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.

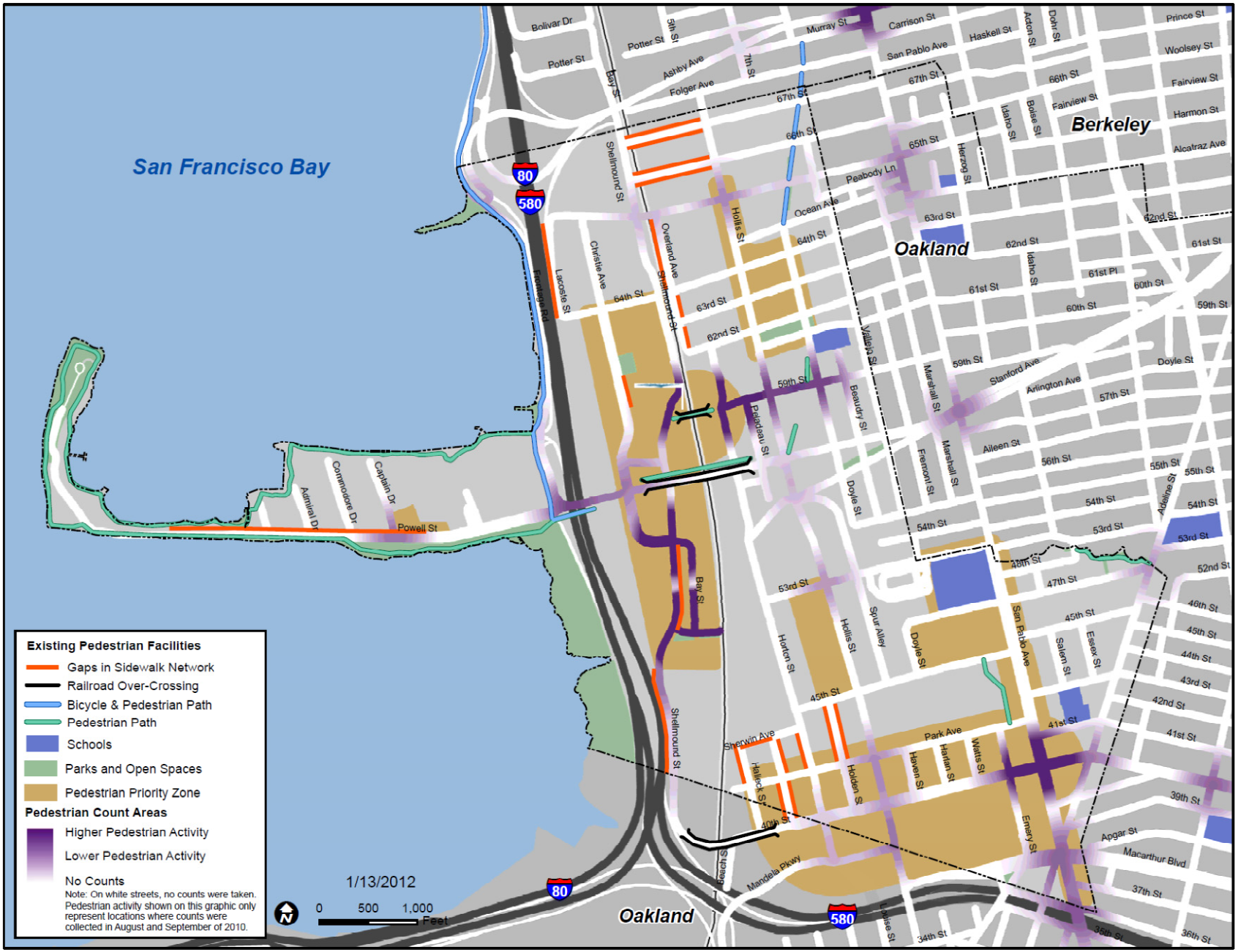
The City has installed an all-way pedestrian phase at the intersection of Christie Avenue and Shellmound Street. While this phase is typically used as a pedestrian scramble, where pedestrians can cross in all directions at once including diagonally, diagonal crossing is not permitted at the Christie 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

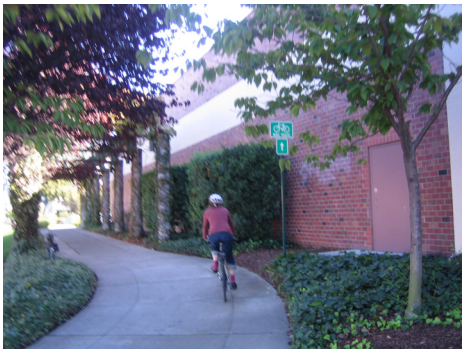
The California Highway Design Manual (HDM) and the California Manual of Uniform Traffic Control Devices (CA MUTCD) present standards that the City of Emeryville is required to follow when designing bikeways. The term "bikeways" refers to three Caltrans defined classifications: Class I bike paths/multi-use 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.

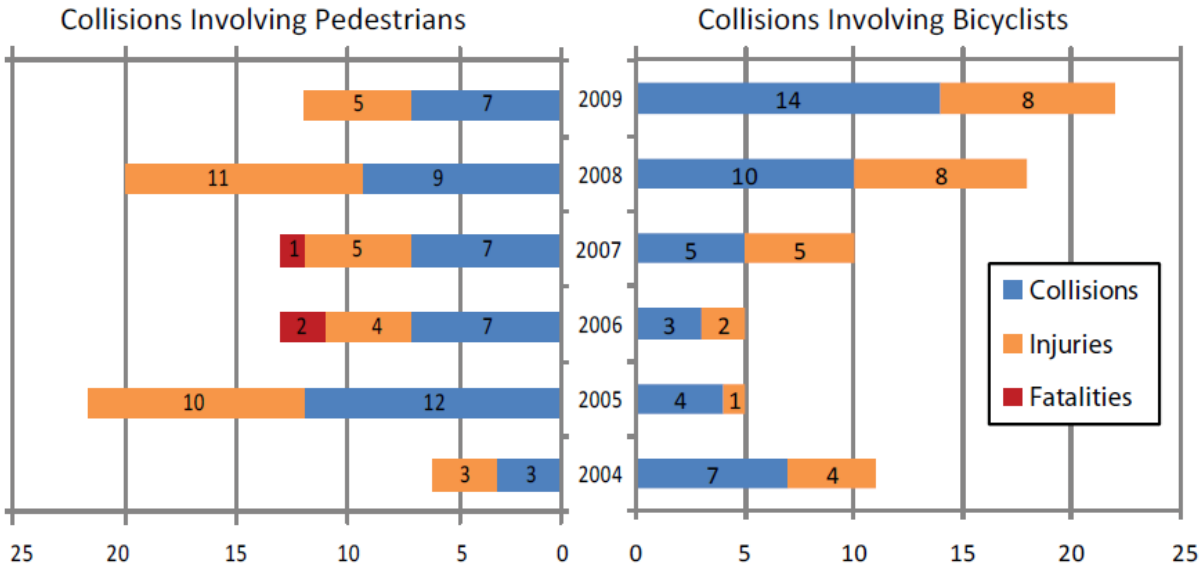


Figure 3-1. Collisions Involving Pedestrians and Bicyclists, 2004-2009

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.

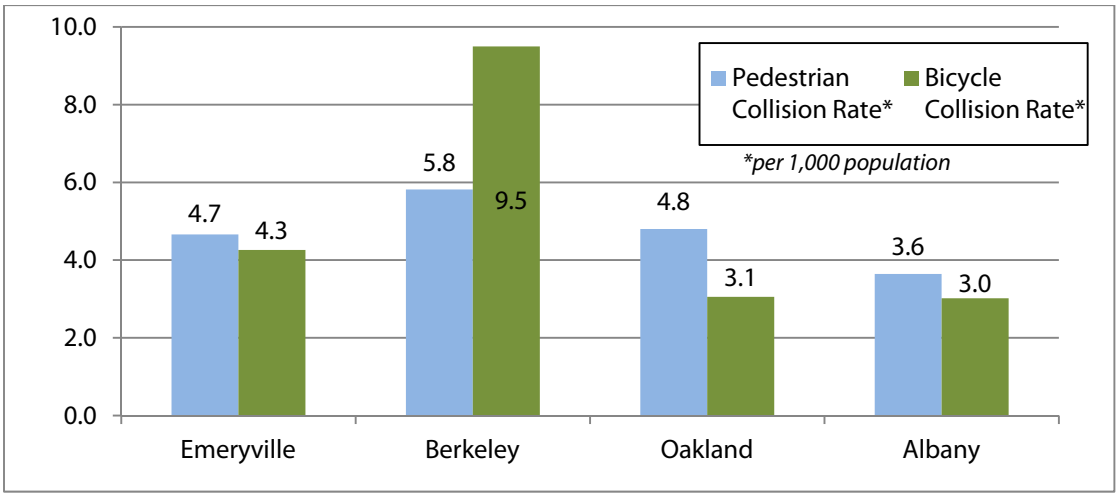


Figure 3-2. Collision rates in Emeryville and nearby cities

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

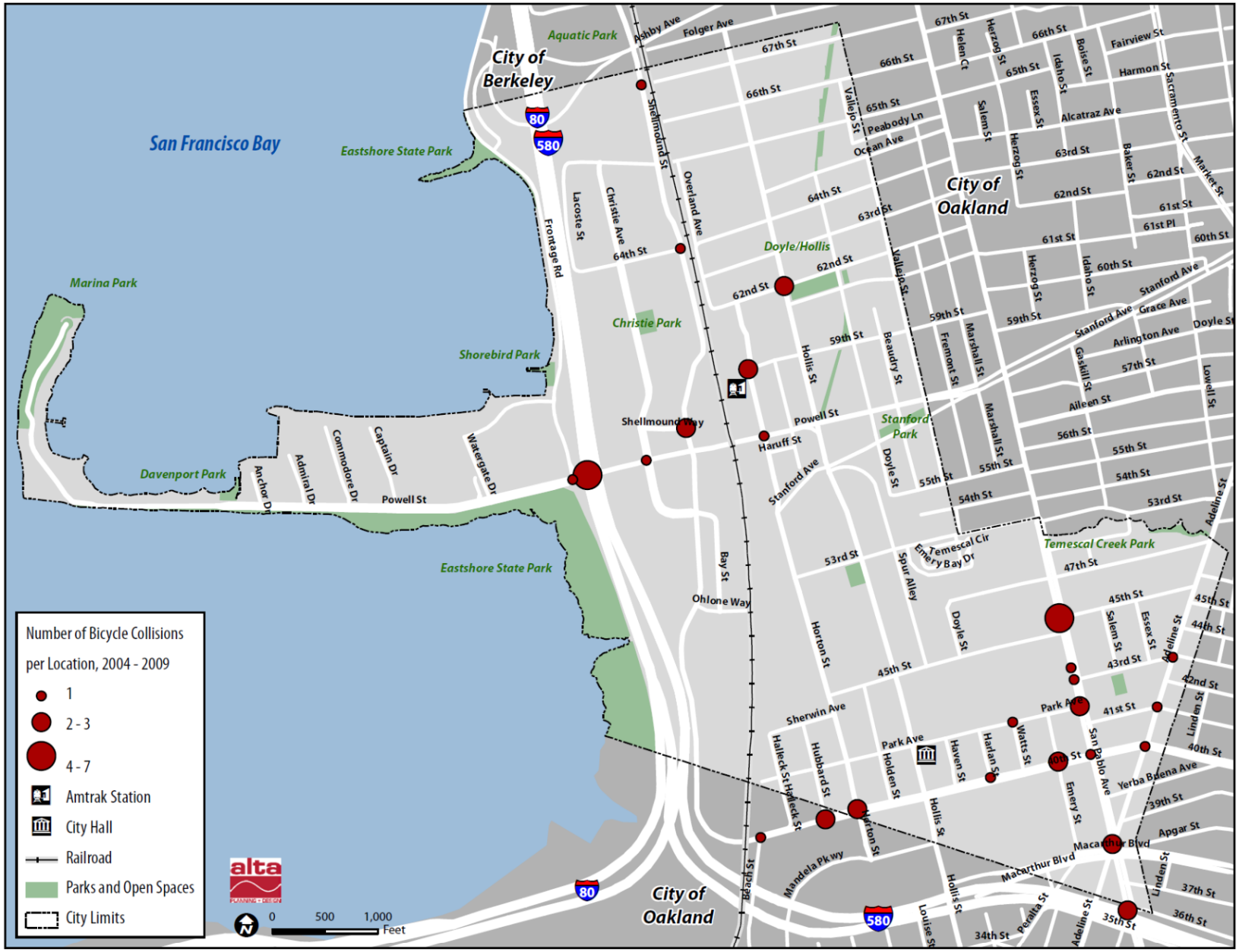
Maps 3-5 and 3-6 show the locations with the most collisions involving pedestrians or bicyclists. Many intersections along San Pablo Avenue have experienced crashes involving both types of users. Fortieth Street also has several high-frequency collision intersections, including at Horton Street and at 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.

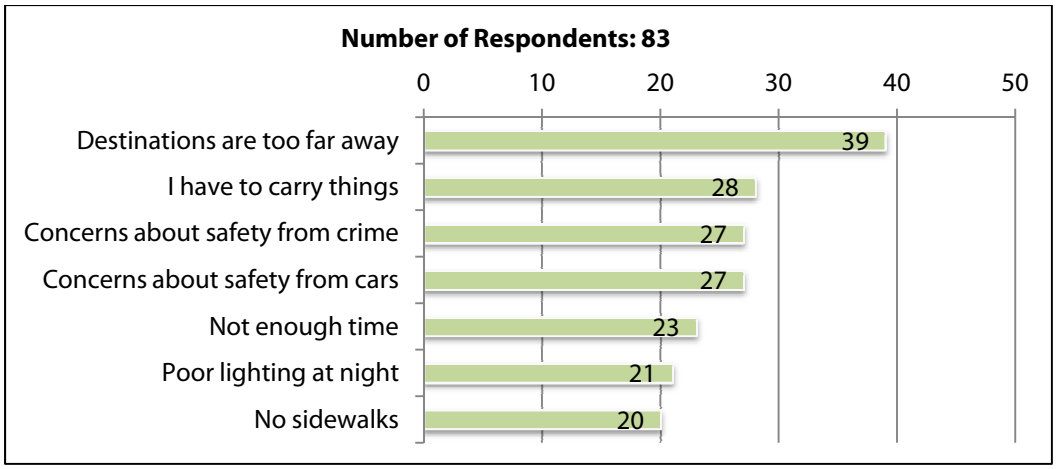


Figure 3-3. Barriers to walking (Source: Emeryville Pedestrian and Bicycle Plan survey)

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**)

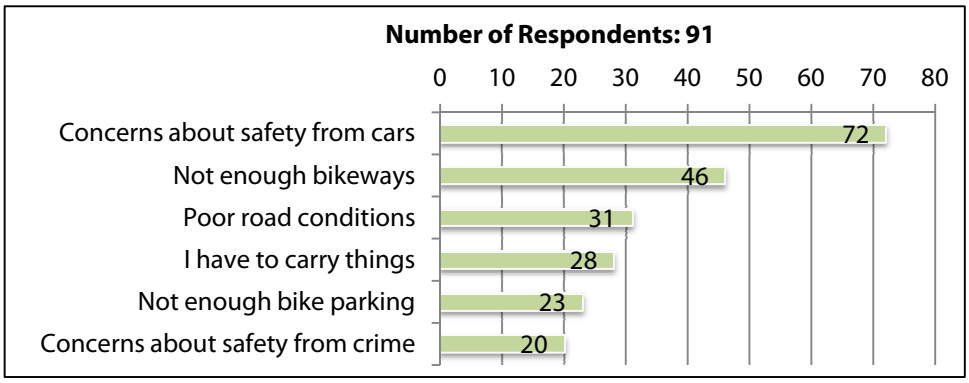


Figure 3-4. Barriers to bicycling

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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