicycle counts as part of the traffic impact analysis. Multimodal counts were conducted in August 2010.

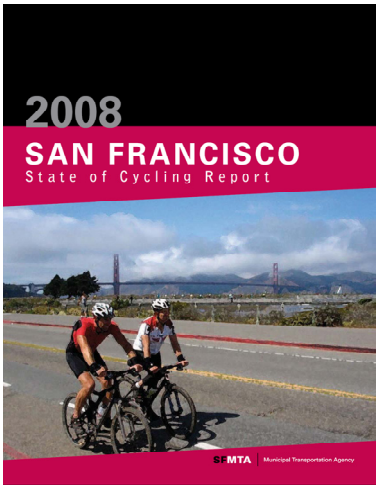
Recommendation

The City should continue to require new large developments to conduct pedestrian and bicycle counts, and should expand traffic counts by:

- Conducting before and after pedestrian, bicycle, and vehicle counts on all roadway projects.
- Conducting annual pedestrian and bicycle counts at count locations included in this Plan.
- Exploring the possibility of using automatic counters to collect data on key pedestrian and bicycle corridors. Automatic count technologies can be useful for bicycle count efforts. In-pavement loop detectors accurately count bicycle activity on-street and infrared counters can count pedestrian and bicycle activities on paths.[18]

4.4.2 Pedestrian and Bicycle Report Card

Cities around the world have begun monitoring their bicycle and pedestrian programs in order to track the number of non-motorized users, gauge user perceptions of the bicycle and pedestrian networks and identify trends in safety. Results are often published in a periodic bicycle and pedestrian account or report card, which can be distributed to the public as a means of publicizing the city's commitment to improving walking and bicycling conditions.



The San Francisco State of Cycling Report (2008) provides a snapshot of bicycling conditions in the city

Recommendation

The City should establish an annual or semi-annual pedestrian and bicycle report card to track progress toward meeting the goals, policies and action items presented in this Plan. Data collection may include a

[18] *The National Bicycle and Pedestrian Documentation Project provides a methodology for conducting counts. Nationwide, most pedestrian and bicycle counts occur in May and the City may consider adopting the same month to allow comparisons between jurisdictions. Resources from National Bicycle and Pedestrian Documentation Project: www.bikepeddocumentation.org*

community and workforce survey, pedestrian and bicycle counts, and summary of collision and hospital records.

4.4.3 Monitoring Bicycle Boulevard Metrics

The City of Emeryville is poised to take a leadership role in the development and implementation of bicycle boulevards. Chapter 6 of this Plan presents three goals for evaluating the City's bicycle boulevards: speed goals, motor vehicle volume goals, and major intersection goals.

Recommendation

The metrics used to monitor the bicycle boulevard goals should be measured regularly at a minimum of every two years to determine whether additional treatments are necessary to bring the street to the target goal. Emeryville should collect this data and evaluate each bicycle boulevard in the case of any of the following:

- Development occurs that is projected to increase motor vehicle volumes on the bicycle boulevard
- The *Pedestrian and Bicycle Plan* is updated
- Substantial community concern is brought to the City

The City can solicit volunteers to assist with these measurements.

4.5. Maintenance

Maintenance issues that may appear minor to motorists, such as overhanging vegetation or debris in the side of the road, can pose safety hazards to pedestrians and bicyclists or make a route inaccessible.

Table 4-1. Suggested Maintenance Schedule

Item	Responsible Party	Frequency
Pedestrian Facility Maintenance		
Sidewalks in non-residential areas: Cracking and ADA accessibility issues.	Adjacent property owners	Ongoing
Sidewalks in residential areas: Cracking and ADA accessibility issues.	City	Ongoing
Curb ramps: bring to ADA compliance during reconstruction, particularly where the ramp meets the roadway	City, Developers	Ongoing
Landscaping: Maintain 8 feet clear overhead	City	1-4 years

Item	Responsible Party	Frequency
Multi-Use Path Maintenance		
Sign replacement/repair	City	1-3 years
Pavement marking replacement	City	1-3 years
Pavement sealing and potholes	City	5-15 years/30-40 years for concrete
Sweeping	City	Monthly – Quarterly (weekly on major routes)
Irrigate/water plants	City	As required while establishing
Planted tree, shrub, and grass trimming/fertilization	City	5 months - 1 year
Maintain furniture	City	Annually
Graffiti removal	City	Weekly/ As needed
Maintain emergency telephones	City	Annually
Bicycle Facility Maintenance		
On-street pavement marking replacement	City	1-3 years
Clean drainage system	City	Annually
Pavement sweeping	City	Monthly
Pavement sealing and potholes	City	As needed, with citywide pavement resurfacing schedule
Tree maintenance on bicycle routes	City	Annually

Recommendation

The City should establish a maintenance schedule for pedestrian and bicycle infrastructure based on best practices, and make this schedule available to the community. **Table 4-1** presents a suggested maintenance schedule.

4.6. Bicycle Sharing

Bike sharing is a system that allows users to check out bikes from publicly accessible stations and return them to other locations within the service area. Such systems have become increasingly popular throughout the North America, with successful programs implemented in Washington D.C., Boston, Minneapolis, Montreal, and other programs planned for Seattle, New York, and San Francisco. Policy 1-6 of this Plan guides the City to evaluate the feasibility of providing a citywide bike sharing system, expanding on the initial analysis presented in this Plan.

Difficulty providing bike sharing stations outside the city limits ordinarily prevents cities of Emeryville's size from implementing bike sharing. However, the city has certain advantages that may improve the feasibility of a system:

- A proposed system in San Francisco; although the two cities are not directly connected by bicycle, reciprocal memberships would enhance the utility of the system for all users.
- Employment density and workplace characteristics may drive bike sharing demand significantly more than residential density. Emeryville's daytime population is much higher than its evening population and demand may therefore be much higher than its population would suggest.

4.6.1 System Size and Demand

Other North American cities that have pursued bike sharing and that have comparable employment and projected population densities as Emeryville, such as Montreal and Washington D.C., have typically spaced stations approximately a quarter-mile apart from one another. This distance allows users to be generally no more than a 5 minute walk from a bicycle and represents a stations density of approximately 16 stations per square mile.

A potential bike share system should have approximately 17 stations located throughout the City. The number of bikes provided at each station can vary considerably from station to station depending on the characteristics of the area. Other cities have deployed approximately 10 bicycles per station, which translates to 170 bikes in Emeryville.

The first season of bike sharing in Minneapolis recorded 1.1 trips per bike per day. The first season of Capital Bike Share in Washington recorded 1.75 trips per bike per day, though rates are higher now. Assuming a 170 bike system in Emeryville and 1 to 2 trips per bike per day, annual demands could range from 60,000 to 120,000 trips per year. Empirically-derived demand models can be used at a later planning stage to more accurately forecast demands and potential user-generated revenues.

4.6.2 Planning Level Costs

Cost Precedents

Capital costs include provision of bicycles, manufacture and installation of bike-stations, purchase of service and distribution vehicles, development of a website, and purchase and installation of necessary hardware and software. Estimated capital costs for bike sharing programs in Montreal, Washington D.C. and Paris average $3,600 per bicycle. [19]

Operating costs include salaries for maintenance and administrative staff, insurance, replacement costs for broken or stolen equipment, debt-service, gasoline and upkeep costs for redistribution vehicles, website hosting and maintenance, electricity charges for the bike-stations, membership cards and warehouse/storage fees. Across bike-share programs, the average annual operating cost is around $1,600/bicycle. Operating costs are lowest in Montreal, where solar-powered stations are used.

Assuming a 170 bicycle (17 station) bike share system in Emeryville, capital costs could be in the order of $600,000 with an annual operating cost of approximately $270,000.

Funding

There are a number of funding models available under which bike-share programs have successfully operated. Many European systems are entirely funded by advertising in that advertising companies are given a street advertising contract in return for providing and operating a bike share program. In many cities, this is not feasible, as street advertising contracts are already set and the opportunity for additional street advertising is not available. There have also been questions about whether cities get full value for money from this arrangement (i.e. are they selling their advertising contracts too cheaply?).

[19] *New York City Department of Planning: Bike-Share Opportunities in New York City, 2009.*

More recent bike share programs have investigated different funding models and have utilized the following funding sources:

- Federal, state, or local grants: generally used to cover capital costs of the initial system setup.
- Steady public agency income sources: these include using a portion of parking revenues or bus bike rack advertising revenue to contribute to operating the system.
- User fees: collected from subscribers who purchase annual, monthly, or daily passes and from users who exceed the generally free first thirty minutes of a trip. A typical bike-share pricing structure costs approximately $70 per year for annual membership and approximately $5 for a day pass. These would likely need to be lower for Emeryville as the program would not provide as extensive a reach as systems in larger cities. However, Emeryville's high employment density and corporate environment also provide valuable opportunities to leverage sponsorship.

Sponsorship

Similar to advertising, companies or individuals can sponsor the system as a whole or as individual stations, the fees going towards covering maintenance and operating costs. These opportunities are likely to be an important component of a bike sharing program implemented in Emeryville. Employers could sponsor bike share stations, either in a publicly accessible location on their campus or at a nearby public location. Two notable case studies are:

- **Nice Ride Minnesota** in Minneapolis is the first example of a public/private bike-share partnership. Capital costs were partially funded by a federal grant and partially by a title sponsor (in exchange for advertising placed on all bicycles in the fleet). Individual station sponsorship is also available to other companies, with that revenue going towards maintenance and operation of the system.
- The **London bike share system** is an example of a naming rights sponsor that paid a premium to have their name associated with the title of the system, i.e. the Barclays London Cycle Hire. This covers the costs of establishing and operating the system at no additional expense to the public agency.

4.6.3 Potential Station Locations

Bike sharing is most effective when combined with a good walking environment and nearby transit facilities. Stations should serve a high density and diversity of users to maintain demand (as much as possible) throughout the day. The following characteristics are attractive for potential bike share stations.

- **High Residential Density**: Proposed station locations should be accessible to the several pockets of high residential density that exist in Emeryville.
- **Employment Centers:** Employment centers can attract bicycle sharing trips as workers may use bikes to commute, as an extension of transit, or to make trips at lunch or other times during the day. The City should inquire among its major employers and office buildings about the potential to provide a bike share station on private property. Such opportunities should balance security needs of the site with public accessibility and visibility of the system.

- **Large Hotels:** Hotels can be a major generator of bike sharing trips, particularly casual users who tend to contribute disproportionately to user-generated revenues. Four large hotels within the City limits and one additional hotel just across the Oakland border present possible locations.

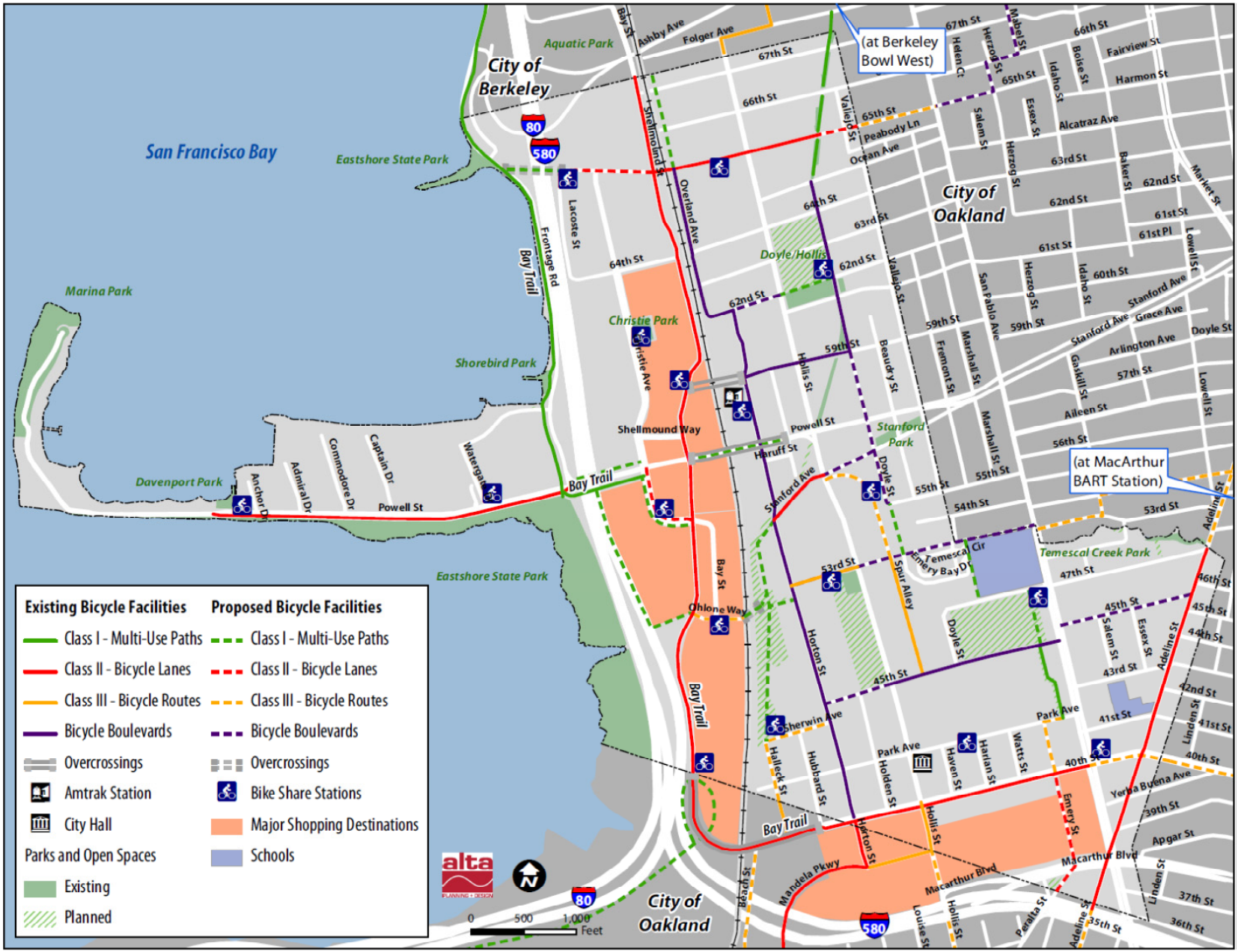
Existing and Proposed Bicycle Facilities: As many bike sharing users may not be experienced bicyclists, it is important to locate stations along protected bikeways where they are most likely to feel comfortable. Locations on multi-use paths, Class II Bikeways, and bicycle boulevards are ideal for station placement. Similarly, placing stations near future bicycle facilities can prompt quicker investment into expanding the bicycling network.

A final consideration for the placement of bike sharing stations is that some key destinations for Emeryville residents and workers may be located outside of the city limits. These include Berkeley Bowl West in Berkeley, the Macarthur BART station in Oakland and even the entrances to many of the large retail stores at the East BayBridge Shopping Center. Stations are therefore recommended at these locations as well. Potential station locations for the 17 station Emeryville bike share system are shown in **Map 4-1,** on the next page.

4.6.4 Station Design

Stations should be visible and accessible and are ideally located as close as possible to major trip generators. The first preference for station placement is generally within the sidewalk space, although this needs to consider the impact on pedestrian through-fare and the placement of utilities and other street features. Stations can also be placed in the street in place of (generally) two to three parking spaces. Public spaces such as parks and plazas or stations on private property may also be appropriate.

There have been significant advancements in the physical needs of a station with the latest generation of technology utilizing a modular station format, solar power, and wireless communication technology to make stations completely portable (they are bolted into place rather than requiring expensive excavation and wiring), cost-effective, and environmentally sustainable.



Map 4-1. Potential Bike Sharing Locations

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5. Citywide Improvements

This chapter recommends physical upgrades to the walking and bicycling environment that can be made on a citywide basis. Recommendations include:

- Signalized intersection improvements for pedestrians
- Treatment guidelines for uncontrolled and mid-block crosswalks
- Parklets
- Pedestrian signage
- Bikeway signage
- Bike parking
- Bike maintenance stations
- Signal detection for bicyclists

5.1. Signalized Intersection Improvements

Signalized intersections provide key pedestrian crossing opportunities across Emeryville's major roadways: San Pablo Avenue, 40th Street, Hollis Street, Powell Street.

Recommendation

The City should upgrade all signals as they are replaced to include pedestrian countdown signal heads and audible pedestrian signals. Pedestrian countdown signals display the number of seconds remaining to cross a street until the end of the pedestrian phase, usually when the traffic signal turns yellow. Countdown signals have been shown to reduce the likelihood that a pedestrian will be caught in the crosswalk when the opposing traffic gets a green light, and can reduce the incidence of pedestrian injuries at an intersection.[20]

The City should adjust signal timing to provide a longer walking signal, to accommodate slower pedestrians, particularly at locations where seniors, children, and people with disabilities may be present. The California Manual of Uniform Traffic Control Devices permits using a walking speed of 2.8 feet per second in these circumstances.

The City should seek to reduce pedestrian wait time at signals. This can be achieved by either providing a walk light if the button is pushed within a few seconds after the light turns green, providing two walk lights per cycle, or providing the walk light whenever the light is green, eliminating the need for a pedestrian button.

5.2. Treatment Levels for Uncontrolled and Mid-Block Crossings

Uncontrolled intersections are locations without a stop sign or signal. Mid-block crossings are locations where there is a marked crosswalk in between intersections. Uncontrolled locations and mid-block crossings require unique treatments to ensure that pedestrians are visible within the roadway.

This section provides guidance about appropriate crossing treatments for uncontrolled and mid-block crossings. Recommendations are drawn from several major studies of pedestrian collision rates at marked and unmarked crosswalks. In 2002, the Federal Highway Administration (FHWA) published a comprehensive

[20] *http://www.popcenter.org/problems/pedestrian_injuries/PDFs/Markowitz_etal_2006.pdf*

report on the relative safety of marked and unmarked crossings.[21] In 2006, another study was completed that further assists engineers and planners in selecting the right treatment for marked crosswalks based on studies of treatment effectiveness.[22]

5.2.1 Recommended Guidelines for Marking and Enhancing Crosswalks

The California Vehicle Code requires vehicles to yield the right-of-way to pedestrians at any intersection where crossing is not prohibited, whether a crosswalk is painted on the roadway or not.[23] The primary purpose of painting a crosswalk is to channelize pedestrians. Well-marked pedestrian crossings prepare drivers for the likelihood of encountering a pedestrian, and reinforce the location and legitimacy of a crossing.

The City should consider uncontrolled and mid-block crossings as a candidate for marked (painted) crosswalks if there is a demonstrated need for a crosswalk including:

- Location near existing or proposed land uses or buildings with high pedestrian volumes (e.g. transit stops, schools)
- High existing pedestrian volumes
- High number or rate of pedestrian-vehicle collisions at this location (over several years)
- Nearest (adequately) marked or controlled crosswalk is far away
- Requests from the community (e.g. community surveys, direct requests, findings from walking audits, etc.)

The City should mark crosswalks at uncontrolled intersections and mid-block crossings where some of the following occur:

- Sufficient demonstrated need exists to justify the installation of a crosswalk (see above)
- The location has sufficient sight distance and/or sight distance will be improved with treatments
- Safety considerations do not preclude a crosswalk

5.2.2 Selecting Crosswalk Enhancements

When evaluating an uncontrolled or mid-block crossing for improvements, as a first step, the City should determine if the pedestrian volumes and vehicle volumes warrant installing a signal. If they do not, and the crossing is to be kept unsignalized, then the City should follow the treatment levels described below to select crosswalk enhancements.

Determining the appropriate treatment level relies on two pieces of information: the length of time a pedestrian (or bicyclist) must wait before they can cross a street (pedestrian delay), and the likelihood that motorists will yield to pedestrians or bicyclists who are crossing the street (motorist compliance). Locations with high pedestrian delay and low motorist compliance require higher level treatments, while locations with low pedestrian delay and high motorist compliance require lower level treatments.

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[21] *Zegeer, C.V., J.R. Stewart, H.H. Huang and R.A. Lagerwey. "Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations: Executive Summary and Recommended Guidelines." Report No. FHWA-RD-01-075. Washington, DC, USA: Federal Highway Administration, March 2002. http://www.walkinginfo.org/pdf/r&d/crosswalk_021302.pdf.*

[22] *Fitzpatrick, Kay, et al. Improving Pedestrian Safety at Uncontrolled Crossings. TCRP Report 112/NCHRP Report 562. 2006. http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_562.pdf.*

[23] *More information on the California Vehicle Code sections related to pedestrian right-of-way is available at http://www.walksf.org/vehicleCodes.html.*

Pedestrian delay is measured using Pedestrian Level of Service (PLOS) methodology.[24] PLOS is the average delay experienced by pedestrians as they are waiting to cross the street. For crossings at bicycle boulevards and multi-use paths, the City should count bicyclists as well as pedestrians when calculating pedestrian delay.

Motorist compliance is based on field observations and engineering judgment. If drivers are likely to stop for a pedestrian, the compliance is rated "high." If drivers rarely stop for pedestrians, compliance is "low." A default compliance rate of low is suggested for all locations where the speed limit is 35 mph or greater.

Treatment levels range from Level 1, which consist of minor improvements, to Level 4, which include more intense treatments. **Table 5-1** presents a matrix that can be used to identify which treatment level is appropriate for a particular location. The treatment levels provide a list of possible treatments; the exact treatments installed at a crossing need to be based on site feasibility and engineering judgment.

Descriptions and images of treatments are included in Appendix A.

Level 1 Treatments:

- High visibility crosswalk markings, advance yield limit lines, advance signage

Level 2 Treatments:

- Curb extensions, bus bulbs, reduced curb radii, staggered pedestrian refuges, pedestrian refuge island

Level 3 Treatments:

- In-pavement flashing lights, overhead flashing beacons (on two-lane roads)
- Rectangular rapid flashing beacons (RRFB) (on multi-lane roads)

Level 4 Treatments:

- Pedestrian Hybrid Beacons,[25] also known as High Intensity Actuated Crosswalks (HAWKs; see Appendix A for a picture and more information), RRFB, new signal, or direct pedestrians to the nearest safe crossing

[24] *Note: The pedestrian level of service calculation is set forth in the Highway Capacity Manual (HCM), published by the Transportation Research Board.*

[25] *Pedestrian Hybrid Beacons are now included in the CA MUTCD*

Table 5-1. Treatment Identification Matrix for Uncontrolled and Mid-Block Crossings

Pedestrian Level of Service	Expected Motorist Compliance		
	High	Moderate	Low (or Speed ≥ 35 MPH)
LOS A-D (average delay up to 30 seconds)	**LEVEL 1** High Visibility Crosswalk Markings, Advance Yield Lines, High Visibility Signage	**LEVEL 2** Curb Extensions, Bus Bulb, Reduced Curb Radii, Staggered Pedestrian Refuge (or Pedestrian Refuge Island) **Plus LEVEL 1**	**LEVEL 3** Two-lane street: In-pavement flashers, overhead flashing beacons Multi-lane street: RRFB **Plus LEVEL 1 AND 2**
LOS E-F (average delay greater than 30 seconds)	**LEVEL 2** Curb Extensions, Reduced Curb Radii, Staggered Pedestrian Refuge (or Pedestrian Refuge Island) **Plus LEVEL 1**	**LEVEL 3** Two-lane road: In-pavement flashers, overhead flashing beacons Multi-lane road: RRFB **Plus LEVEL 1 AND 2**	**LEVEL 4** HAWK, RRFB, New Signal, or Direct Pedestrians to Nearest Safe Crossing **PLUS LEVEL 1 AND 2**

Notes:

For candidate crosswalk locations on either a multi-lane street (three or more lanes), or on two-lane streets with average daily traffic volumes greater than 12,000 or with posted speed limit of 35 miles per hour or more, enhanced treatments beyond Level 1 striping and signing may be needed. Failing to provide an enhanced crosswalk and/or removing a crosswalk because it cannot be enhanced should be an option of last resort.

A pedestrian refuge island is recommended for consideration in all scenarios where at least six feet of right-of-way is available.

A road diet is recommended for consideration in all scenarios with four or more lanes of traffic and a daily traffic volume of less than 15,000 vehicles. With a road diet, the number of travel lanes is reduced and replaced with one or more of the following: a two-way left turn lane, wider sidewalks, new bicycle or parking lanes, conversion of parallel parking to angled or perpendicular parking. A daily traffic volume of 15,000 or less is a general guideline for identifying eligible multi-lane roadways where lanes could be removed and vehicle level of service would remain the same or improve.

5.3. Parklets

Parklets are the temporary repurposing and transformation of underused street parking spaces to extend the sidewalk and create more space for pedestrian amenities or outdoor seating for adjacent restaurants and cafes. The spaces are often in the public right-of-way between the curb and travel lanes in commercial and retail areas. They occupy on-street parking spaces and excess roadway area. Parklets are intended to increase public space, enhance the pedestrian environment, and improve corridor aesthetics.

San Francisco parklet
Source: http://sfpavementtoparks.sfplanning.org/

Parklets have been implemented successfully in New York City and San Francisco. The City of Oakland developed a pilot parklet program in late 2011, and expects implementation by 2012.

San Francisco's Pavement to Parks program recommends parklets only in areas that have limited public space, narrow sidewalks, or no parks. The areas should have existing conditions that will attract people to the space, such as retail and high pedestrian activity. Parklets are generally sponsored and implemented by community benefit districts, storefront business owners, non-profit institutions, and community organizations.

Recommendation

The City should establish a parklet program, based on lessons learned from San Francisco's and Oakland's parklets program. Prior to establishing a formal citywide program the City may wish to work with local businesses to permit individual parklets on an ad-hoc basis.

In addition to areas that lack public space and have the potential for open space demand, the following characteristics are recommended for parklet locations:

- Streets with speed limits of 25 mph or less
- Streets with parking lanes
- Site is not in front of a fire hydrant or would restrict access to utility covers and valves
- Site should be a minimum of two parking spaces in length or equivalent

5.4. Pedestrian Directional Signage

Pedestrian directional signage and maps enable people to navigate through public and private space and can enhance the walking experience to help make trips safe and easy. Most cities lack sufficient signage and map information for pedestrians. Pedestrian-oriented signage can help conceptualize a space, area or city as a whole. Maps and signage can help orient both residents and visitors and enable them to calculate the time to reach a destination.

Recommendation

The City should consider a pedestrian signage program within its Pedestrian Priority Zones that provides information on direct and safe routes between key origins and destinations, and where it is possible to cross streets and railroad tracks, access buildings, connect to public transit, and find community facilities such as public bathrooms.

The City should install walking maps, starting with the Amtrak Station and the transit hub at 40th Street and San Pablo Avenue. Pedestrian-oriented directional signs, similar to those used in Oakland, are also recommended.

5.5. Bikeway Destination Signage

Given the unintuitive nature of Emeryville's street and path network, destination signage for bicyclists can significantly improve navigation around the city. Destination signs may display directional or mileage information.

Recommendation

The City should consider installing destination signs on all bikeways. Along bicycle boulevards, the City should continue to install the purple bicycle boulevard directional signs. Signage programs should be coordinated with adjoining jurisdictions. See **Appendix B** for additional recommendations and guidelines for the use of bikeway signage

Directional Signs
Directional signs should be installed before intersections at decision points such as the junction of two or more bikeways. They include destinations and associated directional arrows.

Confirmation signs
Confirmation signs display mileage to destinations and should be installed regularly along the network, including where a bikeway turns. They are located midblock or on the far side of intersections and include destinations and distances.

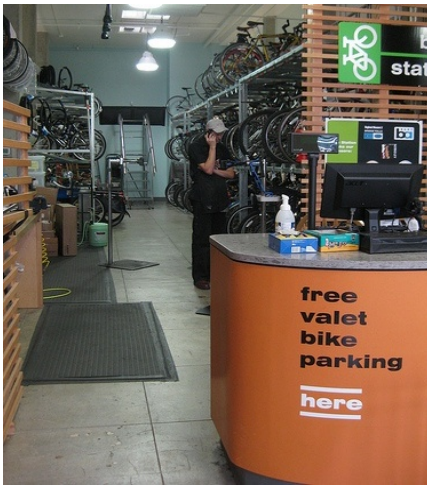
5.6. Bike Parking

Bicyclists need convenient, secure places to store their bicycles at the end of their trips; 22 percent of respondents to the *Emeryville Pedestrian and Bicycle Survey* reported that insufficient bike parking prevented them from making more bicycle trips. The City has a bicycle parking ordinance for private development.

Recommendation

The City should continue to enforce its bicycle parking ordinance and expand bicycle parking in public spaces. Additional bike parking should be provided at major transit hubs and car share locations, as well as locations identified in fieldwork and community outreach.

- Locations identified for bike parking include:
    - 40th Street at San Pablo Avenue
    - The Bay Street area
    - 40th Street at Emery Street
    - Emeryville Public Market
    - 65th Street at Hollis Street
    - 53rd Street and Hollis Street
    - Shellmound Way at Shellmound Street
    - Emeryville Amtrak station
    - 59th Street at Doyle Street
    - 45th Street at Spur Alley
    - Triangle Neighborhood
    - East BayBridge Shopping Center
    - Powell Street Plaza
    - Christie Avenue at 64th Street



The Berkeley Bike Station provides parking and other services.

- Consider establishing a bike station (an attended or restricted-access facility that offers secure bicycle parking and other amenities) at a centrally located site near transit and casual carpool locations, at the MacArthur Bart Station, and at large entertainment venues such as theaters.
- Consider bike stations (or Bike Link lockers or equivalent secure bicycle storage) to be a requirement for large developments.
- Potential locations for bike corrals (bicycle racks grouped within a parking space) include Bay Street, 59th Street between Hollis and Doyle Streets, and 65th Street between Hollis Street and Overland Avenue.
- See **Appendix B** for a detailed discussion of bike corrals, bike stations, and general design.

5.7. Bicycle Maintenance Stations

The installation of bicycle maintenance systems would support and make it easier for Emeryville residents and visitors to bicycle. These stations generally provide tire wrenches and pumps, Allen wrenches, and a few other tools allow minor adjustments. They can be installed for approximately $1,000 each and have been used successfully in Cambridge, MA. Bicycle maintenance stations are recommended at the Emeryville Public Market, along Doyle Street near Doyle-Hollis Park, and on the Bay Trail.


A bicycle repair station in Cambridge.

5.8. Signal Detection for Bicyclists

Bicycle detection at actuated traffic signals permits bicyclists to trigger a green light, even when no motor vehicle is present. California Assembly Bill 1581 requires all new and replacement actuated traffic signals[26] to detect bicyclists and to provide sufficient time for a bicyclist to clear an intersection from a standing start (see Appendix B for details). Caltrans Policy Directive 09-06 clarifies the requirements and permits any type of detection technology. The most common technologies are in-pavement loop detectors and video detection, both of which are used by the City. More recently, microwave detection has been used to detect and differentiate between bicyclists and motor vehicles.

Recommendation

The City should implement Policy 3.9 of this Plan, which states that "all signals should have functioning bicycle detection and signal timing shall be long enough to allow bicyclists to clear the intersection." Where bicyclists are required to wait over a loop detector to request a green light, a bicycle stencil should be painted on the roadway to indicate proper positioning. Bicycle detection with stencils is needed in through lanes and turning lanes. Consider installing signage to instruct bicyclists on positioning their bicycles to activate detection.

Fieldwork indicates that the following intersections do not detect bicyclists or have other issues that interfere with bicycle detection. The City should evaluate bicycle detection at these locations and improve detection if it is faulty:

- 40th Street (Some loop detectors are in poor condition and subject to stress from high traffic volumes)
- 45th Street at San Pablo Avenue (EB)
- 47th Street at San Pablo Avenue (EB and WB)
- 65th Street at Overland Street (WB)
- 65th Street at Shellmound Street (EB and WB) *
- 65th at Hollis Street (EB and WB) *
- Christie Avenue at Powell Street (SB)
- Bay Street at Shellmound Street (WB)
- Park Avenue at Hollis Street (EB and WB)
- Hollis Street at 40th Street (SB)
- Park Avenue at San Pablo Avenue (EB)
- 59th Street at Hollis Street (EB and WB)
- 53rd Street at Hollis Street (EB)
- 53rd Street at San Pablo Avenue (EB)
- Stanford Avenue at Hollis Street (EB and WB)**

Advance Signal Detection

In addition to ensuring bicyclists can trigger signals and have sufficient time to cross the street, the City should consider bicycle advance signal detection. This emerging technology detects a bicycle before the intersection, and extends the green phase to allow the bicyclist adequate time to clear the intersection. Technologies can also be programmed to collect bicycle volumes. Recent applications include City of Portland, and City of Pleasant Hill.

For more information, see http://bikeportland.org/2010/11/16/pbot-project-would-improve-signals-and-reduce-delay-for-bike-traffic-42822

** At this intersection, the stencil is not positioned over the loop detector. The existing stencil should be removed and repainted to communicate to bicyclists how to request a green light.*

[26] *Actuated traffic signals stay red until the signal detects a car or bicyclist that is waiting for the light to turn green.*

***At this intersection, bicyclists are not detected in the bike lane, but are detected in the motor vehicle lane.*

The City should replace loop detectors with video detection, microwave detection, or other effective technology. The City should also pursue an education campaign to teach bicyclists how to position their bicycles to activate loop detectors. This may include signage indicating stencils and positioning for loop detectors or video with messaging such as "Wait here for green."

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6. Bicycle Boulevards

Bicycle boulevards are generally defined as low-volume, low-speed streets that have been optimized for bicycle travel using treatments such as traffic calming and traffic reduction, signage and pavement markings, and intersection crossing treatments. Bicycle boulevards are an integral part of the City's bicycle network.

This chapter supports Policy 3.3 of this Plan, which states, "the City will construct the network of bicycle boulevards and monitor them for performance goals, as indicated in **Chapters 4, 5,** and **6** of this Plan."

This chapter provides specific guidelines for application of treatments on Emeryville's bicycle boulevards. The material is drawn from the *Bicycle Boulevard Treatments Memorandum*, written during the development of this Plan and presented as **Appendix C**.

6.1. Bicycle Boulevard Standards and Best Practices

Bicycle boulevards have been implemented in several cities throughout the country, and while no federal guidelines exist, several best practices have emerged for their development. This section summarizes standards and best practices for the development of bicycle boulevards, drawn from published materials and interviews with agency staff working to implement bicycle boulevards in eight communities throughout North America.

As demonstrated through the range of experiences and techniques used to develop bicycle boulevards in different jurisdictions, there are no strict standards or warrants for use of bicycle boulevard treatments. Commonalities that emerge among the jurisdictions include:

- Bicycle boulevards are low-speed, low-volume streets that encourage use by bicyclists.
- Distinctive signs and pavement markings are essential components of designating a bicycle boulevard.
- Most municipalities are looking into improving crossings of arterial streets and applying traffic calming and diversion techniques to improve the bicycling environment.
- Public input is a key component of identifying streets and treatments for bicycle boulevards.

However, the jurisdictions differed in terms of street selection, intersection treatments, speed control measures, and volume control measures, as described following.

6.1.1 Street Selection

Most municipalities identified bicycle boulevards through the bicycle master plan process. All municipalities considered local streets with existing traffic calming, closures, or signalized crossings of major streets for bicycle boulevard designation. Streets that improve connectivity to key destinations, provide a direct route for bicyclists, or where residents have expressed a desire for traffic calming are also good candidates.

Most bicycle boulevards are located on residential streets, although Austin, Berkeley, and Portland all have boulevards along commercial streets.

Figure 6-1. Emeryville's existing and proposed bicycle boulevards

6.1.2 Intersection Treatments

Major Street Crossings

The quality of treatments at major street crossings can significantly affect a bicyclist's choice to use a bicycle boulevard or not. If the delay for a bicyclist to cross a major street on a bicycle boulevard is considerably longer than the delay for crossing at an adjacent street, some bicyclists are less likely to use the bicycle boulevard.

Some jurisdictions have prioritized improving bicycle boulevard crossings of arterial streets when establishing a bicycle boulevard, while others began with signs and pavement markings, and are more recently focusing on improving major street intersections. Common treatments include curb extensions, crosswalks, median islands, and signals. Treatment selection is based on engineering judgment as well as manuals, primarily the Manual on Uniform Traffic Control Devices (MUTCD) and National Cooperative Highway Research Program (NCHRP) Report #562, *Improving Pedestrian Safety at Unsignalized Crossings* (2006). Several jurisdictions use pedestrian half-signals, while others use or are considering implementing Pedestrian Hybrid Beacons, also known as High-Intensity Activated Crosswalk or HAWK signals.

Minor Street Crossings

Municipalities differ significantly on use of stop control on bicycle boulevard intersections with other local streets. CAMUTCD Section 2B.05 *Stop Application* specifies when a stop sign can be used at the intersection of two streets with relatively equal traffic volumes and/or characteristics. Some municipalities, including Portland and Vancouver, stop control one direction of every intersection with a minor street.

Many municipalities turn stop signs or remove four-way stop-controlled intersections to give right-of-way to the bicycle boulevard, reducing the delay for bicyclists on the bicycle boulevard.

6.1.3 Speed Control Measures

Motor vehicle speeds are critical to the bicycling environment because of the likelihood of injury resulting from a high-speed crash, as well as turning, passing, and other potential conflicts between motor vehicles and bicyclists.

Automobile speed has a significant impact on the likelihood a fatality will result from a crash (see **Figure 6-2**).

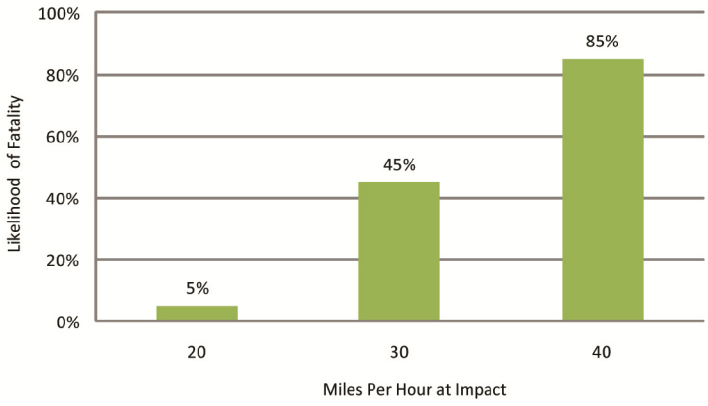

Figure 6-2. Likelihood of pedestrian fatality resulting from crash based on automobile impact speed.
Source: U.K. Department of Transport

Roads selected for bicycle boulevards tend to have maximum motor vehicle speeds of 25 mph, although some communities such as Albuquerque are reducing speeds through traffic calming or posting reduced speed limits. **Table 6-1** summarizes guidance for speeds on bicycle boulevards from the communities interviewed and key resources.

In general, a speed differential between motor vehicles and bicyclists of 15 mph or less is desirable to reduce turning conflicts and the number of passing events; the San Francisco Bicycle Plan recommends re-designing a street for maximum speed of 15 mph unless volumes are low.

Table 6-1. Posted Speeds and Speed Thresholds

Source	Posted Speed	Speed Threshold/Goal
Albuquerque, New Mexico	18	None specified
Austin, Texas	25	85th percentile 25 mph or less
Berkeley, California	25	None specified
Palo Alto, California	25	85th percentile 32 mph or less
Portland, Oregon	25	85th percentile25 mph or less; 15-20 mph preferred
Seattle, Washington	25	85th % speeds <5mph over posted
Vancouver, British Columbia	25	None specified
AASHTO *Guide for the Development of Bicycle Facilities*	25	None specified

6.1.4 Volume Control Measures

Motor vehicle traffic volumes affect the comfort of a bicyclist, particularly for roadways with shared travel lanes, such as bicycle boulevards. Higher vehicle volumes are less comfortable and mean more potential conflicts. To illustrate, on a 25 mph street with 1,000 vehicles per day (vpd), during peak hour a bicyclist traveling at 12 mph would be passed by a car traveling in the same direction about every two minutes.[27] By comparison, at 3,000 vpd, a bicyclist would be passed by a car every 46 seconds, and at 5,000 vpd, a bicyclist would be passed by a car every 28 seconds.

Table 6-2. Traffic Volume Guidelines

Source	Volume Threshold
Albuquerque, New Mexico	500+ vpd threshold for speed humps; 1,500 for diversion
Austin, Texas	None
Berkeley, California	None
Palo Alto, California	None
Portland, Oregon	1,000 vpd goal, depends on street
Seattle, Washington	None
Vancouver, British Columbia	< 3,000 vpd
AASHTO *Guide for the Development of Bicycle Facilities*	generally < 3,000 vpd

There is a wide variation in vehicle volume goals for bicycle boulevards considered by different jurisdictions, shown in Table 6-2. Goals range from 1,000 to 3,000 vpd, with the majority of jurisdictions lacking a volume goal. No jurisdiction has a specific set threshold that triggers implementation of volume control treatments. Instead, the decision to implement volume control treatments is based on the context of the bicycle boulevard, and engineering judgment plays heavily in the decision.

The majority of cities interviewed have a traffic calming program that is separate from bicycle boulevard implementation programs. Portland has modified its traffic calming program to permit traffic calming to be installed on a bicycle boulevard at the City's discretion, rather than just as a response to community request.

[27] *At peak hour, assuming peak hour is 10 percent of vpd, the street is two-way with traffic volumes split evenly between each direction, and cars are evenly spaced along the street.*

6.1.5 Impacts to Neighboring Streets

Some cities consider how traffic calming and/or diversion can affect traffic on adjacent streets; in Palo Alto, an increase of up to 25 percent of existing volume (under 2,500 vpd) is generally considered acceptable.[28] The Traffic Calming Program manual estimates that traffic calming treatments such as a series of speed humps can be expected to divert 10 to 20 percent of traffic onto other routes, while full and partial street closures result in a 50 to 90 percent diversion.

Portland's Neighborhood Traffic Management Program has defined an 'impact threshold curve' to evaluate what impacts are acceptable to neighboring streets. The City's standard impact curve is expressed in terms of total traffic volume. The parameters allow for an increase of up to 150 vpd on any street, while an increase of over 400 vpd on a local street is unacceptable, and the resulting traffic volume on any local street should not exceed 3,000 vpd.[29]

6.1.6 Impacts to Emergency Response Vehicles

Jurisdictions consider traffic calming impacts to emergency vehicle routes in one or more of the following ways:

- Treatments on emergency response routes must be approved by emergency response officials
- A limited set of emergency-vehicle-friendly traffic calming techniques are allowed

Examples of emergency-vehicle-friendly traffic calming techniques include 22-foot speed tables in lieu of speed humps, laterally offset speed tables (also called split humps), speed lumps (which have a gap that emergency vehicles' wheels can fit through), and other treatments.

The Palo Alto Traffic Calming Program Manual notes that emergency "vehicles are particularly susceptible to the vertical displacement of speed humps because of the weight and length of fire trucks, and the delicate instruments and patients in paramedic vans and ambulances." Emergency vehicles must reduce speeds more than a passenger car would to travel over a speed hump. The manual also states that intersection treatments have less of an impact on emergency vehicles than corridor treatments, as the vehicles already slow for intersections. Emeryville's emergency vehicle response time goals are an average of five minutes or less.[30]

It is estimated that a ladder truck may be delayed up to ten seconds at a speed hump and an ambulance may be delayed up to five seconds.[31]

6.1.7 Other Lessons Learned

Experience in several communities indicates that it is important to record where automobile speed measurements are taken in relation to the traffic calming or diversion treatment and replicate for before and after trials. In addition, traffic calming and diversion measures can be implemented on a trial basis to gauge residents' support prior to finalizing the design. Temporary speed humps, tables, and lumps are available, and temporary closures can be created with construction barrels or planters. However, if not aesthetically appealing, the temporary measures can diminish residents' opinions.

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[28] *Based on the Traffic Infusion on Residential Environments (TIRE) index, which shows that most residents do not notice an increase of 25 percent.*
[29] *http://www.portlandonline.com/transportation/index.cfm?&a=85375&c=35934*
[30] *City of Emeryville Website. Accessed March 15, 2011. http://www.ci.emeryville.ca.us/index.aspx?NID=359*
[31] *Ewing, Reid. (1999). p.142 Traffic Calming: State of the Practice. http://www.ite.org/traffic/tcsop/Chapter7.pdf*

6.2. Recommended Bicycle Boulevard Policies and Treatments for Emeryville

This section recommends policies for bicycle boulevard development in Emeryville. None of the case study cities have strict policies that require specific action if bicycle boulevard goals are not met. Similarly, because of the variety of conditions and importance of context-sensitive design, Emeryville's policies are meant to serve as guidelines, rather than standards. If a bicycle boulevard goal is not met, the City should consider treatments that will allow the bicycle boulevard to meet goals. If goals cannot be met, the City should consider a different type of bicycle facility.

This section first identifies Emeryville's existing and proposed bicycle boulevards. It then presents three goals for bicycle boulevards that address speeds, volumes, and intersection delay.

6.2.1 Street Selection

Emeryville's General Plan and the 1998 *Bicycle and Pedestrian Plan* identify bicycle boulevards based on traffic conditions and proximity to key destinations, including schools and parks. **Table 6-3** lists the bicycle boulevards. Note that bicycle boulevards on 66th Street and 55th Street are not included in this Plan and the extents of others have been modified.

Table 6-3. Emeryville's Bicycle Boulevards

Street	Extents	Notes
45th Street	Horton Street to San Pablo Avenue	Modified from General Plan. Changed Eastern extent to San Pablo Avenue.
45th Street	San Pablo Avenue to Adeline Street	
53rd Street	Horton Street to San Pablo Avenue	Included in General Plan.
Doyle Street	Ocean Avenue to 55th Street	Included in General Plan.
Horton Street/Overland Avenue	40th Street to 65th Street	Included in General Plan.
Stanford Avenue	Horton Street to Doyle Street	Included in General Plan.
59th Street	Horton Street to City Limits	Modified from General Plan. Changed eastern extent from City Limits to Doyle Street.

The General Plan includes bicycle boulevards on 55th Street from Doyle Street to the City Limits and on 66th Street from Shellmound Street to the City Limits. These facilities are not supported by this Pedestrian and Bicycle Plan. The General Plan will be amended to reconcile the inconsistencies.

6.2.2 Bicycle Boulevard Goals and Metrics

This section outlines recommended bicycle boulevard goals and metrics for Emeryville based on the best practices resources surveyed. The bicycle boulevard goals address metrics for motor vehicle speeds, motor vehicle volumes, and major intersection delay, described below.

Speed Goals

Streets developed as bicycle boulevards should have posted speeds of 20 mph or less, with 85th percentile speeds at 22 mph or less. If the street has relatively high volumes (over 3,000 vehicles per day) 85th percentile speeds should be further reduced below 22 mph where feasible.

- **Rationale**: Higher vehicular speeds increase the frequency of automobiles passing bicyclists and increase the severity of crashes that occur. Bicyclists generally travel at approximately 12 mph, and maintaining vehicular speeds at a speed closer to bicyclists' speeds greatly improves bicyclists' comfort on a street. Slower vehicular speeds also improve drivers' ability to see and react to bicyclists and minimize conflicts at driveways and other turning locations.

Motor Vehicle Volume Goals

Traffic volumes on bicycle boulevards east of Hollis Street should be below 1,500 vehicles per day. West of Hollis Street, traffic volumes should be below 3,000 vehicles per day. Higher volumes can be permitted for short segments with additional treatments.

- **Rationale**: Volumes of motor vehicles determine the frequency of passing events; at 1,000 vehicles per day, cars pass a bicyclist approximately every two minutes, while at 3,000 vehicles per day, cars pass a bicyclist every 46 seconds. The rate of automobiles passing a bicyclist indicates the number of potential conflicts and affects the comfort of the bicycling environment.

  Bicycle boulevards with volumes higher than 3,000 vehicles per day are not recommended, although a segment of a bicycle boulevard may accommodate more traffic for a short distance if necessary to complete the corridor. Providing additional separation with a bike lane, raised bike lane, cycle track, or other treatment is recommended where traffic calming or diversion cannot reduce volumes below this threshold.

Monitoring

As noted in Chapter 4, Section 4.4.3, the City should regularly monitor traffic volumes, and speeds on its bicycle boulevards to determine if they are meeting the goals listed above or not. Counts should be conducted every two years. If a bicycle boulevard goal is not met, the City should consider treatments that will allow the bicycle boulevard to meet goals. If additional treatments are not possible, or if treatments are unlikely to result in conditions that meet the above goals, the City should consider a different type of bicycle facility.

Emeryville should collect this data and evaluate each bicycle boulevard in the case of any of the following:

- Development occurs that is projected to increase motor vehicle volumes on the bicycle boulevard
- The *Pedestrian and Bicycle Plan* is updated
- Substantial community concern is brought to the City

6.2.3 Bicycle Boulevard Treatment Selection

This section identifies five levels of treatment for bicycle boulevards. The appropriate treatment level is dependent on how well the bicycle boulevard meets the above speed, volume and delay goals. If one treatment does not address out-of-compliance bicycle boulevards, the next treatment level should be used. This phased approach promotes implementation of the least intensive treatment to achieve the desired outcome. **Table 6-4**

shows the hierarchy of application levels. Appendix B includes descriptions and illustrations of the individual treatments. If increased levels of treatment fail to achieve the goals, re-designation should be considered.

The minimum standard to designate a street as a bicycle boulevard, Level 1 treatments consist of "Bicycle Boulevard" or other identification signs and pavement markings. The second level includes these items, plus wayfinding signage and treatments to major street crossings. All bicycle boulevards in Emeryville should meet Level 2 treatments at a minimum.

Traffic calming and diversion treatments (Levels 3, 4, and 5) should be implemented on bicycle boulevards as necessary when the street exceeds the target vehicular speed and volume thresholds. If an analysis shows that the bicycle boulevard does not meet the thresholds, the City should consider applications for the next treatment level.

Note that while traffic calming treatments primarily affect motor vehicle speeds, they also reduce volumes, as drivers avoid slower streets. Speed humps can lead to a 20 percent reduction in vehicular speeds, while chicanes, traffic circles, and other narrowing can reduce vehicle volumes by 10 percent.[32]

Level 1. Basic Bicycle Boulevard

Signs and pavement markings represent the least physically intensive treatments and should be included in all bicycle boulevard treatments. Emeryville's pavement stencils and purple bicycle boulevard signs provide a strong visual identity for the street and designate the corridor as a bicycle route. This is the minimum treatment for a street to be considered a bicycle boulevard.

Level 2. Enhanced Bicycle Boulevards

Wayfinding signs and directional pavement markings improve the experience of a bicycle boulevard and passively market the facility. Intersection treatments that reduce delay can be a major determinant of whether a bicyclist uses the bicycle boulevard rather than a parallel street. Emeryville should build all bicycle boulevards to a Level 2 minimum standard.

Level 3. Limited Traffic Calming

If speeds and volumes on a bicycle boulevard rise above the City's goals, Level 3 treatments should be implemented. Traffic calming should be considered on bicycle boulevards that have 85th percentile speeds greater than 22 mph. Limited traffic calming can also reduce volumes 10 to 20 percent.

Specific treatments depend on public input, whether the street is a transit street, vehicular speeds, and lane widths. Where on-street parking is important, minimize loss of parking by using vertical speed control where appropriate, minimizing impacts to bicycle travel where possible.

[32] *Berkeley Bicycle Boulevard Design Tools and Guidelines.*

Table 6-4. Application of bicycle boulevard treatment levels

Level	Signs	Pavement Markings	Intersection Treatments	Traffic Calming	Traffic Diversion
Level 1 Basic Bicycle Boulevard	• identification	• shared lane markings			
Level 2 Enhanced Bicycle Boulevard	• identification • wayfinding	• shared lane markings • directional markings for bicyclists	• crossing improvements at major streets (high-visibility crosswalks, median islands, HAWK and standard signals)		
All bicycle boulevards in Emeryville should meet level 2 treatments at a minimum					
Level 3 Limited Traffic Calming	• identification • wayfinding	• shared lane markings • directional markings for bicyclists	• crossing improvements at major streets (high-visibility crosswalks, median islands, HAWK and standard signals) • improve visibility of bicyclists (forward stop bars, bicycle crosswalks)	• vertical speed control (speed humps/ cushions/ tables) • horizontal speed control (chicanes, traffic circles, curb extensions)	
Level 4 Significant Traffic Calming	• identification • wayfinding	• shared lane markings • directional markings for bicyclists	• crossing improvements at major streets (high-visibility crosswalks, median islands, HAWK and standard signals) • improve visibility of bicyclists (forward stop bars, bicycle crosswalks)	• vertical speed control (speed humps/ cushions/ tables) • horizontal speed control (chicanes, traffic circles, curb extensions) • narrowings (chokers, neckdowns, pinchpoints, center island narrowing)	
Level 5 Traffic Diversion	• identification • wayfinding	• shared lane markings • directional markings for bicyclists	• crossing improvements at major streets (high-visibility crosswalks, median islands, HAWK and standard signals) • improve visibility of bicyclists (forward stop bars, bicycle crosswalks)	• vertical speed control (speed humps/ cushions/ tables) • horizontal speed control (chicanes, traffic circles, curb extensions) • narrowings (chokers, neckdowns, pinchpoints, center island narrowing)	• full and partial closures, diagonal diverters

Level 4. Significant Traffic Calming

If treatments indicated in Level 3 do not reduce speeds and volumes below the City's goals, Level 4 treatments should be implemented. On bicycle boulevards west of Hollis Street where automobile speeds and volumes are identified issues, neck-downs can reduce speeds significantly, as drivers must slow and wait for one car to pass the treatment at a time. This treatment is not recommended on bicycle boulevards east of Hollis due to limited effectiveness because of low traffic volumes.

Treatments shall not significantly hinder emergency vehicle access or bus routes and the Emeryville Fire Department, AC Transit, and Emery Go-Round should be consulted in the design, as appropriate. Neck-downs shall be designed to permit a 20 foot clear access for emergency vehicles.

Level 5. Traffic Diversion

If treatments indicated in Level 4 do not reduce speeds and volumes below the City's goals, Level 5 treatments should be implemented. Where a bicycle boulevard has high traffic volumes, particularly cut-through traffic, diversion should be considered to substantially reduce volumes on the road. Diversion should only be implemented after a thorough traffic analysis and public outreach process, and traffic conditions should be evaluated after six months to determine whether neighboring streets were negatively impacted.

Alternatively, a treatment can be implemented based on engineering judgment and monitored to determine impacts to neighboring streets. Based on the *Traffic Infusion on Residential Environments* (TIRE) index, an increase of up to 25 percent of existing volume on an adjacent local street is generally acceptable.

6.3. Recommended Design Treatments for Emeryville's Bicycle Boulevards

This section provides existing conditions and general recommendations for Emeryville's existing and proposed bicycle boulevards, based on automobile speeds and volumes, number and location of crashes, and other factors. **Table 6-5** summarizes proposed treatments for all bicycle boulevards. Proposed treatments are also included in **Chapter** 7.

All bicycle boulevards in the City need some level of treatment to be brought up to Level 2: Enhanced Bicycle Boulevard Design treatments. Sections of several bicycle boulevards are also designated as transit streets in the City's General Plan. Treatments on these streets should allow for wider travel lanes, limit horizontal traffic calming treatments, and depending on bus volumes, should consider separation of bicyclists and motor vehicles. Angled parking shall not be developed on bicycle boulevards.

The primary emergency response routes used by the Emeryville Fire apparatus include the following:

- Hollis Street (entire length)
- San Pablo Avenue (entire length)
- Powell Street (from tip of peninsula to San Pablo Avenue)
- Park Avenue (Hollis Street to San Pablo Avenue)
- 40th Street (entire length, including overcrossing)

- Christie Avenue (Shellmound Street to 65th Street)
- Shellmound Way (entire length)
- Shellmound Street (Ashby/I-80 off-ramp/Aquatic Park to 40th Street)

Secondary access routes include 45th Street between Horton Street and San Pablo Avenue, 53rd Street between Horton Street and San Pablo Avenue, and Horton Street/Overland Avenue.

At this time, all of Emeryville's bicycle boulevards with vehicle volume data except Horton/Overland meet vehicle volume goals. Vehicle volumes on 45th Street and Stanford Avenue, and vehicle speeds and intersection delay on all bicycle boulevards should be measured to determine if additional treatments are necessary.

More extensive treatments are required along Horton/Overland to meet the proposed bicycle boulevard goals. The background supporting recommendations for Horton/Overland is described after the table. Prior to installation of any diverters a traffic study will be needed to determine the effects.

Table 6-5. Recommended Treatments for Existing and Proposed Bicycle Boulevards

Bicycle Boulevard	Recommended Treatments
45th Street Horton Street to Adeline Street	• Measure speeds and traffic volumes. • Install bicycle boulevard signage and pavement markings to bring up to Level 2 Treatments. • Consider speed lumps (similar to a speed hump with a gap that allows vehicles with a wider wheel bed to pass unencumbered) if measured speeds are higher than 20 mph. • If Spur Alley bicycle route is implemented, improve crossing with high visibility crosswalks and consider raised intersection.
53rd Street Horton Street to San Pablo Avenue	• Measure speeds and traffic volumes. • Install bicycle boulevard signage and pavement markings to bring up to Level 2 Treatments. • Consider green street treatments such as narrowing street and removing parking to provide bioswales or to daylight Temescal Creek. • If Spur Alley bicycle route is implemented, install high-visibility crosswalks and consider raised intersection. • At San Pablo Avenue, add bicycle pocket or narrow 53rd Street to one lane in either direction with shared lane marking. Adjust signal timing to provide enough time for bicyclists to cross San Pablo Avenue.
Doyle Street Ocean Avenue to 55th Street	• Measure speeds and traffic volumes. • Install wayfinding signage. • Add HAWK signal or full signal at Powell Street. • Install bicycle boulevard signage and pavement markings south of 59th Street to bring up to Level 2 Treatments.

Bicycle Boulevard	Recommended Treatments
Horton Street/Overland Avenue 65th Street to 40th Street	• Measure speeds and traffic volumes • Consider the installation of traffic diverters at key locations. • Explore roadway widening on Horton between 59th Street and Powell Street to better accommodate bicycle lanes. • At Horton and 40th Street install video detection and stripe a bicycle lane between right and left turn lanes to allow bicyclists to continue through northbound. Mark street to emphasize no through motor vehicles. • At Overland and 65th Street, evaluate the need for improvements to bicycle detection and turning movements. • Install three-way stop at intersection of 62nd Street and Horton Street • Enforce restrictions on parking and loading in bike lanes. • See Section 6.3.1 for background
Stanford Avenue Horton Street to Doyle Street	• Measure speeds and traffic volumes • Install bicycle boulevard signage to bring up to Level 2 Treatments. • Continue bicycle boulevard markings between Hollis Street and Doyle Street and include shared lane markings east of Doyle Street • Install bicycle detection in bicycle lane at Hollis Street.
59th Street Horton Street to Doyle Street	• Measure speeds and traffic volumes. • Install bicycle detection at Hollis Street. • Install bicycle boulevard signage to bring up to Level 2 Treatments.

6.3.1 Horton/Overland Treatments

The Horton/Overland bicycle boulevard provides a continuous north-south connection through most of Emeryville, and is a very important bicycle connection, providing access to the Transit Center, the future South Bayfront Bridge, and to Mandela Parkway/Bay Trail in Oakland. The entire bicycle boulevard is currently signed. Bicyclists share the travel lane with motorists north of 62nd Street and south of 53rd Street. Bike lanes are striped between 62nd Street and 53rd Street.

Twenty-four hour traffic counts conducted in fall 2010 show that sections of the bicycle boulevard exceed the 3,000 vehicles per day goal. Within a 24-hour weekday period 3,177 motorists were counted between Park Avenue and 40th Street, 4,859 motorists were counted between Stanford Avenue and 53rd Street, and 3,742 motorists were counted between 59th Street and Powell Street. Volumes along the bicycle boulevard are expected to increase with the construction of Emery Station West. The entrance for the transit center will be located on Horton Street at 59th Street, and the entrance to the garage that will serve the facility will be located along Horton Street just south of 62nd Street.

Delivery drivers and other motorists commonly park on the bicycle lanes on Horton Street between 62nd Street and Powell Street. Bicyclists have noted that it is difficult to merge with traffic to travel around parked vehicles.

The following treatments are recommended along the Horton/Overland bicycle boulevard:

- Measure speeds and traffic volumes
- Consider the installation of traffic diverters at key locations. Suggested locations are at 62nd Street and Stanford Avenue, and enhancements to the existing signed diversion at 40th Street. First develop a traffic study to analyze the impacts of traffic diversion. Then, any installation should be done on a trial basis, with final decisions after evaluation.
- Explore roadway widening on Horton between 59th Street and Powell Street to better accommodate bicycle lanes on both sides and loading lane on east side.
- At Horton and 40th Street install video detection and stripe a bicycle lane between right and left turn lanes to allow bicyclists to continue through.
- At Overland and 65th Street, evaluate the need for improvements to bicycle detection and turning movements.

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7. Site-Specific Projects

This chapter describes upgrades to bicycle and pedestrian infrastructure for specific locations around the city. Because of the large number and variety of these projects they have been classified by type. Some projects, such as overcrossings and paths, are both pedestrian and bicycle projects, and other projects may include both pedestrian and bicycle improvements.

This chapter is organized as follows:

- Pedestrian Projects—this includes sidewalks, pedestrian crossings, transit stop improvements, and corridor enhancements
- Overcrossings
- Paths—this includes pedestrian-only paths and multi-use paths
- Bicycle Projects—this includes bike lanes, signed bike routes, bicycle boulevards, intersection improvements, and spot improvements

All site-specific projects identified in this chapter have been prioritized based on criteria agreed upon by the City and the Bicycle and Pedestrian Advisory Committee. Section 7.5, beginning on page 7-9, includes maps of the projects and detailed project tables that describe the location, recommendation, and cost for each project.

7.1. Pedestrian Projects

The pedestrian improvements will enhance pedestrian access and circulation within Emeryville. These improvements are divided into sidewalks (S), pedestrian crossings (C), transit stop improvements (T), and corridor enhancements (E). Specific project recommendations are listed in **Table 7-3** and their locations are shown on **Map 7-1.**

7.1.1 Sidewalks (S)

Sidewalk projects include gap closures: sidewalk installation where none exist, directional signage where sidewalks are not planned, and sidewalk upgrades to widen or otherwise improve them to meet ADA requirements or City design guidelines.

Twelve sidewalk gap closure projects, totaling 2.26 miles, are recommended. Most of the City's sidewalk gaps have been closed as new developments are built and developers construct adjacent sidewalks. Gaps that remain are the focus of recommended projects, especially along Horton or Holden Streets near Park and Overland Avenues along the railroad tracks.

One sidewalk upgrade project, totaling 0.60 miles, is recommended. Guidelines for minimum sidewalk widths are included in the *Emeryville Design Guidelines*. Generally they require a minimum 6-foot through-zone width for the lower density residential neighborhoods and 7.5 feet on all

Sidewalks that do not provide sufficient space are recommended for upgrades.

other streets in the city, although wider minimums are identified for certain specific areas. Some parts of Emeryville are governed by area plans, and have wider width requirements. Appendix A expands these guidelines with additional recommendations for pedestrian best practices.

7.1.2 Pedestrian Crossings (C)

Crossing improvements are recommended at 15 locations, mostly along San Pablo Avenue, Powell Street, and 40th Street, as well as selected locations on smaller roadways. General guidelines for treating uncontrolled intersections and mid-block crossings are described in Section 5.2.

Rectangular Rapid Flashing Beacons (RRFB) improve motorist yielding rates at uncontrolled crosswalks.

7.1.3 Transit Stop Improvements (T)

Convenient transit is a hallmark of a walkable community, and expands the range of both pedestrians and bicyclists. High-quality transit stops with easy access promote the use of public transportation.

Transit stops are categorized as Primary, Secondary, Tertiary or Local, based on location and ridership counts from a ridership study conducted in 2010, as follows:

- **Primary Stops:** highest transit ridership, multi-modal transit connections or key shopping and work destinations within the City of Emeryville. High priority for new amenities.
- **Secondary Stops:** moderate transit ridership and shopping, work, and medium to high-density residential destinations. Medium priority for new amenities.
- **Tertiary Stops:** low to medium transit ridership and local commercial and residential neighborhoods. Lower priority for new amenities.
- **Local Stops:** lower daily transit ridership and local commercial and residential neighborhoods. Lowest priority for new amenities.

Amenities provided for each bus stop will depend on funding and available space. **Table 7-1** provides guidance for the amenities to be provided by the type of bus stop, while **Table 7-2** lists stops by type. In addition to this general guidance, specific improvements for primary and secondary stops are described in **Table 7-3**.

Table 7-1. Recommended Bus Stop Amenities by Type of Stop

	Primary Stop	Secondary Stop	Tertiary Stop	Local Stop
Bench	X	X	X	X
Trash Bin	X	X	X	X
Lighting	X	X	X	X
Bike Racks	X	X	X	
Shelter	X	X	X	
Real Time Bus Info	X	X		
Landscaping	X			

Table 7-2. Transit Stop Types

Transit Stop Type	Description	Stops
Primary Stops	Bus stops with the very highest transit ridership, as well as multi-modal transit connections or key shopping and work destinations within the City of Emeryville. High priority for new amenities.	• San Pablo Avenue / 40th Street Transit Hub (T.1) • Christie Avenue / Shellmound Way/ Public Market (T.2) • Shellmound St / IKEA/Bay Street (T.3) • 59th St / Horton St and 59th St / Hollis St (T.4) • Powell St at Watergate Drive (T.5) • 40th Street / Emery Street (T.6) • 65th Street / Shellmound Street (T.7) • Shellmound Street / Christie Avenue to Powell Street (T.8)
Secondary Stops	Bus stops with moderate transit ridership, as well as shopping, work, and medium to high-density residential destinations. Medium-high priority for new amenities.	• Hollis Street / 53rd Street (T.9) • Powell Street - Police & Fire Station/ Watergate Condos (T.10) • Hollis Street / 40th Street (T.11) • Christie Ave - Trader Joe's / Powell Street Plaza (T.12) • Christie Avenue / 64th Street (T.13) • Hollis Street / 65th Street (T.14) • Shellmound Street - Public Market (T.15)
Tertiary Stops	Low-medium priority bus stops with lower daily transit ridership and local commercial and residential neighborhoods. Low priority for new amenities.	• Hollis Street / 45th Street • 40th Street / Horton Street • Park Avenue / San Pablo Avenue • Hollis Street and 63rd Street to 64th Street • Vallejo Street / 66th Street • Christie Avenue / 65th Street • San Pablo Avenue / 37th Street • San Pablo Avenue / 45th Street
Local Stops	Lowest priority.	• 40th Street / Harlan Street • San Pablo Avenue / 47th Street • Park Avenue at Pixar • Stanford Avenue / Peladeau / Novartis • Powell Street / Admiral Way • Hollis Street / 67th Street

Notes:

Pairs of bus stops have been consolidated (i.e. eastbound/westbound or northbound/southbound stops at the same intersection or two stops within a block) since these stops will have similar pedestrian and transit access recommendations.

New transit stops are envisioned in the Shellmound Streetscape Design Guidelines (2012). These should be considered primary stops and developed in accordance with the principles provided in the Shellmound Streetscape Design Guidelines.

7.1.4 Corridor Enhancements (E)

Two corridor enhancement projects are recommended, one for 53rd Street and one for San Pablo Avenue. These projects entail significant modifications and incorporate a variety of techniques to enhance the pedestrian environment. They are briefly described below, with details provided in **Table 7-3** in this chapter and in Priority Project Sheets in Chapter 8.

53rd Street Greenway

Fifty-third Street is classified as a greenway, a green street and a bicycle boulevard in the *Emeryville General Plan*. When complete, the improvements will run from Temescal Creek Park on the east end to the planned South Bayfront Bridge on the west end, which will provide bicycle and pedestrian access over the railroad tracks to Bay Street and the Bay Trail.

Recommended corridor enhancements include:

- Improving the intersection at Horton Street and connection to the planned South Bayfront Bridge by narrowing 53rd Street, extending the sidewalk on the west side of Horton Street, and creating a raised intersection.
- Between Hollis Street and San Pablo Avenue, three alternatives are proposed. All alternatives would maintain 53rd Street as a bicycle boulevard. Alternative A would selectively narrow the street at select locations by installing storm water curb extensions. Alternative B would widen the sidewalks on both sides and install bioswales. Alternative C would involve widening the sidewalk on the south side only and creating a creek feature similar to Frog Park along Temescal Creek in Oakland. More detail is provided in **Table 7-3** and Section **8.7.**

San Pablo Avenue

San Pablo Avenue is a key transportation corridor for Emeryville, Oakland, Berkeley, and other communities in Alameda and Contra Costa County. Emeryville has made significant improvements to this corridor, including pedestrian crossing improvements, landscaped medians, and sidewalk improvements. This Plan recommends that the City continue to improve San Pablo Avenue to make it a more complete street—one that accommodates pedestrians, bicyclists and transit in addition to motorists.

To accomplish this, pedestrian improvements are recommended on San Pablo Avenue from 53rd Street to 36th Street. Additionally, a greening study shall be considered for San Pablo Avenue, which would consider improvements such as installing bioswales in bulb-outs at intersections, to improve the aesthetic of the street and reduce run-off, provide pedestrian improvements, and calm traffic. Bicycle projects recommended along San Pablo Avenue include installing "Bicycles May Use Full Lane" signs and painting shared lane markings in the outside lanes.

San Pablo Avenue is a Caltrans-owned roadway (State Route 123); therefore, the City is currently limited in the changes it can make. In the long term, the City shall take the steps necessary to acquire the roadway from Caltrans and develop a greening study.

7.2. Overcrossings

Bicycle and pedestrian travel in Emeryville is significantly limited by two major North-South barriers, Interstate 80 and the Union Pacific railroad tracks. Recommended overcrossing improvements include:

- **65th Street Bridge:** This bridge would span I-80, connecting 65th Street to Frontage Road and the Bay Trail. The City is currently planning this bridge.

- **South Bayfront Bridge:** This bridge from Horton Landing Park to Ohlone Way would provide a connection over the railroad tracks between major mixed-use destination at Bay Street and employment centers on Horton Street.
- **Powell Street Pedestrian/Bicycle Bridge:** A substandard pedestrian/bicycle bridge exists on the Powell Street Bridge over the railroad tracks. The City should conduct a feasibility study for improved pedestrian and bicycle crossing at this location. In conjunction with adjacent development, the City should seek to improve pedestrian and bicycle access. Any improvements to this bridge are long-term and the need for the improvements should be re-evaluated after construction of the South Bayfront Bridge.

These recommendations are included in the project lists and maps for both pedestrian and bicycle facilities.

7.3. Paths

Paths include both pedestrian-only paths which are restricted to pedestrian use, and multi-use paths, which permit bicyclists and other non-motorized users.

7.3.1 Pedestrian Paths

Eight pedestrian-only paths are recommended (0.96 miles). These include segments of the Emeryville Greenway, an extension of the Temescal Creek Path, and short mid-block connections. These recommendations are included in the project lists **(Table 7-3)** and map **(Map 7-1)** for pedestrian projects.

A pedestrian-only path on the Emeryville Greenway

7.3.2 Multi-Use Paths

Multi-use paths are recommended to complete the Bay Trail within Emeryville and to provide key connections between on-street bikeways. Twelve multi-use path projects are recommended, totaling 2.04 miles.

Major multi-use path recommendations include the following:

- Through Emeryville, the **Bay Trail** currently includes a mix of multi-use paths, sidewalks and bike lanes. In accordance with the *Emeryville General Plan*, and the *Powell Street Urban Design Plan*, the Bay Trail should be improved to be a multi-use path for much of its length. Improvements to the Bay Trail include:
    - Spot improvements along the existing Bay Trail along Frontage Road between Shorebird Park and Powell Street.
    - Widening and straightening the existing multi-use path on the south side of the Powell Street undercrossing of I-80 and constructing a multi-use path on the north side of Powell Street.
    - Improvements to the Bay Trail connection between Christie Avenue and Shellmound Street.

    - Construction of a new multi-use path from Powell Street to Shellmound Street at Ohlone Way, west and south of the Powell Street Plaza.

- The **AC Transit/ Joseph Emery Park Path** would extend the existing multi-use path adjacent to Pixar north to 47th Street. Implementation requires an easement or redevelopment of the AC Transit bus yard.
- The **Emery Bay Village Path** will connect the corner of 47th Street and Doyle Street with Spur Alley, providing a convenient bicycle and pedestrian connection between neighborhoods.
- **The Pickleworks Path** from Doyle Street and 55th Street to 53rd Street would extend the Doyle Street bicycle boulevard. Implementation requires an easement.
- A diagonal path from the west end of 47th Street to Spur Alley, adjacent to Emery Bay village.
- Completion of the **Emeryville Greenway** includes construction of multi-use paths from Stanford Avenue to Park Avenue and Halleck or Hubbard Street, via Horton Landing Park and redevelopment of the Sherwin Williams site.
- The **Secondary School/Emeryville Center for Community Life Path** will connect 47th and 53rd Streets along the western edge of Emery Secondary School. Implementation will require coordination with Emery Unified School District and the Emeryville Center for Community Life.
- Over the long term, the Emeryville Transit Center should conveniently connect with the Peninsula. Consider the development of a multi-use path that crosses under the railroad tracks and over the freeway. While no specific alignment is proposed in this Plan, the path is envisioned as part of a newly connected City.

7.4. Bicycle Projects

This section includes bikeway network projects (B), intersection improvements (I), and spot improvements (SP).

7.4.1 Bikeway Network

The recommended bikeway network envisions a comprehensive, safe, and logical network of facilities wherein all types of bicyclists can ride to destinations within the city or seamlessly connect into Oakland or Berkeley. Emeryville's recommended bikeway network consists of Class I multi-use paths, Class II bike lanes, Class III signed bike routes, bicycle boulevards and streets with shared lane markings. The three bikeway classes are illustrated in **Figure 7-1**.

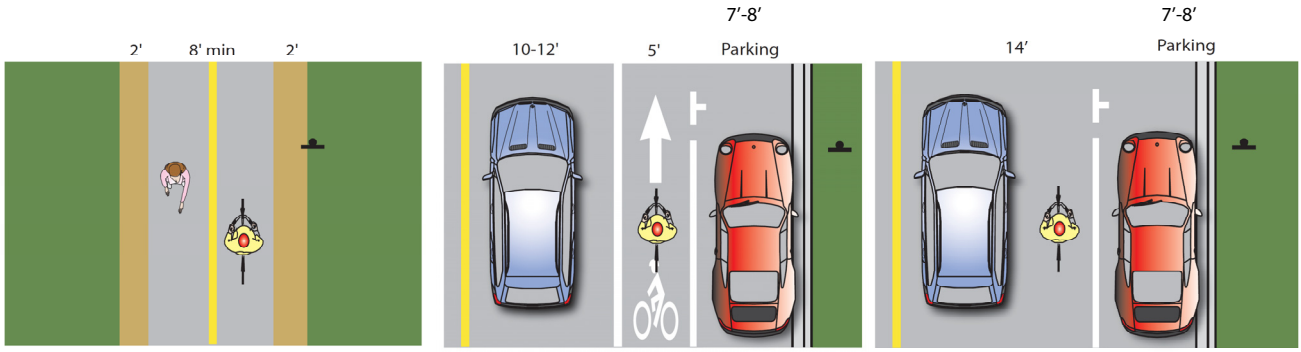

Figure 7-1. Caltrans Bikeway Classifications

The recommended network includes 2.04 miles of new multi-use paths, 0.61 miles of new bike lanes, improvements to 1.17 miles of bicycle boulevards, and nearly a mile (0.95) of new bike routes. Recommendations are summarized briefly below.

Multi-Use Paths

Multi-use paths are described in detail in Section 7.3. Much of the recommended network consists of multi-use paths. Key recommendations include:

- Improvements to the **Bay Trail**, which would improve safety and comfort along Powell Street under I-80, provide an improved connection between Powell Street and Shellmound Street along Christie Avenue, and, in the long-term, provide a multi-use path between Powell Street/I-80 ramps and Shellmound Street/Ohlone Way.
- Extension of the **AC Transit/ Joseph Emery Park Path**, which would provide a parallel route to San Pablo Avenue.
- Construction of the **Pickleworks Path**, which would extend the Doyle Street bicycle boulevard to 53rd Street.
- Completion of the **Emeryville Greenway**, which would connect the planned South Bayfront Bridge to points north and south.

Bicycle Boulevards

Bicycle boulevard improvements are described in detail in Chapter 6. Bicycle boulevard improvements range from installing signage and stenciling bicycle boulevard markings on the roadway, to more extensive treatments, including traffic diversion. Improvements are recommended on:

- **45th Street** from Horton Street to Doyle Street
- **47th Street** from San Pablo Avenue to Adeline Street
- **53rd Street** from Horton Street to San Pablo Avenue
- **Doyle Street** from Ocean Avenue to 55th Street
- **Horton Street/Overland Avenue** from 63rd Street to 40th Street
- **Stanford Avenue** from Horton Street to Doyle Street
- **59th Street** from Horton Street to Doyle Street
- **62nd Street** from Horton Street to Hollis Street

Bike Lanes

Bike lanes provide a striped and stenciled lane for one-way travel on each side of a roadway. The recommended bike lanes fill in gaps in the existing bikeway network, provide connections to Oakland, and provide improved connections along the Bay Trail. Specific recommendations include:

- Striping bike lanes on the west and east ends of **65th Street** to fill in gaps
- Striping bike lanes on **Emery Street and Peralta Street** to connect to proposed bike lanes in Oakland
- Striping a contra-flow bicycle lane on **Christie Avenue** between Shellmond Street and Powell Street to improve the Bay Trail

In addition, several other projects include short "bicycle pockets."

Bike Routes/ Shared Lane Markings

Class III Bike routes provide for shared roadway use and are generally only identified with signage, but may include shared lane markings. Bike routes may have a wide car travel lane or shoulder that allows for bicyclists and motorists to travel side-by-side. Recommended bike routes to provide connections between the City's longer bicycle facilities. Specific recommendations include:

- Signing **Spur Alley** as a bike route to provide improved north-south bike access
- Signing **Sherwin Avenue and Halleck Street** as a bike route to connect to planned bike routes in Oakland
- Signing **Emery Street** north of 40th Street as a bike route, to improve north-south bike access
- Painting shared lane markings on **Ohlone Way** to provide connections between the South Bayfront Bridge and bike lanes on Shellmound Street

Although this Plan does not officially designate San Pablo Avenue or Hollis Street as bicycle routes, the following spot improvements are recommended (see Section 7.4.3):

- Installing Bikes May Use Full Lane" signs and painting shared lane markings on **San Pablo Avenue**
- Installing "Bikes May Use Full Lane" signs on **Hollis Street**

7.4.2 Intersection Improvements for Bicyclists (I)

Intersection improvements consist of enhancements to make crossing or navigating through specific intersections on the bikeway network safer or more convenient. This Plan recommends nine intersection improvements for bicyclists, which largely consist of improving detection of bicyclists at signalized intersections and striping bicycle lanes up to the intersection. Key intersection improvements include:

- Emeryville Greenway at 65th, 66th, and 67th Street crossings (signage, beacons, pavement markings)
- AC Transit/Joseph Emery Park Path midblock crossing of 45th Street (crosswalk, curb extensions)
- San Pablo Avenue / 53rd Street (design study)
- San Pablo Avenue / 45th Street (signal detection, crosswalk, further study)
- 65th St at Overland Ave (signage, shared lane markings)
- Adeline/San Pablo/ Macarthur/Peralta "Star Intersection" (landscaping, intersection redesign)
- Doyle St at Powell St (signal or beacon)
- Emery St: Park Ave at Joseph Emery Park Path (left-turn lane for eastbound bicyclists)

- Spur Alley at 45th St (raised intersection, crosswalk)
- Spur Alley at 53rd St (raised crosswalk, signage)

Specific details are provided in **Table 7-4**. Note that many of these improvements are contingent on associated bicycle infrastructure projects being constructed, and will be implemented with larger projects. See also Section 5.7, in Chapter 5, for a description of a citywide program to improve bicycle detection at signalized intersections.

7.4.3 Spot Improvements for Bicyclists (S)

The following spot improvements are small-scale interventions recommended to improve bicycling conditions, and are targeted to specific locations where a linear bikeway may not be appropriate.

- **"Bicycles May Use Full Lane" signs** remind bicyclists and motorists that bicyclists are allowed use of the full travel lane. They are recommended on Hollis Street, and on San Pablo Avenue for northbound traffic at Macarthur Boulevard and for southbound traffic at 53rd Street. The City should also explore transferring ownership of San Pablo Avenue so that more intensive improvements can be considered, as described in Section 7.1.4
- **40th Street Transit Zone:** Shared lane markings are recommended within the right travel lane in both directions to bridge the gap between existing bike lanes in Emeryville and planned bike lanes in Oakland.
- **Frontage Road north-south path (Bay Trail)**: Existing sidewalk will be improved to accommodate bicyclists on a multi-use path and the turning radius on the southwest corner of Access Road/Frontage Road will be reduced.

7.5. Detailed Project Lists and Maps

This section provides details for the site-specific projects described in the prior sections. Due to the number of recommended site-specific projects, they have been prioritized.

7.5.1 Detailed Project Lists and Maps

The recommended bicycle and pedestrian projects are shown in **Map 7-1** and **Map 7-2**, respectively, on the following pages. **Table 7-3,** starting on page **7-13,** lists pedestrian projects by priority order. **Table 7-4**, on page **7-20**, lists bicycle projects by priority order. The project tables include project numbers that can be cross-referenced to the project maps, a description of each project, and estimated cost.

Note that overcrossings and multi-use paths are shown on both maps, and included in both tables. Pedestrian paths are only shown on the pedestrian map and included in the pedestrian project table. Citywide improvements described in Chapter 5 are not shown on the maps or included in the tables.

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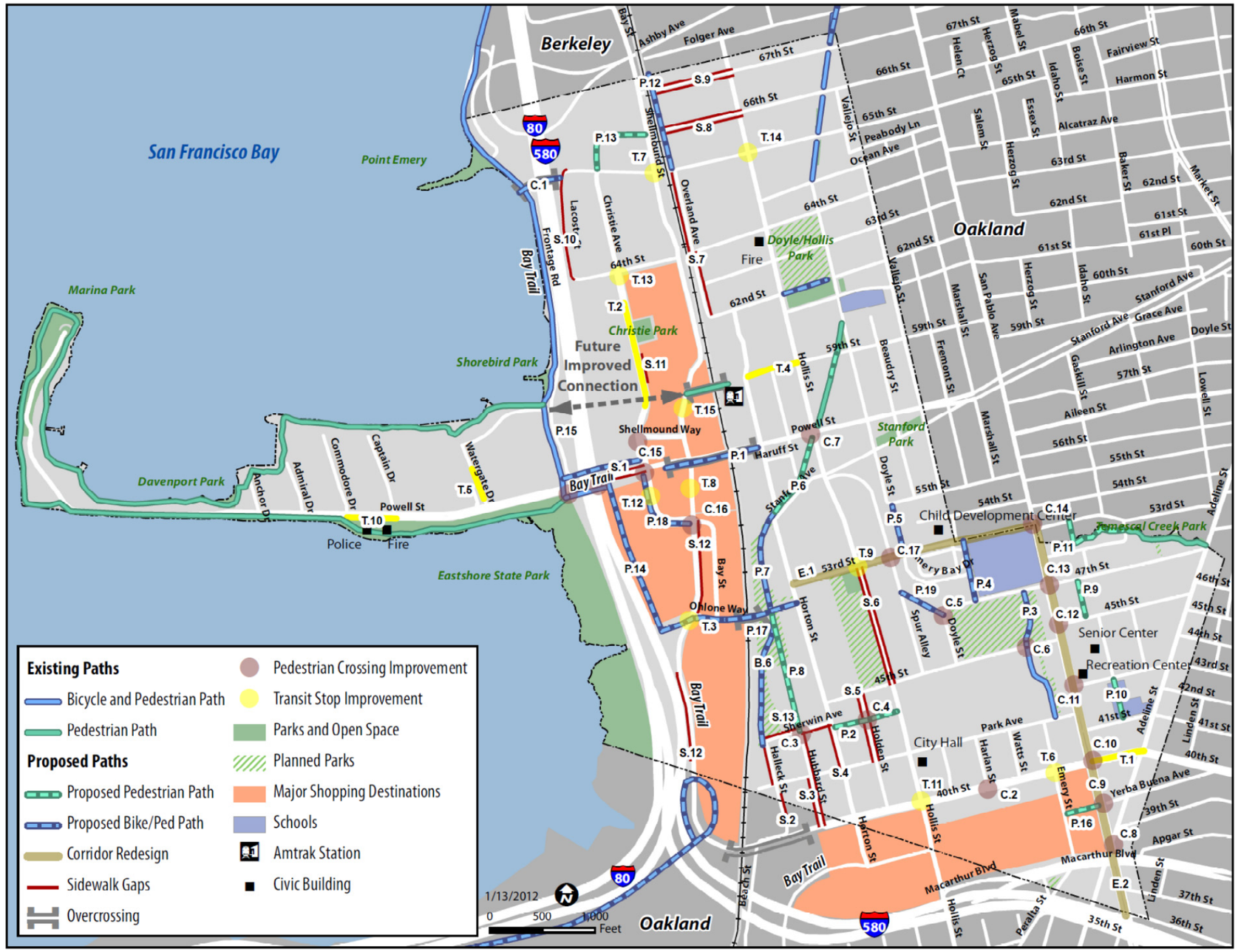
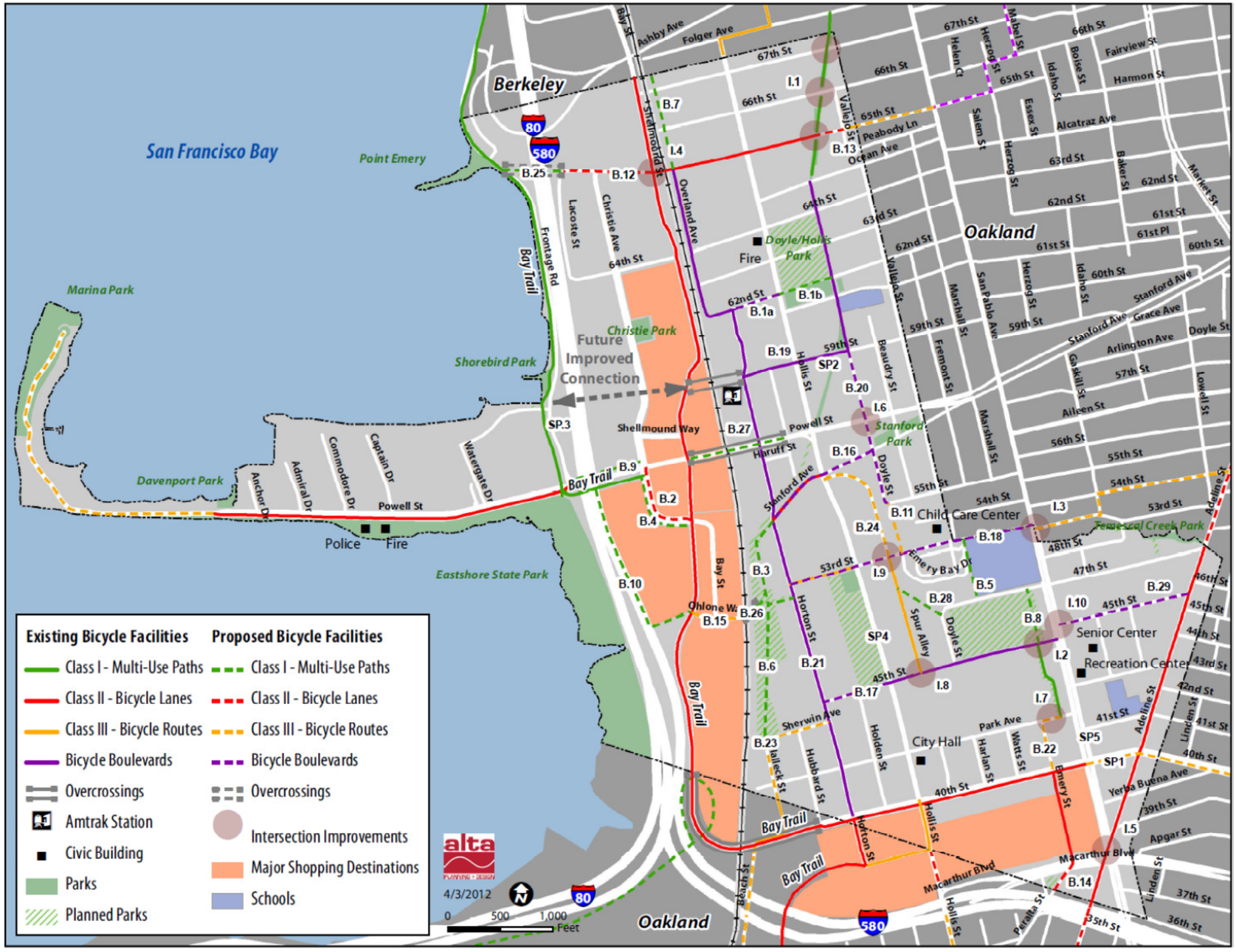


Map 7-1. Recommended Pedestrian Improvements



Map 7-2. Recommended Bicycle Improvements

Table 7-3: Detailed Pedestrian Project List

Priority	Ped Map ID	Bike Map ID	Location	Issue	Recommendation	Notes	Type	Cost (not including land acquisition)
Crossing Improvements								
High	C.1	B.25	Ped-Bike Bridge over I-80: 65th St to Frontage Rd	Freeway is major barrier to Bay Trail; there is only one freeway crossing in Emeryville - at Powell Street.	Build pedestrian/bicycle bridge over I-80 to connect with Bay Trail	Included in General Plan	Bridge	$18,500,000
Medium	C.2		40th St at Harlan St	This unsignalized intersection incluides long crossing distances across 40th St and a higher than average rate of vehicle/pedestrian collisions within Emeryville.	Install new signal and coordinate timing with signals at Emery Street and Hollis Street		Xing	$375,000
Low	C.3		Sherwin Ave at Halleck St and at Hubbard St	Missing crosswalks	Install crosswalks on all legs of Halleck and Hubbard Streets at Sherwin Avenue	To be developed in coordination with Sherwin Williams Redevelopment See also S.13	Xing	$1,500
Low	C.4		Holden St at mid-block pedestrian path	Installation of a mid-block path will necessitate a crossing	Provide a high visibility crosswalk with bulb-outs and shark's teeth.	See P.2	Xing	$152,600
Medium	C.5		Doyle Street / 47th Street	Poorly defined roadway at access point to surface parking lot Paved area ranges from 48 feet to 75 feet No crosswalks at intersection	· Articulate northwest corner through construction of curb, gutter and sidewalk · Replace off-street parking with on-street parking · Install crosswalk on east leg of intersection		Xing	$106,000
Medium	C.6	I.2	AC Transit / Joseph Emery Park Path mid-block crossing of 45th St	Proposed path will require a mid-block crossing	Provide high visibility crosswalk with bulb-outs and shark's teeth when path is extended through AC Transit facility	See also pedestrian project P.3 and bicycle project B.8	Xing	$181,200
Medium	C.7		Emeryville Greenway crossings at Hollis St and Powell St, SW corner	Greenway crossing of Powell and Hollis Sts should be enhanced	Alternative A: Provide a raised crosswalk across the right-turn slip lane on the southwest corner and lengthen the refuge to improve pedestrian visibility and slow vehicles around the turn Alternative B: Eliminate slip lane to provide protected signalized crossing for pathway users		Xing	$250,000
High	C.8	I.5	Intersection of Macarthur Blvd/San Pablo Ave / Adeline St	Wide intersection with many vehicle appropaches make it difficult for pedestrians to cross.	Construct landscaping and crossing improvements.		Xing	$500,000
High	C.9		San Pablo Ave/ Yerba Buena Ave between 40th St and Adeline St	Candidate location for mid-block crossing to provide direct connection from pedestrian path in front of Pak N Save across San Pablo Ave	· Install HAWK Beacon. Alternatively, consider pedestrian actuated signal that is timed with adjacent signals · High visibility crosswalk markings · Remove parking spaces and install curb extensions · Install curb cuts in sidewalk and cut in median for pedestrian refuge	Also see project P.16	Xing	$334,100
High	C.10		San Pablo Ave/40th St Transit Hub	Intersection needs pedestrian improvements	See intersection improvements in project T.1			See T.1
High	C.11		San Pablo Ave at 43rd St	At this unsignalized location, it is challenging for pedestrians to cross San Pablo Ave. Currently, in-pavement flashers alert drivers to the crossing, but they are difficult to see in the day time and the multi-lane configuration continues to present sightline and visibility issues.	Upgrade in-roadway warning lights, install an overhead flashing beacon on a masthead and/or Rectangular Rapid Flashing Beacons (RRFB) Replace out-of-compliance warning signs with pedestrian warning signs compliant with the most recent CA MUTCD Refresh the existing crosswalks with new paint and install yield line enhancements		Xing	$180,000
High	C.12		San Pablo Avenue / 45th Street	Pedestrian crossing needs improvement	Install new in-roadway warning lights, overhead flashing beacon and/or RRFBs, curb extensions, and median tip		Xing	$152,400
High	C.13		San Pablo Avenue / 47th Street	Pedestrian wait time to cross San Pablo Ave is too long.	Reevaluate signal timing and pedestrian recall to reduce the wait time for pedestrians crossing San Pablo Avenue, and install new audible pedestrian heads.		Xing	$30,000

Priority	Ped Map ID	Bike Map ID	Location	Issue	Recommendation	Notes	Type	Cost (not including land acquisition)
Medium	C.14	I.3	San Pablo Avenue / 53rd Street	53rd Street is skewed at its intersection with San Pablo Avenue, creating long crossing distances. Poorly placed curb ramps and pedestrian call buttons make this intersection difficult for disabled pedestrians. Offset intersection creates difficult environment for pedestrians and bicyclists to cross San Pablo Avenue.	Look for opportunity to reconcile skewed intersection by clipping southwest corner or use of wedge shaped crosswalks Install a new crosswalk on north leg of intersection Add push buttons and curb ramps to all crossings Move existing push buttons if they are not directly adjacent to the curb ramp Consider narrowing 53rd Street on the west side of San Pablo Avenue with a curb extension on the north side of the street, and realign approach to one lane in each direction	Coordinate improvements with 53rd Street/ Temescal Greenway recommendations (E.1) and bicycle recommendations. Coordinate with City of Oakland, ECCL, and Caltrans	Xing	$126,300
High	C.15		Christie Avenue between Powell St and Shellmound Way	The north approach at Powell St and the west and south approaches at Shellmound Way do not have marked crosswalks, limiting pedestrian movement across Christie Ave	Stripe a crosswalk across the north leg of intersection Improve sidewalks	Phase improvments with recommendations from *Powell Street Urban Design Plan*	Xing	$141,000
Medium	C.16		Shellmound Street / Christie Avenue	The north side of the intersection does not have a marked crosswalk	Install crosswalk on north leg of intersection and square off northwest corner to reduce crossing distance		Xing	$78,000
Medium	C.17	I.9	Spur Alley at 53rd St	Uncontrolled intersection with limited visibility and no advance warning of pedestrian or bicyclist crossing	Acquire easement north of 53rd St for pedestrian and bicycle access and install high-visibility marked crossing, raised crosswalk and advance warning signage	See also B.24	Xing	$320,500
Corridor Enhancements								
High	E.1	B.18	53rd Street/Temescal Greenway from San Pablo Ave to Horton St	Opportunities to improve 53rd St and create Temescal Greenway	**53rd Street between Horton Street and Hollis Street** Install creek feature and create a bicycle & pedestrian street with connection to the future South Bayfront Bridge across the railroad tracks · At Horton Street, extend sidewalk area on west side of Horton Street, and raise the intersection of 53rd St and Horton St to create a seamless gateway to Horton Landing Park **53rd Street / Hollis Street** · Improve west leg of the intersection by extending curbs and improving crosswalk markings · Relocate utility boxes on the southeast corner to provide adequate pedestrian path of travel **53rd Street between San Pablo Avenue and Hollis Street** · Alternative A: Narrow the roadway at select location(s) along 53rd Street by installing storm water curb extensions. On-street parking would be removed within the narrowed area. Curb could extend further into the roadway to slow vehicle speeds (effectively making the street a single lane) but be mountable to allow for emergency vehicle access. This treatment could be considered at the proposed Spur Alley crossing. Maintain Bike Boulevard designation. See Appendix A for examples of this treatment. · Alternative B: Widen sidewalks on both sides to meet Design Guidelines; bioswales; Maintain Bike Boulevard designation. On-street parking would need to be removed where bioswales are installed. · Alternative C: Widen sidewalk on south side only to Design Guidelines and daylight creek; Maintain Bike Boulevard designation. On-street parking would need to be removed on one side of street to provide room for creek. **53rd St/ San Pablo Avenue** · Intersection improvements (see C.14 San Pablo Avenue recommendations)	53rd Street is classified as a Greenway, Green Street and Bicycle Boulevard in the Emeryville General Plan. Example: NE Siskiyou Green Street Project, Portland OR (See *Pedestrian Design Guidelines*) Coordinate recommendations with City of Oakland, Caltrans, and Center of Community Life traffic study to determine circulation issues.	Corridor	$2,318,100

Priority	Ped Map ID	Bike Map ID	Location	Issue	Recommendation	Notes	Type	Cost (not including land acquisition)
High	E.2		San Pablo Ave from 36th St to 53rd St	Pedestrian environment needs improvement	Consider greening study for San Pablo Avenue (e.g. installation of bioswales in bulb-outs at intersections) to improve aesthetic of street and reduce run-off, provide pedestrian improvements, and calm traffic. Install parklets where feasible.		Corridor	$1,800,000
Pedestrian Paths								
Medium	P.1	B.27	Powell Street Bridge and Pedestrian/ Bicycle Path	Cantilevered ped/bike facility on bridge is substandard	Conduct feasibility study for improved ped/bike crossing of railroad at Powell St Bridge. In conjunction with adjacent development, seek to improve pedestrian and bicycle access	Cost is for feasibility study. Once South Bayfront Bridge is constructed, need for this improvement lessens. Recommend evaluating the need for it after construction of SBF Bridge.		$25,000
Low	P.2		North-South midblock pedestrian path from Horton St to Hollis St between Park Ave and 45th St	Opportunity for midblock pedestrian path	Construct pedestrian path	See also C.4. City has ROW easement and $100,000 for this project	Ped Path	$162,000
Medium	P.3	B.8	AC Transit/ Joseph Emery Park Path Extension to 47th Street	Path terminates at 45th Street and northern extensions would serve Emery Secondary School and provide a north-south alternative to a stretch of San Pablo Avenue	Construct new multi-use path with redevelopment or modification of AC Transit facility	Included in General Plan See C.6, bike project B.8	Multi-Use Path	$611,600
Low	P.4	B.5	North-South multi-use path at west side of Secondary School from 47th St to 53rd St	Opportunity for mid-block access	Construct new multi-use path	Path is being planned in conjunction with ECCL (Emery Unified School District property)	Multi-Use Path	$151,100
Medium	P.5	B.11	North-south path connecting Doyle St to 53rd St at Pickleworks property	Opportunity for improved north-south pedestrian and bicycle connection	Acquire easement through property, remove fencing, construct short connector path between Doyle Street and the parking lot.	Private property--easement required Acquisition costs not included	Multi-Use Path	$30,000
High	P.6		Emeryville Greenway extension from Powell St south to Stanford Ave at Horton St	Opportunity to extend greenway to the south to connect with Horton Landing Park	Construct new ped path	Project designed See recommendation C.7 for crossing improvements at Hollis Street and Powell Street Costs include remediation	Ped Path	$1,100,000
High	P.7	B.3, B.6	Horton Landing Park paths: - Greenway north-south from Stanford Ave at Horton St to South Bayfront Bridge - East-west connection from Horton St, south of 53rd St to South Bayfront Bridge	Opportunity to extend Greenway and provide pedestrian and bicycle access to planned South Bayfront Bridge	Construct new multi-use paths	Project planned	Multi-Use Path	$1,049,000
High	P.8		North-south pedestrian path through Sherwin Williams property from Horton Landing Park to Sherwin Ave	Opportunity to extend pedestrian access south from Horton Landing Park	Construct north-south pedestrian path in conjunction with redevelopment of Sherwin Williams property	Bicycle access from Horton Landing Park to Sherwin Ave is project B.6	Ped Path	To be provided by developer of Sherwin Williams Site
Medium	P.9		North-South pedestrian path from 45th St to 47th St east of San Pablo in Triangle Neighborhood	Opportunity for better North-South pedestrian access in Triangle Neighborhood	Construct new pedestrian path in conjunction with private development.	Approved development required to make this improvement	Ped Path	$94,500

Priority	Ped Map ID	Bike Map ID	Location	Issue	Recommendation	Notes	Type	Cost (not including land acquisition)
Low	P.10		North-south pedestrian path through Anna Yates School Between 43rd and 41st Sts, south of Salem Street in Triangle neighborhood	Opportunity for better north-south pedestrian access in Triangle Neighborhood	Work with the school district to construct path	Emery Unified School District property Does not include acquisition costs	Ped Path	$94,500
Medium	P.11		East-west pedestrian connection from Temescal Creek Park to San Pablo Ave	Opportunity to extend east-west pedestrian access along Temescal Greenway	Work with Alameda County Flood Control to construct path	On Alameda County Flood Control property	Ped Path	$620,000
Low	P.12	B.7	North-south multi-use path east of railroad tracks from Overland Ave at 65th St to Berkeley border	Opportunity to extend pedestrian/bicycle access from Overland Ave at 65th St north to 66th and 67th Sts	Construct new multi-use path	May not be adequate room between existing buildings and tracks Coordinate with Berkeley to connect to Folger Street Included in General Plan	Multi-Use Path	$198,200
Low	P.13		Pedestrian path north from 65th St at Christie Ave and east through Ex'pressions College to Shellmound St at 66th St.	Opportunity for mid-block pedestrian access	Construct new path in conjunction with redevelopment	Proposed as multi-use path in General Plan. Changed classification from multi-use path to pedestrian-only path.	Ped Path	$202,500
High	P.14	B.10	North-south Bay Trail realignment between Powell Street Plaza and I-80, Powell St to Shellmound St at Ohlone Way	Opportunity to improve Bay Trail alignment	Construct new multi-use path along west and south perimeter of Powell Street Plaza in phases.	See Bike Project B.10 for more details.	Multi-Use Path	$1,027,000
High	P.15	SP.3	North-south path on west side of Frontage Rd from Powell Street to Shorebird Park	Opportunity to improve walking conditions	Improve existing sidewalk to accommodate multi-use path, by replacing pavers with concrete or asphalt multi-use path and installing a landscaped buffer between Frontage Road and sidewalk path. At southwest corner of Access Road/Frontage Road, reduce turning radius and realign pedestrian push button		Multi-Use Path	$200,000
Low	P.16		Mid-block north-south pedestrian path between San Pablo Ave and Emery St at Pak N Sav	Opportunity to improve existing pedestrian connection	Construct pedestrian path through existing parking lot	See also C.9	Ped Path	$67,500
High	P.17	B.26	South Bayfront Bridge across railroad: Horton Landing Park to Ohlone Way	Railroad is major barrier between east and west sides of city. No connection over railroad tracks between major mixed-use destination at Bay Street and employment centers on Horton Street.	Build the South Bayfront Bridge over railroad from Ohlone Way to Horton Landing Park.	Included in General Plan	Crossing	$13,500,000
Medium	P.18	B.4	Christie Ave Path: Powell St - Shellmound St, west/south side	Poor Bay Trail connections to Shellmound St and poor on-street connections to Powell Street Plaza businesses from north. Christie Avenue has high traffic volumes.	Widen the sidewalk on the west/south sides of Christie Avenue between Powell Street and Shellmound Street to eight feet and set back from street to provide a multi-use path.	Consider as an interim step to B.10. See also B.2	Multi-use Path	$355,300
Medium	P.19	B.28	Path from Spur Alley to Doyle Street/47th Street Intersection	Large blocks increase distances for pedestrians and bicyclists	Install pedestrian and bicycle path connecting 47th Street to Spur Alley	Coordinate with Emery Bay Village	Multi-use Path	$150,000
Sidewalk Gap Closure								
High	S.1A	B.9a	South side of Powell St from Christie Ave to I-80	Powell St Urban Design Plan Phase I	Upgrade/ straighten walkway, new multi-use path, signage as prescribed. Phase I of plan.		Multi-Use Path	$163,800

Priority	Ped Map ID	Bike Map ID	Location	Issue	Recommendation	Notes	Type	Cost (not including land acquisition)
High	S.1B	B.9b	North side of Powell St from Christie Ave to I-80	Powell St Urban Design Plan, Phase II	Install new multi-use path as prescribed in Phase II of plan		Multi-Use Path	$163,800
Medium	S.2		North-south on Halleck St between 40th St and Sherwin Ave, both sides	Sidewalk gaps	Install sidewalk per Park Avenue District Plan, Phase II	*Park Avenue District Plan* calls for this to be funded as part of City Phase II improvements	Sidewalk	$592,998
Medium	S.3		North-south on Hubbard St between 40th St and Sherwin Ave, both sides	Sidewalk gaps	Install sidewalk per *Park Avenue District Plan*	*Park Avenue District Plan* calls for this to be split into two phases, City's Phase II and a Banker Marks funded phase	Sidewalk	$571,550
Low	S.4		North-south on Horton St between Park Ave and Sherwin Ave, west side	Narrow sidewalk	Install new sidewalk per *Park Avenue District Plan*	This improvement may require the narrowing of the vehicle travel lanes and parking lanes, or the removal of parking lane one side. *Park Avenue District Plan* calls for this to be funded by Banker Marks	Sidewalk	$300,000
Low	S.5		North-south on Holden St between 45th St and Park Avenue, both sides	Sidewalk gaps	Install sidewalk per *Park Avenue District Plan*	*Park Avenue District Plan* calls for this to be funded as part of City's Phase II	Sidewalk	$663,200
Medium	S.6		North-south on Hollis St from 45th St to 53rd St	Narrow sidewalks	Widen sidewalks from 5 feet to 6 feet wide to a minimum of 12 feet wide with street trees and lighting to match recommendations in *Park Avenue District Plan*	Coordinate with redevelopment of adjacent properties	Sidewalk	$603,000
Low	S.7		North-south on Overland Ave between 62nd St and 65th St, both sides	Sidewalk gaps	Install a sidewalk south of 64th Street on the east side of Overland Avenue and north of 64th Street on the west side of the street.		Sidewalk	$712,800
Low	S.8		East-west on 66th St between Hollis St and Shellmound St, both sides	Sidewalk gaps	· **Alternative A**: Add six-foot sidewalks on both sides of the street and maintain perpendicular parking. · **Alternative B:** Match sidewalks on 66th Street to the east of Hollis Street by adding 16 foot sidewalks to both sides of the street. This would require reconfiguring the parking to be parallel on one side of the street with angled parking on the other.		Sidewalk	$399,200
Low	S.9		East-west on 67th St between Hollis St and Shellmound St, both sides	Sidewalk gaps	· **Alternative A**: Add six-foot sidewalks on both sides of the street and maintain perpendicular parking. · **Alternative B:** Match sidewalks on 67th Street to the east of Hollis Street by adding 16 foot sidewalks to both sides of the street. This would require reconfiguring the parking to be parallel on one side of the street with angled parking on the other.		Sidewalk	$399,200
Low	S.10		North-south on Lacoste St between 64th St and 65th St, west side	Sidewalk gap	Provide signage to direct pedestrians to use sidewalk on east side of street where appropriate.		Sidewalk (signage only)	$500
High	S.11		Christie Ave south of 63rd St adjacent to open lot	Sidewalk gap	Install permanent sidewalk		Sidewalk	$102,600
Low	S.12		Shellmound St south of Christie Ave to Emeryville border	Need directional signage to direct pedestrians to other side of the street. There is not room for sidewalks due to the freeway retaining wall on the west side of Shellmound St south of Bay St and building frontages between Ohlone Way and Christie Ave on the east side of Shellmound St	Install signage on either side of sidewalk gap directing pedestrians to use crosswalk and sidewalk on east side of Shellmound St. Between Ohlone Way and Christie Ave, install signage directing pedestrians to use Bay St or sidewalk on west side of Shellmound St		Sidewalk (signage only)	$2,400

Priority	Ped Map ID	Bike Map ID	Location	Issue	Recommendation	Notes	Type	Cost (not including land acquisition)
Low	S.13		Sherwin Ave from Halleck St to Hubbard St (north side) and from Hubbard Street to Horton Street (south side)	Missing sidewalk	Install sidewalk per Park Avenue District Plan	To be developed in conjunction with Sherwin Williams redevelopment See also C.3	Sidewalk	$400,000
Transit Stop Improvements								
High	T.1		San Pablo Avenue / 40th Street Transit Hub	This intersection has Primary Transit Stops on both 40th Street between San Pablo Avenue and Adeline Street and on San Pablo Avenue, and has some of the highest pedestrian volumes in the city. The bus stops on San Pablo Ave are the only Rapid Bus stops in Emeryville, serving AC Transit Line 72R.	Install primary stop improvements as shown in Table 7-1 · Enhance medians and streetscape along 40th Street · Install electronic signage with transit information · Redesign curb ramps to direct users into crosswalk on all approaches, as feasible · Adjust signal timings at major intersections to improve pedestrian crossings · Install advance stop lines on San Pablo Avenue where feasible. Consider the feasibility of installing bike boxes on 40th Street · Improve maintenance of tree grates and sidewalks for ADA accessibility		Transit Stop	$178,900
Medium	T.2		Christie Avenue / Shellmound Way/ Public Market	High pedestrian volumes and casual carpool location.	Move Casual Carpool pick up area to north, adjacent to Transbay bus stop. Install benches and information kiosk; install long-term bike parking next to U-racks		Transit Stop	$17,100
Low	T.3		Shellmound St / IKEA/Bay Street		One northbound and one southbound stop on Shellmound Street at Bay Street. Install primary stop improvements shown in Table 7-1 · Benches – Increase number of seats and size of benches as existing shelters only provide 2 or 3 seats at each. Provide at least 12 seats as space permits. · Shelters – Increase size of shelters to accommodate the high levels of demand at these stops · Long- and short-term bike parking (long-term parking should be consolidated at Bay Street) · Increase wheelchair accessibility at northbound stop by providing a clear path in shelter		Transit Stop	$41,000
Medium	T.4		59th St / Horton St and 59th St / Hollis St	High volumes associated with Amtrak station	Four north and southbound stops located at the corners of 59th / Horton and Hollis Install primary stop improvements as shown in Table 7-1 · Install Benches – add to three of the four stops (southwest corner of Hollis/59th has an existing bench) · Install Shelters – Add to all four stops. Prioritize for closest to the Amtrak station. · Install Long- and short-term bike parking	This area will be significantly improved with implementation of Emery Station West project. Improvements suggested here could be provided in the interim.	Transit Stop	$41,000
Low	T.5		Powell St at Watergate Drive	Need improved bus stop amenities	Two stops located near the Towers Office Complex and Hilton Garden Inn Install primary stop improvements as shown in Table 7-1 · Bench & shelter – add to westbound stop at the Hilton along Powell Street · Additional landscaping · Provide a sidewalk connection from Powell Street to the Watergate stop · Install long- and short-term bike parking (consolidate some long term parking at the Office Tower stop)		Transit Stop	$41,000

Priority	Ped Map ID	Bike Map ID	Location	Issue	Recommendation	Notes	Type	Cost (not including land acquisition)
Low	T.6		40th Street / Emery Street	Need improved bus stop amenities	Three stops located on either side of 40th Street and one on Emery Street. Install primary stop improvements as shown in Table 7-1 · Benches – add to three of the four stops (southwest corner of Hollis/59th has an existing bench.) · Shelters – Add to all four stops		Transit Stop	$41,000
Low	T.7		65th Street / Shellmound Street	Need improved bus stop amenities	There is one stop at the corner of Shellmound and 65th Install primary stop improvements as shown in Table 7-1 · Benches · Shelters		Transit Stop	$41,000
Medium	T.8		Shellmound St from Christie Ave to Powell St	Need improved bus stop amenities	There are two separate stops located on this block. Install primary stop improvements as shown in Table 7-1		Transit Stop	$14,000
Low	T.9		Hollis Street / 53rd Street	Need improved bus stop amenities	Two stops in the north and southbound directions Install secondary stop improvements as shown in Table 7-1 · Benches – add benches to both stops · Shelter – add to the southbound stop		Transit Stop	$21,500
Low	T.10		Powell Street - Police & Fire Station/ Watergate Condos	Need improved bus stop amenities	Two stops located on either side of Powell Street. Install secondary stop improvements as shown in Table 7-1 · Bench and shelter in front of the Watergate condos · Long- and short-term bike parking due to location on the Bay Trail		Transit Stop	$21,500
Low	T.11		Hollis Street / 40th Street	Need improved bus stop amenities	Two stops along 40th Street. Install secondary stop improvements as shown in Table 7-1		Transit Stop	$21,500
Low	T.12		Christie Ave - Trader Joe's / Powell Street Plaza	Need improved bus stop amenities	Install secondary stop improvements as shown in Table 7-1		Transit Stop	$21,500
Low	T.13		Christie Avenue / 64th Street	Need improved bus stop amenities	Install secondary stop improvements as shown in Table 7-1		Transit Stop	$21,500
Low	T.14		Hollis St /65th St	Need improved bus stop amenities	Install secondary stop improvements as shown in Table 7-1		Transit Stop	$21,500
Medium	T.15		Shellmound Street at Public Market	New primary bus stop	Install new transit stops on Shellmound Street in accordance with the principles of the Shellmound Streetscape Design Guide		Transit Stop	$41,000
	T.16		Citywide	Need improved bus stop amenities	Install tertiary stop improvements as shown in Table 7-1		Transit Stop	$132,000
	T.17		Citywide	Need improved bus stop amenities	Install local bus stop improvements as shown in Table 7-1		Transit Stop	$40,500

Table 7-4. Detailed Bicycle Project List

Priority	BikeID	PedID	Location	Description of Issue	Recommendation	Notes	Type	Cost (Does not include land acquisition, unless otherwise noted.)
Linear Bikeways								
Low	B.1a		62nd St: Horton St - Doyle St	The current alignment of the Horton-Overland bicycle boulevard includes a short jog on 62nd Street. Eastward extension would serve Doyle-Hollis Park	In short term, extend bike boulevard to Doyle Street		Bicycle Boulevard	$1,300
Low	B.1b		62nd St: Hollis St - Doyle St	Planned expansion of Doyle-Hollis Park will close one block of 62nd Street, providing an opportunity for a Class I path	In conjunction with expansion of park, replace bike boulevard with Class I path		Multi-Use Path	$134,700
High	B.2		Bay Trail connection from Shellmound St to Powell St at Christie Ave	Existing Bay Trail connection through Sheraton parking lot is problematic.	Restripe Christie Ave between Shellmound St and Powell St to accommodate bike lanes on northeast side. Bike lane will be contraflow between Shellmound St and Powell St Plaza access drive.	See also Pedestrian Projects: P.14, S.1A, S.1B, C.16, and Bicycle Projects: B.4, B.9a, B.9b, and B.10	Bike Lane	$10,900
High	B.3	P.7	Horton Landing Park paths: - Greenway north-south from Stanford Ave at Horton St to South Bayfront Bridge - East-west connection from Horton St, south of 53rd St to South Bayfront Bridge	Opportunity to extend Greenway and provide ped/bike access to planned South Bayfront Bridge	Construct new multi-use paths	Project planned See also Bicycle Project B.6, Pedestrian projects: P.6, P.7, P.8, E.1	Multi-Use Path	$1,049,000
Medium	B.4	P.18	Christie Ave Path: Powell St - Shellmound St, west/south side	Poor Bay Trail connections to Shellmound St and poor on-street connections to Powell Street Plaza businesses from north. Christie Avenue has high traffic volumes.	Widen the sidewalk on the west/south sides of Christie Avenue between Powell Street and Shellmound Street to eight feet and set back from street to provide a multi-use path.	Consider as an interim step to B.10. See also B.2	Multi-Use Path	$355,300
Low	B.5	P.4	North-South multi-use path at west side of Secondary School from 47th St to 53rd St	Opportunity for mid-block access	Construct new multi-use path	Path is being planned in conjunction with ECCL (Emery Unified School District property)	Multi-Use Path	$151,100
Low	B.6		Greenway connection from Horton Landing Park south to Sherwin Avenue at Halleck St. Between railroad and Sherwin Wiliams site	Opportunity to extend Greenway to the south and provide connections from south to South Bayfront Bridge	Install a Class I path from Horton Landing Park to the intersection of Sherwin Avenue and Halleck Street	Pedestrian access from Horton Landing Park to Sherwin Ave is project P.8	Multi-Use Path	$640,000
Low	B.7	P.12	North-south multi-use path east of railroad tracks from Overland Ave at 65th St to Berkeley border	Opportunity to extend pedestrian/bicycle access from Overland Ave at 65th St north to 66th and 67th Sts	Construct new multi-use path	May not be adequate room between existing buildings and tracks Coordinate with Berkeley to connect to Folger Street Included in General Plan	Multi-Use Path	$198,200
Low	B.8	P.3	AC Transit/ Joseph Emery Park Path Extension to 47th Street	Path terminates at 45th Street and northern extensions would serve Emery Secondary School and provide a north-south alternative to a stretch of San Pablo Avenue	Construct new multi-use path with redevelopment or modification of AC Transit facility	Included in General Plan Pedestrian project P.3	Multi-Use Path	$611,600
High	B.9A	S.1A	South side of Powell Street: Christie Avenue to I-80	Powell Street Urban Design Plan, Phase I	Upgrade/ straighten walkway, new multi-use path, signage as prescribed. Phase I of plan.		Multi-Use Path	$163,800
High	B.9B	S.1B	North side of Powell Street - Christie Avenue to I-80	Powell Street Urban Design Plan Phase II	Install new multi-use path as prescribed in Phase II of plan		Multi-Use Path	$163,800
High	B.10	P.14	Bay Trail realignment between Powell St Plaza and I-80, Powell St to Shellmound St at Ohlone Way	Opportunity to improve Bay Trail alignment	Phase I: Install Class III facility with sharrows through parking lot and behind hotel Phase II: When Powell Street Plaza redevelops, install Class I path	Ultimately, will require acquisition of ROW Included in General Plan Cost includes land acquistion.	Multi-Use Path	$1,027,000
Medium	B.11	P.5	North-south connection between Doyle St and 53rd St at Pickleworks property	Opportunity for improved north-south pedestrian and bicycle connection	Construct Class III facility connecting Doyle St with 53rd St Install sharrows through parking lot	Private property--easement required Acquisition costs not included	Multi-Use Path	$230,000

Priority	BikeID	PedID	Location	Description of Issue	Recommendation	Notes	Type	Cost (Does not include land acquisition, unless otherwise noted.)
High	B.12		East-west on 65th St from Lacoste St to Shellmound St	Would provide east-west connection to the future bridge over I-80 at 65th Street	When bridge over I-80 is constructed, install bike lanes on 65th St. Will require removal of parking on one side of 65th St.	On-street facility/bike boulevard included in General Plan.	Bike Lane	$25,600
Medium	B.13		East-west on 65th St from Emeryville Greenway to Oakland border	Signalized crossing of San Pablo Avenue and connection to Emeryville Greenway and planned Oakland bike facilities provide excellent opportunities for improved connections in northern Emeryville and surrounding cities.	Extend Class II bike lanes to Vallejo Street.	On-street facility included in General Plan. Will require changing diagonal parking to parallel parking at Oliver lofts (not included in costs).	Bike Lane	$3,500
High	B.14		North-south on Peralta Street from Macarthur Boulevard to the Oakland border	Peralta Street has unused capacity. Oakland's Bicycle Plan includes bike lanes on Peralta Street, which connects directly to West Oakland	Install bike lanes on Peralta Street to Oakland border. Peralta Street has a 48-foot paved width but only two travel lanes. Facility should take into account occasional truck traffic on Emery.	On-street facility included in General Plan	Bike Lane	$12,000
Medium	B.15		West on Ohlone Way from Shellmound St to the South Bayfront Bridge	Proposed Powell-Shellmound path and South Bayfront Bridge should be connected with an on-street facility on Ohlone Way.	When South Bayfront Bridge is built, install sharrows on Ohlone Way in the westbound right lane and center left turn lane.	On-street facility included in General Plan	Shared Lane Marking	$6,000
Low	B.16		East on Stanford Ave from Holllis St to Doyle St	Opportunity to extend Stanford route to the east. Bike lanes striped between Hollis Street and Horton Street. Bicyclists are not detected in bike lanes at Hollis Street.	· Measure speeds and volumes · Install bicycle boulevard signage. · Install traffic calming treatments and shared lane markings · Install bicycle detection in bike lane at Hollis Street.	Included in General Plan See also Chapter 6, Bicycle Boulevards	Bicycle Boulevard	$6,400
Medium	B.17		East-west on 45th St from Horton St to San Pablo Ave	Opportunity to improve east-west bicycle boulevard; 45th St has two lanes with parallel parking on both sides. Bike boulevard stencils and signs east of Hollis Street. Nearby destinations include the AC Transit facility and Pixar campus.	· Install bicycle boulevard signage and pavement markings west of Hollis Street. · Measure speeds and traffic volumes. Consider speed lumps if measured speeds are higher than 20 mph. · If Spur Alley bike route is implemented, improve crossing with high visibility crosswalks and consider raised intersection.	Included in General Plan. See also Chapter 6, Bicycle Boulevards	Bicycle Boulevard	$7,500
High	B.18	E.1	East-west on 53rd St from Horton St to San Pablo Ave	Opportunities to improve 53rd St and create Temescal Greenway. 53rd St is a bike route between Horton Street and Hollis Street and has speed bumps between Boyer St and San Pablo Ave. 53rd Street/San Pablo Avenue intersection is skewed. Identified as Greenway in General Plan. Connects to planned bike route in Oakland. 53rd Street is a key corridor because it crosses both Hollis Street and San Pablo Avenue at signalized intersections. Nearby destinations include Novartis and Emery Secondary School/ECCL Site	· Measure speeds and volumes. · Install bicycle boulevard signage and pavement markings to bring up to Level 2 Treatments. · Consider green street treatments such as narrowing street and removing parking to provide bioswales or to install creek feature. · If Spur Alley path is extended to the north of 53rd St, install high-visibility crosswalks and consider raised intersection. · Improve intersection with San Pablo Avenue per bicycle project I.3 and pedestrian project C.14	See also pedestrian project E.1 and C.14, bicycle project I.3, and Chapter 6, Bicycle Boulevards North side of 53rd Street east of Boyer Street is in Oakland. Included in General Plan Need to coordinate with ECCL, Oakland, and Caltrans	Bicycle Boulevard	$2,318,100
Low	B.19		East-west on 59th St from Horton St to Doyle St	Opportunity to improve east-west bicycle travel. Bicycle boulevard pavement stencils east of Hollis Street. Bike lanes west of Hollis Street. Diagonal parking between Hollis Street and Doyle Street.	· Measure speeds and volumes. · Install video detection on 59th St at Hollis St. · Install bicycle boulevard signage.	Modified from General Plan by not extending to city limits. Costs do not include video detection.	Bicycle Boulevard	$3,000

Priority	BikeID	PedID	Location	Description of Issue	Recommendation	Notes	Type	Cost (Does not include land acquisition, unless otherwise noted.)
Medium	B.20		North-south on Doyle Street from Ocean Ave to 55th St	Opportunity to improve north-south bicycle travel. Between Ocean Avenue and 59th Street: Bicycle boulevard signage and stencils installed. Traffic calming includes curb extensions and roadway narrowing. Stop signs turned to favor bicycle boulevard traffic. Between 59th Street and 55th Street: No signage, pavement stencils or traffic calming. Powell Street intersection difficult to cross.	· Measure speeds and volumes · Add HAWK signal or full signal on Doyle St at Powell Street. · Install bicycle boulevard signage and pavement markings south of 59th Street.	Included in General Plan. Papermill development required to install traffic signal at intersection with Powell Street See also Chapter 6, Bicycle Boulevards Cost does not include signal; see I.6 for more detail on Doyle St/Powell St signal	Bicycle Boulevard	$3,000
High	B.21		North-south on Horton St and Overland Ave from 62nd St - 40th St	Opportunity to impove function of major north-south bicycle boulevard. The entire route is currently signed as bicycle boulevard. Bicycle boulevard pavement markings north of 62nd St and south of 53rd St. Bike lanes striped on Horton St from 62nd to 53rd St. Section from 59th St to Stanford Ave identified as Green Street and Transit Street in General Plan.	Implement bicycle boulevard treatments as described in Chapter 6 · Measure speeds and volumes · Consider diversion at 62nd St, Stanford Ave, 45th St, and 40th St. Diversion to be installed on a trial basis only after evaluation with community input and traffic analysis. · Reconfigure roadway between 59th St and Powell St to prevent loading/parking in bike lanes. Widen to include bike lanes on both sides and loading zone on east side. · Consider speed cushions, tables, split lumps, curb extensions, median islands and permanent speed feedback signs to reduce vehicle speeds. · Improve bicycle detection at 40th St and 65th St · Install 3-way stop at 62nd St and Horton · Study measures to discourage through motor vehicle movement northbound on Horton at 40th St.	Included in General Plan See also pedestrian projects S.4 and S.7.	Bicycle Boulevard	$2,015,000
Medium	B.22		North-south on Emery St from 40th St to Park Ave	Opportunity to improve north-south bicycle travel. Parallel stretch of San Pablo Ave has frequent bicycle-related collisions and the completion of the Joseph Emery Park path provides an opportunity to complete an alternative route for cyclists. Major destinations in the area include East BayBridge Center, Oaks Card Club, Emery Secondary School/ECCL site, and San Pablo Ave businesses	Sign Class III bike route on Emery St and install bicycle left-turn pocket eastbound on Park Avenue for left onto path.	Included in General Plan Cost does not include left turn bike pocket; see I.7 for bike pocket details and cost	Bike Route	$1,800
Medium	B.23		Sherwin Ave and Halleck St from Horton St to the Oakland border	Opportunity to connect with future bike route on Beach Street and connections to West Oakland.	Sign Class III bike route on Sherwin Avenue and Halleck Street. Improve lighting and examine parking and loading practices on Halleck Street.	Work with Oakland to improve lighting and pavement on Beach and Wood Streets Included in General Plan See also pedestrian projects C.3, S.2, P.8	Bike Route	$3,100
Medium	B.24		North-south Spur Alley Extension from 53rd St to Hollis St at Stanford Ave	Opportunity to improve north-south bike travel. Current bike route on Spur Alley terminates at 53rd Street.	Acquire easement and extend bike route on Spur Alley north of 53rd St to Hollis Street.	Spur Alley is privately owned. South of 53rd Street, City has easement for bike/ped access. North of 53rd Street, City has no easement. Does not include acquisition costs. See also I.9	Bike Route	$3,300
High	B.25		Ped-Bike Bridge over I-80: 65th St to Frontage Rd	Freeway is major barrier to Bay Trail; there is only one freeway crossing in Emeryville - at Powell Street.	Build pedestrian/bicycle bridge over I-80 to connect with Bay Trail	Included in General Plan	Crossing	$18,500,000

Priority	BikeID	PedID	Location	Description of Issue	Recommendation	Notes	Type	Cost (Does not include land acquisition, unless otherwise noted.)
High	B.26	P.18	South Bayfront Bridge across railroad: Horton Landing Park to Ohlone Way	Railroad is major barrier between east and west sides of city. No connection over railroad tracks between major mixed-use destination at Bay Street and employment centers on Horton Street.	Build the South Bayfront Bridge over railroad from Ohlone Way to Horton Landing Park.	Included in General Plan	Crossing	$13,500,000
Medium	B.27	P.1	Powell Street Bridge and Pedestrian/ Bicycle Path	Cantilevered ped/bike facility on bridge is substandard	Conduct feasibility study for improved ped/bike crossing of railroad at Powell St Bridge. In conjunction with adjacent development, seek to improve pedestrian and bicycle access	Cost is for feasibility study. Once South Bayfront Bridge is constructed, need for this improvement lessens. Recommend evaluating the need for it after construction of SBF Bridge.		$25,000
Medium	B.28	P.19	Spur Alley to 47th Street/Doyle Street intersection	Large blocks increase distances for pedestrians and bicyclists	Install pedestrian and bicycle path connecting 47th Street to Spur Alley	Coordinate with Emery Bay	Multi-use Path	$150,000
Medium	B.29		East-West on 45th Street from San Pablo Avenue to Adeline Street	45th Street offers connection across San Pablo Avenue to Adeline Street and into Oakland.	Implement Bicycle Boulevard treatments as described in Chapter 6		Bicycle Boulevard	$3,000
Intersection Improvements								
Medium	I.1		Emeryville Greenway at 65th, 66th, 67th St crossings	Uncontrolled intersections of bicycle and pedestrian path	· Install in-pavement or beacon flashers, either motion-activated or with push-button · Modify warning signage to indicate that bicyclists and pedestrians may be crossing · Consider installing yield control for motorists that refers to bike/ped crossing · Consider raised crosswalks to slow motorists · Consider "Cross Traffic Does Not Stop" signage for path users. · Add street identification signs at Greenway for 65th 66th, and 67th streets.		Intersection Improvement	$115,200
Low	I.2	C.6	AC Transit/Joseph Emery Park Path midblock crossing of 45th Street	Proposed path will require a mid-block crossing	Provide high visibility crosswalk with bulb-outs and shark's teeth when path is extended through AC Transit facility	See also pedestrian projects P.3 and bicycle project B.8	Intersection Improvement	$181,200
High	I.3	C.14	San Pablo Avenue / 53rd Street	Poorly designed intersection. The east-west bicycle boulevard crosses San Pablo Ave at 53rd St, and connects to Oakland bike route.	Continue to study alternatives for improvement: - Look for opportunities to clip the southwest corner to better align the intersection across San Pablo Avenue. - Consider bicycle pocket or narrow 53rd Street to one lane in each direction with shared lane marking (per pedestrian recommendations). - Easrbound on 53rd Street, consider restriping for one left turn lane and one through-right lane. - Implement new citywide policy on traffic signals	Coordinate with ECCL, City of Oakland, and Caltrans. See also ped projects C.14, E.1	Intersection Improvement	$126,300
Low	I.4		Westbound on 65th St at Overland Ave	Challenging for bicyclists to turn left onto the Overland Avenue Bicycle Boulevard	· Move signage directing westbound bicyclists to Overland Avenue further east to provide advance notice · Stencil Shared Lane Markings in westbound left turn lane on 65th Street to indicate to motorists that bicyclists may be using the lane		Intersection Improvement	$9,000

Priority	BikeID	PedID	Location	Description of Issue	Recommendation	Notes	Type	Cost (Does not include land acquisition, unless otherwise noted.)
High	I.5	C.8	Adeline/San Pablo/ Macarthur/Peralta "Star Intersection"	· Wide lanes with little landscaping · Complicated intersection with multiple turning motions	· Landscape unused paved right of way to improve safety and character, in keeping with City plans for this intersection · Preserve cyclists' path of travel in design	See also pedestrian project C.8	Intersection Improvement	$500,000
Medium	I.6		Doyle St at Powell St	· Extending Doyle Street bicycle boulevard will necessitate crossing Powell Street · Uncontrolled multi-lane intersection is difficult for bicyclists to cross	Install traffic signal, stencils, and markings	Approved development required to contribute to cost of traffic signal. Otherwise, install HAWK signal/ actuated flashing beacon See also B.20	Intersection Improvement	$189,000
Medium	I.7		Park Ave at Emery St: Park Ave at Joseph Emery Park path	Cyclists traveling southbound on Joseph Emery Park Path must make a right turn on Park Avenue and quick left onto path	Provide center left-turning lane for eastbound cyclists	See also B.22	Intersection Improvement	$12,900
Medium	I.8		Spur Alley at 45th St	Uncontrolled "T" intersection with limited visibility and no advance warning of bicyclist crossing	Raise intersection, install high visibility crossing		Intersection Improvement	$320,500
High	I.9	C.17	Spur Alley at 53rd St	Uncontrolled intersection with limited visibility and no advance warning of pedestrian or bicyclist crossing	If easement is acquired north of 53rd St, install high-visibility marked crossing, raised crosswalk and advance warning signage	Contingent on B.24.	Intersection Improvement	$320,500
High	I.10	C.12	San Pablo Ave at 45th Street	Most bicycle collisions of any intersection with Emeryville.	Ensure that cycle length allows adequate time for bicyclists to cross San Pablo Avenue safely. Conduct study to determine whether traffic signal on westbound leg is warranted. Consider establishing a bicycle refuge in the median opposite the Walgreen's driveway, allowing bicyclists to turn left onto San Pablo Avenue.		Intersection Improvement	$70,000
Spot Improvements								
High	SP1		40th St Transit Zone between San Pablo Avenue and Adeline Street	Conflict with buses	Install shared lane markings in right lane in both directions		Shared Lane Marking	$10,200
Low	SP2		59th St Bicycle Boulevard between Hollis St and Doyle St	Conflict with diagonal parking	Reconfigure parking from diagonal to parallel		Special Project	$2,700
High	SP3	P.15	North-south path on west side of Frontage Rd from Powell Street to Shorebird Park	Opportunity to improve bicycling conditions	Improve existing sidewalk to accommodate multi-use path, by replacing pavers with concrete or asphalt multi-use path and installing a landscaped buffer between Frontage Road and sidewalk path. At southwest corner of Access Road/Frontage Road, reduce turning radius and realign pedestrian push button		Special Project	$200,000
Medium	SP4		Hollis St, full length	Not enough room for bike lanes	Install signage: "Bicycles May Use Full Lane"		Signage	$7,500
Medium	SP5		San Pablo Ave	No opportunity for bike lanes at this time.	Install signage: "Bicycles May Use Full Lane" Install shared lane markings in right lane in both directions		Shared Lane Marking	$36,800

8. Funding and Implementation

This Plan recommends pedestrian and bicycle projects and programs that will make walking and bicycling an integral part of everyday life in Emeryville. This chapter presents a general funding and implementation plan that will assist the City in securing funding for projects and in determining which projects and programs to pursue first. The projects and programs will be implemented over a number of years, through a variety of means including private development, grants and other mechanisms described in this chapter.

As the costs of these projects and programs likely exceed the City's anticipated bicycle and pedestrian funding, the City should pursue high-priority projects and projects that cost little but have a big impact, and projects that can be integrated into larger planned roadway and development projects first. This Plan provides two tools for assisting the City in determining a sequence for these improvements: First, the detailed project listings in **Chapter 7 (Table 7-3** and **Table 7-4)**, are organized by priority and can be used as a chronology for implementing the projects. Second, the Priority Project Sheets located at the end of this chapter provide groupings of projects by location. These sheets can be used when applying for grants or identifying improvements to be made as part of development or redevelopment projects.

This chapter also includes an Action Plan that lists specific actions that the City will take to implement the goals and policies of this Plan. Each action is assigned to a City department and given a timeframe for implementation.

8.1. Cost Summary

Planning level costs have been developed for recommended programs and projects, using the cost assumptions from similar programs and projects implemented in the Bay Area. Costs for infrastructure recommendations include construction materials, plans, specifications and estimates, traffic control, inspection, mobilization and contingency.[33] Total cost of implementing the recommendations in this Plan is $59.1 million in 2011 dollars. Costs by project type are shown in **Table 8-1**.

[33] *Additional cost burden was included as follows: 10% to 15% for plans, specifications, and estimates, 20% for traffic control, mobilization and inspection combined, and 20% to 30% for contingency.*

Table 8-1. Cost Summary

Type of Improvement	Cost	Notes
Programs		
Encouragement, enforcement, education, evaluation programs	$319,500	Annually. Annual bike sharing operating costs estimated at $270,000. Many programs require staff time only.
Bike sharing - start-up	$600,000	One-time capital cost of establishing bike sharing.
Maintenance of new infrastructure projects	$80,600	Annually
Subtotal	**$4,601,000**	Includes program costs over 10 years
Citywide Infrastructure Improvements		
Signalized intersections	varies	Capital costs dependent on selected treatments.
Treatments for uncontrolled and mid-block crosswalks	varies	Capital costs dependent on selected treatments.
Parklets	varies	Staff time for permitting, inspection.
Pedestrian directional signage	$24,000	
Bikeway destination signage	$24,000	
Bike parking	varies	Capital costs dependent on type and quantity of bicycle parking.
Signal detection for bicyclists	varies	Capital costs dependent on whether improvements require calibration only or installation of new technologies.
Subtotal	**$48,000+**	
Site-Specific Projects		
Sidewalks	$4,547,400	
Pedestrian Crossings	$2,928,600	
Transit Stop Improvements	$757,500	
Corridor Enhancements	$4,118,100	
Overcrossings	$32,000,000	
Pedestrian Paths	$2,341,000	
Multi-Use Paths	$4,099,800	
Bikeway Network	$2,880,400	Includes costs for bicycle boulevards, bike lanes, bike routes, and shared lane markings. Does not include costs for multi-use paths.
Intersection Improvements for Bicyclists	$716,600	
Spot Improvements for Bicyclists	$57,200	
Site-specific projects (excluding overcrossings)	**$22,446,600**	
Subtotal	**$54,446,600**	
Total cost over 10 years	**$59,095,600**	Includes annual programs costs over 10 years.

Maintenance Costs

Maintenance is essential to providing a pedestrian and bicycle network that is safe and reliable for users. Table 8-2 summarizes the projected annual cost for Emeryville to maintain the proposed projects.

Table 8-2. Pedestrian and Bicycle Facility Maintenance Cost Estimates (Proposed Projects)

Facility	Cost Per Mile	Miles	Annual Cost Estimates	Notes
Paved paths (multi-use and pedestrian paths)	$25,000	3.0	$75,000	Sources: Alameda CTC Bicycle and Pedestrian Plans Update (2011), based on countywide average costs EBRPD per-mile estimates Includes landscaping & reserve fund contributions
Sidewalks	$1,000	2.26	$2,260	
Class II Bike Lanes/ Bicycle Boulevards/ Bike Routes with SLMs	$1,500	1.78	$2,670	Source: Alameda CTC Bicycle and Pedestrian Plans Update (2011), based on countywide average costs.
Class III Bike Routes	$700	0.95	$665	Source: Alameda CTC Bicycle and Pedestrian Plans Update (2011), based on countywide average costs. Includes sign replacement.
Total Estimated Annual Additional Maintenance Cost			$80,595	

8.2. Past Expenditures

This section summarizes the City's past expenditures for pedestrian and bicycle projects. The City of Emeryville has been extremely resourceful and strategic in pursuing funding for pedestrian and bicycle expenditures. City staff have successfully secured funds from a number of sources, as described below. In general, much of the financing for capital projects comes from local sources including the former Redevelopment Agency and the existing Transportation Impact Fee program, which is currently being updated. City staff noted the overall difficulty of securing regional or non-local funding due to Emeryville's small size and the lack of regional connections when compared to larger neighboring jurisdictions.[34] However,

[34] *This information was collected during a conversation with City staff from the Economic Development and Housing Department, Public Works Department, and Planning Department on April 18th, 2011.*

the city actively lobbies for both state and federal funding for pedestrian and bicycle infrastructure improvements.

8.2.1 Capital Improvement Program (CIP)

The City's Capital Improvement Program establishes the infrastructure funding plan over a five-year timeframe. All pedestrian and bicycle projects are listed in the CIP with a variety of funding sources. The CIP is primarily funded through the general fund, and in the past, Redevelopment Agency funds. Under the CIP (2006-2011), $3.5 million in City funds and $15.6 million in Redevelopment Agency funds were spent on pedestrian and bicycle improvements, out of a total of $15.6 million and $84.2 million in funds from these two funding sources, respectively. Recently completed CIP projects include the Emeryville Greenway Multi-Use Path, Park Avenue Beautification Phase I, Powell Area Pedestrian Safety Improvements project, the pedestrian signal at Christie Avenue, the Triangle Traffic Calming program, and lighted crosswalks.

The CIP will be updated once the City determines the effect of the State changes to redevelopment agencies. Understanding the City's investment in the existing pedestrian and bicycle system and what is required to complete the system is important in developing a funding strategy.

8.2.2 Redevelopment Agency Funds

In the past, Emeryville was split into two large redevelopment zones that covered the entire City except for the Marina and the Watergate Condominiums. Redevelopment Agency funds were used for projects that require new right-of-way or to acquire land for large infrastructure projects. However, due to the State dismantling of Redevelopment Agencies, this funding source has been eliminated. The City will need to determine alternative funding sources.

8.2.3 Conditions of Approval (COA)

Emeryville has included pedestrian and bicycle improvements as a condition of approval for developers. Improvements include new sidewalks or bicycle facilities along the project frontage, or intersection improvements to facilitate project site access. In commercial areas, property owners are required to maintain street trees and sidewalks along their frontage. Recent projects include the Pixar Path, Bike Boulevard on 45th Street, and 65th Street bike lanes.

8.2.4 Measure B Funds

Measure B one half cent sales tax for Alameda County is passed through to all jurisdictions. Emeryville often uses its Measure B funds to slurry seal a portion of roadways each summer. The slurry seal projects are often combined with other transportation improvement projects such as roadway restriping or bicycle lanes. The Adeline Street Reconstruction, which consisted of a "road diet" and new bike lanes, was funded through Measure B funds.

8.2.5 Regional Transportation Plan (RTP)

The Metropolitan Transportation Commission (MTC) adopted the 2009 *Transportation 2035 Plan for the San Francisco Bay Area* to specify how the approximately $218 billion in anticipated federal, state, and local transportation funds will be spent in the San Francisco Bay Area. Eighty percent of these funds will be used to maintain and operate the existing transportation system.

Due to the uncertainty of redevelopment funds, the City has submitted 12 to 15 pedestrian and bicycle related projects for inclusion in the Regional Transportation Plan (RTP) and subsequent eligibility for Federal funding. The City also recently submitted a request for $13 million in the RTP for funding of the I-80 / 65th Street Bridge.

8.2.6 Transportation Development Act Article 3

The City of Emeryville receives between $5,000 and $7,000 in pass-through funds annually as a part of TDA Act 3. The City also receives $10,000 annually through the related Transportation Fund for Clean Air.

8.2.7 Proposition 84

The City has secured funds from the Proposition 84 Urban Greening for Sustainable Communities Grant Program for landscaping and planning projects.

8.2.8 Federal Earmarks

In addition, funding for the planned Transit Center and Plaza has been partially covered by a Federal Earmark through the federal funding and authorization bill, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU).

8.3. Estimated Revenue

Beyond the funding sources which the City has already pursued, there are other numerous sources at the local, county, regional, state, and federal levels that are potentially available to the City of Emeryville to implement the projects and programs in this Plan. Potential local, countywide, regional, state and federal funding sources are described below.

8.3.1 Local Funding Sources

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

Traffic Impact Fee

The City's Traffic Impact Fee (TIF) program is currently being updated and will be used to finance transportation infrastructure projects through the *General Plan* horizon year (2030). The TIF is funded through development fees to lessen the impacts to the transportation system caused by new development. The updated TIF includes improvements to all transportation modes, reflecting that the motorized roadway system has limited ability to expand and that multiple transportation options are required to provide continued mobility for Emeryville residents, employees, and visitors. Key areas where the TIF will focus the transportation funding in the future include:

- Limited intersection capacity improvements for vehicles, primarily around the Powell Street interchange.
- Improvements to the transit system that focus on improving pedestrian connections to/from transit stops and providing better transit stop amenities to attract choice riders.

- Improvements to the bicycle and pedestrian system focused on reducing barriers to east-west travel across the city, closing gaps in the existing system, and providing high visibility crossings of the existing roadway network.

This source is proposed to be the primary funding source for improvements included in this Plan. Since revenue from the TIF will be tied to development, it will be difficult to forecast the timing of revenue as development patterns will likely change year to year. This will affect the implementation timeframe for projects funded through the TIF.

Planned Roadway Improvements

Pedestrian and bicycle improvements can often be included in ongoing roadway projects or planned roadway improvements for a nominal cost. This may include adding curb ramps during a utility reconstruction or marking bicycle lanes or stencils during routine roadway paving projects. The City of Emeryville should review planned roadway projects to determine if there are opportunities for coordination between these planned projects and the pedestrian and bicycle recommendations presented in this Plan.

Capital Improvement Program (CIP)

The CIP sets priorities for building the City's infrastructure, including pedestrian and bicycle improvements. A majority of funding for the CIP previously came from the City's Redevelopment Agency, with some funding also coming from the City's General Fund or federal, state, or regional grants. As noted, Redevelopment Agency funding has been eliminated with the State's dismantling of Redevelopment Agencies.

Private Financing Mechanisms

New construction can be used to finance new pedestrian and bicycle infrastructure through several key mechanisms:

- Developer financed infrastructure on- or off-site. This could include on-site pedestrian or bicycle connections to existing infrastructure or entirely new infrastructure in the project vicinity. Emeryville has used this mechanism to require Pixar to construct the multi-use path between Park Avenue and 45th Street.

In addition to the upfront infrastructure costs, the financing for the maintenance of new facilities may be provided for by private developments. Funding for long-term operations and maintenance can be financed through several mechanisms:

- Condition of approval that the new development maintains the infrastructure along the project frontage or in the project vicinity. It is currently the City's policy for nonresidential uses to maintain sidewalks along the establishment's frontage.
- Require resident and employee AC Transit "Easy Pass" for new developments. This would include monthly passes that are included in rental or homeowner fees and could provide a source of funding for transit service, or the development of an on-site bicycle station or bike sharing facility.
- Implement parking pricing policies for on-street and off-street facilities. Revenue from meters or parking garages could be used to finance on-going maintenance of bicycle and pedestrian facilities.

- Under the General Plan and Zoning Regulations, developers may voluntarily agree to build pedestrian and bicycle infrastructure in order to earn "bonus points" for increased height, intensity and density of development.

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 pedestrian or bikeway projects. Creation of these potential sources usually requires substantial local support.

8.3.2 Countywide Funding Sources

Alameda County Measure B Bicycle and Pedestrian Program

Measure B is a half-cent sales tax that was passed in 1986 by Alameda County voters and reaffirmed by voters in 2000. Funds are distributed through the Alameda County Transportation Commission. Seventy-five percent of these funds are distributed to cities and the County based on population, while twenty-five percent are allocated for regional projects.

Measure WW

In 2008, Contra Costa and Alameda County voters approved EBRPD's Measure WW, the "Regional Open Space, Wildlife, Shoreline and Parks Bond." This extension of a similar 1988 bond measure allocates $33 million specifically to trail projects in the county. In addition, the measure will provide $48 million directly to cities, the county and special park and recreation districts for their park and recreation needs, including trails and other non-motorized transportation projects.

- Measure WW: www.ebparks.org/ww

8.3.3 Regional Funding Sources

Transportation for Livable Communities

MTC created the Transportation for Livable Communities (TLC) program in 1998. It provides technical assistance and funding to cities, counties, transit agencies and nonprofit organizations for capital projects and community-based planning that encourage multimodal travel and the revitalization of town centers and other mixed-use neighborhoods. The program funds projects that improve bicycling to transit stations, neighborhood commercial districts and other major activity centers.

- MTC's TLC program: www.mtc.ca.gov/planning/smart_growth/ tlc_grants.htm

Climate Action Program

In partnership with the Bay Area Air Quality Management District, Bay Conservation Development Commission and the Association of Bay Area Governments, MTC is sponsoring a transportation-oriented Climate Action Program, designed to reduce mobile emissions through various strategies, including a grant program. The grant program will provide funding for bicycle projects through new Safe Routes to School and Safe Routes to Transit programs, with total funding expected to be approximately $400 million. This funding

will be in addition to the state and federal Safe Routes to School programs and MTC's existing Safe Routes to Transit program.

Safe Routes to Transit (SR2T)

SR2T is a grant-funding program that emerged out of the Bay Area's Regional Measure 2, which instituted a $1 toll increase on the Bay Area's seven state-owned toll bridges. Through the SR2T program, up to $20 million is to be allocated through 2013 on a competitive basis to programs, planning efforts and capital projects designed to reduce congestion on toll bridges by improving bicycling and walking access to regional transit services that serve toll-bridge corridors. Funds can be used for secure bicycle storage at transit; safety enhancements and barrier removal for pedestrian or bicycle access to transit; and system-wide transit enhancements to accommodate bicyclists. The SR2T program is administered by two nonprofit organizations, TransForm and the East Bay Bicycle Coalition, with MTC serving as the fiscal agent. The program awarded approximately $12 million during its first three cycles, in 2005, 2007, and 2009. The fifth and final funding cycle will occur in 2013.

- Bay Area Safe Routes to Transit funding program: www.transformca.org/campaign/sr2t

Regional Bikeway Network Program

MTC's "Regional Bicycle Plan for the San Francisco Bay Area" designates a regional bikeway network covering approximately 2,140 miles throughout the nine Bay Area counties. MTC has pledged $1 billion to fully fund this regional bikeway network (with the exception of links on toll bridges) and will create a funding program with the intention of completing construction of the network by 2035. This program was completed in 2009 and replaced the expired Regional Bicycle and Pedestrian Program. The Bay Trail through Emeryville is a part of the regional bikeway network. The South Bayfront Bridge and 65th Street Bridge are both identified for funding in the Plan.

Bay Trail Grants

The San Francisco Bay Trail Project—a non-profit organization administered by the Association of Bay Area Governments—provides grants to plan, design, and construct segments of the Bay Trail. The amount and availability of Bay Trail grants vary from year to year, depending on whether the Bay Trail Project has identified a source of funds for the program. In recent years, grants have been made using funds from Proposition 84, the 2006 Clean Water, Parks and Coastal Protection Bond Act; however, this is a limited-term source of funds.

- Bay Trail grants: www.baytrail.org/grants.html

Transportation Fund for Clean Air (TFCA)

TFCA is a grant program administered by the Bay Area Air Quality Management District (BAAQMD). The purpose of the program, which is funded through a $4 surcharge on motor vehicles registered in the Bay Area, is to fund projects and programs that will reduce air pollution from motor vehicles. Eligible projects include including the purchase or lease of clean air vehicles; shuttle and feeder bus service to train stations; ridesharing programs to encourage carpool and transit use; bicycle facility improvements such as bike lanes, bicycle racks, and lockers; arterial management improvements to speed traffic flow on major arterials; smart growth projects; and transit information projects to enhance the availability of transit information. Grant

awards are generally made on a first-come, first-served basis to qualified projects. Funding for projects is also available through the TFCA's County Program Manager Fund. Under that sub-program, 40 percent of TFCA revenues collected in each Bay Area county is returned to that county's congestion management agency (CMA) for allocation (the Alameda County CMA in Emeryville's case). Applications are made directly to the CMAs, but must also be approved by the BAAQMD.

- TFCA Bicycle Facility Program: www.baaqmd.gov/pln/grants_and_incentives/bfp/index.htm
- TFCA County Program Manager Fund: www.baaqmd.gov/pln/grants_and_incentives/tfca/cpm_fund.htm

8.3.4 Statewide Funding Sources

Below is a list of Statewide Funding sources available for transportation related improvements.

Proposition 1B Transportation Infrastructure Bond

Proposition 1B is a statewide bond passed by the voters of California in 2006 to provide money for transportation improvements. This money can be used for such activities as improving rail-highway crossings, retrofitting local bridges, modernizing transit services to improve pedestrian or bicycle access, as well as provide matching funds for locally nominated projects.

Proposition 1C Housing/Transit Oriented Development Bonds

Proposition 1C is a statewide bond passed by the voters of California to provide money for affordable housing and transit oriented development. Of this bond, $850 million is available in grants for the development of public infrastructure projects that facilitate or support infill housing construction. This program has been used previously to finance construction of roadways as well as pedestrian and bicycle facilities to support affordable housing and transit oriented development.

Transportation Enhancements (TE)

Under the Transportation Enhancements program, California receives approximately $60 million per year from the federal government to fund projects and activities that enhance the surface transportation system. The program funds projects under 12 eligible categories, including the provision of bike lanes, trails, bicycle parking and other bicycling facilities; safety-education activities for pedestrians and bicyclists; landscaping and other scenic beautification projects; and the preservation of abandoned railway corridors and their conversion to trails for non-motorized transportation. In California, 75 percent of TE funding is distributed by the regional transportation planning agencies. For the Bay Area, MTC allocates the money through its Transportation for Livable Communities program (see above). The remaining 25 percent is allocated by Caltrans at the district level.

Bicycle Transportation Account (BTA)

The BTA is a Caltrans-administered program that provides funding to cities and counties for projects that improve the safety and convenience of bicycle commuting. Eligible projects include secure bike parking; bike-carrying facilities on transit vehicles; installation of traffic-control devices that facilitate bicycling; planning, design, construction and maintenance of bikeways that serve major transportation corridors; and elimination

of hazards to bike commuters. In fiscal year 2010/11, the BTA provided $7.2 million for projects throughout the state. To be eligible for BTA funds, a city or county must prepare and adopt a bicycle transportation plan that meets the requirements out-lined in Section 891.2 of the California Streets and Highways Code.

- Bicycle Transportation Account: www.dot.ca.gov/hq/LocalPrograms/bta/btawebPage.htm

Safe Routes to School (SR2S)

California's Safe Routes to Schools program (SR2S) is a Caltrans-administered grant-funding program established in 1999 (and extended in 2007 to the year 2013). Eligible projects include bikeways, walkways, crosswalks, traffic signals, traffic-calming applications, and other infrastructure projects that improve the safety of walking and biking routes to elementary, middle and high schools, as well as "incidental" education, enforcement and encouragement activities. Planning projects, on the other hand, are not eligible. In fiscal year 2009/10, approximately $24.25 million was available in grant funding.

- Caltrans Safe Routes to School program: www.dot.ca.gov/hq/LocalPrograms/saferoutes/saferoutes.htm

Transportation Development Act (TDA), Article 3

TDA Article 3 is perhaps the most readily available source of local funding for pedestrian and bicycle projects. TDA funds are derived from a statewide quarter-cent retail sales tax. This tax is returned to the county of origin and distributed to the cities and county on a population basis. Under TDA Article 3, two percent of each entity's TDA allocation is set aside for pedestrian and bicycle projects; this generates approximately $3 million in the Bay Area annually. Eligible projects include the design and construction of walkways, bike paths and bike lanes, and safety education programs. According to MTC Resolution 875, these projects must be included in an adopted general plan or pedestrian and bicycle plan and must have been reviewed by the relevant city or county pedestrian and bicycle advisory committee.

- MTC's Procedures and Project Evaluation Criteria for the TDA Article 3 program: www.mtc.ca.gov/funding/STA-TDA/RES-0875.doc

State Transportation Improvement Program (STIP)

Every two years, the California Transportation Commission programs funds for a variety of projects that relieve congestion on state highways and local streets, which must provide accommodations for pedestrians and bicyclists to receive the funds. Seventy-five percent of STIP funds are distributed to the counties. The remaining 25 percent is programmed for intercity highway and rail improvements.

Highway Safety Improvement Program (HSIP)

In 2009, the HSIP replaced the Hazard Elimination Safety program which provided funds to eliminate or reduce the number and severity of traffic collisions on public roads and highways. Cities and counties compete for HSIP funds by submitting candidate projects to Caltrans for review and analysis. Caltrans prioritizes these projects statewide and approves priority projects for funding through its annual HSIP program plan. Historically, only about 20 percent of applications are approved for funding. In February 2011, Caltrans released the fourth cycle of projects approved for funding. The list contained 179 projects totaling nearly $75 million in federal funds

- Hazard Elimination Safety program: www.dot.ca.gov/hq/LocalPrograms/hesp/hesp.htm

8.3.5 Federal Funding Sources

Below is a list of Federal Funding sources available for transportation related improvements.

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

SAFETEA-LU 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 pedestrian and bicycle facilities. This legislation also includes a Safe Routes to School program, with funding for projects that improve pedestrian and bicycle access and safety around primary and middle schools. Cities, counties, and transit operators can apply for SAFETEA-LU funds. An 11.5 percent local match is required for these funds. Several key SAFETEA-LU programs include the following:

- *Surface Transportation Program Fund, Section 1108 (STP)* – STP are block grant funds that are used for roads, bridges, transit capital, and bicycle projects. SAFETEA-LU allows the transfer of funds from other SAFETEA-LU programs to the STP Fund. Cities, counties, metropolitan planning organizations, and transit operators can apply for STP funds.
- *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, and transportation systems, meet national defense requirements, and serve interstate and inter-regional travel. Facilities must be located and designed pursuant to an overall plan developed by each metropolitan planning organization 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. Cities, counties, MPO, state, and transit operators can apply for SAFETEA-LU funds. An 11.5 percent local or state match is required for these funds. Note that this program will likely be discontinued.
- *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. 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. Additional detail on this program is provided below, relating to the statewide distribution from the TE Program.
- *Bridge Repair and Replacement Program (BRRP)* – BRRP funds are available for bridge rehabilitation and replacement. Bridge projects must be incorporated into the Regional Transportation Improvement Program (RTIP). Cities may apply for these funds.

- *National Recreational Trails Fund, Section 1112* – Funds are available for recreational trails. 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. Eligible states must adopt a Highway Safety Plan (HSP) reflecting state highway problems. 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 a variety of transportation activities including improving pedestrian and bicycle access to mass transportation, landscape and scenic beautification, historic preservation, and environmental mitigation. 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 study and research multi-modal transportation safety. 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 to improve mass transit station areas including access to the station. 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.

Safe Routes to Schools

The Federal Safe Routes to Schools (SRTS) program, established by Section 1404 in SAFETEA-LU, is funded at approximately $150 million dollars annually, through Federal-aid highway funds. The Federal Highway Administration (FHWA) apportions funds annually to each state, with California receiving on average, $23 million dollars per year. The program emphasizes the 5E's – education, encouragement, engineering, enforcement, and evaluation; therefore, both infrastructure and programmatic projects are eligible for funding; however, only projects located within a two mile radius of elementary and middle schools are eligible. The third cycle call for projects occurred in 2011. No local match is required to receive program funds.

- Federal Safe Routes to School program: http://www.dot.ca.gov/hq/LocalPrograms/saferoutes/srts.htm

8.4. Funding Strategy

With this understanding of Emeryville's funding opportunities and challenges, the City should consider the following options for fulfilling the funding commitment necessary to complete the proposed systems:

- For multi-agency projects, prepare joint applications with other local and regional agencies, such as the Cities of Oakland and Berkeley, Alameda County, and the East Bay Regional Park District 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 act as the lead agency, with a strong emphasis on coordination between participating jurisdictions and agencies (including transit and public health organizations), to ensure projects are implemented as quickly as possible.
- Use existing funding sources as matching funds for State and Federal funding.
- Include pedestrian and bicycle projects in local traffic impact fee (TIF) programs and assessment districts.
- Include costs of facility maintenance in the updated TIF. The feasibility of this approach is currently being studied as a part of the on-going TIF update process.
- Require construction of pedestrian and bicycle facilities as part of new development.
- Continue to include proposed pedestrian and bicycle improvements as part of roadway projects involving widening, overlays, or other improvements.

Continue to coordinate the maintenance of pedestrian and bicycle facilities as part of standard roadway maintenance efforts. For example, prioritize paving improvements along designated bikeways, and stripe bike lanes when repaving.

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

8.5. Implementation Steps

Most recommended projects will require further exploration and analysis by the City before they can be implemented. While this Plan identifies recommended treatments for specific projects, all design level issues will be determined during project implementation by the City. Unanticipated opportunities and challenges will arise during the City's analysis, design and funding of each project, and as a result, the specific designs recommended in this Plan, and the implementation schedule described in this chapter may change.

The steps required to implement recommended projects will vary by project. Many of the projects in this plan are relatively easy to implement and can be completed under the discretion of City staff. Such projects can be implemented using City or grant funds with project level review by the BPAC.

Other projects in the plan, such as multi-use paths and bicycle boulevards, require additional study, a more involved public outreach process, and significant engineering. The City may wish to hold public meetings early in the planning process for such projects. City staff and City Council may wish to involve an appropriate committee to assist with gathering public input and making recommendations. Depending on the nature of the project, this would most likely involve the BPAC, Transportation Committee, Public Works Committee, and/or the Planning Commission.

More complex projects with greater associated impacts typically include the following steps:

1. Preparation of a Feasibility Study involving a conceptual design (with consideration of possible alternatives and environmental issues), public input, and cost estimate for individual projects as needed.
2. Securing, as necessary, outside funding and any applicable environmental approvals.
3. Additional public outreach and approval of the project by the BPAC, Transportation Committee, Planning Commission (as appropriate) and the City Council, including the commitment by the latter to provide for any unfunded portions of project costs.
4. Completion of final plans, specifications and estimates, advertising for bids, receipt of bids and award of contract(s).
5. Project construction.

8.5.1 Implementation Steps by Project Type

Implementation steps for specific bicycle and pedestrian project types are described below.

Sidewalks

Sidewalk projects should be coordinated with planned roadway work or developments. A majority of the sidewalk gaps are in areas that are slated for redevelopment, and new sidewalk construction will be part of the developments' conditions of approval. For projects not adjacent to redeveloping properties, the City will pursue grants for design and construction. Adjacent property owners will be contacted during project design, and the City will work closely with the adjacent property owners on specific project issues (e.g. landscape restoration, driveway reconstruction) at that time. All improvements should meet Americans with Disabilities Act (ADA) requirements and, in some cases, improvements related to ADA compliance may provide an occasion for other planned improvements.

Intersection Improvements and Pedestrian Crossings

Intersection improvements and pedestrian crossings should be incorporated into existing roadway improvement plans when possible. When this approach is not available, Safe Routes to Schools grants would be appropriate for areas adjacent to Emeryville schools such as the intersections along San Pablo Avenue. Other grant funding sources or the updated Transportation Impact Fee (TIF) can provide additional funding sources for other intersection improvements.

Pedestrian Pathways/Corridor Enhancements

A variety of funding sources are available for off-street pedestrian paths including grants for paths adjacent to schools, the updated TIF, or private financing as a part of developer agreements. Adjacent property owners will be contacted during project design, and the City will work closely with the adjacent property owners on specific project issues (e.g. landscape restoration) at that time.

Transit Stop Improvements

Transit stop improvements should be coordinated with transit studies currently underway in Emeryville including the *Sustainable Transportation Strategy*. Funding may be provided through a variety of grants sources such as Safe Routes to Transit grants or the updated TIF.

Overcrossings

Overcrossings include the 65th Street Bridge and South Bayfront Bridge. The City is currently in the process of applying for regional grant funding for the 65th Street Bridge. Grant funding priorities will have to be weighed with other construction projects in the CIP.

Multi-Use Paths (Class I Bikeways)

Multi-use paths will be funded through several mechanisms, including but not limited to the updated TIF and as a condition of approval for new development, and grant programs such Measure B and the Caltrans Bicycle Transportation Account.

Bikeways and Spot Improvements

Bikeway stencils and striping in neighborhoods whose streets are scheduled to be resurfaced should be implemented at the time of resurfacing. Residents and businesses will be notified during the resurfacing project design phase about the new striping and stencils. Bike facilities in neighborhoods whose streets have recently been resurfaced will be added as an un-funded project in the CIP and the City will apply for grant funding to implement these projects.

8.6. Action Plan

To fully achieve the vision set forth in this Plan, close coordination among City departments, neighboring jurisdictions, and the community-at-large will be required. **Table 8-3** identifies action steps to support this Plan's goals and policies. The Action Plan identifies the department or agency responsible for implementing each action and a timeframe. Some action steps are ongoing activities. Others are identified as short-term, within the first two years of adoption of this Plan; medium term, within two to five years; and long-term, within six to 10 years. Actions that call for the implementation of the site-specific projects, as listed in **Chapter 7**, will be carried out in accordance with the priority tier established for each project in **Table 7-3** and **Table 7-4**.

Table 8-3. Action Steps for Implementation of PBP Goals and Policies

Key:

PW: Public Works

P&B: Planning and Building

EDH: Economic Development and Housing

Policy	Action Step	Responsible Party	Time-frame
Goal 1: Multi-modal			
1.1	*The design, construction, operation, and maintenance of city streets shall be based on a "complete streets" concept that enables safe, comfortable, and attractive access and travel for pedestrians, bicyclists, motorists, and transit users of all ages and abilities.*		
	1. Implement the street improvement projects identified in this Plan.	PW	by tier
	2. Collect and analyze pedestrian and bicycle data on an annual basis and utilize to improve the pedestrian and bicycle system. Continue to work with Alameda CTC and MTC on regional count efforts.	PW	ongoing
	3. Identify funding and assign a part-time staff position to coordinate the implementation of this Plan	PW	short
1.2	*To the extent allowed by law, the City's Traffic Impact Fee shall include bicycle, pedestrian, transit, and road improvements so that development pays its fair share toward a circulation system that optimizes travel by all modes.*		
	Continue to collect traffic impact fees and use as a funding source for improvements that support all modes.	P&B PW	ongoing
1.3	*The City will strive for most trips within Emeryville to occur on foot, on bike, or on transit by providing enticing, safe, and direct pedestrian and bicycle connections to all major destinations and transit, and by making bicycling and walking the easiest and least expensive way to travel within the City.*		
	1. Continue to work with the BPAC to implement this Plan.	PW	ongoing
	2. Refer to this Plan when reviewing new development and seek opportunities for its implementation.	P&B PW	ongoing
1.4	*The City will strive to balance the needs of pedestrians, bicyclists, and motorists in all roadway and reconstruction projects*		
	Refer to the Pedestrian and Bicycle Plan prior to construction to identify opportunities to implement pedestrian and bicycle projects	PW	ongoing
	Consider and make accommodations for the needs of all roadway users in new construction projects	P&B PW	ongoing
1.5	*The City will consider health issues in the community design process and in promoting walking and biking as a form of transportation and recreation.*		
	Work with Alameda County Public Health Department to conduct a Health Impact Assessment for the City.	P&B PW	short
1.6	*The City will consider strategies that manage traffic speed in order to improve safety for pedestrians, bicyclists, and motorists.*		
	1. Consider pedestrian and bicyclist volumes when setting speed limits.	PW	ongoing

Policy	Action Step	Responsible Party	Time-frame
	2. Implement traffic calming measures as proposed in this Plan.	PW	by tier
	3. Monitor speeds on bicycle boulevards and class III bike routes, and address overly high speeds with effective traffic calming devices.	PW	ongoing
	4. Prohibit angled parking on bicycle boulevards; reconfigure angled parking where it does not comply.	PW	by tier
1.7	*The City will evaluate the suitability of providing a citywide bicycle sharing system and if feasible, work with local employers, transit agencies, and neighboring communities to plan, fund, and implement a bicycle sharing system.*		
	Expand the initial analysis of bicycle sharing presented in this Plan and work with employers, local jurisdictions, and non-profit agencies to plan and implement.	P&B PW	mid
1.8	*Emeryville will remain up to date on new laws and practice pertaining to pedestrian and bicycle transportation*		
	1. Monitor laws and practices through relevant sources and workshops.	P&B	ongoing
	2. Advocate for change in law that would allow bicyclists to treat stop signs as yield signs.	P&B PW	ongoing
1.9	*The City will seek to develop San Pablo Avenue as a green, multi-modal corridor.*		
	1. Work with Caltrans to develop improvements for San Pablo Avenue and take steps to acquire San Pablo Avenue from Caltrans to facilitate other strategies.	P&B	mid
	2. Coordinate with Berkeley and Oakland on San Pablo Avenue bicycle and pedestrian safety.	P&B PW	ongoing
	3. Develop conceptual plans and designs for improved pedestrian and bicycle facilities and green street treatments.	P&B PW	long
Goal 2: A walkable city			
2.1	*The pedestrian circulation system shall be as set forth in this Plan and the General Plan and based on the typologies described in the General Plan.*		
	Implement the pedestrian improvement projects identified in this Plan.	PW	by tier
2.2	*Sidewalks shall be provided on both sides of all streets; pedestrian connections between new and existing development is required.*		
	Implement the sidewalk improvement projects identified in this Plan.	PW	by tier
2.3	*Sidewalks shall be safe, comfortable, and accessible for pedestrians.*		
	Implement the ADA transition plan improvements.	PW	ongoing
2.4	*The City will plan, upgrade, and maintain pedestrian crossings at intersections and mid-block locations by providing safe, well-marked crosswalks with audio/visual warnings, bulb-outs, and median refuges that reduce crossing widths.*		
	Implement the pedestrian crossing projects identified in this Plan.	PW	by tier
2.5	*Pedestrian routes will be provided across large blocks, pursuing creative options if necessary such as purchasing private alleys, designating pathways through buildings, and acquiring public access easements.*		
	Implement the pedestrian path projects identified in this Plan.	PW	by tier

Policy	Action Step	Responsible Party	Time-frame
2.6	*Establish Pedestrian Priority Zones in Neighborhood Centers, around schools, and in other locations as indicated in the General Plan, where wider sidewalks, street lighting, crosswalks, and other pedestrian amenities are emphasized. Link these zones to adjacent land uses to ensure that building frontages respect pedestrians and truck loading takes place on adjacent streets wherever possible.*		
	Implement the projects identified in this Plan that are located in pedestrian priority zones.	PW	by tier
2.7	*Walking will be encouraged through building design and ensuring that automobile parking facilities are designed to facilitate convenient pedestrian access within the parking area and between nearby buildings and adjacent sidewalks. Primary pedestrian entries to nonresidential buildings should be from the sidewalk, not from parking facilities.*		
	Develop a mechanism for the entitlement process to confirm that new developments conform to the Emeryville Design Guidelines and this Plan.	P&B	short
2.8	*Safe and direct pedestrian access to Aquatic Park and the peninsula will be provided and maintained.*		
	Implement the projects identified in this Plan for the Marina area and work with the City of Berkeley to improve access to Aquatic Park.	PW	by tier
2.9	*Safe pedestrian walkways that link to streets and adjacent bus stops will be required of new development.*		
	Through the entitlement process, ensure that new developments provide safe and comfortable pedestrian access to adjacent streets and bus stops.	P&B PW	ongoing
2.10	*The City will require new development to minimize the number and width of curb cuts for vehicles to reduce vehicle conflicts with pedestrians.*		
	Develop a mechanism for the entitlement process to confirm that new developments conform to the Emeryville Design Guidelines.	P&B	ongoing
2.11	*The City will use the best possible technology as feasible to create the shortest possible wait time for pedestrians at signalized intersections. Particularly, where pedestrian volumes are high, automatic pedestrian walk signals will be provided, where timing allows. Where activation is needed to get a walk signal, a mechanism will be provided to show activation and pedestrian countdown.*		
	Using available pedestrian count data, evaluate which signals should be the highest priority for improvements.	P&B	short
	Commit a percentage of the annual budget for signalized intersection improvements.	PW	mid
2.12	*Where feasible the City will provide drinking fountains, public toilets, benches, and other pedestrian amenities on public property.*		
	Develop an inventory of existing pedestrian amenities in public areas, and create a plan for improving and installing amenities. Identify priority areas for additional amenities such as pedestrian Priority Zones and high volume locations.	PW	mid
2.13	*The City will evaluate and improve existing and proposed uncontrolled marked crosswalks with the purpose of improving pedestrian safety and, in doing so, enhance pedestrian accessibility and mobility.*		
	Improve crossings in accordance with the treatment levels in Chapter 5 of this Plan.	PW	ongoing
2.14	*The City will provide pedestrian-oriented destination signs and walking maps, especially at the transit hubs.*		
	Develop and implement a pedestrian signage program starting at transit hubs and Pedestrian Priority Zones.	P&B PW	mid

Policy	Action Step	Responsible Party	Time-frame
Goal 3: A safe, comprehensive, and integrated bicycle system			
3.1	*The City will develop the bicycle circulation system set forth in the General Plan and based on the typologies described in the General Plan.*		
	Implement the bicycle improvement projects identified in this Plan.	PW	by tier
3.2	*On-street bike routes in the City's Bicycle and Pedestrian Plan shall be designated as either Class II (bike lanes) or Class III (signed routes without lanes), as appropriate.*		
	Implement the improvements to Class II bike lanes and Class III bike routes identified in this plan.	PW	by tier
3.3	*The City will construct the network of bicycle boulevards and monitor them for performance goals, as indicated in this Plan.*		
	Monitor bicycle boulevards' performance for speed, volume, and intersection goals, described in Chapters 4 and 6 of this Plan, and pursue appropriate treatments if bicycle boulevards exceed the thresholds for these goals.	PW	ongoing
3.4	*Safe, secure, and convenient short- and long-term bicycle parking shall be provided near destinations for all users, including commuters, residents, shoppers, students, and other bicycle travelers. Retail businesses in regional retail areas are encouraged to provide valet bicycle parking.*		
	1. Create a bicycle parking plan which identifies specific locations, and funding sources for public bicycle parking. Consider secure parking at shopping areas, use of on-street parking lanes, and use of bicycle pods.	PW	mid
	2. Update the bike parking requirements in the zoning code.	PW	short
3.5	*The City will provide showers and changing facilities in civic buildings for employees and, where practical, support the development of such facilities in commercial buildings.*		
	1. Inventory showers and changing facilities in civic buildings, and develop a plan for upgrading or providing these facilities for employees in civic buildings.	PW	mid
	2. Work with developers of non-residential buildings to provide showering facilities for employees.	P&B	ongoing
3.6	*A numbered bike route system with destination signs, consistent with the regional bike route numbering system, shall be developed and implemented with clear signage to bicycle boulevards.*		
	Develop and implement a bicycle destination signage plan that is coordinated with neighboring jurisdictions.	PW	short
3.7	*The City will seek to attract a bicycle store, community bicycle shop, bicycle station, and/or other gathering/retail/shop space for bicyclists.*		
	1. Evaluate opportunities for a bicycle station in the City of Emeryville, in addition to the future bike station at the Transit Center.	P&B	mid
	2. Pursue a community-based bicycle shop, with consideration of providing subsidized space for a community-based non-profit bicycle repair/retail shop.	EDH	short
	3. Install public bicycle maintenance stations at the Emeryville Public Market, on Doyle Street, and on the Bay Trail.	PW	short

Policy	Action Step	Responsible Party	Time-frame
3.8	*The City will improve intersection crossings of bikeways and busy streets and ensure bicycle paths, lanes and routes have good accommodations for crossing high-volume or high-speed roadways.*		
	Implement the intersection improvements identified in Chapters 5, 6, and 7 of this Plan.	PW	by tier
3.9	*All signals shall have functioning bicycle detection and signal timing should be long enough to allow bicyclists to clear the intersection. The City will use the best technology as feasible to create the shortest possible delay for bicyclists*		
	Implement the citywide program to improve signal detection for bicyclists, described in Chapter 5 of this Plan.	PW	ongoing
Goal 4: A regional bicycle and pedestrian network			
4.1	*The City's preferred Bay Trail route through Emeryville is set forth in the General Plan, including the main trail between Frontage Road in Berkeley and Mandela Parkway in Oakland, and spur trails to the Marina along Powell Street and to the Bay Bridge along the east side of Interstate 80.*		
	Implement the Bay Trail as identified in this Plan, and work with ABAG and Oakland to identify this alignment on their maps.	P&B PW	by tier
4.2	*The City will provide bikeways, bike parking, and pedestrian walkways to support connections with transit, including Amtrak, Emery Go Round, AC Transit, and MacArthur, West Oakland, and Ashby BART Stations.*		
	1. Implement the projects identified in this Plan that connect to transit.	P&B	by tier
	2. Implement the transit stop improvements identified in this Plan.	P&B	by tier
	3. Continue to work with Caltrans to move forward on pedestrian and bicycle improvements along the San Pablo Avenue corridor and other locations within the Caltrans right-of-way.	PW	ongoing
4.3	*The City, in collaboration with stakeholders and interested agencies and parties, will study the feasibility of a pedestrian/bicycle trail along the west side of I-80, east of the Emeryville Crescent, to provide access from the Bay Trail to the eastern span of the Bay Bridge.*		
	Identify a funding source for studying the feasibility of a multi-use path along the west side of I-80 to extend the Bay Trail to the eastern span of the Bay Bridge.	P&B	mid
4.4	*Following completion of the new east span of the Bay Bridge, the west span should be retrofitted with a pathway to provide continuous pedestrian and bicycle access between San Francisco and the East Bay.*		
	Actively lobby for and support efforts to construct a bicycle and pedestrian pathway on the west span of the Bay Bridge.	CM	ongoing
Goal 5: Education, encouragement and enforcement to support walking and bicycling			
5.1	*Bicycling will be promoted through public education, including the publication of literature concerning bicycle safety and the travel, health and environmental benefits of bicycling.*		
	Work with EBBC, Alameda County Public Health Department, Alameda County Transportation Commission, and other organizations and agencies to distribute literature and information related to bicycling and safety, health, and the environment.	PW	ongoing
	Use Measure B funds for more general outreach and marketing of Emeryville as a pedestrian/bicycle friendly city	EDH	ongoing

Policy	Action Step	Responsible Party	Time-frame
5.2	*The City will promote programs that teach people good walking and bicycling habits to last a lifetime. Examples include "Safe Routes to School," children's bicycle safety rodeos, adult bicycle education courses, and traffic citation diversion programs.*		
	1. Establish and fund a Safe Routes to School Program which includes involvement by City staff, school district staff, PTA leaders, and other stakeholders. Consider scheduling regular ongoing meetings to maintain stakeholder involvement.	EDH	short
	2. Organize, advertise, and host bicycle safety training classes taught by trainers certified by the League of American Cyclists.	PD	ongoing
	3. Implement the pedestrian safety education programs recommended in Chapter 4.	PD	ongoing
	4. Consider a Traffic Diversion Program to offer drivers education in lieu of a citation.	PD	ongoing
5.3	*The City will continue to develop materials that increase public awareness of available facilities for safe walking and bicycling, such as a walking/biking map, walking tours/bike tours of the city, street fairs, and pedestrian/bicyclist safety pamphlets, and promote these materials on the City website and at special events.*		
	1. Develop a walking/bicycling map. Include basic information, definitions, and rules.	EDH	mid
	2. Use Measure B funds for more general outreach and marketing of Emeryville as a pedestrian- and bicycle- friendly city.	EDH P&B	mid
	3. Pursue the recommendations in this Plan that increase public awareness of available safe walking and bicycling facilities.	PW	mid
5.4	*The City will support special events that encourage people to bike or walk instead of drive, such as Bike to Work Day, International Walk and Bike to School Day, and the Bike Commute Challenge.*		
	Continue to support Bike to Work Day, Bike Commute Challenge, and work with schools to celebrate International Walk and Bike to School Day.	P&B PW CS	ongoing
5.5	*The City will establish a bicycle/pedestrian route around the city, which highlights locations relevant to Emeryville's history and art.*		
	Expand upon the Public Art Walking Guide by including bicycling and including historic sites.	EDH	mid-long
Goal 6: Funding for pedestrian and bicycle projects and programs			
6.1	*The City will continue to apply for county, regional, state and federal funding opportunities, continue to collect Transportation Improvement Fees, include pedestrian and bicycling facilities as conditions of development, and include pedestrian and bicycle projects and programs in the City Capital Improvement Program.*		
	1. Apply for bicycle or pedestrian related grants as they come available (such as Safe Routes to Schools, Safe Routes to Transit, and Measure B Bicycle and Pedestrian Countywide Discretionary Fund).	EDH	ongoing
	2. Actively lobby for state and federal funding for pedestrian and bicycle improvements and programs	PW	ongoing
6.2	*The City will update its Pedestrian and Bicycle Plan at least every ten years, or as changing conditions warrant, to maintain eligibility for Caltrans funding.*		

Policy	Action Step	Responsible Party	Time-frame
	Update the Pedestrian and Bicycle Plan every five to ten years, or as needed to be eligible for Caltrans funding.	P&B PW	mid-long

8.7. Priority Project Sheets

The Priority Project Sheets in this section present high-priority projects, grouped by location. These sheets can be used when applying for grants or identifying improvements to be made as part of development or redevelopment projects.

Priority Project Sheets include:

Pedestrian Project Sheets

- San Pablo Avenue – 40th Street to Adeline Street
- Powell Street at Christie Avenue
- South Bayfront Area
- Bay Trail from Powell Street to Shorebird Park
- Park Avenue District Pedestrian Improvements
- San Pablo Avenue – Safe Routes to School Project

Bicycle Project Sheets

- Bay Trail – Christie Avenue
- Horton/Overland Bicycle Boulevard Treatments
- Emery Street Corridor
- Doyle Street Connections

Pedestrian Project Sheets

8.7.1 San Pablo Avenue - 40th Street to Adeline Street

Description

In Emeryville there are two adjacent major intersections on San Pablo Avenue. One is the 40th St. transit hub and the other is the Star Intersection formed where Adeline St. and MacArthur Blvd. intersect at San Pablo Ave. Both intersections are auto-dominated with conflicts between motorists and pedestrians. Walking distance between these intersections is long; pedestrians would benefit by a crossing at mid-block.

San Pablo Avenue at 40th Street Transit Hub

Proposed Improvements

T.1 Install primary bus stop improvements (see Table 7.1) and include electronic signage with transit information.

San Pablo at 40th Street Transit Hub:

C.10 Enhance medians and streetscape along 40th St.

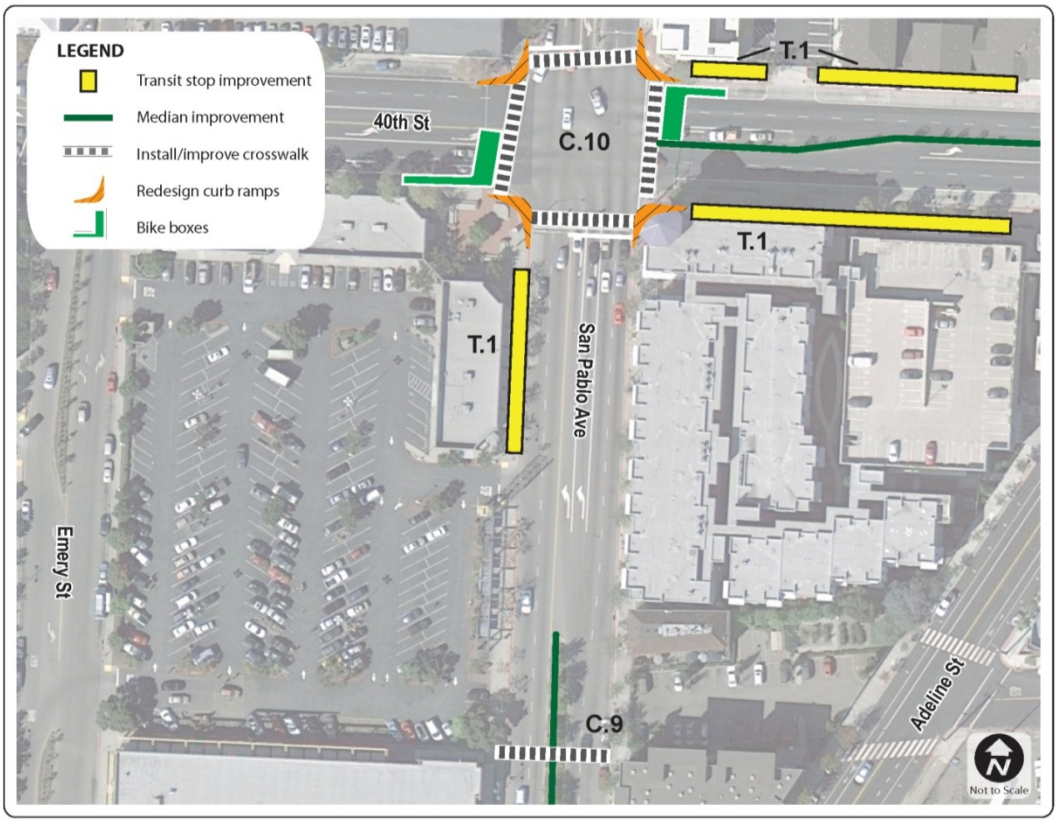
- Redesign curb ramps to direct users into crosswalk on all approaches, as feasible
- Adjust signal timings to improve pedestrian crossings
- Install advance stop lines on San Pablo Ave.
- Consider the viability of installing bike boxes on 40th St.
- Improve maintenance of tree grates and sidewalks

C.9 At San Pablo at Yerba Buena install mid-block crossing of San Pablo Ave.

Install hybrid beacon. Alternatively, consider pedestrian actuated signal that is timed with adjacent signals

- Install high visibility crosswalk markings
- Remove on-street parking and install curb extensions
- Install curb cuts in sidewalk and cut in median for pedestrian refuge.

Design Treatment



8.7.1 San Pablo Avenue - 40th Street to Adeline Street

San Pablo Avenue at Star Intersection

Proposed Improvements

San Pablo Avenue at Stanford Intersection:

C.8 Install and improve crosswalks
Construct medians and install landscaping improvements

Design Treatment

8.7.2 Powell/Christie

Description

Powell St. between I-80 and the railroad is one of the most challenging roadway segments in the City due to high traffic volumes associated with freeway access. The City has adopted the *Powell Street Urban Design Plan* to improve multi-modal travel through phased improvements. Christie Ave. north of Powell St. is a north-south, two-lane street located between I-80 and the railroad. Due to the high residential densities and broad mix of land uses, including office, retail and entertainment, this area has the capacity to support a large percentage of walking trips. There are opportunities for pedestrian improvements throughout the area.

Proposed Improvements

C.15 Improve sidewalks; install crosswalk on north leg of Powell/Christie intersection.

P.1 Powell Street Bridge. Conduct feasibility study for improved pedestrian /bike crossing of railroad; in conjunction with adjacent development seek to improve pedestrian/bike access.

S.1A/B Implement multi use paths, and median and intersection improvements per the Powell Street Urban Design Plan, Phases I and II.

S.11 Install permanent sidewalk adjacent to vacant property.

T.2 Install primary bus stop improvements and casual carpool pick up area. Install long-term bike parking, benches, and information kiosks. Install curb extension in yellow zone in front of Pacific Park Plaza.

Design Treatment

8.7.3 South Bayfront

Description

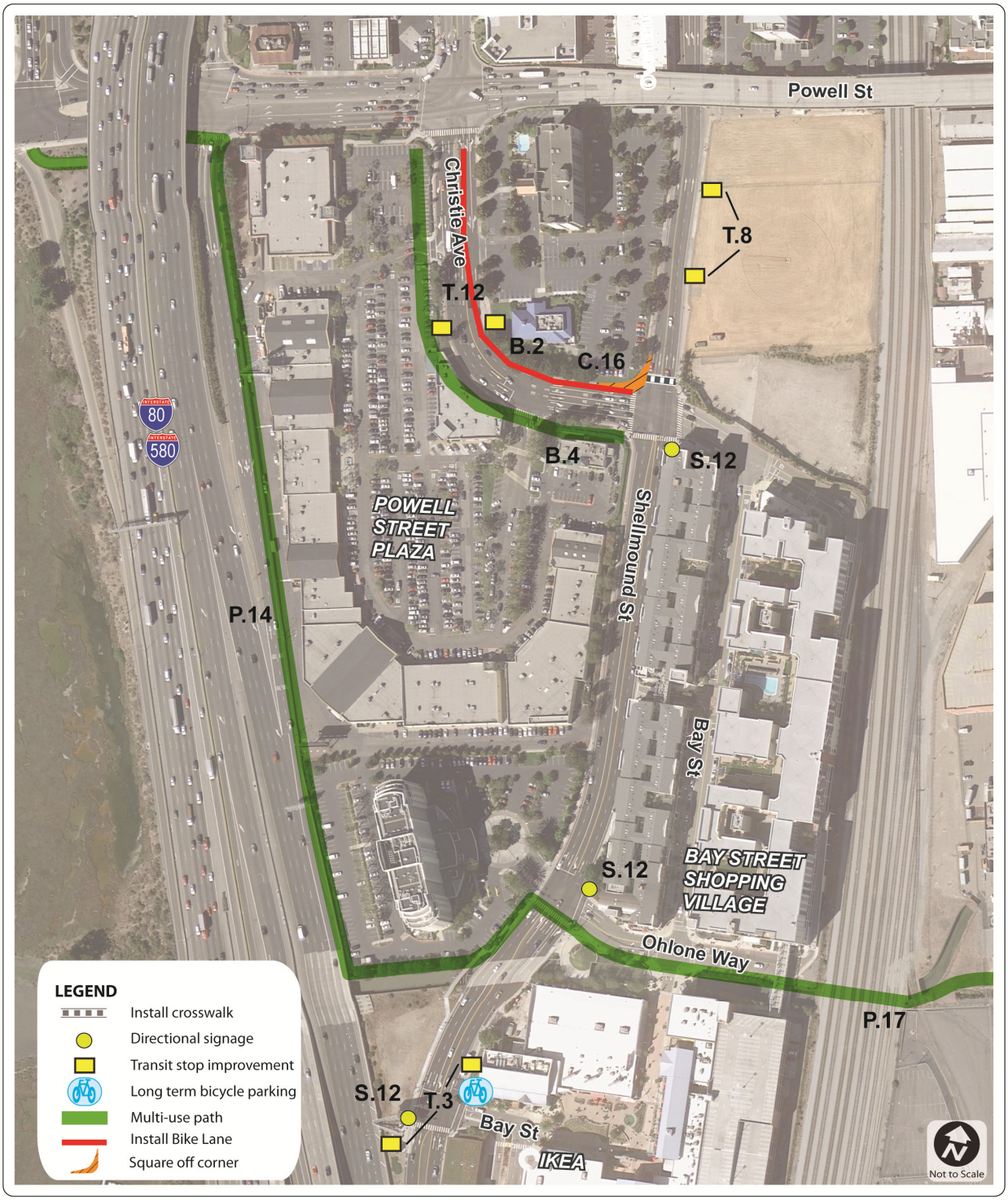
The South Bayfront area, between I-80 and the railroad and south of Powell St., is a regional retail center which includes Bay Street, IKEA, and the Powell Street Plaza. As a destination for out-of-town drivers, the area was designed primarily for auto access. Pedestrian facilities need to be better integrated into this district.

Proposed Improvements

B.2	Restripe Christie Avenue between Shellmound Street and Powell Street to accommodate a bike lane on the north and east sides. The bike lane will be contra-flow between Shellmound Street and the Powell Street Plaza access drive.
B.4	Widen the sidewalk on the west and south sides of Christie Avenue between Powell Street and Shellmound Street to eight feet and set back from the street to provide a multi-use path.
C.16	Shellmound Street at Christie Ave: Install crosswalk on north leg of intersection and square off northwest corner to reduce crossing distance.
P.14	Bay Trail realignment: Construct new multi-use path along west and south perimeter of Powell Street Plaza, in phases, to connect to Ohlone Way and South Bayfront Bridge.
P.17	Build the South Bayfront Bridge over the railroad from Ohlone Way to Horton Landing Park.
S.12	Shellmound St. south of Powell: Install signage on either side of sidewalk gap directing pedestrians to use crosswalk and sidewalk on east side of Shellmound St. Between Ohlone Way and Christie Ave. Install signage directing pedestrians to use Bay Street or sidewalk on west side of Shellmound St.
T.3	Northbound and southbound bus stops on Shellmound at Bay St: Install primary bus stop improvements (see Table 7-1). Include: Benches, providing at least 12 seats Shelters to accommodate the high levels of demand Long- and short-term bike parking Increase wheelchair accessibility at northbound stop by providing a clear path in shelter
T.8	Install primary bus stop improvements (see Table 7-1) at two northbound stops.
T.12	Install secondary bus stop improvements (see Table 7-1) at northbound and southbound stops.

8.7.3 South Bayfront

Design Treatment



8.7.4 Bay Trail from Powell Street to Shorebird Park

Description

The off-street portions of the Bay Trail from Powell Street to just north of Shorebird Park run along a sidewalk parallel to Frontage Road. While the portion of the sidewalk fronting the Hilton Garden Inn has been improved, areas that still need improvement include the segment to the south that fronts the Shell Station and the segment extending north of the hotel to the north end of Shorebird Park.

Proposed Improvements

P.15 Improve existing sidewalk to accommodate multi-use path:

- Shell Station frontage: Install landscaped buffer between path and street. Investigate reducing curb cut area.
- North of Hilton Garden Inn: Replace pavers with smooth surface to better accommodate bicyclists. Install landscaped buffer between path and street. Remove street trees from center of path and relocate to landscaped buffer at roadway edge. At southwest corner of intersection of Frontage Road and the private drive (accessing Chevy's and office complex) tighten turning radius and realign pedestrian push button.

Design Treatment

8.7.5 Park Avenue District Pedestrian Improvements

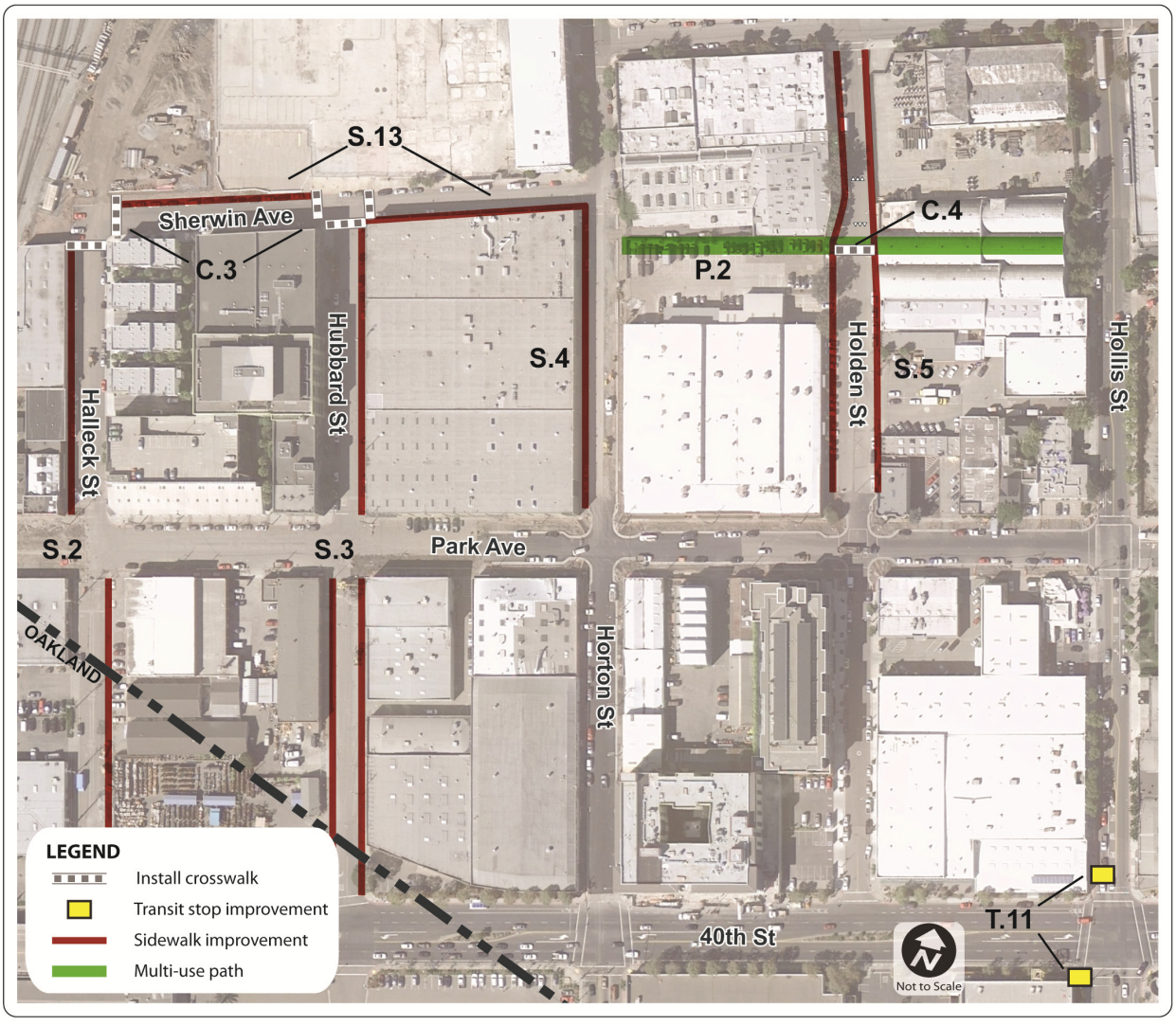
Description

The Park Avenue District is a mixed use neighborhood within the City's historic center. The *Park Avenue District Plan* delineates a series of public improvements to be developed in phases, including improvements to pedestrian facilities. Completion of sidewalks and improved crossings will enhance the pedestrian environment in this fine-grained district.

Proposed Improvements

P.2	Construct mid-block pedestrian path connecting Horton St. to Hollis St. between Park Ave. and 45th St.
C.4	Install high visibility crosswalk with bulb-outs and shark's teeth at mid-block pedestrian path.
S.2	Install sidewalks on Halleck St. between Sherwin Ave. and 40th St. per *Park Avenue District Plan.*
S.3	Install sidewalks on Hubbard St. between Sherwin Ave. and 40th St. per *Park Avenue District Plan.*
S.4	Install sidewalk on Horton St. between Park Ave. and Sherwin Ave. per *Park Avenue District Plan.*
S.5	Install sidewalks on Holden St. between Park Avenue and 45th St. per *Park Avenue District Plan.*
S.13	Install sidewalks on Sherwin Ave. between Halleck St. and Horton St. per *Park Avenue District Plan.*
T.11	Install secondary bus stop improvements (see Table 7-1) eastbound and westbound on 40th St.

Design Treatment



8.7.6 53rd Street Corridor – West and East

Description

Fifty-Third St. traces the approximate historic location of Temescal Creek prior to culverting. This corridor is envisioned as an east-west greenway connecting Temescal Creek Park on the east to Horton Landing Park and the South Bayfront Bridge.

Proposed Improvements

53rd Street Corridor West

C.17 Spur Alley crossing: If easement acquired north of 53rd St. install high-visibility marked crossing, raised crosswalk and advance warning signage.

E.1 Redesign of the 53rd St. corridor as follows:

- Horton St. to Hollis St.: Create bicycle and pedestrian greenway with connection to Horton Landing Park and South Bayfront Bridge. Extend sidewalk area on west side of Horton St. and raise the intersection at Horton St. to create a seamless gateway to Horton Landing Park. Maintain Bike Boulevard designation.
- 53rd St. at Hollis St.: Improve west leg by extending curbs and improving crosswalk markings. Relocate utility boxes on southeast corner to provide adequate pedestrian path of travel.
- Hollis to San Pablo Ave.:
  - Alternative A: Narrow the roadway at selected locations by installing storm-water curb extensions and removing on-street parking. Curb could extend further into roadway to slow vehicle speeds but be mountable to allow for emergency vehicle access. This treatment could be considered at the Spur Alley crossing.
  - Alternative B: Widen sidewalks on both sides. Install bioswales, removing on-street parking in these locations.
  - Alternative C: Widen sidewalk and remove on-street parking on south side only and install faux creek feature along south side.
- 53rd St. at San Pablo Ave.: Improve intersection per C.14 described in 53rd St. Corridor East.

P.5 Construct new north-south multi-use path connecting Doyle St. to 53rd St. at Pickleworks property.

P.7 Construct new east-west multi-use path connecting Horton St., south of 53rd St., to Horton Landing Park and South Bayfront Bridge

B.24 Acquire easement to extend ped/bike access on Spur Alley north of 53rd St. Sign as Class III.

T.9 Northbound and southbound bus stops: Install secondary bus stop improvements (see Table 7.1). Add benches at both stops and shelter at southbound stop.

53rd Street Corridor East

C.14 Improve intersection at San Pablo Ave.:

- Reconcile skewed intersection by clipping southwest corner or use of wedge-shaped crosswalk
- Install new crosswalk on north leg
- Add push buttons and curb ramps to all crossings
- Move existing push buttons if they are not directly adjacent to the curb ramp
- Narrow 53rd St. on west side of San Pablo Ave. with a curb extension on the north side of the street, and realign approach to one lane in each direction.

E.1 As described in 53rd Street Corridor Wast.

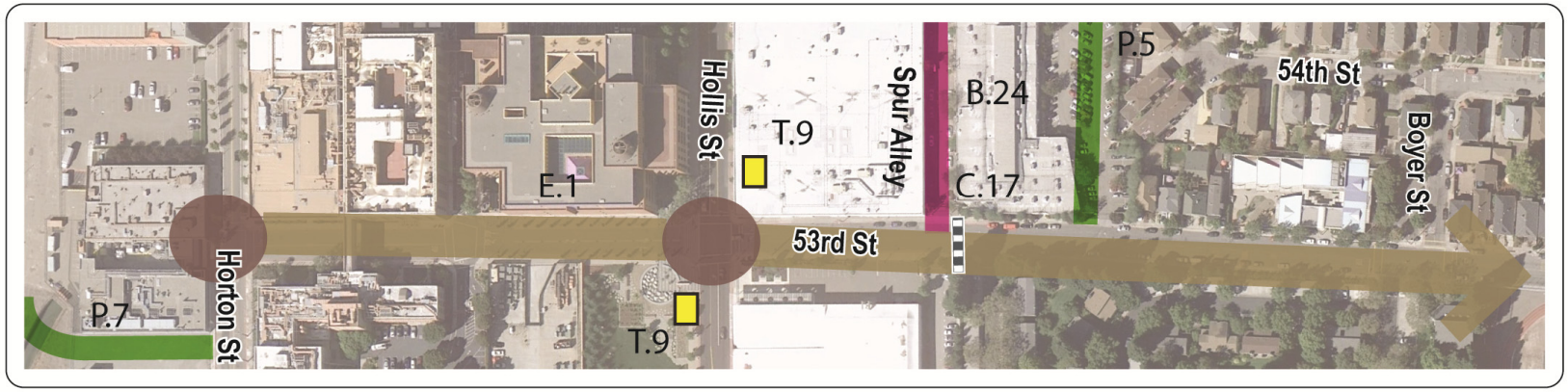
P.4 Construct new north-south multi-use path at west side of Secondary School from 47th St. to 53rd St.

P.11 Install pedestrian path connecting Temescal Creek Park to 53rd St.

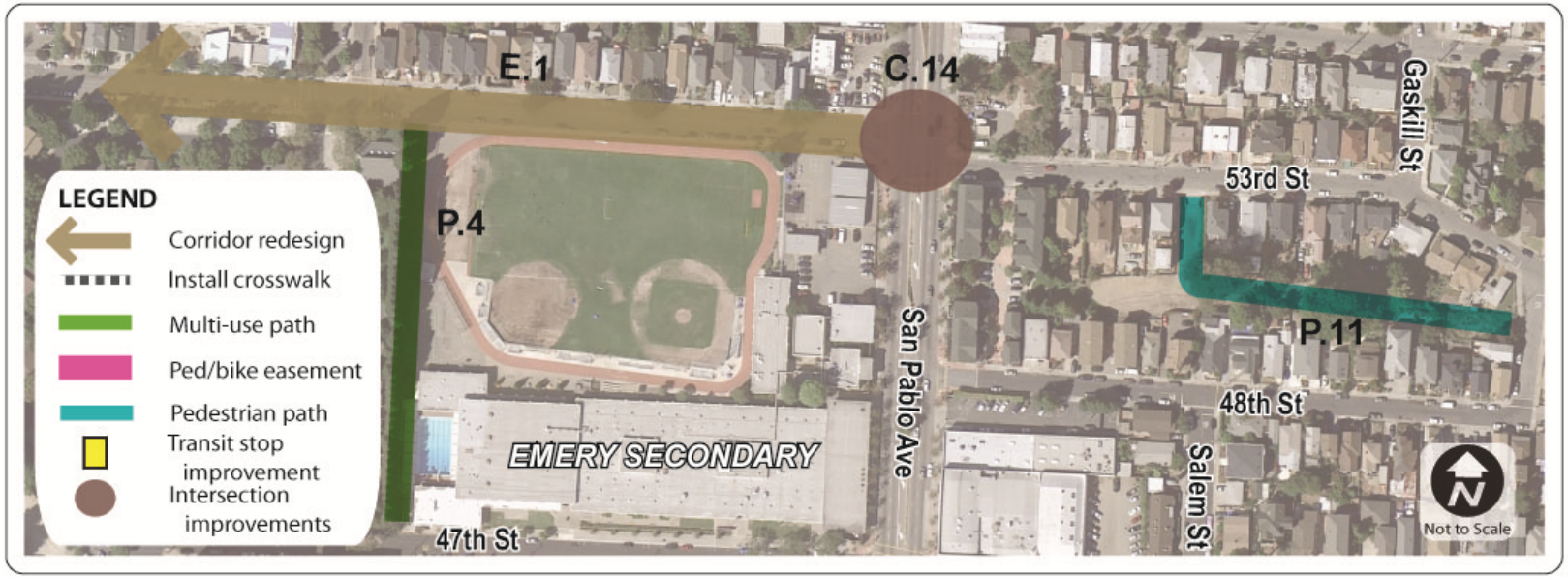
8.7.6. 53rd Street Corridor – West and East

Design Treatment

Design Treatment – 53rd Street West



Design Treatment – 53rd Street East



8.7.7 San Pablo Avenue - Safe Routes to School Project

Description

San Pablo Ave. (State Route 123) is adjacent to Emery Secondary School (grades 6-12) and a private school with pre-K to 8th graders. Anna Yates Elementary School with grades K through 5, is a half block away. Enrollment areas for these schools extend across San Pablo Ave. The road has high traffic volumes (over 20,000 vehicles per day) and motorist compliance with uncontrolled crossings is low.

Proposed Improvements

San Pablo Ave at 43rd St.

C.11 Upgrade in-roadway warning lights, install an overhead flashing beacon on a masthead and/or Rectangular Rapid Flashing Beacons (RRFB)
Replace out-of-compliance warning signs with pedestrian warning signs compliant with the most recent California MUTCD
Refresh the existing crosswalks with new paint and install yield line enhancements.

San Pablo Ave. at 45th St.

C.12 Install new in-roadway warning lights, overhead flashing beacon and/or RRFBs, curb extensions, and median tip.

San Pablo Ave. at 47th St.

C.13 Reevaluate signal timing and pedestrian recall to reduce the wait time for pedestrians. Install new audible pedestrian heads.

8.7.7 San Pablo Avenue - Safe Routes to School Project

Design Treatment

Bicycle Project Sheets

8.7.8 Horton/Overland Bicycle Boulevard Treatments

Description

The Horton/Overland bicycle boulevard provides a continuous north-south connect through Emeryville. This is an important bicycle connection, providing access to the Amtrak Station, the future South Bayfront Bridge, and Mandela Parkway and the Bay Trail in Oakland. Bicyclists share the roadway with motorists except where bike lanes are striped between 62nd St and 53rd St. This corridor exceeds the desire threshold of vehicles per day and volumes are expected to increase with future development. Treatments are needed to improve bicycle safety and circulation.

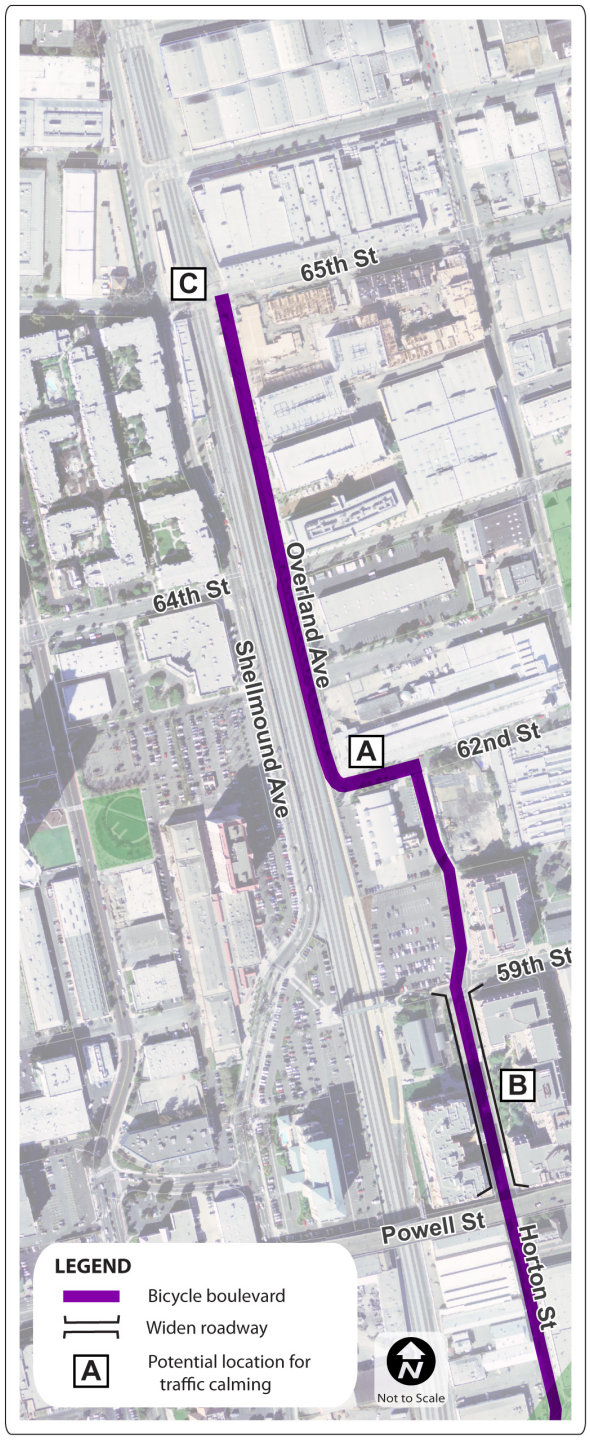
Proposed Improvements

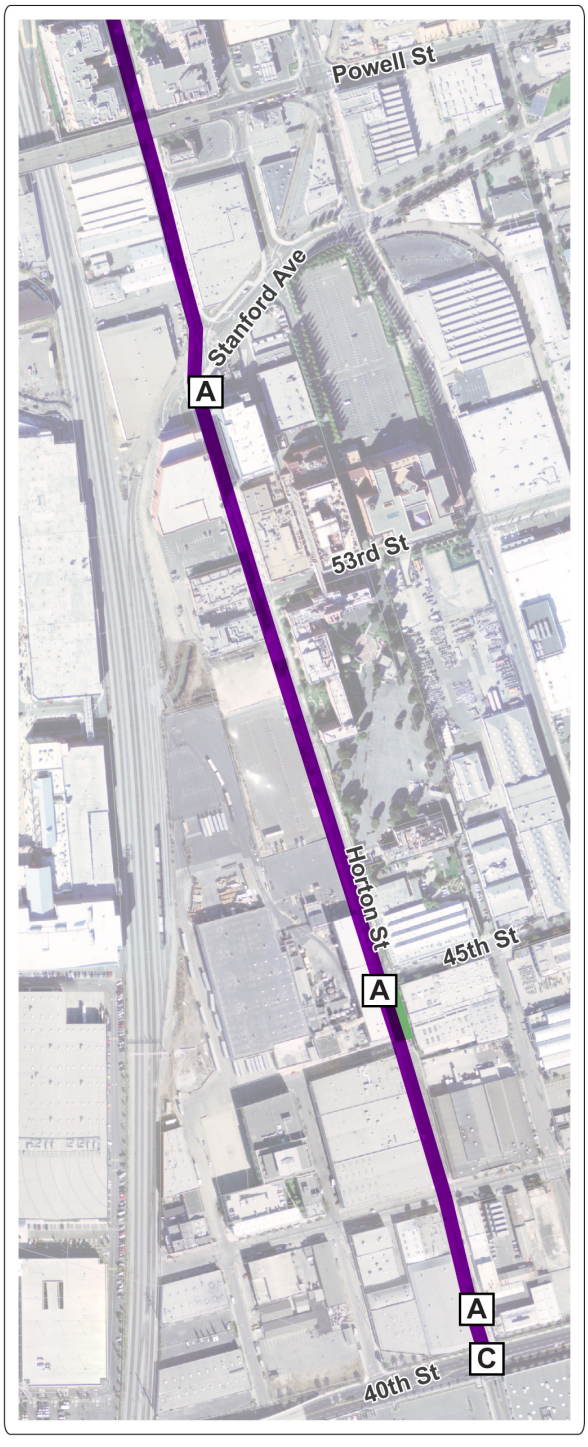
B.21 Implement the bicycle boulevard treatments as described in Chapter 6. Measure speeds throughout and, to slow traffic, consider speed cushions, tables, split lumps, curb extensions, median islands and permanent speed feedback signs to reduce vehicle speeds.

A. Consider diversion at 62nd St, Stanford Ave, 45th St, and 40th St. Diversion to be installed on a trial basis only after evaluation with community input and traffic analysis.
B. Explore roadway widening between 59th St and Powell St to better accommodate bicycle lanes on both sides and a loading lane on the east side.
C. Improve bicycle detection and turning movements at 40th St and at 65th St.

8.7.8 Horton/Overland Bicycle Boulevard Treatments

Design Treatment





8.7.9 Emery Street Corridor

Description

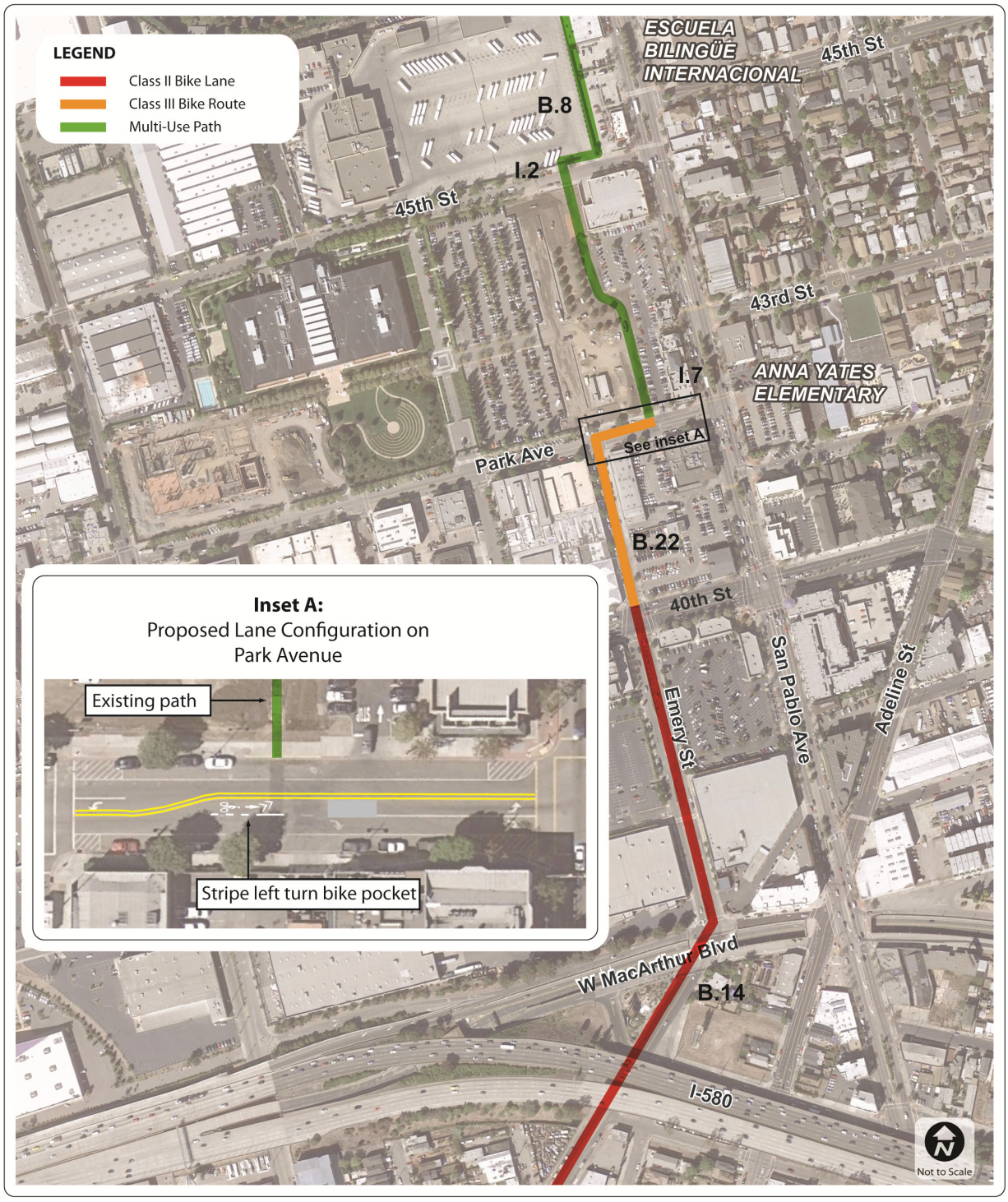
One block west of San Pablo Ave, Emery St provides an alternative parallel bicycling route. Although Emery St is only two blocks in length, it is extended to the south into Oakland via Peralta St. The northern terminus joins with the Joseph Emery multi use path from Park Ave to 45th St. There is potential for a northerly extension of this multi use path to connect with Emery Secondary School and the Emeryville Center for Community Life.

Proposed Improvements

B.8	Construct new multi use path between 45th and 47th Streets through modification or redevelopment of the AC Transit facility.
B.14	Install bike lanes on Peralta St to Oakland border. Peralta St has a 48-foot paved width but only two travel lanes.
B.22	Sign Class III bike route on Emery St and install bicycle left-turn pocket eastbound on Park Ave for left turn into Joseph Emery Park Path.
I.2	When multi use path is extended to 47th St (B.8 above) install high visibility crossing with bulb-outs and shark's teeth.
I.7	On Park Ave provide center left-turn lane for eastbound cyclists turning north onto Joseph Emery Path.

8.7.9 Emery Street Corridor

Design Treatment



8.7.10 Doyle Street Connections

Description

The Doyle St bicycle boulevard provides good bicycle access in the northeast part of the city. Connections to the south and west can be improved.

Proposed Improvements

B.11 Acquire easement and construct Class III facility connecting Doyle St with 53rd St through the Pickleworks property. Install sharrows through parking lot.

B.16 Improve bicycle boulevard on Stanford between Hollis and Doyle Streets.
Measure speeds and volumes
Install bicycle boulevard signage
Install traffic calming treatments and shared lane marking
Install bicycle detection in bike lane at Hollis St.

B.20 Measure speeds and volumes on Doyle St bicycle boulevard. Install hybrid beacon or full signal at Powell St. Install bicycle boulevard signage and pavement marking south of 59th St.

B.24 Acquire easement and extend bike route on Spur Alley north of 53rd St to Hollis St.

I.6 Install traffic signal, stencils, and markings where Doyle St bicycle boulevard crosses Powell St. (Note: approved development is required to contribute to the cost of a traffic signal. Otherwise, install hybrid beacon or signal/actuated flashing beacon.)

8.7.10 Doyle Street Connections

Design Treatment

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