

III

Existing Infrastructure, Transportation and Circulation Assessment

3.1 Transportation and Circulation

The purpose of this existing conditions report for the State Route 238 Bypass Land Use Study is to reveal current transportation facilities and operations in or adjacent to the Project study area. The Project area under study involves a roughly five-mile corridor containing State-owned property of various sizes, the majority of which is discontinuous and located in the City of Hayward. The closest adjacent parallel roadway corridor is Foothill Boulevard south of Interstate 238 to the Foothill Boulevard-Jackson Street & Mission Boulevard intersection; then Mission Boulevard south to Industrial Parkway. The Project area is generally located east of this roadway corridor except in the southern portion where it flanks both sides.

Environmental Issues

This section of the DEIR examines potential impacts of the Project on roadways, public transit systems, bicycle and pedestrian systems and parking resources.

Environmental Setting

Most of the existing conditions analysis was derived from the *South Hayward BART/ Mission Boulevard Concept Design Plan*¹ and the *Route 238 Corridor Improvement Project: Final Environmental Impact Report (FEIR)*², which were both prepared for the City of Hayward.

¹ *South Hayward BART/ Mission Boulevard Concept Design Plan. Draft Program Environmental Impact Report.* April 2006

² *Route 238 Corridor Improvement Project: Final Environmental Impact Report.* SCH#2005112116. City of Hayward. Certified November 27, 2007.

3.2 Existing and Planned Roadway Facilities

This section describes key roadway characteristics in the study area. All roadways are located in Hayward unless otherwise noted.

Regional vehicular access to the Project area is provided primarily by the freeway and state route system that traverses most of the City of Hayward. Interstate 580 (I-580), an east-west freeway, has ramps that are located directly north of the Project site at Mattox Road. Interstate 238 (I-238), an east-west freeway that connects I-880 and I-580, also has ramps that are located directly north of the Project site at Mattox Road. Interstate 880 (I-880), a north-south freeway, is located about 1.75 miles from the southern portion of the Project site. State Route 238 (SR-238), a north-south facility that parallels the Project site, is located along Mission Boulevard and Foothill Boulevard. State Route 92 (SR-92), known as Jackson Street, is an east-west facility located a ½ mile west of the Project site with its terminus at the Foothill Boulevard-Jackson Street & Mission Boulevard intersection.

3.2.1 Arterials

Foothill Boulevard (SR-238) is a six-lane north-south roadway carrying from 50,000 to 57,000 average daily vehicles along the section from Grove Way to A Street (2006 Caltrans). From Apple Avenue to Mattox Road, the roadway is located in unincorporated Alameda County. There is a raised median that runs intermittently throughout the corridor. Posted speeds vary from 25 mph to 35 mph. This corridor section provides local access to residential and commercial developments and access to interstate freeways I-580 and I-238. Land uses are varied and primarily commercial and institutional, including retail stores, motels, sit-down and fast-food restaurants, schools, and gas stations. On-street parking is permitted on intermittent sections of the roadway. AC Transit operates one bus route on a portion of Foothill Boulevard. Sidewalks are on both sides of the roadway, except in the northern portion in the unincorporated area, and generally continuous. There are currently no bikeways on Foothill Boulevard, but planned facilities detailed in the *City of Hayward Bicycle Master Plan* calls for bike lanes between A and D Streets. Major roadway changes include the conversion of a portion of Foothill Boulevard to a northbound one-way roadway as a couplet with Mission Boulevard's conversion to a southbound roadway. The detailed planned roadway changes, according to the *Route 238 Corridor Improvement Project*, include the following:

- Modify Foothill Boulevard between Apple Avenue and Civic Center Drive (South) to provide four travel-lanes in each direction during peak hours and three travel-lanes with parking in each direction during off-peak hours;
- Modify Foothill Boulevard between Civic Center Drive (South) and A Street to provide four travel lanes in each direction and replacement of existing raised medians with narrower ones;
- Removal of traffic signal and left-turn pockets at Russell Way and restriction of vehicle turning movements on Russell Way to right-in/right out;
- Convert Foothill Boulevard from A Street to Mission Boulevard to six one-way travel lanes in the northbound direction with parking prohibited on the west side of the roadway;
- Provide triple right-turn lanes in the southbound direction at A Street.
- Providing right-turn-only access from northbound Foothill Boulevard to eastbound Main Street.

Mission Boulevard (SR-238) is a four- to six-lane north-south roadway carrying from 36,000 to 45,500 average daily vehicles along the section from Industrial Parkway West to Harder Road (2006 Caltrans). There is a raised median that runs intermittently throughout the corridor. Posted speeds are generally 35 mph. This corridor provides local access to residential and commercial developments, but also serves as a regional connection from Oakland (as International Boulevard/State Route 185) to Fremont. Mission Boulevard is on the *Alameda County Congestion Management Program (CMP)* network. Land uses are varied and primarily commercial and institutional, including retail stores, motels, car dealerships, auto body and repair shops, sit-down and fast-food restaurants, religious facilities, schools, bars, and gas stations. Several lots, especially in the southern portion of the corridor, are vacant and/or abandoned. On-street parking is permitted on intermittent sections of the roadway. The *Route 238 Corridor Improvement Project* details future projects on Mission Boulevard that include improvements to the Carlos Bee intersection, access changes at Moreau High School, conversion of some parking lanes to travel lanes in the peak hours, and other access improvements. AC Transit operates two bus routes on Mission Boulevard and one on a portion of Foothill Boulevard. Sidewalks exist on the corridor but tend to be discontinuous, especially in the southern portion. However, the Route 238 Corridor Improvement Project will correct this deficiency. Major roadway changes include the conversion of a portion of Mission Boulevard to a southbound one-way roadway as a couplet with Foothill Boulevard's conversion to a northbound roadway. The detailed planned roadway changes, according to the Route 238 Corridor Improvement Project, include the following:

- Convert Mission Boulevard to a five-lane, one-way street in the southbound direction street between A and D Streets;
- Convert Mission Boulevard to a six-lane, one-way street in the southbound direction street between D and Jackson Streets, with four through-lanes and two right-turn lanes at Jackson Street;
- Provide three northbound through lanes at Foothill Boulevard-Jackson Street intersection that will merge onto northbound Foothill Boulevard and eliminate northbound through movements to Mission Boulevard;
- Eliminate vehicular access to E Street from Mission Boulevard;
- Provide four southbound lanes south of Jackson Street and reduce to three lanes at the approach to Fletcher Lane.
- Modify Mission Boulevard between Fletcher Lane and Palisades Street to provide three travel-lanes in each direction during peak hours and two travel-lanes with parking in each direction during off-peak hours;
- Widen Mission Boulevard at Carlos Bee Boulevard intersection to provide three through lanes in each direction, dual left-turn lanes from southbound Mission Boulevard to eastbound Carlos Bee Boulevard, a right-turn lane from southbound Mission Boulevard to Orchard Avenue, and a left-turn lane from northbound Mission Boulevard to westbound Orchard Avenue;
- At the Harder Road intersection, provide three through lanes and dedicated left-turn lanes in each direction on Mission Boulevard by restricting parallel parking;
- At the Tennyson Road intersection, restrict parking to provide three through lanes in each direction on Mission Boulevard, a left-turn lane from southbound Mission Boulevard to eastbound Tennyson Road, a right-turn lane from southbound Mission Boulevard to westbound Tennyson Road, and dual left-turn lanes from northbound Mission Boulevard to westbound Tennyson Road;

- Removal of traffic signal and left-turn pockets at Jefferson Street and restriction of vehicle turning movements on Jefferson Street to right-in/right out;
- Provide signalized southbound left-turn access into Moreau High School's driveway;
- Convert Pinedale Court, Palisade Street, Devon Drive, Broadway Street, Webster Street, and Monticello Street intersections to right-in, right-out movement only;
- Signalize Valle Vista Avenue and Berry Avenue intersections.

A Street is a four-lane, east-west arterial roadway located in unincorporated Alameda County to the east of San Lorenzo Creek and in Hayward to the west. Its intersection with Rockaway Lane-4th Street is signalized. On-street parking is permitted intermittently in the study area. Sidewalks in the study area are discontinuous. There is currently a bike route and AC Transit operates two bus routes on this roadway in the study area. Planned roadway changes, according to the *Route 238 Corridor Improvement Project*, include converting A Street to a five-lane, one-way roadway in the westbound direction between Foothill and Mission Boulevards, with triple left turn-lanes at westbound A Street to Mission Boulevard southbound.

Tennyson Road is a four-lane, east-west arterial that traverses Hayward, terminating east of Mission Boulevard. From Pacific Street to Mission Boulevard, the roadway is divided by a raised, landscaped median and passes under the BART tracks. On-street parking is not allowed in this segment of Tennyson Road. Land use along Tennyson Road is mixed commercial and residential. The speed limit is 35 miles per hour. Planned changes to Tennyson will include extension of the roadway east of Mission Boulevard to serve new development. The intersections at Dixon Street-East 12th Street and Mission Boulevard are signalized.

Industrial Parkway West is a four-lane, east-west arterial. To the east, Industrial Parkway West becomes Alquire Parkway at Mission Boulevard. In the project area between Dixon Street and Mission Boulevard, it is divided by a raised, landscaped median and has residential, commercial, and recreational uses. The intersections of Mission Boulevard and Dixon Street are both signalized and contain left turn pockets.

3.2.2 Collectors

Mattox Road is a four to six-lane, east-west collector roadway located in unincorporated Alameda County.³ A raised median is located east of Foothill Boulevard. It provides access to I-580, I-238, and Foothill Boulevard (SR-238). On-street parking is not allowed in the study area. There are continuous sidewalks on the southern side of the roadway and intermittent sidewalks on the northern side. Pedestrian crossings at the freeway ramp intersections are limited. There are currently no bikeways but bike plans are proposed for the future.⁴ There are currently no transit routes operating on Mattox Road in the study area.

B Street is a one-way in downtown two-lane, east-west collector roadway. Its intersection with 4th Street is signalized and marked crosswalks are found on all but the east leg. AC Transit operates several bus routes on this roadway in the study area that connect to the downtown Hayward BART station. Planned roadway changes, according to the *Route 238 Corridor Improvement Project*, include converting B Street to a two-way street between Foothill Boulevard and 2nd Street.

³ *Eden Area Draft General Plan*. Alameda County Community Development Agency. October 14, 2005.

⁴ *2006 Countywide Bicycle Plan*. Alameda County Congestion Management Agency. Adopted October 26, 2006.

D Street is a two-lane, east-west collector roadway. It provides access via 5th Street to Markham Elementary School. There is currently a bike route⁵ and AC Transit operates a bus route on this roadway in the study area. A marked crosswalk is located at 5th Street in the study area. Planned roadway changes, according to the Route 238 Corridor Improvement Project, include eliminating dual left turns from westbound D Street to southbound Foothill Boulevard and roadway widening to provide an eastbound through-lane and triple left-turn lanes from eastbound D Street to northbound Foothill Boulevard.

Highland Boulevard is a two-lane, east-west collector roadway. It is curvilinear and contains gentle grades. It parallels a hiking and riding trail greenbelt and is discontinuous due to a mid-block barricade between Tiegen Drive and Morse Court.

Carlos Bee Boulevard is a four-lane, east-west collector roadway. It is curvilinear and contains steep grades. It provides direct access to the California State University East Bay (CSUEB) campus. At Mission Boulevard in the westbound direction, the street is renamed as Orchard Avenue and becomes a local roadway. There is currently a bike route on the roadway and AC Transit operates a bus route on the eastern portion near the CSUEB campus. Its intersection with Mission Boulevard is signalized. Planned roadway changes, according to the Route 238 Corridor Improvement Project, include dual left-turn lanes from westbound Carlos Bee Boulevard to southbound Mission Boulevard and dual left-turn lanes, a through lane, and a shared through-right lane from Orchard Avenue at Mission Boulevard.

Harder Road is a four-lane, east-west collector roadway with a raised median. It is curvilinear and contains gentle grades. It provides direct access to the CSUEB campus. Its intersection with Mission Boulevard is signalized. Planned roadway changes, according to the Route 238 Corridor Improvement Project, include dual left-turn lanes on Harder Road in both directions at the Mission Boulevard intersection.

Dixon Street is a two-lane, north-south collector roadway that runs from Tennyson Road to Industrial Parkway West. The street is primarily residential with a mix of single-family and multi-family residences. Several new residential developments are being constructed or have been constructed along this roadway. Dixon provides sole access to the South Hayward BART's main and satellite parking lots. On-street parking is allowed on both sides of the street for non-commercial vehicles and is unrestricted save for twice-monthly street cleaning days. Bike lanes are installed on this roadway and AC Transit operates several bus routes out of the BART station. The posted speed limit is 25 mph.

3.2.3 Local Streets

Ash Street is a two-lane, east-west local roadway located in unincorporated Alameda County. At its intersection with Foothill Boulevard, vehicles may only turn right in and out of the street and there are no pedestrian crossing facilities.

Oak Street is a two-lane, short section north-south local roadway located in Hayward. It has intersections with Apple Street in the north and Grove Way in the south and provides access to a few commercial businesses located east of Foothill Boulevard.

⁵ *City of Hayward Bicycle Master Plan*. November 20, 2007.

Apple Avenue is a two-lane, east-west local roadway located in Hayward. At its intersection with Foothill Boulevard, vehicles may only turn right in and out of the street due to the raised median on Foothill Boulevard. Planned roadway changes, according to the *Route 238 Corridor Improvement Project*, include converting Apple Avenue between Foothill Boulevard and Oak Street to be one-way in the eastbound direction.

Grove Way is a two-lane, east-west local roadway. It is located in unincorporated Alameda County east of Oak Street and in Hayward from Oak Street to Locust Street. Its intersection with Foothill Boulevard is signalized and marked crosswalks are provided on all four legs. It becomes curvilinear and steeper grades are found on the western portion of the roadway. AC Transit operates a bus route on a portion of this roadway in the study area.

Gary Drive is a two-lane, north-south local roadway located in unincorporated Alameda County. Its intersection with Grove Way is four-way stop-controlled and a marked crosswalk is provided on the northern leg. It is curvilinear and steep grades are found on the southern portion of the roadway leading to the project site.

Crescent Avenue is a two-lane, east-west local roadway located in unincorporated Alameda County. It provides access to the Senior Center, Japanese Gardens, Botany Garden, Little Theater, and San Lorenzo Creek.

North 3rd Street is a two-lane, north-south local roadway on the border of Hayward and unincorporated Alameda County. It provides access to the Senior Center, Japanese Gardens, Botany Garden, Little Theater, and San Lorenzo Creek.

Rockaway Lane-4th Street is a two-lane, north-south local roadway. It provides access to the Senior Center, Japanese Gardens, Botany Garden, Little Theater, and San Lorenzo Creek. Its intersection with A Street is signalized and marked crosswalks are found on all but the east leg.

5th Street is a two-lane, north-south local roadway. It is stop-controlled, offset at B Street, and discontinuous from C to D Streets. It provides direct access to Markham Elementary School.

Ruby Street is a two-lane, north-south local roadway. Its intersection with A Street is stop-controlled and marked crosswalks are found on all but the western leg.

C Street is a two-lane, east-west local roadway. Its intersection with 4th Street is all-way stop-controlled and marked crosswalks are found on two legs.

E Street is a two-lane, east-west local roadway. It provides access via East Avenue to Hayward High School and direct access to Bret Harte Middle School. AC Transit operates a bus route on this roadway in the study area. Marked crosswalks are located at 5th Street and East Avenue in the study area.

East Avenue is a two-lane, east-west local roadway. East of E Street, it is located within unincorporated Alameda County. It provides direct access to Hayward High School. AC Transit operates a bus route on this roadway in the study area. Marked crosswalks are located at E Street and at a mid-block crossing in the front of the school.

2nd Street is a two-lane, north-south local roadway. It traverses the backside of Hayward High School. There is currently a bike route⁶ and AC Transit operates a bus route on this roadway in the study area. Marked crosswalks are located at E Street, Walpert Street and at a school access road.

Walpert Street-Fletcher Lane is a two-lane, east-west local roadway. It is curvilinear and contains steep grades, especially in the western portion near its intersection with Mission Boulevard.

⁶ *City of Hayward Bicycle Master Plan*. November 20, 2007.

Overlook Avenue is a two-lane, north-south local roadway with a 68 foot right of way width. Its intersection with Carlos Bee Boulevard is stop-controlled. Its northern leg dead-ends at the project site at the former quarry operations.

Palisade Street is a two-lane, east-west curvilinear local roadway. Its intersection with Mission Boulevard is stop-controlled. Its eastern leg dead-ends at the project site at the former quarry operations. Planned roadway changes, according to the *Route 238 Corridor Improvement Project*, include restricting turning movement access at Mission Boulevard to right-in, right-out only.

Central Boulevard is a two-lane, east-west curvilinear local roadway with gentle grades. The right of way width is 50 feet from Mission Boulevard to Delmar, and narrows to a substandard 40 feet after that. It provides direct access to Spring Grove Park. Its intersection with Mission Boulevard is stop-controlled. Planned roadway changes, according to the *Route 238 Corridor Improvement Project*, include closing Central Boulevard between Mission Boulevard and Belmont Avenue to through vehicular movements while maintaining vehicular access to local residents on this segment.

Maitland Drive is a narrow two-lane, north-south curvilinear local roadway with gentle grades and a substandard right of way width of 40 feet. It provides access to sparse, residential land uses.

Bunker Hill Boulevard is a narrow two-lane, north-south curvilinear local roadway with steep grades and a substandard right of way width of 40 feet. It provides access to sparse, residential land uses.

Westview Way is a two-lane, north-south local roadway. Its intersection with Harder Road is stop-controlled.

Calhoun Street is a two-lane, east-west curvilinear local roadway with gentle to steep grades. Its intersection with Mission Boulevard is signalized.

East 16th Street is a two-lane, north-south local roadway. Its intersection with Calhoun Street is stop-controlled.

Webster Street is a two-lane, east-west local roadway. Its intersection with Mission Boulevard is stop-controlled. Planned roadway changes, according to the *Route 238 Corridor Improvement Project*, include restricting turning movement access at Mission Boulevard to right-in, right-out only.

Hancock Street is a two-lane, east-west local roadway. Its intersection with Mission Boulevard is signalized.

Valle Vista Avenue is a two-lane, east-west local street. Its intersection with Mission Boulevard is stop-controlled and its intersection with Dixon Street is all-way stop controlled. It terminates at the BART train tracks to the west. On-street parking is allowed on both sides of the street and is unrestricted save for twice-monthly street cleaning days. Planned roadway changes, according to the *Route 238 Corridor Improvement Project*, include signalizing its intersection with Mission Boulevard.

3.3 Existing and Planned Transit Facilities

The project site is generally not served by existing transit because development of these parcels is sparse or non-existent. However, regional rail and local bus services are located in close proximity to portions of the project site. This section contains detailed descriptions of transit services in the project area.

3.3.1 Rail Service

The San Francisco Bay Area Rapid Transit District (BART) provides heavy-rail, regional transit service to four counties in the Bay Area, including San Francisco. There are two BART stations in Hayward, one in the downtown area near C Street & Atherton Street and the other in the southern part of the city near Dixon Street & Tennyson Road. Both stations are served extensively by AC Transit bus service. BART’s direct service from this station includes the Fremont-Richmond line and the Fremont-Daly City line. Table 3.1 shows a summary of BART’s approximate hours and frequency of service and Figure 3.1 shows BART’s existing system map.

Amtrak’s Capital Corridor line provides inter-city heavy rail service to San Jose and Sacramento and stations in between. The station is located on Meekland Avenue near B Street. Service is provided in each direction every 90 to 150 minutes between roughly 6:30 AM and 8:00 PM on the weekdays and 8:00 AM and 8:30 PM on the weekends.⁷



Figure 3.1: Bart System Map

Line	Days	Times
Fremont-Richmond	Weekday	First 4:15 AM
		Last 12:15 AM
	Frequency 15 min	
Saturday	First 6:00 AM	
	Last 12:15 AM	
Sunday & Holidays	Frequency 20 min	
	First 8:00 AM	
	Last 12:15 PM	
Fremont-Daly City	Weekday	Frequency 15 min
		First 5:15 AM
	Saturday	Last 6:00 PM
Frequency 20 min		
Sunday & Holidays	No Service	

Source: BART Fares and Schedules. Effective January 1, 2008

Table 3.1: Summary of BART Service at Hayward Stations

⁷ Amtrak Website www.amtrak.com, accessed November 15, 2007

3.3.2 Bus Service

Bus service in Hayward is provided by the Alameda-Contra Costa Transit District (AC Transit). Fourteen bus routes operate in the study area: Detailed service times and frequencies are contained in Tables 3.2 and 3.3. Most bus stops in the study area are indicated by free standing poles with signs indicating bus route numbers. The Hayward and South Hayward BART stations, as well as some bus stops on Mission Boulevard, contain other amenities, such as shelters and bus route maps. Figure 3.2 displays a map of AC Transit's bus system operating in the study area near the two BART stations.

Paratransit service for seniors and adults with disabilities is available to Alameda County residents through East Bay Paratransit, a service of AC Transit and BART. The City of Hayward's (Measure B) paratransit program supplements and complements this service for residents of Hayward and the unincorporated areas adjacent to Hayward.

Planned changes in the study area include basic improvements to modestly decrease bus travel times along Mission Boulevard and the expansion of transbay service across the San Mateo Bridge,⁸ however this is not anticipated in the near future and is likely subject to funding availability.

3.3.3 Shuttle Service

California State University East Bay (CSUEB) offers the Hayward Hillhopper Shuttle, connecting the Hayward BART station to the campus. It operates on weekdays in the morning (7:15 AM to 9:30 AM) and in the afternoon (4:45 PM to 6:45 PM) at 20 to 25 minute intervals. Additionally, Monday through Thursday when classes are in session, the Hillhopper operates evening service (8:00 PM to 10:00 PM) at 20 to 25 minute intervals.⁹

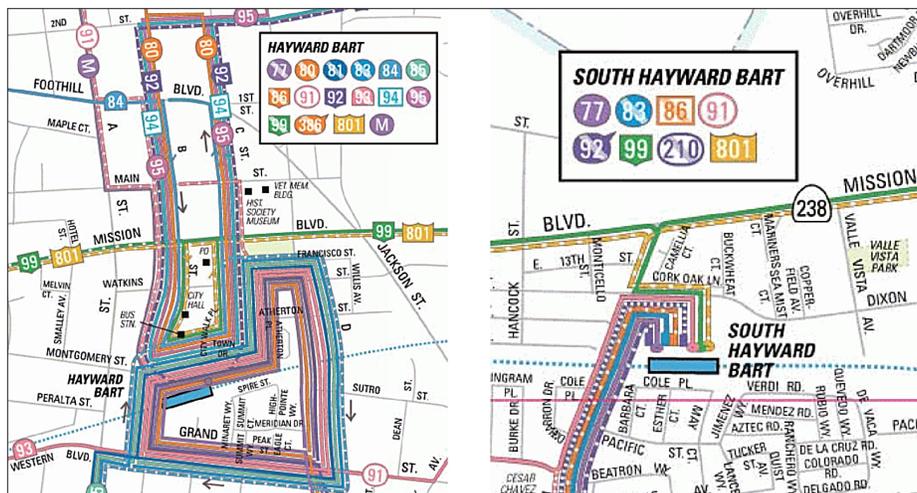


Figure 3.2: AC Transit Bus Service at BART Stations

⁸ FY2003-FY2012 Short Range Transit Plan. Alameda Contra Costa Transit District. May 2004

⁹ California State University East Bay website. Accessed on February 14, 2008. http://www.csueastbay.edu/about/campuses_and_locations/transportation.html

Route	Cities Served	Timepoints	Days	Times	
77	Hayward	Tampa Ave & Tennyson Rd; Ruus Ln. & Georgian Manor; South Hayward BART; Gading Rd & Harder Rd; Hayward BART	Weekday	First	6:00 AM
				Last	6:00 PM
				Frequency	30 min
			Weekend	First	8:30 AM
				Last	6:30 PM
				Frequency	60 min
80	San Leandro Castro Valley Hayward	San Leandro BART; Estudillo Ave & E 14th St; Estudillo Ave & MacArthur Blvd; Fairmont Hospital; Castro Valley BART; B St & Center St; Hayward BART	Weekday	First	6:00 AM
				Last	7:30 PM
				Frequency	30 min
			Weekend	First	8:00 AM
				Last	7:00 PM
				Frequency	60 min
83	Hayward Cherryland	South Hayward BART; Tennyson Rd & Hesperian Blvd; Depot Rd & Industrial Blvd; AC Transit Hayward Division; Landing Rd & Investment; Clawiter Rd & Industrial Blvd; Winton Ave & Hesperian Blvd; Hesperian Blvd & W. A St; Hayward BART	Weekday	First	4:30 AM
				Last	11:15 PM
				Frequency	15-30 min
			Weekend	No service	
84	San Leandro Castro Valley Hayward	San Leandro BART; Marina Blvd & Merced St; Farnsworth St & Lewelling Blvd; Fargo Ave & Washington Ave; Washington Ave. & Floresta Blvd; Bay Fair BART; 164th Ave & E 14th St; Castro Valley BART; Foothill Blvd & Grove Wy; Hayward BART; San Clara St & Jackson St; Kaiser Permanente Hayward Medical Center	Weekday	First	6:00 AM
				Last	8:15 PM
				Frequency	30 min
			Weekend	First	7:45 AM
				Last	6:45 PM
				Frequency	60 min
86	Hayward	South Hayward BART; Tennyson Rd & Hesperian Blvd; Depot Rd & Industrial Blvd; AC Transit Hayward Division; Eden Landing Rd & Investment Blvd; Clawiter Rd & Industrial Blvd; Winton Ave & Hesperian Blvd; Hesperian Blvd & W. A St; Hayward BART	Weekday	First	4:15 AM
				Last	11:00 PM
				Frequency	20 min
			Weekend	First	5:45 AM
				Last	10:00 PM
				Frequency	20-30 min
91	Hayward Castro Valley	San Antonio St & San Luis Obispo Ave; Industrial Pkwy & Huntwood Ave; South Hayward BART; Hayward BART; A St & Foothill Blvd; Castro Valley BART; Castro Valley Senior	Weekday	First	6:00 AM
				Last	9:30 PM
				Frequency	30-60 min
			Weekend	No Service	
92	Hayward	Chabot College; Southland Shopping Center; Hayward BART; Hayward High School (once a day); Campus Dr & 2nd St; Warren Hall, Cal State East Bay; South Hayward BART (weekends only); Kaiser Permanente Hayward Medical Center (weekends only)	Weekday	First	6:00 AM
				Last	10:30 PM
				Frequency	15 min
			Weekend	First	8:00 AM
				Last	7:00 PM
				Frequency	60 min

Source: AC Transit website, www.actransit.org, accessed November 14, 2007
Dowling Associates, Inc.

Table 3.2: AC Transit Routes 77 through 92 in the Study Area

Route	Cities Served	Timepoints	Days	Times
94	Hayward	Hayward BART; C St & Foothill Blvd; Hayward High School; Campus Dr & 2nd St; Hayward Blvd & Spencer Ln; Hayward Blvd & Skyline Dr	Weekday	First 6:30 AM Last 6:30 PM Frequency 45-90 min
			Weekend	No Service
95	Hayward Castro Valley	Hayward BART; C St & Foothill Blvd; Bret Harte Middle School; Hayward High School; D St & Maud Ave; Kelly St & Eddy St; Don Castro Regional Park (weekends only)	Weekday	First 6:30 AM Last 6:30 PM Frequency 30-60 min
			Weekend	First 9:00 AM Last 7:00 PM Frequency 60 min
99	Fremont Union City Hayward San Leandro	Fremont BART; Mission Blvd & Mowry Ave; Mission Blvd & Nursery; Terrace Dr & Gurdwara Rd; Mission Blvd & 7th St; Union City BART; Mission Blvd & Whipple Ave; Mission Blvd & Gresel St; South Hayward BART; Mission Blvd & Harder Rd; Hayward BART; Bay Fair BART	Weekday	First 5:30 AM Last 12:45 AM Frequency 15-30 min
			Weekend	First 6:15 AM Last 11:45 PM Frequency 30 min
210	Fremont Union City Hayward	Ohlone College; Fremont Blvd & Washington Blvd; Fremont Blvd & Mowry Ave; Fremont Blvd & Peralta Blvd; Paseo Padre Pkwy & Fremont Blvd; Dyer St & Alvarado Blvd; Union Landing Shopping Center; Huntwood Ave & Whipple Rd; Industrial Pkwy & Huntwood Ave; South Hayward BART	Weekday	First 5:30 AM Last 11:00 PM Frequency 30 min
			Weekend	No service in Hayward on weekends
801	Fremont Union City Hayward San Leandro Oakland	Fremont BART; Mission Blvd & Nursery Ave; Union City BART; Mission Blvd & Whipple Ave; Mission Blvd & Gresel St; South Hayward BART; Hayward BART; Bay Fair BART; San Leandro BART; 98th Ave & International Blvd; Seminary Ave & International Blvd; Fruitvale BART; 23rd Ave & International Blvd; 14th St & Broadway	Weekday	First 12:30 AM Last 4:30 AM Frequency 60 min
			Saturday	First 12:30 AM Last 4:30 AM Frequency 30-60 min
			Sunday & Holiday	First 12:30 AM Last 6:30 AM Frequency 30-60 min
M	Union City Fremont Menlo Park Redwood City Redwood Shores San Mateo Foster City Hayward Castro Valley	(Weekday only) Union City BART; Paseo Padre Pkwy & Fremont Blvd; Ardenwood Park & Ride; Sun Microsystems; Stanford Midpoint Center; Oracle Headquarters; Hillsdale Shopping Center; E Hillsdale Blvd & Saratoga Dr; 1163 Chess Dr; Vintage Park Dr & Metro Center Blvd; Chabot College; Hayward BART; Castro Valley BART	Weekday	First 5:45 AM Last 8:30 PM Frequency 30-120 min
			Weekend	First 7:00 AM Last 6:30 PM Frequency 120 min

Source: AC Transit website, www.actransit.org, accessed January 17, 2008
Dowling Associates, Inc.

Table 3.3: AC Transit Routes 94 through M in the Study Area

3.4 Existing and Planned Bicycle Facilities

The City of Hayward adopted its *Bicycle Master Plan* in 1997 and adopted the Bicycle Master Plan update on November 20, 2007. Additionally, the Circulation Element of Hayward's *General Plan* and the Neighborhood Plans in the study area (Harder-Tennyson, Hayward Highlands, Mission Foothills, Mission-Garin, North Hayward, and Upper B Street) contain references to providing bicycling facilities and creating bicycling-friendly environments.

3.4.1 Bicycling Facilities Nomenclature

A better and safer bicycling environment can be created by providing bikeway and terminal facilities, and other amenities. It is important to note that bicycles are allowed on all roadways (except for most access-controlled freeways), as they are defined as a vehicle in the California Vehicle Code and subject to the same rules governing motor vehicles. Additionally, facilitating transit connections, developing an on-going maintenance program for roadway and terminal facilities, incorporating the bicycle as a design vehicle for roadways, educating motorists and bicyclists, and stepping up police enforcement, in conjunction with the provision of facilities, encourage a safer bicycling environment.

The following is a summary of bicycle facilities nomenclature, as detailed in the 2007 *City of Hayward Bicycle Master Plan* update.

Definition of Bikeways (Page 3-6)

Class I Bikeway: Typically called a “bike path,” a Class I bikeway provides bicycle travel on a paved right-of-way completely separated from any street or highway.

Class II Bikeway: Often referred to as a “bike lane,” a Class II bikeway provides a striped and stenciled lane for one-way travel on a street or highway.

Class III Bikeway: Generally referred to as a “bike route,” a Class III bikeway provides for shared use with motor vehicle traffic and is identified only by signing.

Other related facilities for bicycle travel include traffic signal loop detectors at intersections, and directional and mileage signage scaled for bicyclists.

Bicycle Parking (Page 3-17) In California, bicycle facilities are classified as either Class I or Class II facilities.

Class I Parking – Long Term Facilities include secure areas such as lockers or bicycle “cages” that can be locked by the cyclist. Used mainly by students, employees, residents and others expected to park for more than two hours.

Class II Parking – Short Term Facilities include bicycle racks. Cyclists provide their own locks to secure their bicycles. Used mainly by shoppers, visitors, messengers, and other expected to depart within two hours.

Additional Facilities and Programs (Pages 3-16 to 3-17)

Other facilities and programs for bicyclists include:

Bicycle signal detection at locations with traffic signals.

Bicycle signage, generally used for Class II and Class III bikeways.

Showers and lockers are typically needed for bicycling commuters.

Maintenance programs to ensure the upkeep of existing bicycle facilities.

3.4.2 Existing Bicycling Conditions

Foothill Boulevard and Mission Boulevard are currently four- to six-lane arterials with heavy traffic and high speeds. The adjacent land uses consist mainly of commercial uses with some housing. Based on field observations, the *South Hayward BART/Mission Boulevard Concept Plan: Transportation Access Assessment*, and the *City of Hayward Bicycle Master Plan 2007*, the following East-West bikeways may be found along the following roadways and trails near the project area:

- Class III bike route on City Center Drive from Maple Court to 2nd Street.
- Class III bike route on “A” Street from 4th Street to Montgomery Street, which connects to Class II bike lanes west of Montgomery Street.
- Class II bike lanes on “D” Street from Myrtle Street to 2nd Street, which connects to a Class III bike route from 2nd Street to the eastern city limit and onto bikeways in the unincorporated areas of Alameda County.
- Class III bike route on Orchard Avenue-Carlos Bee Boulevard-Hayward Boulevard from Soto Road to Mission Boulevard.
- Class I bike path on the Eden Greenway from east of Soto Road to Hesperian Boulevard.
- Class II bike lanes on Harder Road from Santa Clara Street to Westview Way.
- Class II bike lanes on Tennyson Road from Industrial Boulevard to Dixon Street.
- Class I bike path on Industrial Parkway west of Pacific Street.

The following North-South bikeways may be found along the following roadways and trails near the project area:

- Class III bike route on 2nd Street from City Center Drive to Cricket Hill Court, which connects to Class I multi-use trails through Hayward Area Recreational District’s (HARD) parks and green belt.
- Class III bike route on Western Boulevard-Grand Street-Silva Avenue-Whitman Street from the northern city limit to Tennyson Road.
- Class II bike lanes along Huntwood Avenue from Tennyson Road to the southern city limit.
- Class II bike lanes on Dixon Street from Tennyson Road to Industrial Parkway West

Figure 3.3 shows existing bikeway network in close proximity to the Project study area.

Policies that support bicycle parking facilities are found in the City of Hayward’s Municipal Code 10-2.406 for off-street parking, which includes the provision of bicycle and motorcycle parking in developments with more than fifty (50) required off-street parking spaces. Additionally, developers can replace up to 5% of the required number of off-street parking spaces with bicycle parking. There is currently no city program to install bicycle parking on arterials close to existing developments, due to the lack of funding for such a program.

Some of Hayward’s largest employers provide bike parking and/or showering facilities. The 2007 Bicycle Master Plan contains a summary of these employers, which is shown in Table 3.4.

Bicycle loop detectors are located at the signalized intersection of Industrial Boulevard-Dixon Street. Field observations did not reveal the existence of other traffic signal loop detectors for bicycles or employee locker/showering facilities at employment centers.

Bicyclist volumes at select study intersections are detailed in Table 3.5. The highest bicyclist volumes were found at the Dixon Street-Valle Vista Avenue intersection, which is in close proximity to the South Hayward BART station. Important destinations for bicyclists and pedestrians include those listed in Table 3.6.



Figure 3.3: Bicycle Master Plan Network in Study Area

Employer Name	Number of Employees	Bike Parking?	Showers?	Notes
Kaiser Permanente Medical Center	2200	yes	yes	
Hayward Unified School District	2100	no	no	Response only for school district headquarters.
Cal State University	1600	yes	yes	Space for 4 bikes in front of police station. Employee shuttles have bike racks.
City of Hayward	847	yes	yes	10 racks at City Hall, some also at police department, firehouses, library, and the corporation yard lock
Chabot College	763	yes	yes	Students generally use racks. There is an additional gated storage room that fits 10 bikes.
St. Rose Hospital	660	yes	yes	Currently have one bike rack (not bolted down) for 6 bikes at front of the hospital. Going to replace rack in front and add one in the back.
Berkeley Farms	640	no	no	
Gillig Corporation	474	no	no	
Alameda Newspaper Group	405	no	no	
Pepsi Cola	400	yes	no	
Cell Genesys, Inc.	375	no	yes	
Injex Industries, Inc.	350	yes	no	6-10 bikes fit on rack Have changing area, but no showers.

Source: Alia Planning + Design Telephone Survey, January 2007

Table 3.4: Bike Parking and Showers at Selected Hayward Employers

Intersection	Peak Hour	Volumes
6 Mission Boulevard at Jackson Street-Foothill Boulevard	AM	10
	Mid-day	10
	2:50-3:50 PM	4
	PM	5
19 Mission Boulevard at Valle Vista Avenue	AM	2
	PM	3
21 Dixon Street at Tennyson Road	AM	2
	PM	7
22 Dixon Street at Valle Vista Avenue	AM	29
	PM	31
23 Dixon Street at Industrial Parkway West	AM	6
	PM	8
AM counts were done 7:00-9:00 AM; PM counts were done 4:00-6:00 PM Counts at intersection 6 were done in 2005 by All Traffic Data on Counts at all other intersections were conducted on weekdays in Dowling Associates, Inc.		

Table 3.5: Bicyclist Volumes at Intersections

Transit

Hayward BART Station (Fremont-Daly City, Fremont-Richmond line, and AC Transit buses)
 South Hayward BART Station (Fremont-San Francisco and Fremont-Richmond line, and AC Transit buses)
 Mission Boulevard for AC Transit bus routes 82, 99, and 801 (The All-Nighter)
 Grove Way for AC Transit bus route 84
 Foothill Boulevard for AC Transit bus route 84
 A Street for AC Transit bus route 91 and M (Transbay)
 B Street for AC Transit bus route 80
 D Street for AC Transit bus route 95
 2nd Street for AC Transit bus route 92 and 94
 East Street for AC Transit bus route 94

Schools

California State University East Bay (east of study area between Carlos Bee Boulevard and Harder Road)
 Moreau Catholic High School on Mission Boulevard at Jefferson Street
 Strobridge Elementary School
 Hayward High School
 Markham Elementary School
 Tennyson High School (Whitman Street north of Tennyson Road)
 Bret Harte Middle School (on "E" Street near the Foothill / Mission / Jackson intersection)

Shopping/Employment

Downtown Hayward (near Hayward BART station)
 Foothill Boulevard (i.e., Mervyn's headquarters, Safeway, Washington Mutual, old town shopping area)
 Mission Boulevard (Lucky's Center, other commercial areas)

Parks

Bret Harte Park and Field (Foothill / Mission / Jackson intersection)
 Carlos Bee Park (Grove Way)
 Eden Greenway (west of Whitman Street near Berry Avenue)
 Green Belt Hiking and Riding Trails (east of study area starting at Hayward Memorial Park)
 Hayward Memorial Park (near Pinedale Court)
 Botany Gardens (Little Theater and Japanese Garden)

Miscellaneous

The Plunge Swim Center (East Avenue)
 Holy Sepulchre Cemetery (Mission Boulevard between Harder Road and Sorenson Road)
 Tennyson Swim Center (Whitman Street)
 YMCA (Palisade Street)

Source: Dowling Associates, Inc

Table 3.6: Important Destinations for Bicyclists and Pedestrians

3.4.3 Planned Bicycle Facilities

According to the *City of Hayward Bicycle Master Plan 2007*, there are some proposed bikeway facilities in the Project study area. Figure 3.4 displays the existing and proposed bikeway network. The proposed bikeway network includes additions adjacent to the project study area, including:

- Extending Industrial Parkway's Class I multi-use trail to Mission Boulevard, locating the path through the property of a former bowling alley. However, since this facility was not built in conjunction with the Twin Bridges development, this bike facility will now be constructed along Industrial Parkway and along Mission Boulevard. It has been identified as a high priority project in the Alameda County Congestion Management Agency Countywide Bicycle Master Plan.
- Class II bike lane (northbound) on Foothill Boulevard from A to D Streets.

The Alameda County Congestion Management Agency Bike Plan (ACCMABP) was last updated in September 2006. The ACCMABP proposes Class II bike lanes on Mission Boulevard between Lewelling Boulevard in San Lorenzo and "A" Street in Hayward. In conjunction with the *Route 238 Corridor Improvement Project*, wide curb lanes will be constructed on Mission Boulevard between "A" Street and Industrial Parkway West, which will be able to accommodate bicycles but will not be designated as a bike route. However, the ACCMABP is neither consistent with the *City of Hayward Bicycle Master Plan 2007*, which takes precedent, nor with the *Route 238 Corridor Improvement Project*.

The proposed class I bike path along the Hayward Fault (east of Mission Boulevard) is dependent upon the release of Route 238 right of way along the fault.

A Class I bike path, called the East Bay BART Greenway, is being considered to follow the BART right-of-way from Hayward to Oakland. Urban Ecology is taking the lead on this effort, along with other affected jurisdictions and interested parties. It may be implemented as part of seismic retrofit work in 2009; however, construction funding is uncertain. A parallel study of the possible use of the Oakland subdivision rail line between Fremont and Oakland is also underway.

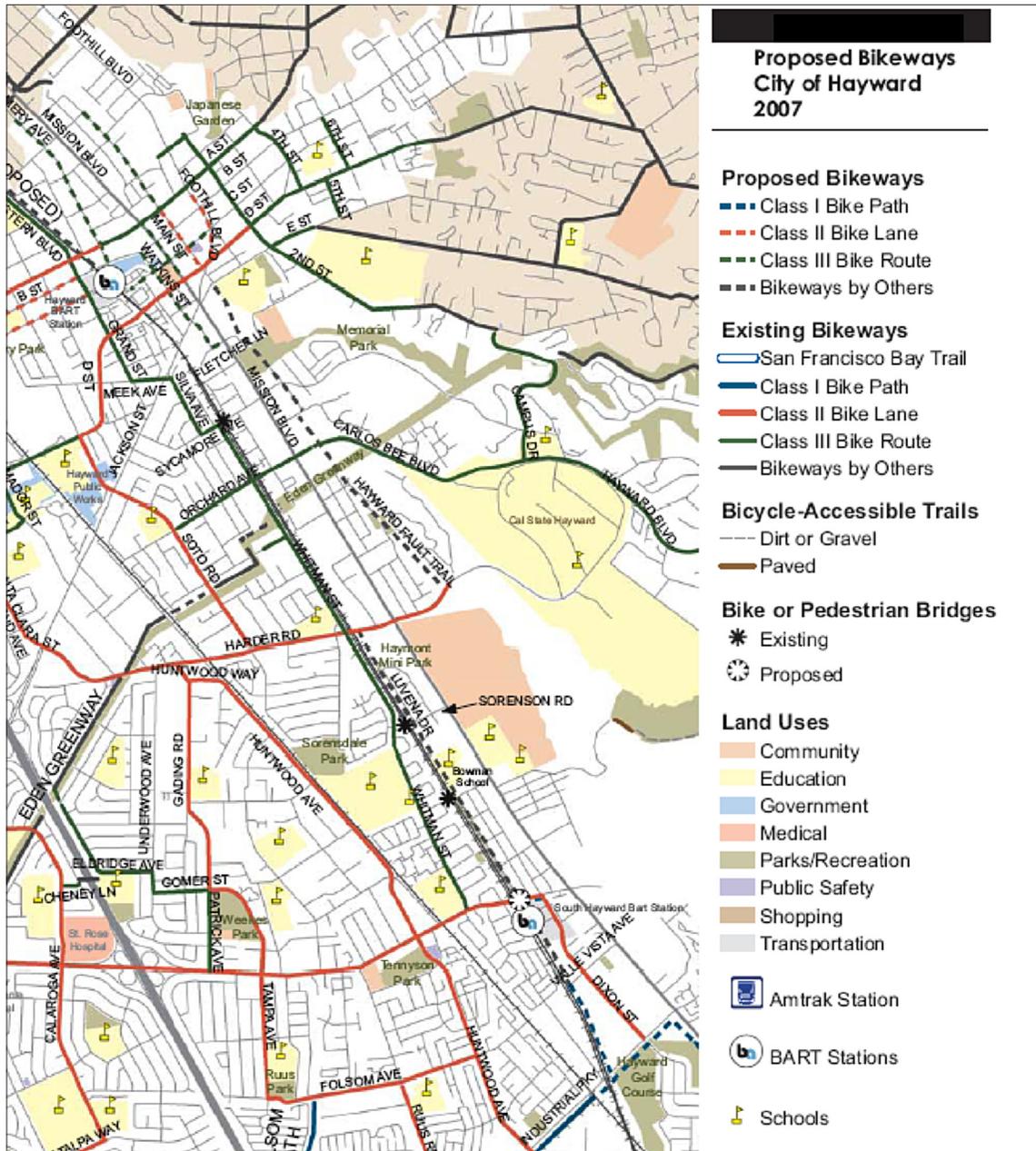


Figure 3.4: Existing and Proposed Bikeways Network in Study Area

3.5 Existing and Planned Pedestrian Facilities

The City of Hayward does not have a separate pedestrian master plan. The Circulation Element of Hayward's *General Plan* and the Neighborhood Plans in the study area (Harder-Tennyson, Hayward Highlands, Mission Foothills, Mission-Garin, North Hayward, and Upper B Street) contain references to providing pedestrian facilities and creating pedestrian-friendly environments. In 2003, the City of Hayward completed a sidewalk rehabilitation project in its downtown area, which included the installation of street furniture, lighting, bus shelters, and signage.

Existing Pedestrian Conditions

Foothill Boulevard and Mission Boulevard are currently four- to six-lane arterials with heavy traffic and high speeds. The adjacent land uses consist mainly of commercial uses with some housing. Important destinations for bicyclists and pedestrians include those listed in Table 4 (shown previously).

Field work conducted in June 2006 revealed the following about existing pedestrian facilities along the SR-238 corridor (Mission Boulevard and Foothill Boulevard in the study area) and near the South Hayward BART station:

- Foothill Boulevard has continuous sidewalks on both sides of the roadway in the study area except near the freeway ramps.
- Curb ramps and marked crosswalks are at most signalized intersections on Mission Boulevard. Some intersections do not have crosswalks on all legs to avoid conflict with heavy left-turn vehicle volumes.
- Raised medians on Mission Boulevard are not designed to serve as ADA accessible pedestrian refuges at intersections.
- Most curb ramps do not issue onto the crosswalks properly and they lack yellow or grey high-contrast truncated domes, which are the standard design requirements for detectable warnings for determining the boundary between the sidewalk and street by people with visual disabilities. However, all new city projects for construction at new pedestrian ramps will include dark gray truncated domes. The pedestrian ramps are currently under the purview of Caltrans. When the City of Hayward assumes control of this facility as part of the *Route 238 Corridor Improvement Project*, it is anticipated that the new pedestrian ramps would be constructed according to the updated requirements.
- Most signalized intersections have signal heads with pedestrian activation.
- Sidewalks in some sections need to be repaired because they are deteriorating or uneven. Sidewalks on Mission and Foothill Boulevards will be repaired as part of the *Route 238 Corridor Improvement Project*.
- In the sections from A Street to the north, the sidewalks are sometime narrow and/or bordered by surface parking lots.
- From B Street to D Street, the pedestrian environment includes wider sidewalks, and street trees.

- At the Jackson/Mission/Foothill junction, pedestrians are prohibited from crossing the northeast side of the intersection. The intersection is generally difficult to cross because it is a five-legged intersection at skewed angles with high traffic volumes on Mission Boulevard, Foothill Boulevard, and Jackson Street. The City of Hayward is planning to construct pedestrian improvements at this intersection as part of the *Route 238 Corridor Improvement Project*, including a pedestrian-actuated signal.
- Many objects impede pedestrian movement on sidewalks, including utilities (poles, guy wires), and some road signs (The City has plans to underground utilities on Mission Boulevard from Fletcher Lane south).
- The intersection of Calhoun Street allows no pedestrian crossing of Mission Boulevard on either leg, although there is a crosswalk on the north side of the Mission Blvd/ Jefferson intersection which facilitates pedestrian access to Moreau High School.
- On Mission Boulevard from Fletcher Lane to Foothill Boulevard on the east side, the sidewalk bends abruptly, becomes extremely narrow, and is bordered by a retaining wall, creating issues for visually impaired pedestrians and wheelchair users.
- The pedestrian pathway is unpaved in a number of locations on the southern portion of Mission Boulevard. However, the *Route 238 Corridor Improvement Project* includes constructing new sidewalk, which will rectify the following issues:
 - Discontinuous sidewalk/unpaved trail north of Sorenson Road on the west side.
 - Near Monticello Street, the sidewalk is paved with asphalt and has no raised curb on the west side, resulting in vehicles parked in the pedestrian right-of-way.
 - From Tennyson Road to Industrial Parkway, the sidewalk is discontinuous on both sides of the roadway, alternating between concrete, asphalt, and dirt walkways.
 - From Hancock Street to Webster Street, there is only an informal dirt path on the east side that is slightly elevated above the road.
 - Near Douglas Street, the sidewalk is discontinuous on the east side, leading to a dirt path for a half block.
 - Near Broadway Street on the east side, the pedestrian walkway is paved with asphalt and has no raised curb
- Existing sidewalks and curb ramps in the South Hayward BART station area are in good condition and are continuous, affording pedestrians with access to the station. Sidewalks are located at the perimeter of BART's surface parking lot but most pedestrians approaching the station from Dixon Street intersections were observed walking diagonally through the parking lot, which afforded a more direct walking route, rather than using the perimeter sidewalks. Pedestrian access to the station is wheelchair accessible from Dixon Street or by stairs on the south side of Tennyson Road.
- Sidewalks on Dixon Street, E. 12th Street, Industrial Parkway West and Tennyson Road are continuous and generally well-maintained.
- Marked crosswalks and pedestrian signal heads exist on all legs at the signalized intersections on Dixon Street.
- There is a marked midblock crossing on Dixon Street between Tennyson Road and Valle Vista Avenue to connect BART's satellite parking lot with the station.

- Long stretches between intersections dissuade pedestrian activity if pedestrians are not given access. The Project Area contains a fenced, undeveloped area located between Mission Boulevard and Dixon Street that creates a 0.3 mile barrier to pedestrians from Valle Vista Avenue to Industrial Parkway West. Several stretches along Mission Boulevard in the study area exceed 0.25 miles between intersections, which limit pedestrian access.

A Project site tour visit in July 2007 revealed the following about pedestrian facilities on the other roadways in the Project study area, on collector or local roadways:

- Sidewalks are provided on some roadways on at least one side, but continuous sidewalks are lacking.
- Marked crosswalks are generally found at signalized intersections, but are not as common at unsignalized intersections.
- There are few pedestrian amenities.

Pedestrian volumes at select study intersections are detailed in Table 3.7. The highest pedestrian volumes were found at the Mission Boulevard-Jackson Street-Foothill Boulevard intersection, which is in close proximity to Bret Harte Middle School. Important destinations for bicyclists and pedestrians include those listed previously in Table 3.6.

Intersection	Peak Hour	Volumes
6 Mission Boulevard at Jackson Street-Foothill Boulevard	AM	42
	Mid-day	46
	2:50-3:50 PM	112
	PM	53
19 Mission Boulevard at Valle Vista Avenue	AM	10
	PM	10
21 Dixon Street at Tennyson Road	AM	38
	PM	18
22 Dixon Street at Valle Vista Avenue	AM	42
	PM	71
23 Dixon Street at Industrial Parkway West	AM	26
	PM	38
<p>AM counts were done 7:00-9:00 AM; PM counts were done 4:00-6:00 PM</p> <p>Counts at intersection 6 were done in 2005 by All Traffic Data on Tuesday, November 1 except the 2:50-3:50 count, which was done on Thursday, September 21, 2006.</p> <p>Counts at all other intersections were conducted on weekdays in November, 2005 by Wiltec. Volumes indicated are based on peak one-hour counts within a two-hour observation period.</p> <p>Dowling Associates, Inc.</p>		

Table 3.7: Pedestrian Volumes at Intersections

3.5.3 Planned Pedestrian Facilities

The *Route 238 Corridor Improvement Project* includes many improvements to pedestrian facilities along Mission Boulevard and Foothill Boulevard in the Project study area, as detailed above. Additionally, the City of Hayward is constructing sidewalks on 2nd Street adjacent to Hayward High School.

The Circulation Element of Hayward's *General Plan* and the Neighborhood Plans in the study area (Harder-Tennyson, Hayward Highlands, Mission Foothills, Mission-Garin, North Hayward, and Upper B Street) contain references to providing pedestrian facilities and creating pedestrian-friendly environments. Recommendations generally include the provision of continuous sidewalks and access to parks and open space. Some plans call for additional improvements, such as land-use patterns that encourage more vibrant places to walk and better access to transit.

3.6 Traffic Operations

A set of intersections was selected for study based upon the anticipated volume and distributional patterns of project traffic and known locations of operational difficulty. This selection was made in collaboration with City of Hayward staff. The locations studied are shown in Table 3.8.

Mission Boulevard at the La Vista Quarry entry, a signalized intersection between Tennyson Road and Valle Vista Avenue, was not analyzed as part of this study because the intersection is temporary and will be removed during construction of the La Vista Development.

Intersection	
1	Foothill Boulevard & Mattox Rd
2	Foothill Boulevard & Grove Way
3	Foothill Boulevard & A Street
4	Foothill Boulevard & B Street
5	2nd Street & B Street
6	Foothill Boulevard & D Street
7	Mission Boulevard & Jackson Street-Foothill
8	Mission Boulevard & Fletcher Lane
9	Mission Boulevard & Highland Boulevard
10	Mission Boulevard & Carlos Bee Boulevard
11	Mission Boulevard & Central Boulevard
12	Mission Boulevard & Berry Avenue
13	Mission Boulevard & Torrano Avenue
14	Mission Boulevard at Harder Road
15	Mission Boulevard at Sorenson Road
16	Mission Boulevard at Jefferson Street-Calhoun
17	Mission Boulevard at Hancock Street
18	Mission Boulevard at Tennyson Road
19	Mission Boulevard at Valle Vista Avenue
20	Mission Boulevard at Industrial Parkway West
21	Dixon Street at Tennyson Road
22	Dixon Street at Valle Vista Avenue
23	Dixon Street at Industrial Parkway West

Table 3.8: Intersections Studied

3.6.1 Existing Vehicle Volumes

Turning traffic volumes were counted at the study intersections during the weekday AM and PM commuter periods (7:00 to 9:00 AM and 4:00 to 6:00 PM). Almost all of the study intersection counts on Mission Boulevard were done in 2003 and were taken from the *State Route 238 Corridor Improvement Project Traffic Analyses* report, prepared by Dowling Associates on January 30, 2007, as part of the Draft Environmental Impact Report (DEIR) for the *Route 238 Corridor Improvement Project*. The following four intersections, were counted in November 2005 for the *South Hayward BART/ Mission Boulevard Concept Design Plan*: 19 Mission Boulevard at Valle Vista Avenue; 21 Dixon Street at Tennyson Road; 22 Dixon Street at Valle Vista Avenue; and, 23 Dixon Street at Industrial Parkway West.

3.6.2 Level of Service (LOS) concept

“Levels of service” describe the operating conditions experienced by motorists. Level of service is a qualitative measure of the effect of a number of factors, including speed and travel time, traffic interruptions, freedom to maneuver, driving comfort and convenience. Levels of service are designated “A” through “F” from best to worst, which cover the entire range of traffic operations that might occur. Level of Service (LOS) “A” through “E” generally represent traffic volumes at less than intersection capacity, while LOS “F” represents over capacity and/or significant delays. As mentioned previously, the General Plan identifies LOS “D” as the goal for City’s intersections during peak commute hours. LOS “E” may be considered acceptable at intersections where mitigation would not be feasible.

Signalized Intersections Analysis: Signalized intersection analyses were conducted using the operational methodology outlined in the 1994 Highway Capacity Manual (Transportation Research Board, Washington, D.C., 1994, Chapters 9 and 10), as required by the City of Hayward. This procedure calculates an average stopped delay per vehicle at a signalized intersection.

Unsignalized Intersections Analysis: Stop sign controlled intersections were analyzed utilizing the operational methodology outlined in the 2000 Highway Capacity Manual (Transportation Research Board, Washington, D.C., 2000, Chapter 17), due to correction of formula errors in the HCM 1994 method for unsignalized intersections.

Tables 3.9 and 3.10 illustrate the LOS criteria used in this analysis for both signalized and unsignalized intersections.

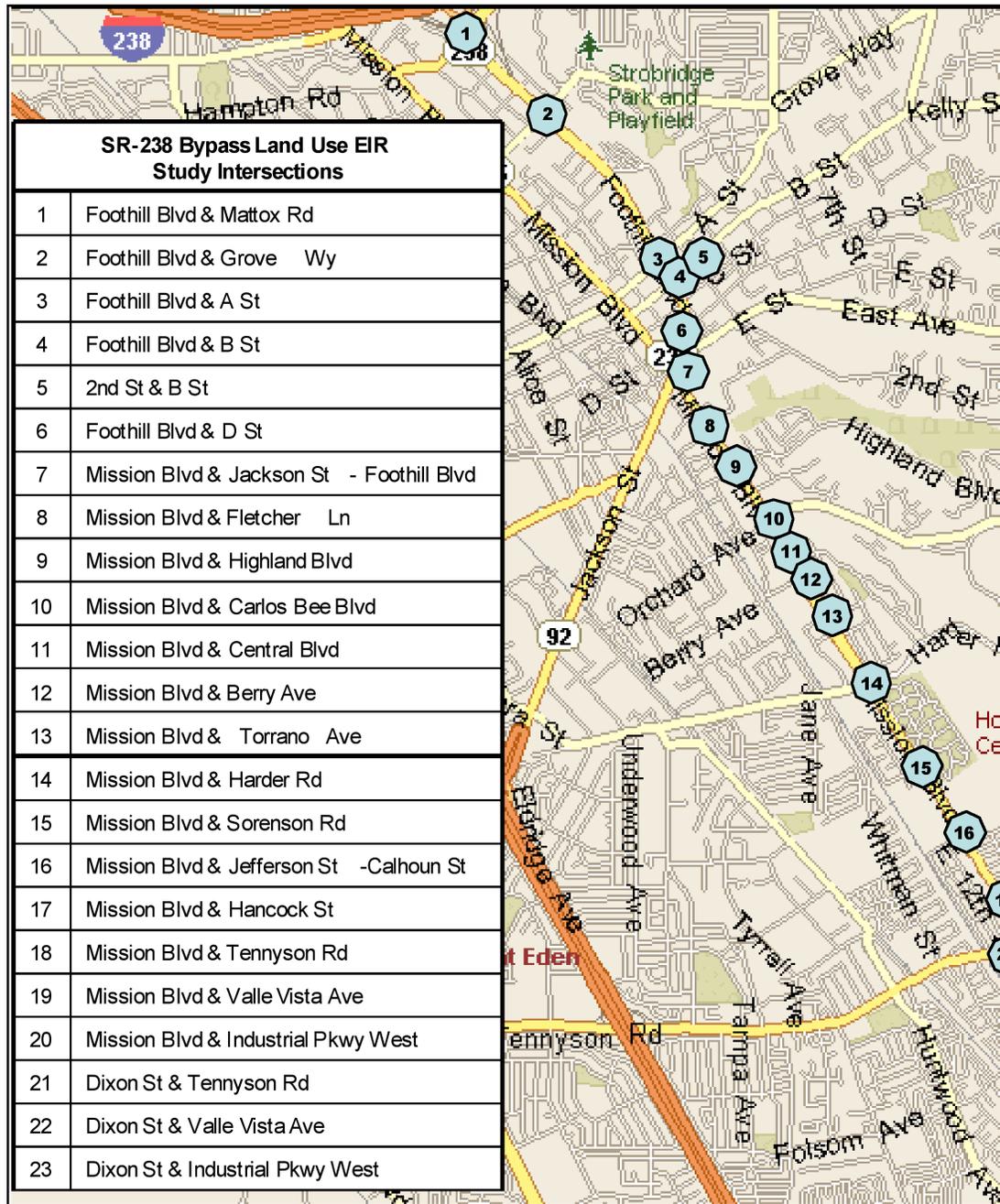


Figure 3.5: Study Intersections

3.6.3 Existing Intersection Levels of Service

The existing AM and PM peak-hour operating conditions at the project area intersections are shown in Table 3.11 and Table 3.12, respectively.

As indicated in Table 3.11, the following signalized intersections are currently operating at LOS E or worse in the AM peak-hour:

- 7 Mission Boulevard & Jackson Street-Foothill Boulevard at LOS E
- 10 Mission Boulevard & Carlos Bee Boulevard at LOS F

Additionally, the stop-controlled approaches at the following unsignalized intersections are experiencing LOS F and significant delays in the AM peak-hour:

- 12 Mission Boulevard & Berry Avenue
- 13 Mission Boulevard & Torrano Avenue

As indicated in Table 3.12, the following signalized intersections are currently operating at LOS E or worse in the PM peak-hour:

- 1 Foothill Boulevard & Mattox Rd at LOS E
- 3 Foothill Boulevard & A Street at LOS E
- 7 Mission Boulevard & Jackson Street-Foothill Boulevard at LOS F
- 10 Mission Boulevard & Carlos Bee Boulevard at LOS E

Additionally, the stop-controlled approaches at the following unsignalized intersections are experiencing LOS F and significant delays in the PM peak-hour:

- 11 Mission Boulevard & Central Boulevard
- 12 Mission Boulevard & Berry Avenue
- 13 Mission Boulevard & Torrano Avenue

Level of Service (LOS)	Average Delay (seconds/vehicle)	Description
A	≤ 5	Very Low Delay: This level of service occurs when progression is extremely favorable and most vehicles arrive during a green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	> 5 and ≤ 15	Minimal Delays: This level of service generally occurs with good progression, short cycle lengths, or both. More vehicles stop than at LOS A, causing higher levels of average delay.
C	> 15 and ≤ 25	Acceptable Delay: Delay increases due to fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level of service. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.
D	> 25 and ≤ 40	Approaching Unstable Operation/Significant Delays: The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume / capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	> 40 and ≤ 60	Unstable Operation/Substantial Delays: These high delay values generally indicate poor progression, long cycle lengths, and high volume / capacity ratios. Individual cycle failures are frequent occurrences.
F	> 60	Excessive Delays: This level, considered unacceptable to most drivers, often occurs with oversaturation (that is, when arrival traffic volumes exceed the capacity of the intersection). It may also occur at high volume / capacity ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.
Source: Transportation Research Board, <i>Highway Capacity Manual</i> , Washington, D.C., 1994, pages 9-6 and 9-7 Dowling Associates, Inc.		

Table 3.9: Level of Service Criteria for Signalized Intersections (1994 HCM Methodology)

Service (LOS)	(seconds/vehicle)	Description
A	≤ 10	Very Low Delay
B	> 10 and ≤ 15	Minimal Delays
C	> 15 and ≤ 25	Acceptable Delay
D	> 25 and ≤ 35	Approaching Unstable Operation and/or Significant Delays
E	> 35 and ≤ 50	Unstable Operation and/or Substantial Delays
F	> 50	Excessive Delays

Source: *Highway Capacity Manual*, 1994, page 10-12 and *Highway Capacity Manual*, 2000, pages 17-2 and 17-32, Transportation Research Board,

Table 3.10: Level of Service Criteria for Unsignalized Intersections (2000 HCM Methodology)

3.7 Regulatory Framework

The Circulation Element of Hayward's General Plan contains policies and strategies relating to regional traffic, promoting alternative transportation modes and improving local access and circulation.

- Reduce the amount of Regional Through Traffic in the Hayward Area. *(Policy 1)*
 - Support transportation plans that incorporate alternatives to automobile use. *(Strategy 2)*
 - Coordinate transportation planning with regional agencies and adjoining jurisdictions. *(Strategy 4)*
- Improve Mobility to Foster Economic Vitality. *(Policy 4)*
 - Provide a safe and efficient transportation system for the movement of people, goods and services through and within Hayward. *(Strategy 1)*
- Improve Coordination among Public Agencies and Transit Providers. *(Policy 5)*
 - Consider needs of transit riders, pedestrians, people in wheelchairs, cyclists and others in long-range planning and review of development proposals. *(Strategy 1)*
 - Promote effective intermodal connections at transit stations *(Strategy 5)*
- Encourage Land Use Patterns that Promote Transit usage. *(Policy 10)*
 - Encourage transit-oriented development, where appropriate, encourage intensive new residential and commercial development within 1/2 mile of transit stations or 1/4 mile of major bus routes. *(Strategy 1)*
 - Encourage mixed-use residential and commercial development to reduce the need for multi-destinational trips *(Strategy 2)*
 - Promote high density new residential development, including residential above commercial uses, near transit facilities, activity generators and along major arterials. *(Strategy 3)*
 - Encourage alternatives to automobile transportation through development policies and provision of transit, bike and pedestrian amenities. *(Strategy 4)*
 - Encourage design of development that facilitates use of transit. *(Strategy 6)*

The *City of Hayward Bicycle Master Plan* update (adopted in November 2007) provides an assessment of existing conditions, policy goals, a proposed network and implementation plan to enhance and improve the bicycling environment and encourage bicycle use in the City of Hayward. The key elements of the Master Plan are to:

- Develop an implementation strategy.
- Provide needed facilities.
- Enhance the quality of life in Hayward.
- Integrate the Hayward bicycle network into regional bicycle routes.
- Maximize funding sources.

Intersection	Traffic Control	Average LOS	Average Delay	Worst LOS	Worst Delay
1 Foothill Blvd & Mattox Rd	Signal	D	36.0		
2 Foothill Blvd & Grove Wy	Signal	C	19.4		
3 Foothill Blvd & A St	Signal	D	26.1		
4 Foothill Blvd & B St	Signal	C	15.7		
5 2nd St & B St	Signal	C	23.8		
6 Foothill Blvd & D St	Signal	D	36.3		
7 Mission Blvd & Jackson St-Foothill Blvd	Signal	E	45.8		
8 Mission Blvd & Fletcher Ln	Signal	B	12.3		
9 Mission Blvd & Highland Blvd	Signal	B	13.4		
10 Mission Blvd & Carlos Bee Blvd	Signal	F	62.4		
11 Mission Blvd & Central Blvd	SSSC	A	0.7	D	34.9
12 Mission Blvd & Berry Ave	SSSC	C	21.4	F	1112.4
13 Mission Blvd & Torrano Ave	SSSC	C	19.8	F	1217.1
14 Mission Blvd at Harder Rd	Signal	D	28.9		
15 Mission Blvd at Sorenson Rd	Signal	B	6.3		
16 Mission Blvd at Jefferson St-Calhoun St	Signal	D	25.1		
17 Mission Blvd at Hancock St	Signal	A	4.2		
18 Mission Blvd at Tennyson Rd	Signal	C	20.0		
19 Mission Blvd at Valle Vista Ave	SSSC	A	0.6	D	28.9
20 Mission Blvd at Industrial Parkway West	Signal	C	24.9		
21 Dixon St at Tennyson Rd	Signal	C	15.4		
22 Dixon St at Valle Vista Ave	AWSC	B	10.5	B	11.0
23 Dixon St at Industrial Parkway West	Signal	B	12.3		

LOS = Level of Service; **Delay** = Weighted average delay for vehicles in seconds; **SSSC** = Side Street stop control; **AWSC** = All Way stop control

Average LOS is based on the weighted average delay per vehicle of the total intersection approaches; **Worst LOS** is calculated for stop-controlled intersections and is based on the weighted average control delay per vehicle of the intersection leg with the worst delay.

Signalized intersections were analyzed using the 1994 HighWy Capacity Manual (HCM) methodology whereas stop-controlled intersections were analyzed using the 2000 HCM methodology

Source: Dowling Associates, Inc. using TRAFFIX

Table 3.11: Intersection Vehicle LOS for Existing Conditions – AM Peak Hour

Intersection	Traffic Control	Average LOS	Average Delay	Worst LOS	Worst Delay
1 Foothill Blvd & Mattox Rd	Signal	E	44.0		
2 Foothill Blvd & Grove Wy	Signal	D	30.9		
3 Foothill Blvd & A St	Signal	E	51.7		
4 Foothill Blvd & B St	Signal	B	13.6		
5 2nd St & B St	Signal	D	25.6		
6 Foothill Blvd & D St	Signal	D	37.0		
7 Mission Blvd & Jackson St-Foothill Blvd	Signal	F	79.8		
8 Mission Blvd & Fletcher Ln	Signal	C	16.9		
9 Mission Blvd & Highland Blvd	Signal	C	18.1		
10 Mission Blvd & Carlos Bee Blvd	Signal	E	57.4		
11 Mission Blvd & Central Blvd	SSSC	A	3.3	F	184.4
12 Mission Blvd & Berry Ave	SSSC	B	13.8	F	732.9
13 Mission Blvd & Torrano Ave	SSSC	A	9.7	F	823.3
14 Mission Blvd at Harder Rd	Signal	D	32.1		
15 Mission Blvd at Sorenson Rd	Signal	C	15.1		
16 Mission Blvd at Jefferson St-Calhoun St	Signal	B	13.4		
17 Mission Blvd at Hancock St	Signal	B	5.6		
18 Mission Blvd at Tennyson Rd	Signal	C	20.6		
19 Mission Blvd at Valle Vista Ave	SSSC	A	0.7	C	20.0
20 Mission Blvd at Industrial Parkway West	Signal	D	27.4		
21 Dixon St at Tennyson Rd	Signal	C	15.3		
22 Dixon St at Valle Vista Ave	AWSC	B	10.6	B	11.7
23 Dixon St at Industrial Parkway West	Signal	B	10.5		

LOS = Level of Service; **Delay** = Weighted average delay for vehicles in seconds; **SSSC** = Side Street stop control; **AWSC** = All Way stop control

Average LOS is based on the weighted average delay per vehicle of the total intersection approaches; **Worst LOS** is calculated for stop-controlled intersections and is based on the weighted average control delay per vehicle of the intersection leg with the worst delay.

Signalized intersections were analyzed using the 1994 HighWy Capacity Manual (HCM) methodology whereas stop-controlled intersections were analyzed using the 2000 HCM methodology

Source: Dowling Associates, Inc. using TRAFFIX

Table 3.12: Intersection Vehicle LOS for Existing Conditions – PM Peak Hour

3.8 Standards of Significance

The circulation element of the General Plan identifies as a policy to “Seek a minimum Level of Service D at intersections during the peak commute periods except when a LOS E may be acceptable due to costs of mitigation or when there would be other unacceptable impacts”.

3.9 Existing Infrastructure Assessment

Mark Thomas & Company, Inc. completed the existing utility exhibit for the 238 Corridor Land Use Study as provided by the city and private utility agencies. The city and other private utility agencies have not reported or disclosed any problem areas or capacity issues for the existing systems. The existing utilities appear to meet the current needs for the existing land uses and conditions. Future studies will be required to analyze and assess the existing utility infrastructure as it relates to the proposed land uses / future developments and the demands placed on the system. Appendix E contains all the graphical exhibits of the infrastructure assessment.