4.14 TRANSPORTATION

This section describes the existing transportation network in and around the plan area, applicable policies and regulations, and examines the traffic impacts associated with new development allowed under the New General Plan. The plan area consists of the corporate limits of the City of Redwood City (City) as well as lands within the City’s sphere of influence. The information in this section is partially based on the Redwood City General Plan Transportation and Circulation Technical Report prepared by Fehr & Peers in October 2008.

4.14.1 ENVIRONMENTAL SETTING

Travel characteristics in the plan area, as obtained from U.S. Census data, show that in the year 2000, approximately 87 percent of the City’s residents commuted to work by automobile. Of these, approximately 74 percent used single-occupant cars and 13 percent were in carpools. Other modes of commuter transportation for the same time period were: five percent by public transit, two percent by bicycle, three percent by walking, and the remainder using other means or working at home. U.S. Census data show that the number of people traveling to work in single-occupant cars has stayed about the same between 1980 and 2000. Over the same period, carpool use has decreased and bicycle and transit use have increased. The average commute time has increased from 20 minutes in 1980 to about 27 minutes by the year 2000.

Roadway Network

The roadway network within the plan area consists of streets of various types. Figure 4.14-1 shows the street network classification proposed by the New General Plan. To ensure a balanced multi-modal transportation network, streets and other transportation facilities are organized according to typologies that consider the context and prioritize different travel modes for each street.

Regional access is provided by U.S. 101, I-280, Woodside Road, and El Camino Real.

Freeways

Highway 101 (U.S. 101) is a major north-south regional route; however, U.S. 101 travels in an east-west direction through the plan area. Within the San Francisco Bay Area, U.S. 101 extends from south of San Jose to north of San Francisco and serves the eastern portion of the Peninsula region. In the plan area, U.S. 101 is located north of Downtown and south of the Bayfront areas and generally provides four mixed-flow lanes in each direction. Interchanges at Marsh Road (in Menlo Park), Woodside Road, and Whipple Avenue provide access to most of the plan area. Interchanges at Holly Street/Redwood Shores Parkway and Ralston Avenue/Marine Parkway provide access to the Redwood Shores neighborhood of the City.

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Note: The street typology and road designations represent Redwood City's intent. Further evaluation is required prior to implementation. Vera Avenue, Valota Road, and King Street have been suggested to replace Brewster Avenue, Roosevelt Avenue, and Hudson Street as Bicycle Boulevards.
High-Occupancy Vehicle (HOV) lanes are also provided on U.S. 101 in both directions east of Whipple Avenue connecting to San Jose and Morgan Hill. U.S. 101 serves an Average Daily Traffic (ADT) volume of about 190,000 vehicles per day through the plan area.²

**I-280** is a major north-south freeway that connects the cities of San Jose and San Francisco; however, I-280 travels in an east-west direction near the plan area. I-280 traverses the San Francisco Peninsula south of the plan area and generally provides four lanes in each direction. Interchanges at Woodside Road, Farm Hill Boulevard, Edgewood Road, and Ralston Avenue provide access to the City. I-280 has an ADT of about 101,000 vehicles per day in the portion closest to the plan area.³

**Expressways and Arterials**

**Woodside Road (SR 84)** is a four- to six-lane north-south arterial and a designated state highway through the plan area between I-280 and U.S. 101.

**El Camino Real (SR 82)** is an east-west intraregional arterial and a designated state highway with two to three lanes in each direction through the plan area.

Other arterials include Middlefield Road, Broadway, Veterans Boulevard, Industrial Way, Whipple Avenue, Jefferson Avenue, Farm Hill Boulevard, Edgewood Road (between Alameda De Las Pulgas and I-280), Redwood Shores Parkway, Marine Parkway, and Seaport Boulevard. These roads include one to three lanes in each direction within the plan area and speeds limits ranging from 25 to 35 mph.

**Collectors**

Collectors generally provide access to residential neighborhoods and commercial areas that connect to local streets, other collectors, and arterials. They typically provide one to two lanes in each direction with on-street parking and sidewalks on both sides of the street and a posted speed limit of 25 mph. Some collectors provide Class II bicycle lanes.

**Local Streets**

Local streets provide direct access to all abutting parcels and typically connect to other local streets, collectors, and sometimes arterials. They are generally two-lane facilities, with on-street parking and a speed limit of 25 mph. Many local streets also provide sidewalks.

**Traffic Volumes**

The following describes the current traffic volumes and historic traffic volume trends in the plan area. The methodology used to analyze traffic operations and the resulting findings for current conditions, based on AM and PM peak hour segment volumes, are also described.

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² Based on data published by Caltrans for 2008 between the Woodside Road and Whipple Avenue Interchanges.

³ Based on data published by Caltrans for 2008 between the Woodside Road and Farm Hill Boulevard Interchanges.
Data Collection

Traffic counts were collected at 41 locations throughout the plan area in April 2008 for a three-day period. Weekday peak period (7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM) intersection turning movement counts were also collected in November 2007 and April 2008 at 29 intersections. For the purpose of this study, the highest hour within each peak period for each roadway segment was selected for analysis.

Levels of Service (LOS)

LOS is a quantitative measure that characterizes operation of transportation facilities. LOS uses categories ranging from LOS A (indicating free flow traffic conditions with little or no delay) to LOS F (indicating high levels of congestion with prolonged delays (i.e., traffic jam)). LOS E represents “at-capacity” operations. The level of service standard (i.e., minimum acceptable operations) for roadways in the City is LOS D. Therefore, facilities registering LOS E or LOS F would be considered to operate at an unacceptable level.

The LOS thresholds based on peak hour volumes and used in this analysis are listed in Table 4.14-1. The data in this table reflect the total traffic volume in both directions corresponding to various levels of service for different roadway facility types. Thresholds for arterials and collectors were based on 2000 Highway Capacity Manual (HCM) calculations, while thresholds for freeways were based on 2000 HCM procedures relating LOS to vehicle density ranges.

Roadway segment LOS based on two-way peak hour volumes provides a general representation of traffic operations and flow along a specific roadway segment. Since volumes in both directions are accounted for, the reported LOS represents the overall conditions in both directions of traffic combined, which is standard practice for general plan-level transportation analyses. It is acknowledged that operations in the peak direction of travel or at intersections may be temporarily worse than reported.

Existing Roadway LOS

Table 4.14-2 summarizes two-way, peak hour volumes and corresponding LOS on roadway segments throughout the plan area. Figures 4.14-2 and 4.14-3 show the roadway segment LOS during AM and PM peak hours, respectively.

As indicated in Table 4.14-2, most roadway segments operate at acceptable LOS D or better during both AM and PM peak hours. The following roadway segments currently operate at LOS E or LOS F:

- Alameda de Las Pulgas between Stockbridge Avenue and Woodside Road operates at LOS E during the AM peak hour.
- Alameda de Las Pulgas between Edgewood Road and Whipple Avenue operates at LOS E during the AM peak hour.
- Woodside Road between El Camino Real and Middlefield Road operates at LOS E during the AM peak hour and LOS F during the PM peak hour.
- U.S. 101 between Willow Road and Marsh Road operates at LOS E during the AM peak hour and LOS F during the PM peak hour.
FIG 4-14.2

Legend

City Boundary
Share of Influence
Downtown Precise Plan
Major Roads
Local Roads
Railroad

Level of Service Based on Average Peak Hour Volume:
A-C LOS
D LOS
E LOS
F LOS

Source: Fehr and Peers, 2010

Woodside
Foster City
Belmont
San Carlos
Menlo Park
Atherton

1 inch equals 4,000 feet

Existing Conditions AM Peak Hour Segment LOS Summary

Redwood City
General Plan EIR

Geographic Consulting 04-08-10
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Table 4.14-1  Roadway Segment LOS Thresholds (Bi-Directional) 1, 2

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>LOS A</th>
<th>LOS B</th>
<th>LOS C</th>
<th>LOS D</th>
<th>LOS E</th>
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<tbody>
<tr>
<td>4-Lane Freeway</td>
<td>2,220</td>
<td>4,020</td>
<td>5,760</td>
<td>7,140</td>
<td>8,020</td>
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<tr>
<td>6-Lane Freeway</td>
<td>3,400</td>
<td>6,160</td>
<td>8,800</td>
<td>10,820</td>
<td>12,120</td>
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<td>8-Lane Freeway</td>
<td>4,640</td>
<td>8,400</td>
<td>11,900</td>
<td>14,560</td>
<td>16,280</td>
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<tr>
<td>2-Lane Undivided Arterial3</td>
<td></td>
<td></td>
<td>910</td>
<td>1,670</td>
<td>1,770</td>
</tr>
<tr>
<td>3-Lane Arterial (2 lanes in one direction)</td>
<td>1,310</td>
<td>2,060</td>
<td>2,170</td>
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<td></td>
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<tr>
<td>3-Lane Arterial (1 lane in each direction plus a TWLTL)</td>
<td>1,140</td>
<td>2,090</td>
<td>2,210</td>
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<tr>
<td>4-Lane Undivided Arterial3</td>
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<td></td>
<td>1,750</td>
<td>2,740</td>
<td>2,890</td>
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<tr>
<td>4-Lane Divided Arterial3</td>
<td>1,920</td>
<td>3,540</td>
<td>3,740</td>
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<td></td>
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<tr>
<td>5-Lane Divided Arterial (3 lanes in one direction)</td>
<td>2,260</td>
<td>4,430</td>
<td>4,670</td>
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<td></td>
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<tr>
<td>6-Lane Divided Arterial3</td>
<td></td>
<td></td>
<td>2,710</td>
<td>5,320</td>
<td>5,600</td>
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<tr>
<td>2-Lane Collector5</td>
<td>260</td>
<td>520</td>
<td>780</td>
<td>1,100</td>
<td>1,290</td>
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<tr>
<td>3-Lane Collector (1 lane in each direction plus a TWLTL)</td>
<td>330</td>
<td>650</td>
<td>980</td>
<td>1,380</td>
<td>1,610</td>
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<tr>
<td>4-Lane Collector5</td>
<td>390</td>
<td>780</td>
<td>1,170</td>
<td>1,650</td>
<td>1,940</td>
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</table>

1 The LOS capacity thresholds are based on HCM 2000 methodology and are generally appropriate for suburban areas.
2 Peak hour capacities are assumed to be 10 percent of the daily traffic volume.
3 LOS A and B are not achievable for arterial roadways based on the HCM 2000 methods and definitions.
4 TWLTL = Two-way left-turn lane
5 For collector roadway segments, the capacity limitation is related to neighborhood quality of life rather than the physical carrying capacity of the road. This assumes a standard suburban neighborhood, 40-foot roadway width, and 25 mile per hour speed limit with normal speed violation rates.

<table>
<thead>
<tr>
<th>Roadway Segment</th>
<th>Roadway Type¹</th>
<th>Number of Lanes</th>
<th>AM Peak Hour Volume</th>
<th>AM Peak Hour LOS</th>
<th>PM Peak Hour Volume</th>
<th>PM Peak Hour LOS</th>
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</thead>
<tbody>
<tr>
<td>Alameda De Las Pulgas (Stockbridge Avenue to Woodside Road)</td>
<td>Collector with TWLTL²</td>
<td>3</td>
<td>1,572</td>
<td>E</td>
<td>1,315</td>
<td>D</td>
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<tr>
<td>Alameda De Las Pulgas (Woodside Road to Fernside Street)</td>
<td>Collector</td>
<td>2</td>
<td>1,084</td>
<td>D</td>
<td>839</td>
<td>D</td>
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<tr>
<td>Alameda De Las Pulgas (Edgewood Road to Whipple Avenue)</td>
<td>Collector with TWLTL²</td>
<td>3</td>
<td>1,468</td>
<td>E</td>
<td>1,313</td>
<td>D</td>
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<tr>
<td>Bay Rd (Woodside Road to 5th Avenue)</td>
<td>Collector</td>
<td>4</td>
<td>691</td>
<td>B</td>
<td>784</td>
<td>C</td>
</tr>
<tr>
<td>Blomquist Street (Seaport Boulevard to Maple Street)</td>
<td>Collector</td>
<td>2</td>
<td>410</td>
<td>B</td>
<td>473</td>
<td>B</td>
</tr>
<tr>
<td>Brewster Avenue (Hudson Street to Broadway)</td>
<td>Collector</td>
<td>2</td>
<td>701</td>
<td>C</td>
<td>580</td>
<td>C</td>
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<tr>
<td>Brewster Avenue (Winslow Street to Veterans Boulevard)</td>
<td>Collector with TWLTL²</td>
<td>3</td>
<td>864</td>
<td>C</td>
<td>997</td>
<td>D</td>
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<tr>
<td>Broadway (Brewster Avenue to El Camino Real)</td>
<td>Collector</td>
<td>2</td>
<td>612</td>
<td>C</td>
<td>650</td>
<td>C</td>
</tr>
<tr>
<td>Broadway (Jefferson Avenue to Main Street)</td>
<td>Collector</td>
<td>2</td>
<td>304</td>
<td>B</td>
<td>493</td>
<td>B</td>
</tr>
<tr>
<td>Broadway (Beech Street to Chestnut Street)</td>
<td>Arterial</td>
<td>4</td>
<td>646</td>
<td>C</td>
<td>981</td>
<td>C</td>
</tr>
<tr>
<td>Broadway (Woodside Road to 5th Avenue)</td>
<td>Collector</td>
<td>4</td>
<td>731</td>
<td>B</td>
<td>803</td>
<td>C</td>
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<td>Canyon Road (Highland Avenue to Cordelleras Road)</td>
<td>Collector</td>
<td>2</td>
<td>362</td>
<td>B</td>
<td>386</td>
<td>B</td>
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<tr>
<td>East Bayshore Road (Seaport Boulevard to Haven Avenue)</td>
<td>Collector</td>
<td>2</td>
<td>469</td>
<td>B</td>
<td>610</td>
<td>C</td>
</tr>
<tr>
<td>East Bayshore Road (Whipple Avenue to Bair Island Road)</td>
<td>Arterial with TWLTL²</td>
<td>3</td>
<td>499</td>
<td>C</td>
<td>523</td>
<td>C</td>
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<tr>
<td>Edgewood Road (Alameda de Las Pulgas to Cordilleras Road)</td>
<td>Arterial</td>
<td>2</td>
<td>1,368</td>
<td>D</td>
<td>1,433</td>
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<tr>
<td>Edgewood Road (Alameda de Las Pulgas to El Camino Real)</td>
<td>Collector</td>
<td>2</td>
<td>306</td>
<td>B</td>
<td>331</td>
<td>B</td>
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<tr>
<td>Roadway Segment</td>
<td>Roadway Type¹</td>
<td>Number of Lanes</td>
<td>AM Peak Hour Volume</td>
<td>LOS</td>
<td>PM Peak Hour Volume</td>
<td>LOS</td>
</tr>
<tr>
<td>-------------------------------------------------------</td>
<td>---------------</td>
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<tr>
<td>El Camino Real (Woodside Road to 5th Avenue)</td>
<td>Divided Arterial</td>
<td>6</td>
<td>3,040</td>
<td>D</td>
<td>3,487</td>
<td>D</td>
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<tr>
<td>El Camino Real (Whipple Avenue to City Limits)</td>
<td>Divided Arterial</td>
<td>5</td>
<td>2,273</td>
<td>D</td>
<td>2,800</td>
<td>D</td>
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<tr>
<td>El Camino Real (Jefferson Avenue to Maple Street)</td>
<td>Divided Arterial</td>
<td>4</td>
<td>2,519</td>
<td>D</td>
<td>3,126</td>
<td>D</td>
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<td>Farm Hill Boulevard (Woodhill Drive to I-280)</td>
<td>Arterial</td>
<td>4</td>
<td>1,526</td>
<td>C</td>
<td>1,225</td>
<td>C</td>
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<tr>
<td>Hopkins Avenue (Hudson Street to Broadway)</td>
<td>Collector with TWLTL²</td>
<td>3</td>
<td>358</td>
<td>B</td>
<td>59</td>
<td>A</td>
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<tr>
<td>Hudson Street (Oak Avenue to Woodside Road)</td>
<td>Collector</td>
<td>2</td>
<td>558</td>
<td>C</td>
<td>680</td>
<td>C</td>
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<tr>
<td>Hudson Street (Jefferson Avenue to Roosevelt Avenue)</td>
<td>Collector</td>
<td>2</td>
<td>826</td>
<td>D</td>
<td>864</td>
<td>D</td>
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<tr>
<td>Industrial Way (Whipple Avenue to City Limits)</td>
<td>Arterial with TWLTL²</td>
<td>3</td>
<td>974</td>
<td>C</td>
<td>1,347</td>
<td>D</td>
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<td>1,401</td>
<td>C</td>
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<td>Jefferson Avenue (Farm Hill Boulevard to East Lake Way)</td>
<td>Collector</td>
<td>2</td>
<td>517</td>
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<td>451</td>
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<td>1,496</td>
<td>C</td>
<td>1,375</td>
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<td>Jefferson Avenue (Hudson Street to El Camino Real)</td>
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<td>4</td>
<td>1,716</td>
<td>C</td>
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<td>Jefferson Avenue (Broadway to Veterans Boulevard)</td>
<td>Arterial</td>
<td>4</td>
<td>980</td>
<td>C</td>
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<td>C</td>
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<tr>
<td>Main Street (Broadway Street to Middlefield Road)</td>
<td>Arterial with TWLTL²</td>
<td>3</td>
<td>536</td>
<td>C</td>
<td>789</td>
<td>C</td>
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<tr>
<td>Maple Street (Blomquist Lane to Veterans Boulevard)</td>
<td>Collector</td>
<td>2</td>
<td>302</td>
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<td>B</td>
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<tr>
<td>Maple Street (El Camino Real to Franklin Street)</td>
<td>Collector</td>
<td>2</td>
<td>250</td>
<td>A</td>
<td>412</td>
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<td>Marine Parkway (Twin Dolphin Drive to Cypress Boulevard)</td>
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<td>1,601</td>
<td>C</td>
<td>1,434</td>
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<tr>
<td>Roadway Segment</td>
<td>Roadway Type¹</td>
<td>Number of Lanes</td>
<td>AM Peak Hour Volume</td>
<td>LOS</td>
<td>PM Peak Hour Volume</td>
<td>LOS</td>
</tr>
<tr>
<td>-----------------</td>
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<tr>
<td>Island Drive)</td>
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<tr>
<td>Marine Parkway (Twin Dolphin Drive to U.S. 101 Ramps)</td>
<td>Divided Arterial</td>
<td>6</td>
<td>1,965</td>
<td>C</td>
<td>1,840</td>
<td>C</td>
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<td>Marsh Road (Fair Oaks Avenue to Florence Street)</td>
<td>Arterial</td>
<td>4</td>
<td>2,267</td>
<td>D</td>
<td>2,130</td>
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<td>Divided Arterial</td>
<td>4</td>
<td>2,618</td>
<td>D</td>
<td>2,609</td>
<td>D</td>
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<tr>
<td>Marsh Road (Florence Street to Scott Drive)</td>
<td>Arterial</td>
<td>4</td>
<td>2,618</td>
<td>D</td>
<td>2,609</td>
<td>D</td>
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<tr>
<td>Massachusetts Avenue (Alameda de Las Pulgas to Woodside Road)</td>
<td>Collector with TWLTL²</td>
<td>3</td>
<td>986</td>
<td>D</td>
<td>789</td>
<td>C</td>
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<td>Mc Garvey Avenue (Fernside Street to Farm Hill Boulevard)</td>
<td>Collector</td>
<td>2</td>
<td>792</td>
<td>D</td>
<td>643</td>
<td>C</td>
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<td>Middlefield Road (Woodside Road to 5th Avenue)</td>
<td>Arterial</td>
<td>4</td>
<td>1,628</td>
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<td>1,731</td>
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<td>Middlefield Road (Woodside Road to Chestnut Street)</td>
<td>Arterial with TWLTL²</td>
<td>3</td>
<td>1,072</td>
<td>C</td>
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<td>Redwood Shores Parkway (Twin Dolphin Drive to Shoreline Drive)</td>
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<td>Valota Road (Woodside Road to Redwood Court)</td>
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<td>2</td>
<td>555</td>
<td>C</td>
<td>485</td>
<td>B</td>
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<td>Veterans Boulevard (Main Street to Jefferson Avenue)</td>
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<td>2,085</td>
<td>C</td>
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<td>Veterans Boulevard (Maple Street to Chestnut Street)</td>
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<td>6</td>
<td>1,613</td>
<td>C</td>
<td>1,927</td>
<td>C</td>
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<tr>
<td>Whipple Avenue (Hudson Street to Grant Street)</td>
<td>Collector</td>
<td>2</td>
<td>948</td>
<td>D</td>
<td>1,008</td>
<td>D</td>
</tr>
<tr>
<td>Whipple Avenue (Veterans Boulevard to Industrial Way)</td>
<td>Divided Arterial</td>
<td>4</td>
<td>2,359</td>
<td>D</td>
<td>2,723</td>
<td>D</td>
</tr>
</tbody>
</table>

¹ Roadway Type
² TWLTL (Two Way Lane Limitation)
### Roadway Segment Table

<table>
<thead>
<tr>
<th>Roadway Segment</th>
<th>Roadway Type</th>
<th>Number of Lanes</th>
<th>AM Peak Hour Volume</th>
<th>AM Peak Hour LOS</th>
<th>PM Peak Hour Volume</th>
<th>PM Peak Hour LOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whipple Avenue (El Camino Real to Winslow Street)</td>
<td>Arterial</td>
<td>4</td>
<td>1,962</td>
<td>D</td>
<td>1,956</td>
<td>D</td>
</tr>
<tr>
<td>Winslow Street (Brewster Avenue to Broadway)</td>
<td>Collector with TWLTL²</td>
<td>3</td>
<td>496</td>
<td>B</td>
<td>737</td>
<td>C</td>
</tr>
<tr>
<td>Woodside Road (I-280 to Alameda de Las Pulgas)</td>
<td>Divided Arterial</td>
<td>4</td>
<td>3,458</td>
<td>D</td>
<td>3,317</td>
<td>D</td>
</tr>
<tr>
<td>Woodside Road (Alameda De Las Pulgas to Massachusetts Avenue)</td>
<td>Divided Arterial</td>
<td>4</td>
<td>3,376</td>
<td>D</td>
<td>3,057</td>
<td>D</td>
</tr>
<tr>
<td>Woodside Road (El Camino Real to Middlefield Road)</td>
<td>Divided Arterial</td>
<td>4</td>
<td>3,636</td>
<td>E</td>
<td>3,776</td>
<td>F</td>
</tr>
<tr>
<td>Woodside Road (Middlefield Road to Bay Road)</td>
<td>Divided Arterial</td>
<td>4</td>
<td>3,133</td>
<td>D</td>
<td>3,288</td>
<td>D</td>
</tr>
<tr>
<td>Woodside Road (Bay Road to Broadway Street)</td>
<td>Divided Arterial</td>
<td>5</td>
<td>3,098</td>
<td>D</td>
<td>3,157</td>
<td>D</td>
</tr>
<tr>
<td>U.S. 101 (Willow Road to Marsh Road)</td>
<td>Freeway</td>
<td>6</td>
<td>11,207</td>
<td>E</td>
<td>12,322</td>
<td>F</td>
</tr>
<tr>
<td>U.S. 101 (Whipple Avenue to Holly Street)</td>
<td>Freeway</td>
<td>8</td>
<td>14,492</td>
<td>D</td>
<td>14,400</td>
<td>D</td>
</tr>
<tr>
<td>I-280 (Woodside Road to Farm Hill Road)</td>
<td>Freeway</td>
<td>8</td>
<td>12,937</td>
<td>D</td>
<td>14,499</td>
<td>D</td>
</tr>
</tbody>
</table>

**Note:** Results in **bold** represent roadway segments operating at LOS E or LOS F.

1. Each segment is defined by the major roadways nearest the count location.
2. TWLTL = Two-way left-turn lane


The majority of roadways within the City operate at LOS C or better during the AM and PM peak hours. Major arterials, such as El Camino Real, Edgewood Road, Whipple Avenue, and Woodside Road, operate at LOS D during both peak hours. The segment of Woodside Road between El Camino Real and Middlefield Road operates at LOS E during the morning and LOS F during the evening peak periods.

### Collision Trends

Based on collision data provided by the Redwood City Engineering and Construction Department, 4,207 traffic collisions were reported within the City for the three-year period between January 2005 and December 2007. During this time period, 770 collisions included injuries and five involved fatalities. Three of these fatalities were pedestrians. A total of 118 collisions involved bicycles, and 126 collisions involved pedestrians.

**Table 4.14-3** summarizes the collision data for the City in 2008 based on the California Office of Traffic Safety (OTS) summary of collision statistics and rankings. Rankings are
based by comparing to other cities in the same population group. The City is included in the pool of California cities with a population between 50,000 and 100,000 people. The OTS summary included 103 California cities in this group. Collision data rankings are determined by the average population of the 103 cities as well as by the total daily vehicle miles traveled within each city.

Table 4.14-3 Redwood City Traffic Collisions and Rankings, 2008

<table>
<thead>
<tr>
<th>Type of Collision</th>
<th>Victims Killed and Injured in Redwood City</th>
<th>Redwood City Ranking by Daily Vehicle Miles Traveled (Of 103 Cities)¹</th>
<th>Redwood City Ranking by Average Population (Of 103 Cities)²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fatal and Injury</td>
<td>302</td>
<td>36</td>
<td>53</td>
</tr>
<tr>
<td>Alcohol Involved</td>
<td>18</td>
<td>79</td>
<td>86</td>
</tr>
<tr>
<td>HBD (Had Been Drinking) Driver &lt; 21</td>
<td>1</td>
<td>77</td>
<td>79</td>
</tr>
<tr>
<td>HBD Driver 21 - 34</td>
<td>4</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>Pedestrians</td>
<td>24</td>
<td>32</td>
<td>44</td>
</tr>
<tr>
<td>Pedestrians &lt; 15</td>
<td>1</td>
<td>94</td>
<td>98</td>
</tr>
<tr>
<td>Pedestrians 65+</td>
<td>0</td>
<td>95</td>
<td>99</td>
</tr>
<tr>
<td>Bicyclists</td>
<td>32</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>Bicyclists &lt; 15</td>
<td>2</td>
<td>76</td>
<td>78</td>
</tr>
<tr>
<td><strong>Composite</strong></td>
<td><strong>36</strong></td>
<td><strong>49</strong></td>
<td></td>
</tr>
<tr>
<td>Speed Related</td>
<td>76</td>
<td>16</td>
<td>27</td>
</tr>
<tr>
<td>Nighttime (9:00pm - 2:59am)</td>
<td>25</td>
<td>37</td>
<td>50</td>
</tr>
<tr>
<td>Hit and Run</td>
<td>20</td>
<td>37</td>
<td>48</td>
</tr>
<tr>
<td>DUI ARRESTS</td>
<td>211</td>
<td>26</td>
<td></td>
</tr>
</tbody>
</table>

1. Based on comparison with 103 cities in California that had a population of 50,000 to 100,000 residents in 2008. Source: California Office of Traffic Safety, http://www.ots.ca.gov/Media_and_Research/Rankings/default.asp

A city with the worst safety record among the 103 cities (i.e., the highest rate) receives ranking #1. The best safety record receives ranking 103. Based on the OTS rankings in 2008, the City’s rankings in terms of collisions involving fatalities or injuries is 36 of 103 when rated by daily vehicle miles traveled and 53 out of 103 when based on the City’s population.

Among cities included in the 2008 OTS summary, the City had relatively poor rankings in some categories, such as bicycle collisions and speed related collisions with scores of 20 or less, placing the City roughly within the bottom fifth percentile of all communities with similar populations. In other categories, such as alcohol involved and pedestrians under 15, the City had scores of 80 or higher, placing within the top fifth percentile of all communities with similar populations.
Pedestrian System

Pedestrian Network

The City’s pedestrian system consists of sidewalks of varying widths and physical conditions. The system is augmented in some areas with Class I (off-road, fully-separated) bicycle paths, which were designed as multi-use trails (in other words, for both bicycle and pedestrian use). Additional pedestrian facilities include marked and unmarked crosswalks and intersections, mid-block pedestrian signal heads, and pedestrian activated signals at some major intersections.

The Downtown is one of the most walkable areas, insofar as it contains numerous businesses, institutional, and residential uses in close proximity to each other and to local and regional transportation systems in an environment with a flat terrain, short blocks, wide sidewalks and various pedestrian amenities. As a result, Downtown has a high level of pedestrian activity. Walking is also prevalent in many neighborhoods throughout the City where grades are mild and sidewalks or other facilities are present – such as Redwood Shores, Mezesville, and Mount Carmel. In contrast, residential areas in some hilly neighborhoods are some of the least walkable areas due to the hilly terrain, relatively great distances between different uses, and street networks that feature long blocks and circuitous pedestrian routes. Walking is further discouraged in these areas by lack of sidewalks on one or both sides of some streets.

Common physical barriers to pedestrian use in the plan area include crossing El Camino Real, Woodside Road, railroad tracks, creeks, and freeways which limit pedestrian connectivity. Similarly, traffic speeds and pedestrian crossing times along some arterial corridors require prohibiting pedestrian crossings, resulting in circuitous routes discouraging pedestrian use. Additionally, wide roadways, long block lengths, and high traffic speeds further discourage pedestrian use of these arterials.

Large retail centers in the plan area were designed to accommodate private vehicles and require pedestrian users to access them by traversing large parking lots, with little connectivity between street sidewalks and stores.

Pedestrian Safety

A Pedestrian Safety Assessment (PSA) was recently completed by the City to identify areas for improvements in pedestrian safety and for enhanced walkability and accessibility for pedestrians. Table 4.14-4 lists the top ten locations where pedestrian-vehicle collisions occurred between January 1997 and April 2008. Seven of the top 10 intersections are located along El Camino Real; two of the 10 are located along Woodside Road.

The PSA provides recommendations to improve pedestrian safety, such as upgrading to pedestrian countdown signal heads, installing corner bulbouts at intersections, providing two-stage pedestrian signals, and installing appropriate lighting.
Table 4.14-4  Pedestrian–Vehicle Collision Locations in Redwood City (January 1997 to April 2008)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Intersection</th>
<th>Number of Collisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Woodside Road/Hess Road</td>
<td>9</td>
</tr>
<tr>
<td>2</td>
<td>El Camino Real/Center Street</td>
<td>8</td>
</tr>
<tr>
<td>3</td>
<td>El Camino Real/Jefferson Avenue</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>El Camino Real/Whipple Avenue</td>
<td>8</td>
</tr>
<tr>
<td>5</td>
<td>El Camino Real/Broadway</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>El Camino Real/James Avenue</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>El Camino Real/Oak Avenue</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>El Camino Real/Roosevelt Avenue</td>
<td>6</td>
</tr>
<tr>
<td>9</td>
<td>Jefferson Avenue/Clinton Street</td>
<td>5</td>
</tr>
<tr>
<td>10</td>
<td>Woodside Road/Kentucky Street</td>
<td>5</td>
</tr>
</tbody>
</table>

Notes: Mid-block collisions were mapped to the nearest intersection.
Source: Redwood City Engineering and Construction Department as summarized by Fehr & Peers in Redwood City Pedestrian Safety Assessment.

Bicycle System

Existing, as well as planned future, bicycle facilities in the plan area and surrounding communities are shown in Figure 4.14-4. Approximately 25 miles of bicycle facilities are currently provided within the plan area. About nine miles of these are designated Class I bicycle paths (completely separate facilities designated for exclusive bicycle and pedestrian use with cross-flow minimized). Another 10 miles are designated as Class II bicycle paths (striped lanes designated for the use of bicycles on a street or highway). The remaining approximately seven miles are designated Class III (a route designated by signs or pavement markings within the vehicular travel lane, indicating shared use of a roadway). The bicycle system is used by groups of varying abilities and needs, ranging from commuter bicyclists to recreational riders and school children.

As shown in Figure 4.14-4, the existing bicycle system does not serve all portions of the plan area. Gaps limit access between neighborhoods, recreational trails, and adjacent communities. Barriers to bicycling are similar to those regarding pedestrian barriers. Additional bicycle-specific barriers include narrow streets with high traffic volumes (those with limited or no shoulders), too many parked vehicles (posing potential obstacles, such as vehicle doors opening into the path of a bicyclist), steep terrain (particularly in the upper western and southern neighborhoods), and potential conflicts with buses and large trucks (of greatest concern along arterials). While bicyclists are legally allowed to use all surface roadways unless specifically prohibited, riders are often reluctant to use the most direct routes, such as thoroughfares and arterials, because of safety factors and concern about vehicle pollution.
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Transit Service

Transit service in the plan area includes heavy rail, bus, shuttle, and paratransit services. Existing service routes are shown in Figure 4.14-5. Future transit services in the planning stage as of early 2010 include changes to existing Caltrain service, new ferry services, and new potential high-speed rail service.

Caltrain

Caltrain offers commuter rail service between Gilroy and San Francisco and is operated by the Joint Powers Board (JPB). Within the City, the rail line is parallel to and north of El Camino Real. The Redwood City Station is located Downtown, between Jefferson Avenue and Broadway (and is sometimes referred to locally as the “Sequoia Station,” a name currently used by a retail shopping center adjacent to the Caltrain facility). Riders who board at the stations represent about six percent of the total ridership for the Caltrain system. Between 1992 and 2008, Redwood City Station boardings increased by about 180 percent. Over the same period, systemwide boardings increased by about 75 percent. The higher increase in ridership at the Redwood City Station may be attributed to the Baby Bullet Express service at the station and shuttles serving the station.

Currently, only three of the roadways within the plan area that cross the Caltrain tracks are grade separated (Woodside Road, Jefferson Avenue, and 5th Avenue). All other roadways intersecting Caltrain tracks in the plan area are at-grade. At-grade crossings include gates and warning systems to prohibit vehicles and pedestrians from crossing when trains are passing. As a result, vehicle queues at many at-grade crossings can spill back, disrupt traffic flow and affect upstream intersections.

The Redwood City Station includes 557 auto parking spaces, 20 bicycle rack spaces, and 52 keyed, enclosed bicycle lockers (available for long-term rental). Caltrain permits a certain number of bicycles aboard its trains; accordingly, many commuters system-wide board with their bicycles.

Caltrain is planning to replace its current diesel locomotives with electric-powered vehicles. This project is currently in the design phase and is expected to begin revenue service in 2015. Since electric trains can accelerate and decelerate faster than diesel trains, travel times would decrease along the Caltrain corridor, resulting in a potential increase in ridership. Please see Chapter 6.0, Cumulative Impacts, where Caltrain electrification is discussed in more depth.

Caltrain is also planning and developing rail service in the Dumbarton Bridge corridor between the Menlo Park/East Palo Alto area and the cities of Fremont, Newark, and Union City on the east side of San Francisco Bay. The proposed project would link the existing Caltrain system with the East Bay via rehabilitating an existing (but damaged) rail bridge, over which new train service would be extended to the Union City BART station. Environmental review for the Dumbarton Bridge project is in progress as of 2009.

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4 Based on Caltrain’s system-wide draft Bicycle Access and Parking Plan, October 2008.
High-Speed Rail

High-speed rail (HSR) is a planned rail connection between northern, central, and southern California. Trains would travel at speeds of up to 220 mph. The high speed of the train requires that HSR tracks be fully grade separated (in other words, HSR would have no gated crossings with streets. Different vertical alignments of HSR are being studied including tunnels, trenches, and elevated structures).

The California High-Speed Rail Authority (Authority) is the state entity responsible for planning, constructing and operating the HSR system. On November 4, 2008, Proposition 1A, known as the Safe, Reliable High-Speed Passenger Train Bond Act was approved by California voters. The proposition guarantees $9.95 billion in state bond money to fund that state’s share of the first phase of the HSR system.

The environmental review process for the San Francisco Bay Area portion of the HSR system is in process as of early 2010. The cities of Redwood City, Palo Alto, and Mountain View are being considered as a potential location for a “Mid-Peninsula” HSR station. It is possible that one city will be selected for a station or that none of the cities will have a station. If the Redwood City Station is identified as an HSR facility, the City would become a regional transit hub, and HSR operations would necessitate additional facilities and amenities, including construction of long-term parking facilities and implementation of more feeder transit services to the station. Updates on the status of the HSR project are available at www.cahighspeedrail.ca.gov. For the purposes of this EIR, the potential for high speed rail service is considered as a cumulative project. Please see Chapter 6.0, Cumulative Impacts for related discussion and analysis.

SamTrans (Bus Service)

As shown in Figure 4.14-5, a number of bus routes serve the plan area. All but one route is operated by the San Mateo County Transit District (SamTrans). A bus route connecting Redwood Shores employment centers to the East Bay, via State Route 92, is operated by Alameda-Contra Costa Transit (AC Transit).

SamTrans bus routes within the plan area can be categorized as follows:

- Community routes
- Express routes
- Caltrain connection routes
- BART and Caltrain connection routes (the closest BART connection is available at the Millbrae Station, located approximately 12 miles to the west)

Typical SamTrans ridership in the plan area is estimated at approximately 4,700 riders per weekday.
Shuttles

Caltrain and the Peninsula Traffic Congestion Relief Alliances operate commute shuttles within the City. During peak commute times, shuttles provide vital links from the Redwood City Caltrain Station to major area employers and other nearby Caltrain stations. Shuttles help facilitate transit ridership among people whose ultimate destination is beyond walking or biking distance from Caltrain, or for those who cannot or prefer not to ride a bike or walk. The shuttles are generally free to employees of major employers who purchase Caltrain tickets. Typical weekday ridership is approximately 740 riders per day.

A mid-day on-demand community shuttle service, funded by Metropolitan Transportation Commission (MTC), San Mateo County City/County Association of Governments (C/CAG), and City of Redwood City operates in eastern part of the City. The shuttle is free and open to general public. However, riders must call on the day before their trip to reserve a pick-up and drop-off time within the service area (area bound by El Camino Real, Marsh Road, U.S. 101, and Whipple Avenue).

Paratransit

All SamTrans and AC Transit buses are accessible to people with disabilities and meet all pertinent requirements of the Americans with Disabilities Act. In addition, SamTrans provides additional paratransit service for individuals in its service area who cannot independently use regular bus service through Redi-Wheels. This service serves San Mateo County and select surrounding cities.

Water Emergency Transportation Authority

The San Francisco Water Emergency Transportation Authority (WETA) was established in 2007 to coordinate and consolidate ferry transportation in the San Francisco Bay. It replaces the Water Transit Authority (WTA), which had been authorized to operate a public water transportation system. WTA had produced a 2003 plan, "A Strategy to Improve Public Transit with an Environmentally Friendly Ferry System". Under the 2003 plan, WETA is currently conducting a constraints analysis and environmental review of a new ferry terminal at one of three potential locations near the Port of Redwood City and the existing Pacific Shores center at the northern end of Seaport Boulevard.

The new terminal would initially provide service to and from San Francisco and potentially to and from the East Bay. Trip times are expected to be comparable to travel times along U.S. 101 during peak commute times. WETA forecasts approximately 1,420 daily passenger trips by 2025.

4.14.2 Regulatory Setting

Assembly Bill 32 (AB 32)

AB 32 enacts the Global Warming Solutions Act of 2006, which creates a statewide greenhouse gas emission limit such that by 2020 California reduces its greenhouse gas emissions to the level they were in 1990. The bill is being interpreted by the Attorney 5

General’s Office to mean that cities and counties must include greenhouse gas analysis in their project EIRs. One way to measure greenhouse gas emissions, including carbon dioxide emission from vehicles, is to calculate vehicle miles of travel (VMT). VMT is the total mileage traveled by all vehicles and can be calculated by multiplying trip lengths by the number of trips/vehicles. **Chapter 4.16, Greenhouse Gas Emissions**, more specifically analyses the New General Plan’s effects relative to global climate change.

**Congestion Management Program**

The City/County Association of Governments of San Mateo County (C/CAG) is the designated Congestion Management Agency in San Mateo County. The Congestion Management Program (CMP) prioritizes the use of state and federal funding for roadway system improvements. CMP components identified for improvement by the program in the plan area include SR 82 (El Camino Real), SR 84 (Woodside Road), U.S. 101, and I-280. The CMP also identifies two congested intersections in the City: El Camino Real/Whipple Avenue and Woodside Road/Middlefield Road.

The C/CAG CMP requires local jurisdictions to analyze the impacts of new land use policy changes on identified CMP facilities if they would result in 100 net new peak hour trips. The C/CAG has defined Transportation Demand Management Strategies to provide mitigation methods to reduce the number of net new vehicle trips generated by new developments. These guidelines are intended to ensure the implementation of programs to reduce the number of peak hour vehicle trips generated by new developments.

**San Mateo County Comprehensive Bicycle Route Plan**

The San Mateo County Comprehensive Bicycle Route Plan was completed by C/CAG to create a safe and effective network for bicyclists throughout the County. The plan proposes the North-South Bikeway Project and Bay Trail Gap Closure Project in the City. Initial phases of the North-South Bikeway would consist of Class II and Class III bicycle facilities between San Francisco and Palo Alto. Also, the Bay Trail Gap Closure Project would complete gaps in the trail to provide a continuous trail in San Mateo County.

**Regional Transportation Plan**

The Metropolitan Transportation Commission (MTC) is the regional transportation planning agency and federally-designated Metropolitan Planning Organization (MPO) for the nine-county San Francisco Bay Area. MTC is responsible for preparing the Regional Transportation Plan (RTP), a comprehensive 20-year plan for the development of mass transit, highway, airport, seaport, railroad, bicycle, and pedestrian facilities. The plan prioritizes improvement projects based on revenues and their ability to improve air quality.

In 2009, the Metropolitan Transportation Commission (MTC) adopted the Regional Transportation Plan (RTP) – the Transportation 2035 Plan. The Transportation 2035 Plan is a comprehensive 25-year plan for the development of mass transit, highways, airport, seaport, railroad, bicycle, and pedestrian facilities. The Transportation 2035 Plan specifies a detailed set of goals and strategies related to land use and transportation, including providing incentives to city and counties to promote future growth near transit already in urbanized areas; a Transportation Climate Action Campaign to reduce transportation-
related greenhouse gas emissions; convert and expand current carpool lanes into a Regional Express Lane Network; reduced reliance on the automobile; and a sustainable transportation system.

**Policy Consistency Analysis**

Consistent with the C/CAG CMP, potential traffic impacts of the New General Plan are analyzed in this section specifically, and other effects of the New General Plan are analyzed in this EIR more generally.

The New General Plan includes policies and programs that would maintain and expand the City’s bicycle network consistent with the County’s North-South Bikeway Project and the Bay Trail Gap Closure project.

The traffic study for the New General Plan includes analysis of freeways (U.S. 101 and I-280) and arterials (El Camino Real and Woodside Road) that are under Caltrans jurisdiction.

The Built Environment Chapter of the New General Plan includes numerous policies and implementation programs related to the goals and objectives of the Transportation 2035 Plan. In regards to reducing vehicle trips and reliance on the automobile, New General Plan Policy BE-25.1 would accommodate and encourage alternative transportation modes to reduce vehicle trip generation and vehicle miles traveled. New General Plan Policy BE-24.5 would also support land use practices that enable City residents to minimize their need to travel via personal automobile. Program BE-75 of the New General Plan would also require participation in regional transportation and land use planning organizations to ensure development and maintenance of a transportation network and land uses that encourage non-automobile travel.

New General Plan policies and implementation programs would also promote a better range of travel options. New General Plan Policy BE-27.2 would pursue development of a streetcar or trolley line to connect major destinations within the plan area, while Program BE-58 would allow for a feasibility study of implementing the streetcar system. New General Plan Policy BE-27.5 would require that new development and redevelopment projects improve access to and accommodations for public transit. In addition to the streetcar system, Program BE-75 would require the City to regularly coordinate with the San Francisco Water Emergency Transportation Authority to develop planning efforts for the implementation of a ferry terminal.

New General Policy BE-26.1 through Policy BE-26.6 would also improve pedestrian, bicycle, and electric scooter facilities to be more convenient, comfortable, and safe. Specifically, Policy BE-26.10 would prioritize bicycle, scooter, and pedestrian safety improvements at street crossings, while Policy BE-26.11 would prioritize implementation of pedestrian, scooter and bicycle improvements near schools, transit, shopping, hospitals, and mixed-use areas with higher pedestrian concentrations. In regards to the Bayfront area in particular, Policy BE-10.7 of the New General Plan would improve pedestrian, bicycle, transit, and automobile linkages between the Bayfront and the areas south of U.S. 101. New General Plan Policy BE-26.21 would also designate a system of bicycle boulevards with increased amenities and safety features, such as bicycle detectors at signalized...
intersections to promote pedestrian and bicycle safety. Further, Program BE-49 would enforce the City’s engineering standards for public and private streets to require safe travel for pedestrians and bicyclists.

Multiple policies and implementation programs within the Land Use and Urban Form section of the Built Environment Chapter of the New General Plan would promote pedestrian and bicycle access as well. New General Plan Policy BE-6.2 and Policy BE-8.2 would also provide connections to commercial uses, schools, parks and recreation areas, and transit. New General Plan Policy BE-7.4 would also foster connections between Mixed Density Neighborhoods and surrounding corridors and centers, paying special attention to pedestrian access across major corridors, while Policy BE-11.1 would improve the major corridors to emphasize pedestrian orientation and safety, public transit access, and safe bicycle movement. Policies BE-12.1, BE-12.3, BE-13.1, BE-14.3, BE-14.6, BE-14.7, and BE-16.3, as well as Programs BE-8, BE-19, and Program BE-26, would further improve pedestrian and bicycle facilities along the major corridors within the plan area, including El Camino Real, Woodside Road, Middlefield Road, Veterans Boulevard, and Broadway. The enhancement of the pedestrian and bicycle facilities within the plan area pursuant to the New General Plan policies and implementation programs would not only improve pedestrian and bicycle transportation, but would provide additional alternative modes of transportation to further reduce reliance on the automobile.

In addition to the New General Plan policies and implementation programs identified above, Policy BE-31.2 and Policy BE-31.4 would further promote a sustainable transportation system within the plan area, consistent with the intent of the Transportation 2035 Plan. Policy BE-31.2 would promote Transit-Oriented Developments with reduced parking requirements while Policy BE-31.4 would involve the implementation of a citywide or areawide Transportation Demand Management program to further coordinate city or regional transportation systems and reduce reliance on the automobile.

As these New General Plan policies encompass the goals and objectives of the Transportation 2035 Plan, the New General Plan would be consistent with the Transportation 2035 Plan.

4.14.3 THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines, a significant transportation impact could occur if development allowed by the New General Plan would:

a) 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.

b) Conflict with an applicable congestion management program, including, but not limited to level of service (LOS) standard and travel demand measures, or other standards established by the county Congestion Management Agency for designated roads or highways.
c) 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.

d) Substantially increase hazards due to a design feature (i.e., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

e) Result in inadequate emergency access.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Based on criteria previously used in the City and considering specific aspects of the New General Plan, the above general significance criteria are interpreted as follows for evaluating the New General Plan:

**Motor Vehicle Impact Criteria**

a) Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system,

   • Cause a roadway segment that currently operates at LOS D or better to degrade to LOS E or LOS F.
   • Increase roadway volumes by more than five (5) percent at roadways that currently operate at LOS E or LOS F.

b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways (unless it is practical to achieve the standard through increased use of alternative transportation modes).

**Air Traffic Impact Criteria**

a) Result in a change in air traffic patterns, including either an increase in traffic levels, obstructions to flight, or a change in location, that results in substantial safety risks.

**Roadway Design Impact Criteria**

b) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses.

**Emergency Access Impact Criteria**

c) Result in inadequate emergency access.

**Adopted Policies, Plans or Programs Impact Criteria**

f) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., conflict with policies promoting bus turnouts, bicycle racks, etc.).
**Pedestrian Impact Criteria**
- Disrupt existing pedestrian facilities
- Interfere with planned pedestrian facilities

**Bicycle Impact Criteria**
- Disrupt existing bicycle facilities
- Interfere with planned bicycle facilities

**Transit Impact Criteria**
- Result in an increase above existing capacity
- Be inaccessible to transit riders (defined as within one-quarter mile walk of a transit stop)
- Disrupt existing or planned transit service

**VMT Impact Criteria**
- Result in an increase in VMT per household over the existing General Plan.

**4.14.4 Methodology and Assumptions**
Two scenarios are evaluated for purposes of this EIR:

- Existing (2008) Conditions, which represents transportation conditions in 2008; and
- Project Conditions, which represents a future (2030) scenario if the General Plan land uses and transportation system improvements are adopted and implemented.

Impacts are assessed based upon comparison between existing (2008) conditions and project conditions.

Travel demand models are typically developed to estimate traffic volumes 20 to 25 years out from the base (or existing) year. The model developed for the City is based on the C/CAG regional model, which has a future horizon year of 2035. However, the New General Plan has a horizon year of 2030. Thus, the City travel demand model reflects the buildout of the New General Plan, expected by 2030, within the City; for areas outside of the City, the model land uses are consistent with the C/CAG regional model land use projections for the year 2035. Thus, the year 2030 analysis completed for this report includes the additional incremental growth between the years 2030 and 2035 for areas outside of the City. The year 2030 roadway volume analysis in this report presents a conservative analysis that is appropriate for analyzing impacts of the New General Plan.
Travel Demand Forecasting

The City developed a citywide transportation demand model for use in this EIR. The model includes estimates for existing and future year 2030 traffic volumes and is based on the C/CAG regional model, with refined land uses and roadway network within the City. Since the model is based on the C/CAG model and includes land use and network information for the region, the forecasted year traffic volumes include traffic generated by growth in areas outside of the City included in the regional model (i.e., the rest of San Mateo County and the Bay Area) that would use the roadway network in the City. The model also includes planned improvements as identified in the proposed new General Plan. The model forecasts morning and evening peak period traffic throughout the City for all of the major roadways. Raw model forecasts were adjusted based on the existing base year traffic volumes.

Compared to existing (2008) conditions, the New General Plan will add about 9,100 dwelling units and 7.3 million square feet of non-residential space within the plan area. The citywide transportation demand model estimates that the vehicle trip generation for the New General Plan will be approximately 12 and 16 percent higher in the AM and PM peak hours, respectively, as compared to existing (2008) conditions.

Roadway and Network Improvements

The new General Plan proposes several roadway improvements within the City, including grade separations along the Caltrain rail corridor; linkages, such as the Blomquist Street Extension; and U.S. 101 improvements, including U.S. 101/SR 84 interchange improvements.

The New General Plan also includes policies and implementation programs for a fixed-route streetcar network consisting of up to three lines that would intersect in Downtown. The three lines identified include the Middlefield Road, Broadway, and Seaport Boulevard streetcar corridors. The City travel demand model reduced trip generation rates for land uses within 1,000 feet of the proposed streetcar corridors by 10 percent to account for the anticipated reduction in vehicle travel.

The City is also proposing implementation of “Pedestrian Enhanced Design” (PED) that reduce the number and/or width of lanes along specified segments on Veterans Boulevard, Middlefield Road, Jefferson Avenue, Broadway, Brewster Avenue, and Farm Hill Boulevard. Though this is part of the New General Plan, the reduction of travel lanes was analyzed separately and was not included as part of the model.

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6 The City contracted with the firm TJKM to complete modeling. Analysis in this section was completed by Fehr & Peers using the modeling output.

7 U.S. 101 improvements and the U.S. 101/SR 84 interchange improvements were not included in the transportation demand model, since no detailed plans are currently available. This results in a more conservative analysis of the New General Plan.
4.14.5 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Issues Not Discussed Further

Change in Air Traffic Patterns

City residents have ready access to nearby San Carlos Airport, as well as major international airports in the cities of San Francisco, San Jose, and Oakland. Though the New General Plan will increase density and increase building heights in designated areas such as the Downtown and north of U.S. 101, the building heights will not interfere with current flight patterns of nearby airports. Due to the nature and scope of the New General Plan, adoption of the New General Plan would not have the potential to result in a change in air traffic patterns at the San Carlos Airport or any other airport in the area. Thus, no further analysis of this issue is required. (The Airport Land Use Commission has considered the draft New General Plan relative to the San Carlos Airport Plan.)

Project Impacts

Impact 4.14-1: New development allowed under the New General Plan could cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the roadway system and result in unacceptable service levels on some roadway segments based on current LOS policy. (Significant and Unavoidable)

Based on the previously identified impact criteria, buildout of the land uses envisioned in the New General Plan could result in significant impacts to the following roadway segments:

- Alameda De Las Pulgas between Stockbridge Avenue and Woodside Road is projected to operate at LOS F during the AM and PM peak hours.
- Alameda de Las Pulgas between Woodside Road and Fernside Street is projected to operate at LOS F during the AM peak hour.
- Alameda de Las Pulgas between Edgewood Road and Whipple Avenue is projected to operate at LOS F during the AM and PM peak hours.
- East Bayshore Road between Seaport Boulevard and Haven Avenue is projected to operate at LOS E during the AM peak hour and LOS F during the PM peak hour.
- El Camino Real between Jefferson Avenue and Maple Street is projected to operate at LOS E during the AM peak hour and LOS F during the PM peak hour.
- Industrial Way between Whipple Avenue and northerly City limits is projected to operate at LOS E during the PM peak hour.
- Marsh Road between Florence Street and Scott Drive is projected to operate at LOS E during the PM peak hour.
- Whipple Avenue between Hudson Street and El Camino Real is projected to operate at LOS E during the AM peak hour.
- Woodside Road between I-280 and Alameda de Las Pulgas is projected to operate at LOS F during the AM and PM peak hours.
Woodside Road between Alameda de Las Pulgas and Massachusetts Avenue is projected to operate at LOS F during the AM and PM peak hours.

Woodside Road between El Camino Real and Middlefield Road is projected to operate at LOS F during the AM and PM peak hours.

Woodside Road between Middlefield Road and Bay Road is projected to operate at LOS F during the AM and PM peak hours.

Woodside Road between Bay Road and Broadway is projected to operate at LOS E during the AM peak hour and LOS F during the PM peak hour.

U.S. 101 between Willow Road and Holly Street is projected to operate at F during the AM and PM peak hours.

I-280 between Woodside Road and Farm Hill Boulevard is projected to operate at LOS F during the AM and PM peak hours.

Table 4.14-5 summarizes peak hour two-way volumes and corresponding LOS on roadway segments throughout the plan area under project conditions. Figures 4.14-6 and 4.14-7 show the future (2030) roadway segment LOS during AM and PM peak hours, respectively. Program BE-52 of the New General Plan identifies locations for removal/reduction of roadway travel lanes throughout the plan area. The impact of the proposed PEDs, (i.e., the removal or reduction of travel lanes) on traffic operations, is analyzed separately below in the PED Impacts section.

The significant roadway segment impacts identified in Table 4.14-5 are considered significant and unavoidable, since no feasible mitigation measures are available to reduce the impacts to less than significant levels at most locations. Mitigation would require the widening of roadways (e.g., from 2 to 4 lanes), which is considered infeasible in most locations because of: 1) existing landscaping or structures and pedestrian, bicycle and transit facilities that need to be maintained and/or expanded per General Plan policies, and 2) right-of-way and existing building constraints at numerous locations throughout the City. However, roadway widening is potentially feasible on two of the impacted segments:

- Alameda de Las Pulgas between Woodside Road and Fernside Street can be widened by eliminating the existing median and restriping the roadway.
- Portions of East Bayshore Road between Seaport Boulevard and Haven Avenue can be widened on the east side of the roadway.

Although widening of these segments would mitigate the impact, it would result in loss of landscaping and encourage speeding on both roadways, which are in conflict with other goals of the New General Plan.
<table>
<thead>
<tr>
<th>Roadway Segment</th>
<th>Roadway Type¹</th>
<th>Number of Lanes</th>
<th>AM Peak Hour Volume</th>
<th>AM Peak Hour LOS</th>
<th>PM Peak Hour Volume</th>
<th>PM Peak Hour LOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alameda De Las Pulgas (Stockbridge Avenue to Woodside Road)</td>
<td>Collector with TWLTL²</td>
<td>3</td>
<td>2,070 F</td>
<td></td>
<td>1,760 F</td>
<td></td>
</tr>
<tr>
<td>Alameda de Las Pulgas (Woodside Road to Fernside Street)</td>
<td>Collector</td>
<td>2</td>
<td>1,330 F</td>
<td></td>
<td>1,050 D</td>
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</tr>
<tr>
<td>Alameda de Las Pulgas (Edgewood Road to Whipple Avenue)</td>
<td>Collector with TWLTL²</td>
<td>3</td>
<td>1,730 F</td>
<td></td>
<td>1,700 F</td>
<td></td>
</tr>
<tr>
<td>Bay Rd (Woodside Road to 5th Avenue)</td>
<td>Collector</td>
<td>4</td>
<td>1,000 C</td>
<td></td>
<td>1,480 D</td>
<td></td>
</tr>
<tr>
<td>Blomquist Lane (Seaport Boulevard to Maple Street)</td>
<td>Collector</td>
<td>2</td>
<td>740 C</td>
<td></td>
<td>870 D</td>
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</tr>
<tr>
<td>Brewster Avenue (Hudson Street to Broadway)</td>
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<td>740 C</td>
<td></td>
<td>710 C</td>
<td></td>
</tr>
<tr>
<td>Brewster Avenue (Winslow Street to Veterans Boulevard)</td>
<td>Collector with TWLTL²</td>
<td>3</td>
<td>1,200 D</td>
<td></td>
<td>1,320 D</td>
<td></td>
</tr>
<tr>
<td>Broadway (Brewster Avenue to El Camino Real)</td>
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<td>660 C</td>
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<td>790 D</td>
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<tr>
<td>Broadway (Jefferson Avenue to Main Street)</td>
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<tr>
<td>Broadway (Beech Street to Chestnut Street)</td>
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<td>1,910 D</td>
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</tr>
<tr>
<td>Broadway (Woodside Road to 5th Avenue)</td>
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<td>4</td>
<td>670 B</td>
<td></td>
<td>680 B</td>
<td></td>
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<tr>
<td>Canyon Road (Highland Avenue to Cordelleras Road)</td>
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<td>2</td>
<td>800 D</td>
<td></td>
<td>720 C</td>
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<tr>
<td>East Bayshore Road (Seaport Boulevard to Haven Avenue)</td>
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<td>2</td>
<td><strong>1,170 E</strong></td>
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<td><strong>1,800 F</strong></td>
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<tr>
<td>East Bayshore Road (Whipple Avenue to Bair Island Road)</td>
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<td>3</td>
<td>1,120 C</td>
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<td>Edgewood Road (Alameda de Las Pulgas to Cordilleras Road)</td>
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<td>1,480 D</td>
<td></td>
<td>1,610 D</td>
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<tr>
<td>Edgewood Road (Alameda de Las Pulgas to El Camino Real)</td>
<td>Collector</td>
<td>2</td>
<td>550 C</td>
<td></td>
<td>560 C</td>
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</tr>
<tr>
<td>Roadway Segment</td>
<td>Roadway Type</td>
<td>Number of Lanes</td>
<td>AM Peak Hour Volume</td>
<td>LOS</td>
<td>PM Peak Hour Volume</td>
<td>LOS</td>
</tr>
<tr>
<td>------------------------------------------------------</td>
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</tr>
<tr>
<td>El Camino Real (Woodside Road to 5th Avenue)</td>
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<td>6</td>
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<td>D</td>
<td>4,670</td>
<td>D</td>
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<tr>
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<td>5</td>
<td>3,440</td>
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<td>3,840</td>
<td>D</td>
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<td>3,620</td>
<td>E</td>
<td>4,200</td>
<td>F</td>
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<td>Farm Hill Boulevard (Woodhill Drive to I-280)</td>
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<td>4</td>
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<td>B</td>
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<td>A</td>
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<tr>
<td>Hudson Street (Oak Avenue to Woodside Road)</td>
<td>Collector</td>
<td>2</td>
<td>440</td>
<td>B</td>
<td>810</td>
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<tr>
<td>Hudson Street (Jefferson Avenue to Roosevelt Avenue)</td>
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<td>2</td>
<td>980</td>
<td>D</td>
<td>1,000</td>
<td>D</td>
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<tr>
<td>Industrial Way (Whipple Avenue to City Limits)</td>
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<td>3</td>
<td>1,300</td>
<td>D</td>
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<td>E</td>
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<tr>
<td>Jefferson Avenue (El Camino Real to Middlefield Road)</td>
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<td>D</td>
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<td>D</td>
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<tr>
<td>Jefferson Avenue (Farm Hill Boulevard to East Lake Way)</td>
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<td>2</td>
<td>530</td>
<td>C</td>
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<tr>
<td>Jefferson Avenue (Alameda de Las Pulgas to Hudson Street)</td>
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<td>4</td>
<td>1,630</td>
<td>C</td>
<td>1,500</td>
<td>C</td>
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<tr>
<td>Jefferson Avenue (Hudson Street to El Camino Real)</td>
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<td>4</td>
<td>1,810</td>
<td>D</td>
<td>1,680</td>
<td>C</td>
</tr>
<tr>
<td>Jefferson Avenue (Broadway to Veterans Boulevard)</td>
<td>Arterial</td>
<td>4</td>
<td>1,240</td>
<td>C</td>
<td>1,570</td>
<td>C</td>
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<tr>
<td>Main Street (Broadway Street to Middlefield Road)</td>
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<td>3</td>
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<td>C</td>
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<td>D</td>
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<tr>
<td>Maple Street (Blomquist Lane to Veterans Boulevard)</td>
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<td>2</td>
<td>380</td>
<td>B</td>
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<tr>
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<td>2</td>
<td>270</td>
<td>B</td>
<td>390</td>
<td>B</td>
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<tr>
<td>Marine Parkway (Twin Dolphin Drive to)</td>
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<tr>
<td>Roadway Segment</td>
<td>Roadway Type¹</td>
<td>Number of Lanes</td>
<td>AM Peak Hour Volume</td>
<td>PM Peak Hour Volume</td>
<td>LOS</td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------------</td>
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</tr>
<tr>
<td>Island Drive)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Marine Parkway (Twin Dolphin Drive to U.S. 101 Ramps)</td>
<td>Divided Arterial</td>
<td>6</td>
<td>3,090</td>
<td>2,600</td>
<td>C</td>
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<tr>
<td>Marsh Road (Fair Oaks Avenue to Florence Street)</td>
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<td>4</td>
<td>2,340</td>
<td>2,710</td>
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<tr>
<td>Marsh Road (Florence Street to Scott Drive)</td>
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<td>4</td>
<td>3,070</td>
<td>3,570</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>Marsh Road (Florence Street to Scott Drive)</td>
<td>Divided Arterial</td>
<td>4</td>
<td>3,070</td>
<td>3,570</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>Massachusetts Avenue (Alameda de Las Pulgas to Woodside Road)</td>
<td>Collector with TWLTL²</td>
<td>3</td>
<td>1,030</td>
<td>860</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Mc Garvey Avenue (Fernside Street to Farm Hill Boulevard)</td>
<td>Collector</td>
<td>2</td>
<td>920</td>
<td>860</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>Middlefield Road (Woodside Road to 5th Avenue)</td>
<td>Arterial</td>
<td>4</td>
<td>2,330</td>
<td>2,690</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>Middlefield Road (Woodside Road to Chestnut Street)</td>
<td>Arterial with TWLTL²</td>
<td>3</td>
<td>1,490</td>
<td>1,700</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>Redwood Shores Parkway (Twin Dolphin Drive to Shoreline Drive)</td>
<td>Divided Arterial</td>
<td>6</td>
<td>2,930</td>
<td>3,060</td>
<td>D</td>
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<tr>
<td>Redwood Shores Parkway (Twin Dolphin Drive to U.S. 101 Ramps)</td>
<td>Divided Arterial</td>
<td>6</td>
<td>3,130</td>
<td>3,680</td>
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<tr>
<td>Seaport Boulevard (Blomquist Street to Chesapeake Drive)</td>
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<td>4</td>
<td>2,910</td>
<td>2,860</td>
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<tr>
<td>Valota Road (Woodside Road to Redwood Court)</td>
<td>Collector</td>
<td>2</td>
<td>700</td>
<td>570</td>
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<tr>
<td>Veterans Boulevard (Whipple Avenue to Brewster Avenue)</td>
<td>Divided Arterial</td>
<td>6</td>
<td>3,320</td>
<td>3,880</td>
<td>D</td>
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<tr>
<td>Veterans Boulevard (Main Street to Jefferson Avenue)</td>
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<td>6</td>
<td>2,730</td>
<td>3,050</td>
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<tr>
<td>Veterans Boulevard (Maple Street to Chestnut Street)</td>
<td>Divided Arterial</td>
<td>6</td>
<td>2,200</td>
<td>2,800</td>
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<tr>
<td>Whipple Avenue (Hudson Street to Grand Street)</td>
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<td>1,190</td>
<td>1,100</td>
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<td>Whipple Avenue (Veterans Boulevard to Industrial Way)</td>
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<td>4</td>
<td>2,860</td>
<td>3,360</td>
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</tbody>
</table>
### Roadway Segments Table

<table>
<thead>
<tr>
<th>Roadway Segment</th>
<th>Roadway Type</th>
<th>Number of Lanes</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
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<tr>
<td>Whipple Avenue (El Camino Real to Winslow Street)</td>
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<td>4</td>
<td>2,140 D</td>
<td>2,280 D</td>
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<td>Winslow Street (Brewster Avenue to Broadway)</td>
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<td>490 B</td>
<td>730 C</td>
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<tr>
<td>Woodside Road (I-280 to Alameda de Las Pulgas)</td>
<td>Divided Arterial</td>
<td>4</td>
<td>4,640 F</td>
<td>4,270 F</td>
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<td>Woodside Road (Alameda De Las Pulgas to Massachusetts Avenue)</td>
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<td>4</td>
<td>4,250 F</td>
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<tr>
<td>Woodside Road (El Camino Real to Middlefield Road)</td>
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<td>4</td>
<td>4,880 F</td>
<td>5,310 F</td>
</tr>
<tr>
<td>Woodside Road (Middlefield Road to Bay Road)</td>
<td>Divided Arterial</td>
<td>4</td>
<td>4,590 F</td>
<td>5,030 F</td>
</tr>
<tr>
<td>Woodside Road (Bay Road to Broadway Street)</td>
<td>Divided Arterial</td>
<td>5</td>
<td>4,610 E</td>
<td>4,960 F</td>
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<td>U.S. 101 (Willow Road to Marsh Road)</td>
<td>Freeway</td>
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<td>14,080 F</td>
<td>14,820 F</td>
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<td>U.S. 101 (Whipple Avenue to Holly Street)</td>
<td>Freeway</td>
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<td>18,790 F</td>
<td>18,320 F</td>
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<tr>
<td>I-280 (Woodside Road to Farm Hill Road)</td>
<td>Freeway</td>
<td>8</td>
<td>16,920 F</td>
<td>17,330 F</td>
</tr>
</tbody>
</table>

**Notes:** Results in **bold and italic** represent roadway segments with significant impacts as compared to Existing Conditions.

1. Each segment is defined by the major roadways nearest the count location.
2. TWLTL = Two-way left-turn lane


The magnitude of the segment impacts can be reduced by implementing New General Plan policies and implementation programs that aim to reduce the City’s vehicle trip generation and are intended to manage traffic by enhancing non-auto travel. The following policies and implementation programs of the New General Plan could reduce this impact, but the impact would remain significant unless mitigated:

**Policy BE-25.1:** Accommodate and encourage alternative transportation modes to achieve Redwood City’s mobility goals and reduce vehicle trip generation and vehicle miles traveled (VMT).

**Policy BE-25.2:** Facilitate convenient transfers between various travel modes. Emphasis should be on transfers between alternative transportation modes that minimize the need for use of single-occupant vehicles.

**Policy BE-25.3:** Support using the concept of complete streets to design, construct, operate, and maintain City and private streets to enable safe, comfortable, and attractive access and travel for pedestrians, bicyclists,
motorists, and transit users of all ages, abilities, and preferences. Use the complete streets concept to better link the Port, Seaport Center, Pacific Shores, and other employment centers with Downtown and other nearby areas.

**Policy BE-25.4:** Consider impacts on overall mobility and various travel modes when evaluating transportation impacts of new developments or infrastructure projects.

**Policy BE-25.5:** Continue to implement Pedestrian Enhanced Designs (PEDs), especially on streets with projected excess vehicle capacity, to reduce either the number of travel lanes or the roadway width, and use the available public right-of-way to provide wider sidewalks, bicycle lanes, transit amenities or landscaping.

**Policy BE-25.6:** Ensure that the City’s transportation impact fee program provides adequate funding for necessary transportation improvements that will benefit all travel modes, while also incentivizing development which is less dependent on expensive new transportation infrastructure.

**Policy BE-25.7:** Cooperate with neighboring jurisdictions and County, State, and Federal agencies toward maintaining and improving the existing regional transportation network, and identifying, funding, and implementing regional improvements to the transportation network.

**Policy BE-26.1:** Consult the planning, funding, prioritization, and implementation of bicycle, electric scooter, and pedestrian policies, programs, and supporting infrastructure.

**Policy BE-26.2:** Develop and maintain comprehensive master plans for the citywide bicycle, electric scooter, and pedestrian networks to identify short- and long-range policies, programs, and improvement projects that will improve walking and bicycling.

**Policy BE-26.3:** Encourage citizen participation in improving the City’s “complete streets,” and bicycle and pedestrian networks.

**Policy BE-26.4:** Consider street modifications to improve bicyclist, electric scooter, and pedestrian safety through such measures as the use of neighborhood traffic management strategies, the development of complete streets concepts, and implementation of bike boulevards.

**Policy BE-26.5:** Integrate financing and implementation of pedestrian, bicycle, and electric scooter improvement projects with other related street modifications projects.

**Policy BE-26.6:** Require new development projects to provide pedestrian and bicycle/electric scooter facilities that connect to existing and planned pedestrian and bicycle facilities; and require large parking facilities to accommodate pedestrian, bicycle, and electric scooter circulation.
Legend

- City Boundary
- Shore of Influence
- Downtown Precise Plan

Level of Service Based on Average Peak Hour Volume:

- A-C LOS
- D LOS
- E LOS
- F LOS

Source: Fehr and Peers, 2010

1 inch equals 4,000 feet
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Policy BE-26.7: Promote the collection and maintenance of data on pedestrian, bicycle, and electric scooter activity to better understand where heaviest use and safety and improvement needs are and to assist in prioritizing improvement projects.

Policy BE-26.8: Identify funding for the regular maintenance of all public bicycle, electric scooter, and pedestrian facilities.

Policy BE-26.9: Use portions of railroad and utility rights-of-way for use as exclusive or shared bicycle, electric scooter, and pedestrian facilities.

Policy BE-26.10: Prioritize bicycle, electric scooter, and pedestrian safety improvements at street crossings.

Policy BE-26.11: Prioritize implementation of pedestrian, bicycle, and scooter improvements near schools, transit, shopping, hospitals, and mixed-use areas with higher pedestrian concentrations.

Policy BE-26.12: Encourage more students to walk and bicycle to and from schools.

Policy BE-26.13: Explore the implementation of uniform way-finding signs to guide bicycles, electric scooters, and pedestrians to recommended travel routes and destinations throughout the community. Ensure consistency with countywide/regional signage wherever feasible.

Policy BE-26.14: Support completion of the pedestrian network by providing sidewalks or paths on at least one side of the street (preferably both sides where feasible) where they are missing and feasible. Crosswalks and sidewalks shall be universally accessible and designed for people of all abilities, wherever feasible.

Policy BE-26.15: Improve the pedestrian experience through the use of landscaping, medians, crosswalks, mid-block crossings, pedestrian-scale lighting, pedestrian traffic signals, appropriate street furniture, orienting new development toward the street, and increased education and enforcement.

Policy BE-26.16: Encourage pedestrian activity by installing, maintaining, and where appropriate, enhancing existing crosswalks at both mid-block locations and all approaches of major intersections where feasible and where enhanced traffic control devices or roadway amenities would improve pedestrian access and safety.

Policy BE-26.17: Encourage pedestrian activity by accommodating pedestrian crossings on all intersection approaches and/or mid-block with maximum spacing of 500 feet, where feasible, including enhanced traffic control devices or roadway amenities, where appropriate to improve pedestrian access and safety, on all street types other than Auto Dominated Highways. Where necessary, traffic flow should be preserved with roundabouts or signal coordination rather than increased intersection spacing.
Policy BE-26.18: Maintain and encourage the use of existing pedestrian walkways that enhance pedestrian connectivity throughout the City.

Policy BE-26.19: Expand the bicycle system to provide a continuous system within Redwood City by eliminating missing segments. Additionally, provide continuous bicycle facilities, where appropriate, through eliminating parking on one or both sides of the street and/or other roadway modifications. If exclusive bicycle facilities (i.e., Class I or II) are not feasible, provide shared facilities by posting appropriate signs and shared lane markings.

Policy BE-26.20: Eliminate or minimize physical obstacles and barriers on City streets that impede bicycle movement, including consideration of grade-separated crossings at railroad tracks and freeways.

Policy BE-26.21: Designate a system of bicycle boulevards with increased amenities and safety features such as bicycle detectors at signalized intersections.


Policy BE-26.23: Encourage bicycling and use of electric scooters to public transit nodes by providing appropriate amenities at stations and on-board transit vehicles.

Policy BE-26.24: Encourage bicycling and use of electric scooters by providing adequate bicycle parking.

Policy BE-26.25: Encourage bicycling and use of electric scooters by prioritizing routine street maintenance and sweeping for streets that are designated as bike facilities.

Policy BE-26.26: Promote comprehensive pedestrian, bicycle, and electric scooter education throughout the community for pedestrians, cyclists, and drivers.

Policy BE-27.1: Locate bus, shuttle, and rail services on designated streets as near as possible to areas with the highest ridership potential.

Policy BE-27.2: Pursue development of streetcar lines in areas for targeted development intensification and to connect major destinations.

Policy BE-27.3: Provide for roadways designated as transit routes to accommodate transit vehicle circulation and adequate access to and from transit stops.

Policy BE-27.4: Consider prioritizing bus mobility along El Camino Real and other heavily traveled transit corridors.

Policy BE-27.5: Require that new development and projects improve access to and accommodations for public transit.

Policy BE-27.6: Site transit stops at safe, efficient, and convenient locations. Provide transit stop amenities to facilitate access to and from transit stops and
transfers between buses. Make transit an attractive alternative to driving.

**Policy BE-27.7:** Pursue expanding the community-serving shuttle program to access neighborhoods throughout Redwood City.

**Policy BE-27.8:** Consult with employers and transit providers to establish and maintain shuttle service serving major vehicle trip-generating destinations in the City.

**Policy BE-27.9:** Encourage new transit providers in Redwood City.

**Policy BE-27.10:** Maintain and improve access and mobility for the mobility impaired population groups such as youth, the disabled, and seniors.

**Policy BE-28.1:** Support Caltrain to improve service and amenities that increase daily ridership and reduce potential negative effects on the community.

**Policy BE-28.2:** Support attractive and pedestrian-friendly railroad track grade-separated crossings and other appropriate measures to mitigate potential noise, air pollution, safety, and traffic impacts of increased Caltrain service and new high-speed rail service.

**Policy BE-28.3:** Support the development of related uses and amenities that contribute to increased ridership of potential high-speed rail, while balancing the needs of the greater community.

**Policy BE-28.4:** Balance high-speed rail and freight rail needs, opportunities, and advantages.

**Policy BE-29.1:** Develop and maintain a roadway network that categorizes streets according to function and type, considering the surrounding land use context.

**Policy BE-29.2:** Pursue programs that reduce vehicle speeds and cut-through traffic on local streets.

**Policy BE-29.3:** Support programs that identify safety issues and develop appropriate countermeasures in Redwood City.

**Policy BE-29.4:** Encourage implementation of Intelligent Transportation Systems (ITS) strategies to maximize the efficiency of the existing transportation systems.

**Policy BE-29.5:** Support re-evaluation of the City’s Level of Service (LOS) policies for motor vehicle circulation to ensure efficient traffic flow and balance multi-modal mobility goals.

**Policy BE-29.6:** Develop a new Level of Service (LOS) policy for Downtown Redwood City that includes the following components:

- Emphasizes pedestrian and bicycle access and circulation
- Maintains appropriate emergency vehicle response time
- Supports reduced vehicle miles traveled
Considers, but does not deem congestion in Downtown for autos to be an impact

**Policy BE-29.7:** Maintain and enhance the interconnected network of streets and short blocks that support all modes of travel.

**Policy BE-29.8:** Support infrastructure projects that increase the efficiency of the Woodside Road (SR 84) corridor (including the replacement of the El Camino Real/Woodside Road grade separation with an at-grade intersection) and balance the needs of all travel modes.

**Policy BE-29.9:** Support increasing the connectivity of all travel modes in the areas east of U.S. 101.

**Policy BE-30.1:** Minimize potential conflicts between trucks and pedestrian, bicycle, and transit access and circulation on streets designated as truck routes.

**Policy BE-30.2:** Minimize potential conflicts between truck loading and unloading and pedestrian, bicycle, and transit access and circulation.

**Policy BE-30.3:** Ensure that adequate freight movement capacity is provided at the Port of Redwood City, balanced with the overall transportation needs within the Seaport Boulevard corridor.

**Policy BE-30.4:** Maximize the efficiency of goods movement while working to minimize related environmental impacts.

**Policy BE-31.1:** Explore alternative techniques and requirements as they pertain to various transportation modes including parking, land use, and traffic mitigation that would encourage the use of alternative transportation modes.

**Policy BE-31.2:** Promote Transit-Oriented Development with reduced parking requirements and other amenities around appropriate transit hubs and stations to facilitate the use of available transit services.

**Policy BE-31.3:** Encourage developments that minimize vehicle trips and vehicle miles traveled.

**Policy BE-31.4:** Support implementation of a citywide or areawide TDM program.

**Policy BE-31.5:** Ensure that TDM programs initiated by private parties reduce projected traffic impacts.

**Policy BE-31.6:** Encourage City employees to use other transportation modes rather than single-occupant automobile.

**Policy BE-31.7:** Balance business viability and land resources by maintaining an adequate supply of parking to serve demand while avoiding excessive parking supply that discourages non-automobile travel modes use.

**Policy BE-31.8:** Support using parking supply and pricing as a strategy to encourage use of non-automobile modes where feasible.
Policy BE-31.9: Consider reducing parking requirements for mixed-use developments and for developments providing shared parking or a comprehensive TDM program, or developments located near major transit hubs.

Policy BE-31.10: Encourage private property owners to share their underutilized parking with the general public and/or other adjacent private developments.

Policy BE-31.11: Explore “Parking Benefit Districts” that use revenues from parking in the district to benefit the district.

Program BE-33: Transportation Impact Fee. Review and, if necessary, update the City’s transportation impact fee program to ensure that funding is provided for necessary transportation improvements that will benefit all travel modes.

Program BE-34: Transportation Funding Prioritization. Develop an overall policy to prioritize funding and timing for implementing transportation improvements. Consider prioritizing multi-modal projects that provide the most benefit to all users. Also, account for other potential funding sources where feasible.

Program BE-35: Complete Streets Coordinator. Designate a citywide bicycle and pedestrian coordinator to administer the planning, funding, prioritization, and implementation of bicycle and pedestrian policies, programs, and supporting infrastructure.

Program BE-36: Pedestrian and Bicycle Facilities Maintenance. Identify funding sources for the regular maintenance and cleaning of all public bicycle, electric scooter, and pedestrian facilities as part of the City’s regular budget. Prioritize routine street maintenance for streets designated as bike facilities.

Program BE-37: Pedestrian Connectivity. Develop a plan to maintain and enhance existing pedestrian walkways through the City that connect neighborhoods to parks, schools, other public/quasipublic facilities and key destinations. Work with adjacent property owners to identify creative methods of preventing associated issues of security, vandalism, and litter. Eliminate walkways only to improve pedestrian safety.

Program BE-38: Bicycle Detection Devices. Review 1) all new traffic signal installations, 2) existing traffic signal modifications, and 3) projects included in the Capital Improvement Plan to include installation of bicycle detection devices where feasible.

Program BE-39: Off-Street Bicycle and Electric Scooter Parking and Storage Requirements.
- Encourage all public off-street parking facilities, including those owned by Redwood City, San Mateo County, and the San Mateo County Transit District (SamTrans), to set aside an area for
aesthetically designed, secure, and convenient bicycle and electric scooter parking in strategic and highly visible locations.

- Require all new developments and reuse/ redevelopment projects to provide safe, secure, and convenient long-term and short-term bicycle and electric scooter storage facilities and other appropriate amenities.

**Program BE-40: Bus Facilities Funding.** As part of the project development review process, require developers of new building and redevelopment/reuse projects located along bus routes to pay their fare share of the cost of providing improved bus stop facilities and related street furniture or, where appropriate, dedicate land for improved bus stop facilities. If new streets are proposed as part of new developments, determine the suitability of expanding transit service. If appropriate, the new streets shall be designed to accommodate transit vehicles and provide appropriate amenities.

**Program BE-41: New Development Shuttle Service.** As part of the entitlement process for large developments, explore the feasibility of providing shuttle service to and from other transportation hubs and activity centers such as Canada College, Caltrain Station, and Downtown.

**Program BE-42: Neighborhood Traffic Management Program.** Update the City’s Neighborhood Traffic Management Program to formalize:

- Comprehensive strategies to improve safety and livability of local and collector streets
- Procedures that can uniformly be applied to all neighborhoods to identify and prioritize traffic management measures
- A program that can be clearly followed by residents, City staff, and other stakeholders

**Program BE-43: Smaller Street Blocks.** As part of the development review process for redevelopment/reuse of existing developments, and for new development, encourage the construction or conversion of larger blocks into smaller blocks separated by a network of narrow short streets and/or pedestrian and bicycle corridors.

**Program BE-44: U.S. 101/Woodside Road Redesign.** Continue to actively participate in the process for the redesign of U.S. 101/Woodside Road interchange, and ensure that it provides access and circulation for all travel modes.

**Program BE-45: Off-Street Loading Requirements.** As part of the project development review process, ensure that adequate off-street loading areas in new large commercial, industrial, and residential developments are provided, and that they do not conflict with pedestrian, bicycle, or transit access and circulation.

**Program BE-46: Parking Standards Update.** Update existing parking standards that reduce parking requirements for transit-oriented developments and mixed use projects, and that address shared parking and TDM
programs. The standards should also require amenities and programs to support the reduced parking requirements.

Program BE-47: Parking Demand Analysis. As part of the entitlement process, require large developments to complete a parking demand analysis that accounts for shared parking, TDM programs, and parking pricing to determine the appropriate parking supply. Encourage the use of parking reserve in landscaping concept (i.e. landscaping that can be converted to parking in the future if necessary) to ensure that excessive parking is not provided.

Program BE-48: New Development Roadway Consistency. Require new development’s roads and all other roadway improvements to be consistent with the adopted street typologies.

Program BE-49: Street Standards. Update and enforce the City’s engineering standards for public and private streets to require safe, comfortable, and attractive access and travel for pedestrians, bicyclists, motorists, and transit users of all ages, abilities, and travel mode preferences when new streets are established or existing streets are modified. High quality pedestrian facilities (such as sidewalks that provide direct walking routes with adequate width, pedestrian-scale lighting, landscaping, and other appropriate amenities) shall be provided as part of all new development.

Program BE-50: Level of Service Policy Evaluation. Evaluate Redwood City’s current Level of Service (LOS) policies for motor vehicle circulation. The evaluation shall consider the following to ensure efficient traffic flow and balance multi-modal mobility goals:

- Maintaining LOS D or better for motor vehicles in all areas of the City, except the Downtown area as defined by the Downtown Precise Plan. In Downtown, no minimum vehicular LOS standard will be maintained but vehicular LOS will be calculated and alternate LOS standards for other travel modes will be established.
- Explore other areas of the City where vehicular LOS standard would either be lowered or eliminated. These areas may include gateway intersections providing access into the City, freeway ramps, or along Transit streets including the proposed streetcar corridors.
- Consider the effect of potential mitigation measures to improve vehicle LOS on the operations of other travel modes.
- Evaluate the potential for elimination of vehicle LOS as the primary measure of impact assessment for developments in parts or the entire City.

Program BE-51: Multi-Modal Level of Service Standards. Develop and adopt multi-modal level of service (LOS) standards that address each travel mode. Vary the standard by facility type, travel mode, and location. This approach will help to apply a preference for selected modes based on the street type and/or location.
Program BE-52: Pedestrian Enhanced Design (PED) Criteria. Establish criteria to identify roadways for implementing pedestrian enhanced design. Conduct engineering studies to determine feasibility of implementing PEDs that provide multi-modal amenities within the public right-of-way by reducing the number of travel lanes on the following streets that are projected to have excess vehicle capacity:

- Veterans Boulevard (from 6 lanes to 4 lanes)
- Middlefield Road south of Woodside Road (from 4 or 5 lanes to 3 lanes)
- Jefferson Avenue between Hudson Street and Alameda de Las Pulgas and between Marshall Street and Veterans Boulevard (from 4 lanes to 3 lanes), and potentially between Hudson Street and Clinton Street if traffic signals on El Camino Real can be appropriately timed to accommodate it.
- Broadway between Maple Street and a quarter-mile east of Douglas Avenue—where Broadway already provides a three lane cross-section (from 4 lanes to 3 lanes)
- Brewster Avenue from El Camino Real and Elwood Street (from 4 lanes to 3 lanes)
- Farm Hill Boulevard (from 4 lanes to 2 lanes)

Program BE-53: Complete Streets Master Plan. Fund, implement, and regularly update master plans for the bicycle, electric scooter, and pedestrian systems in Redwood City. These documents shall accomplish the following:

- Identify streets, pedestrian walks, bicycle boulevards, and bicycle routes that create a fully connected network throughout the City, and connect to neighboring communities and existing and planned regional trails. Corridors for potential bike facilities to provide a more complete interconnected network are illustrated on Figure BE-13.
- Identify and promote policies and programs that encourage walking, biking, and use of electric scooters, and improve safety.
- Develop design standards for various pedestrian, bicycle, and electric scooter facilities, including sidewalks, off-street paths, bicycle lanes, and bicycle paths. These standards shall be applicable to existing and future roadways.
- Identify methodology to determine timing for implementation of infrastructure projects, with priority for projects that enhance pedestrian and bicycle safety and projects located in areas with potentially high pedestrian and bicycle usage.
- Establish a citywide crosswalk policy to address installation, maintenance, removal, and enhancements of crosswalks at intersections and mid-block locations. Crosswalk locations and treatment shall be based on criteria including, but not limited to safety, traffic volume, and concentration of pedestrian activity. Potential enhancements shall include leading pedestrian intervals at signalized intersections, bulb-outs, and median refuges to reduce crossing distances. Crosswalks shall not be removed to
improve automobile flow. Crosswalks may be removed to increase pedestrian safety, based on an engineering study finding that enhanced traffic control devices or roadway amenities to improve pedestrian safety are not feasible as an alternative to removal, and subsequent to the public notice and opportunity to be heard required by the California Vehicle Code.

- Establish a uniform way-finding program to guide bicycles, electric scooters, and pedestrians to recommended travel routes and destinations citywide, and ensure consistency with countywide/regional signage where feasible.
- Develop bicycle and electric scooter parking standards.
- Study the feasibility of providing the following infrastructure improvement projects:
  - Install a pedestrian walkway and bikeway along the portion of Redwood Creek between Main Street and Bair Island Road.
  - Provide a bicycle/pedestrian only or bicycle/pedestrian/automobile connection across U.S. 101 south of Woodside Road within a better connected multi-modal network, which should include the Bay Trail when it is completed.
  - Enhance current bicycle and pedestrian connection across U.S. 101 between Woodside Road and Whipple Avenue.
  - Develop bicycle paths along the Hetch Hetchy easement and the corridor parallel to Alameda de Las Pulgas rights-of-way.
  - Daylight creeks in connection with proposed bicycle and pedestrian pathways.
  - Explore establishing pedestrian- and bicycle-friendly travel ways that connect various part of the City. Potential corridors include:
    - Vera Avenue between Alameda de Las Pulgas and El Camino Real, including an improved pathway through Red Morton Park. An alternative to Vera Avenue would be Madison Avenue between Alameda de Las Pulgas and El Camino Real; or, designate Vera Avenue and Madison Avenue as one-way couplets for bicycles, with each street designed to accommodate bicycle traffic in one direction.
    - Maple Street between El Camino Real and Veterans Boulevard.
    - Industrial Way/Winslow Street/Middlefield Road between north and south City limits.
    - Broadway between Hopkins Avenue and 5th Avenue.
    - King Street between Whipple Avenue and Jefferson Avenue.
    - Harrison Avenue between El Camino Real and Alameda de Las Pulgas.
    - A variety of northwest/southeast corridors that cross Woodside Road.

**Program BE-54:** Capital Improvement Program. Incorporate bicycle and pedestrian facilities into the Capital Improvement Program.

**Program BE-55:** On-site Pedestrian Bicycle, and Electric Scooter Facilities. As part of the project development review process, require developers of new development and redevelopment/reuse projects, including parking facilities, to provide appropriate onsite facilities such as
bicycle and scooter storage and showers, provide connections to existing and planned facilities, dedicate land to expand existing facilities or provide new facilities such as sidewalks and/or bicycle lanes/paths, and/or pay a pro-rata or other share of the cost of improvements.

**Program BE-56:** Pedestrian, Bicycle, and Electric Scooter Counts and Survey. Collect pedestrian, bicycle, and electrical scooter counts as part of routine traffic counts. Quantifying pedestrian, bicycle, and electric scooter activities will measure the amount of pedestrian, bicycle, and electric scooter usage throughout the City and assist in determining and prioritizing infrastructure improvement projects. In addition, survey bicyclists and electric scooter users regarding their safety concerns.

**Program BE-57:** Street Modification Procedures. Develop standard procedures for evaluating and implementing street modifications that enhance bicycle and pedestrian facilities. Planning for each street modification shall require participation by the public, particularly local residents, business operators, students, property owners, and other stakeholders who will be directly affected by the proposal.

**Program BE-58:** Streetcar Route. Study the feasibility of implementing a streetcar or similar system in the following corridors: Broadway, Seaport Boulevard, and Middlefield Road as shown on Figure BE-15. This system is proposed as a long-term community asset that will enhance non-automobile connectivity between neighborhoods; bus, rail, and water transit hubs; and the Downtown core.

**Program BE-59:** Community Shuttle Study. Conduct a feasibility study of providing and funding community-serving shuttles to health facilities, community centers, parks, libraries, schools, and neighborhoods throughout Redwood City, including Redwood Shores. Consider specific routes and fares that facilitate use of a shuttle by seniors and teens. Likely destinations for both of these groups may include parks, centers, community libraries, theaters, and shopping destinations.

**Program BE-60:** High-Speed Rail Adjacent Land Use. If a high-speed rail station is planned for Redwood City, conduct studies to determine the appropriate uses and amenities necessary to increase ridership, while balancing the needs of the greater community, without causing harm to the long-term land use planning efforts in Downtown.

**Program BE-61:** Intelligent Transportation System. Conduct a study of Intelligent Transportation Systems (ITS) strategies, such as adaptive signal controls, real-time transit information, and real-time parking availability information, which may maximize the efficiency of the existing transportation systems throughout Redwood City. Implement those improvements that would be most effective.
Program BE-62: **Grade Separation Removal Study.** Study the feasibility of removing the grade separation at Woodside Road/El Camino Real intersection.

Program BE-63: **Blomquist Street Extension.** Develop plans to extend Blomquist Street to East Bayshore Road to provide a continuous roadway east of U.S. 101 between Woodside Road and Whipple Avenue interchanges.

Program BE-64: **Skyway Extension.** Study the feasibility of extending Skyway to Whipple Avenue to provide an additional vehicular, including transit, connection between Redwood Shores and the rest of Redwood City.

Program BE-65: **Transportation Impact Fee Reduction.** As part of the City’s transportation impact fee program update, reduce transportation impact fees for new developments that demonstrate a commitment to effective TDM strategies. Alternatively, explore the feasibility of providing reimbursements after monitoring shows effectiveness of TDM strategies.

Program BE-66: **Pedestrian, Bicycle, and Electric Scooter Safety Programs.** Partner with other agencies and/or organizations to establish a comprehensive pedestrian, bicycle, and electric scooter safety education program for pedestrians, bicyclists, scooter users, and motorists of all ages. Increase driver awareness of pedestrian safety and educate drivers about the legal obligation to yield to pedestrians at marked and unmarked crosswalks. Provide bicycle safety education at all public and private schools, parks, and community centers. Disseminate information through libraries, brochure mailings, and electronic media. Continue to enforce the California Vehicle Code and other applicable laws that promote safe bicycle and automobile operation. In addition, enforce pedestrian right-of-way at crosswalks through rigorous targeted police operations.

Program BE-67: **Collision Data Evaluation.** Develop a program to regularly evaluate traffic collision data. Identify top collision locations for automobiles, bicycles, and pedestrians in Redwood City, and develop appropriate countermeasures.

Program BE-68: **Truck Route Designation Review.** Regularly review the City’s designated truck routes (City’s Municipal Code Chapter 20, Section IV-20.52) to ensure that truck freight movement is accommodated with minimal conflicts with pedestrian, bicycle, and transit access and circulation throughout the City, including Redwood Shores. As part of the review process for major developments, review if current truck routes should be eliminated or new truck routes should be designated. In addition, explore prohibiting trucks and deliveries on specific roadways during particular times of day such as on Downtown streets during the busy evening periods.
Program BE-69: TDM Programs and Monitoring.

- Establish a citywide or areawide TDM program potentially funded by annual fees or assessments on existing and new developments, or grants. The program may include free shuttle service, ridesharing, preferential carpool parking, flexible work schedules, car-sharing, parking pricing, and other measures. Explore the feasibility of neighborhood electric vehicles (NEVs) or Segways for short trips within residential neighborhoods or office parks.
- Establish a department procedure that reviews and monitors private party TDM programs to ensure that the programs are operational and are effective in reducing traffic impacts. If departmental review finds TDM programs are not operational or are not effective, consult with private party to initiate new programs before instituting a fee.
- Update and enhance the existing TDM program for City of Redwood City employees. The program may include free shuttle service, preferential carpool parking, ridesharing, flexible work schedules, parking pricing, car-sharing, and other measures.

Program BE-70: Shared Parking Incentive. Establish a program and provide potential incentives for private property owners to share their underutilized parking with the general public and/or other adjacent private developments.

Program BE-71: Parking Benefit District. Establish Parking Benefit Districts that use revenues from parking in the district to enhance nonmotorized connections, security, and the physical environment of the district. A feasibility study can be completed as parts of specific plans or master plans that are prepared for particular districts.

Program BE-72: Street Typologies. Implement the street typologies presented in this General Plan.

Program BE-73: Bus Route Street Improvements and Pavement Requirements. Review all capital improvement projects to ensure improvements located on existing and planned bus routes include modification of street, curb, and sidewalk configurations to allow for easier and more efficient bus operation and improved passenger access and safety while maintaining overall pedestrian and bicycle safety and convenience. As part of routine street maintenance and repair programs, design streets designated as bus routes with a structural pavement cross-section of sufficient strength to accommodate buses. Design the portion of the street used as a bus stop with additional pavement treatment to minimize street deterioration.

Program BE-74: “Complete Streets” Advisory Committee. Create a “Complete Streets” Advisory Committee to provide opportunities for citizen input on bicycle and pedestrian facilities and planned improvements.
Program BE-75: Participate with Local, Regional, State, and Federal Agencies and Other Organizations.

- Actively participate in regional transportation and land use planning organizations to ensure development and maintenance of a transportation network and land uses that encourage non-automobile travel. This includes consultation with adjacent jurisdictions.
- Consult with local and regional transit providers including the Joint Powers Authority, to locate, plan, and design transit stops that facilitate transfers between various modes and various transit services (e.g., providing adequate bicycle parking at the Caltrain station or reasonable walking paths to bus stops)
- Regularly participate with regional transportation planning and funding agencies such as the San Mateo County City/County Association of Governments and Metropolitan Transportation Commission.
- Continue negotiations and discussions with the Caltrans on the following matters:
  - Maintenance of pavement surfaces under their jurisdiction
  - Median and street landscaping
  - Design standards modifications
  - Traffic lights sensitive to accommodating cyclists on the roadway
  - Better pedestrian accommodations to allow crossing at angles and all four corners of intersections
  - Context-sensitive measures to improve pedestrian and bicycle safety and circulation on El Camino Real and Woodside Road
  - Meet regularly with local schools to develop and consult programs that encourage more students to walk and bicycle to and from schools. Also, participate in and support recommendations of a Safe Routes to School Program.
  - Consult with Caltrans and San Mateo County Transit District to study the feasibility of prioritizing bus mobility along El Camino Real and other heavily traveled transit corridors by installing transit signal priority, queue jump lanes at congested intersections, and/or exclusive bus lanes.
  - Regularly consult with the San Francisco Water Emergency Transportation Authority to consult planning efforts for the proposed ferry station with appropriate land use designations and transportation connections.
  - Regularly consult with the Peninsula Corridor Joint Powers Board to consult planning efforts for the proposed Dumbarton Rail Corridor with appropriate land use designations and transportation connections.
  - Regularly consult with the paratransit service providers to meet the changing needs of the mobility impaired population in Redwood City.
Continue to regularly consult with Joint Powers Authority on the following matters:
- Maintenance of rail lines, landscaping, and easements
- Potential for rail electrification to increase the frequency of train service
- Potential for lobbying for full grade separations (either above-ground or underground) to improve street connectivity and pedestrian and bicycle mobility at ground level
- Potential for providing timed transfers with other transit providers in the area.
- Anticipate, analyze, and mitigate potential negative impacts resulting from increased train service, corridor expansion, and the eventual upgrading of the rail line. Seek to balance opportunities provided by both freight rail and high-speed rail.
- Consult with the California High-Speed Rail Authority to ensure that any modifications to rail corridors within the City are planned and constructed in a manner that prevents or minimizes physical or visual barriers in the City.
- Consult with the Port of Redwood City to ensure that adequate capacity is provided for freight movement at the Port; determine the overall transportation needs within the Seaport Boulevard corridor.
- Consult with ship operators and the trucking industry to ensure that the benefits of goods movements are maximized, to the extent feasible while environmental impacts are minimized.
- Consult with rail operators to ensure that the benefits of goods movements are maximized, to the extent feasible while environmental impacts are minimized and good movements on freight rail are balanced with high speed rail needs.
- Establish procedures whereby the Redwood City Community Development Services Department and the Planning section of the San Mateo County Transit District have full knowledge of each agency’s short- and long-range plans for bus routes, bus stop locations, timed transfers, street improvements, land use policies, and new building projects so that each agency’s plans are complementary.

Consult with the San Mateo County Transit District, Corridor Joint Powers Board, and local shuttle operators to:
- Encourage these agencies to permit riders to transport bicycle and electric scooters on the transit vehicles
- Provide appropriate facilities for the bikes and electric scooters;
- Provide secure bicycle and electric scooter storage lockers for long-term parking at all park-and-ride facilities and train stations for transit riders; and
- Regularly consult with transit providers to:
Site transit stops at safe, efficient, and convenient locations, and to develop;
- Provide transit stop amenities such as pedestrian pathways approaching stops, benches and shelters, traveler information systems, and bike storage to facilitate access to and from transit stops. Bus stops should accommodate timed transfers between buses and other transit services where necessary; and
- Provide service to health centers and health facilities.

Policy BE-7.4: Foster connections between Mixed Density Neighborhoods and surrounding Corridors and Centers, paying special attention to pedestrian access across major Corridors.

Policy BE-10.7: Improve pedestrian, bicycle, and automobile linkages between the Bay front and the areas west of U.S. 101.

Policy BE-11.1: Improve the Corridors to create a network of “complete streets” that emphasizes pedestrian orientation and safety, public transit access, safe bicycle movement, and other improvements.

Policy BE-11.3: Plan for and accommodate mixed-use projects along Corridors, where a site or sites are developed in an integrated, compatible, and comprehensive planned manner involving two or more land uses. Combine residential and office uses with commercial development to reduce automobile trips and encourage walking, and facilitate compact, sustainable development.

Policy BE-11.7: Provide the appropriate density of land uses to facilitate high levels of transit use along corridors.

Policy BE-12.1: Integrate land use and transportation planning and development to transform El Camino Real to an urban, pedestrian-friendly, and transit oriented boulevard for residents to live, work, shop, and play.

Policy BE-12.3: Accommodate the pedestrian in all public and private improvement projects along El Camino Real.

Policy BE-12.6: Strengthen pedestrian, transit, and bicycle connections to the corridor, and to provide convenient connectivity to the Caltrain Station.

Policy BE-14.3: Enhance pedestrian and bicycle safety along the Middlefield corridor through streetscape improvements, additional crosswalks, and other measures appropriate for the corridor.

Policy BE-14.6: Improve all means of transportation (pedestrian, bicycle, public transit, and vehicles), and enhance pedestrian and bicycle safety.

Policy BE-14.8: Establish land uses and development that support a local streetcar line along Middlefield Road.

Policy BE-19.3: Promote enhanced accessibility to Employment Centers through alternative modes of transportation, including walking, bicycling,
carpooling, a local street car or similar system, and other transit alternatives.

**Policy BE-19.5:** Require that new and renovated Employment Center development be designed to accommodate safe and convenient walking, biking, and transit use, and exhibit design features that encourage connections, including interconnected systems of streets and walkable blocks; innovative parking solutions that reduce surface parking lots; buildings with primary entrances on public streets and sited around common plazas, courtyards, walkways, and open spaces; extensive on-site landscaping; a coordinated and well-designed signage program; and attractive streetscapes and lighting to promote pedestrian activity.

**Policy BE-21.3:** Prepare a plan that accommodates a passenger ferry terminal at the Port, and that:

- Applies to all of the areas immediately adjacent to the ferry terminal,
- Facilitates a variety of travel mode connections to various parts of Redwood City, and
- Establishes architectural and site planning standards for new buildings.

**Policy BE-22.2:** Apply the following performance criteria and standards, as applicable, to all new development projects, with the level of application commensurate with the scale of a development:

- The development must result in a net positive fiscal impact to the City unless the City Council identifies unique circumstances for waiving this requirement.
- Adequate long-term water supplies must be available to serve the new development without impinging upon service to established and approved uses and developments. Adequacy must be fully documented to the satisfaction of the responsible City departments.
- The City’s adopted service standards for pedestrian, bicycle, public transit usage, and motorized vehicle mobility must be achieved. Any circulation improvements or programs needed to maintain the established level of service standard must be programmed and funding committed for construction or implementation at the appropriate time.
- New development must plan for access to public transportation, including the potential streetcar system, transportation hub, and ferry terminal, as appropriate.
- Limit new development within the flood plain or ensure new development incorporates extra precautions into the site and building design to account for flood plain location.
- Storm drain, sewerage, and similar infrastructure improvements necessary to serve the development must be fully funded at the appropriate time, and any such improvements shall not place burdens upon nor otherwise impact tributary facilities.
Sufficient measures must be incorporated into project design and fully funded at the appropriate time to provide adaptation to and/or guard against potential damage from anticipated rises in sea levels.

Minimize direct or indirect impact to sensitive biological resources while optimizing the potential for mitigation.

Uses proposed must clearly be compatible with surrounding established and planned uses.

Development must support the City’s vision for the district or area in which it is proposed to be located.

Development must incorporate sustainability features, including features that minimize energy and water use, limit carbon emissions, provide opportunities for local power generation and food production, and provide areas for recreation.

The development must provide a measurable and/or clearly identifiable community benefit in the form of affordable housing, jobs generation, available parkland or open space, environmental hazard protection, and/or other criteria established by the City.

Require new development to pay its fair share of the cost of public facilities, services, and infrastructure, including but not limited to transportation, incremental water supply, sewer and wastewater treatment, solid waste, flood control and drainage, schools, fire and police protection, and parks and recreation. Allow for individual affordable housing projects to be exempted from the full cost of impact fees, subject to meeting specified criteria.

Policy BE-23.2: Coordinate land use and transportation planning to ensure land use patterns and intensities can support a regionally integrated transportation network that includes bicycles and pedestrians, and provides equal access to jobs, recreation, quality education, child care, and health care system.

Program BE-8: Transit Amenities. Require incorporation of transit-oriented design features, and attractive and appropriate transit amenities (including shaded bus stops) into public and private development projects, as appropriate, to promote and support public transit use.

Adherence to the above policies and programs would individually and collectively reduce the overall vehicle trip generation and vehicles miles traveled. Thus, application of the policies and programs would result in fewer vehicle trips, reduce the traffic volumes on the impacted roadways, and thus reduce the magnitude of the impact. However, since the effectiveness of these programs and policies cannot be accurately quantified, the City concludes that the impact would remain significant and unavoidable.

It should be noted that with or without adoption of the New General Plan, growth is likely to occur. If the New General Plan is not adopted, the mitigating policies and programs would not be adopted. Please see Chapter 5.0, Alternatives, for a more complete evaluation of the “No Project” alternative.

At locations where roadways are projected to operate at LOS E or F, it is expected that some regional traffic may divert to local streets to avoid congested, higher volume streets.
This could result in potentially significant impacts and generate the need for traffic calming or other neighborhood traffic calming strategies in affected areas. Policies in the next section, especially the implementation of Program BE-42 (Neighborhood Traffic Management Program) will help reduce or eliminate the amount of cut-through traffic in residential neighborhoods and mitigate the potential impacts to less than significant levels.

**Impact 4.14-2: Elimination of the LOS standard for roadways within the Downtown would result in potential increases in congestion in the Downtown area that could result in LOS E or F operations. (Less than Significant)**

Program BE-50 in the New General Plan proposes to eliminate the minimum vehicular LOS standard for roadways within the Downtown area. The Downtown area is illustrated on Figure 4.14-6 and is generally bound by El Camino Real to the south, Brewster Avenue to the west, Veterans Boulevard to north, and Maple Street to the east. The following ten roadway segments within the Downtown area are analyzed as part of this EIR:

- Brewster Avenue between Winslow Street and Veterans Boulevard
- Broadway between Brewster Avenue and El Camino Real
- Broadway between Jefferson Avenue and Main Street
- El Camino Real between Jefferson Avenue and Maple Street
- Jefferson Avenue between El Camino Real and Middlefield Road
- Jefferson Avenue between Broadway and Veterans Boulevard
- Main Street between Broadway and Middlefield Road
- Maple Street between El Camino Real and Franklin Street
- Winslow Street between Brewster Avenue and Broadway
- Veterans Boulevard between Main Street and Jefferson Avenue

Allowable building heights in the Downtown district would range from 3 to 12 stories. The New General Plan does not prescribe specific limits on density and intensity on specific parcels in the Downtown district. Rather, the New General Plan describes a district limit of 2,500 net new residential units and 586,000 square feet of net new non-residential space. This is consistent with the policies of the Downtown Precise Plan, which was originally adopted in 2007 and is scheduled to be revised and readopted in the fall of 2010. Thus, the model simply carries these numbers forward as the 2030 anticipated level of development.

As previously documented, with the exception of El Camino Real between Jefferson Avenue and Maple Street, all Downtown area roadway segments studied for this EIR are projected to operate at acceptable service levels (i.e., LOS D or better based on current policy) through 2030. With the proposed elimination of the LOS standard in the Downtown area, the impact on El Camino Real between Jefferson Avenue and Maple Street, identified above as a significant and unavoidable impact of the 2030 New General Plan build out condition, would be identified as a less than significant impact in future environmental review of development proposals following this General Plan. Performance of this segment should be anticipated to decline as build out occurs over time.
As discussed above, the proposed elimination of an LOS standard in the Downtown would allow for increased congestion in the Downtown area that could correlate to LOS E or F operations. This policy would not directly increase traffic volumes, but it could allow increased congestion at key locations within the area.

The City’s purpose in proposing this policy is to facilitate higher density development within the Downtown and to emphasize expansion and protection of facilities and services for non-automobile travel modes including transit, bicycling, and walking in and through this area. Under the current General Plan, projects are typically required to widen intersections to increase capacity to meet existing LOS standards. However, the infrastructure improvements implemented to satisfy these standards often result in larger intersections which generally discourage walking and bicycling, by increasing pedestrian crossing distances, vehicle speeds, vehicle traffic and the number of conflict points. In addition, roadway widenings could require the elimination of bicycle lanes, the narrowing of sidewalks, or the elimination of bus turnouts, all of which would discourage non-automobile travel.

The proposed policy to eliminate LOS standards in the Downtown district will not determine what land use is developed at a specific location, nor will it modify any of the land use policies that guide residential, commercial, industrial or public facility development under the adopted New General Plan. By limiting the extent to which vehicular capacity improvements can eliminate or restrict other modes of transportation (such as bicycle and pedestrian facilities), the policy modifications may reduce adverse impacts on multi-modal access and circulation within the City. Eliminating LOS standards in the Downtown district is expected to reduce the likelihood of creating wider intersections that can divide neighborhoods and reduce safe pedestrian and bicycle travel.

The elimination of LOS standards in the Downtown area may result in both direct and indirect impacts. Direct impacts on the transportation network and indirect impacts on other environmental areas are described below.

**Direct Impacts**

If adopted, the LOS policy modifications would not change the nature, land use designation, or character of the affected streets. For roadway segments where LOS E or LOS F would be allowed, adoption of the New General Plan would not require any additional street right-of-way. As congestion increases at individual locations, traffic queues would be expected to increase in length. This could result in traffic blocking driveways for businesses or residences near the intersections, or cars cutting through parking lots to avoid congestion. While annoying, traffic queues that block commercial and residential driveways are an operational issue and are not considered to be a significant environmental impact for the purposes of CEQA. Likewise, cutting through commercial properties can be a nuisance to businesses, but the practice can be limited by the use of speed humps, diverters, landscaped barriers and other traffic operation and management design techniques.

A recurring concern in residential neighborhoods is the likelihood that residential streets will become “cut-throughs”, shortcuts or bypasses used by non-neighborhood traffic. While some use of residential streets by such traffic occurs in most areas, substantial
quantities of through traffic can result in impacts such as noise, safety impacts to pedestrians, impaired driveway access, interference with emergency vehicle access, increased dust and litter, and similar annoyances that adversely affect the residential character of the neighborhood. Traffic noise increases of three decibels or more are generally triggered by a doubling of traffic. This amount of traffic would be a substantial change on streets that directly serve front-on residences, especially single family houses and duplexes that have usable front yards and driveways that normally require parked vehicles to back out.

Since major arterials, such as Veterans Boulevard, are usually the most direct routes, drivers would be expected to use those routes as long as congestion is not excessive. In Redwood City, traffic spillover is less likely to occur where there are parallel routes on major streets to which some of the spillover traffic will divert. General Plan Program BE-42 would update the City’s Neighborhood Traffic Management Program and would formalize strategies for limiting spillover into residential neighborhoods through modifications to traffic operations (i.e., limiting turning movements during peak commute periods at some locations or installing speed humps) if problems develop. In the Downtown, congestion will slow traffic down. Since the projected congestion level in the Downtown area under the New General Plan in 2030 is limited (i.e. only one street is projected to operate at LOS E or LOS F), the potential for substantial cut-through traffic is expected to be minimal.

Indirect Impacts

The proposed revisions to the LOS standard in Downtown under Program BE-50, if adopted, will result in a relaxation of the mitigation requirements for significant vehicle capacity impacts at all the intersections in the Downtown district. However, mitigation may still be required for other travel modes. By relaxing the vehicle mitigation requirements for Downtown development, projects that may not have been feasible due to the cost of mitigation may become feasible. This increase in the number of projects that could be feasibly proposed for the Downtown district would be an indirect benefit of the proposed LOS policy. Notably, however, the revised LOS policy would not permit development that otherwise is not consistent with the General Plan or zoning ordinance. Furthermore, the Downtown Precise Plan implementation approach is an overall development cap for the area as a whole and thus the prospect of increasing the number of feasible projects is actually limited by that development cap. The development cap would not increase as a result of adoption of a revised LOS policy for the area.

All future development proposals would be subject to the City’s land use entitlement processes and would be required to comply with CEQA requirements. If the City identifies extraordinary circumstances affecting public health, safety, or welfare, the City would be free to consider traffic levels of service as part of its project review and CEQA evaluation. All future development under the proposed Circulation Element update would be subject to the policies and City standards in effect at the time of development.

The adoption of the proposed LOS policy would not reduce the efficacy or effectiveness of other policies, standards and guidelines. For this reason, indirect or secondary impacts associated with the proposed LOS policy change are considered less than significant.
The proposed elimination of vehicle LOS standards in the Downtown would facilitate the
development of higher density development in the Downtown by reducing the land area
needed for infrastructure to accommodate vehicle infrastructure, and enhance facilities and
services for non-automobile travel modes. Proximity of complementary land uses at higher
densities would make walking and bicycling more viable modes for all trips and will reduce
overall vehicle trip generation. As documented in Impact 4.14-1, one location in the
Downtown area would operate at an unacceptable LOS. However, the congestion at this
location would be caused by the projected development, and not by the elimination of the
LOS standard in the Downtown area. In addition, the New General Plan includes policies
and programs which are expected to reduce vehicle trip generation and enhance non-
automobile travel. Therefore, this impact is considered to be less than significant.

**Impact 4.14-3: The reduction of the number and/or width of travel lanes
along specified roadway segments (“pedestrian enhancement design”) would
result in an unacceptable service level at one of the proposed locations. (Less
than Significant with Mitigation)**

Figure 3-5 in Chapter 3.0, Project Description, shows candidate locations for
removal/reduction of roadway travel lanes throughout the plan area. The removal or
reduction of travel lanes is also known as PEDs. Though the PEDs are part of the New
General Plan, they were analyzed separately so that the impacts from the proposed land use
changes and pedestrian enhancements could be assessed independently.

Program BE-52 in the New General Plan proposes to reduce the number and/or width of
lanes along several roadways in the plan area. These PEDs are proposed in areas for
several reasons. Streets that are (or appear) relatively wide to their surroundings
encourage vehicles to travel faster\(^8\), posing concerns in densely built-up areas where
pedestrian and/or bicycle activity is common. Reducing the number or width of travel
lanes can serve as an important tool in “traffic calming,” when combined with other
measures, such as changes in traffic signal timing and control, that help achieve a safer and
more balanced roadway network for all users. With PEDs, several enhancements can be
made including:

- Addition of a center two-way left-turn lane.
- Reduction of pedestrian crossing distances.
- Widening of sidewalks and/or providing additional landscaping.
- Striping of bicycle lanes within the existing curb-to-curb width (provided they
  connect other bike facilities and are integrated with the bicycle system).
- Addition of on-street parking can be added where appropriate.

Roadways identified in the New General Plan as potential candidates for PEDs include
segments of Veterans Boulevard, Middlefield Road, Jefferson Avenue, Broadway, Brewster
Avenue, and Farm Hill Boulevard. Along most segments, the PED would result in an
existing 4-lane facility (2 lanes in each direction) converted to a 3-lane facility (1 lane in

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\(^8\) Ewing, Reid and Steven J. Brown, *U.S. Traffic Calming Manual* (Chicago: American Planning Association
Planners Press, 2009), 112.
each direction plus a center two-way left-turn lane). As shown in Table 4.14-6, none of the roadways identified in the proposed New General Plan for PED are projected to operate at unacceptable service levels with their current roadway configuration. Although the proposed PED would reduce the number of through vehicle lanes throughout the corridor, the current lane configuration may need to be maintained at certain segments such as major intersections in order to minimize traffic congestion. Thus, more detailed analysis may be needed for each PED project to determine the specific configuration of the corridor.

The peak hour roadway LOS results for the proposed PEDs are summarized in Table 4.14-6. Based on this analysis all of the roadway segments are projected to operate at acceptable LOS D or better with the proposed narrowing of the roadways, with the exception of Veterans Boulevard between Whipple Avenue and Brewster Avenue. In the PM peak hour roadway operations are projected to degrade from LOS D to LOS F on this segment with the proposed roadway narrowing from six to four lanes as compared to operations under Project Conditions.

Two options are currently being considered for narrowing Farm Hill Boulevard. One option would narrow the roadway from four lanes to three lanes (with a center two-way left-turn lane) and the other option would narrow Farm Hill Boulevard to two lanes. In either option the roadway is projected to operate at acceptable LOS D during both peak hours.

Implementation of PEDs as specified in Program BE-52 of the New General Plan would result in a significant impact at the Veterans Boulevard roadway segment between Whipple Avenue and Brewster Avenue. For all other locations implementation of Program BE-52 would result in less than significant impacts. The significant impact at Veterans Boulevard between Whipple Avenue and Brewster Avenue can be reduced to less than significant level by implementing Mitigation 4.14-1.

**Mitigation 4.14-1:** The City shall revise Program BE-52 of the New General Plan to the following:

**Program BE-52:** Pedestrian Enhanced Design (PED) Criteria. Establish criteria to identify roadways for implementing pedestrian enhanced design. Conduct engineering studies to determine feasibility of implementing PEDs that provide multi-modal amenities within the public right-of-way by reducing the number and/or width of travel lanes on the following streets that are projected to have excess vehicle capacity:

- Veterans Boulevard (from 6 lanes to 4 lanes **east of Brewster Avenue**)
- Middlefield Road **south east** of Woodside Road (from 4 or 5 lanes to 3 lanes)
- Jefferson Avenue between Hudson Street and Alameda de Las Pulgas and between Marshall Street and Veterans Boulevard (from 4 lanes to 3 lanes), and potentially between Hudson Street and Clinton Street if traffic signals on El Camino Real can be appropriately timed to accommodate it.
- Broadway between Maple Street and a quarter-mile east of Douglas Avenue—where Broadway already provides a three lane cross-section (from 4 lanes to 3 lanes)
- Brewster Avenue from El Camino Real and Elwood Street (from 4 lanes to 3 lanes)
Significance After Mitigation: Implementation of Mitigation Measure 4.14-1 would reduce the impact to Veterans Boulevard between Whipple Avenue and Brewster Avenue with regard to PEDs to less than significant.

Table 4.14–6 Roadway Segments Considered for Pedestrian Enhanced Design (PED) - Level of Service Summary

<table>
<thead>
<tr>
<th>Roadway Segment</th>
<th>Existing Conditions</th>
<th>Project</th>
<th>Project With PED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Lanes</td>
<td>AM</td>
<td>PM</td>
</tr>
<tr>
<td>Veterans Boulevard: Whipple Avenue to Brewster Avenue</td>
<td>6</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>Veterans Boulevard: Main Street to Jefferson Avenue</td>
<td>6</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Veterans Boulevard: Maple Street to Chestnut Street</td>
<td>6</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Middlefield Road: Woodside Road to 5th Avenue</td>
<td>4</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Jefferson Avenue: Hudson Street to Alameda de Las Pulgas</td>
<td>4</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Jefferson Avenue: Marshal Street to Veterans Boulevard</td>
<td>4</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Broadway: Maple Street to Douglas Avenue</td>
<td>4</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Brewster: El Camino Real to Elwood Street</td>
<td>4</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Farm Hill Boulevard: Alameda de Las Pulgas to I-280 (Option 1)</td>
<td>3</td>
<td>D</td>
<td>D</td>
</tr>
<tr>
<td>Farm Hill Boulevard: Alameda de Las Pulgas to I-280 (Option 2)</td>
<td>4</td>
<td>C</td>
<td>C</td>
</tr>
</tbody>
</table>


Impact 4.14-4: Adoption of the New General Plan could result in a network of “complete streets” that accommodate multiple travel modes and various users appropriate to the surrounding land uses and would not increase hazards due to roadway design features or incompatible uses. (Less than Significant)

The City generally has a completed roadway network to serve its land uses and will need to construct few new roads to serve the New General Plan’s proposed land uses. As identified in the New General Plan, these new roadways include the Blomquist Street bridge and extension between Maple Street and Bair Island Road, U.S. 101/Woodside Road.
interchange improvements, and grade-separations at the existing at-grade Caltrain railroad crossings at Whipple Avenue, Hopkins Avenue, Brewster Avenue, Broadway, Maple Street, Main Street, Chestnut Street, and potential improvements to existing crossings at 5th Avenue and Jefferson Avenue. All new roadways will be constructed based on industry standards and will not increase hazards due to roadway design.

Policy BE-28.2 and Program BE-62 support the grade-separation at the existing at-grade railroad crossings in the City. The grade-separation projects would not only improve the overall safety of these crossings by minimizing the potential for pedestrian, bicycle, or vehicle conflict with trains, but would also improve operations and congestion by eliminating the time vehicles have to wait to cross the railroad during train crossings and gate downtimes. Furthermore, the City’s envisioned crossings result in fully depressed or elevated railroad tracks to ensure the street grade is maintained to best support pedestrian/bikes and maintain connectivity without dividing communities.

To ensure a balanced, multi-modal transportation network, the New General Plan organizes streets and other transportation facilities according to “typologies”, which consider the context and prioritize travel modes for each street. The proposed “typologies” are intended to provide a network of “complete streets” that accommodate various users. This ensures that the standards consider a facility’s relation to surrounding land uses, appropriate travel speeds, and the need to accommodate multiple travel modes and various users.

For example, the New General Plan identifies a number of Bicycle Boulevards. These streets are intended as through routes for bicycles, to provide continuous access to local and regional bicycle network and destinations. Although local automobile, truck, and transit traffic would be accommodated on Bicycle Boulevards, bicycles would have priority in potential conflicts.

Adoption of the New General Plan would not substantially increase hazards due to design features or incompatible uses and result in less than significant impacts. No mitigation is required.

**Impact 4.14-5: Adoption of the New General Plan would not result in potentially inadequate emergency access in the Downtown. (Less than Significant)**

The New General Plan includes proposed increases in land use and transportation network changes that will increase traffic and congestion on certain roadways within the City. When transportation and environmental studies are conducted for individual developments, significant traffic impacts and corresponding mitigation is identified based on the City’s level of service policy, which currently applies to all roadways under City jurisdiction. The proposed program and associated roadway impacts are discussed in more detail earlier in this chapter. Also see Impact 4.7-4 in the Hazards and Hazardous Materials chapter, for an evaluation of emergency impact issues citywide.

Program BE-50 in the New General Plan proposes to eliminate vehicular LOS standards for roadways within the Downtown area. Without a minimum operating standard, improvements such as the addition of lanes, widening of intersections, and other substantive vehicle capacity enhancements would not be required to mitigate
environmental impacts for traffic. The purpose of this program is to establish and maintain a more pedestrian-, bicycle-, and transit-friendly environment in the Downtown area with wide sidewalks, minimal pedestrian crossing distances and delays, a limited number of travel lanes, and more convenient non-automobile travel. With the elimination of LOS thresholds and intensification of land use in Downtown, peak period congestion is expected to increase, and queuing and delays at signalized intersections may potentially negatively impact emergency vehicle access in this area. Emergency providers use response time as a primary performance measure, which could be substantially affected by the additional traffic congestion.

As previously documented, the traffic analysis shows that only one street segment in Downtown would operate at unacceptable LOS E or LOS F in the year 2030 with the adoption of the New General Plan. While El Camino Real between Jefferson Avenue and Maple Street is expected to operate at LOS E during the AM peak hour and LOS F during the PM peak hour, other streets in Downtown would operate at LOS D or better under the New General Plan which also includes the buildout of the Downtown Precise Plan. Regardless of the proposed Downtown LOS policy, the majority of Downtown area streets are expected to operate at an acceptable LOS. Therefore, traffic congestion in Downtown is not expected to degrade substantially to affect emergency response times.

Although congestion is not expected to substantially increase emergency response times, emergency response times throughout the City would continue to be monitored. If necessary, appropriate strategies would be developed to maintain acceptable emergency and response times. Thus, adoption of the New General Plan would not result in inadequate emergency access in the Downtown area or substantially increase emergency response times. It would result in a less than significant impact. No mitigation is required.

**Impact 4.14-6: Adoption of the New General Plan, specifically the policies and implementation programs related to the Land Use and Urban Form Chapter of the New General Plan, would not conflict with the adopted policies, plans, or programs supporting alternative transportation under Circulation/Transportation. (Less than Significant)**

The New General Plan proposes to adopt policies, plans, or programs related to Land Use and Urban Form. Many of these policies affect the proposed transportation policies and programs. The Built Environment programs (BE-88) and policies (BE-7.4, 10.77, 11.1, 11.3, 11.7, 12.1, 12.3, 12.6, 14.3, 14.6, 14.8, 19.3, 19.5, 21.3, 22.2, 23.2.) listed in the Motor Vehicle Access and Circulation impact discussion support the development of alternative transportation. Additionally, the following policies and programs either directly or indirectly affect transportation in the City:

**Policy BE-1.6:** Require that new large-scale projects are developed with an interconnected pattern or small blocks to induce walking and create walkable neighborhoods and to maximize connections between neighborhoods. If a new large-scale development project is able to achieve circulation interconnectedness for all modes and maximize walkability, then the small block pattern may not be required.
Policy BE-1.8: Require that new projects are integrated as seamlessly as possible into surrounding development, creating extensions of the urban fabric rather than a series of isolated pods.

Policy BE-3.8: Encourage use of alleys for new large scale developments to accommodate garages, parking areas, and garbage pickup.

Policy BE-6.2: Create new connections to commercial uses, schools, parks, and recreational areas, and transit from Post-War Neighborhoods.

Policy BE-7.2: Investigate and implement innovative approaches to address parking congestion.

Policy BE-8.2: Provide connections to commercial uses, schools, trails, and local parks.

Policy BE-9.2: Prohibit gated streets in any new Master Planned Neighborhood, and review carefully any proposal to provide gates in already constructed neighborhoods, with the goal of providing for connectivity and integration into surrounding areas.

Policy BE-11.2: Improve the Corridors to create a network of “green streets” that address the environmental impacts of street paving.

Policy BE-11.5: Improve public streetscapes along the Corridors, including widened sidewalks and crosswalks, protected crosswalks, regular street tree planting, bus shelters, and street furniture, and pedestrian-oriented street lighting.

Policy BE-11.10: Study the feasibility of rebuilding the intersection of Woodside Road and El Camino Real as a surface intersection that establishes a stronger linkage between adjacent commercial districts and residential neighborhoods. Land currently devoted to entrance ramps could be acquired for new commercial or mixed-use infill development, which may help to finance the improvements.

Policy BE-14.7: Include pedestrian amenities on Middlefield Road, and create community gathering spaces as destinations. Utilize materials and public art in public spaces that promote local identity and pride.

Policy BE-16.3: Pursue infrastructure and mobility enhancements that will facilitate movement across Woodside Road, and that promote walking, bicycling, and transit use, including a streetcar system.

Policy BE-18.9: Create a network of attractive, interesting public places and spaces that encourage walking and lingering through connections to Broadway, adjacent neighborhoods, transit, and El Camino Real.

Policy BE-18.10: Plan, manage, and operate the overall supply of parking to provide “just enough” parking at the right price to serve the needs of people living, working, and visiting Downtown.
Policy BE-21.4: Maintain railroad rights-of-way for materials transport and potential transit use.

Policy BE-23.4: Support revitalization, provide a catalyst for economic development, and connect neighborhoods and activity centers through establishment of a streetcar system, transportation hub, and ferry terminal in Redwood City.

Policy BE-23.5: Accommodate business paradigms and infrastructure enhancements that minimize the need for automobile trips, such as live/work, home-based businesses, high-speed telecommunications support, and satellite work centers, in addition to mixed-use development strategies.

Policy BE-22.2: Require new development pay its fair share of the cost of public facilities, services, and infrastructure, including but not limited to transportation, incremental water supply sewer and wastewater treatment, solid waste, flood control and drainage, schools, fire, and policy protections, and parks and recreation. Allow for individual affordable housing projects to be exempted from the full cost of impact fees, subject to meeting specific criteria.

Program BE-27: Active Pedestrian Environment Streetscape improvements. For areas designated by the General Plan to achieve an active pedestrian environment or improvement of their image and quality, prepare design plans, street tree plants, and financing plans for the comprehensive streetscape improvements.

One of the stated goals of the Circulation Section of the New General Plan is to maintain a local transportation system that balances the needs of bicyclists, pedestrians, and public transit with those of private cars. Several of the policies outlined in the Built Environment section, including but not limited to policies BE-7.4, BE-10.77, BE-11.1, BE-11.5, and BE-11.7, directly identify the enhancements to bicycle, pedestrian, and transit facilities, by including all modes of transportation as an integral consideration in land use development decisions.

Further, by paying special attention to pedestrians, bicyclists, and transit users in these policies, the New General Plan provides for specific opportunities to limit vehicle travel. Several of the Built Environment policies outlined above promote walking, bicycling, and transit usage by encouraging the development of improved facilities, better multi-modal connections, and convenient access. Additionally, other policies, such as BE-18.1010, provide framework for managing parking in core areas, in such a way as to meet the needs of all travel modes.

All of these policies and programs are in direct support of the transportation goals and policies. The policies and programs outlined above aim to reduce automobile trips and encourage walking, bicycling, and transit usage.

Adoption of the New General Plan would not conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., conflict with policies promoting bus
turnouts, bicycle racks, etc.); therefore the impact is less than significant. No mitigation measures are required.

**Impact 4.14-7: Adoption of the New General Plan would promote walking and bicycling within the City, which could complement existing facilities and support planned pedestrian and bicycle facilities. (Beneficial Impact)**

The New General Plan seeks to promote walking and bicycling within the City by improving pedestrian and bicycle conditions, increasing pedestrian and bicycle safety, and creating a land use context supportive of pedestrian and bicycle travel. Policy BE-26.2 requires the development of Bicycle and Pedestrian Master Plans. The master plans would propose several new bicycle facilities to link destinations within the City, as well as provide linkages to surrounding communities and destinations. The proposed bicycle facilities would include both recreational and commuter routes and address the needs of various types of bicyclists. The master plans would also include specific programs and policies that promote walking and bicycling, including the expansion and enhancement of pedestrian facilities, especially in the Downtown and along the proposed streetcar lines, where pedestrian access is vital to promoting multi-modal access.

The New General Plan includes the following policies to promote pedestrian and bicycle access and circulation in the City:

**Policy BE-25.3:** Support using the concept of complete streets to design, construct, operate, and maintain City and private streets to enable safe, comfortable, and attractive access and travel for pedestrians, bicyclists, motorists, and transit users of all ages, abilities, and preferences.

**Program BE-49:** Street Standards. Update and continue to enforce the city’s engineering standards for public and private streets to require safe, comfortable, and attractive access and travel for pedestrians, bicyclists, motorists, and transit users of all ages, abilities, and preferences when new streets are established or existing streets are modified. High quality pedestrian facilities (such as sidewalks that provide direct walking routes with adequate width, pedestrian scale lighting, landscaping and other appropriate amenities) shall be provided as part of all new development.

**Program BE-51:** Multi-Modal Level of Service Standards. Develop and adopt multi-modal level of service (LOS) standards that address all travel modes. Vary the standard by facility type, travel mode, and location. This approach will help to apply a preference for selected modes based on the street type and/or location.

**Policy BE-26.1:** Consult the planning, funding, prioritization, and implementation of bicycle, electric scooter, and pedestrian policies, programs, and supporting infrastructure.

**Policy BE-26.2:** Develop and maintain comprehensive master plans for the citywide bicycle, electric scooter, and pedestrian networks to identify short- and long-range policies, programs, and improvement projects that will improve walking and bicycling.
Policy BE-26.3: Encourage citizen participation in improving the City’s “complete streets” bicycle and pedestrian networks.

Policy BE-26.4: Consider street modifications to improve bicyclist, electric scooter and pedestrian safety through such measures as the use of neighborhood traffic management strategies, the development of complete streets concepts, and implementation of bike boulevards.

Policy BE-26.5: Integrate financing and implementation of pedestrian, bicycle, electric scooter improvement projects with other related street modifications projects.

Policy BE-26.6: Require new development projects to provide pedestrian and bicycle/electric scooter facilities that connect to existing and planned pedestrian and bicycle facilities; and require large parking facilities to accommodate pedestrian, bicycle, and electric scooter circulation.

Policy BE-26.7: Promote the collection and maintenance of data on pedestrian, bicycle, and electric scooter activity to better understand where heaviest use and needs are and to assist in prioritizing improvement projects.

Policy BE-26.8: Identify funding for the regular maintenance of all public bicycle, electric scooter, and pedestrian facilities.

Policy BE-26.9: Use portions of railroad and utility rights-of-way for use as exclusive or shared bicycle, electric scooter, and pedestrian facilities.

Policy BE-26.10: Prioritize bicycle, electric scooter, and pedestrian safety improvements at street crossings.

Policy BE-26.11: Prioritize implementation of pedestrian, bicycle, and electric scooter improvements near schools, transit, shopping, hospitals, and mixed-use areas with higher pedestrian concentrations.

Policy BE-26.12: Encourage more students to walk and bicycle to and from schools.

Policy BE-26.13: Explore the implementation of uniform way-finding signs to guide bicycles, electric scooters, and pedestrians to recommended travel routes and destinations throughout the community. Ensure consistency with countywide/regional signage wherever feasible.

Policy BE-26.14: Support completion of the pedestrian network by providing sidewalks or paths on at least one side of the street (preferably both sides where feasible) where they are missing and feasible. Crosswalks and sidewalks shall be universally accessible and designed for people of all abilities.

Policy BE-26.15: Improve the pedestrian experience through the use of landscaping, medians, crosswalks, mid-block crossings, pedestrian-scale lighting, pedestrian traffic signals, appropriate street furniture, orienting new development toward the street, and increased education and enforcement.
Policy BE-26.16: Encourage pedestrian activity by installing, maintaining, and where appropriate, enhancing existing crosswalks at both mid-block locations and all approaches of major intersections where feasible and where enhanced traffic control devices or roadway amenities would improve pedestrian access and safety.

Policy BE-26.17: Encourage pedestrian activity by accommodating pedestrian crossings on all intersection approaches and/or mid-block with maximum spacing of 500 feet, where feasible, including enhanced traffic control devices or roadway amenities where appropriate to improve pedestrian access and safety, on all street types other than Auto Dominated Highways. Where necessary, traffic flow should be preserved with roundabouts or signal coordination rather than increased intersection spacing.

Policy BE-26.18: Maintain and encourage the use of existing pedestrian walkways that enhance pedestrian connectivity throughout the City.

Policy BE-26.19: Expand the bicycle system to provide a continuous system within Redwood City by eliminating missing segments. Additionally, provide continuous bicycle facilities, where appropriate, through eliminating parking on one or both sides of the street and/or other roadway modifications. If exclusive bicycle facilities (i.e., Class I or II) are not feasible, provide shared facilities by posting appropriate signs and shared lane markings.

Policy BE-26.20: Eliminate or minimize physical obstacles and barriers on City streets that impede bicycle movement, including consideration of grade-separated crossings at railroad tracks and freeways.

Policy BE-26.21: Designate a system of bicycle boulevards with increased amenities and safety features such as bicycle detectors at signalized intersections.


Policy BE-26.23: Encourage bicycling and use of electric scooters to public transit nodes by providing appropriate amenities at stations and on-board transit vehicles.

Policy BE-26.24: Encourage bicycling and use of electric scooters by providing adequate bicycle parking.

Policy BE-26.25: Encourage bicycling and use of electric scooters by prioritizing routine street maintenance and sweeping for streets that are designated as bike facilities.

Policy BE-26.26: Promote comprehensive pedestrian, bicycle, and electric scooter education throughout the community for pedestrians, cyclists, and drivers.
Adoption of the New General Plan will not disrupt existing facilities or interfere with planned facilities; but rather enhance and expand the City’s current pedestrian and bicycle facilities. Therefore the New General Plan would have a beneficial impact. No mitigation measures are required.

**Impact 4.14-8: Adoption of the New General Plan would promote transit usage and accessibility within the City, which could complement existing and planned transit service within existing capacity. (Beneficial Impact)**

The New General Plan seeks to foster increased transit use and a greater emphasis on transit in planning for future transportation. The City seeks to increase transit ridership through land use decisions, connectivity to other modes (including walking and biking), and improving traffic operations within key corridors to facilitate bus headways. The New General Plan includes policies and programs to not only increase transit ridership on existing services, such as bus and rail, but also includes policies and programs to encourage the development of new transit services in the City and to support the increased transit usage. Adoption of the New General Plan would allow for a fixed-route streetcar network consisting of up to three lines that would intersect in Downtown. The three lines identified include the Middlefield, Broadway, and Seaport streetcar corridors.

Additionally, the New General Plan includes programs that call for collaboration with the San Francisco Water Emergency Transportation Authority to coordinate planning efforts for the proposed new ferry station at the Port. Increased demand for transit service could result in significant impacts if transit service is not enhanced to keep pace with demand such as through increased frequency of service within the City, especially in the Downtown, along major corridors, such as El Camino Real and Woodside Road, and to major employment centers. However, the New General Plan also includes programs and policies to continue extensive coordination with various agencies to expand transit service and accessibility, provide new transit service, and prioritize transit service as appropriate.

The New General Plan includes the following policies to promote transit access and circulation in the City:

- **Policy BE-27.1:** Locate bus, shuttle, and fixed guideway services on designated streets as near as possible to areas with the highest ridership potential.
- **Policy BE-27.2:** Pursue development of streetcar lines in areas for targeted development intensification and to connect major destinations.
- **Policy BE-27.3:** Provide for roadways designated as transit routes to accommodate transit vehicle circulation and adequate access to and from transit stops.
- **Policy BE-27.4:** Consider prioritizing bus mobility along El Camino Real and other heavily traveled transit corridors.
- **Policy BE-27.5:** Require that new development and redevelopment/reuse projects improve access to and accommodations for public transit.
- **Policy BE-27.6:** Site transit stops at safe, efficient, and convenient locations. Provide transit stop amenities to facilitate access to and from transit stops and
transfers between buses. Make transit an attractive alternative to driving.

**Policy BE-27.7:** Pursue expanding the community-serving shuttle program to access neighborhoods throughout Redwood City.

**Policy BE-27.8:** Consult with employers and transit providers to establish and maintain shuttle service serving major vehicle trip-generating destinations in the City.

**Policy BE-27.9:** Encourage new transit providers in Redwood City.

**Policy BE-27.10:** Maintain and improve access and mobility for the mobility impaired population groups such as youth, the disabled, and seniors.

Adoption of the New General Plan will be consistent with existing plans promoting transit circulation and will not disrupt existing facilities or interfere with planned facilities. The policies outlined in the New General Plan aim to locate transit services on designated streets as near as possible to areas with highest ridership and as such promote the accessibility to transit riders. To further facilitate transit ridership, the New General Plan includes policies and implementation programs that encourage the development of mixed-use projects and higher densities along major transit corridors. Therefore, the New General Plan would have a beneficial impact. No mitigation measures are required.

**Impact 4.14-9:** Adoption of the New General Plan would have the potential to decrease the Vehicle Miles Traveled per household as compared to the existing General Plan. (Less than Significant)

Another variable for evaluating the impacts of the New General Plan is vehicle miles traveled (VMT) during the peak hours. VMT is the total number of peak hour trips times the total number of miles traveled between trip origins and destinations. This metric is useful as a comparison of the amount of traffic generated by different alternatives, illustrating differences in congestion between alternatives, and also takes into account the circuitous routes that drivers may take to avoid congested areas.

Based on the City’s travel demand model VMT is projected to increase by 31 and 35 percent during the morning and evening peak hours, respectively as compared to Existing Conditions.\(^9\) Compared to the existing General Plan, the VMT for the New General Plan is projected to be one percent higher in the morning peak hour and four percent higher in the evening peak hour. However, VMT per household between the New General Plan and the existing General Plan is projected to be six and five percent lower, respectively. Compared to the existing General Plan, the adoption of the New General Plan would not increase VMT per household; and therefore is consistent with the proposed policies and the intent of state legislation AB 32. Therefore the impact is less than significant. No mitigation measures are required.

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\(^9\) The City’s travel demand model was used to estimate VMT. The Redwood City travel demand model includes the streets within Redwood City only. It does not include streets outside of Redwood City. The model also accounts for trips with origins and destinations outside of Redwood City that use the street network in Redwood City. Thus, the VMT estimation presented here represents the total VMT on streets within the City only. It does not account for VMT outside of the City limits by trips with origins or destinations within the City.