

This section of the Draft Environmental Report (DEIR) describes the existing transportation system in the GPU Planning Area and addresses the potential impacts to the circulation system resulting from the proposed project. The analysis evaluates impacts to level of service on study area roadways and intersections with the implementation of the proposed General Plan. Likewise impacts to safety, bicycle and pedestrian trails, and alternative forms of transportation are also discussed. This section has been prepared based on traffic analysis provided by Dowling Associates (2010) and included as **Appendix C** to this DEIR.

4.4.1 ENVIRONMENTAL SETTING

EXISTING CONDITIONS

The city's transportation system is made up of roadways, transit services, bicycle and pedestrian facilities, and related facilities such as parking and freight service. About 71 percent of the city's residents commute to work by driving alone and another 17.5 percent carpool. Around 6.4 percent of the residents use transit services including bus (2 percent), subway (4 percent), rail (0.09 percent), and ferry (0.05 percent). A very small percentage of residents commute using non-motorized transportation (about 0.22 percent travel by bicycle and just over 1 percent commute on foot) (CTPP, 2000).

ROADWAY DEFINITIONS

The city's roadway network is described by functional classifications that are described below and depicted in **Figure 4.4-1**. These classifications identify the purpose of the roadways relative to their overall function in the distribution of different types of trips using the facilities. The relevant classifications in 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 auto vehicular carrying capacity with the maximum speed limits allowed by law and are owned and operated by the California Department of Transportation (Caltrans).

Interstate 80 (I-80) is an eight-lane divided freeway that bisects the city in an east-west direction. It provides regional access to San Francisco City and County, Alameda County, Contra Costa County, Solano County, and points beyond to the east. In the vicinity of Pinole, I-80 carries from 180,000 to 196,000 vehicles daily (Caltrans, 2005). Full access to the city is provided at interchanges with Richmond Parkway, Appian Way, and Pinole Valley Road. Access to the freeway is provided at Pinole Valley Road and 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.

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 intercity circulation. Speed limits often range from 30 to 50 mph.

San Pablo Avenue is a four-lane, mostly divided arterial aligning east-west along the northern portion of Pinole and providing connections to the unincorporated community of Tara Hills to the

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south and the City of Hercules to the north. San Pablo Avenue generally aligns 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 four-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's a four-lane roadway from Appian Way to Flannery Road, where it narrows to two lanes to its terminus in the unincorporated community of Bayview-Montalvin. On-street parking is generally allowed on the 4-lane section within Pinole.

Appian Way is a four-lane, north-south arterial between San Pablo Avenue and Michael Drive and then transitions between Michael Drive and Dalessi Drive to two lanes. On-street parking is allowed on some segments of the roadway.

Pinole Valley Road is a four-lane, north-south arterial from Henry Avenue through Seamus and two lanes everywhere else. From San Pablo Avenue to Henry Avenue, Pinole Valley Road is a two-lane collector. On-street parking is allowed on some segments of the roadway.

Tennent Avenue is a two-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.

Collectors

Collectors typically serve intracity 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.

The following roadways are identified in the proposed General Plan Circulation Element as collectors:

- Allview Avenue
- Canyon Drive
- Del Monte Drive
- Estates Avenue
- Flannery Road
- Galbreth Road
- Henry Avenue
- Manor Road
- Marlesta Road
- Pinole Shores Drive
- Pinole Valley Road (between Tennent Avenue and San Pablo Avenue)
- Rancho Road
- Sarah Drive
- Shamrock Drive
- Shawn Drive
- Shea Drive
- Simas Avenue
- Sunnyview Drive
- Wright Avenue

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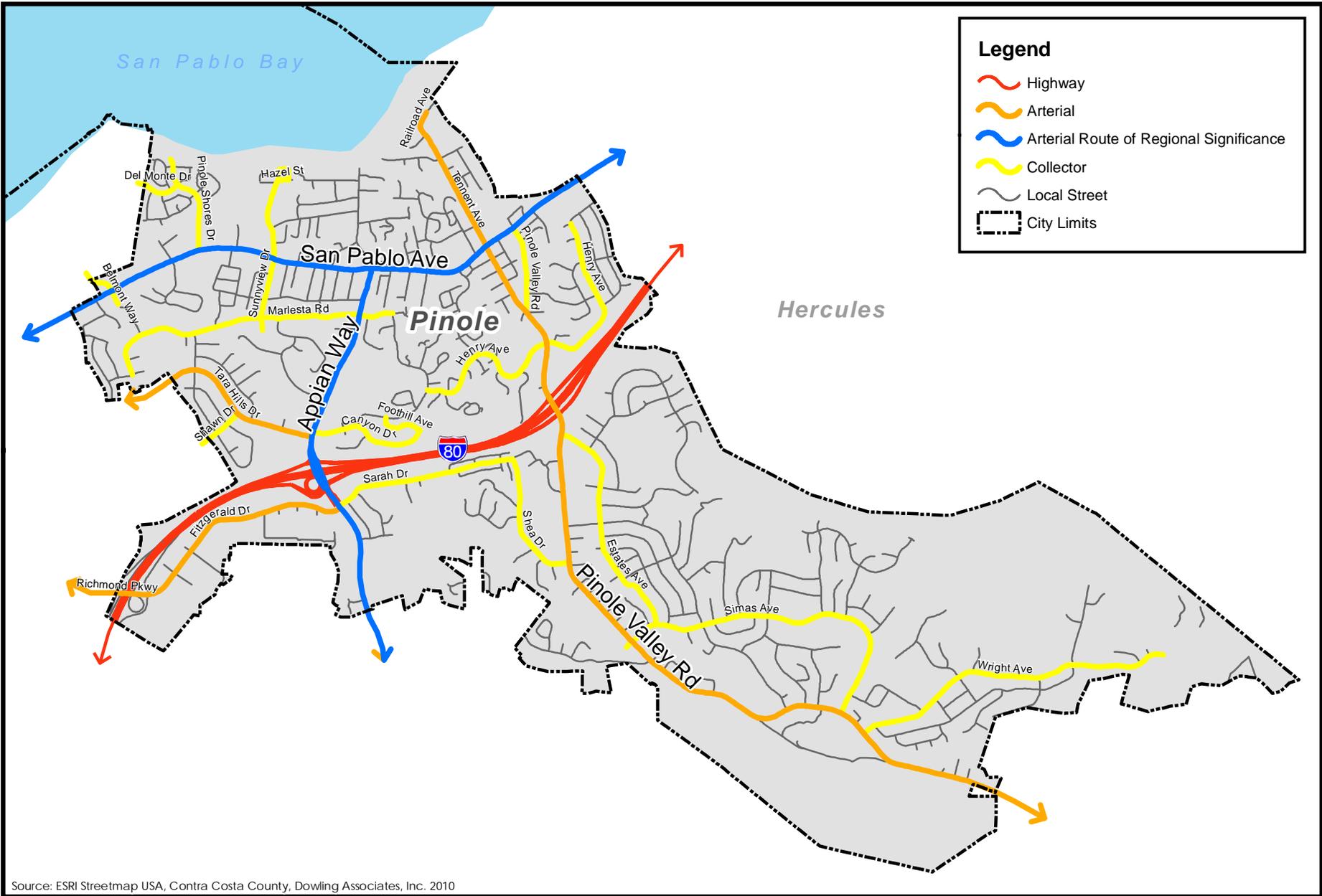


Figure 4.4-1
Circulation and Roadway Classification

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.

All other roadways in Pinole are classified as local streets.

AUTOMOBILE AND TRUCK LEVEL OF SERVICE THRESHOLDS

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 overcapacity and/or forced flow conditions.

At signalized intersections, the level of service is determined in Pinole using the Contra Costa Transportation Authority’s methodology, which calculates a ratio of the volume of vehicles to the capacity of the critical movements at the intersection, similar to the Circular 212 Planning Method. The intersection volumes at signalized intersections are depicted in **Figure 4.4-2** and the corresponding level of service at each intersection is shown in **Table 4.4-4**. Level of service is a convenient way to express the ratio between volume and capacity on a given link or at a given intersection and is expressed as a letter grade ranging from LOS A through LOS F. Each level of service for signalized intersections is generally described in **Table 4.4-1** below.

**TABLE 4.4-1
INTERSECTION LEVEL OF SERVICE DEFINITIONS**

Level of Service	Description
A	Free-flowing travel with an excellent level of comfort and convenience and freedom to maneuver.
B	Stable flow conditions, but the presence of other road users causes a noticeable, though slight, reduction in comfort, convenience and maneuvering freedom.
C	Stable flow conditions, but the operation of individual users is substantially affected by the interaction with others in the traffic stream.
D	High-density but stable flow. Users experience severe restrictions in speed and freedom to maneuver, with poor levels of comfort and convenience.
E	Operating conditions at or near capacity. Speeds are reduced to a low but relatively uniform value. Freedom to maneuver is difficult with users experiencing frustration and poor comfort and convenience. Unstable operation is frequent, and minor disturbances in traffic flow can cause breakdown conditions.
F	Forced or breakdown conditions. This condition exists whenever the volume of traffic exceeds the capacity of the roadway or when the amount of traffic approaching a point exceeds the amount that can traverse a point. Roadways store long queues behind such locations, with traffic advancing in stop-and-go “waves.”

Source: City of Pinole, 2009a and 2009b

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FREEWAY SEGMENTS

Three freeway mainline segments are evaluated in this DEIR. These segments are located within the GPU Planning Area. The segments were evaluated for both eastbound and westbound directions:

- I-80 west of Appian Way interchange
- I-80 between Appian Way and Pinole Valley Road interchanges
- I-80 east of Pinole Valley Road interchange

Highway Capacity Manual (HCM) 2000 procedures were used to calculate average peak hour capacities for each LOS threshold from A to F for freeway mainline segments. The LOS was determined using density. Density is the number of passenger vehicles per mile per lane for a transportation facility. Density is computed based on freeway geometrics, traffic volume, free-flow speed, and traffic composition of the facility. **Table 4.4-2** contains the density thresholds for freeway mainline LOS.

TABLE 4.4-2
FREEWAY MAINLINE – LEVEL OF SERVICE CRITERIA

Level of Service	Maximum Density (passenger vehicles per mile per lane)
A	11
B	18
C	26
D	35
E	45
F	> 45

Source: Transportation Research Board, 2000

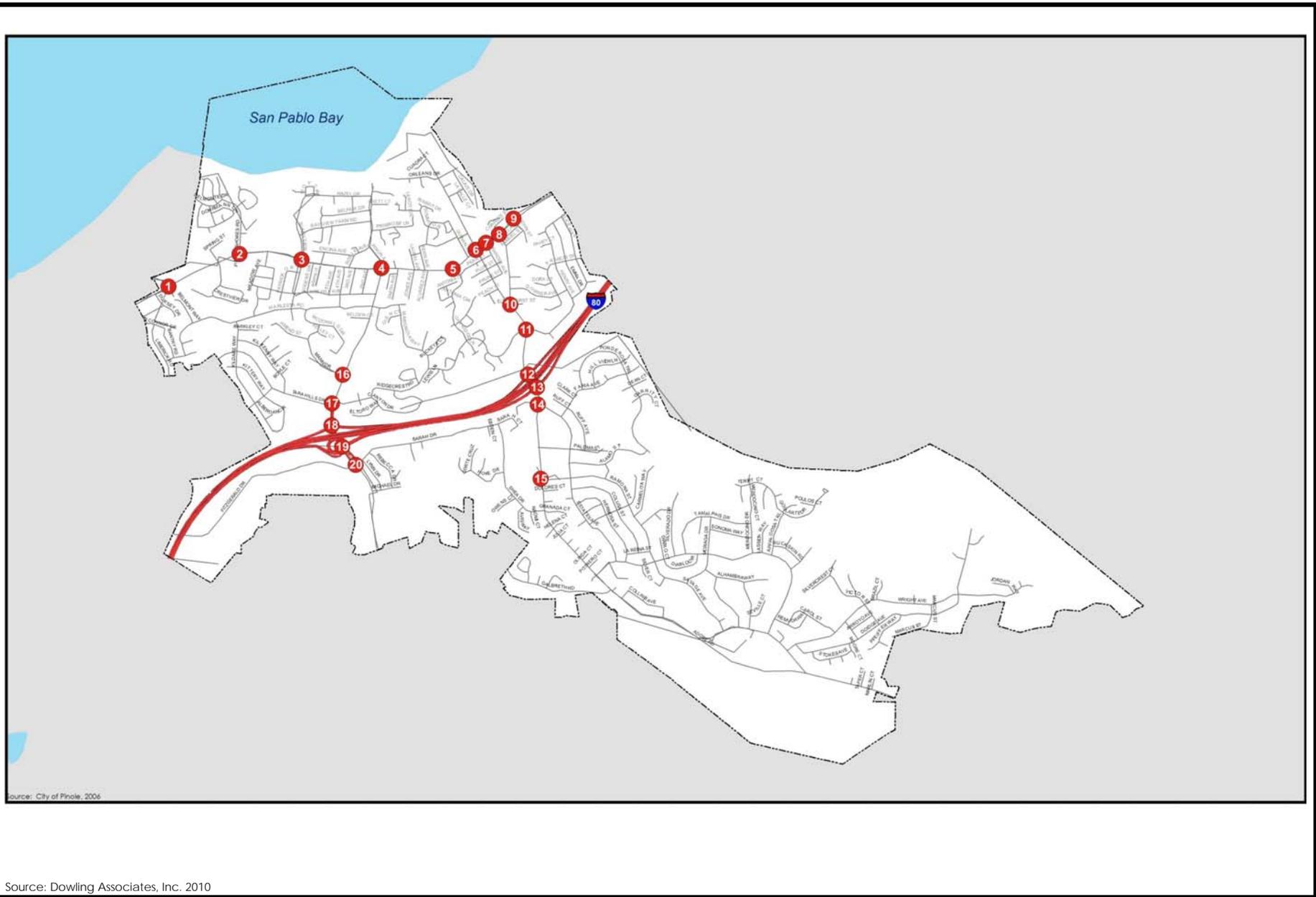


Figure 4.4-2
Study Intersections

Existing volumes were obtained from Caltrans Census data, as well as PeMS database.¹ Results of existing freeway operations are shown in **Table 4.4-3**. I-80 westbound is the peak commute direction during AM peak hour, and I-80 eastbound is the peak commute direction during the PM peak hour. As noted in **Table 4.4-3**, a majority of existing traffic counts in the study area were constrained due to mainline bottlenecks and queues in the peak direction of travel, during both AM and PM peak hours. Since constrained low counts would yield unrealistically optimistic LOS using the standard deterministic HCM method, existing freeway LOS is instead reported based on congested freeway conditions and speeds observed for the peak direction, as noted in **Table 4.4-3**. The observed speeds were based on the PeMS database, which also recorded freeway mainline speeds in addition to traffic counts. In the westbound direction, all three freeway segments operate at LOS F with downstream bottlenecks and queuing conditions. In the eastbound direction, I-80 operates at LOS F from west of Appian Way to Pinole Valley Road and operates at LOS E east of Pinole Valley Road during PM peak hour. The freeway operates at LOS C or better in the off-peak direction of travel.

**TABLE 4.4-3
EXISTING YEAR 2007 – FREEWAY MAINLINE LOS SUMMARY**

Location	AM Peak Hour			PM Peak Hour		
	Volume	Density ¹	LOS ²	Volume	Density ¹	LOS ²
I-80 Eastbound						
West of Appian Way ³	3,971	16.2	B	5,758	> 45	F
Between Appian Way and Pinole Valley Road ³	4,625	18.9	C	6,184	> 45	F
East of Pinole Valley Road ⁴	4,402	24.0	C	5,535	> 35 & < 45	E
I-80 Westbound						
East of Pinole Valley Road ³	5,444	> 45	F	4,889	20.0	C
Between Appian Way and Pinole Valley Road ³	5,930	> 45	F	5,087	20.8	C
West of Appian Way ³	6,261	> 45	F	4,897	20.0	C

Source: Dowling Associates, Inc., 2010

Note:

1 Density = passenger cars per mile per lane

2 LOS = level of service

3 Bold/italic cells highlighted in grey indicate locations where counts are constrained due to existing bottleneck and queuing conditions. LOS F is reported based on observed speeds of lower than 30 mph.

4 Bold/italic cells highlighted in grey indicate locations where counts are constrained due to existing bottleneck conditions. LOS E is reported based on observed speeds of between 40 and 50 mph. Density shown is over the range of LOS E conditions.

EXISTING TRAFFIC VOLUMES AND OPERATING CONDITIONS

Intersections

Intersection levels of service were evaluated at 20 key signalized intersections in Pinole for the AM and PM peak hours. The level of service was determined using the Contra Costa Transportation Authority's methodology, which calculates a ratio of the volume of vehicles to the capacity of the critical movements at the intersection, similar to the Circular 212 Planning

¹ PeMS (Performance Measurement System) is a project conducted by the Department of Electrical Engineering and Computer Sciences at the University of California, Berkeley, with the cooperation of the California Department of Transportation, California Partners for Advanced Transit and Highways, and Berkeley Transportation Systems.

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Method. The intersection volumes at these locations are depicted in **Figure 4.4-3**, and the corresponding levels of service at the intersections are shown in **Table 4.4-4**.

TABLE 4.4-4
EXISTING YEAR 2007 – EXISTING CONDITIONS OF INTERSECTION LEVEL OF SERVICE

#	Intersection	Time Period	LOS	Volume-to-Capacity (V/C) Ratio
1	Del Monte Drive at San Pablo Avenue	AM	A	0.50
		PM	A	0.40
2	Pinole Shores Drive at San Pablo Avenue	AM	A	0.44
		PM	A	0.34
3	Sunnyview Drive at San Pablo Avenue	AM	A	0.39
		PM	A	0.38
4	Appian Way at San Pablo Avenue	AM	A	0.43
		PM	A	0.59
5	Oak Ridge Lane at San Pablo Avenue	AM	A	0.41
		PM	A	0.35
6	Tennent Avenue at San Pablo Avenue	AM	A	0.55
		PM	A	0.43
7	Fernandez Avenue at San Pablo Avenue	AM	A	0.41
		PM	A	0.34
8	Pinole Valley Road at San Pablo Avenue	AM	A	0.57
		PM	A	0.55
9	John Street at San Pablo Avenue	AM	A	0.44
		PM	A	0.38
10	Pinole Valley Road at Tennent Avenue	AM	A	0.42
		PM	A	0.32
11	Pinole Valley Road at Henry Avenue	AM	A	0.41
		PM	A	0.39
12	Pinole Valley Road at I-80 westbound ramps	AM	A	0.54
		PM	A	0.52
13	Pinole Valley Road at I-80 eastbound ramps	AM	B	0.69
		PM	C	0.71
14	Pinole Valley Road at Estates Avenue	AM	A	0.48
		PM	A	0.45
15	Pinole Valley Road at Ramona Street	AM	A	0.30
		PM	A	0.24

#	Intersection	Time Period	LOS	Volume-to-Capacity (V/C) Ratio
16	Appian Way at Mann Drive	AM	A	0.51
		PM	A	0.50
17	Appian Way at Tara Hills Drive-Canyon Drive	AM	B	0.67
		PM	A	0.55
18	Appian Way at I-80 westbound ramps	AM	B	0.67
		PM	A	0.60
19	Appian Way at I-80 eastbound ramps	AM	A	0.41
		PM	B	0.60
20	Appian Way at Fitzgerald Drive-Sara Drive	AM	A	0.50
		PM	A	0.54

Source: Dowling Associates, Inc., 2010

Under the existing conditions, all study intersections operate at LOS C or better during the AM and PM peak hours.

In addition to the level of service analysis, traffic conditions were observed in the field. Operations at the I-80 interchanges of Appian Way and Pinole Valley Road were observed for 15-minute periods during a weekday morning commute time. There was one observed instance at southbound Appian Way where the queue from the traffic signal at the northern leg of the interchange reached the preceding intersection and caused vehicle backups for right-turning vehicles from Tara Hills Drive. I-80 westbound vehicles could not get around the queue to access the uncontrolled on-ramp. No spillovers onto city roadways were observed at the I-80 interchange of Pinole Valley Road, but a large number of vehicles in the AM peak-hour exited I-80 using the westbound off-ramp, proceeded through the intersection, and re-entered I-80 in order to avoid this congested section of the freeway.

Lane utilization presents an issue at the Tara Hills-Canyon Drive and Appian Way intersection. Even though two eastbound right-turn lanes are provided, the outer turn lane, which leads directly to the I-80 westbound on-ramp just 300 feet south on Appian Way, is preferred by motorists in order to avoid the need to merge into the right-hand lane after the turn. The resulting congestion is particularly pronounced in the AM peak hour, when most of the turning traffic is destined for westbound I-80. Such operational issues may not be reflected in the level of service analysis.

Transit Systems

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

Bus Service

Two bus transit agencies, the Western Contra Costa Transit Authority (WestCAT) and the Alameda Contra Costa Transit Authority (AC Transit), offer a total of nine fixed routes linking

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Pinole with the greater Bay Area. The bus transit agencies also provide connection services to other transit services including passenger rail.

WestCAT operates seven fixed routes serving Pinole as shown in **Figure 4.4-4**. 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 buses 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.

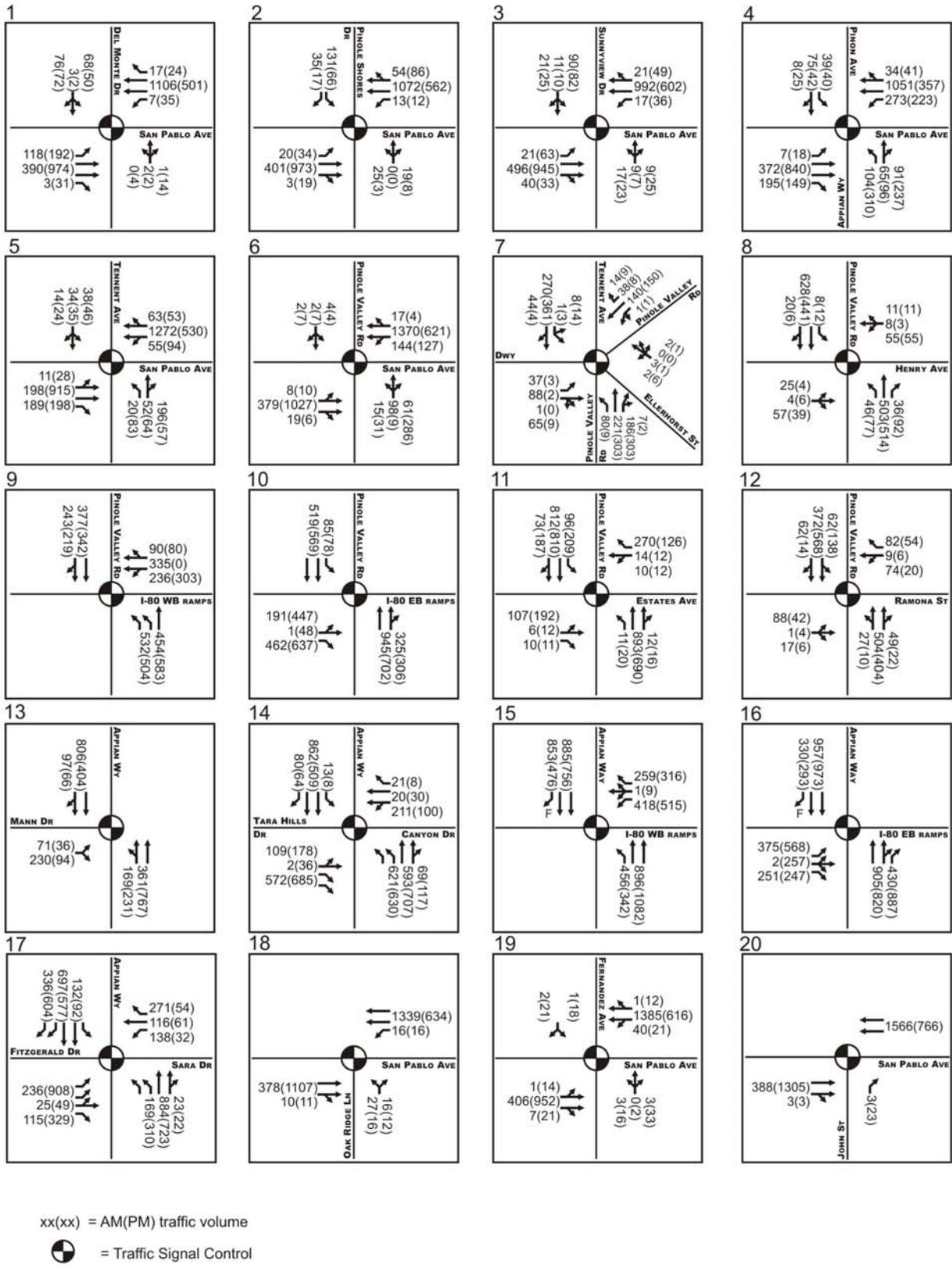
AC Transit operates two fixed-route services in southern Pinole, Route 70 and Route 376. AC Transit also operates dial-a-ride paratransit services for seniors and the disabled in southern Pinole. Buses are equipped with front-loading racks that can hold up to two bicycles.

Passenger Rail

BART

The San Francisco Bay Area Rapid Transit District (BART) provides passenger-rail, regional transit service to Alameda, San Francisco, Contra Costa, and San Mateo counties. Currently there is 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 and every 20 minutes on the weekend. This passenger-rail line runs until 1:00 AM daily. Weekday service begins at 4:15 AM, Saturday at 6:00 AM, and Sunday at 8:00 AM. The Richmond/San Francisco line also runs with trains every 15 minutes during the weekday until 7:45 PM and every 20 minutes on Saturday until 6:00 PM. Connections to the Fremont/San Francisco line, Pittsburgh/Daly City line, and Dublin-Pleasanton/Millbrae line can be made at various points throughout the system.

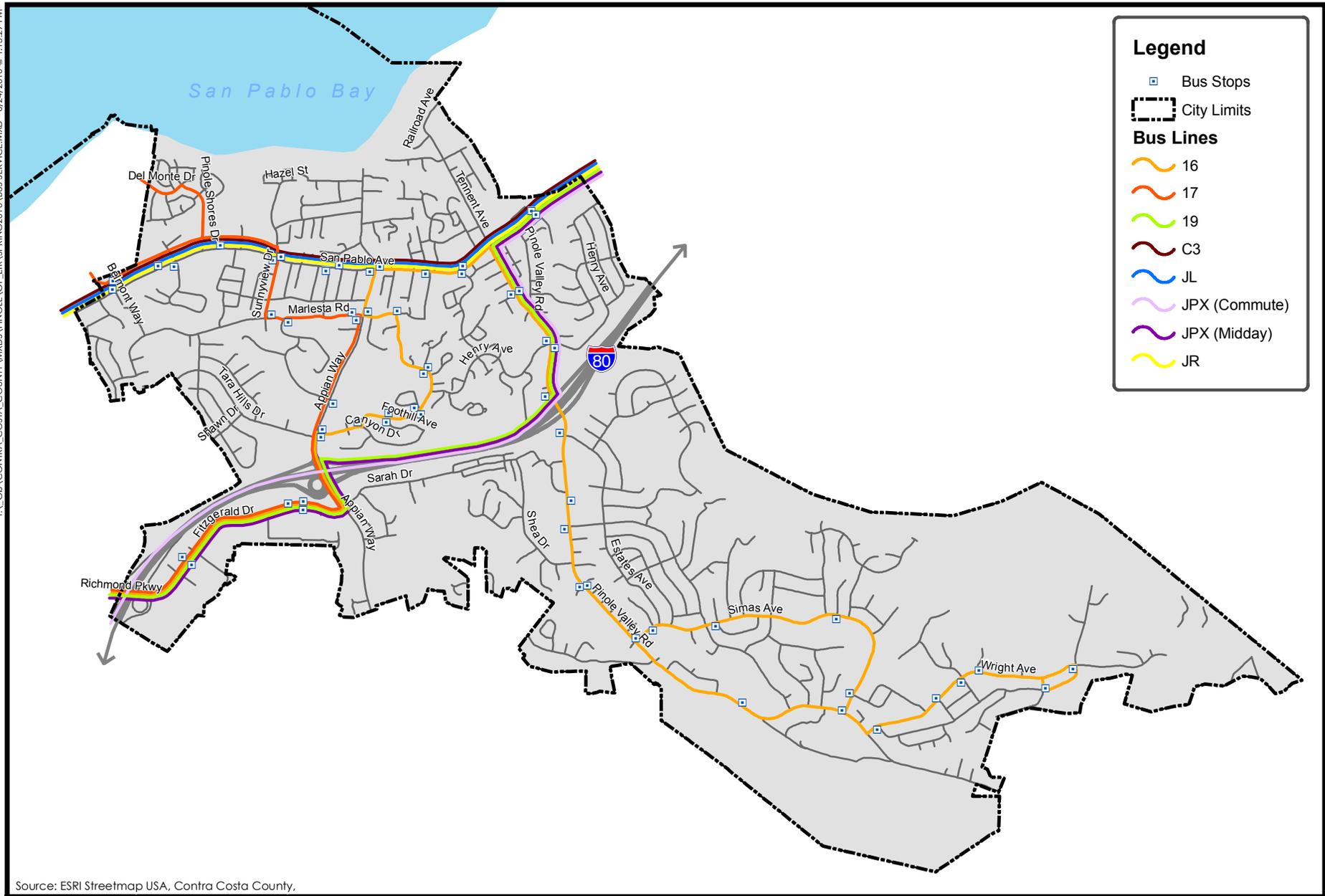
BART also provides transit service to both San Francisco International Airport and Oakland International Airport. To get to Oakland International Airport, passengers can travel on the Fremont line or the Dublin-Pleasanton line, exit BART at the Oakland Coliseum BART station, and then take the AirBART shuttle (which departs every 15 minutes). To get to San Francisco International Airport, passengers can take the BART line directly to the BART station in the San Francisco International Terminal.



Source: Dowling Associates, Inc. 2010

Figure 4.4-3
 Intersection Traffic Volume & Lane Geometry Existing Conditions

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Legend

- Bus Stops
- City Limits
- Bus Lines**
- 16
- 17
- 19
- C3
- JL
- JPX (Commute)
- JPX (Midday)
- JR

Source: ESRI Streetmap USA, Contra Costa County.

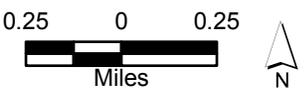


Figure 4.4-4
WestCAT and AC Transit Bus Service in Pinole



Amtrak

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 (WCCTAC, 2009). 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

Currently no ferry service is 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 5:30 AM into the evening hours at 30- to 100-minute intervals. Weekend service is provided from 9:00 AM into the evening hours at 60- to 120-minute intervals. There are plans to build a ferry station in Richmond and a multimodal ferry and Amtrak station in neighboring Hercules (WCCTAC, 2009).

For-Hire Passenger Services

Pinole is served by two taxi cab companies that provide passenger services for hire: Greyline Cab Company and Yellow Cab and Shuttle Services.

Bicycle and Pedestrian Facilities

Pinole is generally quite hilly from San Pablo Avenue to the south, which disrupts the ability to provide a grid system. As a result, many local streets do not provide a parallel lower-traffic-volume/lower-speed alternative to high-traffic arterial/collector roadways that can be used by bicyclists. Nonetheless, Pinole maintains a limited number of bicycle facilities as described below and shown in **Figure 4.4-5**.

The classification system for bikeways is as follows (City of Pinole General Plan Update, 2010):

- *Class I Multi-Use Path*, a paved right-of-way separate from any street or highway, is provided along Pinole Creek between I-80 and Railroad Avenue and at Bayfront Park. The Pinole Creek Trail provides connections to Pinole Valley Lanes Bowling Alley, Collins Elementary School, the Central Business District, Fernandez Park, residential areas, and the Bay Trail.² The trail at Bayfront Park 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.³
- *Class II Bike Lane* provides for a striped and stenciled lane for one-way travel on a street or highway. Currently, there are no bike lanes in Pinole. However, such a facility is proposed along San Pablo Avenue and Pinole Valley Road in the 2009 Contra Costa Countywide Bicycle and Pedestrian Plan adopted in October 2009. Further, the plan also

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

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proposed the conversion of the existing Class III bike routes along Fitzgerald Drive and Appian Way to Class II bike lanes.

- *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. Bike routes are found on Fitzgerald Drive, San Pablo Avenue, and Appian Way.

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. Bikeway facilities in Pinole are summarized in **Table 4.4-5** and shown on **Figure 4.4-5**.

**TABLE 4.4-5
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
Total: 5.30 miles		

Source: Dowling Associates, Inc., 2010

While the Class I Multi-Use Path along Pinole Creek is a bit narrow to accommodate both bicyclists and pedestrians, it provides a safe recreational and commuter path. The Class I Multi-Use Path at 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 has been identified for future improvement.

San Pablo Avenue is the east-west arterial and Pinole Valley Road is the north-south arterial with the gentlest grades, but of these two roads, only San Pablo Avenue is designated as a Class III bike route. 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 is available at City Hall and Fernandez Park. 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 western Contra Costa County, has bike racks capable of holding two bicycles at a time installed on all fixed-route and express buses.

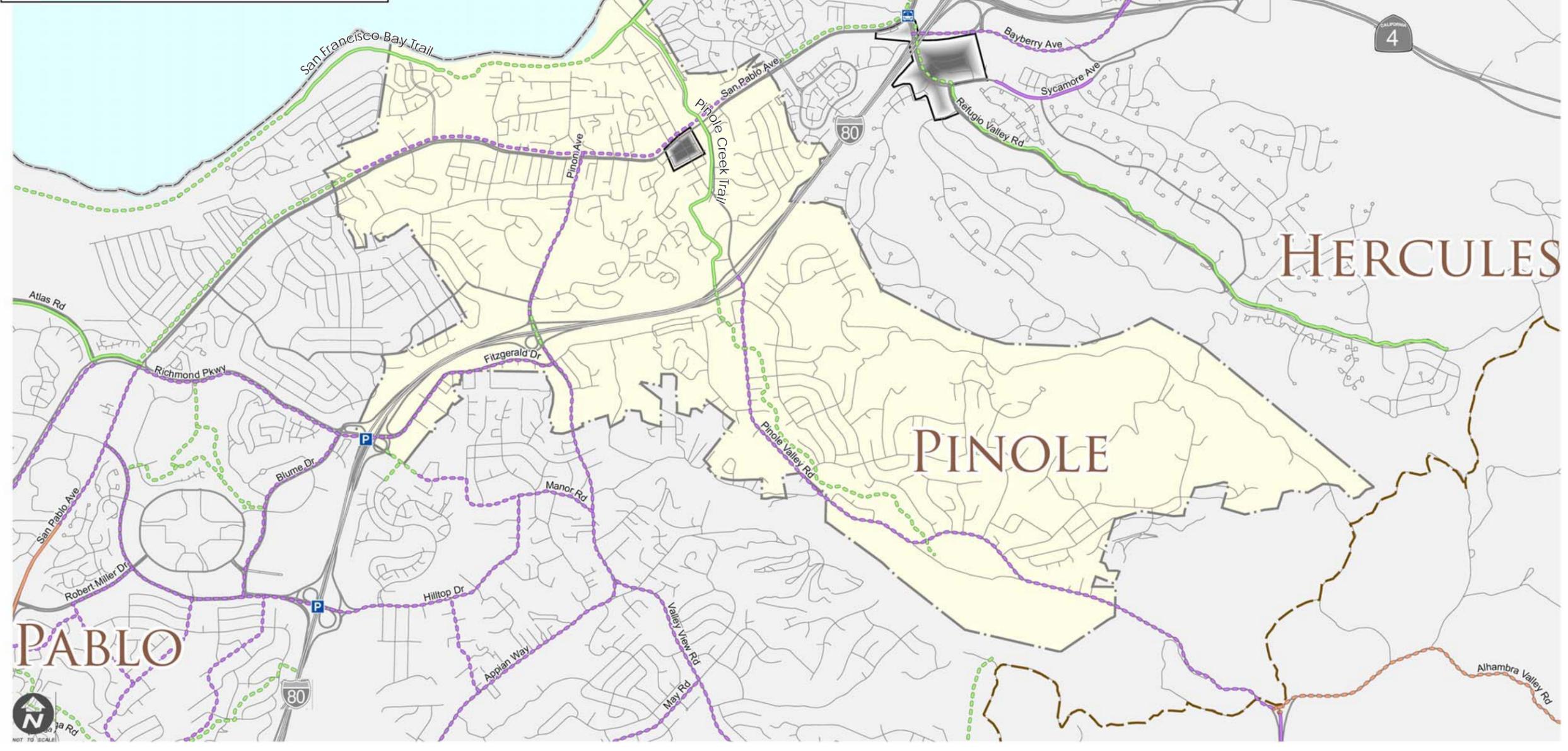


LEGEND

Bicycle Facilities

- Existing Class I
- - - Proposed Class I
- Existing Class II
- - - Proposed Class II
- Existing Class III
- - - Proposed Class III

- Park-and-Ride
- Rail Station
- Transit Center
- Downtown/Town Center
- City Limit
- County Boundary



Source: Contra Costa County Countywide Bicycle and Pedestrian Plan 2009

Not to Scale



Figure 4.4-5
Bicycle Routes
PMC

Sidewalks and Paths

Sidewalks with raised curb and gutter are generally provided on all arterials and collectors. Most signalized intersections have marked crosswalks on all legs as well as pedestrian signal heads and actuation. Marked crosswalks are also generally found at unsignalized intersections on some legs. Pedestrian curb ramps are located at most intersections.

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

The portion of 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.

Freight Rail Service

Union Pacific Railroad (UPRR) operates a freight service line that passes through Pinole. The UPRR 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 UPRR line operates from Oakland to Martinez. Burlington Northern Santa Fe (BNSF) railroad tracks align through Pinole parallel to the UPRR but further inland and operate from Richmond to Stockton.

Aviation

There are no public airports in Pinole. The closest public airports are the Oakland International Airport, which is 27 miles away, San Rafael Airport which is approximately 12 miles west, Buchanan Field Airport which is 13 miles east), and the and San Francisco International Airport, which is 34 miles away.

Parking

Parking in Pinole is generally readily available except in portions of the Central Business District including near City Hall. On-street parking is not metered. Parking along arterials varies. Both San Pablo Avenue and Appian Way limit the height and length of parking vehicles. Other arterials have entire sections where on-street parking is prohibited.

Transportation Programs

Transportation Demand Management Program

A transportation demand management program, 511 Contra Costa, has been created to promote alternatives to the single-occupant vehicle, such as carpooling, vanpooling, telecommuting, biking, transit, and walking in Contra Costa County. Information is available online at www.511contracosta.org. Pinole, as part of West Contra Costa Transportation Advisory Committee (WCCTAC), is represented by the office located in the City of San Pablo offices at 13831 San Pablo Avenue.

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East Bay SMART Corridors Program

The City of Pinole is a partner of the East Bay SMART Corridors program, which has established goals to better manage congestion and incidents along regional routes, improve transportation mobility, efficiency and safety, and to provide timely, multimodal transportation information to agency transportation managers and to the public along major arterial corridors including the San Pablo Avenue corridor, which aligns through Pinole (East Bay SMART Corridors, 2009). The East Bay SMART Corridors program consists of two major arterial corridors in the east bay portion of the San Francisco Bay Area: the San Pablo Avenue (I-80) corridor and the Hesperian/International/East 14th Boulevard (I-880) corridor. The monitoring begins in Hercules and stretches both southwest and southeast throughout the Bay Area.

I-80 Integrated Corridor Mobility Project

The pending I-80 Integrated Corridor Mobility Project is sponsored by the Alameda County Congestion Management Agency, Contra Costa Transportation Authority (CCTA), West Contra Costa Transportation Advisory Committee (WCCTAC), Caltrans, Metropolitan Transportation Commission (MTC), local agencies including the City of Pinole, and local transit agencies in Alameda and Contra Costa counties. Its goal is to enhance the current transportation network along I-80 and its parallel arterials, such as San Pablo Avenue, between the Carquinez Bridge and the Bay Bridge by building an integrated system that would improve the safety and mobility of all users. The project entails seven components including freeway management system (ramp metering), arterial management system, transit management system, traveler information system, commercial vehicle operations, traffic surveillance and control system, and incident management system.

FOCUS

FOCUS, short for the Focusing Our Vision initiative, is a regional planning initiative undertaken by the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission in coordination with the Bay Area Air Quality Management District and Bay Conservation and Development Commission to support a regional development pattern that is compact and transit-oriented. The City of Pinole has designated as Priority Development Area (PDA) candidates the San Pablo Avenue, Tennent Avenue, and Pinole Valley Road corridors and Old Town Pinole.

4.4.2 REGULATORY FRAMEWORK

STATE

State of California Department of Transportation

The California Department of Transportation (Caltrans) is responsible for planning, design, construction, and maintenance of all state highways. I-80 is the only state highway that passes through the GPU Planning Area. 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, 2002) provides consistent guidance for Caltrans staff who review local development and land use change proposals. The

guide also helps Caltrans staff, who inform local agencies of the information needed to analyze the traffic impacts to state highway facilities including freeway segments, on- or off-ramps, and signalized intersections.

REGIONAL

Contra Costa Transportation Authority

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 Congestion Management Program. Local jurisdictions work through their respective Regional Transportation Planning Committees (RTPCs).

West Contra Costa Transportation Advisory Committee

As part of western Contra Costa County, the City of Pinole works with other west county municipalities and transit service providers through the West Contra Costa Transportation Advisory Committee (WCCTAC) to implement the West Contra Costa Action Plan for Routes of Regional Significance. The plan identifies multimodal traffic service objectives (MTSOs) 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 MTSO sets a target level of service. The West County Action Plan Update was adopted on July 31, 2009 (WCCTAC, 2009).

San Pablo Avenue MTSOs

- 1) Maintain LOS E or better at all signalized intersections along San Pablo Avenue

San Pablo Avenue Key Objectives

- 1) Improve pedestrian and bicycle access with related safety enhancements along the corridor.
- 2) Monitor and potentially expand San Pablo Avenue Rapid Bus.
- 3) Complete San Pablo Avenue Specific Plan in the cities of Richmond and El Cerrito, and expand to jurisdictions north of study area.
- 4) As a designated ABAG FOCUS Priority Development Area, monitor development and implement projects on or near the San Pablo Avenue, BART stations, and other transit hubs to facilitate transit-oriented development.
- 5) San Pablo Avenue SMART Corridors extension to Crockett.
- 6) Operations and Management funding for SMART Corridor.

San Pablo Avenue Actions

- 1) Study traffic improvement and management options to discourage diversion from I-80 and encourage diverted traffic to return to I-80 on the next downstream feeder road. Clearly identify feeder roads to motorists that will take them back to I-80, particularly at Appian Way, Hilltop Drive, El Portal Drive, and San Pablo Dam Road.

4.4 TRAFFIC AND CIRCULATION

Include study of diversion traffic and reduction in diversion traffic as part of the I-80 ICM project and San Pablo SMART corridor.

- 2) Encourage the use of Appian Way from San Pablo Avenue as the major connecting arterial to I-80 rather than Tennent Avenue and Pinole Valley Road through improved signage and signalization.
- 3) Work with the CCTA and MTC to seek funding to:
 - Develop bike route links to the Bay Trail such as the Richmond Greenway, Wildcat Creek Trail, Pinole Valley Road, and John Muir Parkway as alternate bicycle facilities to San Pablo Avenue.
 - Improve bicycle and pedestrian access to the West County BART stations.
- 4) Seek funding for San Pablo Avenue Rapid Bus program expansion.
- 5) Complete a corridor-wide specific plan for San Pablo Avenue through coordination of each partner jurisdiction, building upon the specific plans prepared by the cities of Richmond and El Cerrito as well as the County of Contra Costa (and potentially San Pablo).
- 6) Partner with ABAG on development of San Pablo Avenue, El Cerrito del Norte BART station, Hercules New Town Center, and Hercules Waterfront as well as other Priority Development Areas.
- 7) Seek funding for construction of completed plans for San Pablo Avenue SMART Corridor extension to Crockett.
- 8) Seek funding for SMART Corridors O&M.

Metropolitan Transportation Commission (MTC)

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.

LOCAL

Measure C

Standards for roadway operations in Pinole are defined on a countywide basis. In 1988, Contra Costa County voters passed Measure C, which raised the sales tax to provide funding for regional transportation improvements. Measure C required 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, towns, and the County in managing the impacts of growth in Contra Costa County. The program sets standards for the regional and non-regional routes in Contra Costa County, which the City of Pinole 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.

Measure J

Measure J, approved by the voters in 2004, authorized the extension of Measure C and establishes the 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 Section 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.

4.4.3 IMPACTS AND MITIGATION MEASURES

This subsection describes the transportation analysis of the proposed General Plan Update and identifies potential impacts and mitigation measures that would be associated with the adoption of the proposed General Plan Update. Quantitative transportation impact analyses were conducted for the Year 2030 and assumed full buildout of the land uses proposed in the General Plan Update. In this manner, the full impact of the proposed General Plan is analyzed. However, because it is unlikely that full buildout condition would occur by Year 2030, the transportation analyses tend to be more conservative.

SIGNIFICANCE CRITERIA

The impact analysis provided below is based on the California Environmental Quality Act (CEQA) Guidelines Appendix G. A transportation/traffic impact is considered significant if implementation of the proposed General Plan would result in the following:

- 1) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

Specifically, the following LOS and volume-to-capacity ratios (v/c ratios) are stated as policies in the Circulation Element (See CE.3.1) of the proposed General Plan, and are applied in this section as the minimum acceptable standards at signalized intersections for automobiles and trucks:

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Central Business District (LOS E+ or better, v/c ratio of 0.90 to 0.94)

Applicable roadways

- San Pablo Avenue from Oak Ridge Road to eastern city limits

Urban (LOS D- or better, v/c ratio of 0.85 to 0.89)

Applicable roadways

- San Pablo Avenue from Oak Ridge Road to western city limits
- Appian Way from San Pablo Avenue to southern city limits
- Pinole Valley Road from San Pablo Avenue to city limits
- Tennent Avenue from Pinole Valley Road to Railroad Avenue
- Fitzgerald Drive from Appian Way to 1,000 feet west of Appian Way
- Tara Hills Drive from Appian Way to 1,000 feet west of Appian Way

Suburban (LOS D+ or better, v/c ratio of 0.80 to 0.85)

Applicable roadways

- All roadways not listed above
- 1) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

Specifically, the relevant MTSOs of the West County Action Plan are:
 - Maintain a Delay Index of 3.0 or less during weekday morning and evening peak hour on Interstate 80
 - Maintain LOS "E" or better at all signalized intersections along San Pablo Avenue
 - Maintain LOS "D" or better at all signalized intersections on Appian Way
 - The relevant LOS standard from the Congestion Management Plan (CMP) is LOS F for I-80 between State Route 4 and San Pablo Dam Road in both eastbound and westbound directions. However, the CMP does not set a threshold of significance, if the freeway segment already operates at LOS F. For the purposes of this analysis, if the freeway segment operate at LOS F under baseline conditions, an increase in traffic volumes of more than three (3) percent was considered to be significant. This three percent was considered to be within normal daily fluctuations in traffic volumes.
 - 2) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
 - 3) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

- 4) Result in inadequate emergency access.
- 5) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

There are no air-related facilities in the existing city limits or in the general vicinity of the GPU Planning Area. Given the distance to San Rafael Airport (approximately 12 miles west) and Buchanan Field Airport (approximately 13 miles east), the proposed General Plan is not expected to result in a change to air traffic patterns because the facilities do not provide commuter or connecting services. Therefore, threshold of significance 3 above is not applicable.

METHODOLOGY

Transportation Analysis Methodology and Results

The transportation impact analysis is focused on potential LOS impacts on freeways and intersections that would occur from increased travel demand associated with new land development and roadway network modifications under the proposed General Plan.

The assessment of these components of the transportation system was conducted quantitatively using the process outlined in the Analysis Methodology subsection below. For the transit, bicycle, and pedestrian systems, the policies and implementation measures were evaluated against the significance thresholds.

Analysis Methodology

The Contra Costa Transportation Authority's Travel Demand Model was used to develop future traffic volume forecasts based on the proposed Land Use Map for the GPU Planning Area. The model was used to forecast the daily roadway volumes as well as the AM and PM peak hour intersection turning movement data. The following steps were taken in the analysis:

1. Roadway Networks. The latest available CCTA Model was reviewed to ensure that future regional roadway improvements are included as part of the future 2030 condition. For the 2030 baseline condition, this included the planned Appian Way widening from two lanes to four lanes between San Pablo Dam Road and Manor Road outside the city limit. For the proposed General Plan, modifications included the proposed narrowing of San Pablo Avenue between Oakridge Road and the eastern city limit.
2. Land Use Data. The CCTA model includes future development throughout the region. The 2030 forecasts are consistent with regional totals for growth projected by the Association of Bay Area Governments (ABAG) in their *Projections 2005* report. Therefore, the traffic forecasts reflect traffic from growth in Pinole as well as traffic in the region that may use the roadways in the City of Pinole.
3. The land use data for the proposed General Plan Update were developed. The land use data was categorized into total households, single-family dwelling units, multi-family dwelling units, total employment, and employment by sector (retail, service, agriculture, manufacturing, wholesale, and other) by traffic analysis zone (TAZ) for input to the model. TAZs are defined as groupings of land use bound by natural and man made borders such as waterways, topography, and roadways that represent homogenous

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travel behavior. Model Forecasts. The model was used to produce traffic volume forecasts for 2030 baseline conditions and 2030 proposed General Plan Update conditions. The Gateway Capacity Constraint Methodology was applied in projecting the peak hour volumes. This methodology, consistent with the *West County Action Plan for Routes of Regional Significance – 2009 Update* (West County Action Plan), limits future peak hour volumes based on the capacity of major corridors (or gateways) that serve the area. The Bay Bridge serves as the gateway for to west Contra Costa County including Pinole. Both base year and future year forecasts were extracted and used to estimate the growth, which was applied to the existing counts.

4. Impact Analysis. The significance criteria were used to identify potential roadway network deficiencies. For the intersections, the future (2030) volumes were adjusted following the process established in the CCTA Technical Procedures, using the Furness method. Free-flow and congested speeds from the model were used to calculate the delay index. For the other transportation issues, the impacts were qualitatively assessed and the proposed General Plan policies were reviewed for conflicts with adopted plans and policies.

Model Forecasts Summary

Summaries of daily vehicles trips, average vehicle trip lengths, and vehicle miles traveled (VMT) for trips generated in Pinole from the model forecasts for year 2000 and 2030 baseline are presented in **Table 4.4-6**. The County model was modified to reflect the Three Corridors Specific Plan and its land use assumptions.

**TABLE 4.4-6
MODEL FORECAST SUMMARY**

Year	Households	Total Employment	Total Daily Vehicle Trips	VMT Generated (in miles)	Average Trip Length (in miles)
2000 Model	7,137	5,747	68,495	620,000	9.05
2030 Baseline	7,619	7,324	81,679	750,000	9.18

Source: Dowling Associates, Inc., 2010

Freeway Operations

2030 Baseline Conditions

Future freeway volumes are calculated based on adding incremental model growth to existing counts. The base year forecast model is 2000 and future year is 2030, which represent a total growth of 30 years. Existing traffic counts were obtained in 2007. Therefore, the growth was further adjusted by multiplying a factor of 23/30 years (or approximately 77 percent of the 30-year growth).

In 2030 under baseline conditions, the freeway would continue to operate with the same peak direction of travel as existing conditions – westbound in the AM peak hour and eastbound in the PM peak hour. Freeway mainline LOS for 2030 baseline conditions are shown in **Table 4.4-7**. All study segments would operate at LOS F in the peak commute directions.

**TABLE 4.4-7
2030 BASELINE – FREEWAY MAINLINE LOS SUMMARY**

Location	AM Peak Hour			PM Peak Hour		
	Volume	Density ¹	LOS ²	Volume	Density ¹	LOS ²
I-80 Eastbound						
West of Appian Way ³	4,977	20.3	C	6,587	> 45	<i>F</i>
Between Appian Way and Pinole Valley Road ³	5,523	22.6	C	7,369	> 45	<i>F</i>
East of Pinole Valley Road	5,326	29.9	D	6,996	> 45	<i>F</i>
I-80 Westbound						
East of Pinole Valley Road ³	6,947	> 45	<i>F</i>	5,702	23.3	C
Between Appian Way and Pinole Valley Road ³	7,196	> 45	<i>F</i>	6,004	24.6	C
West of Appian Way ³	7,302	> 45	<i>F</i>	5,841	23.9	C

Source: Dowling Associates, Inc., 2010

Notes:

¹ Density = passenger cars per mile per lane

² LOS = level of service

³ Bold/italic cells highlighted in grey indicate locations where the freeway operates at LOS F in existing conditions. With traffic growth in 2030, the freeway would continue to operate at LOS F with increased delays and queues due to downstream bottlenecks.

2030 Proposed Project Conditions

Freeway mainline LOS for 2030 proposed project conditions are shown in **Table 4.4-8**. The project would result in increased traffic volumes on the freeway mainline segments in the peak direction of travel in both AM and PM peak hours, i.e., westbound direction during the AM peak and eastbound direction during the PM peak.

**TABLE 4.4-8
2030 PROPOSED PROJECT – FREEWAY MAINLINE LOS SUMMARY**

Location	AM Peak Hour			PM Peak Hour		
	Volume	Density ¹	LOS ²	Volume	Density ¹	LOS ²
I-80 Eastbound						
West of Appian Way ³	5,067	20.7	C	6,689	> 45	<i>F</i>
Between Appian Way and Pinole Valley Road ³	5,763	23.6	C	7,663	> 45	<i>F</i>
East of Pinole Valley Road	5,588	32.0	D	7,376	> 45	<i>F</i>
I-80 Westbound						
East of Pinole Valley Road ³	7,263	> 45	<i>F</i>	6,064	24.8	C
Between Appian Way and Pinole Valley Road ³	7,432	> 45	<i>F</i>	6,252	25.7	C
West of Appian Way ³	7,423	> 45	<i>F</i>	5,976	24.5	C

Source: Dowling Associates, Inc., 2010

Notes:

¹ Density = passenger cars per mile per lane

² LOS = level of service

³ Bold/italic cells highlighted in grey indicate locations where the freeway operates at LOS F in existing conditions. With traffic growth in 2030, the freeway would continue to operate at LOS F with increased delays and queues due to downstream bottlenecks.

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IMPACTS AND MITIGATION MEASURES

Impacts to Freeway Mainline (Standard of Significance 1)

Impact 4.4.1 Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would result in an increase in freeway mainline volumes during the AM and PM peak hours. This is considered a **significant impact**.

General Plan Update

Implementation of the land use development and roadway modifications proposed in the General Plan Update would result in increased traffic volumes for all three I-80 freeway segments. The segments are currently predicted to operate at LOS F in the peak direction under 2030 Baseline Conditions as shown in Table 4.4-8. Development within the GPU Planning Area would add more trips to these freeway segments which would increase density and result in the segments continuing to operate at LOF F. For segments that are already operating at an unacceptable LOS, the threshold of significance of three percent increase in volume over baseline. Of the three segments, both freeway segments east of Pinole Valley Road and between Appian Way and Pinole Valley Road exceed this threshold and therefore, this is considered a **significant impact**.

Based on a comparison of the traffic volumes for the proposed project without the narrowing of a portion of San Pablo Avenue within Pinole (see **Table 4.4-9**), the added freeway trips are primarily a result of the proposed road narrowing on San Pablo Avenue. The travel model forecasts that the narrowing of San Pablo Avenue would result in vehicles shifting to use the freeway mainline as an alternative to traveling through the City. While the increased volume of traffic does not result in densities in the LOS F range, the low travel speeds of the traffic along these segments (due to the downstream bottlenecks along the I-80 corridor) will worsen the projected LOS F condition.

2030 Proposed Project Without Road Narrowing Conditions

As an alternative to the proposed project, freeway mainline LOS for year 2030 without the narrowing of San Pablo Avenue was examined (see **Table 4.4-9**). Without the proposed narrowing, the project would result in a minimal increase traffic volumes on the freeway mainline segments in the peak direction of travel in both AM and PM peak hours. Both westbound traffic during the AM peak and eastbound traffic during the PM peak would be impacted as the project would add more trips to the freeway that would already operate at LOS F. However, without the road narrowing, the increase in traffic volumes on these three segments of I-80 in the peak direction would not exceed the three percent threshold used to establish a significant impact.

Without the narrowing, the traffic volumes on the local streets, particularly San Pablo Avenue, would continue to increase. During the peak hours in the peak direction, the travel demand model show as much as 73 and 82 percent of the traffic on San Pablo in Old Town to be regional trips traveling through the city. The impacts to local circulation without the narrowing of San Pablo Avenue are described below under the intersection analysis.

TABLE 4.4-9
2030 PROPOSED PROJECT WITHOUT ROAD NARROWING – FREEWAY MAINLINE LOS SUMMARY

Location	AM Peak Hour			PM Peak Hour		
	Volume	Density ¹	LOS ²	Volume	Density ¹	LOS ²
I-80 Eastbound						
West of Appian Way ³	4,985	20.4	C	6,685	> 45	F
Between Appian Way and Pinole Valley Road ³	5,531	22.6	C	7,443	> 45	F
East of Pinole Valley Road	5,333	30.0	D	7,082	> 45	F
I-80 Westbound						
East of Pinole Valley Road ³	6,986	> 45	F	5,700	23.3	C
Between Appian Way and Pinole Valley Road ³	7,243	> 45	F	5,997	24.5	C
West of Appian Way ³	7,374	> 45	F	5,828	23.8	C

Source: Dowling Associates, Inc., 2010

Notes:

1 Density = passenger cars per mile per lane

2 LOS = level of service

3 Bold/italic cells highlighted in grey indicate locations where the freeway operates at LOS F in existing conditions. With traffic growth in 2030, the freeway would continue to operate at LOS F with increased delays and queues.

Three Corridors Specific Plan

Implementation of the proposed Three Corridors Specific Plan would consist of the revitalization of the San Pablo Avenue, Pinole Valley Road, and Appian Way corridors, which could include new development and/or redevelopment of various urban uses. The Three Corridors Specific Plan directs the majority of the city's future growth to sites designated for mixed and multiple-family use in the San Pablo Avenue, Pinole Valley Road, and Appian Way corridors. The Three Corridors Specific Plan also identifies opportunity sites for infill mixed-use development along the city's commercial corridors in close proximity to transit and other amenities. The overall result of revitalizing these corridors would be more intense land uses, which would potentially result in increased traffic volumes within the Specific Plan area as well as on Interstate 80. This is considered a **significant** impact.

Zoning Code Update

Updates to the Zoning Code are further clarify the types and forms of uses permitted under particular land use designations, but would not result in any development activities beyond that analyzed for the proposed General Plan Update. Therefore, the Zoning Code Update would have an impact similar to that for the General Plan Update as discussed above.

Proposed General Plan Policies and Action Items That Address Impacts to Freeway Mainline

The proposed General Plan Update incorporates the following policies and actions that guide the development of the proposed circulation system and reduce potential impacts to I-80.

Policy CE.1.2 Coordinate development of the circulation system with sustainable land use planning.

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- Action CE.1.2.1 Give priority to projects that will contribute to a reduction in vehicle miles traveled per capita, while maintaining economic vitality and sustainability.
- Action CE.1.2.2 Require development to provide bus, bicycle, pedestrian and alternative fuel vehicle facilities, as appropriate.
- Policy CE.1.6 Encourage transit services between major employment centers in each area of the city and surrounding communities.
- Action CE.1.6.1 The City shall continue to work cooperatively with local and regional transit service providers with transportation agencies, and other municipal jurisdictions such as BART, WCCTAC, WestCAT, AC Transit, Contra Costa County, West County cities, CCTA, EBRPD, and Railroads, to maximize connectivity between existing or proposed transit stations, schools, parks, employment opportunities, and housing within the GPU Planning Area and region.
- Action CE.1.6.2 Work with WestCAT, AC Transit and other transit providers to support expanded transit lines and increased frequency of service on major transit arterials.
- Policy CE.2.2 Identify needed improvements to the highway/interstate facilities in the city and in order to aid Caltrans in implementing necessary programs on the state highway system and its interchanges/intersections with local roadways.
- Action CE.2.2.1 Work with Caltrans and adjacent jurisdictions to improve the operational performance of I-80 and local transit corridors designated Priority Development Areas (San Pablo Avenue, Appian Way and Pinole Valley Road).
- Action CE.2.2.2 Work with Caltrans in analyzing the performance of freeway interchanges located in the General Plan area and seek appropriate improvements.
- Policy CE.3.3 All projects shall pay their fair share of the cost for project impacts on the circulation network in order to ensure that established levels of service are met.
- Action CE.3.3.1 Establish a mechanism for collecting appropriate fees from development projects that will offset negative impacts on LOS thresholds.
- Action CE.3.3.2 Adopt traffic impact fees that are based upon peak hour trip generation.
- Policy CE.6.1 Encourage the use of carpooling and vanpooling to maintain an acceptable LOS on city streets and I-80.

In addition, Three Corridors Specific Plan Circulation Policies 3 and 7, as well as transit, bicycle, and pedestrian facilities identified in Section 5.0, *Circulation*, of the Specific Plan, facilitate the creation of a pedestrian friendly environment throughout the Specific Plan areas. These policies and facilities may mitigate a portion of increased traffic volumes within the Specific Plan area as well as on Interstate 80.

Mitigation Measures

Several planning efforts are under way to address this regional issue. They include the I-80 Corridor Study by the Sacramento Council of Governments, 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, Caltrans, local agencies including the City of Pinole, and local transit agencies in Alameda and Contra Costa counties. Further, the WCCTAC Action Plan includes objectives such as increasing High Occupancy Vehicle (HOV) lane use, improving transit service, increasing the size and number of park and ride lots, and additional interchanges to help alleviate congestion along the I-80 corridor. The update to the plan was adopted in July 2009. Despite these efforts, no feasible mitigation measures are available to improve the projected LOS to levels below the threshold of significance; therefore, impacts would remain **significant and unavoidable**.

While the 2030 proposed project without road narrowing conditions alternative would reduce this freeway impact to less than significant, the effects on local circulation and access for vehicles as well as pedestrians and bicyclists in the city, particularly in Old Town, would not support the goals and policies of the proposed GP. Therefore, impacts would remain significant and unavoidable.

Conflicts with Acceptable Volume-to-Capacity Ratios (Standard of Significance 1)

Impact 4.4.2 Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would result in an increase in volume-to-capacity (v/c) ratios and a decrease in LOS on study intersections during the AM and PM peak hours. This is considered a **significant** impact.

General Plan Update

The forecast intersection traffic volume for Year 2030 baseline conditions is shown **Figure 4.4-6**. **Figure 4.4-7** depicts forecast intersection traffic volume for the proposed General Plan Update with the narrowing of San Pablo Avenue. **Figure 4.4-8** depicts forecasted intersection traffic volume for the proposed General Plan Update without the narrowing of San Pablo Avenue. The intersection levels of service under both 2030 conditions are summarized in **Table 4.4-10**. The peak hour volumes at several intersections along key corridors serving Pinole, such as San Pablo Avenue, Appian Way, and Pinole Valley Road, would approach or exceed the capacity of the intersections, resulting in substandard conditions as identified in bold in the table.

**TABLE 4.4-10
YEAR 2030 PEAK HOUR INTERSECTION LEVELS OF SERVICE
BASELINE AND PROPOSED GENERAL PLAN UPDATE**

#	Intersection	Time Period	2030 Baseline		Proposed GP Update		Proposed GP Update Without the Narrowing of San Pablo	
			LOS	v/c Ratio	LOS	v/c Ratio	LOS	v/c Ratio
1	Del Monte Drive at San Pablo Avenue	AM	B	0.610	A	0.570	B	0.620
		PM	A	0.550	A	0.460	A	0.550

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#	Intersection	Time Period	2030 Baseline		Proposed GP Update		Proposed GP Update Without the Narrowing of San Pablo	
			LOS	v/c Ratio	LOS	v/c Ratio	LOS	v/c Ratio
2	Pinole Shores Drive at San Pablo Avenue	AM	A	0.560	A	0.510	A	0.560
		PM	A	0.440	A	0.370	A	0.440
3	Sunnyview Drive at San Pablo Avenue	AM	A	0.510	A	0.470	A	0.520
		PM	A	0.500	A	0.430	A	0.510
4	Appian Way at San Pablo Avenue	AM	D	0.850	B	0.630	E	0.900
		PM	F	1.060	C	0.740	F	1.110
5	Oak Ridge Lane at San Pablo Avenue	AM	A	0.570	D	0.810	A	0.570
		PM	A	0.530	B	0.670	A	0.550
6	Tennent Avenue at San Pablo Avenue	AM	C	0.780	E	0.980	D	0.810
		PM	B	0.680	D	0.830	B	0.680
7	Fernandez Avenue at San Pablo Avenue	AM	B	0.600	C	0.780	A	0.600
		PM	A	0.590	B	0.600	B	0.610
8	Pinole Valley Road at San Pablo Avenue	AM	C	0.780	E	0.950	D	0.850
		PM	D	0.830	F	1.060	D	0.850
9	John Street at San Pablo Avenue	AM	B	0.690	E	0.910	C	0.700
		PM	A	0.580	C	0.740	A	0.580
10	Pinole Valley Road at Tennent Avenue	AM	B	0.610	B	0.670	B	0.670
		PM	A	0.380	A	0.450	A	0.380
11	Pinole Valley Road at Henry Avenue	AM	A	0.540	B	0.610	A	0.570
		PM	A	0.530	C	0.700	A	0.560
12	Pinole Valley Road at I-80 westbound ramps	AM	B	0.660	B	0.680	B	0.680
		PM	A	0.560	B	0.640	A	0.580
13	Pinole Valley Road at I-80 eastbound ramps	AM	C	0.700	B	0.700	C	0.710
		PM	D	0.900	E	0.930	D	0.880
14	Pinole Valley Road at Estates Avenue	AM	A	0.490	A	0.480	A	0.490
		PM	A	0.470	A	0.460	A	0.490
15	Pinole Valley Road at Ramona Street	AM	A	0.320	A	0.330	A	0.340
		PM	A	0.280	A	0.300	A	0.300
16	Appian Way at Mann Drive	AM	A	0.540	A	0.530	A	0.550
		PM	A	0.460	A	0.400	A	0.470

			2030 Baseline		Proposed GP Update		Proposed GP Update Without the Narrowing of San Pablo	
#	Intersection	Time Period	LOS	v/c Ratio	LOS	v/c Ratio	LOS	v/c Ratio
17	Appian Way at Tara Hills Drive-Canyon Drive	AM	E	0.910	D	0.880	E	0.950
		PM	B	0.680	C	0.710	C	0.700
18	Appian Way at I-80 westbound ramps	AM	D	0.900	D	0.870	E	0.940
		PM	C	0.710	C	0.720	C	0.720
19	Appian Way at I-80 eastbound ramps	AM	B	0.650	A	0.560	B	0.680
		PM	C	0.760	C	0.740	C	0.750
20	Appian Way at Fitzgerald Drive-Sara Drive	AM	B	0.700	C	0.760	C	0.730
		PM	D	0.820	D	0.870	D	0.860

Source: Dowling Associates, Inc., 2010

Note: Bold indicates facilities that would not meet current standard; shaded cells indicate significant impacts.

The 2030 conditions at these intersections represent increase traffic volumes due to growth in the GPU Planning Area as well as in adjacent communities. In addition, San Pablo Avenue, as a parallel arterial to the congested I-80 corridor, and Appian Way, providing access to the freeway, serve not only local traffic, but regional traffic along the I-80 corridor. Under the proposed General Plan Update with the narrowing of San Pablo Avenue, some of the traffic on San Pablo Avenue would shift back to I-80, but the reduced capacity due to the lane reduction on San Pablo Avenue would result in increased v/c at the intersection with John Street, Pinole Valley Road and Tennent Avenue. The narrowing also results in lower traffic volumes on San Pablo Avenue south of the narrowing at Appian Way as well as on Appian Way between San Pablo Avenue and I-80. At these locations the LOS improves to LOS D or better.

When compared to the General Plan Update without the narrowing of San Pablo Avenue, the v/c ratios would increase at the intersections along Appian Way. The lower v/c ratios along San Pablo Avenue are attributed to reduced capacity due to the lane reduction.

Implementation of the land use development and roadway modifications proposed in the General Plan Update would cause four study intersections to operate below City level of service standards as shown in **Table 4.4-10**. The San Pablo Avenue intersections with Tennent Avenue, Pinole Valley Road, and John Street would degrade to LOS E or LOS F during one or both peak hours. The deterioration in operation at these intersections can be attributed to the proposed narrowing of San Pablo Avenue from the existing four travel lanes to two travel lanes through the Old Town area. In addition, the intersection of Pinole Valley Road and the I-80 eastbound ramp would continue to operate at a substandard level with an increase in v/c by 0.03 for the General Plan Update (and a decrease in v/c by 0.02 for the General Plan Update without narrowing of San Pablo Avenue) and level of service degrade from a high LOS D to a low LOS E. This is considered a **significant** impact.

Without the narrowing, the impacts shift to Appian Way, where the LOS at three intersections would be below the acceptable standard. At the intersections of Appian Way with San Pablo Avenue, Tara Hill Drive-Canyon Drive, and I-80 westbound ramps, the v/c ratio increases resulting in LOS E or F conditions.

4.4 TRAFFIC AND CIRCULATION

Three Corridors Specific Plan

The proposed project also includes development of a Specific Plan that covers three major city corridors. The Three Corridors Specific Plan covers major areas of redevelopment under consideration in the San Pablo Avenue, Pinole Valley Road, and Appian Way corridors. The overall result of revitalizing these corridors would be more intense land uses, which would potentially result in increased traffic volumes within the Specific Plan area. As shown in **Table 4.4-10**, several intersections with San Pablo Avenue and Pinole Valley Road would be impacted, with resulting decreases in LOS and increases in v/c ratio. This is considered a **significant** impact.

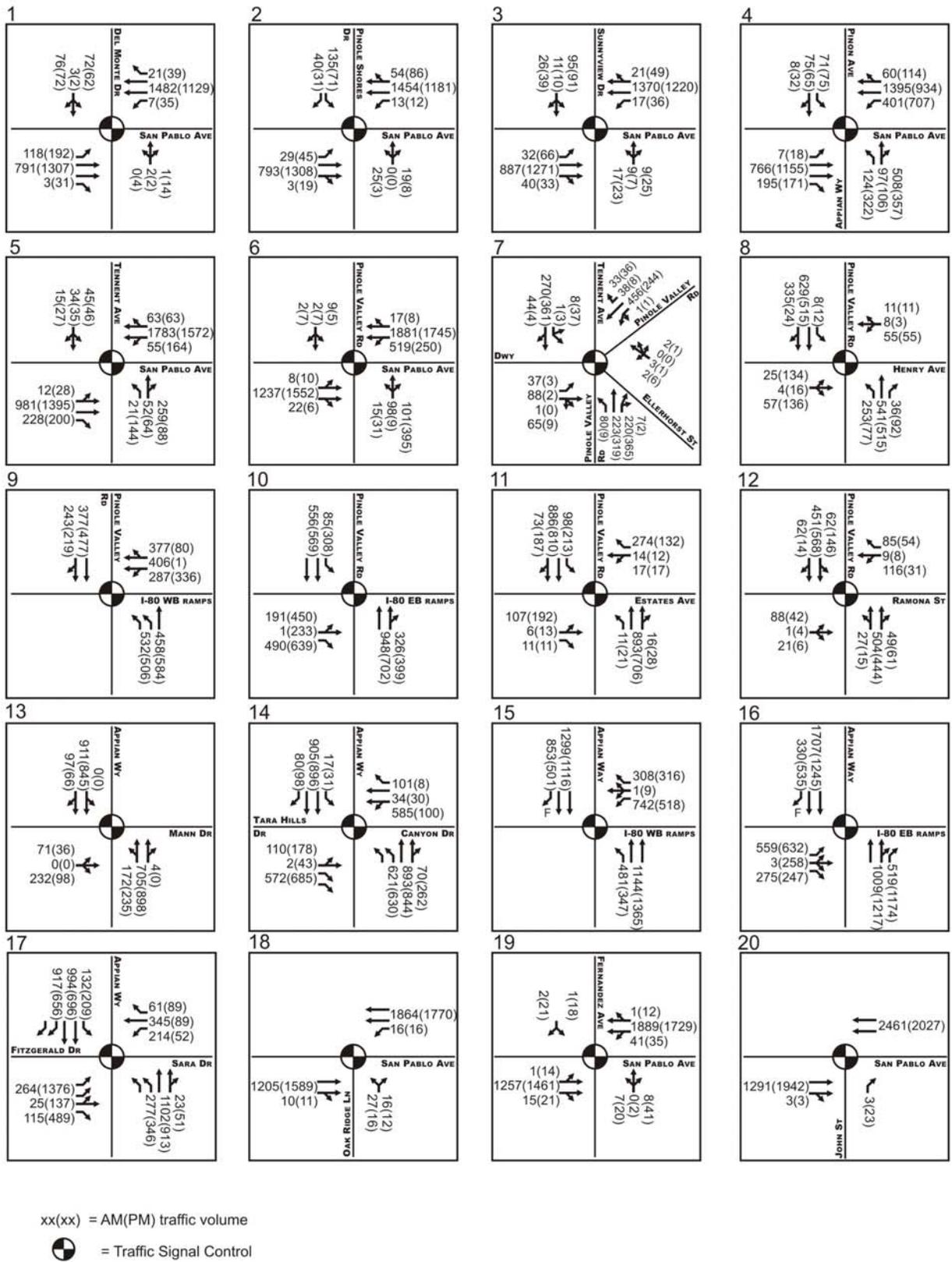
Zoning Code Update

Updates to the Zoning Code are intended to further clarify the types and forms of uses permitted under particular land use designations, but would not result in any development activities beyond that analyzed for the proposed General Plan Update. Therefore, the Zoning Code Update would have an impact similar to that for the General Plan Update as discussed above.

Proposed General Plan Policies and Action Items that Address Conflicts with V/C Ratio

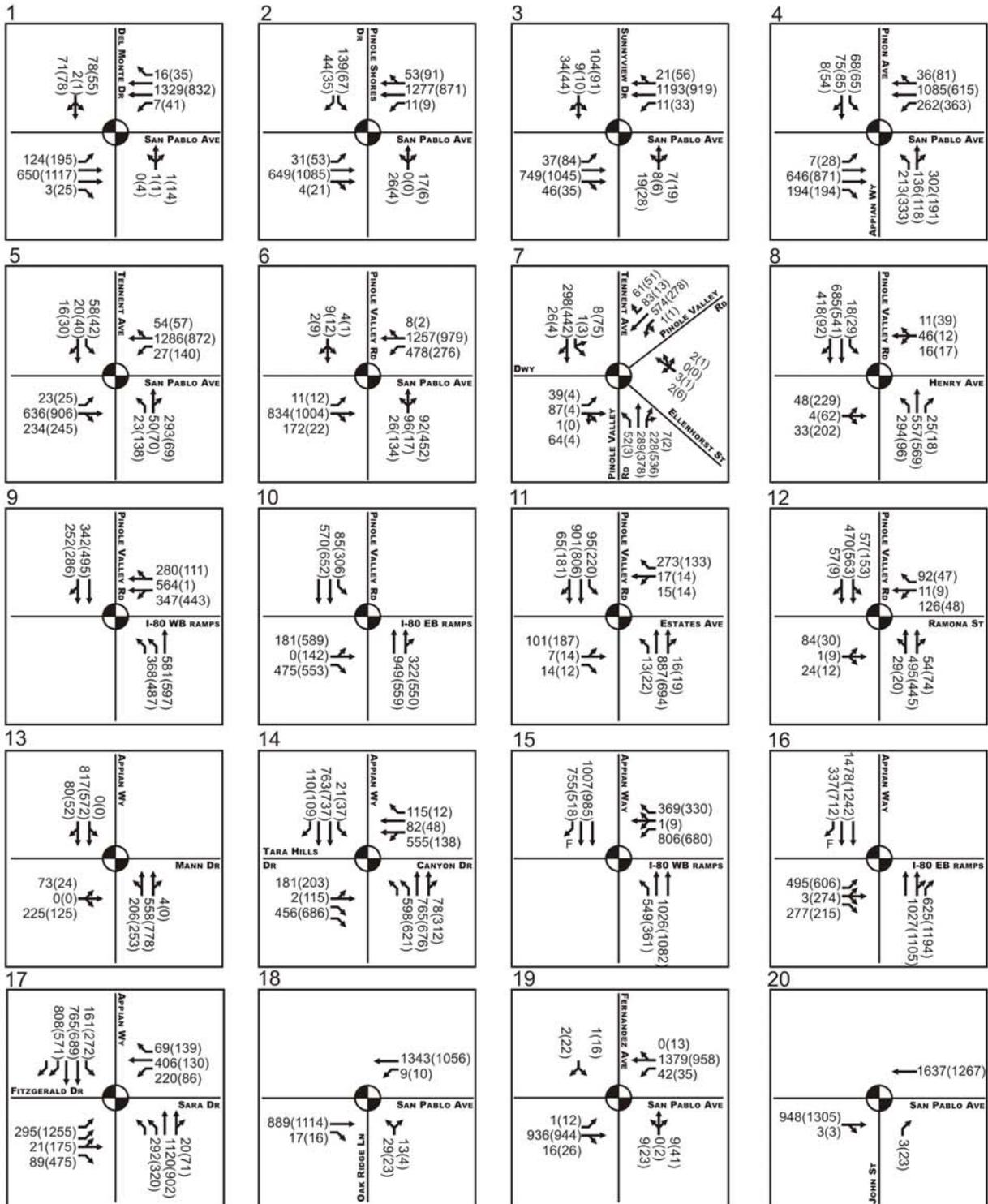
The proposed General Plan Update incorporates the following policies and actions that guide the development of the proposed circulation system and reduce potential level of service impacts to study roadway segments and intersections.

Policy CE.1.2	Coordinate development of the circulation system with sustainable land use planning.
Action CE.1.2.1	Give priority to projects that will contribute to a reduction in vehicle miles traveled per capita, while maintaining economic vitality and sustainability.
Action CE.1.2.2	Require development to provide bus, bicycle, pedestrian and alternative fuel vehicle facilities, as appropriate.
Action CE.1.2.3	Provide safe and convenient access for pedestrians and bicyclists, wherever feasible.
Policy CE.1.6	Encourage transit services between major employment centers in each area of the city and surrounding communities.
Action CE.1.6.1	The City shall continue to work cooperatively with local and regional transit with transportation agencies and other jurisdictions such as BART, WCCTAC, Transit Providers, West County Jurisdictions, CCTA, Railroads, to maximize connectivity to existing or proposed transit stations within the GPU Planning Area.
Action CE.1.6.2	Work with WestCAT, AC Transit and other transit providers to support expanded transit lines and increased frequency of service on major transit arterials.



Source: Dowling Associates, Inc. 2010

Figure 4.4-6
 Intersection Traffic Volume & Lane Geometry 2030 Baseline Conditions

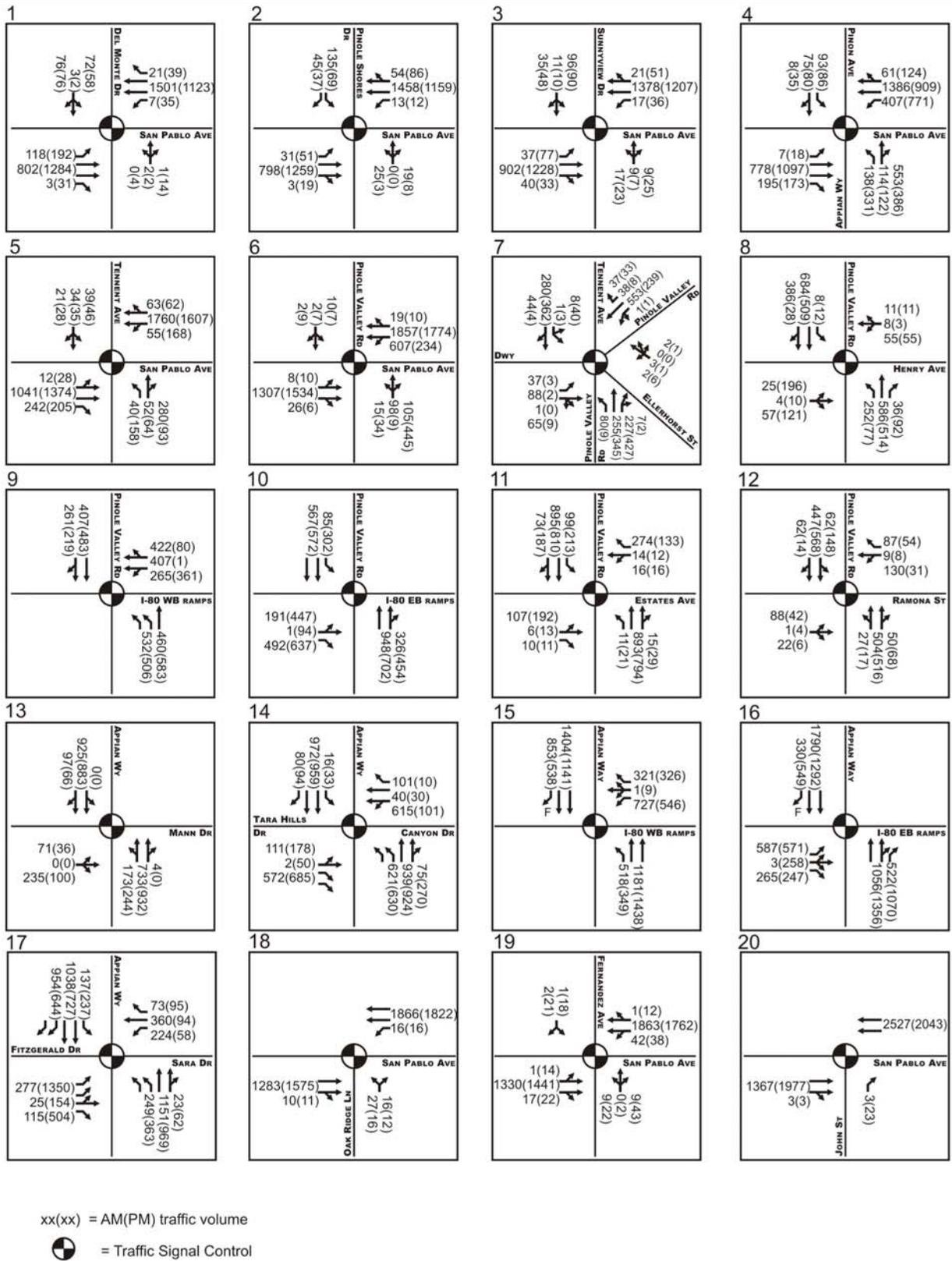


xx(xx) = AM(PM) traffic volume

= Traffic Signal Control

Source: Dowling Associates, Inc. 2010

Figure 4.4-7
Intersection Traffic Volume & Lane Geometry Existing Conditions Proposed
General Plan Update with San Pablo Avenue Narrowing



Source: Dowling Associates, Inc. 2010

Figure 4.4-8
 Intersection Traffic Volume & Lane Geometry Existing Conditions Proposed
 General Plan Update without San Pablo Avenue Narrowing

- Policy CE.3.1 Apply the traffic service objectives indicated on Figure 7.4 [of the Circulation Element] for the identified roadways. LOS (level of service) and volume to capacity (V/C) thresholds are defined as follows:
- Level of Service A (50 to 59 V/C):** Indicates a relatively free flow of traffic, with little or no limitation on vehicle movement or speed.
- Level of Service B (60 to 69 V/C):** Describes a steady flow of traffic, with only slight delays in vehicle movement and speed. All queues clear in a single signal cycle.
- Level of Service C (70 to 79 V/C):** Denotes a reasonably steady, high-volume flow of traffic, with some limitations on movement and speed, and occasional backups on critical approaches. LOS C+ = 70 to 75 V/C. LOS C- = 75 to 79 V/C.
- Level of Service D (80 to 89 V/C):** Denotes the level where traffic nears an unstable flow. Intersections still function, but short queues develop and cars may have to wait through one cycle during short peaks. LOS D+ = 80 to 85 V/C. LOS D- = 85 to 89 V/C.
- Level of Service E (90 to 99 V/C):** Describes traffic characterized by slow movement and frequent (although momentary) stoppages. This type of congestion is considered severe, but is not uncommon at peak traffic hours, with frequent stopping, long-standing queues, and blocked intersections. LOS E+ = 90 to 94 V/C.
- Level of Service F (100+ V/C):** Describes stop-and-go traffic characterized by traffic jams and stoppages of long duration. Vehicles at signalized intersections usually have to wait through one or more signal changes, and "upstream" intersections may be blocked by the long queues.
- Action CE.3.1.1 Work with WCCTAC and CCTA to revise the Action Plan level of service standard for San Pablo Avenue within Old Town to LOS F to create a more pedestrian-friendly environment and facilitate pedestrian and bicycle access and circulation.
- Action CE.3.1.2 Project applicants shall provide a traffic study forecasting traffic impacts, identifying deficient roadways and intersections, and providing an implementation plan for needed improvements to the satisfaction of the Public Works Director/City Engineer.
- Action CE.3.1.3 The City shall develop a Roadway/Trail Master plan to improve the sidewalk, bike trail, pedestrian trail and roadway system, as necessary for buildout of the General Plan.
- Policy CE.3.2 Maintain roadway network at or above established LOS thresholds.
- Policy CE.3.3 All projects shall pay their fair share of the cost for project impacts on the circulation network in order to ensure that established levels of service are met.

4.4 TRAFFIC AND CIRCULATION

- Action CE.3.3.1 Establish a mechanism for collecting appropriate fees from development projects that will offset negative impacts on LOS thresholds.
- Action CE.3.3.2 Adopt traffic impact fees that are based upon peak hour trip generation.
- Policy CE.3.4 Reduce traffic congestion at key intersections throughout the city, as appropriate and in line with the overall sustainability goals of the City.
- Action CE.3.4.1 Construct necessary improvements to intersections to ensure that the applicable levels of service mentioned in Policy CE.3.1 are achieved.

In addition, Three Corridors Specific Plan Circulation Policies 3 and 7, as well as transit, bicycle, and pedestrian facilities identified in Section 5.0, *Circulation*, of the Specific Plan, facilitate the creation of a pedestrian friendly environment throughout the Specific Plan areas. These policies and facilities may mitigate a portion of increased traffic volumes within the Specific Plan area.

Mitigation Measures

Widening of the intersection of Pinole Valley Road and I-80 eastbound ramps would be required to reduce the v/c to meet the LOS standard. However, since this intersection is at the freeway ramps, an alternative analysis was performed using the Highway Capacity Manual methodology required by Caltrans. This methodology takes into considerations the signal timing and operations of the intersection and establishes the LOS based on delays at the intersection. With this methodology the intersection would operate at LOS D with a delay of 48.4 seconds during the PM peak hour. This LOS D would be similar to that for the No Project and proposed project without the narrowing when using the HCM methodology.

The proposed project exceeds the adopted LOS standards for the intersections on portions of San Pablo Avenue in Old Town. Maintaining the intersections with the additional travel lane to accommodate automobiles and trucks would address only one facet of transportation within the GPU Planning Area. The proposed project seeks to amend the LOS established by policy to a less restrictive standard. Because about 75 percent of the traffic on this roadway originates from outside of the GPU Planning Area and uses the roadway as a convenient by-pass for the freeway, the City would prefer a more balanced transportation corridor and seeks to redirect inter-regional traffic back to the freeway, or to alternative modes of transportation such as bicycles, buses, and rail. This modification to the policy would eliminate the need to construct certain improvements at the intersections and result in a **less than significant** impact. Note that the impacts to the mainline freeway are only marginally worsened as a result of this approach. See Table 4.4-9.

Conflict with an Applicable Congestion Management Plan (Standard of Significance 3)

Impact 4.4.3 Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would conflict with the multimodal transportation service objectives (MTSOs) identified in the West County Action Plan. This is considered a **significant** impact.

As summarized in **Table 4.4-11**, the delay index for I-80 between the Alameda county line and the Carquinez Bridge would be maintained at less than 3.0 with and without the proposed General Plan Update.

TABLE 4.4-11
DELAY INDEX FOR INTERSTATE 80 BETWEEN ALAMEDA COUNTY LINE AND CARQUINEZ BRIDGE
2030 BASELINE AND PROPOSED GENERAL PLAN UPDATE

Scenario	Direction	Distance (miles)	AM Delay Index	PM Delay Index
2030 Baseline	I-80 NB	13.802	1.61	2.33
	I-80 SB	13.807	2.47	1.82
Proposed General Plan Update	I-80 NB	13.802	1.64	2.51
	I-80 SB	13.807	2.63	1.87

Source: Dowling Associates, Inc., 2010

Implementation of the proposed General Plan Update would not exceed the MTSOs outlined in the West County Action Plan for I-80. However, implementation of proposed General Plan Update Action CE.3.1.1 would modify the level of service standards along the Old Town segment of San Pablo Avenue to LOS F. The West County Action Plan dictates that all signalized intersections along San Pablo Avenue shall maintain LOS E or better. Likewise the West County Action Plan calls for maintaining LOS D or better along Appian Way. As shown in the intersection analysis above, the change in LOS standard for Appian Way is not needed for the proposed project with the narrowing, since regional traffic would shift back to the freeway. Therefore, the project conflicts with the MTSOs established by the West County Action Plan. This is considered a **significant** impact.

General Plan Update

The City of Pinole is largely built out with opportunities for infill housing and commercial development. Proposed Action CE.3.1.1 would modify the level of service standards along the Old Town segment of San Pablo Avenue to LOS F. These proposed levels of service would exceed thresholds established by the West County Action Plan for signalized intersections along San Pablo Avenue. Therefore, this is considered a **significant** impact.

Three Corridors Specific Plan

The proposed project also includes development of a Specific Plan that covers three major city corridors. The Three Corridors Specific Plan covers major areas of redevelopment under consideration in the San Pablo Avenue, Pinole Valley Road, and Appian Way corridors. Implementation of the proposed Three Corridors Specific Plan would consist of revitalization in these areas. Focus would be on replacing vacated and underutilized commercial areas with new residential and commercial mixed-use developments and increasing the density in residential areas. The overall result would be more intense land uses, which would potentially result in increased traffic volumes within the Specific Plan area. As the corridors involved are addressed in the West County Action Plan, this impact is considered **significant**.

Zoning Code Update

Updates to the Zoning Code are intended to further clarify the types and forms of uses permitted under particular land use designations, but would not result in any development activities beyond that analyzed for the proposed General Plan Update. This would not conflict with the multimodal transportation service objectives (MTSOs) identified in the West County Action Plan.

4.4 TRAFFIC AND CIRCULATION

Therefore, the Zoning Code Update would have an impact similar to that for the General Plan Update as discussed above.

Proposed General Plan Policies and Action Items that Address Conflict with an Applicable Congestion Management Plan

Action CE.3.1.1 Work with WCCTAC and CCTA to revise the Action Plan level of service standard for San Pablo Avenue within Old Town to LOS F to create a more pedestrian-friendly environment and facilitate pedestrian and bicycle access and circulation.

The above action of the proposed General Plan Update directs the City to work with WCCTAC and CCTA to revise the MTSO for San Pablo Avenue within Old Town to LOS F. This action provides mitigation to eliminate the conflict between the West County Action Plan and the proposed General Plan Update related to the Old Town segment of San Pablo Avenue.

Mitigation Measures

Maintaining the existing level of service performance standards along San Pablo Avenue and Appian Way, which are consistent with the MTSO, would mitigate the proposed project's impact. However, the proposed modification in level of service standards reflects greater emphasis on alternative modes of transportation and allows for more sustainable growth in the city. The implementation of the General Plan Update would better balance the needs of all roadway users despite its conflict with the West County Action Plan's MTSOs.

To address the proposed LOS change for Appian Way, the following modification to the proposed Action CE.3.1.1 should be included in the Circulation Element.

MM 4.4.3 Action CE.3.1.1 of the Circulation Element of the General Plan shall be revised to read: Work with WCCTAC and CCTA to revise the Action Plan level of service standard for San Pablo Avenue within Old Town to LOS F and for Appian Way between Mann Drive and I-80 to LOS E as well as new MTSO's that reflect non-motorized LOS.

If the City is able to work with WCCTAC and CCTA to revise the West County Action Plan, or the City modifies the proposed Circulation Element to be consistent with the adopted West County Action Plan, the project impact would be less than significant. However, since the outcome of the revision is dependent upon an action by another independent agency, this impact is considered **significant and unavoidable**.

Roadway Hazards or Incompatible Uses (Standard of Significance 3)

Impact 4.4.4 Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would result in changes to the circulation network. However, the changes would not increase hazards due to a design feature or incompatible uses. Therefore, the project impact is considered to be **less than significant**.

Subsequent land use activities associated with implementation of the proposed General Plan Update may require new roadway construction or modification to the existing circulation network associated with specific projects. The design of any new roadways or modifications

would be required to meet the City's roadway design standards. Adherence to such standards would preclude the construction of any unsafe design features. Therefore, the project is anticipated to result in **less than significant** impacts with regard to roadway hazards or incompatible uses.

General Plan Update

Implementation of the roadway modifications proposed in the General Plan Update would be designed to meet the City's roadway design standards. Therefore, General Plan Update land use changes and roadway modifications are considered to have a **less than significant** impact with regard to roadway hazards or incompatible uses.

Three Corridors Specific Plan

The proposed project includes development of a Specific Plan that covers the San Pablo Avenue, Pinole Valley Road, and Appian Way corridors. Any roadway improvements necessary within the Specific Plan would be designed to meet the City's roadway design standards. Therefore, roadway hazards and land use incompatibilities associated with the Three Corridors Specific Plan are anticipated to result in **less than significant** impacts.

Zoning Code Update

The Zoning Code establishes zoning districts based on the General Plan land use designations. Adoption of the General Plan will require amendments to the Zoning Code for consistency with the new land designations provided by the Three Corridors Specific Plan. These updates would not result in any development activities beyond those analyzed for the proposed GPU. Therefore, the Zoning Code Update would have an impact similar to that for the General Plan Update as discussed above.

Proposed General Plan Policies and Action Items that Address Roadway Hazards

The proposed General Plan Update includes the following policies and actions that address safety and roadway hazards.

- Action CE.2.1.3 Work with emergency service providers to ensure the transportation system facilitates efficient service delivery and protects public safety.
- Action CE.4.4.2 Roadways experiencing or forecast to experience worse than applicable level of service conditions (unstable or forced traffic flows) shall be improved, unless economic conditions, community character issues or public health, safety or welfare factors are such that needed improvements would be detrimental to other City goals and objectives.
- Action CE.7.3.4 Minimize bicycle/pedestrian/motor vehicle conflicts by providing proper trail, street and intersection design and separation.
- Policy CE.7.4 Establish bicycle safety as a priority through ongoing public education.
- Action CE.7.4.1 Assist in the development and dissemination of public education programs to promote bicycle safety.

4.4 TRAFFIC AND CIRCULATION

- Action CE.8.1.1 As feasible, ensure that all intersections in areas with pedestrian usage are signalized with curb ramps, bulbouts, high-contrast crosswalks and pedestrian actuation, and other safety measures.
- Policy CE.8.3 Design access ways to school facilities that will ensure public safety.
- Action LU.8.1.1 Utilize the Three Corridors Specific Plan to encourage attractive mixed-use development along San Pablo Avenue while retaining Pinole's important view corridors; providing a safe circulation plan that includes traffic calming measures, enhanced transit, bicycle, and pedestrian facilities as well as to encourage sustainable and green building environment.
- Action LU.8.2.1 Adopt and implement the Three Corridors Specific Plan for the Pinole Valley Road transportation corridor (Action LU.1.1.1) to include design guidelines that are appropriate for this area and still retain Pinole's character; a circulation plan that includes traffic calming measures, transit options, and improved bicycle and pedestrian facilities; and sustainable, green building policies.
- Action LU.8.3.1 Adopt and implement the Three Corridors Specific Plan for the Appian Way transportation corridor (Action LU.1.1.1) to include design guidelines that are appropriate for this area and still retain Pinole's character; a circulation plan that includes traffic calming measures, streetscaping, signage, transit options, and improved bicycle and pedestrian facilities; and sustainable, green building policies.

In addition, Three Corridors Specific Plan Circulation Policy 1 provides for the safe and efficient movement of people and goods within and through the Specific Plan areas while Circulation Policy 2 requires all future roadway and intersection improvements to consider pedestrian and traffic safety first and foremost. Circulation Policies 7 and 8 provide for safe passage of pedestrians and bicyclists, as well as for people who are disabled or impaired, using San Pablo Avenue, Pinole Valley Road and Appian Way. These policies further address safety and roadway hazards resulting from the proposed project.

Mitigation Measures

None required.

Emergency Access (Standard of Significance 4)

Impact 4.4.5 Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would result in an increase in vehicular traffic and changes to the roadway network, which may potentially increase emergency access conflicts. This is considered a **less than significant** impact.

Implementation of the proposed General Plan would increase the amount of vehicle traffic and modify the roadway network. However, the proposed General Plan Update is designed to provide and maintain a comprehensive circulation system within the city that would provide adequate roadway connections and emergency access options. The proposed narrowing of San Pablo Avenue in the Old Town area and the resulting degradation of level of service between Tennent Avenue and John Street may cause delays along San Pablo Avenue during

the morning and evening peak periods. Bike lanes and striped medians are proposed on the roadway that would allow vehicles to pull over to the right and allow emergency response vehicles to pass on the left. The roadway design for the narrowing would be reviewed by the City's police and fire departments to ensure compliance with established standards and emergency requirements. Therefore, the project impact is anticipated to be **less than significant**.

General Plan Update

The proposed General Plan Update is designed with adequate roadway connections and emergency access options. Therefore, impacts to emergency access resulting from the General Plan Update are considered **less than significant**.

Three Corridors Specific Plan

The proposed project includes development of a Specific Plan that covers the San Pablo Avenue, Pinole Valley Road, and Appian Way corridors. Any roadway improvements necessary within the Specific Plan area would be designed to meet the City's roadway design standards, including provision of adequate emergency access. Therefore, impacts to emergency access associated with the Three Corridors Specific Plan are considered **less than significant**.

Zoning Code Update

The Zoning Code establishes zoning districts based on the General Plan land use designations. Adoption of the General Plan will require amendments to the Zoning Code for consistency with the new land designations provided by the Three Corridors Specific Plan. These updates would not result in any development activities beyond those analyzed for the proposed GPU. Therefore, the Zoning Code Update would have an impact similar to that for the General Plan Update as discussed above.

Proposed General Plan Policies and Action Items that Address Emergency Access

The proposed General Plan Update includes the following policies and actions that address emergency access.

- Action CE.2.1.3 Work with emergency service providers to ensure the transportation system facilitates efficient service delivery and protects public safety.
- Action CS.2.5.5 Develop Evacuation Plans. Work with agencies that provide emergency preparedness, response and recovery services to formulate definitive plans and procedures for evacuation of hazard-prone areas.

In addition, Chapter 7.0, *Private Realm Standards and Design Guidelines*, of the proposed Three Corridor Specific Plan requires site circulation to allow for and facilitate emergency access to the site and all buildings.

Mitigation Measures

None required.

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Conflicts with Programs Supporting Alternative Transportation (Standard of Significance 5)

Impact 4.4.6 Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would support continued and expanded transit use, bicycling, and walking throughout the city, although changes to the roadway network may potentially affect bus operations. This is considered a **less than significant** impact.

The General Plan Update supports bicycle use and walking as forms of non-motorized transportation by establishing goals and related policies to enhance bicycle and pedestrian infrastructures throughout the city (Goal CE.7 and CE.8). For example, the proposed narrowing of San Pablo Avenue through Old Town would allow for the construction of bike lanes and provision of curb bulb-outs that would shorten the crossing distance and minimize exposure for pedestrians. As such, the General Plan Update would have positive impacts on bicycle and pedestrian facilities.

Regarding public transit, the narrowing of San Pablo Avenue may result in nominal delay for bus service during the peak commute periods. Furthermore, even though currently there is no bus stop in Old Town between John Street and Oak Ridge Avenue, stopped buses may inhibit through traffic if bus stops are added in the future. The proposed pedestrian bulb-outs would also require buses to pull into and out of the parking lane to load and unload passengers, which results in additional delays. Similar to emergency access discussed under Impact 4.4.5, the availability of bike lanes and striped medians would allow through traffic to pass on the left of the stopped bus. The City will work with WestCAT to design a narrowing plan compatible with the transit agency's needs, such as longer bulb-outs that can accommodate buses.

General Plan Update

Goal CE.7 and CE.8 of the General Plan Update establish goals and related policies to support bicycle use and walking as forms of non-motorized transportation throughout the city. Therefore, the General Plan Update would not conflict with plans supporting alternative transportation, and this impact is considered **less than significant**.

Three Corridors Specific Plan

The Three Corridors Specific Plan covers major areas of redevelopment under consideration in the San Pablo Avenue, Pinole Valley Road, and Appian Way corridors. The narrowing of San Pablo Avenue may result in nominal delay for bus service during the peak commute periods, but would not substantially impact service along San Pablo Avenue within the Three Corridors Specific Plan area. Bicycle and pedestrian infrastructure is provided throughout the area and identified in Action CE.1.2.2. Therefore, the Three Corridors Specific Plan would not conflict with plans supporting alternative transportation. This impact is considered **less than significant**.

Zoning Code Update

The project requires a Zoning Code Update to amend the Zoning Code for consistency with the new land designations provided by the Three Corridors Specific Plan. The proposed Zoning Code updates are largely intended to clarify the types of uses that are permitted under a particular land use designation. This would not conflict with plans supporting alternative modes of transportation. therefore, the Zoning Code Update would have an impact similar to that for the General Plan Update as discussed above resulting in **no impact**.

Proposed General Plan Policies and Action Items that Address Conflicts with Programs Supporting Alternative Transportation

The proposed General Plan Update includes the following policies and actions that support alternative modes of transportation.

- | | |
|-----------------|---|
| Policy CE.1.3 | Encourage development that is sensitive to both local and regional transit measures and that promotes the use of alternative modes of transportation. |
| Action CE.1.3.1 | Consult with transit providers during review of development proposals. |
| Action CE.1.3.2 | Include facilities that support alternative modes of transportation (pedestrian, bicycles, public transit, electric vehicles, etc.) where feasible. |
| Policy CE.1.4 | Encourage maximum utilization of the existing public transit system and alternate modes of transportation in Pinole. |
| Action CE.1.4.1 | Study the feasibility of increasing public transit frequency in areas currently served, and continue evaluating the possibility of expanding service to areas currently without service. |
| Action CE.1.4.2 | Include links to public transit resources, bike trails maps, pedestrian trails maps and carpool/van pool information on the City's website. |
| Action CE.1.4.3 | Pursue extension of rapid bus service to Pinole and enhance transit facilities that serve Pinole users. |
| Action CE.1.4.4 | Support provision of wayfinding signage and markers for transit stops and multi-use trails. |
| Policy CE.1.5 | Encourage transit facilities that will provide good access to major public facilities and employment centers in the city. |
| Action CE.1.5.1 | Enhance existing and provide additional bus shelters and other amenities that support transit use, where feasible and appropriate. |
| Policy CE.1.6 | Encourage transit services between major employment centers in each area of the city and surrounding communities. |
| Action CE.1.6.1 | The City shall continue to work cooperatively with local and regional transit with transportation agencies and other jurisdictions such as BART, WCCTAC, Transit Providers, West County Jurisdictions, CCTA, Railroads, to maximize connectivity to existing or proposed transit stations within the GPU Planning Area. |
| Action CE.1.6.2 | Work with WestCAT, AC Transit and other transit providers to support expanded transit lines and increased frequency of service on major transit arterials. |

The reader is referred to Chapter 5.0, *Circulation*, of the proposed Three Corridor Specific Plan which contains goals and policies (Circulation Policies 2, 3, 7, and 8) that support the

4.4 TRAFFIC AND CIRCULATION

development and safety of bicycle and pedestrian facilities. The reader is also referred to Chapter 7.0, *Private Realm Standards and Design Guidelines*, of the Specific Plan which encourages numerous site design techniques to create clearly identifiable, well-connected, and safe pedestrian paths as well as easily accessible transit stops that are sited close to commercial uses. Furthermore, the reader is referred to Section 17.48.110 of the proposed Zoning Code Update which contains minimum bicycle parking requirements by land use category. These policies, standards and design guidelines help to implement the proposed General Plan policy provisions listed above and would further reduce this impact.

Mitigation Measures

None required.

4.4.4 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

The geographic extent of the cumulative setting for traffic and circulation consists of the GPU Planning Area and pending or approved major projects within the city, as well as consideration of regional activities and attributes (e.g., regional traffic volumes and patterns). Cumulative (Year 2030) traffic forecasts for this study were based on information obtained from the Contra Costa Transportation Authority's Travel Demand Model and information provided by the City of Pinole.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Transportation Impacts

Impact 4.4.7 Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would result in cumulative transportation impacts. This impact is considered **cumulatively considerable**.

The project's contribution to potential cumulative impacts to local and regional transportation facilities would be consistent with the impacts discussed under Impact 4.2.2. The traffic modeling analysis addressed the project's contribution to traffic conditions projected in 2030. The 2030 analysis represents the cumulative condition as it includes the background growth in the traffic forecasts. Summaries of daily vehicles trips, average vehicle trip lengths, and vehicle miles traveled for trips generated in Pinole from the model forecasts for cumulative with the proposed project are presented in **Table 4.4-12**.

TABLE 4.4-12
CUMULATIVE MODEL FORECAST SUMMARY

Year	Households	Total Employment	Total Daily Vehicle Trips	VMT Generated (in miles)	Average Trip Length (in miles)
Cumulative with Proposed Project	8,651	8,093	90,234	830,000	9.20

Source: Dowling Associates, Inc., 2010

No new impacts or increase in significance of impacts is expected other than the impacts addressed under Impact 4.2.2. As identified in Impact 4.2.2, cumulatively considerable impacts would occur at city intersections. These intersection impacts would be reduced to less than cumulatively considerable with implementation of the proposed policies.

As identified above, the changes to the city's roadway network as proposed in the Circulation Element would affect travel patterns within the city and along Interstate 80. Modifications of regional facilities, such as the proposed narrowing of San Pablo Avenue between Oakridge Road and the eastern city limit, were captured in the CCTA Model. Thus, no cumulatively considerable impacts are expected outside of the GPU Planning Area. In fact, implementation of the Circulation Element's policies regarding alternative modes of transportation and trip reduction should have a beneficial impact on neighboring jurisdictions.

As identified in Impact 4.4.2 (**Table 4.4-10**), cumulatively considerable impacts would occur at four city intersections, with resulting decreases in LOS and increases in v/c ratio. These intersection impacts would be reduced to less than significant with implementation of the proposed General Plan Circulation Element policies. Therefore, this impact is considered **less than cumulatively considerable** impact.

Proposed General Plan Policies and Action Items that Address Cumulative Transportation Impacts

The proposed General Plan Update incorporates the following policies and actions that guide the development of the proposed circulation system and reduce potential level of service impacts to study roadway segments and intersections. Since these policies and action items have been described in detail in prior impact discussions for this section, the following is limited to only listing the policy and action item numbers.

1) Circulation Element

Policy CE.1.2, Action CE.1.2.1, Action CE.1.2.2, Action CE.1.2.3, Policy CE.1.6, Action CE.1.6.1, Action CE.1.6.2, Policy CE.3.1, Action CE.3.1.1, Action CE.3.1.2, Action CE.3.1.3, Policy CE.3.2, Policy CE.3.3, Action CE.3.3.1, Action CE.3.3.2, Policy CE.3.4, Action CE.3.4.1

In addition, Three Corridors Specific Plan Circulation Policies 3 and 7, as well as transit, bicycle, and pedestrian facilities identified in Section 5.0, *Circulation*, of the Specific Plan, facilitate the creation of a pedestrian friendly environment throughout the Specific Plan areas. These policies and facilities may mitigate a portion of cumulative traffic volumes resulting from implementation of the project.

Mitigation Measures

As identified under Impact 4.4.3, a modification, per mitigation measure **MM 4.4.3**, should be made to proposed Action CE.3.1.1 to revise the Action Plan level of service standard for San Pablo Avenue within Old Town to LOS F and for Appian Way between Mann Drive and I-80 to LOS E. If the City is able to work with WCCTAC and CCTA to revise the West County Action Plan, or the City modifies the proposed Circulation Element to be consistent with the adopted West County Action Plan, the impact would be **less than cumulatively considerable**.

Cumulative Conflicts with an Applicable Congestion Management Plan

Impact 4.4.8 Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would conflict with the

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multimodal transportation service objectives (MTSOs) identified in the West County Action Plan. This is considered a **cumulatively considerable** impact.

As summarized in **Table 4.4-11** above, the delay index for I-80 between the Alameda county line and the Carquinez Bridge would be maintained at less than 3.0 with and without the proposed General Plan Update. Implementation of the General Plan Update, in combination with other pending or approved major projects within the city and other regional activities, would increase traffic volumes. Action CE.3.1.1 would modify the level of service standards along the Old Town segment of San Pablo Avenue to LOS F. The West County Action Plan requires that all signalized intersections along San Pablo Avenue maintain LOS E or better. Likewise the West County Action Plan calls for maintaining LOS D or better along Appian Way. Therefore, the General Plan Update conflicts with the MTSOs established by the West County Action Plan.

The City of Pinole is largely built out with opportunities for infill housing and commercial development. Under cumulative conditions, pending or approved major projects within the city, in combination with other regional activities, would increase traffic volumes through the Planning Area. Action CE.3.1.1 would modify the level of service standards along the Old Town segment of San Pablo Avenue to LOS F. These proposed levels of service would exceed thresholds established by the West County Action Plan for signalized intersections along San Pablo Avenue and Appian Way.

Proposed General Plan Policies and Action Items that Address Cumulative Conflicts with an Applicable Congestion Management Plan

Action CE.3.1.1 of the proposed General Plan Update directs the City to work with WCCTAC and CCTA to revise the MTSO for San Pablo Avenue within Old Town to LOS F. This action provides mitigation to eliminate the conflict between the West County Action Plan and the proposed General Plan Update related to the Old Town segment of San Pablo Avenue.

Mitigation Measures

Maintaining the existing level of service performance standards along San Pablo Avenue and Appian Way, which are consistent with the MTSO, would mitigate the cumulative impacts to the West County Action Plan. However, the proposed modification in level of service standards reflects greater emphasis on alternative modes of transportation and allows for more sustainable growth in the city. The implementation of the General Plan Update would better balance the needs of all roadway users despite its conflict with the West County Action Plan's MTSOs. Refer to mitigation measure **MM 4.4.3**, above, regarding modification to the proposed Action CE.3.1.1 of the Circulation Element.

If the City is able to work with WCCTAC and CCTA to revise the West County Action Plan, or the City modifies the proposed Circulation Element to be consistent with the adopted West County Action Plan, the project impact would be less than significant. However, since the outcome of the revision is dependent upon an action by another independent agency, this impact is considered **significant and unavoidable** and **cumulatively considerable**.

Cumulative Roadway Hazards or Incompatible Uses

Impact 4.4.9 Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update), in combination with pending or approved major projects within the city as well as consideration of

regional activities, would result in changes to the circulation network. The changes are not anticipated to increase hazards due to a design feature or incompatible uses. Therefore, this impact is considered to be **less than cumulatively considerable**.

Subsequent land use activities associated with implementation of the proposed project, as well as regional activities, may require new roadway construction or modification to the existing circulation network associated with specific projects. The design of any new roadways or modifications would be required to meet applicable City, County, or Caltrans roadway design standards. Adherence to such standards would preclude the construction of any unsafe design features. Therefore, the project is anticipated to result in **less than cumulatively considerable** impacts with regard to roadway hazards or incompatible uses.

Implementation of the roadway modifications proposed in the General Plan Update, as well as other improvements outside the City's jurisdiction, would be designed to meet applicable (City, County, or Caltrans) roadway design standards. Therefore, General Plan Update land use changes and roadway modifications, in combination with cumulative development, are considered to be **less than cumulatively considerable** with regard to roadway hazards or incompatible uses.

Proposed General Plan Policies and Action Items that Address Roadway Hazards

The proposed General Plan Update includes the following policies and actions that address safety and roadway hazards. Since these policies and action items have been described in detail in prior impact discussions for this section, the following is limited to only listing the policy and action item numbers.

Action CE.2.1.3, Action CE4.4.2, Action CE.7.3.4, Policy CE.7.4, Action CE.7.4.1, Action CE.8.1.1, Policy CE.8.3, Action LU.8.1.1, Action LU.8.2.1, Action LU.8.3.1

In addition, as discussed above, Three Corridors Specific Plan Circulation Policies 1, 2, 7, and 8 further address safety and roadway hazards resulting from the proposed project.

Mitigation Measures

None required.

Cumulative Emergency Access

Impact 4.4.10 Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update), in combination with pending or approved major projects within the city as well as consideration of regional activities, would result in an increase in vehicular traffic and changes to the roadway network, which may potentially increase emergency access conflicts. This is considered a **less than cumulatively considerable** impact.

Implementation of the proposed project, in combination with pending or approved major projects within the city as well as consideration of regional activities, would increase the amount of vehicle traffic and modify the roadway network. The proposed General Plan Update is designed to provide and maintain a comprehensive circulation system within the city that would provide adequate roadway connections and emergency access options under cumulative

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conditions as described under Impact 4.4.5. Therefore, impacts to emergency access are considered **less than cumulatively considerable**.

The proposed General Plan Update, in combination with pending or approved major projects within the city, as well as consideration of regional activities, is designed with adequate roadway connections and emergency access options. Therefore, cumulative impacts to emergency access resulting from the General Plan Update are considered **less than cumulatively considerable**.

Proposed General Plan Policies and Action Items that Address Cumulative Emergency Access

The proposed General Plan Update includes the following policies and actions that address emergency access. Since these policies and action items have been described in detail in prior impact discussions for this section, the following is limited to only listing the policy and action item numbers.

Action CE.2.1.3, Action CS.2.5.5

In addition, Chapter 7.0, *Private Realm Standards and Design Guidelines*, of the proposed Three Corridor Specific Plan requires site circulation to allow for and facilitate emergency access to the site and all buildings.

Mitigation Measures

None required.

Cumulative Conflicts with Programs Supporting Alternative Transportation

Impact 4.4.11 Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) in combination with pending or approved major projects within the city as well as consideration of regional activities, would support continued and expanded transit use, bicycling, and walking throughout the city, although changes to the roadway network may potentially affect bus operations. This is considered a **cumulatively considerable** impact.

As described under Impact 4.4.6, the General Plan Update supports bicycle use and walking as forms of non-motorized transportation by establishing goals and related policies to enhance bicycle and pedestrian infrastructures throughout the city (Goal CE.7 and CE.8).

The narrowing of San Pablo Avenue may result in nominal delay for bus service during the peak commute periods. Similar to emergency access discussed under Impact 4.4.5, the availability of bike lanes and striped medians would allow through traffic to pass on the left of the stopped bus. The City will work with WestCAT to design a narrowing plan compatible with the transit agency's existing and future needs, such as longer bulb-outs that can accommodate buses.

Goal CE.7 and CE.8 of the General Plan Update establish goals and related policies to support bicycle use and walking as forms of non-motorized transportation throughout the city. Therefore, the General Plan Update, in combination with pending or approved major projects within the city as well as consideration of regional activities, would not conflict with plans supporting alternative transportation. This impact is considered **cumulatively considerable**.

Proposed General Plan Policies and Action Items that Address Cumulative Conflicts with Programs Supporting Alternative Transportation

The proposed General Plan Update includes the following policies and actions that support alternative modes of transportation. Since these policies and action items have been described in detail in prior impact discussions for this section, the following is limited to only listing the policy and action item numbers.

Policy CE.1.3, Action CE.1.3.1, Action CE.1.3.2, Policy CE.1.4, Action CE.1.4.1, Action CE.1.4.2, Action CE.1.4.3, Action CE.1.4.4, Policy CE.1.5, Action CE.1.5.1, Policy CE.1.6, Action CE.1.6.1, Action CE.1.6.2

The reader is referred to Chapter 5.0, *Circulation*, of the proposed Three Corridor Specific Plan which contains goals and policies (Circulation Policies 2, 3, 7, and 8) that support the development and safety of bicycle and pedestrian facilities. The reader is also referred to Chapter 7.0, *Private Realm Standards and Design Guidelines*, of the Specific Plan which encourages numerous site design techniques to create clearly identifiable, well-connected, and safe pedestrian paths as well as easily accessible transit stops that are sited close to commercial uses. Furthermore, the reader is referred to Section 17.48.110 of the proposed Zoning Code Update which contains minimum bicycle parking requirements by land use category. These policies, standards and design guidelines help to implement the proposed General Plan policy provisions listed above and would further reduce this impact.

Mitigation Measures

The following mitigation measure shall be included under the Circulation Element of the General Plan Update:

MM 4.4.11 Work with WestCAT and AC Transit to construct additional bus turnouts along the following Pinole Roadways: San Pablo Avenue, Pinole Valley Road, Appian Way & Fitzgerald Drive.

With the implementation of the above proposed General Plan policies, the appropriate Specific Plan policies and strategies, as well as the addition of the proposed mitigation measure above, this impact would be reduced to a **less than cumulatively considerable** level.

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