6.0 Cumulative Impacts

The California Environmental Quality Act (CEQA) requires an evaluation of a project’s contribution to cumulative environmental impacts. According to Section 15355 of the CEQA Guidelines, cumulative impacts are defined as “two or more individual effects which, when taken together, are considerable, or which can compound or increase other environmental impacts.” Although an individual project may not have significant impacts, when considered in combination with other projects, these cumulative effects may be considerable. This section therefore discusses the potential cumulative effects for all less than significant and significant impacts identified in this EIR.

Section 15130 of the CEQA Guidelines provides the following direction regarding a cumulative impact analysis:

- An EIR should not discuss cumulative impacts that do not result, in part, from the proposed project.
- A lead agency may determine that an identified cumulative impact is less than significant and shall briefly identify facts and analysis in the EIR supporting its determination.
- A lead agency may determine a project’s incremental effect is not cumulatively considerable and, therefore, is not significant and shall briefly describe in the EIR the basis for its determination.
- A lead agency may determine a project’s cumulatively considerable contribution to a significant cumulative impact may be rendered less than cumulatively considerable and, therefore, residually not significant, if the project implements or funds its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

6.1 CUMULATIVE METHODOLOGY

CEQA Guidelines Section 15130 allow for the use of two alternative methods to determine the scope of projects for the cumulative impact analysis, including:

- List Method: A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the lead agency.
- Regional Growth Projections Method: A summary of projects contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact.
For the purposes of this EIR, the list method is used in evaluating cumulative impacts. A discussion of the related cumulative projects is included in Section 6.1.1.

6.1.1 **Cumulative Projects**

The cumulative projects included in this analysis are reasonably foreseeable projects with sites located within the plan area. These projects include transportation projects, land development projects (residential and commercial), and planning projects. The cumulative projects discussed below could collectively result in impacts associated with future development of the plan area.

**Cargill Property – Saltworks Development Proposal (SDP)**

The Saltworks Development Proposal (SDP) would partially develop and partially restore the approximately 1,400 acres of salt crystallization ponds located on the Cargill Property east of Seaport Boulevard and north of US 101. Portions of the site have been used for salt production for over 100 years.

As proposed, the SDP would entail the development of 8,000 to 12,000 low-medium to high density residential units¹, 1,000,000 square feet of commercial/office space, and 140,000 square feet of supporting neighborhood retail uses. Most of the commercial development would be located along Seaport Boulevard, although some commercial and office space could also be located throughout the proposed mixed use areas. In addition, the plan includes sites for four elementary schools, a middle school, sports fields, and about 400 acres of open space.

In January 2010, the City published a series of reports evaluating the feasibility of the SDP proposal. These reports included an assessment of key planning issues, including availability of water and transportation. The reports concluded that significant additional studies would be required for a full environmental review, but that the City had a reasonable basis to proceed with environmental review.

As of May 2010, the City is moving forward to initiate this environmental review, which is anticipated to provide analysis as required under CEQA as well as under the National Environmental Policy Act (NEPA), insofar as the SDP project is anticipated to require one or more federal government actions. As of May 2010, there is no estimate as to when these environmental documents will be published, but the City will continue to post all documents related to the SDP project on the City’s website:

http://www.redwoodcity.org/phed/planning/saltworks/index.asp

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¹ All residential units would be multi-family units, many integrated within mixed-use developments (typically, ground floor commercial or office uses with residential uses above or otherwise “horizontally integrated” into a single development project). The average household size assumed is 2.5 people per household. This analysis uses the higher end of the estimated range of dwelling units (12,000) as the most conservative basis for understanding potential cumulative impacts. With this assumption, the City assumes the SDP would result in a residential population of approximately 30,000 people.
California High Speed Rail

The California High Speed Rail project (CHSR) is a proposed high speed passenger rail service providing connections between northern, central, and southern California. The California High Speed Rail Authority (CHSRA) is the lead agency for this project. In 2008 CHSRA and the Federal Railroad Administration selected the designated route from the Central Valley to San Francisco via the Pacheco Pass, San Jose, and the San Francisco Bay Peninsula along the existing Caltrain corridor. Through Redwood City, the high-speed trains are envisioned to be located parallel to the existing Caltrain tracks, with San Francisco as the ultimate destination.

For safety and efficiency, high-speed rail requires complete separation of rail and surface streets. The CHSRA is studying a number of elevated, at-grade, and below grade alignment options, ranging from aerial viaducts (elevated above ground) to tunnels. For the portion of CHSR that would traverse the plan area, as of May 2010, CHSRA continues to evaluate aerial viaducts, at-grade options (within protected right of way areas), trenches, and tunnels.

The Bay Area to Central Valley Final Program Environmental Impact Report/Environmental Impact Statement (EIR/EIS), approved in July 2008, identified passenger stations in San Francisco, San Jose, and Millbrae, with an optional mid-peninsula station either in Palo Alto, Mountain View, or Redwood City. The proposed potential Redwood City station could be located at or near the existing Caltrain station. If developed, the potential Redwood City CHSR station could require more extensive parking facilities than are currently provided for the Caltrain service. The station site could also need to accommodate feeder transit services such as buses and shuttles. As the estimated ridership, number of boardings, and associated automobile trips with the potential Redwood City CHSR station are unknown at the time of the preparation of this EIR, the cumulative development associated with the CHSR is evaluated at a qualitative level.

Caltrain Electrification Project

The Caltrain Electrification project is part of Caltrain’s efforts to modernize, expand capacity, and improve safety of the Caltrain system. The Caltrain Electrification project would extend along 51 miles of the Caltrain corridor between San Francisco to San Jose, which traverses immediately adjacent to El Camino Real along the Caltrain (Union Pacific) rail corridor through Redwood City. The Caltrain Electrification project would replace the diesel operating system with an electrified train system for this 51-mile segment of the Caltrain corridor. The system involves the placement of 10 traction power stations (none of which would be located within the New General Plan area) and approximately 140 track miles of overhead contact wires (sometimes referred to as catenary wires). The switch to electric power could reduce air quality pollutant emissions by up to 90 percent and could result in lower operating costs. In addition, the electric trains are anticipated to be significantly quieter than the diesel trains. It is

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2 Diesel-powered service would remain in place between San Jose Diridon and Gilroy. Source: Final Programmatic EIR for Caltrain Electrification, Caltrain Joint Powers Board, March 2010.

May 2010 Draft EIR
anticipated that the Caltrain Electrification project will be in place by 2015. The timeframe of the Caltrain Electrification project could be affected by the CHSR project, however.

Caltrain predicts that electrification of the system between San Francisco and San Jose would increase daily system ridership relative to a non-electrification alternative. Specifically, Caltrain anticipates an approximate 9.7 percent ridership increase by 2035 with electrification, relative to projected ridership levels in 2035 without electrification. This translates to about 6,300 more riders system wide by the year 2035 relative to no electrification (some ridership increase is projected by 2035 with or without electrification; electrification would result in a greater increase). Caltrain assumes that with electrification, approximately 300 more riders would board or alight from trains each day at the Redwood City station in the year 2035 than in a scenario without electrification. Caltrain concluded that projected ridership increases associated with electrification would result in a greater mode shift from automobile transit to trains, thereby freeing up space on area roadways and resulting in overall reduced travel times for roadways in the vicinity of stations. Caltrain thus concluded that electrification would not result in significant local traffic impacts at stations.

6.2 ANALYSIS OF CUMULATIVE IMPACTS

The following is a discussion of the cumulative impacts of the development that would be allowed by the New General Plan when taken within the context of related cumulative projects.

6.2.1 AESTHETICS

The area considered for cumulative impacts to aesthetic resources includes the plan area and surrounding viewsheds, including the adjacent portions of the cities visible from the plan area (i.e., the cities of San Carlos and Foster City to the northwest, Atherton and Menlo Park to the east, and the Town of Woodside to the south).

Scenic Vistas

The development allowed by the New General Plan, in combination with the cumulative projects, could have the potential to impact views from scenic vistas, including Easter Bowl, Easter Cross, and the Edgewood County Park, all of which are located within the western hillsides of the plan area. An existing view from the southwestern hillside area is provided in Figure 6-1.

New development associated with the cumulative projects could be concentrated to the northeast of Downtown (i.e., the SDP on the Cargill Property). The allowable development under the New General Plan and cumulative projects could combine to further intensify views of urban settlement near Downtown. The new development proposed by the SDP cumulative project would also have the potential to impact views towards the San Francisco Bay from scenic vistas. Depending on the proposed building

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View From Southwestern Hillsides Looking Northeasterly

Source: Redwood City, 2010
heights of the SDP, this proposed development in combination with the development allowed by the New General Plan within the Bayfront area could slightly limit views of the San Francisco Bay at lower elevations. However, because the scenic vistas are in the hillside areas and due to the distance and difference in elevation between the cumulative development and these scenic vistas, it is not anticipated that the cumulative projects would substantially limit views from these vistas. Thus, cumulative impacts related to scenic vistas and views of the San Francisco Bay would be less than significant.

**Visual Character**

Development allowed by the New General Plan, in addition to implementation of the SDP cumulative project, could result in new urban development that could potentially alter the overall visual character of the plan area. Development of the SDP would have the potential to substantially alter the existing visual character of the salt crystallization ponds, as extensive urban development would be introduced in an area that has appeared substantially non-urbanized for more than a century. Thus, the allowable development by the New General Plan in combination with the cumulative projects would have a significant cumulative impact to visual character.

The project’s contribution to this cumulative impact would be reduced through adherence to several New General Plan policies and implementation programs. For example, Policies BE-1.1, BE-1.4, BE-BE-1.5, BE-1.6, BE-1.8, and BE-2.3 seek to improve the visual environment through the enhancement of the individual character of each neighborhood, while maintaining a cohesive aesthetic environment throughout the plan area by requiring design compatibility for new development and requiring design interfaces between each neighborhood, creating interconnected block patterns to enhance visual connectivity, and developing district plans for each neighborhood to better define the aesthetic character. With the adherence to the aforementioned New General Plan policies and implementation programs, the New General Plan’s contribution to the cumulative impact would not be considerable.

**Shadow**

The development allowed by the New General Plan in combination with the cumulative projects would have the potential to increase building heights above existing levels, which could introduce new shadowing effects.

If Redwood City is selected for the CHSR mid-Peninsula station site, the CHSR station could include facilities that have the potential for shadow impacts, such as a parking structure and/or aerial railways. At this time, insufficient information is available on the actual station site, the program of any new buildings that could be located on the station site, and the potential for any of the CHSR station features to result in shadow impacts. As of May 2010, the environmental review for the CHSR San Francisco to San Jose Diridon segment is still in process. The final environmental documents for the preferred alternative will investigate the aesthetic impacts of the mid-Peninsula CHSR station, whether located in Redwood City or one of the other candidate locations.

Urban development of the Cargill Property under the SDP would have the potential to introduce shadow effects to the Bayfront area, as the existing open area would be
developed with structures and building height would be introduced to the area. While specific building heights are not yet determined at this time, the development of up to 12,000 residential units and approximately one million square feet of commercial/office uses could introduce new shadow effects to existing adjacent developments, public open space areas, waterways, and tidal lands. Cumulative shadow effects would therefore be considered significant.

The New General Plan includes several policies and implementation programs related to the review of new development within the plan area, such as shadowing effects. Mitigation Measures 4.1-2 and 4.1-3 would further mitigate New General Plan impacts related to shadowing impacts within the Bayfront area. With adherence to these measures, policies, and implementation programs, the New General Plan would not have a considerable contribution to the significant cumulative effect.

Light and Glare

The increment of new development allowed by the New General Plan, in combination with the cumulative projects (most specifically implementation of the SDP), could result in increased light and glare within the plan area and immediate surrounding areas. Light and glare impacts also contribute to night sky impacts. As the SDP could result in urban development in relatively non-urbanized areas, the increased level of allowable development associated with the project in combination with the SDP could have a significant cumulative impact on daytime glare and nighttime lighting.

Adherence to New General Plan Policies BE-13.1 and NR-4.5 and Programs BE-18 and NR-20 include measures to reduce light pollution and glare, which in combination with the mitigation to require compliance with Title 24 Lighting Zone requirements, would reduce project impacts to light and glare. With adherence to these measures, policies, and programs, the development allowed by the New General Plan would not have a considerable contribution to the significant cumulative effect.

6.2.2 Agriculture and Forest Resources

The cumulative impact area for agriculture and forest resources is the plan area. There are no designated forest lands or timberlands within the plan area, thus cumulative development within the plan area would not result in the loss of forest land or convert forest land to non-forest use. The cumulative projects would not individually or collectively result in any direct impacts to any agriculturally designated lands, as they are located on urban infill sites where there is no agricultural use and no identified Farmlands or forest resources. The development allowed by the New General Plan has no potential to result in any significant impact to forest or agricultural resources.

Notably, owners of the Cargill Property have filed a non-renewal notice for the Williamson Act contract on the property. This filing sets in place a multi-year period after which the land is removed from Williamson Act coverage. Therefore, when the Williamson Act contract for the site is fully dissolved, cumulative development on the Cargill Property would not conflict with a Williamson Act contract.

Development of the SDP would require numerous discretionary approvals from the City and other federal, state, and local responsible agencies, including rezoning the site.
Currently, the site has a zoning designation of “TP” or “Tidal Plain” with allowable uses including but not limited to agriculture and salt harvesting. Implementing the SDP would require rezoning the site from TP to other zoning designations, including non-agricultural designations. The total cumulative impact to agricultural zoning would therefore be significant. However, the development allowed by the New General Plan would not make a considerable contribution to this impact insofar as the New General Plan preserves existing General Plan land use designations for the site, and therefore results in no associated change to agricultural zoning.

6.2.3 AIR QUALITY

The area considered for cumulative impacts to air quality includes the San Francisco Bay Area Air Basin (Bay Area Basin), which includes the counties of San Francisco, Santa Clara, San Mateo, Napa, Contra Costa County, and Alameda, along with the southeast portion of Sonoma County and the southwest portion of Solano County.

Air Quality Plan Consistency

The air quality evaluation of the New General Plan impacts considers the New General Plan’s effect on regional air quality through the changes in land use and transportation patterns it would set forth. Impacts 4.3-1 and 4.3-2 in Section 4.3, Air Quality, address the New General Plan’s consistency with the regional clean air plans. This analysis, conducted as recommended by the Bay Area Air Quality Management District (BAAQMD), addresses the plan level and cumulative impacts of the New General Plan to regional air quality. The analysis measures whether or not growth in the plan area, as measured by population and vehicle travel, would be greater than assumptions used to develop the regional Clean Air Plan.

The development allowed by the New General Plan and the cumulative projects would allow for considerable increments of growth to the area. The SDP would allow up to 12,000 residential units and approximately one million square feet of commercial/office development. This development would have the potential to generate additional vehicle trips and, thus, associated air pollutant emissions. A project-specific air quality evaluation will be performed for the SDP, which will quantify the air pollutant emissions and consider potential transit options associated with the SDP development.

Conversely, the Caltrain Electrification project could have a beneficial effect, as the switch from the diesel train system to an electric system could result in a reduction of up to 90 percent from current Caltrain emissions, particularly diesel particulate emissions. It is also anticipated that the CHSR would result in a decrease in regional levels of pollutant emissions. Use of CHSR would represent a mode shift from existing forms of transportation between northern and southern California, including automobiles, buses, and airplanes, among others. CHSR is anticipated to utilize an electric-powered train set, meaning that local pollutant emissions would be minimal along railroad tracks.4

However, the Caltrain and CHSR emissions changes, although notable, would be insufficient to offset the anticipated additional air quality impacts associated with the SDP. Thus, the New General Plan together with the cumulative development could result in a significant cumulative impact related to the existing and future violations of air quality standards with respect to regional air pollutants (i.e., ozone and particulate matter).

Although the New General Plan promotes and supports transportation control measures consistent with the BAAQMD Clean Air Plan through policies such as Policies BE-2.1 and BE-2.7 to encourage mixed use developments with pedestrian, bicycle, and transit access, the increase in vehicle travel associated with the allowable development under the New General Plan would be inconsistent with the regional assumptions used to develop the Clean Air Plan. The New General Plan therefore is deemed to have a considerable contribution to the overall significant cumulative impact. As indicated in Impact 4.3-1 in Section 4.3, Air Quality, there are no feasible mitigation measures that would reduce this impact. The cumulative impact would thus remain significant and unavoidable.

**Local Carbon Monoxide Concentrations**

Local air quality impacts due to traffic that could be generated or affected by the New General Plan were assessed by predicting roadside carbon monoxide concentrations. Cumulative traffic conditions, including the development as part of the SDP, were included in this assessment. Modeling results indicate that carbon monoxide levels at the busiest and most congested intersections, with background included, would continue to remain below ambient air quality standards. Therefore, the cumulative impacts would be less than significant.

**Construction Impacts**

The New General Plan does not directly propose or permit any new construction, but rather modifies the land use designations in the City’s existing General Plan to allow for additional future development and redevelopment in the plan area. However, construction activities associated with the future allowable development under the New General Plan were not considered to have significant impacts if proper controls are implemented for future development projects. The New General Plan includes several implementation programs to control emissions from the construction activities associated with the allowable development in the plan area, which would reduce overall impacts from construction activities. These same measures could be applied to any new construction associated with the cumulative projects. Therefore, the cumulative impact would be less than significant.

**Toxic Air Contaminants**

Adoption of the New General Plan together with the cumulative projects would have the potential to expose sensitive receptors to toxic air contaminants (TACs). The cumulative projects would add new development, including residential development and sensitive receptors, in areas adjacent to high volume roadways and industrial uses. The SDP could introduce up to 12,000 residential units, and thus 30,000 residents, to an area.
immediately north of U.S. 101 and immediately west of the Port of Redwood City. Proximity of any new residential uses to these areas could expose potential residents to elevated levels of TACs. Therefore, the cumulative impact would be potentially significant.

The New General Plan includes several policies and implementation programs that establish buffers and measures to adequately protect sensitive land uses from sources of TACs. Mitigation Measure 4.3-3, as detailed in Section 4.3, Air Quality, requires revision of Implementation Program PS-6 to require that the potential air quality impacts from new development projects in the City be evaluated pursuant to the applicable BAAQMD CEQA Guidelines in effect at the time the City commences the air quality evaluation, including, as applicable, the establishment of specific overlay zones around existing and planned sources as TACs. These policies, programs, and measures would apply to all new development in the plan area, including the SDP project. Thus, the New General Plan would not have a considerable contribution to the significant cumulative impact.

**Odors**

The New General Plan includes adequate polices to protect sensitive receptors (such as residential uses or public open space areas) from odors caused by the development of new odor sources, or by development that would place new sensitive receptors near sources of odors. The cumulative projects, in particular the SDP, could locate new residential development (up to 12,000 new residential units and 30,000 new residents) in proximity to the Port of Redwood City, where nearby industrial operations and organic processes contribute to odors that may be considered unpleasant or unhealthy. While additional project-level environmental review will be required for the cumulative projects in regard to odors, there could be a significant cumulative impact. The New General Plan’s contribution to this impact would not be considerable, insofar as the New General Plan does not include plans to locate new sensitive receptors near existing sources of odors.

**6.2.4 BIOLOGICAL RESOURCES**

The area considered for cumulative impacts to biological resources includes the plan area and immediately surrounding lands and waterways.

The plan area includes numerous sensitive biological resources that could be impacted by new development. While the majority of the plan area is already urbanized and thus has low habitat value for wildlife, the western foothills, Bayfront areas, and creek channels have been identified as providing important habitat for sensitive plants and animals. Appendix E lists the potential plant and animal species occurring in the plan area.

Development allowed by the New General Plan in addition to implementation of the cumulative projects (in particular, the SDP) could result in significant effects to biological resources. This is because the SDP is anticipated to result in the conversion of the existing salt crystallization ponds into a mix of urban development and open space. As discussed in Section 4.4, Biological Resources, bayland vegetation communities
and habitats occupying tidal waters are located within the salt crystallization ponds. Potential development of this site is anticipated to result in impacts to the vegetation and wildlife known to exist in the salt crystallization ponds and could also result in impacts to surrounding wetland areas. However, proposed habitat restoration aspects of the SDP could improve the resource value of restored portions of the salt crystallization ponds for both aquatic and terrestrial species, as well as sensitive plant species.

Adherence to federal and state regulations, New General Plan policies and implementation programs, and mitigation measures identified in Section 4.4, Biological Resources, would reduce to a less than significant level all identified project-related impacts to biological resources. For example, Policy NR-8.1 requires that efforts to protect sensitive biological resources are pursued. Policies NR-5.1, NR-5.3 through NR-5.7 also address the protection and enhancement of creeks, streams, and sloughs including the preservation and protection of riparian plants, requiring setbacks from and buffer zones around creeks, limiting construction activities within creeks. These same regulations, policies and programs, and mitigation measures would also be applicable to all new development in the plan area, including the Cargill Property.

While it is known that sensitive biological resources exist within the salt crystallization ponds, including bayland vegetation communities and habitats associated with tidal waters, it is uncertain that the combination of existing regulations, new policies and implementation programs, and mitigation measures could reduce all biological resource impacts to a less than significant level on the Cargill Property, given its relatively large scale as one of the largest undeveloped parcels on the Bayside of the San Francisco Peninsula. Also uncertain are any potentially beneficial impacts associated with proposed habitat restoration components of the SDP. Project-specific analysis relative to the Cargill Property would be required to fully identify all related impacts of the SDP and the extent to which such impacts could be mitigated.

As the New General Plan would allow for new development primarily in already urbanized areas within the plan area (i.e., in Downtown and Downtown-adjacent neighborhoods) where biological resources were found to be limited in both quantity and quality, and the potential impacts on biological resources from such development was determined to be less than significant with implementation of the mitigation measures identified in Section 4.4, Biological Resources, the New General Plan’s contribution to this cumulative impact would not be considerable.

6.2.5 Cultural Resources

The area considered for cumulative impacts related to cultural resources is the plan area. Cultural resource impacts are typically highly localized, generally limited to the immediate area in which a given cultural resource is located.

Adoption of the New General Plan in addition to implementation of the cumulative projects could result in a significant total impact to paleontological, prehistoric, and historic cultural resources. Implementation of the New General Plan allows considerable new development in areas with known historic architectural resources, specifically near Downtown. Moreover, new development throughout the plan area could result in the
uncovering of heretofore unknown paleontological and cultural resources. The cumulative impact to cultural resources would therefore be significant.

Following adoption of the New General Plan, the policies and implementation programs related to cultural resource preservation and maintenance would also be applicable to the cumulative projects, as the cumulative projects would be developed within the plan area. Specifically, Policies BE-36.1 through BE-36.3, BE-37.1 through BE-37.8, BE-38.1 through BE-38.6, and BE-39.1 through BE-39.4 preserves and rehabilitates historic and landmark sites, establish and maintain a record of historic resources, strive for compatibility between new development and adjacent historic properties, and promote public awareness of the historic context of the City. Implementation programs, including Programs BE-100 through BE-118, BE-120, and BE-121 could further introduce measures to reduce impacts to historic resources, such as enforcing a Historic Preservation Ordinance and revitalizing historic districts. Adherence to these New General Plan policies and implementation programs in combination with Mitigation Measures 4.5-1a through 4.5-3b render the New General Plan’s contribution to the cumulative cultural resources impact not considerable.

6.2.6 GEOLOGY AND SOILS

The area considered for cumulative geology and soils impacts is the plan area. Potential impacts of the cumulative projects were examined in conjunction with the anticipated development allowed under the New General Plan. As noted in Section 4-6, the plan area is subject to a number of geologic and soils-related hazards, including soil erosion, expansive soils, slope stability, liquefaction, differential settlement, and subsidence. The impacts to each cumulative project would be specific to that site and its users and would not be common or contribute to (or shared with, in an additive sense) the impacts on other sites. Moreover, all new development allowable under the New General Plan would be subject to local, state, and federal site development and construction standards that are designed to protect public safety. Cumulative impacts would therefore not be significant.

6.2.7 HAZARDS AND HAZARDOUS MATERIALS

In order to evaluate cumulative impacts related to hazards and hazardous materials, the potential impacts related to the land development projects on the cumulative projects list were analyzed in combination with the anticipated impacts from the New General Plan.

Exposure to Hazardous Materials, Wildland Fires, and Airport Safety Hazards

Future development allowed by the New General Plan, in combination with development allowed by the cumulative projects, could involve the use, storage, generation, and disposal of hazardous materials. Implementation of the SDP would also introduce residential development within the proximity of existing industrial uses associated with the Port of Redwood City.

Those residents living within close proximity to the Port of Redwood City could be at risk of being exposed to hazardous materials utilized by the industrial uses along Seaport
Boulevard, adjacent to and/or within the Port of Redwood City. Visitors to the proposed commercial uses under the SDP could also be exposed to hazardous materials associated with existing industrial uses if located within proximity to the Port of Redwood City.

Construction of the cumulative projects could also result in additional unearthing of contaminated soils and/or groundwater and/or the demolition of buildings containing asbestos or lead-based paint, which could expose an increased number of construction workers or the public to such hazards. As the New General Plan and cumulative projects could likely result in increased population growth, these projects could increase the number of people exposed to potential hazards related to hazardous materials. The cumulative development could also introduce an increased population and increased number of structures near areas at risk of wildland fires and within an airport influence zone, which could have an impact on airport safety and operations. Therefore, cumulative impacts related to hazardous materials could be significant.

However, the New General Plan includes policies and implementation programs that would reduce the project’s contribution to the cumulative impact. Several policies and programs promote consistency with the existing state, county, and local hazardous material regulations. Policies PS-8.1 and PS-8.2 regulate and encourage hazardous waste reduction within the City and allows for public education regarding hazardous wastes and toxic materials, while Programs PS-30, PS-31, PS-50, PS-54, and PS-55 require adoption of a Hazardous Waste Ordinance and compliance with hazardous materials management plans. Program PS-47 also requires Phase I site assessments for any proposed redevelopment of commercial and industrial sites within the plan area. With regard to airport safety hazards, Policies BE-22.3 and PS-10.1 and Program PS-37 require future projects to be in compliance with the Federal Aviation Administration regulations. Policy PS-9.2 and programs PS-32, PS-33, and PS-39 address impacts related to wildland fires by identifying available water resources for fire fighting and providing adequate access for fire fighting equipment. Taking into account all of the above aspects, the New General Plan’s contribution to potential cumulative effects would not be considerable.

**Emergency Evacuation Routes**

Future development allowable under the New General Plan, as well as new development associated with the cumulative projects, may also result in increased congestion at intersections and along roadways identified as evacuation routes, which could impede access by emergency vehicles, representing a significant cumulative impact.

The New General Plan includes several policies and implementation programs to enhance emergency services in the plan area and requires that the City foster coordination between the emergency services and the community demands in order to provide adequate emergency services. While the New General Plan would set forth new rules for evaluating traffic impacts of future new projects that may be proposed for the Downtown, the modification of the LOS based analysis in Downtown would not result in substantial traffic congestion and would not substantially degrade emergency access and emergency response times. Refer to Section 4.14, Transportation, for a discussion of emergency access within Downtown. With adherence to and implementation of the New General Plan policies and implementation programs, impacts to emergency
evacuation routes and response would be less than significant and the New General Plan would therefore not have a considerable contribution to the potentially significant cumulative impact.

### 6.2.8 Hydrology and Water Quality

The area considered for cumulative impacts to hydrology and water quality includes the plan area and the watersheds potentially impacted by development allowed by the New General Plan. The allowable development associated with the New General Plan in combination with the cumulative projects could result in cumulative impacts related to stormwater runoff and water quality, groundwater recharge, flooding, and inundation by seiche or mudflow.

**Stormwater Runoff, Water Quality, and Groundwater Recharge**

Development allowed by the New General Plan in combination with the implementation of the cumulative projects could have the potential to increase the amount of impervious surface in the plan area, resulting in cumulative impacts related to stormwater runoff, water quality, and groundwater recharge.

With regard to the potential for groundwater recharge and stormwater runoff, although development of the SDP would introduce urban development to the Cargill property, the earth beneath the salt crystallization ponds has limited permeability. Relatively little rainwater that falls into the salt crystallization ponds is currently absorbed into the underlying groundwater basin.

Moreover, the area is not served by storm drainage facilities. It is uncertain as to what effect any future development in this area could have with regard to permeability. Given the existing impermeability of the earth beneath the salt crystallization ponds, considerable earthwork would likely be necessary in order to restore any portions of the salt crystallization ponds closer to a “natural state” in terms of permeability and porosity.

However, the Caltrain Electrification project and the potential CHSR station are anticipated to occur within or near the urbanized Downtown, which is already developed with hard surfaces. The location of these cumulative projects within this already developed area would not substantially increase the amount of impervious surfaces.

The cumulative projects would also be subject to NPDES requirements to capture and treat stormwater runoff to reduce contamination of existing watersheds. However, given the location and site constraints of the Cargill Property, it is uncertain whether the SDP will be able to fully comply with all NPDES requirements for the reduction and treatment of stormwater. Thus, total impact of the project and cumulative development related to stormwater runoff, water quality, and groundwater recharge is considered significant.

The project’s contribution to this impact is addressed through Program NR-26 of the New General Plan that requires all new development to comply with all provisions of the NPDES permit as well as to support regional efforts by the RWQCB to improve and protect water quality. Adherence to this program would reduce the project’s contribution to a less than considerable level.
Flooding

Development allowed by the New General Plan together with implementation of the cumulative projects could result in cumulative impacts related to flooding due to their location in a FEMA flood hazard zone, dam inundation area, or an area currently prone to flooding. Portions of the Caltrain Electrification project and the CHSR project are anticipated to be located within designated flood areas. Depending on the configuration of the CHSR project as an elevated rail alignment or a below-grade rail alignment through the City, existing creeks within the plan area could be impacted, possibly resulting in the redirection of flood flows.

The Cargill Property is currently shown within a 100-year floodplain as mapped by FEMA. Any new development of this property would likely involve substantial site preparation and grading activities that could alter the land in such a way that the risk of flooding could be changed. Such activities could result in the issuance of a Letter of Map Revision (LOMR) by FEMA upon construction to reflect any changed conditions in the area.

As development associated with the SDP would be located immediately north of the flood-prone Friendly Acres neighborhood, the addition of urbanization and associated runoff could have the potential to cumulatively exacerbate existing flooding hazards in this portion of the plan area. This would be particularly acute if runoff from the Cargill Property is directed into the Bayfront Canal. While the SDP includes proposed measures to address flood control issues, such measures would need to focus on improving the Bayfront Canal and ameliorating existing flooding conditions. Thus, cumulative impacts related to flooding could be significant.

Through adherence to New General Plan policies and implementation programs related to reducing flooding effects to areas within flood hazards zones or flood prone areas (i.e., Friendly Acres neighborhood), including Policies PS-7.2 and PS-7.4 and Programs PS-27, PS-32, PS-35, PS-48, PS-49, and PS-57, flood related impacts associated with development allowed by the New General Plan would be reduced to a less than significant level. Through adherence to these policies and implementation programs and due to the limited amount of development anticipated within existing floodplains pursuant to the New General Plan, the New General Plan would not have a considerable contribution to the cumulative flooding impact.

For a discussion of cumulative flooding impacts related to sea level rise, refer to Section 6.2.16, Greenhouse Gas Emissions.

Inundation by Seiche and Mudflow

Development allowed by the New General Plan in conjunction with implementation of the cumulative projects could result in cumulative impacts related to inundation by seiche and mudflow. Seiche is a seismic-related displacement of an inland water body. The cumulative projects, particularly development associated with the SDP, are anticipated to be located in areas at an elevated risk of inundation in the event of seismic-related seiche. If developed, the Cargill Property’s proximity to San Francisco Bay could potentially place an additional 12,000 residential units and an associated
residential population of 30,000 at an elevated risk of seiche. Cumulative seiche impacts are therefore significant.

The New General Plan targets new growth and development primarily in areas south and/or west of U.S. 101, where the distance from large water bodies limits the risk of inundation by seiche. In areas opening onto Redwood Creek on the north side of U.S. 101, properties along the waterfront would be expected to be subject to potential seiche inundation. Adherence to City building codes and applicable environmental review under CEQA would address any project-specific impacts related to seiche exposure in these areas, rendering the New General Plan’s contribution to this impact not considerable.

Regarding mudflow, both the allowable development by the New General Plan and the cumulative projects would focus new development away from the hillside portion of the plan area, which is at greatest risk of inundation by mudflow. Thus, cumulative impacts related to mudflow would be less than significant.

### 6.2.9 Land Use and Planning

Potential impacts of the cumulative projects in the plan area were examined in conjunction with the anticipated impacts from the development allowed by the New General Plan. Development associated with the New General Plan in combination with implementing the cumulative projects could result in continued infill development and increased density and intensity of land uses in the plan area.

Development allowed by the New General Plan plus the cumulative projects, namely, the SDP, has the potential to result in a significant cumulative impact in terms of physical division between portions of the community. The SDP would introduce substantial new urban development in an area that is largely detached from the central portion of the community. In contrast, the New General Plan focuses new development within already urbanized areas. The New General Plan further includes numerous policies and programs aimed to increase connectivity within the urbanized portion of the plan area, reducing the impact of existing physical divisions in the community. For example, the New General Plan includes conceptual plans to reduce community divisions related to railroad tracks and calls for placing the railroad on aerial structures or below grade so that City roadways may proceed uninterrupted at grade, minimizing physical divisions in the community. Therefore, the New General Plan’s contribution to this impact is less than considerable.

Implementing the SDP could result in inconsistencies with other land use planning documents, notably the San Francisco Bay Plan (Bay Plan). The Bay Plan encourages the retention of salt production in the Bay, citing numerous ecological benefits associated with salt harvesting processes. The Bay Plan calls for a comprehensive planning and review process associated with any proposal to convert salt pond areas to different uses.

Additionally, development of the SDP could introduce land use conflicts. The SDP would allow up to 12,000 residential units and associated commercial and public facility uses, which could conflict with the existing industrial uses west of Seaport Boulevard at the Port of Redwood City. Residential and commercial/office uses could be placed in an area
immediately adjacent to heavy industrial and shipping activities, representing a potential inconsistency with the adjacent existing port uses.

Additionally, the cumulative projects may require General Plan amendments, zoning amendments, variances, or other discretionary actions to maintain consistency with relevant land use plans and policies. While the City will consider the merits of each request on a project level basis and approval would be required prior to implementing a project, implementation of the cumulative projects would have the potential to represent inconsistencies with existing land uses and land use planning documents and policies. As such, cumulative impacts could therefore be significant.

As discussed extensively in Section 4.9, Land Use and Planning, the New General Plan would be largely consistent with pertinent plans and policies. Therefore, the New General Plan would not contribute considerably to this cumulative impact.

6.2.10 Noise and Vibration

The area considered for cumulative noise impacts is the plan area. In order to evaluate cumulative noise impacts, the potential noise impacts related to the land development projects on the cumulative projects list were analyzed in combination with the anticipated impacts from development allowed by the New General Plan.

Noise Level Standards

The cumulative projects could result in residential and commercial development well in excess of the levels allowed by the New General Plan. Implementation of the SDP could increase noise sensitive development in areas where existing noise levels exceed acceptable levels. Implementing the SDP could result in residential and commercial development in an area affected by noise associated with transportation and existing industrial (Port of Redwood City) uses. Therefore, cumulative impacts related to exposing sensitive receptors to noise levels that exceed City standards could be significant.

Through adherence to the policies and implementation programs within the Public Safety Chapter of the New General Plan, which could minimize the impacts of noise sources through the establishment of noise level standards, the development allowed by the New General Plan would not considerably contribute to the cumulative impact.

Ambient Noise Levels

Development of the cumulative projects could also result in an increase of ambient noise levels as a result of the additional cumulative vehicle trips. Table 6-1 shows a comparison of the cumulative noise levels against existing and cumulative project noise levels.
Table 6–1  Existing and Future Noise Levels Along Roadways

<table>
<thead>
<tr>
<th>Roadway From</th>
<th>Segment To</th>
<th>Speed (mph)</th>
<th>2009 Existing CNEL at 75 ft, dBA*</th>
<th>2030 Project + Cumulative</th>
</tr>
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<tbody>
<tr>
<td>Alameda de las Pulgas Woodside Rd</td>
<td>Massachusetts Ave</td>
<td>30</td>
<td>63</td>
<td>63</td>
</tr>
<tr>
<td>Edgewood Rd</td>
<td>Whipple Ave</td>
<td>30</td>
<td>65</td>
<td>65</td>
</tr>
<tr>
<td>Bay Rd Woodside Rd</td>
<td>5th Ave</td>
<td>30</td>
<td>67</td>
<td>69</td>
</tr>
<tr>
<td>Blomquist St Seaport Blvd Map St</td>
<td>25</td>
<td>71</td>
<td>72</td>
<td>73</td>
</tr>
<tr>
<td>Brewster Ave Hudson St Broadway</td>
<td>25</td>
<td>63</td>
<td>63</td>
<td>64</td>
</tr>
<tr>
<td>Winslow St Veterans Blvd</td>
<td>30</td>
<td>68</td>
<td>68</td>
<td>69</td>
</tr>
<tr>
<td>Broadway Brewster Ave El Camino Real</td>
<td>30</td>
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<tr>
<td>Jefferson Ave Main St</td>
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<td>68</td>
<td>68</td>
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<tr>
<td>Chestnut St Woodside Rd</td>
<td>30</td>
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<td>72</td>
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<td>30</td>
<td>63</td>
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<td>63</td>
</tr>
<tr>
<td>El Camino Real Woodside Rd 5th Ave</td>
<td>30</td>
<td>70</td>
<td>70</td>
<td>71</td>
</tr>
<tr>
<td>Whipple Ave City Limits</td>
<td>30</td>
<td>70</td>
<td>71</td>
<td>71</td>
</tr>
<tr>
<td>Farm Hill Blvd Mc Garvey Ave I-280</td>
<td>30</td>
<td>62</td>
<td>63</td>
<td>64</td>
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<tr>
<td>Hopkins Ave Hudson St Broadway</td>
<td>25</td>
<td>62</td>
<td>62</td>
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</tr>
<tr>
<td>Hudson St Oak Ave Woodside Rd</td>
<td>25</td>
<td>62</td>
<td>63</td>
<td>64</td>
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<tr>
<td>Jefferson Ave Roosevelt Ave</td>
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<td>63</td>
<td>64</td>
<td>65</td>
</tr>
<tr>
<td>Industrial Way Whipple Ave City Limits</td>
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<td>75</td>
</tr>
<tr>
<td>Jefferson Ave Farm Hill Blvd Highland Ave</td>
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<td>60</td>
</tr>
<tr>
<td>Hudson St El Camino Real</td>
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<td>Main St Broadway Middlefield Rd</td>
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<td>35</td>
<td>64</td>
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<td>66</td>
</tr>
<tr>
<td>Massachusetts Ave Alameda de las Pulgas Woodside Rd</td>
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<td>64</td>
<td>64</td>
<td>65</td>
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<tr>
<td>Mc Garvey Ave Farm Hill Blvd</td>
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<td>64</td>
</tr>
<tr>
<td>Middlefield Rd Woodside Rd 5th Ave</td>
<td>35</td>
<td>68</td>
<td>69</td>
<td>69</td>
</tr>
<tr>
<td>Redwood Shores Pkwy US 101 Bridge Dr</td>
<td>35</td>
<td>69</td>
<td>70</td>
<td>71</td>
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<tr>
<td>Roosevelt Ave Alameda de las Pulgas</td>
<td>Valota Rd</td>
<td>30</td>
<td>63</td>
<td>63</td>
</tr>
</tbody>
</table>
Typically, noise levels need to increase by 3dBA or more in order to be perceptible to the human ear. The data in Table 6-1 indicate that the addition of cumulative projects involving new commercial/residential development (namely, the SDP) could increase noise levels by 1 dBA to 2dBA along the identified roadways relative to the cumulative project conditions. Project-specific noise modeling will be performed as part of the project-level evaluation of the SDP under separate environmental review.

Data in the table above do not account for the CHSR and Caltrain Electrification projects. According to Caltrain, operations following implementation of the electrification program would reduce train noise along the entire route and decrease the number of sensitive receptors impacted by train noise relative to no electrification. Construction of the overhead electrical contact system would result in temporary noise
increase along the entire railway, but mitigation measures were provided to mitigate such short term impacts to a less than significant level.\footnote{5 Final Programmatic EIR for Caltrain Electrification, Caltrain Joint Powers Board, March 2010.}

CHSR could raise ambient noise levels along its entire route, including portions of the plan area. Many details regarding a possible CHSR station are uncertain: whether such a station would be located in Redwood City, Palo Alto, or Mountain View, the timing of station construction, and whether the CHSR rail alignment would be above or below grade. Nevertheless, it is reasonable to assume that in addition to ambient noise increases resulting from new passenger rail service, a station in Redwood City could add temporary construction noise and permanent traffic increases in and around the station area. The roadway areas most likely to be affected by CHSR would be those in proximity to the existing rail alignment, primarily El Camino Real and nearby areas. While the development allowed by the New General Plan plus the quantified cumulative projects do not result in a perceptible (3 dBA) noise increase along any of the study roadways, the development allowed by the New General Plan plus the quantified cumulative plus the non-quantified cumulative projects (CHSR) may result in noise level increases of 3 dBA or greater, which would be a significant cumulative noise impact.

According to the Final Program EIR/EIS for the Bay Area to Central Valley Segment of CHSR, any high-speed trains on the San Francisco Peninsula (including portions traversing the plan area) would travel below its full speed. Moreover, this EIR/EIS notes that implementation of the CHSR would result in the removal of numerous at-grade crossings along the entire San Francisco Peninsula, reducing the need for signal horns for both Caltrain and high-speed rail. Implementing these measures could reduce cumulative noise impacts.

The contribution from development allowed by the New General Plan, as seen in \textbf{Table 6-1}, would be a 1 to 2 dBA increase near the study roadways, which would not be a perceptible noise increase. The contribution from development allowed by the New General Plan to the potentially significant cumulative noise impact would therefore not be considerable.

\textbf{Vibration}

Development allowed by the New General Plan in conjunction with the cumulative projects could result in increased exposure to groundborne vibration. Specifically, implementing the CHSR project could have the potential to increase groundborne vibration levels, as a new train feature would be implemented in the plan area. Overall, the cumulative impact to vibration would be considered significant.

Adherence to New General Plan Policy PS-13.7 and Program PS-65 could minimize the impacts of groundborne vibration in the plan area by requiring mixed use structures to incorporate design measures to reduce vibration effects and would require the City to consider adoption of vibration standards. Additionally, Mitigation Measure 4.10-1 in \textbf{Section 4.10, Noise and Vibration}, requires buffers of at least 100 feet between vibration-sensitive developments and vibration sources. Adherence to these policies, implementation programs, and mitigation measures would reduce the vibration effects...
associated with development allowed by the New General Plan, and the contribution to
the cumulative vibration impacts would not be considerable.

Construction Noise

Construction of the cumulative projects could have the potential to introduce increased
levels of temporary construction noise to the plan area. Adoption of the New General
Plan, in conjunction with these cumulative projects, could result in a significant
cumulative construction noise impact.

Several policies and implementation programs within the Public Safety Chapter of the
New General Plan could minimize the impacts of temporary construction noise in the
plan area by requiring all exterior noise sources to use noise suppression devices to bring
noise levels to an acceptable level and implementing standard construction noise
controls. Implementation of these measures could reduce construction noise to
acceptable levels and the construction activity related to development allowed by the
New General Plan would therefore not have a considerable contribution to the
cumulative impact.

Airport Noise

Adoption of the New General Plan in combination with development of the cumulative
projects would also have the potential to introduce new residential or other noise
sensitive uses near the San Carlos Airport and associated overhead flights. By ensuring
compliance with the local airport land use plans, implementation of the New General
Plan policies and implementation programs, the cumulative impacts related to aircraft
noise would be less than significant.

6.2.11 POPULATION AND HOUSING

The area considered for cumulative population and housing impacts is the plan area. In
order to evaluate cumulative impacts related to population and housing, the potential
growth impacts related to the land development projects on the cumulative projects list
were analyzed in conjunction with the anticipated growth from the New General Plan.

A major goal of the New General Plan is to shape and focus growth within the City and
the plan area. The New General Plan will not directly result in population and housing
growth but instead will provide a new regulatory environment governing the amount,
location, timing, and intensity of allowable development in the plan area.

The cumulative projects would result in the development of significant number of
additional dwelling units and employment, and thus potentially increase the level of
anticipated development beyond what would be allowable under the New General Plan.
For example, development of the SDP would allow up to 12,000 residential units and
substantial commercial and public facility uses. If considered in addition to allowable
growth under the New General Plan, this increased growth could have a potentially
significant cumulative effect in terms of population, housing, and employment growth.

It is uncertain what effect the SDP could have on the viability of the implementation of
the New General Plan. New growth and development targeted by the New General Plan
for the key focus areas could well be “absorbed” by the SDP, potentially hindering the
effectiveness of the New General Plan. Such impacts would be speculative at this time
due to the uncertain timing of the SDP, among other factors.

The New General Plan includes policies and implementation programs that would be
applicable to any new projects proposed for the plan area. Policy BE-22.5 and Program
BE-22 track the timing of development and require infrastructure concurrency,
specifically regarding water supply and adequacy of wastewater infrastructure.
Mitigation measures identified in Section 4.11, Population and Housing, require
the City to limit the amount of allowable new development to conform to known water
supplies. These measures would mitigate the New General Plan’s contribution to
population, housing, and employment impacts insofar as they would preclude
development from outpacing available water supply and available infrastructure.
Through implementation of the New General Plan and mitigation measures, the
contribution of allowable residential, commercial and employment development
associated with the New General Plan to this potentially significant cumulative impact
would not be considerable.

6.2.12 PUBLIC SERVICES

The area considered for cumulative impacts related to public services is the plan area
and any areas within adjacent communities served by the City’s public services or
facilities.

Development allowed by the New General Plan in addition to the cumulative projects
could increase demand on public services within the plan area. The SDP could introduce
additional residential and commercial developments, which could increase demands for
fire protection and emergency service, police services, school facilities, child care
facilities, and libraries. The addition of up to 12,000 residential units and the associated
residential population of approximately 30,000 could introduce an additional
permanent demand for such public services. Implementation of the CHSR project could
also introduce additional demand for emergency services if an accident were to occur
along the rail corridor within the City. This cumulative increase in development could
require additional staffing or expanded facilities for these public services and would
therefore be significant.

Implementing the SDP would add more residential and nearly as much commercial
development than would be allowed under the New General Plan. The New General Plan
would allow for the development of about 9,100 new housing units plus about 7.3 million
square feet of non-residential space. In comparison, implementing the SDP would allow
up to 12,000 new residential units and about one million square feet of commercial
space.

The New General Plan policies and implementation programs would mitigate the
severity of the allowable development to the ability the Fire and Police Departments to
meet the community needs. Policy PS-11.2 requires coordination with the Fire
Department and the Police Department to determine and meet community needs for fire
and police services. Program PS-39 also provides funding for the Fire Department and
the Police Department to maintain sufficient personnel and equipment to meet the
service requirements for new growth. Policy BE-22.2 also requires new development to pay its fair share of the cost of public facilities, services, and infrastructure. Given these and other related mitigation measures requiring infrastructure concurrency, the contribution of the development allowed by the New General Plan to the potentially significant cumulative impact would not be considerable.

### 6.2.13 Recreation, Parks, and Open Space

The area considered for cumulative recreation impacts is the plan area. In order to evaluate the cumulative impacts related to recreation and parks, the potential growth impacts related to the land development projects on the cumulative projects list were analyzed in conjunction with the anticipated growth from the New General Plan.

The development allowed by the New General Plan in combination with the cumulative projects could allow for substantial increases in population within the plan area. Approval of the cumulative projects could introduce additional dwelling units and commercial development, which could place additional demand on existing park and recreation facilities. Specifically, the SDP would result in a new residential population of approximately 30,000 individuals. The increased population generated by the anticipated development associated with the New General Plan in combination with the growth of the cumulative projects could place additional demand on existing park and recreational facilities, which could cause a physical deterioration to such facilities.

The SDP proposes to develop approximately 113 acres of developed parkland on the Cargill Property. Per the City’s parkland standard, the SDP would be required to provide 90 acres of parkland to achieve 3.0 acres of parkland per 1,000 residents. While the proposed provision of 113 acres would exceed the City’s parkland standard, the additional population generated by the SDP (approximately 30,000 individuals) could increase total demand on existing park and recreation facilities within the plan area, in exceedance of demands assumed in the City’s recent park planning efforts, including the Parks and Facilities Needs Assessment. This could result in accelerated deterioration of City park facilities. Therefore, the cumulative impact related to existing park and recreation facilities could be significant.

The New General Plan goals, policies, and implementation programs include the expansion of the amount of parkland in combination with improving the quality of existing parkland throughout the plan area. Through the application of these policies and implementation programs to improve and maintain the existing facilities, the development allowed by the New General Plan would not cause a physical deterioration to these park and recreation facilities. As such, the New General Plan would not have a considerable contribution to the potentially significant cumulative impact.

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6 This parkland calculation was based on an estimated population of 30,000 associated with the SDP (30,000 residents x 3 acres required parkland per 1000 residents = 90 acres of required parkland)
6.2.14 TRANSPORTATION

The area considered for cumulative transportation impact is the plan area. Potential impacts of the cumulative projects were examined in conjunction with the anticipated impacts from the New General Plan.

This scenario includes a list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the City. These projects include transportation projects, land development projects (residential and commercial), and planning projects. This scenario includes the same transportation and infrastructure improvements as in the proposed project, with the exception of any network improvement specifically proposed by cumulative development project of the SDP.

The cumulative projects would add up to 12,000 households and approximately one million square feet of commercial/office uses above development levels anticipated under the project. The citywide transportation demand model estimates that the trip generation for the cumulative scenario would be 26 percent higher in the AM peak hour and 22 percent higher in the PM peak hour as compared to the New General Plan.

The Caltrain Electrification and CHSR projects were evaluated qualitatively as part of this cumulative transportation analysis. CHSR estimated ridership, number of boardings, and associated automobile trips remain uncertain at the time of the preparation of this EIR. As for Caltrain Electrification, Caltrain estimates that electrification would result in approximately 300 daily additional boardings or de-boardings (“alightings”) in Redwood City in the year 2035, relative to estimated boardings and de-boardings there without electrification. Caltrain further estimates that electrification would result in regional improvements to mobility and reduced travel times, offsetting any incidental additional traffic at individual stations.\footnote{Final Programmatic EIR for Caltrain Electrification, Caltrain Joint Powers Board, March 2010.}

Compared to Existing (2008) Conditions and based on the previously identified impact criteria, cumulative development could result in significant impacts at the 13 roadway segments identified under the New General Plan (see Table 4.14-6 of Section 4.14, Transportation) in addition to the following ten roadway segments (for a total of 23 roadway segment impacts):

- Blomquist Street between Seaport Boulevard and Maple Street is projected to operate at LOS F in the AM and PM peak hours
- Brewster Avenue between Winslow Street and Veterans Boulevard is projected to operate at LOS F in the PM peak hour
- Broadway between Woodside Road and 5th Avenue is projected to operate at LOS E during the AM and PM peak hours
- Edgewood Road between Alameda de Las Pulgas and El Camino Real is projected to operate at LOS E in the PM peak hour
- El Camino Real between Whipple Avenue and northerly City limits is projected to operate at LOS E in the PM peak hour
Legend

- City Boundary
- Shore of Influence
- Downtown Precise Plan
- Major Roads
- Local Roads
- Railroad

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

Source: Fehr and Peers, 2010

1 inch equals 4,000 feet

Cumulative Conditions
AM Peak Hour Segment LOS Summary
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Hudson Street between Jefferson Avenue and Roosevelt Avenue is projected to operate at LOS E in the PM peak hour.

McGarvey Avenue between Fernside Street and Farm Hill Boulevard is projected to operate at LOS E in the AM peak hour.

Middlefield Road between Woodside Road and 5th Avenue is projected to operate at LOS E in the PM peak hour.

Seaport Boulevard between Blomquist Street and Chesapeake Drive is projected to operate at LOS F in the AM and PM peak hours.

Whipple Avenue between Veterans Boulevard and Industrial Way is projected to operate at LOS F in the PM peak hour.

Table 6-2 summarizes peak hour two-way volumes and corresponding LOS on roadway segments throughout the plan area under the cumulative scenario. Figures 6-2 and 6-3 show the cumulative roadway segment LOS during AM and PM peak hours, respectively.

The roadway impacts identified in Table 6-2 for the cumulative scenario are significant and cannot be mitigated to less than significant levels; and therefore remain significant and unavoidable. The magnitude of the segment impacts can be reduced by implementing the New General Plan policies and implementation programs outlined previously that aim to reduce the City’s vehicle trip generation and are intended to manage traffic by enhancing non-auto travel. Furthermore, Policy BE-25.6 of the New General Plan requires that the City’s transportation impact fee program be used to adequately fund transportation improvements needed to accommodate new developments.

To disperse traffic impacts to Seaport Boulevard, Woodside Road and the associated U.S. 101 interchanges, the SDP would need to include new roadways to provide new and direct connections to Marsh Road and Whipple Avenue and a potential U.S. 101 overpass. The exact alignments of these new and expanded facilities are not known and such roadways, with the exception of the U.S. 101 overpass, and are not included in this analysis. The potential impacts of any new or expanded roadways associated with the SDP or any of the other cumulative projects would be studied under separate environmental review.

Based on the information presented in Table 6-2, the SDP will impact roadway operations on Blomquist Street due to the roadway’s new connection to Whipple Avenue. The SDP will also substantially increase traffic volumes on East Bayshore Road south of Seaport Boulevard, Woodside Road between El Camino Real and Broadway, and Seaport Boulevard east of U.S. 101, since these are the main access roads to the Cargill Property. Further study of the SDP in a separate environmental review process may determine additional traffic-related impacts of the SDP.
### Table 6-2 New General Plan and Cumulative Roadway Segment Levels of Service Summary

<table>
<thead>
<tr>
<th>Roadway Segment</th>
<th>Roadway Type</th>
<th>Number of Lanes</th>
<th>Peak Hour</th>
<th>New General Plan Conditions</th>
<th>Cumulative Conditions</th>
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<tr>
<td></td>
<td></td>
<td></td>
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<td>Volume</td>
<td>Volume</td>
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<td></td>
<td></td>
<td>AM</td>
<td>LOS</td>
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<tr>
<td>Alameda De Las Pulgas (Woodside Road to Fernside Street)</td>
<td>Collector</td>
<td>2 AM PM</td>
<td>1,330</td>
<td>F</td>
<td>1,400 F</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>1,050</td>
<td>D</td>
<td>1,160 F</td>
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<tr>
<td>Alameda De Las Pulgas (Edgewood Road to Whipple Avenue)</td>
<td>Collector with TWLTL²</td>
<td>3 AM PM</td>
<td>1,730</td>
<td>F</td>
<td>1,950 F</td>
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<td></td>
<td></td>
<td></td>
<td>1,700</td>
<td>F</td>
<td>1,940 F</td>
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<td>Bay Road (Woodside Road to 5th Avenue)</td>
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<td>4 AM PM</td>
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### Roadway Segment Impact Analysis

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<th>Number of Lanes</th>
<th>Peak Hour</th>
<th>New General Plan Conditions</th>
<th>Cumulative Conditions</th>
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<td>Cumulative Conditions</td>
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## Summary of Potential Traffic Impacts Related to the Cumulative Scenario

In Downtown, the Cumulative Scenario results in unacceptable LOS operations on the roadway segment of Brewster Avenue between Winslow Street and Veterans Boulevard in addition to the roadway segment on El Camino Real that was identified under the New General Plan Scenario. The roadway impacts would continue to result in a significant and unavoidable impact with the elimination of LOS standards in the Downtown. The New General Plan’s contribution to the total cumulative impact is thus considerable.

The estimated roadway volumes under the cumulative scenario could result in unacceptable roadway operations with the implementation of Pedestrian Enhanced Design (PEDs) as specified in Program BE-52 of the New General Plan at the following locations:
Broadway between Beech Street and Chestnut Street is projected to operate at LOS E in the PM peak hour.

- Farm Hill Boulevard between Woodhill Drive and I-280 is projected to operate at LOS E in the AM peak hour with the three lane configuration and LOS F in the AM peak hour with the two lane configuration.

Therefore the cumulative scenario could result in significant impacts at the above listed roadway segments with the implementation of Program BE-52. The cumulative scenario could result in less than significant impacts at the remaining six roadway segments identified on Veterans Boulevard, Middlefield Road, Jefferson Avenue, Broadway, and Brewster Avenue in the New General Plan for PEDs. While the roadway impacts identified on Veterans Boulevard between Whipple Avenue and Brewster Avenue as part of Program BE-52 under the New General Plan could be mitigated to a less than significant level through implementation of Mitigation Measure 4.14-1 in Section 4.14, Transportation, the roadway impacts identified under the cumulative scenario cannot be mitigated to less than significant levels and therefore remain significant and unavoidable. The magnitude of the segment impacts can be reduced by implementing New General Plan policies and implementation programs outlined previously that aim to reduce the City’s vehicle trip generation and are intended to manage traffic by enhancing non-auto travel.

The cumulative traffic scenario would result in the construction of additional new roads not identified in the New General Plan. All new roadways would be constructed according to industry standards and would not increase hazards due to roadway design; and therefore would result in less than significant impacts.

Further, the SDP could potentially result in additional emergency vehicle access impacts if appropriate facilities are not provided with the construction of the projects. However, the potential impact could be mitigated to less than significant levels when transportation and environmental studies are conducted for this development, and significant traffic impacts and corresponding mitigations are identified.

The cumulative scenario does not change the policies and implementation programs outlined in the New General Plan; and therefore the implementation of the cumulative scenario will not be in conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., conflict with policies promoting bus turnouts, bicycle racks, etc.). The cumulative impact related to applicable transportation plans would be less than significant and no mitigation measures are required. Similarly, the cumulative scenario 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 continue to have a beneficial impact with respect to alternative transportation plans and facilities.

Compared to the New General Plan, vehicle miles traveled (VMT) under the cumulative scenario could increase by approximately 13 percent during the morning peak hour and 12 percent during the evening peak hour. However, VMT per household between the cumulative scenario and the New General Plan is projected to decrease by 14 and 15 percent during the morning and evening peak hours, respectively. Thus, the New
General Plan’s contribution to impacts related to VMT and consistency with AB 32 would not be considerable.

6.2.15 Utilities

The area considered for cumulative impacts related to public services is the plan area and any areas within adjacent communities served by the City’s public services or facilities.

Development allowed by the New General Plan in combination with the cumulative projects could result in an increased demand for water, wastewater, and solid waste services. The SDP could directly introduce additional development to the plan area, thus introducing additional population growth. This increased population growth beyond the anticipated growth associated with the New General Plan could add to existing demands on public utility services.

Water Supply

Development allowed by the New General Plan in combination with the cumulative projects could generate an increase in future demand for water supply that is not anticipated to be fully met by the City’s existing and future water supplies.

A preliminary water demand and supply report has been prepared for the SDP. Two different approaches were taken when estimating the water demand associated with development of the SDP. The first approach assumed the incorporation of highly efficient water fixtures, precise installation, and ongoing regulatory oversight to sustain the initial fixture efficiencies. Under this approach, a total potable water demand of 1,080 acre feet per year (afy) is assumed. The second approach estimated a water demand based on the land uses, number of units, and square footage values of the SDP. Under this approach, a total potable water demand 1,815 afy is assumed. As the second approach provides a greater, and thus more conservative, estimate of potable water demand for the SDP, a total water demand of 1,815 afy per year is assumed for the SDP for the purposes of this analysis. Taken in combination with the potable water demand associated with the development allowed by the New General Plan at buildout (13,828 afy), the total cumulative water demand is estimated at 15,643 afy. As stated in Section 4.16, Utilities, the City’s current Supply Assurance from the San Francisco Public Utilities Commission (SFPUC) is 12,243 afy. Thus, the cumulative development would exceed the existing water Supply Assurance by approximately 3,400 afy.

The preliminary water demand and supply report for the SDP identifies potential water supply sources, such as recycled water and gray water, rainwater, local and regional offsets, and surface water transfers. While the viability of the use of groundwater was initially evaluated, groundwater treatments would be required and substantial future studies would be required to establish a reliable groundwater yield and the impacts of groundwater pumping. Thus, the SDP does not intend to utilize groundwater sources.

The Caltrain Electrification and CSHR project would have also the potential to induce additional development within the plan area, depending on the anticipated ridership and selection of a CHSR station site option. As the anticipated development associated with
these projects is uncertain at this time, a quantified water demand rate cannot be determined.

Overall, cumulative impacts related to water demand and existing supplies would be significant, as cumulative development would exceed existing available supplies.

While the City is currently working on updating the 2005 Urban Water Management Plan (UWMP) to address growth under the New General Plan (assuming adoption), an assured water supply for the full development allowed by the New General Plan has not been determined. As shown in Section 4.15, Utilities, growth associated with the New General Plan would be projected to exceed assured water supplies by the year 2020. The New General Plan also includes several policies and implementation programs addressing water supply, specifically to track new development and linking the allowable amount of new development to the City’s assured water supply. Mitigation Measure 4.11-1 in Section 4.11, Population and Housing, would also require the City to revise New General Plan Program BE-22 to ensure that this tracking results in firm limits on the issuance of new building permits if new development would result in an exceedance of the City’s potable water Supply Assurance. Despite the policies and programs that mitigate the impact, the New General Plan would have a significant and unavoidable impact regarding water supply, as the total potable water demand would not be met by the SFPUC Supply Assurance. As such, the project would have a considerable contribution to the cumulative impact and the cumulative impact would remain significant and unavoidable.

Development allowed by the New General Plan in combination with the cumulative projects could, however, require or result in the construction of new City water facilities or the expansion of existing facilities. While any new or expanded water facilities would be subject to separate CEQA review, the potential construction of these facilities could result in a potentially significant cumulative impact. To ensure that both existing and future water system infrastructure needs are met, New General Plan Program BE-134 calls for the preparation of a Water Master Plan that would include recommendations to ensure the long term viability of the system in light of capacity changes. As the Water Master Plan would identify the need for new or upgraded water facilities and that such construction would undergo separate environmental review, the New General Plan would have a less than significant impact relative to water distribution infrastructure and would not have a considerable contribution to the potentially significant cumulative impact.

Wastewater
Cumulative development could establish additional demands on wastewater facilities in the plan area. The allowable development by the New General Plan in combination with the cumulative development would have the potential to increase demands on the existing sewer system and affect existing wastewater flow capacity. For this analysis, it is assumed that only the SDP would contribute to increased wastewater flows. Caltrain electrification would have no direct impact on wastewater generation in the plan area. A CHSR station in Redwood City could incrementally contribute to wastewater flows, but given substantial uncertainties about the ultimate location of this station on the
Peninsula, the timing of its construction, and other factors, no quantitative review of wastewater was performed for this analysis.

The total wastewater generation associated with the SDP is calculated to be 95 percent of the total water demand. It is anticipated that the SDP would generate a total potable water demand of 2 million gallons per day (MGD). This water demand rate includes potable and recycled water. Thus, the total wastewater generation associated with the SDP would be 1.9 MGD, or 95 percent of 2 MGD. Taken in combination with the wastewater flow associated with the New General Plan (8.17 MGD), the total cumulative wastewater flow rate would be approximately 10.07 MGD. As the City has been allocated about 13.8 MGD of average dry weather capacity at the SBSA, the cumulative wastewater flow rate of 10.07 MGD would be within the existing capacity. The City’s existing capacity would also allow for some additional flow beyond the New General Plan allowable development and the SDP. Thus, cumulative impacts to wastewater generation and treatment capacity would be less than significant.

Development allowed by the New General Plan in combination with the cumulative projects could, however, require or result in the construction of new City wastewater conveyance facilities or the expansion of existing facilities. While any new or expanded wastewater facilities would be subject to separate CEQA review, the potential construction of these facilities could result in a potentially significant cumulative impact. The New General Plan includes several policies and implementation programs that would result in the continuation of ongoing monitoring, maintenance, and upgrades to the City’s wastewater collection system. With adherence to these policies and implementation programs, the New General Plan would reduce potential impacts to construction and/or repair of wastewater collection facilities to a less than significant level and would not have a considerable contribution to the potentially significant cumulative impact.

With regard to the Regional Water Quality Control Board’s (RWQCB) wastewater treatment requirements, adoption of the New General Plan in combination with the cumulative projects could result in the South Bayside System Authority’s (SBSA) facility being unable to meet such requirements. As discussed in Section 4.15, Utilities, SBSA set forth a 10-year Capital Improvement Program to assure that the facility is able to meet the RWQCB’s requirements for discharge into the San Francisco Bay. However, this Capital Improvement Program did not assume an increment of new growth associated with the SDP. Therefore, the total cumulative impact is potentially significant.

SBSA’s aforementioned Capital Improvement Plan was prepared in advance of the New General Plan but acknowledged that the City was updating its general plan. SBSA’s Capital Improvement Program will assure that the facility is able to continue to meet or exceed the wastewater treatment requirements established for it by the RWQCB for discharge into the San Francisco Bay. Thus the contribution of additional wastewater associated with the allowable New General Plan development would not be expected to have a considerable contribution to this potentially significant cumulative impact.

\[ 1.9 \text{ MGD} + 8.17 \text{ MGD} = 10.07 \text{ MGD} \]
Solid Waste

Development allowed by the New General Plan, in combination with the cumulative projects could result in increased waste generation that could have an effect on the remaining capacity of the applicable landfill facilities. Development of the SDP would result in additional solid waste generation beyond what was assumed for the New General Plan. The other cumulative projects were not considered. Caltrain electrification would not result in any long term increase in solid waste generation as it would not increase the number of households or businesses generating solid waste. If a CHSR station is located in Redwood City, there is the potential for such a station to generate an increased amount of waste owing to increased ridership and usage of the station area. However, the timing, location, and extent of any CHSR station is unknown and thus estimating any associated increase in solid waste generation would be speculative.

Utilizing the same solid waste generation rates as provided in Table 4.15-7 of Section 4.15, Utilities, it is anticipated that the SDP would result in a solid waste generation rate of 109,200 pounds of solid waste per year.\(^9\) Taken in combination with the anticipated solid waste generated by the allowable development of the New General Plan (224,014,062 pounds per year), cumulative solid waste generation is estimated to be approximately 224,123,262 pounds per year, or 614,036 pounds per day. As the existing solid waste generation for the City is 179,950,352 pounds per year, the cumulative development would result in an increase of solid waste generation of about 44,172,910 pounds per year, or 121,021 pounds per day. This incremental increase of solid waste generation associated with the cumulative development would represent about 1 percent of the maximum daily throughput accepted at the three largest landfills receiving waste from the plan area.

As such, the cumulative impact related to solid waste is anticipated to be less than significant.

6.2.16 Greenhouse Gas Emissions

The area of cumulative analysis for GHG emissions is the San Francisco Air Basin, which includes the plan area and communities within the greater San Francisco Bay Area.

Greenhouse Gas Emissions

The evaluation of GHG emission impacts and global climate change are inherently cumulative in nature. Global climate change and GHG emissions are considered in a broad, cumulative sense and the analysis of GHG emissions associated with the New General Plan incorporates the cumulative context. For a discussion of the cumulative

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\(^9\) A residential solid waste generation rate of 8.6 pounds per dwelling unit and a commercial solid waste generation rate of 0.006 pounds per square foot were assumed. (12,000 dwelling units x 8.6 pounds per dwelling unit per year = 103,200 pounds of residential solid waste per year; 1,000,000 square feet of commercial space x 0.006 pounds of solid waste per year = 6,000 pounds of commercial solid waste per year; 103,200 pounds of solid waste per year + 6,000 pounds of solid waste per year = 109,200 pounds of solid waste per year.)
effects related to GHG emissions, refer to Section 4.16, Greenhouse Gas Emissions.

Overall, development allowed by the New General Plan in combination with the cumulative projects could represent a significant cumulative impact related to GHG emissions, as the new development would introduce new sources of GHG emissions. The anticipated vehicle trip generation associated with this development in addition to the operation of the structures (i.e., heating and cooling) could introduce additional GHG emissions.

Implementation of the Caltrain Electrification project could result in a reduction in train emissions of up to 90 percent, which could include a reduction in associated GHG emissions. It is also anticipated that the CHSR could result in a decrease in GHG emissions, as vehicle trips could be replaced by the CHSR project. However, the Caltrain Electrification and CHSR project emissions would only represent a limited amount of the total GHG emissions within the plan area. Thus, cumulative impacts related to GHG emissions are potentially significant.

The New General Plan incorporates multiple policies and implementation programs to reduce GHG emissions within the plan area. These policies and implementation programs include, but are not limited to, Policy PS-5.1, which requires the City to consult with state agencies and ABAG to utilize incentives to facilitate infill and transit-oriented development, and Program PS-13, which includes the adoption of a GHG emission reduction target through a City Council resolution or other action. The targets would support the state’s efforts to achieve emission reductions mandated under AB 32, SB 375, and Executive Order S-3-05. Program PS-15 requires the City to complete municipal and community GHG inventories at least every five years, which would allow the City to track its progress towards GHG emission reductions per state law. Further, Policies BE-1.6, BE-2.7, BE-13.2, BE-18.9, BE-25.5, and BE-26.14 and Programs BE-18, BE-27, and BE-37 promote walkable, interconnected neighborhoods and promote mixed-use pedestrian-oriented developments to reduce dependency on the automobile, and thus vehicle related GHG emissions. Policy PS-4.1 also implements the City’s Green Building Ordinance, while Program PS-5 requires new buildings to meet the Green Building Ordinance standards.

As detailed in Section 4.16, Greenhouse Gas Emissions, CO2 emissions associated with the New General Plan would be approximately 3.77 metric tons per year per capita in 2020, dropping to 3.45 metric tons per year per capita in 2030. Even allowing for a conversion to CO2e, the year 2020 estimate is below the threshold set forth in the Draft BAAQMD CEQA Guidelines (6.6 metric tons per year per capita of CO2e). As such, the development allowed by the New General Plan is not expected to make a considerable contribution to this potentially significant cumulative impact.

Sea Level Rise

The development allowed by the New General Plan in combination with the cumulative development would have the potential to introduce a substantial population to an area at an elevated risk of future sea level rise. The cumulative development, particularly the SDP, would introduce an additional population of approximately 30,000 individuals and
structures (i.e., up to 12,000 residential units and approximately one million square feet of commercial/office space) within an area vulnerable to future sea level rise for years 2050 and 2100. As such, the total cumulative impact related to sea level rise would be significant.

The precise timing and extent of any increase in the level of the San Francisco Bay cannot be predicted with certainty. Acknowledging the potentially significant impacts associated with rising sea level, the New General Plan would establish various policies and implementation programs designed to mitigate these impacts. Given the uncertainty regarding sea level rise and the effectiveness of possible mitigation policies and measures, however, the impact of sea level rise relating to implementation of the New General Plan is considered potentially significant. Accordingly, the New General Plan could contribute considerably to the potentially significant cumulative impact relating to sea level rise.

6.2.17 Energy

The area considered for cumulative energy impacts is the plan area and adjacent communities served by the same electricity and natural gas providers, including the Pacific Gas & Electric Company (PG&E).

Energy Use and Demand

Development allowed by the New General Plan in combination with the cumulative projects could result in an increase in population, employment, and housing, which could result in an incremental increase in electricity and natural gas use. Construction and operation of the SDP, in addition to the CHSR and Caltrain Electrification projects, could result in a substantial increase in the consumption of nonrenewable energy resources, including natural gas and gasoline products, and could also contribute to additional demands for electricity and natural gas from PG&E. As for the SDP, the additional 12,000 residential units and approximately one million square feet of commercial/office space would require additional energy use beyond what was estimated for the New General Plan and the existing PG&E energy load forecasts. While PG&E updates its load forecasts to ensure the reliability of electricity and natural gas, the project in combination with the cumulative development could result in the need for additional conveyance facilities to accommodate the incremental increase in energy demand. Thus, cumulative development would result in a potentially significant cumulative impact regarding energy use.

The New General Plan includes multiple policies and implementation programs geared toward reducing energy use and promoting the implementation of alternative energy. Specifically, Policies BE-24.8, BE-24.12, and H-1.6 and Programs BE-131, BE-133, BE-139, and BE-144 promote the use of solar, wind energy generation systems, promote the installation of energy saving facilities in new and existing homes, and encourage coordination with energy providers (i.e., PG&E) to promote renewable and low-emission power sources. As such, the development allowed by the New General Plan would have a less than significant impact to energy use and demand and the contribution to the potentially significant cumulative impact would not be considerable.