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1.0  INTRODUCTION

The City of Redwood City is developing the *Inner Harbor Precise Plan*, which will serve as the blueprint to improve the character and vitality of Redwood City’s Inner Harbor area. The Precise Plan seeks to improve the transportation and circulation system to facilitate efficient and safe movement for all modes of transportation within the area. The Precise Plan also addresses overall connectivity from Inner Harbor to surrounding neighborhoods and downtown Redwood City. **Figure 1** shows the Precise Plan Area and surrounding roadway network.

1.1  PURPOSE

This report provides an overview of the existing transportation network and systems serving the Inner Harbor Precise Plan Area. Topics covered include:

1.0 – *Introduction*: An overview of the Precise Plan Area, the physical roadway network, travel characteristics, and applicable transportation-related plans and policies.

2.0 – *Pedestrian Access and Circulation*: Descriptions of the existing pedestrian facilities by street and planned pedestrian improvements.

3.0 – *Bicycle Access and Circulation*: Descriptions of existing bicycle facilities and planned bicycle improvements.

4.0 – *Transit Access and Circulation*: A description of local and regional transit service in the Precise Plan Area, stops provided, and ridership on the routes serving the area; and a description of planned transit service improvements.

5.0 – *Automobile Access and Circulation*: A description of the analysis methods used to assess traffic conditions; existing intersection operations; freeway operations; and planned and proposed capacity and operational improvements.

6.0 – *Additional Considerations*: A discussion of unique features requiring special consideration in evaluating the local transportation system, including major freeway interchanges, railroad crossings, and parking.

7.0 – *Issues and Opportunities*: A summary of key issues in the existing transportation network and opportunities for improvements that may be addressed during the planning process.
Figure 1.
Inner Harbor Precise Plan

Precise Plan Area
SF11-0695_1_StudyArea
1.2 PROJECT AREA ROADWAY NETWORK

The Precise Plan Area is bound by US Highway 101 (US 101) to the south, Redwood Creek to the west and north, and Seaport Boulevard to the east. Regional access to the Plan Area is provided by US 101, State Route 82 (SR 82, also known as El Camino Real) and State Route 84 (SR 84, also known as Woodside Road in the study area).

The roadways within the study area are described below:

**U.S. Highway 101** is a major regional freeway serving Redwood City and the west coast of the United States. US 101 generally runs north-south throughout the state, but east-west through the Plan Area and Redwood City. The route extends northward from Redwood City through San Francisco and southward through San Jose. In Redwood City, US 101 is located on the east side of the City and generally provides four mixed-flow lanes in each direction. Access to the Plan Area is provided from US 101 via the interchange at Seaport Boulevard/Woodside Road (SR 84).

**Seaport Boulevard** runs from its interchange with US 101 and Woodside Rd (SR 84) to the Pacific Shores business park at the northeastern terminus. Seaport Boulevard generally provides two travel lanes in each direction with protected left turn lanes where necessary. A rail line runs parallel to the street through the Plan Area. Access to the Plan Area is provided via the signalized intersection with Blomquist Street.

**Blomquist Street** is a local street that runs for roughly a third of a mile from Seaport Boulevard to Maple Street. Blomquist Street provides one travel lane in each direction with unmetered, on-street parallel parking on the south side of the street. There are Class II bicycle lanes in both directions and a five foot sidewalk provided on the south side of the street.

**Maple Street** connects Downtown Redwood City to the Plan Area by way of a two-lane overcrossing. Northeast of the overcrossing, Maple Street meanders through the Plan Area, providing access to the Redwood City Police Department and the San Mateo County Women’s Jail. Maple Street provides one lane in each direction, and does not currently have any pedestrian or bicycle facilities. The street lacks lane striping and designated shoulders throughout the Plan Area. The pavement is in disrepair and is in need of repaving and other general street maintenance.

**Waterfront Drive** is an informal street that provides local access to the water crafts from Maple Street. Waterfront Drive is on Docktown Marina property and is not maintained by the City of Redwood City. Waterfront Drive is unstriped and provides perpendicular parking on the west side of the street. Speeds
are low and vehicle activity is limited to local traffic. Waterfront Drive does not currently have any pedestrian or bicycle facilities. The pavement on Waterfront Drive is also in poor condition and is in need of repaving and other general street maintenance.

The Redwood City General Plan (The Built Environment Vision 2030) categorizes roadways into eight classifications. The different classifications are described below, and study roadways are indicated as they are envisioned in the General Plan 2030. The Precise Plan will help to realize the General Plan’s vision for the local roadway network.

- **Transit Streets** – routes that are intended to prioritize transit. Other travel modes are accommodated, but not given priority. (Seaport Boulevard)
- **Bicycle Boulevards** – through-routes for bicycles, providing continuous access and connections to the local and regional bicycle route network. (Blomquist Street and Maple Street)
- **Pedestrian Streets** – exceptionally high volumes of pedestrians are encouraged with extra wide sidewalks, low vehicular speeds and volumes, and pedestrian amenities.
- **Connector Street** – accommodate moderate levels of through traffic with all travel modes being equally accommodated.
- **Boulevards** – major roadways that serve a gateway or civic purpose.
- **Auto Dominant Highways** – major roadway and freeway corridors that serve regional traffic. (US Highway 101 and Seaport Boulevard)
- **Local Streets** – roadways that are primarily to provide local access to abutting property. Through traffic is discouraged and truck traffic is prohibited. (Blomquist Street and Waterfront Drive)
- **Truck Routes** – roadways that serve to support industrial business activity by accommodating large, heavy trucks. (Seaport Boulevard)

1.3 PROJECT AREA TRAVEL CHARACTERISTICS

Demographic information was collected from the American Community Survey Five-Year Estimates from 2006-2010. The Precise Plan Area is primarily located within Census Tract 6103.02. This Tract includes a larger area generally bound by US 101 to the south, Marsh Road to the east, Holly Street to the west, and the Bay to the north. As such, the Census Tract also includes other nearby neighborhoods, which may have similar travel characteristics based on similar distances to major land use attractors and transit.

Currently, there are approximately 1,100 residents living in Tract 6103.02 but relatively few living within the Plan Area. It is possible that residents in the Plan Area – who mostly live in Docktown – may have
different travel characteristics than those living in the Tract overall due to variations in transportation infrastructure and socioeconomic factors. Furthermore, if additional residential units are added to the Plan Area, future travel characteristics may also change.

### 1.3.1 Mode Choice

Table 1-1 compares travel mode choice for work trips for the Plan Area’s census tract and for San Mateo County. Over 70 percent of residents in and around the Plan Area and of San Mateo County commute to work in a single-occupancy vehicle (SOV). Although the Plan Area is within one mile of a Caltrain station, only one percent of commuters likely use transit as their mode to work, as compared to seven percent countywide. The proximity to commercial employment centers along Seaport Boulevard contributes to an 11 percent bike/walk/other rate among commuters while only four percent of countywide residents choose similar modes. Approximately 14 percent of commuters carpool to work, which is comparable to the countywide rate. Four percent of workers work at home countywide, compared to only two percent within the Plan Area.

#### Table 1-1: Journey to Work Mode Choice

<table>
<thead>
<tr>
<th>Mode</th>
<th>Census Tract 6103.02</th>
<th>San Mateo County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive alone</td>
<td>72%</td>
<td>72%</td>
</tr>
<tr>
<td>Carpool</td>
<td>14%</td>
<td>13%</td>
</tr>
<tr>
<td>Transit</td>
<td>1%</td>
<td>7%</td>
</tr>
<tr>
<td>Bicycle / Walk / Other</td>
<td>11%</td>
<td>4%</td>
</tr>
<tr>
<td>Worked at home</td>
<td>2%</td>
<td>4%</td>
</tr>
</tbody>
</table>

Source: American Community Survey 5-Year Estimates 2006-2010, Fehr & Peers 2013

### 1.3.2 Auto Ownership

Table 1-2 presents auto ownership in the census tract in which the Plan Area is located. Approximately 65 percent of commuters in the census tract have two or more vehicles available to them. Only two percent of census tract residents do not have any vehicle available to them.
### TABLE 1-2: AUTO OWNERSHIP

<table>
<thead>
<tr>
<th>Auto Ownership</th>
<th>Census Tract 6103.02</th>
</tr>
</thead>
<tbody>
<tr>
<td>No vehicle available</td>
<td>2%</td>
</tr>
<tr>
<td>1 vehicle available</td>
<td>33%</td>
</tr>
<tr>
<td>2 or more vehicles available</td>
<td>65%</td>
</tr>
</tbody>
</table>

*Source: American Community Survey 5-Year Estimates 2006-2010.*

### 1.4 APPLICABLE CIRCULATION GOALS

This section summarizes various transportation goals applicable to the Plan Area.

#### 1.4.1 CITY OF REDWOOD CITY GENERAL PLAN

Adopted in 2010, the *Redwood City General Plan* establishes goals and policies that guide the development of the City. Specific goals pertinent to transportation as they relate to the Precise Plan are listed in this section.

**GOAL BE-25.** Maintain a local transportation system that balances the needs of bicyclists, pedestrians, and public transit with those of private cars.

**GOAL BE-26.** Improve walking, bicycling, and electric bicycle/scooter facilities to be more convenient, comfortable, and safe, and therefore more common transportation modes in Redwood City.

**GOAL BE-27.** Create conditions to improve utilization of existing public transportation services to increase ridership.

**GOAL BE-28.** Provide maximum opportunities for upgrading rail service for faster and more frequent trains, while making this improved service a positive asset to Redwood City that is attractive, accessible, and safe.

**GOAL BE-29.** Maintain the city’s street network to promote the safe and efficient movement of people.
GOAL BE-30. Provide for safe and efficient movement of goods to support commerce and industry.

GOAL BE-31. Encourage developments and implementation of strategies that minimize vehicle trips and vehicle miles traveled.
2.0 PEDESTRIAN ACCESS AND CIRCULATION

The pedestrian environment is one of the most basic elements of the public space, as most trips begin and/or end with a walking trip. This chapter discusses pedestrian access and circulation within the Inner Harbor area. The pedestrian network can vary in physical conditions, making some areas more attractive to walk than others. Many neighborhoods in Redwood City offer different levels of “walkability.” Factors affecting walkability include sidewalk condition, destinations to walk to, such as parks, schools, and commercial areas, ease in crossing streets, connectivity between areas and modes of transportation, good lighting, and an overall perception of safety and security.

2.1 EXISTING PEDESTRIAN FACILITIES

This section describes the pedestrian environment within the Precise Plan Area. Pedestrian facilities vary throughout; some streets have sidewalks, crosswalks, and pedestrian signals, whereas other streets lack any pedestrian facilities. Dedicated pedestrian facilities are provided along the Bay Trail, which is discussed in further detail later in this chapter. US 101 is a significant barrier to pedestrian connectivity between the Plan Area and Downtown, with limited crossing opportunities. Existing crossing points for pedestrians include the Maple Street overcrossing and an informal trail near Main Street. This issue is further explored in Section 6.1.

Figure 2 shows existing and proposed pedestrian facilities within the Precise Plan Area. In general, pedestrian facilities in the Plan Area are aged and lacking in many areas – several streets lack sidewalks, marked crosswalks and adequate pedestrian-scaled lighting. The Precise Plan provides a critical opportunity to upgrade the pedestrian environment, which will be important to create a neighborhood identity and sense of place for residents. Pedestrian facilities on specific streets in the Plan Area are shown on Figure 2 and are discussed below.

Several pedestrian desire lines were observed during site visits to the Plan Area. These desire lines are important indicators for locations that would benefit from future access improvements. Since there are limited crossing opportunities across US 101, some pedestrians use other informal paths to get to/from downtown Redwood City. Some observed pedestrian desire lines include:

- Undercrossing near Main Street
- Maple Street overcrossing
- Undercrossing between Maple Street and Seaport Boulevard
Figure 2.
Inner Harbor Precise Plan

Existing and Proposed Pedestrian Facilities
2.1.1 SEAPORT BOULEVARD

A shared use pedestrian and bicycle path is provided on the east side of Seaport Boulevard that serves as part of the Bay Trail north of Blomquist Street. At the signalized intersection with Blomquist Street, there is one marked crosswalk for pedestrians to travel between the northeast northwest corner.

2.1.2 MAPLE STREET

Maple Street provides the only pedestrian access point to the Plan Area across US 101. There are no pedestrian facilities on Maple Street with the exception of a four foot sidewalk and a two foot sidewalk on either side of the Maple Street overcrossing. Both ends of the bridge lack a sidewalk connection, making walking trips to the Plan Area challenging. Vehicle speeds are relatively low and traffic is light on this segment.

2.1.3 BLOMQUIST STREET

Blomquist Street has sidewalks on its southern side from Maple Street until approximately 100 feet west of the intersection with Seaport Boulevard.

2.2 SAN FRANCISCO BAY TRAIL

The San Francisco Bay Trail is a planned 400-mile paved path network around the San Francisco Bay for use by pedestrians and bicyclists. Once the Bay Trail is complete, it will provide recreational and commute travel options by both bicyclists and pedestrians to and from a variety of destinations along the Bay. Segments of the trail between Whipple Avenue and Holly Street and around Redwood Shores and Pacific Shores have already been completed. However, these segments of the Bay Trail are not currently connected to each other, or to other portions of the trail in Menlo Park.

The Inner Harbor Area is an important missing link in the Bay Trail that will connect the areas to the north and south. The proposed Bay Trail route through the Plan Area will continue from Bair Island Road, across Redwood Creek, along Waterfront Drive, Maple Street, and Blomquist Street before continuing up Seaport Boulevard towards the Port and business park or continuing south along the salt flats just north of
Bayshore Road, as shown in Figure 2. Completion of the Bay Trail will be a significant asset for the Inner Harbor community as well as for visitors. Part of the existing Bay Trail includes the pedestrian/bicycle bridge crossing Redwood Creek, informally known as the “Bridge to Nowhere” because the land side connections were never completed. This bridge provides excellent access to the Plan Area from the north; however neither approach of the bridge meets current design standards for ADA accessibility and improvements will be required.

2.3 PEDESTRIAN ACCESS TO TRANSIT

There are several local bus stops within a half mile of the Plan Area, and the Redwood City Caltrain Station is approximately a one mile walk. Currently, people must walk across the Maple Street/US 101 overcrossing to connect to the Caltrain Station. Limited pedestrian facilities (i.e. sidewalks, marked crosswalks) exist between the major land uses in the Plan Area and nearby transit stops, and coverage is discontinuous making it difficult for pedestrians. Quarter-mile and half-mile walk sheds are shown on Figure 2.

2.4 PLANNED PEDESTRIAN IMPROVEMENTS

Various projects that would improve pedestrian safety, access, and circulation have been proposed in the Precise Plan Area:

- **Bay Trail Connection Improvements** – The Bay Trail is not complete through the Plan Area. Upon build-out of the Bay Trail Plan, there will be a continuous paved shared use path around the San Francisco Bay. This would include sections of Waterfront Drive, Maple Street, Blomquist Street, and Seaport Boulevard. These improvements are shown on Figure 2 as a dashed green line.

- **US 101 Undercrossing** – As part of the Peninsula Park Precise Plan, a US 101 pedestrian and bicycle undercrossing was recommended. The undercrossing was to be constructed to link the Precise Plan Area with Downtown along Redwood Creek. The Plan recommends that the trail be contained within a U-shaped channel to prevent it from being submerged during high tide. This improvement was recently under design and is shown on Figure 2 as a dashed black arrow. However, the City may decide to wait on the implementation of this project in consideration of Inner Harbor Specific Plan – both the updated and more detailed information about the impact of sea level rise in the study area as well as the yet to be determined approach to addressing sea level rise in the final plan.
- **Blomquist Street Extension** – The *Peninsula Park Precise Plan* also recommends a Blomquist Street extension and Redwood Creek Bridge to link the east and west sides of the Bayfront. This offers opportunities to improve access and synergy between the areas. A roundabout has been built where the extension intersects Bair Island Road and East Bayshore Road. This creates a gateway to the Precise Plan Area and slow eastbound traffic en route to the Redwood Creek Bridge. To encourage pedestrian and bicycle circulation, the Precise Plan recommends that the street incorporate bike lanes, attractive sidewalks, lighting, and street trees. A roundabout could also be considered at the south Maple/Blomquist intersection.
3.0 BICYCLE ACCESS AND CIRCULATION

This chapter summarizes the bicycle infrastructure and circulation for the Plan Area.

3.1 EXISTING BICYCLE FACILITIES

Redwood City has adopted three classes of bicycle facilities, which are the same as the standard classifications used by the California Department of Transportation (Caltrans) and commonly adopted by other jurisdictions. Caltrans guidelines and design standards are presented in the Highway Design Manual (Chapter 1000: Bikeway Planning and Design) and other design documents. Bicycle facilities are comprised of paths (Class I), lanes (Class II), and routes (Class III), as described below and shown on the accompanying figures. Bicycle lanes are lanes on roadways designated for bicycle use by striping, pavement legends, and signs. Bicycle routes are roadways designated for bicycle use by signs only. Figure 3 provides a map of existing and proposed bicycle facilities in the immediate vicinity of the Plan Area.

- **Class I Shared Use Path** provides a completely separate right-of-way and is designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized.
Figure 3.
Inner Harbor Precise Plan

Existing and Proposed Bicycle Facilities

SF14-0695_3_ExPropBikeFac
- **Class II Bike Lane** provides a restricted right-of-way and is designated for the use of bicycles with a striped lane on a street or highway. Bicycle lanes are generally five (5) feet wide. Adjacent vehicle parking and vehicle/pedestrian cross-flow are permitted.

- **Class III Bike Route** provides for a right-of-way designated by signs or pavement markings (sharrows) for shared use with pedestrians or motor vehicles. Sharrows are a type of pavement marking (bike and arrow stencil) placed to guide bicyclists to the best place to ride on the road, avoid car doors, and remind drivers to share the road with cyclists.
Similar to pedestrian circulation, bicycle connectivity between the Plan Area and Downtown Redwood City is limited and requires crossings over US 101. Existing crossing points for bicyclists include the Maple Street overcrossing and an informal trail near Main Street. This is further explored in Section 6.1.

3.1.1  EXISTING BICYCLE NETWORK

Blomquist Street provides the only bicycle facility within the Plan Area. East-west Class II bike lanes exist on both sides of Blomquist Street from Maple Street to Seaport Boulevard. These bike lanes serve as a key link to the section of the Bay Trail along Seaport Boulevard (described in Section 2.2). Due to heavy truck traffic along Blomquist Street the bicycle lane markings are quickly degraded or difficult to see. Although bicycling is legal on all City streets, no other designated bicycle facilities exist within the Inner Harbor area. No public bicycle parking is provided within the Plan Area. Existing and proposed bicycle facilities in the vicinity around the Plan Area are shown on Figure 3.

3.1.2  BAY AREA BIKE SHARE

In 2013 Bay Area Bike Share began operating with 70 bike share stations in San Francisco and throughout the Bay Area Peninsula, including six stations in Redwood City. Over 100 bicycle docking stations are provided in the Redwood City Downtown area and at the Caltrain station. The closest bike share station to the Plan Area is the Redwood City Medical Center station (Kaiser Hospital) at the corner of Maple Street and Marshall Street, about ½ mile from the Plan Area. Opportunities to expand the system into the Plan Area should be evaluated.

3.2  PLANNED BICYCLE IMPROVEMENTS

Several segments of bicycle facilities are planned on the periphery of and through the Plan Area, addressing existing gaps in the network. Figure 3 also shows facilities proposed in the Redwood City General Plan (The Built Environment Vision 2030). Many of the proposed improvements in the General Plan overlap with the improvements proposed by the Bay Trail Plan.
4.0 TRANSIT ACCESS AND CIRCULATION

The City of Redwood City encourages the use of transit as an alternative mode of transportation and is served by two major transit providers: SamTrans and Caltrain. SamTrans provides local and regional bus service, and Caltrain provides commuter rail service. Local shuttles are also provided in Redwood City during commute hours by Caltrain and during the mid-day hours and commute hours by the City. Transit service (bus routes, major bus stops and Caltrain tracks and station) is shown on Figure 4.

4.1 SAMTRANS BUS SERVICE

SamTrans operates bus service throughout San Mateo County. There are over 50 routes in the county that can be categorized as community, express, BART connection, Caltrain connection, and BART and Caltrain connection routes. These routes serve over 14 million annual riders. Most bus routes typically operate along major arterial corridors and operate from early morning into the late evening. SamTrans Route 270 is currently the only bus route that travels through the Plan Area via Maple Street and Blomquist Street. Adult fares are $2.00 for local routes serving Redwood City.

4.1.1 ROUTES SERVING REDWOOD CITY

Route 270 provides service between Redwood City Caltrain Station and Kaiser Hospital, Seaport Village, Harbor Village, and Marsh Road (Menlo Park). Headways are 60 minutes on weekdays between 6AM and 6PM as well as on Saturdays between 8AM and 6PM. Limited service is provided after 6PM on weekdays and no service is provided on Sundays.

Routes 296, 297, 397, and ECR serve the Redwood City Caltrain Station and other destinations in Redwood City as well as outside the City; however, these routes do not provide service to or pass through the Plan Area.

4.2 CALTRAIN

Caltrain is owned by the Peninsula Corridor Joint Powers Board and managed under contract with the San Mateo County Transit District (SamTrans). Caltrain operates 50 miles of commuter rail between San Francisco and San Jose, and limited service trains to Morgan Hill and Gilroy during weekday commute periods. On weekdays, Caltrain operates approximately 100 trains per day of local, limited stop, and Baby
Bullet express service in both directions. Travel times between Redwood City and San Francisco are approximately 50 minutes and travel times between Redwood City and San Jose are approximately 40 minutes for local and limited stop services. Caltrain’s Baby Bullet express service makes it possible to travel between Redwood City and San Francisco or San Jose in less than 35 minutes or 30 minutes, respectively. Caltrain offers about 20 weekday commute-hour Baby Bullet trains, which serve Redwood City southbound in the AM and northbound in the PM.

The Redwood City Caltrain Station is the sixth busiest Caltrain station and is located north of El Camino Real between Broadway and Jefferson Avenue. Lockable, sheltered bike parking is provided adjacent to the station platform, and convenient bus and shuttle access is provided at the nearby bus transfer facility. As noted earlier, Bay Area Bike Share is now provided at the Redwood City Caltrain station with space for 27 bikes. On weekends, Caltrain operates approximately 35 trains per day with local stops only. Currently, approximately 2,600 passengers (5.6% of the average weekday ridership system total) board and alight daily at the Redwood City Caltrain station. Approximately 300 daily passengers board with bikes, making it the fourth busiest Caltrain station for bike ridership. This transit ridership is much higher than any previous years. The graph below summarizes Caltrain’s average weekday daily ridership in Redwood City between 2009 and 2013.
Figure 4.
Inner Harbor Precise Plan

Existing Transit Facilities
4.3 SHUTTLE SERVICE

Local shuttle service in Redwood City is provided by Caltrain and the City of Redwood City. Each shuttle service is described below.

4.3.1 CALTRAIN SHUTTLES

Free shuttles are provided between the Redwood City Caltrain Station and employment centers east of US 101 on Seaport Boulevard and Chesapeake Drive. These shuttles, called the Pacific Shores Shuttles, are operated by Caltrain and are also open to the public. Headways are based on train arrivals and departures at the Redwood City Caltrain Station and the shuttles operate between 7 AM – 12 PM and 3 PM – 9 PM on weekdays only. Funding is provided jointly by the Bay Area Air Quality Management District Transportation Fund for Clean Air, the Peninsula Corridor Joint Powers Board, the San Mateo County Transportation Authority, and several private employers including: Pacific Shores, Development Center, LLC, and Jay Paul Company.

4.3.2 REDWOOD CITY SHUTTLES

Redwood City provides two community shuttle services to help ease traffic congestion, offer a viable transportation alternative, and help reduce the City’s carbon footprint – the Midday On-Demand Shuttle and the Mid Point Business Park Shuttle. Managed by the Peninsula Traffic Congestion Relief Alliance, the shuttles serve Redwood City and adjacent cities.

The Midday On-Demand Community Shuttle started service in June 2008 providing residents with on-demand, door-to-door shuttle service to address transportation needs in the North Fair Oaks Community and the surrounding area. Funded by the City of Redwood City, the Metropolitan Transportation Commission, and City/County Association of Governments of San Mateo County, this is a pilot program to serve the transportation needs of low income residents. This community shuttle service operates Tuesday through Saturday from 10 AM to 5 PM in the eastern part of Redwood City with two stops outside the area – Veterans Memorial Senior Center and Woodside Plaza. The eastern part of Redwood City includes: Downtown Redwood City, North Fair Oaks, Friendly Acres, Kaiser Hospital, Marsh Manor, Redwood Village, and Stambaugh/Heller.

The Mid Point Shuttle began in April 2007 and is designed to provide employees at Mid-Point Technology Park with shuttle service directly from the Redwood City Caltrain Station. This shuttle service is provided by the City of Redwood City, the Bay Area Air Quality Management District, and local employers being
served by the shuttle service. The Mid Point Shuttles operate Monday through Friday during peak commute hours and serves stops along Broadway between the Mid-Point Technology Park and Redwood City Caltrain station with 25 minute headways. It is our understanding that the Mid Point Office Park was recently purchased by Stanford University and now has additional shuttle service.

4.4 HIGH SPEED RAIL

The proposed California High Speed Rail (HSR) project will link San Francisco and Los Angeles via high speed trains. Major cities served would include San Francisco, San Jose, Fresno, Bakersfield, Los Angeles, and Anaheim. Future expansion of the project would further link additional areas of the state including Sacramento, Stockton, Modesto, San Diego, Riverside, and Ontario to the system. High speed rail service would be provided between about 5 AM and midnight daily and is projected to serve approximately 32.2 million riders annually by 2020. This project is currently entering the conceptual design and environmental clearance stage; service on the Peninsula is not expected before 2026. HSR is being planned as part of a blended system along the Peninsula allowing Caltrain and high-speed rail trains to primarily share Caltrain’s existing tracks on a system that remains substantially within the existing Caltrain corridor. A HSR station is being considered for Redwood City.

4.5 TRANSIT PASS PROGRAMS

Transit pass programs have been established by several transit providers in the Bay Area. These programs include employer-sponsored commute benefits and passes developed to make fare payments and transfers between systems easier.

4.5.1 GO PASS

Go Pass is an employer-sponsored annual pass that offers unlimited rides on Caltrain and SamTrans’ feeder bus routes seven days a week through all zones. The Go Pass is purchased by participating employers for all full-time employees. Employers pay an annual fee to provide the pass to each full-time
employee regardless of how many employees use the pass and employees must have photo ID badges to participate in the program. The pass is a small sticker attached to ID badge and is presented as proof of payment.

4.5.2 CLIPPER CARD

Over two dozen transit providers operate in the nine-county Bay Area region. To make fare payment and transfers between different transit agencies easier, many Bay Area agencies have adopted the Clipper Card. Transit users scan the Clipper Card at transit stations or onboard vehicles and the correct fare (including transfers and discounts) is automatically deducted. Clipper Card is accepted on Caltrain, SamTrans, BART, AC Transit, VTA, among other transit agencies.

4.6 PLANNED TRANSIT IMPROVEMENTS

Various projects that would improve transit ridership, access, and circulation are planned or proposed in the Precise Plan Area. These improvements are summarized below:

- **SamTrans Short-Range Transit Plan** – Planned short-range improvements to SamTrans service focus on optimizing the current system’s condition and performance. These planned improvements include vehicle replacement, vehicle expansion, improving Clipper Card and other fare collection equipment, installing information technology, and planning for transit oriented development.

- **Caltrain Short-Range Transit Plan** – Planned short range improvements to Caltrain focus on a strategy called the State of Good Repair that will concentrate on a systematic approach in optimizing the current system’s condition and performance. These planned improvements include upgrading signaling and communications systems, replacing old bridges, enhancing approach speeds and flexibility at the San Francisco terminus, and eliminating all of the remaining hold-out stations. These stations are areas where trains are required to wait while another train is in the main station and
therefore increases service delays. Planned long-range improvements to Caltrain include electrification of the entire line to improve operating efficiency and travel times, and provide environmental benefits. Environmental review of the electrification project is currently underway.

- **Seaport Streetcar** – The *Redwood City General Plan* identifies the Seaport Boulevard Corridor as a potential streetcar route because it would connect the proposed ferry and employment concentrations along Seaport Boulevard, the Port of Redwood City, Downtown, and the Redwood City Caltrain Station. Streetcars are typically small (about 50 passengers), light-weight, electric-powered rail vehicles that run on fixed tracks, primarily on shared lanes in public streets. Typically, streetcars are intended for trips that are a couple of miles long within a city. These are trips that are too long for walking and too short for regional transit. Streetcars can be more appropriate for corridors with higher densities due to ability to attract higher ridership than buses because of their more comfortable ride and reduced noise and pollution.
5.0 AUTOMOBILE ACCESS AND CIRCULATION

This chapter discusses analysis methodologies and operations of various automobile facilities, including intersections in the Plan Area and the adjacent freeways.

5.1 ANALYSIS METHODOLOGIES

The operations of roadway facilities are typically described with the term “level of service” (LOS). LOS is a qualitative description of traffic flow from a vehicle driver’s perspective based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels of service are defined ranging from LOS A (best operating conditions) to LOS F (worst operating conditions). Typically, LOS E corresponds to operations “at capacity.” When volumes exceed capacity, stop-and-go conditions result and operations are designated as LOS F.

5.1.1 SIGNALIZED INTERSECTIONS

Operations of the signalized study intersections were evaluated using the LOS calculation method based on the Transportation Research Board’s Highway Capacity Manual (HCM) 2000 methodology, as is consistent with Redwood City Guidelines. The HCM method uses various intersection characteristics (such as traffic volumes, lane geometry, and signal phasing) to estimate an intersection’s average delay per vehicle. Table 5-1 summarizes the relationship between average delay and LOS for signalized intersections.
### TABLE 5-1: SIGNALIZED INTERSECTION LOS CRITERIA

<table>
<thead>
<tr>
<th>Level of Service</th>
<th>Description</th>
<th>Average Vehicle Delay (s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.</td>
<td>&lt; 10</td>
</tr>
<tr>
<td>B</td>
<td>Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.</td>
<td>10-20</td>
</tr>
<tr>
<td>C</td>
<td>Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many vehicles still pass through the intersection without stopping.</td>
<td>20-35</td>
</tr>
<tr>
<td>D</td>
<td>The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and/or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.</td>
<td>35-55</td>
</tr>
<tr>
<td>E</td>
<td>This level is considered by many agencies to be the limit of acceptable delay. High delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.</td>
<td>55-80</td>
</tr>
<tr>
<td>F</td>
<td>This level is considered unacceptable with oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.</td>
<td>&gt; 80</td>
</tr>
</tbody>
</table>


#### 5.1.2 UNSIGNALIZED INTERSECTIONS

For unsignalized (all-way stop-controlled and side-street stop-controlled) intersections, the method outlined in Chapter 17 of the Transportation Research Board’s 2000 HCM was used. This method estimates the worst-approach total delay (measured in seconds per vehicle) experienced by motorists traveling through an intersection. Total delay is defined as the amount of time required for a driver to stop at the back of the queue, move to the first-in-queue position, and depart from the queue into the intersection. Table 5-2 summarizes the relationship between the delay and LOS for unsignalized intersections.
TABLE 5-2: UNSIGNALIZED INTERSECTION LOS CRITERIA

<table>
<thead>
<tr>
<th>Level of Service</th>
<th>Description</th>
<th>Average Control Delay per Vehicle (seconds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>No delay for stop-controlled approaches.</td>
<td>&lt; 10</td>
</tr>
<tr>
<td>B</td>
<td>Operations with minor delay.</td>
<td>10 to 15</td>
</tr>
<tr>
<td>C</td>
<td>Operations with moderate delay.</td>
<td>15 to 25</td>
</tr>
<tr>
<td>D</td>
<td>Operations with long delays for some movements.</td>
<td>25 to 35</td>
</tr>
<tr>
<td>E</td>
<td>Operations with high delays and long queues.</td>
<td>35 to 50</td>
</tr>
<tr>
<td>F</td>
<td>Operations with extreme congestion, with very high delays and long queues.</td>
<td>&gt; 50</td>
</tr>
</tbody>
</table>


5.1.3 FREEWAYS

For both mainline freeway sections and freeway ramp junctions (i.e., ramp merge and diverge areas), the method outlined in Transportation Research Board’s 2000 HCM is used. LOS for both mainline sections and ramp junctions is based on the density of traffic expressed in passenger cars/lane/mile. Mainline LOS is a qualitative description of traffic flow based on speed, travel time, delay, and freedom to maneuver. **Table 5-3** summarizes the relationship between density and LOS for both mainline freeway sections and ramp junctures.
### TABLE 5-3: FREEWAY SEGMENT AND RAMP JUNCTION LOS CRITERIA

<table>
<thead>
<tr>
<th>Level of Service</th>
<th>Description</th>
<th>Freeway Mainline Average Density (pc/mi/ln)$^1$</th>
<th>Ramp Junction Average Density (pc/mi/ln)$^1$</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.</td>
<td>$\leq 11$</td>
<td>$\leq 10$</td>
</tr>
<tr>
<td>B</td>
<td>Free-flow speeds are maintained. The ability to maneuver with the traffic stream is only slightly restricted.</td>
<td>11 to 18</td>
<td>10 to 20</td>
</tr>
<tr>
<td>C</td>
<td>Flow with speeds at or near free-flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver.</td>
<td>18 to 26</td>
<td>20 to 28</td>
</tr>
<tr>
<td>D</td>
<td>Speeds decline slightly with increasing flows. Freedom to maneuver with the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort.</td>
<td>26 to 35</td>
<td>28 to 35</td>
</tr>
<tr>
<td>E</td>
<td>Operation at capacity. There are virtually no usable gaps within the traffic stream, leaving little room to maneuver. Any disruption can be expected to produce a breakdown with queuing.</td>
<td>35 to 45</td>
<td>35 to 43</td>
</tr>
<tr>
<td>F</td>
<td>Represents a breakdown in flow.</td>
<td>$&gt; 45$</td>
<td>$&gt; 43$</td>
</tr>
</tbody>
</table>

1. pc/mi/ln = passenger car per mile per lane

### 5.1.4 OPERATING STANDARDS

The Redwood City General Plan 2030 indicates that intersections should be maintained at LOS D or better for motor vehicles in all areas of the city, except the Downtown area as defined by the Downtown Precise Plan.

The City considers a freeway segment to be operating at an acceptable level of service if the segment volume is less than the theoretical capacity of that segment. Following common practice, a theoretical capacity of 2,300 vehicles per hour per lane (vphpl) has been applied in the analysis for mixed flow (non-carpool) lanes and 1,800 vphpl for high occupancy vehicle (HOV) (carpool) lanes.
5.2 INTERSECTION OPERATIONS

**Table 5-4** summarizes AM and PM peak hour LOS at intersections in the Precise Plan Area based on the HCM 2000 methodology. Intersection turning movement vehicle volumes, intersection lane configurations, and controls were collected in 2011.

All study intersections within the Precise Plan Area operate at LOS D or better during both peak hours, which the *General Plan* describes as being an acceptable level of service. More detailed analysis regarding intersection operations can be provided if requested.

**TABLE 5-4: EXISTING CONDITIONS INTERSECTION LOS SUMMARY**

<table>
<thead>
<tr>
<th>#</th>
<th>Intersection</th>
<th>Control</th>
<th>AM</th>
<th></th>
<th>PM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Blomquist Street/Seaport Boulevard</td>
<td>Signal</td>
<td>47</td>
<td>D</td>
<td>36</td>
</tr>
<tr>
<td>2</td>
<td>Blomquist Street/Maple Street</td>
<td>SSSC</td>
<td>11</td>
<td>B</td>
<td>12</td>
</tr>
</tbody>
</table>

Notes:
1. Signal = signalized intersection; SSSC = Side-Street Stop-Controlled
2. Delay = Average delay per vehicle (in seconds)


5.3 FREEWAY AND INTERCHANGE OPERATIONS

The latest freeway and ramp operations near the Plan Area are summarized in **Table 5-5**. This analysis was based on data collected in 2011. As shown in the table, the freeway segments and ramp merge/diverge areas in the vicinity of Plan Area operate at acceptable LOS D or better during both AM and PM peak hours. More detailed analysis regarding freeway operations can be provided if requested.
### TABLE 5-5: EXISTING CONDITIONS FREEWAY LOS SUMMARY

<table>
<thead>
<tr>
<th>#</th>
<th>Location</th>
<th>Direction</th>
<th>AM Peak</th>
<th>PM Peak</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Density</td>
<td>LOS</td>
<td>Density</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Density</td>
<td>LOS</td>
<td>Density</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Density</td>
<td>LOS</td>
<td>Density</td>
</tr>
<tr>
<td>1</td>
<td>US 101, Marsh to Seaport</td>
<td>NB</td>
<td>31.5</td>
<td>D</td>
<td>17.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SB</td>
<td>21.9</td>
<td>C</td>
<td>24.2</td>
</tr>
<tr>
<td>2</td>
<td>US 101, Seaport to Whipple</td>
<td>NB</td>
<td>26.2</td>
<td>D</td>
<td>16.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SB</td>
<td>23.7</td>
<td>C</td>
<td>18.1</td>
</tr>
<tr>
<td>3</td>
<td>US 101, Whipple to Holly</td>
<td>NB</td>
<td>25.8</td>
<td>C</td>
<td>19.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SB</td>
<td>23.9</td>
<td>C</td>
<td>19.4</td>
</tr>
</tbody>
</table>

**Ramp Juctions**

<table>
<thead>
<tr>
<th>#</th>
<th>Location</th>
<th>Direction</th>
<th>AM Peak</th>
<th>PM Peak</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Density</td>
<td>LOS</td>
<td>Density</td>
</tr>
<tr>
<td>1</td>
<td>US-101 NB Whipple WB On-Ramp</td>
<td>Merge</td>
<td>22.9</td>
<td>C</td>
<td>19.4</td>
</tr>
<tr>
<td>2</td>
<td>US-101 SB Whipple EB On-Ramp</td>
<td>Merge</td>
<td>27.0</td>
<td>C</td>
<td>24.2</td>
</tr>
</tbody>
</table>

**Notes:**
1. NB = Northbound, SB = Southbound
2. Density based on passenger cars/mile/lane
3. Level of Service based on 2000 HCM methodology.

5.4 PLANNED AND PROPOSED AUTOMOBILE IMPROVEMENTS

The following planned and proposed improvements would benefit automobile access and circulation in the Precise Plan Area and surrounding areas:

- **US 101 / SR 84 Interchange Improvements** – The San Mateo County Transportation Authority (SMCTA) has begun an Alternatives Analysis for the US Route 101 / SR 84 (Woodside Rd) Interchange. The purpose of this study is to analyze the performance of this interchange and, given the existing conditions and past studies, to develop a set of viable and feasible alternatives that would improve capacity and operations of this interchange. Bike lanes are proposed to be accommodated under the new design geometry. Under this project, the five-legged intersection at Broadway and Woodside Road is proposed to be consolidated into a four-legged intersection.

- **Blomquist Street Extension** – The Peninsula Park Precise Plan recommends a Blomquist Street extension and Redwood Creek Bridge will link the east and west sides of the Bayfront. This offers opportunities to improve access and connectivity between the areas. However, there is some concern that the extension could be used as a freeway bypass by motorists choosing to use the Whipple/101 interchange rather than the more congested Woodside Road/101 interchange. The alignment of the extension is recommended to be designed to discourage non-local, cut through traffic. It is recommended as a typical city street — low design speed, grid-based intersections, roundabouts, etc. — rather than a curving, higher-speed parkway. A roundabout could be considered at the south Maple/Blomquist intersection. This would accommodate anticipated traffic as well or better than a traffic signal or a four-way stop.
6.0 ADDITIONAL CONSIDERATIONS

This chapter addresses important planning matters not previously discussed but vital to the transportation system for the Precise Plan Area such as US 101 over/under crossings, at-grade railroad crossings, Port of Redwood City operations, vehicle parking, and truck routes.

6.1 U.S. HIGHWAY 101 OVER/UNDER CROSSINGS

US 101 is a major access barrier between the Plan Area and downtown Redwood City. To create a vibrant and accessible Inner Harbor Area, it will be critical to provide links for all modes to adjacent land uses across the US 101. Two crossings are currently provided for automobile traffic (Seaport Boulevard/Woodside Road and Maple Street) while one informal crossing for pedestrians and bicycles exists near Main Street.

6.1.1 SEAPORT BLVD/WOODSIDE RD (SR 84) INTERCHANGE UNDERCROSSING

Seaport Boulevard/Woodside Road traverses under U.S. Highway 101 as part of a modified partial cloverleaf interchange. The interchange is heavily used for vehicles traveling north on Seaport Boulevard and traveling south on Woodside Road (SR 84) through Redwood City. Access to the Plan Area is provided via a signalized intersection at Blomquist Street. Although this access point is acceptable for vehicles, it does not provide adequate facilities for pedestrians or bicycles. Two vehicle travel lanes are provided in each direction but no bicycle or pedestrian facilities are provided along the undercrossing. Most importantly, this interchange is currently being redesigned which would improve vehicular operations and increase access for pedestrians and bicyclists.

6.1.2 MAPLE STREET OVERCROSSING

Maple Street traverses over US 101 and provides direct local access to the Plan Area. One vehicle travel lane is provided in each direction with a four foot sidewalk on the south side and a two foot sidewalk on the north side. Neither sidewalk is ADA accessible nor are there pedestrian connections to adjacent facilities. Narrow shoulders exist on both sides of the overcrossing, so
many bicyclists ride in the travel lane with vehicles. There are no formal bicycle markings or signage. This overcrossing provides the only formal access to Inner Harbor from Downtown Redwood City for pedestrians and bicycles, but it does not provide sufficient facilities for those modes. This overcrossing could also be modified as part of the 101/84 interchange redesign.

6.1.3 MAIN STREET UNDERCROSSING

An informal, unpaved trail exists under US 101 adjacent to Redwood Creek near Main Street. This is a desired path for pedestrians and bicyclists to access the Plan Area; however, the trail does not meet City or State standards and is unregulated. A formal pedestrian and bicycle undercrossing has received environmental clearance and is undergoing final design. The project could begin construction as early as 2014.

6.2 RAILROAD CROSSINGS

Freight service is provided in the Plan Area with two at-grade railroad crossings serving the Graniterock building materials site. Railroad data at the below crossings was obtained from the Federal Railroad Administration. A general description of the crossing, including the number of vehicular travel lanes, the range of train speeds over the crossing, and the typically number of trains per day is discussed below for each crossing.

Blomquist Street, west of Seaport Boulevard – The Blomquist Street crossing is comprised of two four-lane at-grade railroad spurs crossing the eastbound approach of the signalized intersection with Seaport Boulevard. There are up to two trains per day with a typical train speed of five to ten miles per hour over the crossing. No passenger service is provided on this line. Pavement markings and signage are provided at this crossing (no gate arms).
Blomquist Street, east of Maple Street – This Blomquist crossing is comprised of two two-lane at-grade railroad spurs crossing Blomquist Street, approximately 500 feet east of Maple Street. There are up to four trains per day with a typical train speed of one to ten miles per hour over the crossing. No passenger service is provided on this line. Pavement markings, signage, and overhead warning lights are provided at this crossing (no gate arms).
6.3 SHIPPI NG

The Port of Redwood City is located in the south San Francisco Bay on the west side of Seaport Boulevard, just north of the Plan Area. The Port is the only deep-water port in South San Francisco Bay, provides berths for dry bulk, liquid bulk, and project cargoes, along with recreational opportunities and access to San Francisco Bay. The Port provides inland transportation access via U.S. Highway 101 and Union Pacific Railroad. Direct access to the Port is provided via Seaport Boulevard for trucks, heavy rail, and passenger vehicles.

6.4 VEHICLE PARKING

Off-street parking is provided in the Plan Area for existing land uses such as the Redwood City Police Department and Docktown Marina. On-street perpendicular parking is striped along Waterfront Drive to serve water crafts in the area as shown in the image to the left. On-street parking elsewhere in the Plan Area is unmarked, however wide shoulders exist along Maple Street and Blomquist Street that accommodate parallel parking.

6.5 TRUCK ROUTES

The Redwood City Municipal Code establishes truck traffic routes for the movement of vehicles exceeding a maximum gross weight of three tons. Routes are designated based on the industrial districts served, access to freeways, industrial, and connector streets, and avoidance of residential neighborhoods. Identifying truck routes not only preserves dedicated routes to serve industrial districts and reduce land use conflicts, but also allows for proper street construction and maintenance, given that heavy truck traffic impacts physical street conditions more quickly than automobile traffic. Due to the industrial nature of many businesses within and around the Plan Area, truck routes are critical to the transportation network.

Seaport Boulevard from US 101 to Blomquist Street is designated as a truck route in the Redwood City General Plan. At a minimum, this section of Seaport Boulevard is expected to serve as a truck route to
support industrial business activity in the Plan Area. Many large trucks are prevalent in the Plan Area and require additional road design features to ensure efficient and safe travel, such as physical separation from on-street bicycle facilities, curb radii that accommodate truck turning movements while also supporting pedestrian safety and access, and appropriate lane widths.
7.0  ISSUES AND OPPORTUNITIES

This chapter presents issues in the Precise Plan Area, and potential opportunities for improvements based on the existing conditions described in the preceding chapters. The opportunities would help to create a connected, accessible street network for all modes within Inner Harbor. These issues and opportunities are discussed in more detail below:

Issue 1: Bicycle and pedestrian connections between Inner Harbor and Downtown Redwood City are limited and do not meet current design standards.

Opportunity: Improve the Maple Street overcrossing to provide striped bike lanes in both directions. Improve existing overcrossing pedestrian facilities by providing separation from vehicular traffic, pedestrian scaled lighting, and other design components to improve the safety, comfort, and convenience for pedestrians. Add sidewalks on either approach of the bridge to connect existing and future pedestrian facilities. Bike lanes should be added to Woodside Road/Seaport Boulevard along the undercrossing and should connect to other existing and proposed bicycle facilities. If it is constructed, the Main Street undercrossing along Redwood Creek should be formalized and improved to meet City and State standards to provide additional access for bicycles and pedestrians. The design should account for and protect from potential sea level rise. If it is not constructed, an alternate US 101 crossing in the vicinity of Redwood Creek should be considered. In either case, Walnut Street should be considered for extension over US 101 to provide another connection point between Inner Harbor and Downtown Redwood City. A new bridge would have to be constructed, and should accommodate all modes in the design.

Issue 2: Internal circulation within Inner Harbor is underdeveloped and roadway design is outdated.

Opportunity: Improve internal circulation by providing direct access to all proposed land uses. All roadways should be connected, and accommodate pedestrians and bicycles by providing sidewalks and bicycle facilities on both sides of the streets. Roads should be repaved and striped to delineate travel lanes, shoulders, and on street parking where available. Crosswalks should also be marked at all intersections and some midblock crossings where pedestrian desire lines are anticipated with future land uses.

Issue 3: Minimal transit service is provided to the Plan Area and transit access is inadequate.
Opportunity: Improve transit service by modifying existing routes, such as the Caltrain Shuttle servicing the Seaport Centre, to make stops within the Plan Area to serve future, transit-supportive land uses upon build out of the Precise Plan Area. Existing and new bus stops should provide amenities such as shelter, lighting, benches, trash cans, and route signage. Opportunities should be identified to ensure that there are safe and accessible pedestrian and bicycle routes to access transit stops. The proposed Seaport Streetcar should consider a route alignment passing through and serving the Plan Area.

Issue 4: Bicycle access and circulation within and through the Plan Area is limited and does not connect to nearby facilities.

Opportunity: Improve bicycle access and circulation by implementing the proposed facilities as outlined in the Redwood City General Plan, the San Mateo County Comprehensive Bicycle and Pedestrian Plan, and the Bay Trail Plan. Existing and future bicycle routes will also require additional maintenance to ensure that bike lanes remain free of debris and are clearly marked. Bay Area Bike Share should be considered for expansion into the Plan Area. Long-term and short-term secure bicycle parking should be provided at key destinations in the Plan Area to encourage trips by bicycle.

Other opportunities to improve circulation, safety and multimodal access include the following:

- Provide way finding signage for all modes throughout the Plan Area, including gateway and directional signage.
- Provide street lighting and streetscape elements to enhance walkability and aesthetics of community streets.
- Implement smart parking policies such as variable pricing based on demand or time of day, and Transportation Demand Management (TDM) strategies to minimize vehicle miles traveled and greenhouse gas emissions.