

Traffic and Circulation Background

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Traffic Lights
along Pinole Valley Road

INTRODUCTION

This section of the Background Report describes the existing transportation conditions in the City of Pinole. It describes the various modes of the existing transportation system, the existing traffic volumes on area roadways, and current levels of service. Relevant planning documents and policies, and planned roadway improvements for the area are also described.

A Circulation Element has been required as part of local general plans since 1955. Guidelines adopted by the State Office of Planning and Research emphasize the need to develop a "...balanced, multimodal transportation system." Cost efficiency and protection of environmental quality, including air quality, require attention to non-auto transportation facilities and careful coordination with the Land Use Element. Section 65302(b) of the Government Code summarizes State law requirements:

"A circulation element consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other local public utilities and facilities all correlated with the land use element of the plan."

Traffic congestion and other circulation constraints are major considerations in determining appropriate land uses and responding to future conditions that will affect the quality of life in Pinole. The Circulation Element provides data concerning existing and future conditions as a factual basis for community goals, policies and implementing programs for existing and proposed roadway improvements and other transportation needs.

Pinole's Circulation Element addresses such issues as regional traffic congestion, traffic impacts on neighborhoods, public transit, trails, and parking.

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REGULATORY SETTING

Existing transportation policies, plans, laws, and regulations that would apply to the General Plan Circulation Element are summarized below. This information provides a context for the impact discussion related to the plan's consistency with applicable regulatory conditions.

STATE

California Department of Transportation (Caltrans) is responsible for planning, design, construction, and maintenance of all state highways. Interstate 80 (I-80) is the only state highway that passes through Pinole. Caltrans' jurisdictional interest extends to improvements to those local roadways at the interchange ramps serving area freeways. Any federally funded transportation improvements are subject to review by Caltrans staff and the California Transportation Commission.

The Guide for the Preparation of Traffic Impact Studies (Caltrans, 2001) provides consistent guidance for Caltrans staff who review local development and land use change proposals as well as inform local agencies of the information needed for Caltrans to analyze the traffic impacts to State highway facilities including freeway segments, on- or off-ramps, and signalized intersections.

REGIONAL

Metropolitan Transportation Commission (MTC) is the regional organization responsible for prioritizing transportation projects in a Regional Transportation Improvement Program (RTIP) for federal and State funding. The process is based on evaluating each project for need, feasibility, and adherence to federal transportation policies and the local Congestion Management Program (CMP). The CMP requires each jurisdiction to identify existing and future transportation facilities that would operate below an acceptable service level and provide mitigation where future growth would degrade that service level.

Standards for roadway operations in Pinole are defined on a county-wide basis. In 1988, Contra Costa County voters passed Measure C, which raised the sales tax to provide funding for regional transporta-

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tion improvements. Measure C requires local jurisdictions to adopt and implement a growth control program in order to receive their share of funds for transportation projects including maintenance. Measure C also included the Growth Management Program, which established a cooperative, multi-jurisdictional planning process requiring participation of all cities and towns and the County in managing the impacts of growth in Contra Costa County.

Measure J, which was approved by the voters in 2004, authorized the extension of Measure C and establishes Transportation Sales Tax Expenditure Plan that extends the transportation sales tax initially authorized by the passage of Contra Costa Measure C. It provides for \$2 billion in funding for programs and projects. These expenditures are “for the construction and improvement of state highways, the construction, maintenance, improvement, and operation of local streets, roads, and highways, and the construction, improvement, and operation of public transit systems”, including paratransit services (California Public Utilities Code §180205), and for specific efforts supporting such investments. Measure J’s Growth Management Program simplifies Measure C’s requirements; it also requires a binding Urban Limit Line for the county and all of the cities within the county.

The Contra Costa Transportation Authority (CCTA) was established to implement Measure C and its overall goals. CCTA also serves as the Congestion Management Agency responsible for the CMP. Local jurisdictions work through their respective Regional Transportation Planning Committees (RTPCs). As part of western Contra Costa County, the City of Pinole works with other west county jurisdictions through the West Contra Costa Transportation Advisory Committee (WCCTAC) to develop the West Contra Costa Action Plans for Routes of Regional Significance. The Action Plan identifies traffic service objectives (TSOs) for Routes of Regional Significance, which in Pinole include the freeway (I-80) and arterial streets (San Pablo Avenue and Appian Way). On these arterials, the TSO sets a target level of service. In early 2007, CCTA initiated the updates to the Action Plans.

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71% of Pinole residents drive to work alone and 17.5% carpool.

LOCAL

The Measure C Growth Management Program sets standards for the regional and non-regional routes in Contra Costa County, which the City has incorporated into the Circulation Element of the 1995 General Plan. These standards are tied to land use and provide for a tiered system of transportation systems in Pinole, with different standards used for different types of streets.

OVERVIEW OF EXISTING TRANSPORTATION SYSTEM

Pinole's transportation system, made up of roadways, transit services, bicycle and pedestrian facilities, and other transportation related facilities such as parking and freight service, is set up to serve the transportation needs of residents and visitors. This section provides an overview of the transportation system. Each component of the system is detailed in the following subsections of this chapter.

In Pinole, about 71 percent of the residents commute to work by driving alone and 17.5 percent carpool. Around 6.4 percent of the residents use transit services including the bus (2 percent), subway (4 percent), rail (0.09 percent) and ferry (0.05 percent). For non-motorized modes, approximately 0.22 percent of the residents travel by bicycle and just over 1 percent commute on foot.¹

At the core of the City's transportation system is the street system. In general, the street system design and classifications were developed consistent with the General Plan policies that major arterials should not pass through residential neighborhoods, but should provide the boundaries, and interior street patterns should be designed through use of cul-de-sacs, loop streets, and neighborhood collectors to discourage through traffic. Given the topography of Pinole, the City's street system does not represent a traditional grid pattern.

¹ Census Transportation Planning Package (CTPP) 2000, Part 3 < http://www.mtc.ca.gov/maps_and_data/datamart/census/ctpp2000/ >

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Direct transit service is provided by two bus transit agencies, the Western Contra Costa Transit Authority (WestCAT) and the Alameda Contra Costa Transit Authority (AC Transit), offering nine fixed-route services and linking the City with the greater Bay Area region. The bus transit agencies also provide connection services to other transit services including subway provided by the San Francisco Bay Area Rapid Transit District (BART) via El Cerrito del Norte station in El Cerrito and passenger rail provided by Amtrak via Richmond station in downtown Richmond.

ROADWAY CLASSIFICATIONS

Streets and highways in the City are described by their functional classification. These classifications identify the purpose of the streets and highways relative to their overall function in the distribution of different types of trips using the facilities. The classifications that are relevant to the City of Pinole are as follows:

- **Freeways.** Freeways serve both inter-regional and intra-regional circulation needs. These facilities are typically accessed by collector or arterial roadways and have no at-grade crossings. Bicyclists and pedestrians are prohibited from accessing these facilities, unless stated otherwise. These facilities have the highest carrying capacity with the maximum speed limits allowed by law and are owned and operated by Caltrans.
- **Expressways.** Expressways are partially-controlled roadways that provide limited-access connections between freeways or arterials and may also distribute traffic between adjacent communities. Speed limits often range from 35 to 50 mph. Bicyclists are allowed on expressways and some expressways contain pedestrian walkway facilities.
- **Arterials.** Arterials provide primary connections between major areas within the City of Pinole and also distribute traffic between adjacent communities. In addition, arterials provide considerable statewide and interstate circulation. Speed limits often range from 30 to 50 mph.

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- **Collectors.** Collectors typically serve intra-city rather than regional circulation needs. Their primary function is to provide access to adjacent properties and connections between local roads and other roadways that are higher in the hierarchy of classification. Travel speeds on collectors often range between 25 mph and 45 mph.
- **Local Streets.** Local roads provide access to adjacent properties, primarily residential uses, and distribute traffic to collectors. Travel speeds on local streets typically range from 25 to 35 mph.

KEY CITY ROADWAYS

Major roadways in the City are described below and are depicted in **Figure 5.1**.

FREEWAYS

Interstate 80 (I-80) is a major freeway providing a transcontinental connection between California and New Jersey. In the vicinity of Pinole, I-80 is an 8-lane divided freeway that bisects the City in an east-west direction and carries between 180,000 and 196,000 vehicles daily. I-80 provides regional access to San Francisco City and County, Alameda County, Contra Costa County, and Solano County. Full access to the City from I-80 is provided at interchanges with Richmond Parkway, Appian Way, and Pinole Valley Road. Access to the freeway is provided by slip ramps at Pinole Valley Road, and slip ramps and a loop ramp (for southbound vehicles entering eastbound on-ramp) at Appian Way. At Richmond Parkway, freeway access is provided by slip and loop ramps in addition to a direct off-ramp for the eastbound High Occupancy Vehicle (HOV) lane and a direct on-ramp for the westbound HOV lane.

EXPRESSWAYS

Richmond Parkway is a 6-lane divided expressway that terminates at an I-80 overpass in Pinole providing limited access through western portions of the City of Richmond and serving as a connector between I-80 in Pinole to I-580 in Richmond. It provides access to I-80, including direct access to and from HOV lanes, as described above.

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ARTERIALS

San Pablo Avenue is a 4-lane, mostly divided arterial running east-west along the northern portion of Pinole and providing connections to the unincorporated community of Tara Hills to the south and City of Hercules to the north. San Pablo Avenue generally runs north-south from the City of Oakland to the unincorporated community of Crockett. On-street parking is generally allowed along the segment in Pinole.

Fitzgerald Drive is a 4-lane, east-west, divided arterial connecting Richmond Parkway and Appian Way on the southern side of I-80. On-street parking is prohibited.

Tara Hills Drive is a circuitous arterial connecting Appian Way to unincorporated communities on both sides of San Pablo Avenue. It is a 4-lane roadway from Appian Way to Flannery Road, where it narrows to 2-lanes to its terminus in the unincorporated community of Bayview-Montalvin. On-street parking is generally allowed on the 4-lane section and prohibited on the 2-lane section.

Appian Way is a 4-lane, north-south arterial beginning at San Pablo Avenue and running through the unincorporated community of El Sobrante. On-street parking is allowed on some segments of the roadway.

Pinole Valley Road is a 4-lane, north-south arterial from Henry Avenue through Pinole that becomes Alhambra Valley Road at the city limits. From San Pablo Avenue to Henry Avenue, Pinole Valley Road is a 2-lane collector. On-street parking is allowed on some segments of the roadway.

Tennent Avenue is a 2-lane, north-south arterial from its southern terminus at Pinole Valley Road to San Pablo Avenue. From San Pablo Avenue to its northern terminus at Pinole Bayfront Park, Tennent Avenue serves as a collector. On-street parking is generally allowed.

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COLLECTORS

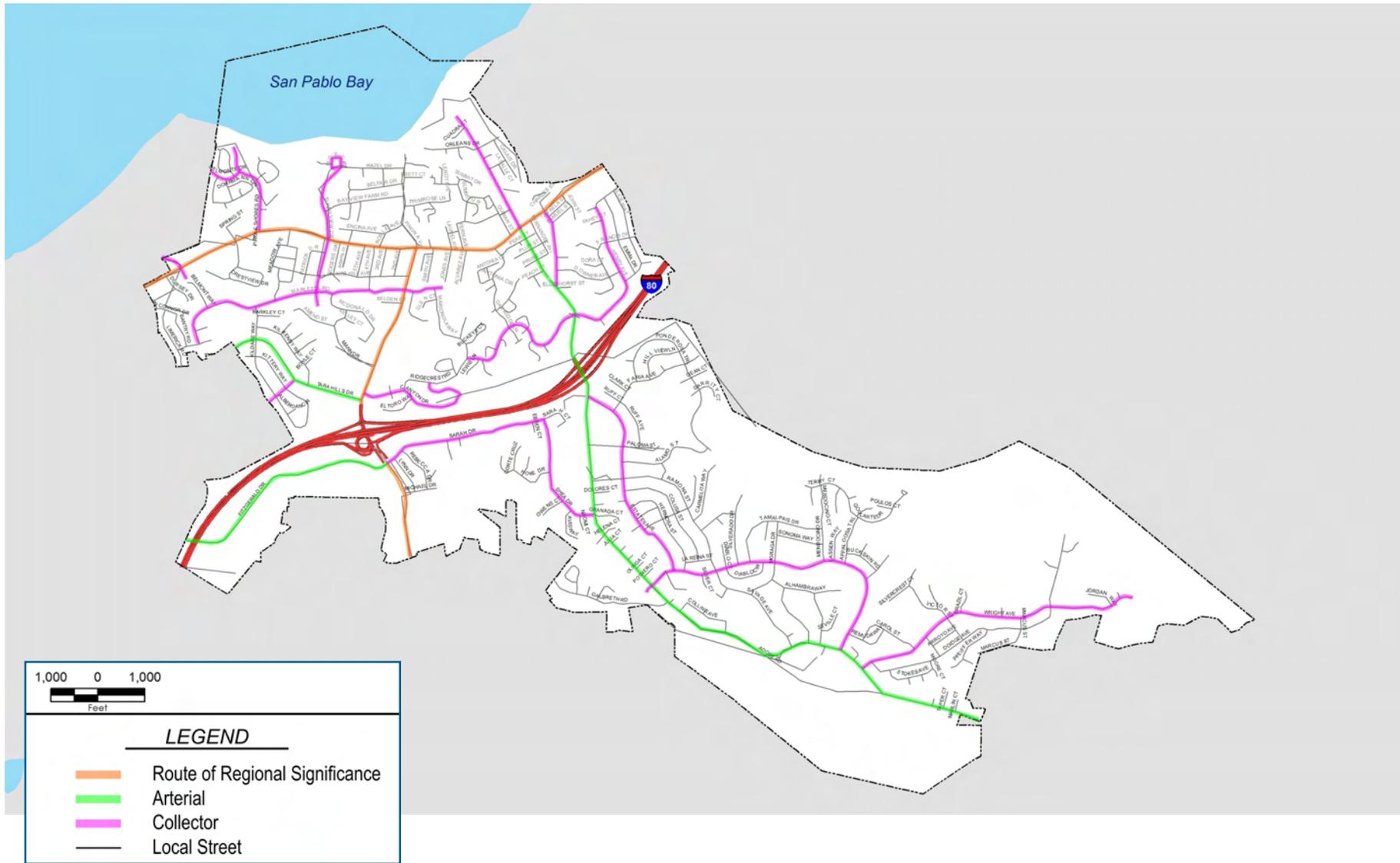
The following roadways are identified in the 1995 General Plan Circulation Element as Collectors:

1. Allview Avenue
2. Canyon Drive
3. Del Monte Drive
4. Estates Avenue
5. Flannery Road
6. Galbreth Road
7. Henry Avenue
8. Manor Road
9. Marlesta Road
10. Pinole Shores Drive
11. Pinole Valley Road (between Tennent and San Pablo Avenue)
12. Rancho Road
13. Sarah Drive
14. Shamrock Drive
15. Shawn Drive
16. Shea Drive
17. Simas Avenue
18. Sunnyview Drive
19. Wright Avenue

LOCAL STREETS

All other roadways in Pinole are classified as Local Streets.

Major Roadways in Pinole and Surrounding Areas



Traffic and Circulation Background

EXISTING TRAFFIC CONDITIONS

LEVEL OF SERVICE CRITERIA

Level of Service (LOS) is a qualitative measure of the condition of traffic operations.

The operating conditions experienced by motorists are described as “levels of service” (LOS). 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. Levels of service “A” through “E” generally represent traffic volumes at less than roadway capacity, while LOS “F” represents over capacity and/or forced flow conditions. The City’s Standard varies by roadway. For detailed information on Level of Service descriptions and City of Thresholds for Level of Service Standards, refer to Appendix A

EXISTING TRAFFIC VOLUMES

As part of the General Plan Update, daily roadway traffic volume counts and intersection movement turning counts were collected to determine existing traffic conditions at critical locations throughout the City. Please refer to Appendix A for detailed information of the traffic counts.

TRAFFIC OPERATIONS – EXISTING

Levels of service were evaluated for 11 key roadway segments and 17 signalized intersections in Pinole and both the roadways and intersections were found to be operating within City Standards. Appendix A gives detailed information on existing traffic operations

TRAFFIC OPERATIONS – FUTURE

The future traffic conditions were forecast using the Contra Costa Transportation Authority (CCTA) Travel Demand Model. The model was used to forecast the daily roadway volumes as well as the AM

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and PM peak hour intersection turning movement data. Based on the forecasts, roadway improvements, increase in future traffic volumes along roadways and intersections were estimated. The increase in daily volumes can be attributed to growth in Pinole as well as the adjacent areas, such as Hercules, San Pablo, and the unincorporated county. Please refer to Appendix A on more information regarding future traffic operations.

TRANSIT SYSTEMS

Transit systems provide a motorized alternative to private vehicles. They serve citizens who cannot drive or chose not to drive, including senior citizens, residents with limited mobility, people under the age of 16, residents with no driver's licenses or suspended driving licenses, people who cannot afford a vehicle, and citizens opting to live a less car-dependent lifestyle.

Bus Service

Pinole is served by two bus transit agencies, the Western Contra Costa Transit Authority (WestCAT) and the Alameda Contra Costa Transit Authority (AC Transit).

WestCAT operates seven fixed-route services that serve Pinole. **Table 5.1** below summarizes the fixed route services and **Figure 5.2** displays their service map in Pinole. Additionally, WestCAT operates an express bus service, the JPX, to El Cerrito BART and an express bus service, the Lynx, to San Francisco from the Hercules Transit Center. WestCAT also operates a dial-a-ride paratransit service for seniors and the disabled. All fixed route busses are equipped with front-loading racks that can hold up to two bicycles. WestCAT's portable route map contains information on bus stop locations, routes, and fixed route bus schedules.

AC Transit operates 2 fixed-route services in southern Pinole, Route 70 (Appian) and Route 376 (North Richmond Night), which are pictured in

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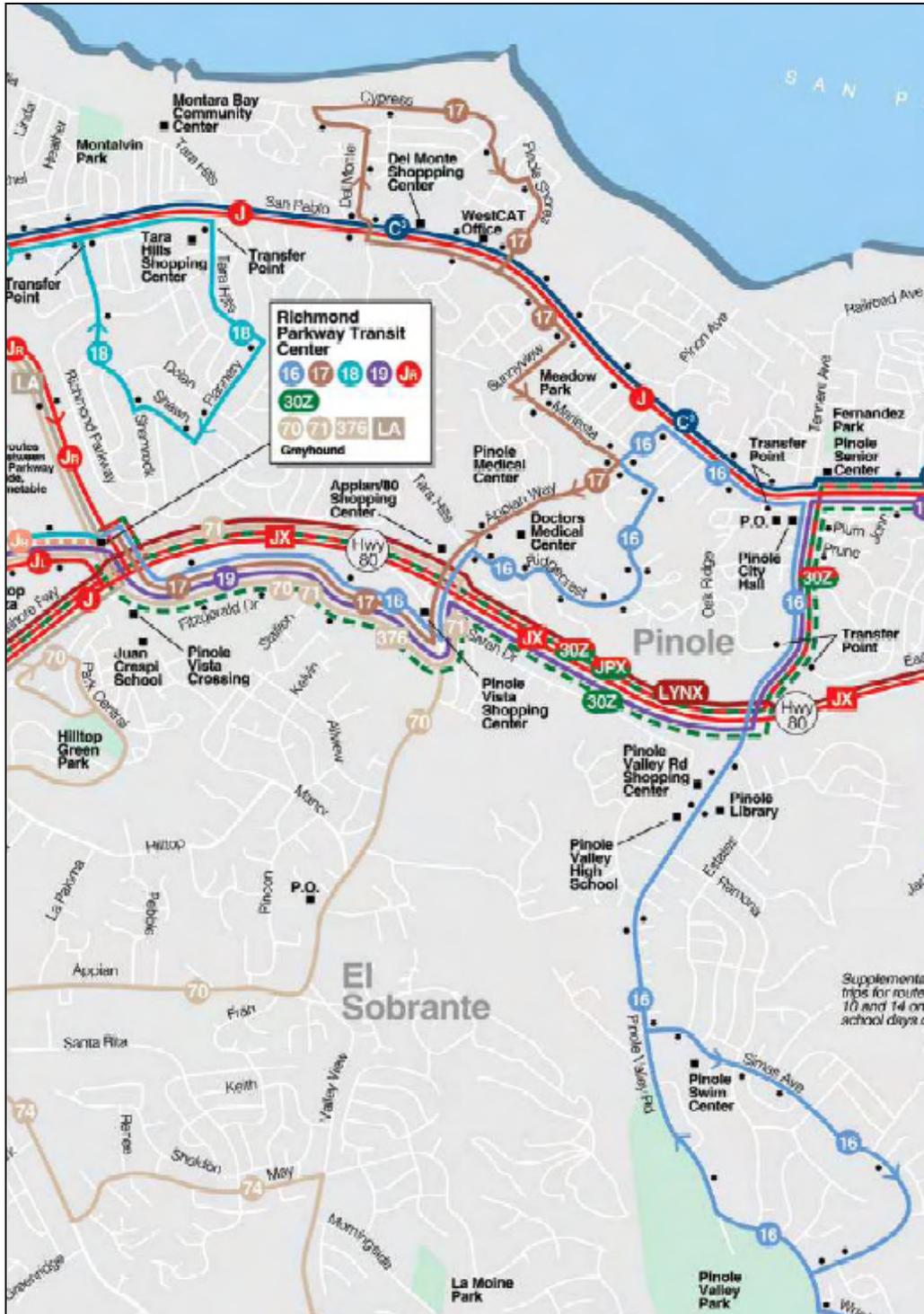
Figure 5.2. AC Transit also operates dial-a-ride paratransit services for seniors and the disabled in southern Pinole. Buses are equipped with front-loading racks that can hold up to two bicycles.

TABLE 5.1 WESTCAT BUS SERVICE IN PINOLE
FIGURE 5.2 WESTCAT AND AC TRANSIT
BUS SERVICE IN PINOLE

Route	Cities Served	Major Timepoints	Days	Times	
16 Pinole Valley	Richmond Pinole	Richmond Parkway Fitzgerald Drive Pinole Valley Road San Pablo Avenue	Weekday	First	5:00 AM
				Last	8:30 PM
				Frequency	30 min
			Weekend	No service	
17 Bay View	Richmond Pinole	Richmond Parkway Fitzgerald Drive Appian Way	Weekday	First	6:30 AM
				Last	6:30 PM
				Frequency	60 min
			Weekend	No service	
18 Tara Hills	Pinole Tara Hills Richmond	Richmond Parkway Hilltop Mall Tara Hills San Pablo Avenue	Weekday	First	6:00 AM
				Last	7:30 PM
				Frequency	60 min
			Weekend	No service	
19 Hilltop/ Hercules	Richmond Pinole Hercules	Richmond Parkway Hilltop Mall Fitzgerald Drive Pinole Valley Road Hercules Transit Center	Weekday	First	6:30 AM
				Last	7:00 PM
				Frequency	30 min
			Saturday	First	8:45 AM
				Last	7:00 PM
				Frequency	45 min
30Z Martinez	El Cerrito Richmond Pinole Hercules Martinez	El Cerrito del Norte BART Richmond Parkway Fitzgerald Drive Hercules Transit Center Martinez Amtrak	Weekday	First	6:15 AM
				Last	6:30 PM
				Frequency	30-60 min
			Weekend	No service	
C ³ Contra Costa College	San Pablo Pinole Hercules	Contra Costa College San Pablo Avenue Hercules Transit Center <i>(Fall and Spring Semesters only)</i>	Weekday	First	7:30 AM
				Last	10:15 PM
				Frequency	60 min
Weekend	No service				
J BART	El Cerrito Richmond Pinole Hercules	El Cerrito del Norte BART Richmond Parkway Hilltop Mall San Pablo Avenue Hercules Transit Center	Weekday	First	4:45 AM
				Last	11:30 PM
				Frequency	15-30 min
			Saturday	First	6:00 AM
				Last	10:45 PM
				Frequency	40 min
			Sunday	First	7:45 AM
				Last	7:15 PM
				Frequency	40 min

Source: WestCAT 2007

WestCAT and AC Transit Bus Service in Pinole



Source: WestCAT website, www.westcat.org

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PASSENGER RAIL SERVICE

The San Francisco Bay Area Rapid Transit District (BART) provides heavy-rail, regional transit service to Alameda, San Francisco, Contra Costa, and San Mateo counties. There is currently no BART service in Pinole. However, WestCAT operates the J bus route, which connects to the BART station at El Cerrito del Norte. BART's direct service from this station includes the Richmond/Fremont line, with trains every 15 minutes during the weekday until 7:00 PM and every 20 minutes during evening weekday times and the weekend. This train line runs until midnight everyday, with weekday, Saturday, and Sunday service beginning at 4:15 AM, 6:00 AM, and 8:00 AM, respectively. The Richmond/San Francisco line also runs with trains every 15 minutes during the weekday until 7:00 PM and every 20 minutes on Saturday until 6:00 PM. Connections to the Fremont/San Francisco line, Pittsburgh/Daly City line, and the Dublin-Pleasanton/Millbrae line can be made at various points throughout the system.

Amtrak operates passenger rail service for three routes that traverse western Contra Costa County. While there is no station in Pinole, the closest station is an unmanned Amtrak station at the Richmond BART station and there are plans to build a ferry and Amtrak station in neighboring Hercules. Two of Amtrak's routes that stop in Richmond are intrastate services, the Capitol Corridor serving Sacramento/ San Jose, and the San Joaquin serving Oakland/ Bakersfield. The other route is the Zephyr, an interstate service serving Emeryville/ Chicago.

FERRY SERVICE

There is currently no ferry service offered in western Contra Costa County. Ferry service to San Francisco is provided by Baylink from Vallejo and by East Bay Ferry from Oakland. Weekday service is provided from about 6:00 AM into the evening hours at 30- to 100-minute intervals and weekend service is provided from 10:00 AM to 6:30 PM at 60- to 120-minute intervals. There are plans to build a ferry station in Richmond and a multi-modal ferry and Amtrak station in neighboring Hercules.

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FOR HIRE PASSENGER SERVICES

Pinole is served by two taxi cab companies that provide passenger services for hire. They are:

- Greyline Cab Company
- Yellow Cab and Shuttle Services

BICYCLING FACILITIES AND PROGRAMS

Pinole is generally quite hilly from San Pablo Avenue to the south. Additionally, many local streets do not provide parallel lower-traffic-volume, lower-speed alternatives for bicyclists to arterials due to roadway configurations and geographical constraints.

The classification system for bikeways is as follows:

- Class I Multi-Use Path provides for pedestrian and bicycle use on a paved right-of-way separate from any street or highway. Under Caltrans standards, it must be at least eight feet wide for a two-way path.
- Class II Bike Lanes provides for a striped and stenciled lane for one-way travel on a street or highway. A Bike Lane has a minimum standard width of four feet.
- Class III Bike Route provides for shared use of a street with motor vehicle traffic, and may be identified only by signing and/or pavement legends. They usually are used and posted to connect other bike lane segments.

The lack of bicycle designations on City streets does not preclude bicycle usage, as they are defined as a vehicle in the California Vehicle Code and subject to the same rules governing motor vehicles.

Bicyclists especially benefit from a continuous bikeway system. Bicyclists using roadways and paved lanes and paths have the following bikeway facilities in Pinole, summarized in **Table 5.2** and shown on **Figure 5.3**.

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**TABLE 5.2:
EXISTING BIKEWAY FACILITIES IN PINOLE**

Bicycle Lane/Path Segment	Type of Facility	Length (Miles)
Pinole Creek Trail from Henry Avenue to Railroad Avenue – Bay Trail	Class I Multi-Use Path	1.15
Bayfront Park – Bay Trail loop near Tennent Avenue and Railroad Avenue	Class I Multi-Use Path	0.35
Class I Multi-Use Path Subtotal		1.5
Appian Way (I-80 Bikeway) from San Pablo Avenue to Dalessi Drive (city limit)	Class III Bike Route	0.95
Fitzgerald Drive from I-80 to Appian Way	Class III Bike Route	0.95
San Pablo Avenue from western to eastern city limits	Class III Bike Route	1.90
Class III Bike Route Subtotal		3.8
Bikeway Facilities Total: 5.30 Miles		

Source: Contra Costa Countywide Bicycle and Pedestrian Plan 2003

The Class I Multi-Use Path along Pinole Creek provides connections to Collins Elementary School, Pinole Valley Lanes Bowling Alley, the Central Business District, Fernandez Park, residential areas, and the Bay Trail.² While a bit narrow to accommodate both bicyclists and pedestrians, it provides a safe recreational and commuter path.

The Class I Multi-Use Path at the Bayfront Park, which is part of the Bay Trail, provides a recreational cycling opportunity but is not yet connected to other segments of the Bay Trail. The undeveloped segment of Bay Trail between Bayfront Park and Pinole Shore Regional Park has been identified for future improvement by the Bay Trail Project.²

San Pablo Avenue is the east-west arterial and Pinole Valley Road is the north-south arterial with the gentlest grades in the City, but only

² The Bay Trail west of the loop is not complete, according to field work. Also see Bay Trail map.

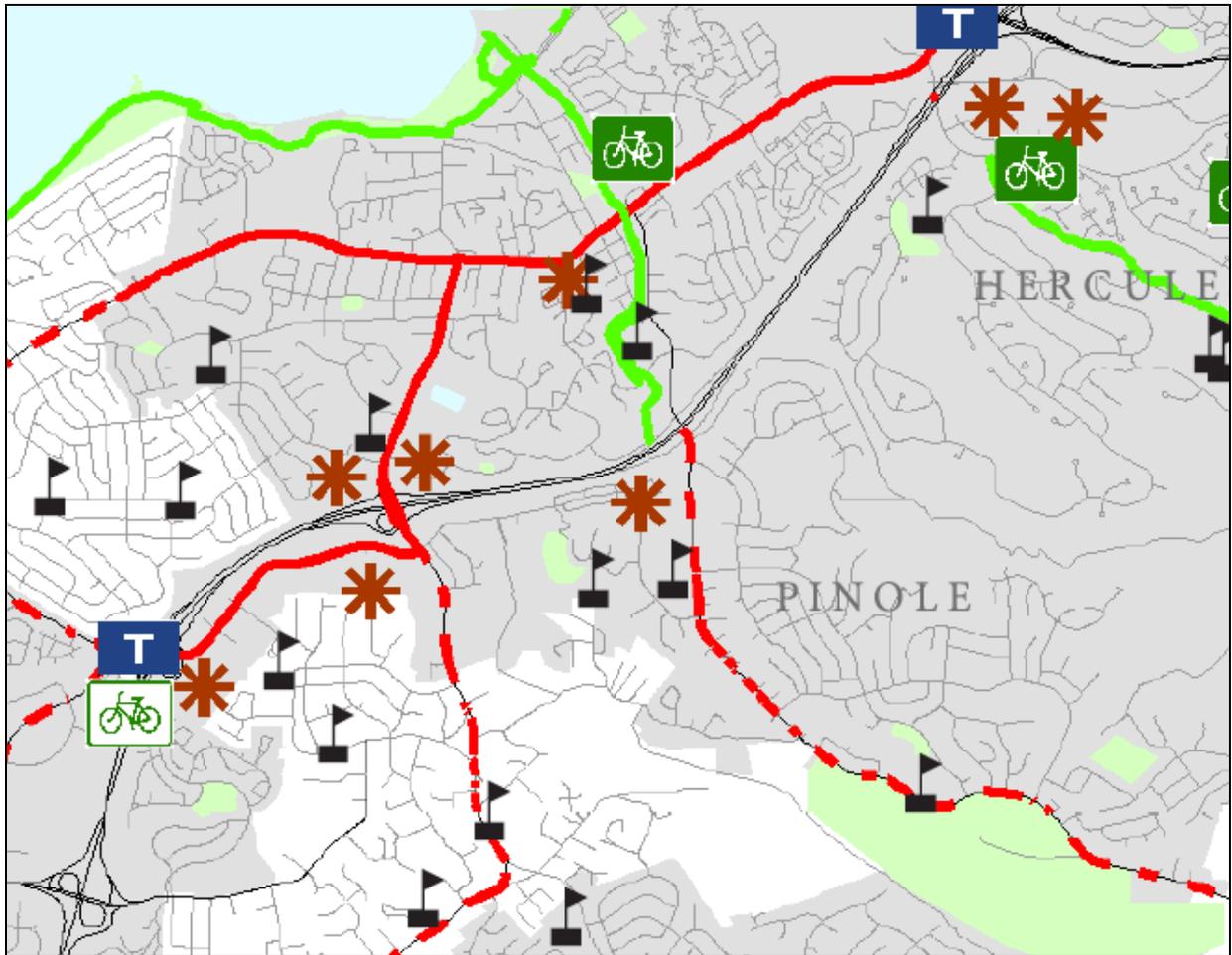
Traffic and Circulation Background

San Pablo Avenue is designated as a Class III bike route. However, high vehicle speeds and volumes on these arterials may discourage inexperienced bicyclists from using the roadways. Fitzgerald Drive is a designated Class III bike route intersecting several access points to a major retail mall. High vehicle speeds and volumes, as well as a large number of turning movements to and from the mall, may discourage inexperienced bicyclists. Appian Way is also a designated Class III bike route, but high vehicle speeds and hilly terrain may serve to discourage bicycling for all but the fittest and most experienced bicyclists along this roadway.

Bicyclists need parking facilities to access various places and services. Bicycle rack parking was found at City Hall and Fernandez Park, but no other bicycle parking facilities were observed. According to the Contra Costa Countywide Bicycle and Pedestrian Plan, Pinole requires adequate bike parking facilities at transportation centers, public parks and buildings, recreational facilities, commercial centers, and large multi-family residential projects. WestCAT, the transit agency serving West Contra Costa County, has bike racks capable of holding two bicycles at a time installed on all fixed route and express buses.

Figure 5.3 – Bicyclists’ Lanes and Roadways

Bycyclists' Lanes and Roadways



Source: Contra Costa County Countywide Bicycle and Pedestrian Plan, West County Map
 (Note – The Bay Trail west of the loop is not complete, according to field work!)

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Most signalized intersections in Pinole have marked crosswalks on all legs, but most sidewalks are too narrow according to federal standards.

PEDESTRIAN SYSTEMS

Sidewalks with raised curb and gutter are generally provided on all arterials and collectors in Pinole. Most signalized intersections have marked crosswalks in all four directions, and pedestrian signal heads and actuation.³ Marked crosswalks are also generally found at unsignalized intersections. Pedestrian curb ramps are located at most intersections except at some T-intersections, such as the northwest corner of Pinole Valley Road at Ramona. However, none of the pedestrian ramps observed contained high-contrast, truncated domes.⁴

The City's multi-use paths along Pinole Creek and in Bayfront Park at the Bay Trail provide recreational and transportation opportunities to pedestrians, with Pinole Creek Trail providing connections to several activity centers. Observed numbers of pedestrians on the trails are significant throughout the day.

The Central Business District, located on San Pablo Avenue from Quinan Street to Pinole Valley Road, contains pedestrian-oriented land uses, pedestrian-scaled lighting, and crossing aids at all intersections such as marked, high-contrast crosswalks, intersection bulb-outs, directional curb ramps, and pedestrian signal heads.

OTHER TRANSPORTATION SYSTEMS

AIRPORTS

There are no public airports in Pinole. The closest public airports are the Oakland International Airport, which is 27 miles away, and San Francisco International Airport, which is 34 miles away.

³ Pedestrian actuation refers to the need for the pedestrian to activate the pedestrian "walk" phase of the pedestrian signal head by use of a pedestrian push button. Some pedestrian signal heads will show walk concurrent with the traffic green phase and do not require pedestrian actuation.

⁴ These are detectable warnings, which are standardized surface feature built in or applied to walking surfaces or other pedestrian elements, such as curb ramps, to warn visually impaired people of potential hazards. In this case, the truncated domes at the bottom of a curb ramp warn the visually impaired that they are about to enter the street.

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PARKING

Parking in Pinole is generally readily available except in the Central Business District and near City Hall. On-street parking is not metered. Some arterials limit the height and length of parking vehicles, specifically on San Pablo Avenue and Appian Way, and some sections of arterials where on-street parking is prohibited altogether.

FREIGHT RAIL SERVICE

Union Pacific railroad operates freight service that passes through Pinole. The Union Pacific tracks are located along the San Pablo Bay shoreline, which limits possible public access to the shoreline. Amtrak passenger trains share these tracks with the freight trains. The Union Pacific lines runs from Oakland to Martinez, where Burlington Northern Sante Fe (BNSF) railroad tracks run through Pinole parallel to the Union Pacific but further inland. (Richmond to Stockton)

TRANSPORTATION PROGRAMS

SPEED HUMP PROGRAM

Neighborhoods wishing to install or remove speed humps on local or collector streets may submit an application to the City's Engineering Department. The installation or removal of speed humps require approval from 70% of the property owner's addresses within a defined area as well as the approval of the four property owners closest to the speed hump.

TRANSPORTATION DEMAND MANAGEMENT PROGRAM

Grown out of the growth management requirement of Measure C, a transportation demand management program, **511 Contra Costa**, was created to promote alternatives to the single occupant vehicle such as carpooling, vanpooling, telecommuting, biking, transit, and walking in Contra Costa County. The program has three offices in the county. Pinole is represented by the office located in San Pablo.

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EAST BAY SMART CORRIDOR PROGRAM

The City of Pinole is a partner of the East Bay SMART Corridors program, which goals are to allow for “better manage congestion and incidents along regional routes, improve transportation mobility, efficiency and safety, and to provide timely, multi-modal transportation information to agency transportation managers and to the public”⁵ along three major arterial corridors including the San Pablo Avenue corridor, which runs through Pinole.

SUMMARY OF CIRCULATION ISSUES

TRAFFIC OPERATIONS

Existing traffic on the Pinole roadway network generally operates within acceptable levels. Of the study roadways, only one Appian Way segment between Tara Hills Drive and the I-80 interchange operates below level of service (LOS) standards at LOS E. However, under cumulative conditions, four study segments are expected to operate at substandard levels with LOS F. Three of these segments, San Pablo Avenue east of Pinole Valley Road, Appian Way south of Tara Hills Drive and south of Michael Drive, are considered roadways with regional significance. The last substandard segment is Pinole Valley Road north of Henry Avenue.

Intersection operations exhibit similar characteristics as roadway operations. Under existing conditions, all study intersections operate efficiently at LOS B or better. However, under cumulative conditions, nine intersections are expected to degrade to LOS E or LOS F during one or both peak hours. Five of the nine intersections lie along Pinole Valley Road between San Pablo Avenue and I-80 eastbound ramps. The remaining four substandard intersections lie along Appian Way primarily between I-80 westbound ramps and Fitzgerald-Sara Drive and at San Pablo Avenue.

⁵ East Bay Smart Corridor Program, 2007. < <http://www.smartcorridors.net/about.php> >

Traffic and Circulation Background

A cause of the degradation in operations can be attributed to the diversion of through traffic from the congested I-80 onto local streets. The anticipated growth in both the San Francisco Bay Area and the Sacramento region is expected to result in increased demand on the I-80 corridor. Several planning efforts are underway to address this regional issue. They include the I-80 Corridor Study by the Sacramento Council of Government, the Association of Bay Area Governments, the Metropolitan Transportation Commission (MTC), and Solano Transportation Authority, and the I-80 Integrated Corridor Mobility Project by the Alameda County Congestion Management Agency, WCCTAC, the Contra Costa Transportation Authority, the California Department of Transportation, MTC, local agencies including the City of Pinole and local transit agencies in Alameda and Contra Costa Counties. Further, the WCCTAC Action Plan includes objectives to help alleviate congestion along the I-80 corridor. The update to the Action Plan began in early 2007.

Improved transit service in Hercules and along the I-80 corridor could reduce the traffic impacts on the local streets in Pinole.

BICYCLE SYSTEM

Field reconnaissance has found several issues with the existing bicycle system such as disconnection issues, lack of signage and lack of roadway crossing aids at Henry Avenue, Tennent Avenue, San Pablo Avenue, and Railroad Avenue. Bicycle loop detectors were also not found at any of the City's traffic signals. Other facilities that may enhance the bicycle system include directional signage indicating points of interest and mileage, water fountains, and bike boxes at intersections to facilitate high-volume left turns.

PEDESTRIAN FACILITIES

While sidewalks are generally provided in the study area, discontinuous sidewalks are found along isolated segments such as San Pablo

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Avenue west of Appian Way on the north side of the roadway. The sidewalks, however, are often too narrow, according to ADA standards, and have utility poles and other obstructions in the pedestrian pathway. Curb ramps are often steep and are not positioned to lead into the crosswalk properly. Additionally, none of the pedestrian ramps observed contained high-contrast, truncated domes.⁶

Disconnection, signage, and width issues mentioned for bicyclists are equally problematic for pedestrians. Additionally, pathway connections from Tennent Avenue and Railroad Avenue to the Bay Trail are unpaved and unsigned. Neighborhood access to the Pinole Creek Trail is provided at Prune Street but discouraged at Plum Street and the foot bridge at Prune Street across the creek to Pinole Valley Road is closed.

One pedestrian issue related to a school route was observed. A number of middle school students (about 20 over a 15-minute period) from southern Pinole were observed on Appian Way crossing the I-80 interchange intersections in the morning peak hour. The uncontrolled movement for southbound vehicles heading onto I-80 westbound on-ramp seemed to be hazardous for pedestrians as vehicles were not yielding to them.

⁶ These are detectable warnings, which are standardized surface feature built in or applied to walking surfaces or other pedestrian elements, such as curb ramps, to warn visually impaired people of potential hazards. In this case, the truncated domes at the bottom of a curb ramp warn the visually impaired that they are about to enter the street.

Traffic and Circulation Background

REFERENCES

- 1 Caltrans, *Traffic Operations Program, 2005 All Traffic Volumes on California State Highway System*. Website address: <http://traffic-counts.dot.ca.gov/2005all/r071-80i.htm>
- 2 The Bay Trail is a project of the Association of Bay Area Governments (ABAG) and is a planned recreational corridor that, when complete, will encircle San Francisco and San Pablo Bays with a continuous 400-mile network of bicycling and hiking trails.
- 3 Contra Costa Countywide Bicycle and Pedestrian Plan, adopted by the Contra Costa Transportation Authority in December 2003