

4 CIRCULATION ELEMENT

The purpose of the Circulation Element is to establish goals, policies and actions to regulate and improve the Eden Area's transportation systems. This Element balances the need to move people and goods by multiple transportation modes and routes with the overall desire to maintain the Eden Area as a safe, attractive community with walkable neighborhoods and vibrant retail districts. The transportation corridors of the Eden Area must accommodate development planned for the area, minimize environmental degradation, and complement regional transportation and land use plans. The Circulation Element is also correlated with the Land Use Element to ensure that existing and new uses are adequately served by transportation systems.

As required by Government Code Section 65302(b), this Element contains information on the general location and extent of existing and proposed major thoroughfares, transportation routes and terminals. State law also requires that a Circulation Element contain data and policies related to water, sewage and storm drainage, and other public utilities. These components are presented in the Public Facilities and Services Element.

This Element is divided into four sections:

- ◆ **Background.** Provides information on the existing circulation network as well as the traffic operation and Level of Service of that network in the Eden Area.
- ◆ **Roadway Classifications.** Describes the roadway classifications and standards that regulate the network.
- ◆ **Changes to the Circulation Network.** Describes changes to the circulation network.
- ◆ **Goals, Policies and Actions.** Provides guidance to the County related to decisions impacting the circulation network.



Pedestrian and bicycle path

A. Background

Integrated planning for land use and transportation is vitally important to ensure that people have efficient and effective choices for travel to their destinations. For many years, the response to traffic congestion or anticipated growth was to add motor vehicle capacity. In turn, these transportation improvements encouraged a land use pattern that required a private automobile for basic mobility. However, circulation is no longer perceived as revolving strictly around motorized transportation in individual cars. It also includes a renewed emphasis on walking, cycling and public transit, often called “alternative modes.” Another term for these types of transport would be “sustainable modes,” since they use fewer resources, take up less space, cause less pollution and have lower private costs to operate than automobiles. The cost to the public is also lower when effective sustainable modes are available because of the costs incurred to the public for road construction and maintenance, congestion and parking, and air and water pollution.

1. Circulation Network

The circulation network is the accumulation of the roadways, railroads, transit and trail systems, including bikeways that form an integrated system to move people and goods within and through the Eden Area.

a. Roadways

Descriptions of the freeways, arterials, collectors and local streets are provided below, along with a discussion of key issues pertaining to the operation of those roadways. With the exception of limited-access freeways, the roadway network accommodates pedestrian and bicycle travel in addition to motor vehicles.

Each street serves a different function in the system of vehicular movement. Freeways serve regional traffic, arterial streets serve area-wide travel needs, collector streets serve the needs of individual neighborhoods, and local streets provide access to private properties. Figure 4-1 shows the roadway network within the Eden Area.

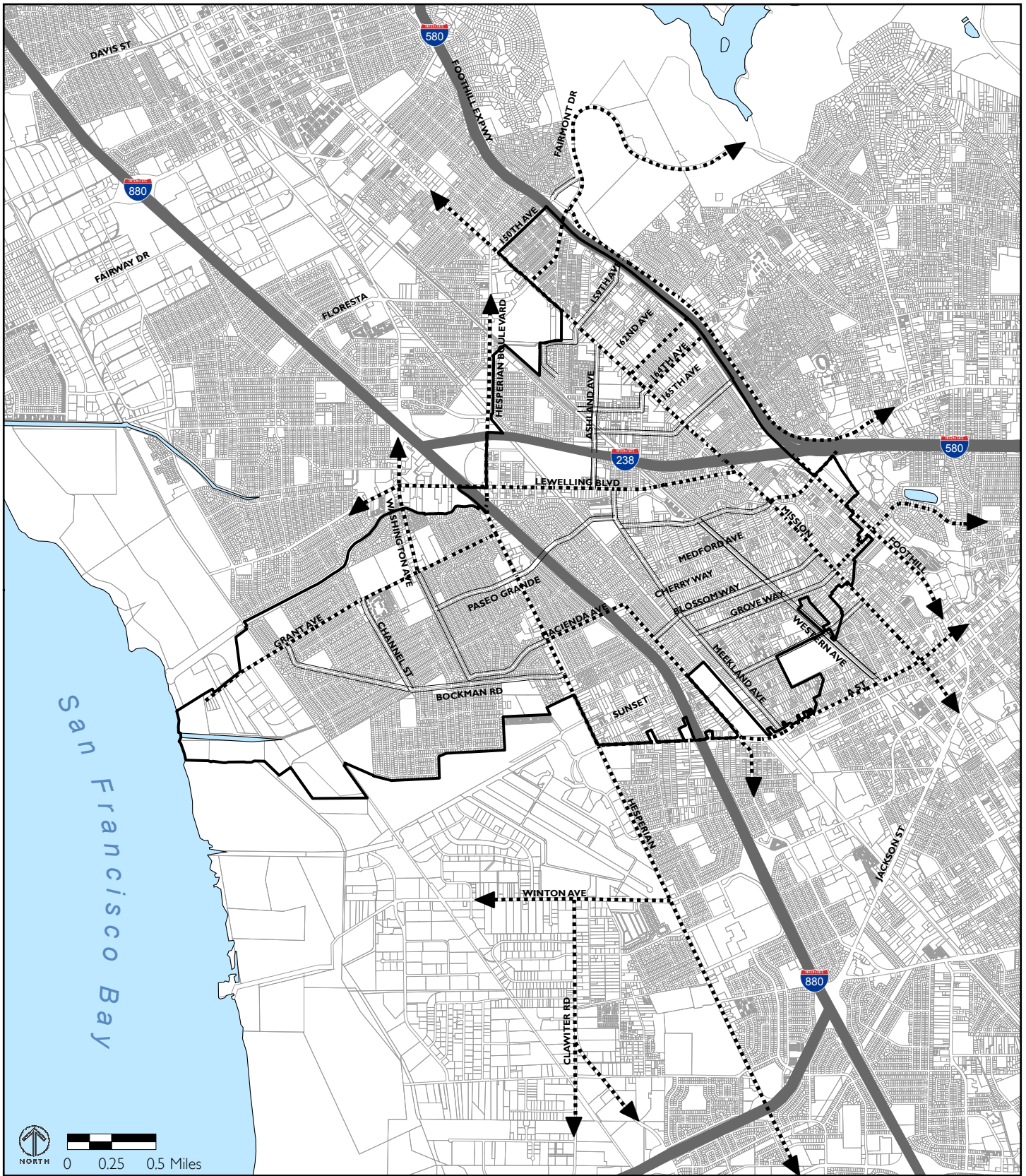


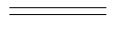



FIGURE 4-1

-  Freeway
-  Arterial
-  Collector
-  Study Area Boundary

ROADWAY NETWORK

COUNTY OF ALAMEDA
EDEN AREA GENERAL PLAN

i. Freeways

Freeways are high-speed, high-capacity transportation facilities serving regional and countywide travel. These limited access facilities provide for relatively long trips between major land use generators. The Eden Area is located at the confluence of three regional freeways:

- ◆ **Interstate 880** is a six- to eight-lane freeway running north and south between the San Francisco-Oakland Bay Bridge and San Jose. The freeway passes through San Lorenzo and Hayward Acres in the Eden Area. There is a high volume of truck traffic on Interstate 880.
- ◆ **Interstate 580** is an eight- to ten-lane freeway that runs north and south from the San Francisco-Oakland Bay Bridge, traveling through the Eden Area in Ashland, before turning east to Castro Valley, Livermore and the Central Valley.
- ◆ **Interstate 238** is a four-lane freeway that connects Interstate 580 and Interstate 880. Due to restrictions on truck travel on Interstate 580 in Oakland, Interstate 238 carries a relatively high proportion of truck traffic. Caltrans is currently widening Interstate 238 from four to six lanes, with plans for additional capacity for eight lanes in the future. This project is expected to reduce future traffic on Lewelling Boulevard.

ii. Arterials

Arterials are relatively high mobility/high capacity roadways that provide access to regional transportation facilities and serve relatively long trips. They also accommodate intra-community travel and connect the rest of the countywide collector system. On-street parking and direct access to properties may be limited. A separated bicycle lane may be provided where feasible. The main arterial roadways that serve the Eden Area are described below:

- ◆ **East 14th Street/Mission Boulevard (SR 185)** is a four-lane road that travels north and south through Ashland and Cherryland and operates as a parallel route to Interstate 880. AC Transit bus service is provided on this arterial. It is one of the primary commercial corridors in the Eden Area.

- ◆ **Hesperian Boulevard** is a six-lane road divided by a landscaped median and high voltage line that runs north-south through the San Lorenzo community. Caltrans has designated Hesperian Boulevard as a reliever route to accommodate excess traffic when Interstate 880 is extremely congested. AC Transit bus service is provided. It is a primary commercial corridor in the Eden Area.
- ◆ **Lewelling Boulevard** is a two- to four-lane road between Hesperian Boulevard and East 14th Street/Mission Boulevard. Limited bus service is provided. The corridor includes both commercial and residential uses.
- ◆ **Washington Avenue** is a four-lane road that runs north from Grant Avenue into the southwest section of the City of San Leandro. The corridor is a truck route and has commercial, residential and public uses.
- ◆ **‘A’ Street** is a four-lane, east-west road running east from Hesperian Boulevard on the southern border of the Eden Area between Hayward Acres and the City of Hayward. Only the northern side of the street is in the Eden Area. AC Transit bus service and bicycle lanes are provided. ‘A’ Street has a mix of small-scale commercial and residential uses. A proposed extension of ‘A’ Street by the City of Hayward would provide access to the industrial area near the Hayward Airport.
- ◆ **Grove Way** is a two-lane, east-west road running between Meekland Avenue that crosses East 14th Street/Mission Boulevard and continues into East Castro Valley Boulevard. Bus service is not provided on Grove Way within the Eden Area. Grove Way is lined with residential and commercial uses.
- ◆ **Foothill Boulevard** is a two- to four-lane road and travels north-south parallel to Interstate 580. Although the boulevard continues north and south, only the section between 150th Avenue and Grove Way lies within the Eden Area. AC Transit bus service is provided along this arterial. The corridor has a mix of commercial and residential uses.
- ◆ **Fairmont Drive** is a four-lane road that runs between Mission Boulevard and Interstate 580 in the Eden Area and east into Castro Valley. AC Tran-



Hesperian Boulevard

sit bus service is provided. Fairmont Drive has limited access points and borders public uses on one side and residential uses on the other.

- ◆ **167th Avenue** is a two-lane road that runs east-west from East 14th Street into Castro Valley.

iii. Collectors

Collectors are relatively low-speed/low-volume streets with two lanes that provide for circulation within and between neighborhoods. Separated bicycle lanes are included where feasible. These roads serve relatively short trips and are meant to collect vehicles from local streets and distribute them to the arterial network. The key collector streets serving the Eden Area are:



Elevated BART tracks along Western Boulevard

- ◆ 150th Avenue
- ◆ 164th Avenue/Miramar Avenue
- ◆ Ashland Avenue
- ◆ Blossom Way
- ◆ Bockman Road
- ◆ Depot Road
- ◆ Eden Avenue
- ◆ Grant Avenue
- ◆ Grove Way west of Mission Blvd.
- ◆ Hampton Road
- ◆ Hathaway Avenue/Via Toledo
- ◆ Mattox Road
- ◆ Meekland Avenue
- ◆ Paseo Grande
- ◆ Sunset Boulevard
- ◆ Via Alamos
- ◆ Western Boulevard

iv. Local Streets

Local streets provide access to individual properties, primarily residences and businesses, and connect to the County's network of arterial and collector streets.

Allowing narrower street rights-of-way for local residential streets would reduce the cost and amount of land needed to complete local streets in the Eden Area that currently lack curbs, gutters and sidewalks. This would also serve to allow for the provision of sidewalks in areas with substandard public right-of-way widths. Additionally, narrower streets have been found to reduce travel speeds, thus helping to “calm” traffic and reduce the negative impacts of traffic in residential areas. Narrow streets are designed to increase safety and beautify residential areas.

Alameda County has a Neighborhood Traffic Calming Program that provides a process for neighborhoods to request the installation of traffic calming devices on local and minor collector streets. These measures include striping, streetscape improvements such as street trees or enhanced pedestrian crossings, bulb-outs, speed humps, roundabouts and partial or full roadway closures.

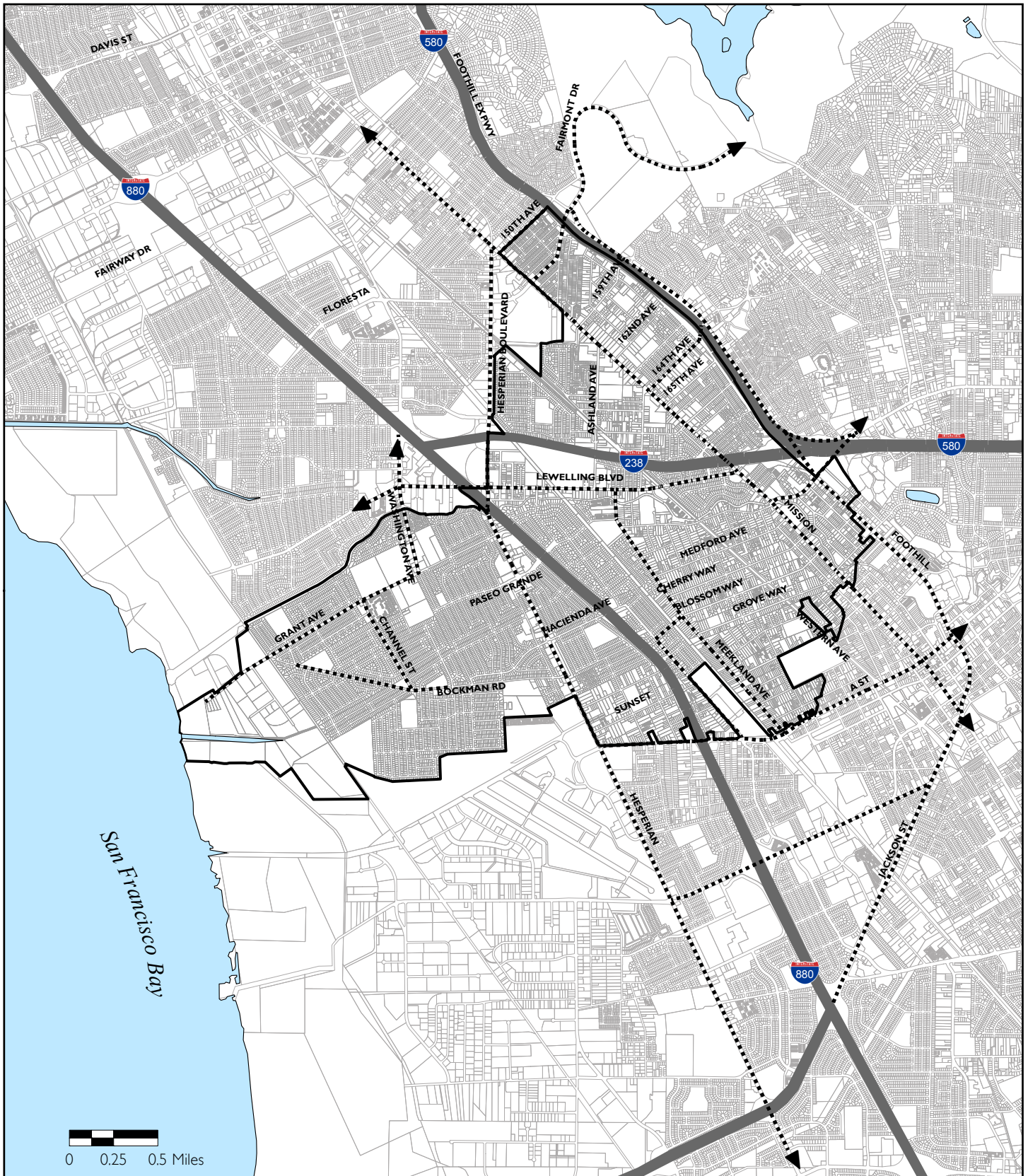
b. Truck Travel

Trucks provide a significant component of the motor vehicles on the circulation network in the Eden Area. Truck travel is regulated by Alameda County Traffic Ordinance, which restricts routes by which heavy trucks may travel within the Eden Area. Preferred truck routes are shown in Figure 4-2.

There are two key issues regarding truck traffic in the Eden Area. First, a high volume of truck traffic enters the Eden Area from Interstates 880 and 238, due in part to restrictions on truck travel on Interstate 580 in Oakland. This has an impact on truck through-traffic on arterial streets, such as Hesperian Boulevard, Lewelling Boulevard and East 14th Street/Mission Boulevard.

A Caltrans project is currently widening Interstate 238 to six lanes, which will likely alleviate some of the truck traffic into the Eden Area.

The second key issue is truck access to the Grant Avenue Industrial Area, the industrial district located at the western end of Grant Avenue in San Lorenzo.



Sources: Alameda County Traffic Ordinance 6.862.012 through 6.862.110; Personal Communication, Robert N. Preston, County of Alameda Public Works Agency, February 14, 2005; City of San Leandro 2015 General Plan, Adopted 2000; City of Hayward Truck Route Map, September 1988.

FIGURE 4-2

- Freeway***
- * Freeways are also truck routes
- Truck Route**
- Study Area**

TRUCK ROUTES

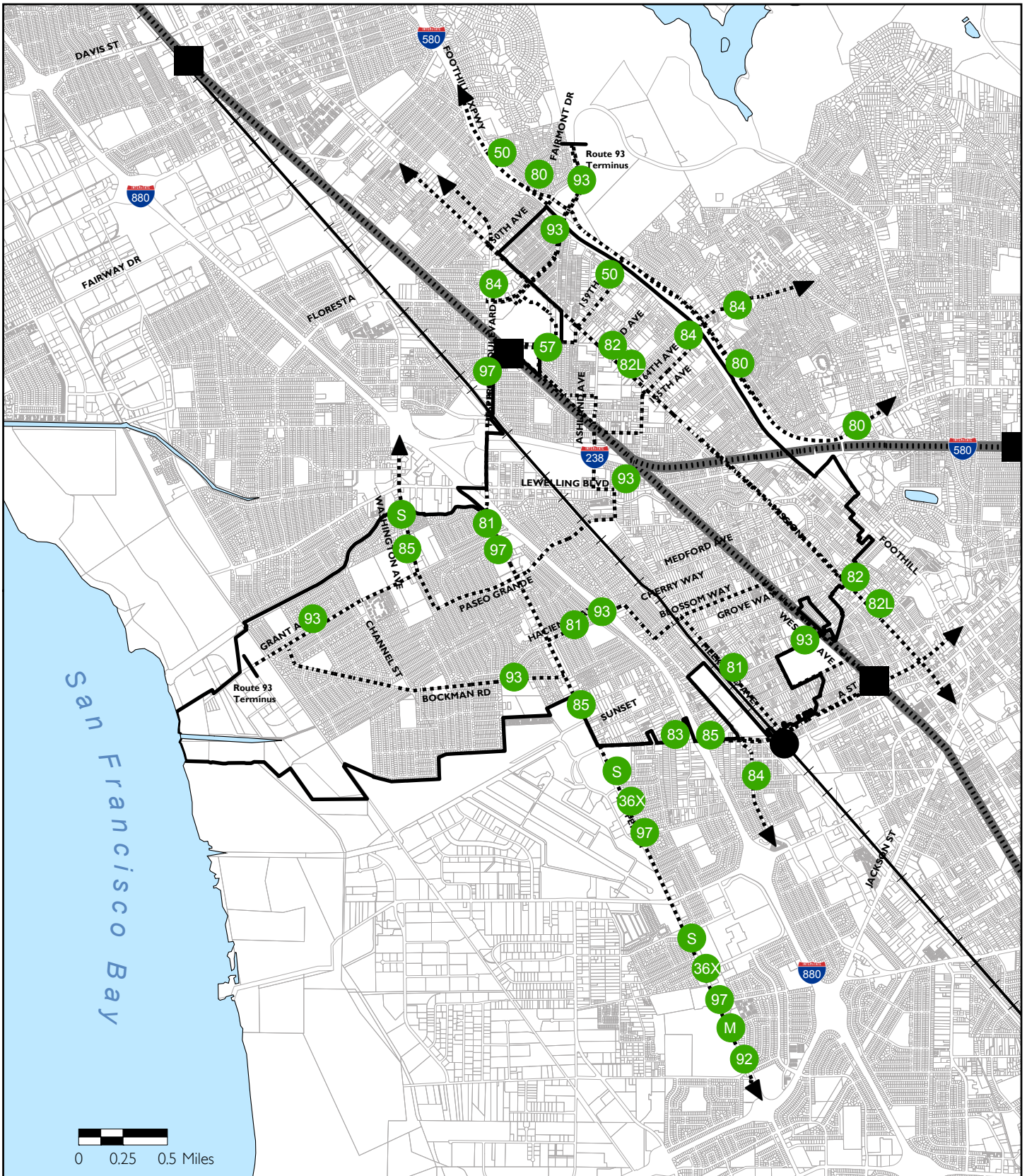
Traffic accesses this area from Interstate 880 via Grant Avenue through residential neighborhoods. Due to the number of economically vibrant industrial and commercial uses in the Grant Avenue Industrial Area, there is an exceptionally high volume of traffic. Typically, truck traffic on an arterial street constitutes less than five percent of overall traffic. Truck traffic was found to constitute between 27 to 30 percent of the traffic on Grant Avenue during peak hours based upon counts conducted on January 28, 2003. Furthermore, illegal truck parking on residential streets in Cherryland and Ashland impacts safety and quality of life for residents.

c. Transit

Two key transit agencies provide public transit in the Eden Area: AC Transit and BART. In addition, Amtrak's Capitol Corridor provides train service from San Jose to Sacramento and passes through the Eden Area with a stop in Hayward. The transit lines that provide service to the Eden Area are shown in Figure 4-3.

A number of studies, including AC Transit's Central County Study, the Central Alameda County Community-Based Transportation Plan (CBTP) and MTC's 2001 Lifeline Transportation Network Report, have identified gaps in the transit service provided to the Eden Area. According to the CBTP, problems include limited hours and frequencies, lack of pedestrian and bicycle access to transit stops, the high cost of transportation, lack of information on transportation options, and the feeling of being "unsafe" while traveling. Additionally, MTC's Lifeline Report identified Cherryland as one of the few low-income communities in the Bay Area that was identified with a spatial gap in terms of transit service coverage.¹

¹ A spatial gap is defined as a geographical area with a high concentration of CalWORKs households or an area of key destinations not served at all by public transit. *Community-Based Transportation Plan* for Cherryland, Ashland and South Hayward Final Report. June 2004. Pages ES-1 and 3-2.



- BART Station
- Capitol Corridor Station
- Bus Route Number
- AC Transit Bus Line
- BART Line
- Amtrak Capitol Corridor Line
- Study Area

FIGURE 4-3

EXISTING TRANSIT FACILITIES

i. AC Transit

AC Transit operates a network of bus lines that provide connections within the Eden Area, to and from the BART stations described below, and to adjacent cities. Despite AC Transit’s extensive transit network, the infrequency of service and the limited number of bus routes prevents the Eden Area from being well served by transit. Additionally, pedestrian conditions, such as narrow sidewalks and lack of transit shelters, street trees or buffers from adjacent automobile traffic, can inhibit transit access along existing streets. The most recent AC Transit route information can be found by contacting AC Transit directly.

ii. Bay Area Rapid Transit (BART)

BART provides relatively frequent heavy-rail, rapid transit service between East Bay cities, San Francisco, Millbrae and the San Francisco Airport. Intervals between trains are generally less than ten minutes on weekdays and 20 minutes during evening and weekend hours. Most of the Eden Area is located more than one-quarter mile from a BART station thus requiring most users to use another mode of travel to reach the nearest BART station. There are two BART stations bordering the Eden Area: Bayfair Station and Hayward Station. Approximately 4,900 people ride BART daily from Bayfair Station on a typical weekday, while another 4,400 ride from Hayward Station.



Elevated BART tracks

Potential improvements to transit circulation affecting the Eden Area are described below:

- ◆ AC Transit is planning to provide bus service along Lewelling Boulevard (via Route 81) and is considering the implementation of an “enhanced bus corridor” on Hesperian Boulevard (that could include signal preemption, improved shelters, “next bus” technology and other measures to increase the speed and efficiency of bus service).
- ◆ BART is studying expansion of service south from Fremont to San Jose, which, if implemented, would provide an additional transportation option for residents of the Eden Area for traveling to and from the South Bay.



Bayfair BART

d. Pedestrian Facilities

The pedestrian environment plays a key role in determining the overall livability and general characteristics of any community. In general, a high quality pedestrian environment has sidewalks on both sides of the street that are separated from traffic by a planting strip and/or parked cars. Other desirable attributes include traffic calming features, pedestrian-scale lighting, street trees that shade pedestrians and provide a visual canopy, visible and safe crosswalks, and a consistent urban development pattern that provides visual continuity (i.e., buildings that form a street wall).

The locations that provide the best pedestrian experience in the Eden Area are the older residential neighborhoods in San Lorenzo and Cherryland. These areas generally have tree canopies, consistent building setbacks, relatively narrow streets and speed bumps for slowing traffic.

Other locations in the Eden Area have only the most basic of pedestrian amenities. The major arterials (namely East 14th Street/Mission Boulevard and Hesperian Boulevard) have sidewalks, but there is little or no buffering of the pedestrian environment from the traffic. In places where there is on-street parking, conditions are slightly better for pedestrians. However, drive-way curb-cuts and the large scale of these streets create hazards for pedestrians and reduce the attractiveness of the environment. In some residential areas, there are no sidewalks, curbs or gutters, and pedestrians must walk in the street with traffic.

A number of existing policies and planning efforts within the Eden Area place an emphasis on improving pedestrian circulation, often in conjunction with efforts to protect neighborhood quality of life or enhance the commercial viability of specific areas. These efforts are summarized below.

- ◆ The *East 14th/Mission Boulevard Master Plan* includes recommendations for reducing blight and improving pedestrian circulation along the corridor. The County envisions extensive streetscape enhancements, including undergrounding of utilities, a raised median, street trees, new street lighting and pedestrian improvements, such as sidewalk extensions at intersections

(bulb-outs) to reduce pedestrian crossing distances. Additionally, the project will include a Class III (signed) bicycle route geared towards bicycle commuters.

- ◆ The *Lewelling Boulevard Improvement Project* includes improvements to widen the street and make improvements to sidewalks. Currently, Lewelling Boulevard has inadequate facilities for pedestrians and bicyclists, lacks landscaping and has higher than normal collision rates. Phase I of the project (between Hesperian Boulevard and Meekland Avenue) will include four travel lanes, a center median/two-way turn lane and 10-foot wide sidewalks (on-street bicycle lanes are not included). Phase II (between Meekland Avenue and Mission Boulevard) provides for two travel lanes, plus a two-way center turn-lane, on-street parking and five-foot sidewalks. The plan recommends street trees along Lewelling Boulevard.
- ◆ The *Hesperian Corridor Streetscape Master Plan* develops a vision for revitalizing the Hesperian corridor and achieving an inviting streetscape for pedestrians, residents and merchants. Key goals include improved pedestrian and bicycle circulation and increased use of public transit. The plan provides streetscape improvements and traffic calming measures where possible without sacrificing current traffic patterns. Proposed improvements include narrower travel lanes, wider sidewalks, bicycle lanes, street trees and raised medians. Key parking areas would be retained.
- ◆ The *San Lorenzo Village Specific Plan* recommends enhancing the economic viability of the historic core of San Lorenzo as a “main street” environment, including pedestrian and streetscape improvements.
- ◆ The *Community-Based Transportation Plan* for Cherryland, Ashland and South Hayward, completed in June 2004, surveyed residents about concerns relating to transit usage and evaluated potential solutions to the problems identified. Recommended solutions include new sidewalks on 72 blocks in Cherryland and increased lighting in pedestrian areas along transit routes.
- ◆ The *Alameda County Pedestrian Master Plan for Unincorporated Areas* was adopted in 2006. The Plan examines existing conditions, identifies pedes-

trian route networks, conducts a needs assessment, identifies design elements and outlines a strategic implementation plan. This plan also promotes walking as a safe, healthy and attractive alternative to driving.

e. Bicycle Facilities

Bicyclists are permitted to travel on all portions of the roadway network except freeways. There are three types of standard bikeway classifications in California. Each is described below:

- ◆ **Class I Bicycle Paths.** Class I bikeways are completely separated from motor vehicle traffic, such as an off-street path along a river or railroad corridor. Class I bikeways are generally 8 to 12 feet wide.
- ◆ **Class II Bicycle Lanes.** Class II bikeways are located on streets and allow bicyclists to utilize a separate lane of travel, usually 5 feet wide, separated from motor vehicle traffic by a 6-inch white stripe.
- ◆ **Class III Bicycle Routes.** Class III bikeways are designated by signs only. Cyclists share the travel lane with motor vehicle traffic on these routes. Some Class III routes have a wide outer curb lane while others carry low volumes of motor vehicle traffic, making a separate bicycle lane or wide curb lane unnecessary.

Although bicycles are allowed on all roads, designated bikeway facilities are limited to a few key streets in the Eden Area. Key elements of the existing bikeway network are described below and are indicated on Figure 4-4. They are:

- ◆ Class I bicycle path running north from the western terminus Grant Avenue, serving as a segment of the San Francisco Bay Trail providing access north to San Leandro and Oakland.
- ◆ Class II bicycle lanes on Grant Avenue (west of Washington Avenue/Via Alamitos) that connect with the San Francisco Bay Trail.
- ◆ Class II bicycle lanes on West 'A' Street.
- ◆ Class III route on Washington Avenue (north of Grant Avenue).

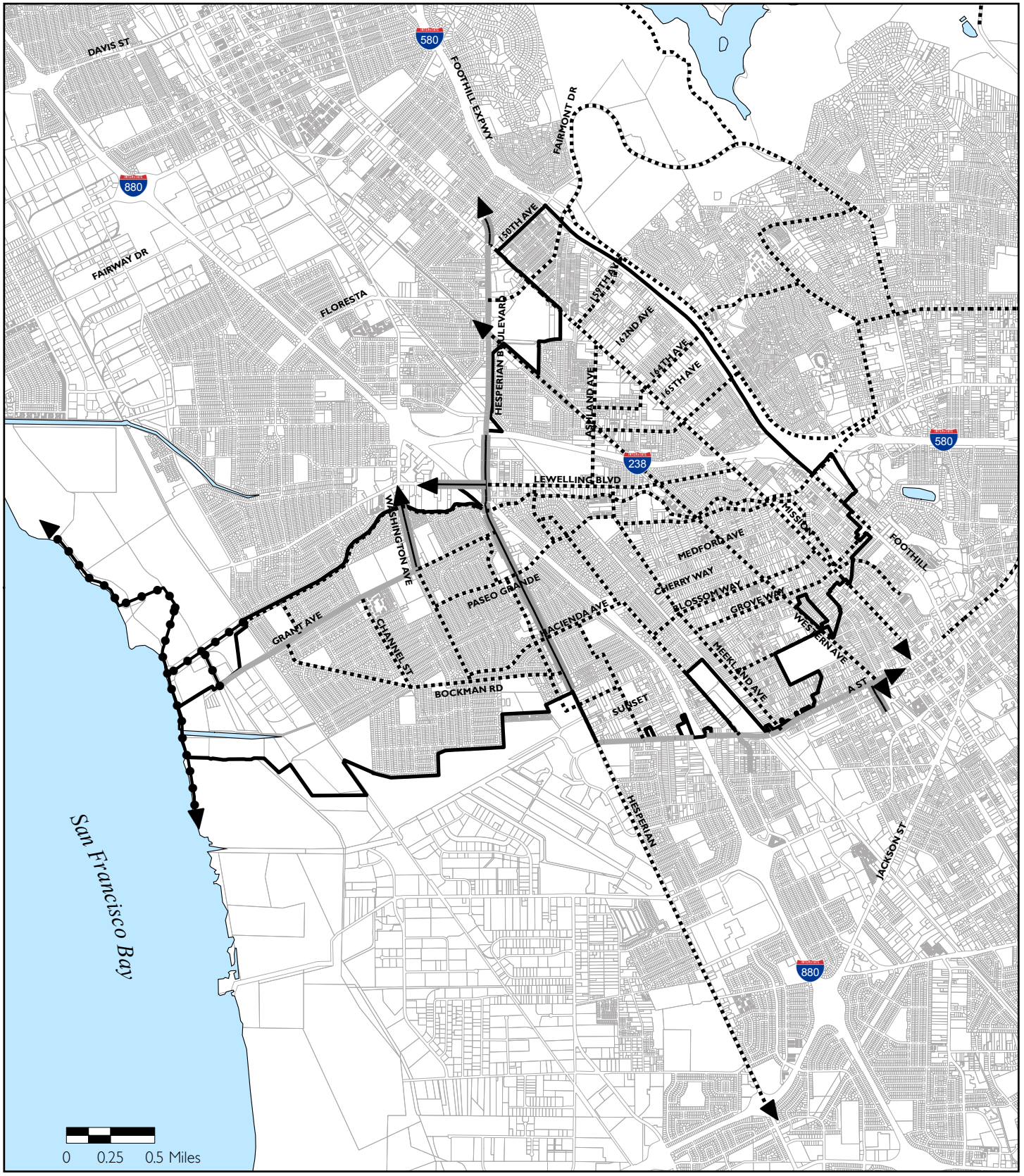
- ◆ Class III route on Hesperian Boulevard (north of 'A' Street) that connects with Class II bicycle lanes on the portion of Hesperian Boulevard in San Leandro.

The *Alameda County Bicycle Master Plan Update for Western Unincorporated Areas* (adopted in 1999) and the *Countywide Bicycle Plan* (adopted in 2001) include recommendations for improving bicycle connections in the Eden Area. The *Bicycle Master Plan for Western Unincorporated Areas* Plan proposes bicycle paths along San Lorenzo Creek and the BART right-of-way, as well as proposes bicycle lanes on East 14th Street/Mission Boulevard, Hesperian Boulevard, Lewelling Boulevard and Meekland Avenue.

More recent corridor plans for East 14th Street/Mission Boulevard and Lewelling Boulevard do not include designated bicycle lanes. The *Countywide Bicycle Plan* makes recommendations for developing regional bicycle routes on major roads such as Foothill Boulevard and the northern portion of East 14th Street to make connections with adjacent communities. The routes in these two plans are shown in Figure 4-4. Additionally, the *Community-Based Transportation Plan* for Cherryland, Ashland and South Hayward recommends the installation of bicycle racks in those communities.

Further recommendations have been included in the *Alameda County Bicycle Master Plan Update for the Unincorporated Areas*, which was completed in 2006. The plan addresses four goals:

- ◆ **Network Provision and Maintenance.** Create and maintain a comprehensive system of bicycle facilities in the local and subregional transportation network in order to establish a balanced multi-modal transportation system.
- ◆ **Network Funding and Prioritization.** Maximize use of public and private resources in establishing a bicycle network.
- ◆ **Network Integration.** Promote the use of transit, ridesharing, bicycling, and walking through land use and transportation planning.



* Proposed by the Alameda County Bicycle Master Plan Update for the Western Unincorporated Areas (1999) or Alameda Countywide Bicycle Plan (2001)


-  Existing Route
-  Existing Lane
-  Existing Path
-  Proposed Route, Lane or Path
-  Study Area

FIGURE 4-4

EXISTING AND PROPOSED BICYCLE NETWORK

- ◆ **Encouragement.** Encourage bicycling and other transportation alternatives as a means to reduce traffic congestion.

Additionally, the plan will assess current conditions to identify priorities for planning bicycle transportation improvement projects. Emerging routes will also be identified for integrating continuous bicycle commuter and recreational trips to promote bicycling as an effective alternative mode of transportation.

2. Traffic Operations

In the Eden Area, as in most communities with similar density and development patterns, most travel beyond a few blocks occurs in motorized vehicles, primarily the automobile. This section describes traffic volumes and operating conditions for motor vehicles at key roadway locations in the Eden Area.

a. Traffic Volumes

Twenty-four hour counts of traffic volumes were conducted at specific locations on eleven roadway study segments on January 29, 2003. They are:

- ◆ 167th Street, just east of Foothill Boulevard, in or immediately outside of the Eden Area
- ◆ Blossom Way, between Meekland and Haviland Avenues
- ◆ Bockman Road, just south of Grant Avenue
- ◆ Grove Way, between Birch and Locust Streets
- ◆ Hampton Road, between Lowell and Standish Avenues
- ◆ Hathaway Avenue, between Ardis Street and Loutte Court
- ◆ Lewelling Boulevard, between Ashland Avenue and Via Granda
- ◆ Meekland Avenue, between Alden Road and Medford Avenue
- ◆ Miramar Avenue, just east of Foothill Boulevard
- ◆ Via Alamos, between Grant Avenue and Paseo Grande
- ◆ Western Boulevard, just south of Sunset Boulevard

These roadway segments generally experienced a daily traffic volume appropriate for their roadway designation with a few exceptions. The majority of roadways did not experience excessive traffic congestion. The two exceptions



Pedestrian amenities

were Lewelling Boulevard and Meekland Avenue, which experienced a higher volume of traffic relative to roadway capacity indicating potentially unacceptable operating conditions. Since freeways serving the Eden Area are at or nearing capacity, several of these roadways could potentially experience increased traffic diverting from regional freeways in the future. Additionally, the *Eden Area Redevelopment Plan Draft Environmental Impact Report* identified unacceptable operating conditions on segments of Foothill Boulevard, Grove Way, Center Street, 'A' Street, Hesperian Boulevard, Grant Avenue (from Nielson Avenue to Hesperian Boulevard) and 150th Avenue.

Table 4-1 presents daily traffic volumes for selected roadways based on the traffic counts described above and on previous studies.

b. Intersection Level of Service

The pace at which traffic moves, or does not move, is a key indicator of how well the circulation network is functioning for vehicular traffic. It is standard practice to measure the performance of an intersection in terms of Level of Service (LOS), which is a system by which the level of congestion can be given a letter grade based on vehicle delay. As explained in Table 4-2, LOS A indicates a facility with little congestion and LOS F indicates a highly congested facility. The proper LOS calculation methodology for intersections is dependent on the type of intersection control device (i.e. whether the intersection is controlled by traffic signals, stop signs or roundabouts).

i. *Level of Service Standards*

LOS standards are commonly adopted by local jurisdictions to define acceptable operating conditions, generally for intersections during peak travel periods. Future decisions regarding proposed development or roadway modifications are then based upon maintaining traffic operations that satisfy the adopted standard.

COUNTY OF ALAMEDA
EDEN AREA GENERAL PLAN
 CIRCULATION ELEMENT

TABLE 4-1 **DAILY TRAFFIC VOLUMES**

Roadway	Daily Traffic Volume
Interstate 880	243,000
Interstate 580	194,000
Interstate 238	118,000
East 14 th Street/Mission Boulevard	27,000
Grant Avenue	9,500 to 17,900 ^b
Hesperian Boulevard	51,000
Lewelling Boulevard ^a	19,000
'A' Street	31,000
Grove Way ^a	8,200
Foothill Drive	19,000
Bockman Road ^a	2,100
Washington Avenue ^a	29,000
Western Boulevard ^a	4,700
Ashland Avenue	5,800 to 12,800 ^c
Meekland Avenue ^a	11,900
Blossom Way ^a	5,400
Sunset Boulevard	2,600
Hampton Road ^a	7,200
Depot Road	6,000
Eden Avenue	1,500
150 th Avenue	17,000

^a Fehr & Peers January 29, 2003.

^b 9,500 was measured west of the Union Pacific Railroad tracks and 17,900 was measured at Nielson Road.

^c 5,800 was measured on the segment from East 14th Street to Galway Drive; 12,800 was measured from Galway Drive to Año Avenue.

Sources: *Eden Area Redevelopment Plan Draft EIR*, 2002 and traffic counts conducted by Fehr & Peers January 28, 2003.

TABLE 4-2 INTERSECTION LEVEL OF SERVICE DEFINITIONS

Level of Service	Definition of Traffic Conditions	Average Control Delay Per Vehicle (in Seconds)
Signalized Intersections		
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	≤ 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	10.1 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.1 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	55.1 to 80.0
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.	> 80.0
Unsignalized Intersections		
A	Little or no delay	≤ 10.0
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	Extreme traffic delays with intersection capacity exceeded	> 50.0

Note: The term V/C refers to "volume-to-capacity".

Source: Transportation Research Board, *Highway Capacity Manual*, 2000.

The Alameda Congestion Management Agency (CMA) has a *Congestion Management Program* (CMP) that includes a Capital Improvements Program aimed at maintaining or improving the operation of the multi-modal transportation system and requires development projects to contribute towards transportation impact mitigation. The CMP includes operating standards for key roads and freeways in the Eden Area: Foothill Boulevard, Center Street, “A” Street, Hesperian Boulevard, Interstate 880, Interstate 580 and Interstate 238. The LOS standard on CMP roadways is LOS E or better.

For the majority of roadways within the Eden Area that are not part of the CMP network, the current operating standard adopted by the County is LOS D or better during peak travel periods and LOS C during non-peak periods. In locations where the level of service is exceeded, current County policy requires that improvements, consistent with other plan policies, should be undertaken.

A key deficiency of current LOS standards is that they focus on the movement of motor vehicles and do not take into account operating conditions for transit, pedestrians or bicyclists.

ii. Study Intersections

The LOS at nine study intersections was evaluated during the AM and PM peak hours based on peak hour traffic and turning movements conducted on January 28, 2003. The results are shown in Table 4-3. The study shows that LOS tends to be lower and delays longer at the study intersections in the afternoon (PM) peak hours than during the morning (AM) commute hours.

The intersections of Mission Boulevard/Blossom Way and Grant Avenue/Washington Avenue have LOS E or F conditions during the PM peak hour and exceed the County’s LOS policy.

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TABLE 4-3 **STUDY INTERSECTIONS: PEAK HOUR LEVEL OF SERVICE^a**

Intersection	Delay/Vehicle		Delay/Vehicle	
	AM	(seconds)	PM	(seconds)
East 14 th Street/ Ashland Avenue	B	18.9	C	23.3
East 14 th Street / 164 th Avenue	B	15.5	C	22.0
East 14 th Street / Lewelling Boulevard	B	17.8	C	23.1
Mission Boulevard/ Lewelling Boulevard	B	11.4	C	23.8
Mission Boulevard/ Hampton Road/ Mattox Road	C	23.0	D	35.8
Mission Boulevard/ Blossom Way	D ^b	Overall: 1.5 (Approach with highest delay was 32.4 seconds)	F	Overall: 4.7 (Approach with highest delay was 118 seconds)
Mission Boulevard/ Grove Way	D	36.2	D	40.5
Grant Avenue/ Washington Avenue	D	44.8	E	58.7
Grant Avenue/ Bockman Road	B	10.9	B	11.3

^a Turning movement diagrams for each intersection are provided in the *Eden Area General Plan Existing Conditions Report*, Appendix C.

^b LOS is determined based on the intersection approach experiencing the highest delay. Although most vehicles traveling through this intersection experience little or no delay, the side street approach from Blossom Way experiences a level of delay that constitutes LOS D during the AM peak hour and LOS F during the PM peak hour.

Source: Traffic counts conducted by Fehr & Peers January 29, 2003.

B. Roadway Classifications

Traffic engineers and planners usually define the roadway system as a functional hierarchy of street classifications. The intent is to develop standards for each route based on its function within the roadway network. As noted in the background section, most functional street classification systems consist of four basic types: freeways, arterials, collectors and local streets.

The functional classification system recognizes that individual roadways do not act independently of one another but form a network that works together to serve travel needs on a local, area-wide and regional level. Standards for the design or operation of each street within a roadway network are typically derived from its functional classification. These standards affect design requirements for lane width, intersection and signal spacing, travel speed, volume and local access (such as whether or not driveway access or on-street parking is allowed).

In the past, functional classification systems have focused primarily on the movement of vehicles. However, there is a growing recognition that additional factors need to be taken into account. For instance, it is now accepted that provisions should be included for pedestrian, bicycle and transit amenities within each classification. There are two exceptions to this new practice: freeways and local streets. Freeways should not have provisions for bicycles because they serve only motor vehicle traffic. Local streets do not need provisions for transit because they are too small. Additionally, within each classification, the appropriate design of a particular street should be determined by the context of the street (i.e., the surrounding land uses). Therefore, the appropriate design of an arterial street within a residential area would be different than the design for an arterial street within a commercial area.

In order to better accommodate all types of traffic and design streets appropriate to their context, the roadway classifications within the Eden Area shall be as defined below:

- ◆ **Freeways** are intended solely to carry motor vehicle traffic and have controlled access, no parking and grade-separated interchanges. Where free-



Hesperian Boulevard

way ramps intersect with County roads, appropriate provisions should be made for pedestrians, bicyclists and transit.

- ◆ **Arterial** streets are either relatively high speed/high capacity roads that provide access to regional transportation facilities and serve relatively long trips, or medium speed/medium capacity roads for intra-community travel, as well as access to the rest of the county-wide arterial system. Arterials serve motor vehicle, transit, bicycle and pedestrian travel, and should include two to six lanes for motor vehicle traffic as well as bicycle lanes, transit shelters, and wide sidewalks with street trees whenever feasible. Controlled pedestrian crossings should be provided at appropriate intervals. Primary access to arterials should be via collector roads and local streets. Curb-cuts should be limited, particularly where pedestrian safety could be affected. On-street parking is discouraged except where the provision of on-street parking may complement adjoining land uses and provide a buffer for pedestrians traveling on adjacent sidewalks.

Four arterial roads in the Eden Area (East 14th Street/Mission Boulevard, Hesperian Boulevard, 'A' Street, and Lewelling Boulevard) are identified as Corridors in the Land Use Element. Corridors are envisioned to be pedestrian-oriented environments that contain a mix of retail, office and other commercial uses. The design of Corridors should balance the needs of automobiles, trucks, transit, bicycles and pedestrians and respect the intensity of adjacent development.

- ◆ **Collector** streets are relatively low-speed/low volume streets. These streets are typically two lanes wide and provide circulation within and between neighborhoods. Collector streets serve relatively short trips and are meant to collect trips from local streets and distribute them to the arterial network. On-street parking and direct driveway access is generally allowed, although curb-cuts that affect pedestrian circulation should be limited. Collector streets serve motor vehicle, transit, bicycle and pedestrian travel and should include sidewalks and bicycle lanes whenever feasible.
- ◆ **Local** streets are low speed/low volume roadways that provide direct access to abutting land uses. The width of local streets should be between 20

to 36 feet for residential and commercial local streets, and up to 40 feet for industrial local streets. Driveways to individual units and on-street parking are allowed. Local streets serve motor vehicle, bicycle and pedestrian travel. Sidewalks should be provided on all local streets.

C. Goals, Policies and Actions

Goal CIR-1 Provide attractive streets designed to serve a broad spectrum of land use patterns and travel modes.

Policies

- P1. The County should develop functional classification and street design standards that allow for variations in street width based on the function of the facility and the land use context. These “context-sensitive” roadway designs should have the following aims:
- ◆ Use design features to make the corridor a center of community activity.
 - ◆ Create an aesthetically attractive streetscape and safe pedestrian environment.
 - ◆ Increase bicycle safety by following accepted standards or by designing a bicycle circulation system.
 - ◆ Balance the needs of autos, pedestrians, trucks, transit and bicyclists. The extent to which each mode is emphasized should vary according to the function of the roadway and the adjacent existing and future land uses.
 - ◆ Decrease the impacts of roadways on surrounding uses by slowing speeds, reducing noise impacts and emphasizing pedestrian travel.

- P2. Whenever possible, roadway modifications should include accommodations for bicycle and pedestrian travel.
- P3. Land use concepts shall be promoted that minimize automobile trips and encourage walking, bicycling and transit use.
- P4. The County should improve transportation infrastructure, such as roadway widening, intersection improvements and bicycle and pedestrian facilities at a rate that keeps pace with growth.
- P5. New developments shall mitigate the full impacts of their projects on the transportation system. A variety of mitigation measures should be considered, including impact fees, street improvements and transportation demand management (TDM) measures.
- P6. New developments shall incorporate design features that encourage use of alternative modes such as transit, bicycling and walking.
- P7. New traffic control device technologies should be considered in order to maximize efficiency of auto, transit, bicycle and pedestrian traffic.

Actions

- A1. Update the functional street classifications and street design standards for the Eden Area.
- A2. Adopt development review standards that require provisions of amenities for multiple travel modes and ensure consistency with adopted bicycle, pedestrian and transit plans.

- A3. Work with Bay Area RIDES to coordinate and promote rideshare efforts, such as for County employees and other large employers in the Eden Area.
- A4. Evaluate public and private development projects for consistency with adopted transit, bicycle and pedestrian master plans.
- A5. Review and revise capital improvement programs to prioritize multi-modal projects over roadway improvements.
- A6. Review and revise the County's impact fees to ensure that new development pays a fair share of infrastructure and street improvement costs.
- A7. Develop a local TDM program to identify realistic target reductions in automobile travel and desirable mode splits. Work with employers in the Eden Area to ensure that these targets are met.

Goal CIR-2 Adopt and enforce level of service (LOS) standards that provide a high level of mobility and accessibility for all travel modes.

Policies

- P1. An LOS of E or better shall be applied to Congestion Management Program (CMP) Roadways: Foothill Boulevard, Center Street, "A" Street, Hesperian Boulevard, Interstate 880, Interstate 580 and Interstate 238.
- P2. An LOS of D or better shall be applied to all non-CMP roadways during peak travel periods.

- P3. The County may allow individual locations to fall below the LOS standards in instances where the construction of physical improvements would be infeasible, prohibitively expensive, significantly affect adjacent properties or the environment, have a significant adverse impact on the character of the Eden Area, or where the lower standard results from significant physical improvements to transit, bicycle or pedestrian facilities.
- P4. Intersections may be permitted to fall below their adopted LOS standards on a temporary basis when the improvements necessary to preserve the LOS standard are in the process of construction or have been designed and funded but not yet constructed.

Actions

- A1. Develop multi-modal LOS standards that consider the movement of transit vehicles and non-motorized travel. The revised standards should also accommodate higher levels of congestion for some streets such as in areas where pedestrian or transit travel may be prioritized (e.g., Districts identified and described in the Land Use Element).
- A2. Maintain an up-to-date record of intersections exempted from the County's LOS standards.

Goal CIR-3 Provide for efficient motor vehicle circulation within the Eden Area.

Policies

- P1. The County should support regional efforts to improve the freeway and arterial system as well as transit facilities, routes, and frequency within and near the Eden Area.
- P2. Where traffic congestion is an existing or imminent problem, priority should be given to those measures that will provide for more efficient use of existing streets and highways, including the use, where appropriate, of high-occupancy vehicle lanes, traffic signal synchronization, and restrictions on turning during peak travel periods.
- P3. The County should maintain street connectivity in the Eden Area in order to disperse traffic on multiple streets and ensure adequate response time for emergency services.
- P4. The County shall ensure that projects implemented as part of the Neighborhood Traffic Calming Program maintain street connectivity and provide appropriate emergency vehicle access.

Actions

- A1. Revise the *Alameda County Public Works Design Guidelines* to better accommodate pedestrian, bicycle and transit traffic; require street designs that are appropriate to the context of surrounding land uses; and ensure consistency with the Roadway Classification specifications in this General Plan.
- A2. Update the Capital Improvement Program to include one of the following two improvement options at the following intersections:
 - ◆ Option A: Realign the Grant/Washington/Via Alami-tos intersection to allow east/west movements (on

Grant Avenue) without split-phase operations. (Currently, eastbound and westbound movements have separate signal phases.) The intersection would operate acceptably at LOS D with this improvement. Improving the intersection alignment would also be desirable to enhance pedestrian circulation. The public prefers Option A.

- ◆ Option B: Add a second southbound (heading towards Via Alamilos) right-turn lane on Washington Avenue, approaching the Grant/Washington/Via Alamilos intersection. The intersection would operate at LOS E with this mitigation, which would be an acceptable LOS for intersections located near schools based upon LOS criteria that would be adopted as part of the proposed General Plan. However, provision of a second southbound right-turn lane could result in undesirable crossing conditions for pedestrians.

- A3. Update the Capital Improvement Program to plan for signalization of the Mission/Blossom intersection. Following signalization, this intersection would operate acceptably at LOS D during the PM peak hour.

Goal CIR-4 Provide access and circulation along Corridors and in Districts while respecting the intensity of adjacent development.

Policies

- P1. Corridors identified in the Land Use Element (East. 14th/Mission Boulevard, Hesperian Boulevard, West ‘A’ Street, Lewelling Boulevard, and Meekland Avenue) shall emphasize pedestrian and transit access to adjacent land uses.

- P2. At intersections located in and immediately adjacent to Districts, pedestrian and transit circulation should take precedence over the movement of motor vehicles. The Districts identified and described in the Land Use Element are:
- ◆ San Lorenzo Village Center.
 - ◆ East 14th Street at Ashland Avenue.
 - ◆ Mission Boulevard at Mattox Road.
 - ◆ The Four Corners area (the intersection of Hesperian Boulevard and Lewelling Boulevard).
 - ◆ The commercial uses on Bockman Road east of Channel Road.
 - ◆ The intersection of Hesperian Boulevard and West 'A' Street.
- P3. On-street parking should be allowed, where appropriate, along Corridors and in Districts to provide access to adjacent land uses and to serve as a buffer for pedestrians.
- P4. The County may create shared parking districts in order to centralize and reduce the total amount of land allocated to parking in Districts and Corridors.
- P5. Shared parking arrangements should be encouraged in Districts and along Corridors.
- P6. Wide sidewalks shall be provided in Districts and along Corridors. Where it is not possible to provide wide sidewalks continuously along a Corridor, sidewalks shall be widened at their most congested locations such as in Districts located along corridors and at bus stops.
- P7. Public spaces should be designed along sidewalks on Corridors and in Districts. Sidewalks provide opportunities for

people to interact on the street, and space for this interaction should be provided to the greatest extent feasible.

Actions

- A1. Review and update parking requirements in the zoning code to include a reduction in the required number of spaces, to allow compact parking spaces, and to include provisions for shared parking in Corridors and Districts where such parking would not impact neighborhoods.
- A2. Implement and pursue funding for the *East 14th/Mission Boulevard Master Plan*, the *Lewelling Boulevard Improvement Project*, the *Hesperian Corridor Streetscape Master Plan*, and the *San Lorenzo Village Master Plan*.
- A3. Reduce posted travel speeds in Districts to a maximum of 30 miles per hour.

Goal CIR-5 Ensure that public transit is a viable alternative to driving in the Eden Area.

Policies

- P1. Encourage AC Transit and BART to provide transit service throughout the Eden Area, preferably within one-quarter mile of all residences, businesses, health care, parks and service facilities.
- P2. The County should work with AC Transit and BART to ensure that the frequency and duration (hours of operation) of transit service is adequate and that overall travel time and convenience of travel by public transit is comparable to travel by other modes.

- P3. The County shall support efforts to enhance regional transit service serving the Eden Area, such as the extension of BART to San Jose and enhanced bus service on East 14th Street/Mission Boulevard and Hesperian Boulevard.
- P4. The County shall promote Transit-Oriented Development (TOD) opportunities and pursue available grant funding from local, state and federal sources to fund potential projects.

Actions

- A1. Work with AC Transit to secure funding for enhanced bus service in the Eden Area, including increased frequency and duration of service on existing bus lines.
- A2. Work with Amtrak to expand Capitol Corridor service and study additional station locations, including potential station locations in the Eden Area.
- A3. Work with BART and the City of San Leandro to develop a station area plan to evaluate the potential for transit-oriented development in the parking lot adjacent to the Bayfair BART Station.

Goal CIR-6 Complete and enhance the pedestrian circulation network serving the Eden Area.

Policies

- P1. Walking shall be considered an essential and integral part of the County's circulation network.

- P2. An uninterrupted pedestrian network of sidewalks, with continuous sidewalks along both sides of streets, should be ensured. An interconnected pedestrian network is essential to a functional and safe walking environment.
- P3. The provision of curbs, gutters and sidewalks on uncompleted street segments in the Eden Area shall be required whenever possible. The County should prioritize sidewalk locations in the following order: near schools and parks; on residential streets without sidewalks; in locations with a high level of pedestrian collisions; in areas that can close small, existing gaps in the sidewalk network; near special needs housing; in locations with high pedestrian volumes; on primary transportation corridors; near shopping and retail areas; and within a quarter-mile of BART and other transit facilities.
- P4. Ample crossing opportunities shall be provided, especially in Districts and along Corridors. In addition to marked crosswalks at all intersections, mid-block crossings and adequately timed signals should be provided at intersections which are too widely spaced for reasonable pedestrian access.
- P5. On street frontages that do not currently include sidewalks, the installation of sidewalks shall be a requirement for all new development.
- P6. New development projects shall be required to provide sidewalks and direct pedestrian connections to adjacent neighborhood streets.
- P7. Street trees, planting strips, bollards and other physical improvements that buffer pedestrians from traffic should be

provided on all streets with existing or potential future high volumes of vehicular and pedestrian activity.

- P8. Direct and safe pedestrian access routes shall be designed between development and transit facilities, including the Bayfair BART station, the Amtrak Capitol Corridor station in Hayward and major bus transit routes. This encourages the use of public transportation.
- P9. The County's pedestrian system shall have a high level of connectivity, especially between residences and common local destinations, such as schools, shopping and parks.
- P10. The County shall investigate measures to enhance access and circulation as required by the Americans with Disabilities Act.
- P11. The County shall promote Transit-Oriented Development (TOD) opportunities and pursue available grant funding from local, State and federal sources to fund potential projects.

Actions

- A1. Regularly update the inventory of sidewalk deficiencies in the Eden Area.
- A2. Complete and adopt the *Pedestrian Master Plan* for the Eden Area.
- A3. Update the County's street standards to reflect the pedestrian policies listed above and to be consistent with the *Alameda County Pedestrian Master Plan for Unincorporated Areas*.

- A4. Investigate available grant funding for sidewalk improvement projects.

Goal CIR-7 Promote bicycling as a form of transportation within the Eden Area.

Policies

- P1. Bicycling shall be considered an essential and integral part of the County’s circulation network.
- P2. The County shall develop and maintain a bikeway system for the Eden Area that effectively serves residential areas, employment centers, schools, parks and transit stations.
- P3. Safe and direct bicycle facilities should be constructed to provide access from residential neighborhoods to the Bayfair and Hayward BART stations and the Amtrak Capitol Corridor station south of the Eden Area.
- P4. The County shall support efforts to develop a regional bikeway network.
- P5. When arterial or collector streets are resurfaced, bicycle lanes shall be installed whenever feasible.
- P6. New commercial, office and Research & Development projects and multi-family residential development projects shall provide safe and secure covered bicycle parking or storage facilities.
- P7. The County shall pursue development of safe and efficient Class I bicycle paths within the Union Pacific Railroad Oakland Subdivision right-of-way along Western Boulevard.

Actions

- A1. Update the *Bicycle Master Plan for the Western Unincorporated Areas* upon adoption of the Eden Area General Plan.
- A2. Adopt a bicycle parking ordinance as part of the Zoning Ordinance.
- A3. Support efforts to convert the Union Pacific Railroad Oakland Subdivision right-of-way into a bicycle/pedestrian path. Work with the Cities of Hayward and San Leandro to implement these efforts.

<p>Goal CIR-8 Provide for adequate truck circulation to allow for the efficient transport of goods within the Eden Area while protecting neighborhoods from truck-related impacts.</p>

Policies

- P1. The County shall enforce the truck restrictions described in the Truck Restriction Ordinance.
- P2. Significant new truck traffic-generating land uses should be limited to locations along designated truck routes, in industrial areas or within a quarter mile of freeways.
- P3. The County shall work to reduce truck traffic on Grant Avenue by working with property owners of industrial land to limit truck traffic during morning and afternoon peak commute hours.
- P4. The County shall pursue alternative routes to the Grant Avenue Industrial Area including the West 'A' Street exten-

sion through Hayward, along the alignment of the proposed State Route 61 and along Railroad Avenue to the City of San Leandro.

Actions

- A1. Review and update the truck route designations contained in the County's Truck Restriction Ordinance.
- A2. Review existing enforcement mechanisms to restrict the use of non-designated facilities by trucks, and develop strategies to increase enforcement if needed.
- A3. Maintain a map of truck routes in the Eden Area.
- A4. Work with the City of San Leandro to develop a plan to reduce truck traffic from uses located on City jurisdictional land and adjacent to the Grant Avenue Industrial Area.
- A5. Provide better signage of truck routes and encourage enforcement of restrictions on truck traffic on residential streets.

Goal CIR-9 Minimize the negative effects of traffic on adjacent land uses and improve traffic safety.

Policies

- P1. Use of local residential streets by non-local and commercial traffic should be discouraged.
- P2. Appropriate buffering and screening mechanisms should be incorporated in development projects to limit the impacts associated with motor vehicle traffic and parking.

- P3. The use of soundwalls on arterial, collectors and residential streets shall only be allowed if no other design alternatives exist.
- P4. The County shall implement traffic calming measures in order to reduce travel speeds and create a safer pedestrian environment. Priority measures should include street trees, pedestrian-scaled lighting, speed bumps, traffic circles and bulb-outs at intersections.
- P5. Road widening projects shall be limited to ensure that roadways do not become barriers between neighborhoods.
- P6. Safety around at-grade railroad crossings along Western Boulevard and Grant Avenue should be improved through a variety of physical design techniques such as increasing signage, restricting pedestrian access, and creating more gradual transitions in-grade between parallel roadways and the railroad tracks.

Actions

- A1. Implement the Neighborhood Traffic Calming Program.
- A2. Review and update development review standards to incorporate adequate buffering requirements in residential areas.
- A3. Work with Caltrans to clean up areas adjacent to highways and along East 14th Street/Mission Boulevard and to minimize impacts from roadway projects on nearby Neighborhoods, Districts and Corridors.

COUNTY OF ALAMEDA
EDEN AREA GENERAL PLAN
CIRCULATION ELEMENT

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