PUBLIC DRAFT
ENVIRONMENTAL IMPACT REPORT

FOR THE

FOSTER CITY GENERAL PLAN UPDATE AND CLIMATE ACTION PLAN

SCH# 2012072003

JULY 2015

Prepared for:

City of Foster City
610 Foster City Boulevard
Foster City, CA 94404

Prepared by:

De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762
www.denovoplanning.com

De Novo Planning Group

A Land Use Planning, Design, and Environmental Firm

PUBLIC DRAFT
ENVIRONMENTAL IMPACT REPORT

FOR THE

FOSTER CITY GENERAL PLAN UPDATE AND CLIMATE ACTION PLAN

SCH# 2012072003

JULY 2015

Prepared for:

City of Foster City
610 Foster City Boulevard
Foster City, CA 94404

Prepared by:

De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762
www.denovoplanning.com

DRAFT EIR

Chapter **Page Number**

Executive Summary ES-1

1.0 Introduction 1.0-1

1.1 Introduction 1.0-1

1.2 Purpose of the EIR 1.0-4

1.3 Type of EIR 1.0-5

1.4 Intended Uses of the EIR 1.0-6

1.5 Known Responsible and Trustee Agencies 1.0-7

1.6 Environmental Review Process 1.0-8

1.7 Organization and Scope 1.0-10

1.8 Comments Received on the Notice of Preparation 1.0-11

2.0 Project Description 2.0-1

2.1 Background and Overview 2.0-1

2.2 Project Location 2.0-13

2.3 Project Characteristics 2.0-15

2.4 Project Objectives 2.0-20

2.5 Uses of the EIR and Required Agency Approvals 2.0-20

3.0 Environmental Analysis 3.0-1

3.0.1 Format of the Environmental Analysis 3.0-1

3.0.2 General Plan Buildout Impact Analysis 3.0-2

3.1 Air Quality 3.1-1

3.1.1 Environmental Setting 3.1-1

3.1.2 Regulatory Setting 3.1-12

3.1.3 Impacts and Mitigation Measures 3.1-21

3.2 Biological Resources 3.2-1

3.2.1 Environmental Setting 3.2-3

3.2.2 Regulatory Setting 3.2-9

3.2.3 Impacts and Mitigation Measures 3.2-15

3.3 Cultural Resources 3.3-1
3.3.1 Environmental Setting 3.3-1
3.3.2 Regulatory Setting 3.3-5
3.3.3 Impacts and Mitigation Measures 3.3-11
3.4 Geology and Soils 3.4-1
3.4.1 Environmental Setting 3.4-1
3.4.2 Regulatory Setting 3.4-10
3.4.3 Impacts and Mitigation Measures 3.4-15
3.5 Greenhouse Gases, Climate Change and Energy 3.5-1
3.5.1 Environmental Setting 3.5-1
3.5.2 Regulatory Setting 3.5-20
3.5.3 Impacts and Mitigation Measures 3.5-27
3.6 Hazards 3.6-1
3.6.1 Environmental Setting 3.6-1
3.6.2 Regulatory Setting 3.6-7
3.6.3 Impacts and Mitigation Measures 3.6-19
3.7 Hydrology and Water Quality 3.7-1
3.7.1 Environmental Setting 3.7-1
3.7.2 Regulatory Setting 3.7-8
3.7.3 Impacts and Mitigation Measures 3.7-18
3.8 Land Use and Population 3.8-1
3.8.1 Environmental Setting 3.8-1
3.8.2 Regulatory Setting 3.8-5
3.8.3 Impacts and Mitigation Measures 3.8-12
3.9 Noise and Vibration 3.9-1
3.9.1 Environmental Setting 3.9-1
3.9.2 Regulatory Setting 3.9-12
3.9.3 Impacts and Mitigation Measures 3.9-20
3.10 Public Services and Utilities 3.10-1
3.10.1 Existing Conditions 3.10-1
3.10.2 Regulatory Setting 3.10-16

3.10.3 Impacts and Mitigation Measures 3.10-32

3.11 Transportation and Circulation 3.11-1

3.11.1 Transportation Setting 3.11-1

3.11.2 Study Locations and Analysis Methodology 3.11-7

3.11.3 Existing Roadway Conditions 3.11-13

3.11.4 Regulatory Setting 3.11-17

3.11.5 Impacts and Mitigation Measures 3.11-23

3.12 Visual and Aesthetic Resources 3.12-1

3.12.1 Environmental Setting 3.12-3

3.12.2 Regulatory Setting 3.12-5

3.12.3 Impacts and Mitigation Measures 3.12-10

4.0 Other CEQA-Required Topics 4.0-1

4.1 Cumulative Impacts 4.0-1

4.2 Growth-Inducing Effects 4.0-10

4.3 Significant Irreversible Effects 4.0-12

4.4 Significant and Unavoidable Impacts 4.0-13

5.0 Alternatives 5.0-1

5.1 CEQA Requirements 5.0-1

5.2 Alternatives Considered in this EIR 5.0-2

5.3 Environmental Analysis 5.0-3

Table **Page Number**

Table ES-1: Comparison of Alternatives to the Proposed Project ES-3

Table ES-2: Project Impacts and Proposed Mitigation Measures ES-5

Table 2-1: General Plan Land Use Categories 2.0-4

Table 2-2: General Plan Land Uses (Acreages) 2.0-14

Table 3.0-1: Foster City General Plan – Potential Development 3.0-3

Table 3.0-2: San Mateo Projects 3.0-5

Table 3.0-3: Population Trends and Forecasts 3.0-6

Table 3.0-4 Household Trends 3.0-6

Table 3.0-5 Employment Trends 3.0-7

Table 3.1-1: Common Sources of Health Effects for Criteria Air Pollutants 3.1-7

Table 3.1-2: Ambient Air Quality Standards and Designations 3.1-9

Table 3.2-1: Special Status Species Present or Potentially Present in Foster City 3.2-7
Table 3.4-1: Richter Magnitude and Effects 3.4-3
Table 3.4-2: Modified Mercalli Intensities and Effects 3.4-4
Table 3.4-3: Significant Earthquakes in the Region 3.4-6
Table 3.5-1: Sectors and Emissions in the GHG Inventory 3.5-8
Table 3.5-2: Greenhouse Gases 3.5-10
Table 3.5-3: 2005 Community Emissions by Sector 3.5-11
Table 3.5-4: Residential and Commercial usage of electricity and natural gas, 2005 ..... 3.5-13
Table 3.5-5: Assumed Waste Composition and Emissions 3.5-16
Table 3.5-6: 2005 Foster City Municipal Operations Emissions by Sector 3.5-17
Table 3.5-7: Detailed descriptions of 2005 Government Operations Sectors and Emissions 3.5-19
Table 3.5-8: Foster City "Business as Usual" Emissions Forecast for 2020, 2025, and 2050 ... 3.5-31
Table 3.6-1: EPA Identified Facilities with Released or Potential to Release Hazardous Mat ... 3.6-2
Table 3.6-2: CIWMB Closed Facilities/Sites 3.6-4
Table 3.7-1: State of California Watershed Hierarchy Naming Convention 3.7-1
Table 3.8-1: General Plan Land Uses (Acreages) 3.8-2
Table 3.8-2: Demographic Trends 3.8-4
Table 3.8-3: General Plan Land Use Categories 3.8-8
Table 3.8-4: Population Trends 3.8-17
Table 3.8-5: Household Trends 3.8-18
Table 3.9-1: Typical Noise Levels 3.9-3
Table 3.9-2: Predicted Existing Traffic Noise Levels 3.9-5
Table 3.9-3: Typical Stationary Source Noise Levels 3.9-9
Table 3.9-4: Existing Continuous 24-hour Ambient Noise Monitoring Results 3.9-11
Table 3.9-5: Existing Short-Term Community Noise Monitoring Results 3.9-11
Table 3.9-6: Groundborne Vibration Impact Criteria 3.9-14
Table 3.9-7: Significance of Changes in Noise Exposure 3.9-21
Table 3.9-8: Effects of Vibration on People and Buildings 3.9-22
Table 3.9-9: Existing Traffic Noise Levels vs. Proposed Project (General Plan Buildout) Traffic Noise Levels 3.9-24
Table 3.9-10: Construction Equipment Noise 3.9-27
Table 3.9-11: Vibration Sources Levels for Construction Equipment 3.9-31
Table 3.10-1: 2011 Fire Department Call Volume Information 3.10-2
Table 3.10-2: Crimes by Category 3.10-3
Table 3.10-3: Grades 1-8 Public School Enrollment 3.10-4

Table 3.10-4: Grades 9-12 Public School Enrollment 3.10-5
Table 3.10-5: Solid Waste Generation Rates 3.10-6
Table 3.10-6: 2011 Solid Waste Stream Comparison (SBWMA Service Area) 3.10-7
Table 3.10-7: EMID Service Area Current and Projected Population 3.10-9
Table 3.10-8: EMID Current and Future Water Supply and Demand (Acre Feet/Year) 3.10-9
Table 3.10-9: Projected EMID Supply Assurance for a Single and Multiple Dry Years 3.10-10
Table 3.10-10: Parkland 3.10-12
Table 3.10-11: EMID Water Supply and Demand Projections (AFY) 3.10-39
Table 3.11-1: Existing Transit Service 3.11-2
Table 3.11-2: Roadway Volumes 3.11-5
Table 3.11-3: Foster City General Plan Assumptions 3.11-8
Table 3.11-4: Signalized Intersection LOS Criteria 3.11-11
Table 3.11-5: Unsignalized Intersection LOS Criteria 3.11-12
Table 3.11-6: Freeway Segment LOS Criteria 3.11-13
Table 3.11-7: Existing Intersection LOS 3.11-14
Table 3.11-8: Existing Freeway Segment LOS 3.11-16
Table 3.11-9: Locally-Acceptable LOS Criteria 3.11-23
Table 3.11-10: Foster City General Plan- Proposed Development 3.11-24
Table 3.11-11: San Mateo Projects 3.11-25
Table 3.11-12: Trip Generation Summary 3.11-26
Table 3.11-13: Cumulative Roadway System Improvements 3.11-28
Table 3.11-14: Cumulative Intersection LOS Summary- Updated General Plan 3.11-29
Table 3.11-15: Cumulative Freeway Segment LOS 3.11-31
Table 3.11-16: VMT Analysis Results 3.11-33
Table 5-1: Comparison of Alternatives and Proposed Project 5.0-9

Figures

Note: Figures are located at the end of the chapters.

Figure 2-1 Regional Location
Figure 2-2 Project Location/Study Area
Figure 2-3 Proposed General Plan Land Use Map
Figure 3.2-1 Major Biological Features
Figure 3.2-2 Land Cover Map
Figure 3.2-3 Special-Status Species 1-Mile Radius

Figure 3.4-1 Faults and Alquist-Priolo Zones
Figure 3.4-2 Liquefaction Susceptibility
Figure 3.4-3 Landslide Potential
Figure 3.6-1 San Carlos Airport
Figure 3.6-2 San Francisco Airport
Figure 3.7-1 Watersheds
Figure 3.7-2 Flood Hazards Map
Figure 3.7-3 Dam Inundation Areas
Figure 3.7-4 Tsunami Inundation Map for Emergency Planning
Figure 3.7-5 Sea Level Rise
Figure 3.9-1 Noise Measurement Locations
Figure 3.9-2 SFO Noise Contours
Figure 3.9-3 San Carlos Airport Noise Contours
Figure 3.11-1 Transit Routes
Figure 3.11-2 Bicycle Facilities
Figure 3.11-3 Existing Roadway Network
Figure 3.11-4 Study Intersections and Freeway Segments
Figure 3.11-5A Peak Hour Traffic Volumes, Traffic Control, and Lane Configurations Existing Conditions
Figure 3.11-5B Peak Hour Traffic Volumes, Traffic Control, and Lane Configurations Existing Conditions
Figure 3.11-6 Cumulative Development Locations
Figure 3.11-7 Trip Distribution
Figure 3.11-8A Peak Hour Traffic Volumes, Traffic Control, and Lane Configurations Trip Assignment
Figure 3.11-8B Peak Hour Traffic Volumes, Traffic Control, and Lane Configurations Trip Assignment
Figure 3.11-9 Cumulative Roadway Improvements
Figure 3.11-10A Peak Hour Traffic Volumes, Traffic Control, and Lane Configurations Cumulative Plus General Plan Buildout Conditions
Figure 3.11-10B Peak Hour Traffic Volumes, Traffic Control, and Lane Configurations Cumulative Plus General Plan Buildout Conditions

Appendices

Appendix A-1 – Notice of Preparation and Comments Received Regarding the Notice of Preparation

Appendix A-2 – Recirculated Notice of Preparation and Comments Received Regarding the Recirculated Notice of Preparation

Appendix B – Existing Traffic: Traffic Noise Model Data

Appendix C – Continuous Noise Monitoring Data

Appendix D – Cumulative Conditions: Traffic Noise Model Data

Appendix E – Traffic Counts

Appendix F – Isolated Intersection Analysis Results

Appendix G – VISSIM Calibration, Validation, and Intersection Analysis Results

Appendix H – Freeway Analysis Results

Appendix I – Trip Generation Calculations

Appendix J – GHG reduction measures from Climate Action Plan

This page left intentionally blank

PURPOSE

The City of Foster City (Foster City or City), as lead agency, determined that the Land Use and Circulation Element Update, Land Use Map Update, and Climate Action Plan (proposed project) is a "project" within the definition of the California Environmental Quality Act (CEQA), and requires the preparation of an Environmental Impact Report (EIR). The proposed project includes a text update to the Land Use and Circulation Element of the General Plan, an amendment to the Land Use Map, and a comprehensive Climate Action Plan (CAP). This Draft EIR has been prepared to evaluate the environmental impacts associated with implementation of the project. This EIR is designed to fully inform decision-makers in the City, other responsible and trustee agencies, and the general public of the potential environmental consequences of approval and implementation of the proposed project.

The proposed amendment to the Land Use and Circulation Element includes minor revisions to many existing goals, policies, and associated text from the element, as well as new goals, policies, and actions to address sustainability, preservation of views, live/work housing units, encourage new development and redevelopment that meets the community's needs, encourage mixed use developments, and ensure that the City's transportation and circulation system meets the needs of the community and provides complete streets. The update also reflects current codes, trends, design guidelines, master plans, and programs that have been initiated or adopted by the City since the last update. The project would amend the Land Use Map to designate Bridgeview Park and Shorebird Park for parks uses (see Figure 2-3). The Land Use and Circulation Element would also be updated to reflect existing conditions and to include improvements necessary to accommodate currently proposed, approved, and anticipated development (see Chapter 3.11, Transportation and Circulation). The proposed Climate Action Plan would provide a set of implementation measures and programs to address climate change through reducing greenhouse gas emissions associated with vehicle trips, land use, energy consumption, solid waste, and City operations.

A detailed description of the proposed project, including the components and characteristics of the project, project objectives, and how the EIR will be used, is provided in Chapter 2.0, Project Description.

AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

This Draft EIR addresses environmental impacts associated with the project that are known to the City, raised during the Notice of Preparation (NOP) scoping process and the Recirculated NOP scoping process, or were raised during preparation of the Draft EIR. This Draft EIR addresses the potentially significant impacts associated with air quality, biological resources, cultural resources, geology/soils, greenhouse gases/climate change, hazards, hydrology/water quality, land use planning/population, noise, public services/utilities, transportation/circulation, visual resources/aesthetics, and cumulative impacts. During the initial NOP process, a comment letter was received from the California Department of Transportation addressing transportation issues,

including State Route 92. During the Recirculated NOP process three comment letters were received, including: a letter from the San Francisco Bay Conservation and Development Commission addressing climate change, scenic views, shoreline public access, recreation, biological resources, and permitting requirements; a letter from the California State Lands Commission addressing mitigation requirements, biological resources, climate change, and cultural resources; and a letter from Caltrans addressing sea level rise, and stating that the Caltrans letter submitted during the original NOP process should still be considered during preparation of the EIR.

The comments are summarized in Chapter 1.0, Introduction, and are also provided in Appendices A-1 and A-2.

SIGNIFICANT IMPACTS

As shown in Table ES-2 below, the proposed project would result in the following significant and unavoidable impacts:

- Impact 3.7-7: project implementation may expose people or structures to a significant risk of loss, injury, or death involving flooding as a result of sea level rise, which is considered a **significant and unavoidable** impact.
- Impact 3.9-4: Construction Noise (significant and unavoidable)

The following potentially significant impacts would reduced to a less than significant level following implementation of mitigation measures:

- Impact 3.1-2: Project implementation may cause health risks associated with toxic air contaminants (less than significant with mitigation)
- Impact 3.3-4: Project implementation could result in damage to or the destruction of historical buildings (less than significant with mitigation)
- Impact 3.9-5: Construction Vibration (less than significant with mitigation)

ALTERNATIVES TO THE PROPOSED PROJECT

The CEQA Guidelines require an EIR to describe a reasonable range of alternatives to the project or to the location of the project which would reduce or avoid significant impacts, and which could feasibly accomplish the basic objectives of the proposed project. The alternatives analyzed in this EIR include the following:

- Alternative 1: No Project Alternative. Under Alternative 1, the City would not adopt the Land Use and Circulation Element or CAP. The General Plan would continue to be implemented and no changes to the General Plan, zoning, or City policies or programs associated with the project would occur.

- Alternative 2: Full General Plan Update Project Alternative. Alternative 2 would include a comprehensive update of all General Plan elements, rather than just the Land Use and

Circulation Element. The CAP would also be adopted under this alternative. It is assumed that the proposed Land Use Map would remain unchanged under this alternative.

The following alternatives were considered, but not selected for further analysis for the reasons described below:

- Reduced Project Alternative – A project alternative consisting of solely the Land Use and Circulation Element or Climate Action Plan (CAP) was considered, but rejected as no significant environmental impacts would be avoided by limiting the scope of the project in this manner. Similarly, no reduction to the policy framework set forth in the Land Use and Circulation Element or to the measures included in the CAP was considered as no significant environmental impacts would be avoided by such an alternative.

- Alternative Location – A project alternative consisting of an alternative project location was not considered, as the Land Use and Circulation Element and CAP are applied on a city-wide basis.

As summarized in Table 5-1 below, Alternative 2 (Comprehensive General Plan Update) is the environmentally superior alternative because it provides the greatest reduction of potential impacts in comparison to the proposed project and the other alternatives. Alternative 1 (No Project) is worse than the project.

TABLE ES-1: COMPARISON OF ALTERNATIVES TO THE PROPOSED PROJECT

ENVIRONMENTAL ISSUE	PROPOSED PROJECT	ALTERNATIVE 1 NO PROJECT	ALTERNATIVE 2 COMPREHENSIVE GENERAL PLAN UPDATE
Air Quality	Same	Worse	Better
Biological Resources	Same	Same	Better
Cultural Resources	Same	Same	Better
Geology & Soils	Same	Same	Better
Greenhouse Gases, Climate Change, and Energy	Same	Worse	Better
Hazards	Same	Same	Better
Hydrology & Water Quality	Same	Same	Better
Sea Level Rise	Same	Worse	Better
Land Use and Population	Same	Worse	Similar
Public Services and Utilities	Same	Worse	Better
Transportation	Same	Worse	Better
Aesthetics	Same	Same	Better
Overall	**No Change**	**Worse**	**Better**

SUMMARY OF IMPACTS AND MITIGATION MEASURES

In accordance with the CEQA Guidelines, this EIR focuses on the significant effects on the environment. The CEQA Guidelines defines a significant effect as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project. A less than significant effect is one in which there is no long or short-term significant adverse change in environmental conditions. Some impacts are reduced to a less than significant level with the implementation of mitigation measures and/or compliance with regulations. The definition of "beneficial" effect is not defined in the CEQA Guidelines, but for purposes of this EIR a beneficial effect is one in which an environmental condition is enhanced or improved.

The environmental impacts of the proposed project, the impact level of significance prior to mitigation, the proposed mitigation measures to mitigate an impact, and the impact level of significance after mitigation are summarized in Table ES-2.

TABLE ES-2: PROJECT IMPACTS AND PROPOSED MITIGATION MEASURES

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
AIR QUALITY			
Impact 3.1-1: Project implementation could conflict with or obstruct implementation of the applicable air quality plan	LS	*None Required*	LS
Impact 3.1-2: Project implementation may cause health risks associated with toxic air contaminants	PS	***Mitigation Measure 3.1-2:*** *Update the Foster City General Plan Conservation Element to include the following policies and action items. The following policies and action items shall apply during environmental review of individual projects effective immediately.* *<u>Policy:</u> Minimize exposure of sensitive receptors to concentrations of air pollutant emissions and toxic air contaminants.* *<u>Policy:</u> Require discretionary projects involving sensitive receptors such as children, the elderly, or people with illnesses that are proposed within 500 feet of the State Route 92 corridor to include an analysis of mobile source toxic air contaminant health risks. The analysis, if necessary, shall identify feasible mitigation measures to reduce health risks to acceptable levels.* *<u>Action:</u> Review all new industrial and commercial development projects for potential air quality impacts to residences and other sensitive receptors. The City shall ensure that mitigation measures and best management practices are implemented to reduce significant emissions of criteria pollutants.* *<u>Action:</u> Review development, infrastructure, and planning projects for consistency with BAAQMD requirements during the CEQA review process. Require project applicants to prepare air quality analyses to address BAAQMD and General Plan requirements, which include analysis and identification of:* *1. Air pollutant emissions associated with the project during construction, project operation, and cumulative conditions.*	LS

CC – cumulatively considerable *LCC – less than cumulatively considerable* *LS – less than significant*

PS – potentially significant *SU – significant and unavoidable*

Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
		2. Potential exposure of sensitive receptors to toxic air contaminants. *3. Significant air quality impacts associated with the project for construction, project operation, and cumulative conditions.* 4. *Mitigation measures to reduce significant impacts to less than significant or the maximum extent feasible where impacts cannot be mitigated to less than significant.*	
Impact 3.1-3: General Plan implementation would not create objectionable odors	LS	*None Required*	LS
Impact 3.1-4: The proposed project would not conflict with Regional Plans	LS	*None Required*	LS
Biological Resources			
Impact 3.2-1: Project implementation could result in direct or indirect effects on candidate, sensitive, or special-status species	LS	*None Required*	LS
Impact 3.2-2: Project implementation may result in effects on riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service	LS	*None Required*	LS
Impact 3.2-3: Project implementation may result in effects on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal,	LS	*None Required*	LS

CC – cumulatively considerable *LCC – less than cumulatively considerable* *LS – less than significant*

PS – potentially significant *B – beneficial impact* *SU – significant and unavoidable*

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
filling, hydrological interruption, or other means			
Impact 3.2-4: Project implementation could result in interference with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites	LS	*None Required*	LS
Impact 3.2-5: Project implementation may conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance	LS	*None Required*	LS
Impact 3.2-6: Project implementation would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan	LS	*None Required*	LS
CULTURAL RESOURCES			
Impact 3.3-1: Project implementation could result in a substantial adverse change in the significance of a historical or archaeological resource	LS	*None Required*	LS
Impact 3.3-2: Project implementation could result in the inadvertent discovery of human remains	LS	*None Required*	LS

CC – cumulatively considerable *LCC – less than cumulatively considerable* *LS – less than significant*

PS – potentially significant *SU – significant and unavoidable*

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
Impact 3.3-3: Project implementation could result in damage to, or the destruction of, paleontological resources	LS	*None Required*	LS
Impact 3.3-4: Project implementation could result in damage to or the destruction of historical buildings	PS	***Mitigation Measure 3.3-4:*** *Update the Foster City General Plan Conservation Element to include the following policy language. The following policy shall apply during the construction of individual projects effective immediately.* *During environmental review of individual projects that would result in the destruction or demolition of a building or structure 50 years old or greater, City staff shall review and evaluate architectural resources proposed for destruction or demolition using criteria for listing in the California Register of Historic Resources, in order to determine if the structure is a qualified historical architectural resource. If it is determined that the structure proposed for destruction or demolition is not a qualified historical architectural resource, no further action is required.* *If it is determined that the structure is a qualified historical architectural resource, the resources shall be recorded by a qualified architectural historian on appropriate California Department of Parks and Recreation (DPR) 523 forms, photographed, and mapped. The DPR forms shall be produced and forwarded to the Central California Information Center. If federal funding or approval is required, then the implementing agency shall comply with Section 106 of the National Historic Preservation Act.* *If architectural resources are deemed as potentially eligible for the California Register of Historic Resources or the National Register of Historic Places, the City shall consider avoidance through project redesign as feasible. If avoidance is not feasible, the City shall ensure that the historic resource is formally documented through the use of large-format photography, measured drawings, written architectural descriptions, and historical narratives. The documentation shall be entered into the Library of Congress, and archived in the California Historical Resources Information System. In the event of building relocation, the City shall ensure that any alterations to significant buildings or structures conform to the Secretary of the Interior's Standards for*	LS

CC – cumulatively considerable *LCC – less than cumulatively considerable* *LS – less than significant*

PS – potentially significant *B – beneficial impact* *SU – significant and unavoidable*

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		Rehabilitation and Guidelines for Rehabilitating Historic Buildings.	
Impact 3.3-5: Project implementation could result in cumulative impacts to known and undiscovered cultural resources	LCC	*None Required*	LCC
GEOLOGY AND SOILS			
Impact 3.4.1: Implementation of the project has the potential to expose people or structures to potential adverse effects involving rupture of a fault, strong seismic ground shaking, or seismic-related ground failure, including liquefaction	LS	*None Required*	LS
Impact 3.4-2: Implementation of the project has the potential to expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides	LS	*None Required*	LS
Impact 3.4-3: Implementation of the project has the potential to result in substantial soil erosion or the loss of topsoil	LS	*None Required*	LS
Impact 3.4-4: Project implementation has the potential to result in development located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence,	LS	*None Required*	LS

CC – cumulatively considerable *LCC – less than cumulatively considerable* *LS – less than significant*

PS – potentially significant *SU – significant and unavoidable*

Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
liquefaction or collapse			
Impact 3.4-5: Project implementation has the potential to result in development on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property	LS	*None Required*	LS
Impact 3.4-6: Project implementation does not have the potential to have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water	LS	*None Required*	LS
Greenhouse Gases and Climate Change			
Impact 3.5-1: Project implementation may generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	LS	*None Required*	LS
Impact 3.5-2: Project implementation may conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	LS	*None Required*	LS
Hazards			
Impact 3.6-1: Project implementation has the potential hazard to the public or the environment through the routine transport,	LS	*None Required*	LS

CC – cumulatively considerable *LCC – less than cumulatively considerable* *LS – less than significant*

PS – potentially significant *B – beneficial impact* *SU – significant and unavoidable*

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
use, disposal, or accidental release of hazardous materials			
Impact 3.6-2: Project implementation has the potential to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	LS	*None Required*	LS
Impact 3.6-3: Project implementation has the potential to have projects located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5	LS	*None Required*	LS
Impact 3.6-4: Impact to people residing or working within two miles of a public airport, public use airport, or private airstrip	LS	*None Required*	LS
Impact 3.6-5: Project implementation may impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	LS	*None Required*	LS
Impact 3.6-6: Project implementation may expose people or structures to a risk of loss, injury or death from wildland fires	LS	*None Required*	LS
HYDROLOGY AND WATER QUALITY			
Impact 3.7-1: Project implementation could result in a violation of water quality standards or waste discharge requirements	LS	*None Required*	LS

CC – cumulatively considerable *LCC – less than cumulatively considerable* *LS – less than significant*

PS – potentially significant *SU – significant and unavoidable*

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
Impact 3.7-2: Project implementation could result in the depletion of groundwater supplies or interfere substantially with groundwater recharge	LS	*None Required*	LS
Impact 3.7-3: Project implementation could alter the existing drainage pattern in a manner which would result in substantial erosion, siltation, flooding, or polluted runoff	LS	*None Required*	LS
Impact 3.7-4: Project implementation could otherwise substantially degrade water quality , including the Foster City Lagoon	LS	*None Required*	LS
Impact 3.7-5: Project implementation could place housing and structures within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map	LS	*None Required*	LS
Impact 3.7-6: Project implementation may expose people or structures to a significant risk of loss, injury, or death involving flooding as a result of failure of a levee or dam, seiche, tsunami, or mudflow	LS	*None Required*	LS
Impact 3.7-7: Project implementation may expose people or structures to a significant risk of loss, injury, or death involving flooding as a result of sea level rise	PS	***Mitigation Measure 3.7-7:*** *Update the Foster City General Plan Safety Element to include the following policies and action item.* ***New Safety Policy 1:*** *Incorporate consideration of, and measures to mitigate the risks of, sea level rise into the planning process.* ***New Safety Policy 2:*** *Prepare response plans that will help Foster City*	SU

CC – cumulatively considerable *LCC – less than cumulatively considerable* *LS – less than significant*

PS – potentially significant *B – beneficial impact* *SU – significant and unavoidable*

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		adapt and respond to climate change. ***New Safety Action 1: Sea Level Rise Response Strategy.*** *Prepare response strategies that address sea level rise and increased flooding, and other climate change induced events such as flooding, landslides, and soil erosion. Include response strategies to address sea level rise on Foster City's levee system.*	
LAND USE AND POPULATION			
Impact 3.8-1: Project implementation has the potential to physically divide an established community	LS	*None Required*	LS
Impact 3.8-2: Project implementation has the potential to conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted to avoid or mitigate an environmental effect	LS	*None Required*	LS
Impact 3.8-3: Project implementation may conflicts with an applicable habitat conservation plan or natural community conservation plan	LS	*None Required*	LS
Impact 3.8-4: Project implementation has the potential to induce substantial population growth	LS	*None Required*	LS
Impact 3.8-5: Project implementation does not have the potential to displace substantial numbers of people or existing housing	LS	*None Required*	LS

CC – cumulatively considerable *LCC – less than cumulatively considerable* *LS – less than significant*

PS – potentially significant *SU – significant and unavoidable*

Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
Noise			
Impact 3.9-1: Traffic Noise Sources	LS	*None Required*	LS
Impact 3.9-2: Stationary Noise Sources	LS	*None Required*	LS
Impact 3.9-3: Airport Noise	LS	*None Required*	LS
Impact 3.9-4: Construction Noise	PS	*No feasible mitigation available*	SU
Impact 3.9-5: Construction Vibration	PS	***Mitigation Measure 3.9-5:*** *Update the Noise Element of the Foster City General Plan to include the following policy language. The following policy shall apply during environmental review of major projects that involve the use of pile drivers or other heavy equipment or construction techniques that may result in significant levels of groundborne vibration.* *Projects shall be designed and implemented to reduce adverse construction vibration impacts to sensitive receptors, as feasible, when vibration-related construction activities are to occur within 100 feet or less from existing sensitive receptors. Measures to reduce noise and vibration effects may include, but are not limited to:* • *Phase demolition, earth-moving and ground-impacting operations so as not to occur in the same time period.* • *The pre-existing condition of all buildings within a 100-foot radius will be recorded in order to evaluate damage from construction activities. Fixtures and finishes within a 100-foot radius of construction activities susceptible to damage will be documented (photographically and in writing) prior to construction. All damage will be repaired back to its pre-existing condition.* • *Substituting vibration-generating equipment with equipment or procedures that would generate lower levels of vibration. For instance, in*	LS

CC – cumulatively considerable *LCC – less than cumulatively considerable* *LS – less than significant*

PS – potentially significant *B – beneficial impact* *SU – significant and unavoidable*

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		comparison to impact piles, drilled piles or the use of a sonic or vibratory pile driver are preferred alternatives where geological conditions would permit their use. • *Other specific measures as they are deemed appropriate by the implementing agency to maintain consistency with adopted policies and regulations regarding vibration.*	
PUBLIC SERVICES AND UTILITIES			
Impact 3.10-1: Project implementation could result in adverse physical impacts on the environment associated with governmental facilities and the provision of public services	LS	*None Required*	LS
Impact 3.10-2: Project implementation has the potential to increase the demand for additional water supply which may result in the construction or expansion of water facilities or exceed the existing water supply available to the City.	LS	*None Required*	LS
Impact 3.10-3: Project implementation may exceed wastewater treatment requirements, require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, or result in inadequate wastewater capacity.	LS	*None Required*	LS
Impact 3.10-4: Project implementation has the potential to exceed landfill capacity and/or cause incompliance with solid waste statutes or regulation.	LS	*None Required*	LS

CC – cumulatively considerable *LCC – less than cumulatively considerable* *LS – less than significant*

PS – potentially significant *SU – significant and unavoidable*

Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
Impact 3.10-5: Project implementation may result in adverse physical impacts associated with the deterioration of existing parks and recreation facilities or the construction of new parks and recreation facilities	LS	*None Required*	LS
Impact 3.10-6: Project implementation may result in adverse physical impacts on the environment associated with construction of new parks and recreation facilities	LS	*None Required*	LS
Transportation and Circulation			
Impact 3.11-1: Implementation of the proposed project may result in cumulative impacts to intersection levels of service	LS	*None Required*	LS
Impact 3.11-2: Implementation of the proposed project would contribute vehicle trips to freeway segments that would exceed their CMP LOS threshold	LS	*None Required*	LS
Impact 3.11-3: Implementation of the proposed project would not impact pedestrian or bicycle facilities	LS	*None Required*	LS
Impact 3.11-4: Implementation of the proposed project would not impact transit facilities	LS	*None Required*	LS
Impact 3.11-5: Implementation of the proposed project would not impact air traffic	LS	*None Required*	LS

CC – cumulatively considerable *LCC – less than cumulatively considerable* *LS – less than significant*

PS – potentially significant *B – beneficial impact* *SU – significant and unavoidable*

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
or aviation facilities			
VISUAL RESOURCES AND AESTHETICS			
Impact 3.12-1: Project implementation could result in substantial adverse effects on visual character, including impacts to scenic vistas or scenic resources	LS	*None Required*	LS
Impact 3.12-2: Project implementation could result in the creation of new sources of nighttime lighting and daytime glare	LS	*None Required*	LS
OTHER CEQA-REQUIRED TOPICS			
Impact 4.1: Cumulative Impact on the Region's Air Quality	LCC	*None Required*	LCC
Impact 4.2: Cumulative Loss of Biological Resources Including Habitats and Special Status Species	LCC	*None Required*	LCC
Impact 4.3: Cumulative Impacts on Known and Undiscovered Cultural Resources	LCC	*None Required*	LCC
Impact 4.4: Cumulative Impacts related to Geology and Soils	LCC	*None Required*	LCC
Impact 4.5: Increased Greenhouse Gas Emissions May Contribute to Climate Change	LCC	*None Required*	LCC
Impact 4.6: Cumulative impacts from	LCC	*None Required*	LCC

CC – cumulatively considerable *LCC – less than cumulatively considerable* *LS – less than significant*

PS – potentially significant *SU – significant and unavoidable*

Environmental Impact	*Level of Significance Without Mitigation*	*Mitigation Measure*	*Resulting Level of Significance*
hazardous materials and human health risks.			
Impact 4.7: Cumulative impacts related to Hydrology and Water Quality.	LCC	*None Required*	LCC
Impact 4.8: Cumulative Impact associated with Land Use Plans	LCC	*None Required*	LCC
Impact 4.9: Cumulative Exposure of Noise-Sensitive Land Uses to Noise in Excess of Normally Acceptable Noise Levels or to Substantial Increases in Noise	LCC	*None Required*	LCC
Impact 4.10: Cumulative Impact on Public Services and Recreation	LCC	*None Required*	LCC
Impact 4.11: Cumulative Impact from Public Utilities	LCC	*None Required*	LCC
Impact 4.12: Cumulative Impact on the Transportation Network	LCC	*None Required*	LCC
Impact 4.13 Cumulative Degradation of the Existing Visual Character of the Region	LCC	*None Required*	LCC

CC – cumulatively considerable *LCC – less than cumulatively considerable* *LS – less than significant*

PS – potentially significant *B – beneficial impact* *SU – significant and unavoidable*

1.1 INTRODUCTION

The City of Foster City is currently in the process of preparing an update to the City's General Plan and preparing a Climate Action Plan. The project to be analyzed in the EIR includes three inter-related components: (1) the proposed City of Foster General Plan Land Use and Circulate Element Update (2) an amendment to the City of Foster City General Plan Land Use Map and (3) a separate, stand-alone Climate Action Plan document. The revisions to the Land Use and Circulation Element and the General Plan Land Use Map are referred to as the "General Plan Update" component of the proposed project. The Climate Action Plan (CAP) is the third component of the proposed project. These three components are collectively referred to as the "project" or "proposed project" and provide the basis for the environmental analysis. Each of these project components is described in greater detail in Chapter 2.0 (Project Description).

As part of the General Plan Update process, multiple background reports were prepared to establish a baseline of existing conditions in the city and provide information on housing, transportation and demographics in Foster City. The City has conducted a series of public meetings, surveys, and other public outreach efforts to provide an opportunity for citizens and policymakers to come together in a process of developing a common vision for the future.

The proposed project includes text updates to the Land Use and Circulation Element of the General Plan, minor amendments to the Land Use Map, and a comprehensive Climate Action Plan. The Foster City General Plan includes a framework of goals, policies, and programs that will guide the community toward their common vision. The Climate Action Plan identifies the City's 2005 baseline greenhouse gas (GHG) emissions, projects GHG emissions levels for the years 2020, 2025, and 2050, establishes a target for emissions reductions, and provides a framework of reduction measures to reach the target.

FOSTER CITY GENERAL PLAN

General Plan

The Foster City General Plan is the overarching policy document that guides land use, housing, transportation, infrastructure, community design, and other policy decisions throughout the City. The Foster City General Plan is divided into six elements: 1) Land Use and Circulation; 2) Housing; 3) Parks and Open Space; 4) Noise; 5) Safety; and 6) Conservation. Each element contains background information that has been collected and analyzed to establish goals and policies that are intended to guide development and City actions in a particular manner. Community involvement plays a major role in establishing the goals and policies of the General Plan because the goals and policies reflect the views and concerns of the citizens and attempt to achieve their vision of the City.

The General Plan sets out the goals, policies, and programs in each of these areas and serves as a policy guide for how the City will make key planning decisions in the future, and how the City will

interact with surrounding cities, San Mateo County, and other local, regional, State, and Federal agencies.

General Plan Land Use and Circulation Element Revisions

The Land Use and Circulation Element focuses on past, present and future development issues affecting Foster City. It establishes a pattern for land use and sets out clear standards for the density of population and the intensity of development for each of the proposed land uses. The Land Use and Circulation Element establishes a direct tie between the timing, amount, type and location of development with the traffic, service and infrastructure demands such development will generate.

This Element brings together all land use issues, constraints and opportunities, balanced with the numerous needs and desires of the community. It includes policies and programs affecting both development and redevelopment of land in Foster City.

The Land Use and Circulation Element also relates to many issues addressed in other parts of the General Plan. Among these are the preservation of open space, the provision of affordable housing, the conservation of natural resources, the control of noise, and the protection of life and property from natural or human hazards.

This proposed project includes a major revision of the 1993 Land Use and Circulation Element of the Foster City General Plan. Many of the development projects now completed or under construction were envisioned at the time the 1993 Land Use and Circulation Element was adopted. However, there have been some changes in the specific mix of housing and commercial building types in several large scale master-planned projects, notably the Pilgrim/Triton and Chess/Hatch areas, and the vacant land adjacent to the Civic Center.

The proposed Land Use and Circulation Element update includes numerous revisions to existing goals, policies, and implementation measures contained in the 1993 General Plan, as well as new goals, policies, and implementation measures. **Appendix B** includes a matrix table that identifies proposed changes to the Land Use and Circulation Element. An expanded discussion of the Land Use and Circulation Element is contained in Chapter 2.0, Project Description, of this EIR.

General Plan Land Use Map Revisions

The General Plan Land Use Map identifies land use designations for each parcel within the city. The project proposes four changes to the General Plan Land Use Map:

1. Shorebird Park (formerly **Destination Park):** change from Waterfront Commercial to Park (Site A on Figure 2-3)
2. Bridgeview Park (formerly **Werder Park):** change from Open Space to Park (Site B on Figure 2-3)
3. **Elementary School (four sites):** change legend to School
4. **Study Areas:** eliminate two previously designated study areas, (1) Chess Drive Industrial and (2) Marina Site

The proposed General Plan Land Use Map is attached as Figure 2-3.

Climate Action Plan

The City of Foster City has developed the Climate Action Plan to address challenges that climate change will bring to the community. Climate scientists around the world, represented by the Intergovernmental Panel on Climate Change (IPCC), have acknowledged that, through release of greenhouse gases (GHG), human activity is causing climate shifts. Although climate change is an issue of global concern, effects will be felt locally and so the City has begun taking steps to face associated problems. The Climate Action Plan describes climate change effects and prescribes measures to mitigate negative impacts. By addressing potential issues arising from climate change impacts, the City will better adapt to changing conditions and can protect general community welfare.

Forecasts for GHG emissions into 2020, 2025, and 2050 reveal a large increase in greenhouse gases if no action is taken, but State laws have set GHG reduction targets for the State as part of a statewide greenhouse gas reduction plan. Local governments have also sought to adopt reasonable targets for greenhouse gas reductions based on goals set forth by the State. The Foster City City Council is considering the establishment of the following GHG reduction targets: achieve 15 percent GHG emissions reduction below 2005 levels by 2020, 20 percent below 2005 levels by 2025, and 80 percent below 2005 levels by 2050.

In order to meet greenhouse gas reduction targets, the Climate Action Plan contains a variety of measures to address emissions from different sectors. Many measures have been based on policies proposed over time from sources such as the Sustainability Action Plan, the General Plan, and the Sustainable Foster City Plan. Thus, the Climate Action Plan contains a refined collection of ideas that have been developed from a variety of sources to meet current projected GHG reduction needs.

The measures in the Climate Action Plan are broadly grouped into seven categories:

- Energy (Community): energy efficiency upgrades to residential and commercial buildings through code adoption, funding programs, and urban forestation programs

- Energy (Municipal): energy efficiency upgrades and improvements by the City through revised building standards, solar systems, purchase of environmentally-friendly materials, and leveraging of funds.

- Transportation and Land Use (Community): policies in the General Plan that reduce automobile trips through compact and more efficient land use patterns that promote a balanced mix of land uses, encourage alternative modes of transportation, and encourage use of hybrid and electric cars.

- Transportation-Related Municipal Operations: policies that promote energy efficiency in the City fleet and promote telecommuting and flexible work schedules to reduce vehicle trips.

- Waste (Community): waste diversion from landfills to reduce the generation of methane and other greenhouse gases.

- Energy and Water: energy reduction in the heating and usage of water.
- Education: programs to increase awareness of conservation, sustainability, and the Climate Action Plan

Chapter 4 of the Climate Action Plan presents all measures with background information, a description, cost and financial impacts, implementation process, and calculation assumptions for GHG reductions.

The Climate Action Plan recommends measures that are compatible with the proposed General Plan Land Use and Circulation Element, which means that the GHG reduction measures in the plan will tie into new development projects as well as existing development and municipal and community activities. The Climate Action Plan, as a programmatic tiering document under CEQA, will also serve as a tool for greenhouse gas analysis and mitigation review for new projects. It will help guide future planning, development, and municipal policy decisions. Chapter 5 of the Climate Action Plan discusses implementation, monitoring, implementation measures, implementation timeline, and potential funding sources.

An expanded discussion of the CAP is provided in Chapter 2.0, Project Description, of this EIR.

1.2 PURPOSE OF THE EIR

The City of Foster City, as lead agency, determined that the General Plan Update and Climate Action Plan project components identified above are a "project" within the definition of the California Environmental Quality Act (CEQA). CEQA requires the preparation of an environmental impact report (EIR) prior to approving any project that may have a significant impact on the environment. For the purposes of CEQA, the term "project" refers to the whole of an action, which has the potential for resulting in a direct physical change or a reasonably foreseeable indirect physical change in the environment (CEQA Guidelines Section 15378[a]).

This Draft EIR has been prepared according to CEQA requirements to evaluate the potential environmental impacts associated with the implementation of the Foster City General Plan Update and Climate Action Plan. Copies of the General Plan Update documents and the Climate Action Plan are located on the City's website at: http://tinyurl.com/LUCupdate and can also be viewed at the Foster City Department of Community Development at 610 Foster City Blvd. Foster City, CA 94404.

The Draft EIR also discusses alternatives to the project, and proposes mitigation measures that will offset, minimize, or otherwise avoid significant environmental impacts. This Draft EIR has been prepared in accordance with CEQA, California Resources Code Section 21000 et seq.; the Guidelines for the California Environmental Quality Act (California Code of Regulations, Title 14, Chapter 3); and the rules, regulations, and procedures for implementing CEQA as adopted by the City of Foster City.

An EIR must disclose the expected direct and indirect environmental impacts associated with a project, including impacts that cannot be avoided, growth-inducing effects, impacts found not to be significant, and significant cumulative impacts, as well as identify mitigation measures and

alternatives to the proposed project that could reduce or avoid its adverse environmental impacts. CEQA requires government agencies to consider and, where feasible, minimize environmental impacts of proposed development, and an obligation to balance a variety of public objectives, including economic, environmental, and social factors.

1.3 TYPE OF EIR

The State CEQA Guidelines identify several types of EIRs, each applicable to different project circumstances. This EIR has been prepared as a Program EIR pursuant to CEQA Guidelines Section 15168. Section 15168 states:

A program EIR is an EIR which may be prepared on a series of actions that can be characterized as one large project and are related either:

1) Geographically,
2) As logical parts in the chain of contemplated actions,
3) In connection with issuance of rules, regulations, plans or other general criteria to govern the conduct of a continuing program, or
4) As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.

The program-level analysis considers the broad environmental effects of the proposed project. This EIR will be used to evaluate subsequent projects and activities under the proposed project. This EIR is intended to provide the information and environmental analysis necessary to assist public agency decision-makers in considering approval of the proposed project, but not to the level of detail to consider approval of subsequent development projects that may occur after adoption of the General Plan Update.

This EIR analyzes potentially significant cumulative impacts associated with adoption and implementation of the General Plan Update and the Climate Action Plan. As shown on Figure 2-3, there are very minor land use changes proposed to the City's Land Use Map. None of the proposed changes would result in an increase in development potential or development intensity within the City. Additionally, approval of the project would not entitle or otherwise directly or indirectly approve or facilitate new development within the City. As such, there is no potential for environmental impacts to occur in the near-term as a result of project approval. Therefore, the analysis in this Draft EIR focuses on the potential impacts associated with buildout of the Foster City General Plan through 2030. The Draft EIR includes a description of existing baseline environmental conditions relative to each environmental topic contemplated under CEQA, and includes an analysis of potential impacts under cumulative conditions associated with buildout of the General Plan and implementation of the Climate Action Plan.

Additional environmental review under CEQA may be required for subsequent projects and would be generally based on the subsequent project's consistency with the proposed project and the analysis in this EIR, as required under CEQA. It may be determined that some future projects or infrastructure improvements may be exempt from environmental review. When individual

subsequent projects or activities under the proposed project are proposed, the lead agency that would approve and/or implement the individual project will examine the projects or activities to determine whether their effects were adequately analyzed in the program EIR (CEQA Guidelines Section 15168). If the projects or activities would have no effects beyond those disclosed in this EIR, no further CEQA compliance would be required.

1.4 INTENDED USES OF THE EIR

The City of Foster City, as the lead agency, has prepared this EIR to provide the public and responsible and trustee agencies with an objective analysis of the potential environmental impacts resulting from adoption of the proposed project and subsequent implementation of projects consistent with the proposed project. The environmental review process enables interested parties to evaluate the proposed project in terms of its environmental consequences, to examine and recommend methods to eliminate or reduce potential adverse impacts, and to consider a reasonable range of alternatives to the project. While CEQA requires that consideration be given to avoiding adverse environmental effects, the lead agency must balance adverse environmental effects against other public objectives, including the economic and social benefits of a project, in determining whether a project should be approved.

This program level EIR is also intended to inform future City determinations on the appropriate environmental review process for future specific development projects for which it is the lead agency, including future updates to other General Plan elements. A program EIR provides a first tier analysis of the environmental effects of implementing the proposed project and can be used to streamline the environmental review of future specific individual development projects for which the City is acting as the lead agency through “tiering”.

Tiering refers to the coverage of general matters in broad program level EIRs with subsequent narrower EIRs or site-specific EIRs, incorporating by reference the information contained in the broader EIR and focusing only on issues specific to the latter project for which the EIR is being prepared. CEQA Guidelines § 15152. Negative Declarations and Mitigated Negative Declarations can also be tiered from a program EIR. This process helps to avoid repetition and may reduce the time and costs associated with preparing EIRs, Negative Declarations, or Mitigated Negative Declarations on future projects. If a future individual project would have effects that were not examined in this program EIR, or not examined at an appropriate level of detail, an initial study would need to be prepared to determine the appropriate environmental document. If the City finds that pursuant to Section 15152 of the CEQA Guidelines, no new effects could occur or new mitigation measures would be required as a result of a future specific project, the City can approve the project as being within the scope of the project covered by this program EIR, and no new environmental documentation would be required. See also CEQA Guidelines Sections 15162-15164 and Public Resources Code Sections 21166 governing subsequent EIRs.

CEQA Guidelines Section 15183 provides additional basis for CEQA process streamlining. Environmental review can be limited for individual projects that are consistent with the development density established by existing zoning, community plan or general plan policies for which an EIR was certified, except as might be necessary to examine whether there are project-

specific effects which are peculiar to the project or its site. Section 15183(b) specifies that examination of environmental effects for individual projects shall be limited to those effects that: 1) are peculiar to the project or parcel on which the project would be located; 2) were not analyzed as significant effects in a prior EIR on the zoning action, general plan or community plan with which the project is consistent; 3) are potentially significant off-site and cumulative impacts which were not discussed in the underlying EIR; and 4) are previously identified in the EIR, but which are determined to have a more severe adverse impact than that discussed in the underlying EIR. Section 15183(c) specifies that if an impact is not peculiar to the parcel or to the proposed project, then an EIR need not be prepared for that project solely on the basis of that impact.

Furthermore, pursuant to CEQA Guidelines Section 15183.5(a), future project-specific environmental documents may tier off of the programmatic analysis of greenhouse gas emissions contained in this EIR. With respect to the CAP itself, because it contains the elements set forth in CEQA Guidelines Section 15183.5(b)(1), it may be used by the City to determine that a future project's incremental contribution to a cumulative effect is not cumulatively considerable if the project complies with its requirements. CEQA Guidelines Section 15183.5(b)(2).

This EIR may also be used by other agencies within Foster City, including the Estero Municipal Improvement District (EMID), which may use this EIR during the preparation of environmental documents related to the Urban Water Management Plan or other plans related to the delivery of potable water supplies or transport of wastewater to the wastewater treatment plant jointly owned with the City of San Mateo.

1.5 KNOWN RESPONSIBLE AND TRUSTEE AGENCIES

The term "Responsible Agency" includes all public agencies other than the Lead Agency that have discretionary approval power over the project or an aspect of the project (CEQA Guidelines Section 15381). For the purpose of CEQA, a "Trustee" agency has jurisdiction by law over natural resources that are held in trust for the people of the State of California (CEQA Guidelines Section 15386). While no Responsible Agencies or Trustee Agencies are responsible for approvals associated with adoption of the Foster City General Plan Update, implementation of future projects within Foster City may require permits and approvals from Trustee and Responsible Agencies, which may include the following:

- Bay Conservation and Development Commission (BCDC)
- California Department of Fish and Wildlife (CDFW)
- California Department of Transportation (Caltrans)
- San Francisco Regional Water Quality Control Board (RWQCB)
- U.S. Army Corps of Engineers (ACOE)
- U.S. Fish and Wildlife Service (USFWS)
- Bay Area Air Quality Management District (BAAQMD)

1.6 ENVIRONMENTAL REVIEW PROCESS

The review and certification process for the EIR has involved, or will involve, the following general procedural steps:

NOTICE OF PREPARATION

The City of Foster City circulated a Notice of Preparation (NOP) of an EIR for the proposed project on July 2, 2012 to trustee and responsible agencies, the State Clearinghouse, and the public. A scoping meeting was held on July 19, 2012 with the Foster City Planning Commission. No public or agency comments on the NOP were presented or submitted during the scoping meeting. However, during the 30-day public review period for the NOP, which ended on August 3, 2012, a comment letter from the California Department of Transportation (Caltrans) was received. The NOP and all comments received on the NOP are presented in Appendix A-1.

RECIRCULATED NOTICE OF PREPARATION

The City issued a Recirculated Notice of Preparation for the proposed project on January 20, 2015. The reason for the Recirculated NOP is due to the fact that since the initial circulation of the NOP in 2012, the project has been refined, including proposed changes to policies and programs in the Land Use and Circulation Element, proposed changes to the Land Use Map, and proposed changes to the Draft Climate Action Plan. Based on these changes, and the time that had elapsed since initial publication of the NOP, the City determined that the NOP should be recirculated with the current project description as refined/modified.

The public comment period for the Recirculated NOP ran from January 20, 2015 through February 19, 2015. A scoping meeting was held on February 19, 2015 with the Foster City Planning Commission. During the Recirculated NOP process three comment letters were received, including: a letter from the San Francisco Bay Conservation and Development Commission addressing climate change, scenic views, shoreline public access, recreation, biological resources, and permitting requirements; a letter from the California State Lands Commission addressing mitigation requirements, biological resources, climate change, and cultural resources; and a letter from Caltrans addressing sea level rise, and stating that the Caltrans letter submitted during the original NOP process should still be considered during preparation of the EIR. The Recirculated NOP and all comments received on the Recirculated NOP are presented in Appendix A-2.

DRAFT EIR

This document constitutes the Draft EIR. The Draft EIR contains a description of the project, description of the environmental setting, identification of the project's direct and indirect cumulative impacts on the environment, and mitigation measures for impacts found to be significant, as well as an analysis of project alternatives, identification of significant irreversible environmental changes, and growth-inducing impacts. This Draft EIR identifies issues determined to have no impact or a less than significant impact, and provides detailed analysis of potentially

significant and significant impacts. Comments received in response to the NOP and Recirculated NOP were considered in preparing the analysis in this EIR. Upon completion of the Draft EIR, the City of Foster City will file the Notice of Completion (NOC) with the State Clearinghouse of the Governor's Office of Planning and Research to begin the public review period.

PUBLIC NOTICE/PUBLIC REVIEW

Concurrent with the NOC, the City of Foster City will provide a public notice of availability for the Draft EIR, and invite comment from the general public, agencies, organizations, and other interested parties. Consistent with CEQA requirements, the review period for this Draft EIR is forty-five (45) days. Public comment on the Draft EIR will be accepted in written form as well as orally at the Planning Commission Public Hearing to receive comments on the Draft EIR (date to be announced in the NOC). All comments or questions regarding the Draft EIR should be addressed to:

Curtis Banks, Community Development Director
City of Foster City
610 Foster City Boulevard
Foster City, CA 94404

RESPONSE TO COMMENTS/FINAL EIR

Following the public review period, a Final EIR will be prepared. The Final EIR will respond to written comments received during the public review period and to oral comments provided at the Planning Commission Public Hearing on the Draft EIR.

CERTIFICATION OF THE EIR/PROJECT CONSIDERATION

The City of Foster City will review and consider the Final EIR. If the City finds that the Final EIR is "adequate and complete," the City Council may certify the Final EIR in accordance with CEQA. As set forth by CEQA Guidelines Section 15151, the standards of adequacy require an EIR to provide a sufficient degree of analysis to allow decisions to be made regarding the proposed project that intelligently take account of the project's environmental consequences.

Upon review and consideration of the Final EIR, the City Council may take action to approve, revise, or reject the project. A decision to approve the proposed project, for which this EIR identifies significant environmental effects, must follow certification of the EIR and be accompanied by written findings in accordance with State CEQA Guidelines Sections 15091 and 15093. A Mitigation Monitoring and Reporting Program (MMRP) would also be adopted in accordance with Public Resources Code Section 21081.6(a) and CEQA Guidelines Section 15097 for mitigation measures that have been incorporated into or imposed upon the project to reduce or avoid significant effects on the environment. The Mitigation Monitoring and Reporting Program will be designed to ensure that these measures are carried out during project implementation, in a manner that is consistent with the EIR.

1.7 ORGANIZATION AND SCOPE

Sections 15122 through 15132 of the State CEQA Guidelines identify the content requirements for Draft and Final EIRs. An EIR must include a description of the environmental setting, an environmental impact analysis, mitigation measures, alternatives, significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. Discussion of the environmental issues addressed in the Draft EIR was established through review of environmental and planning documentation developed for the project, environmental and planning documentation prepared for recent projects located within Foster City, and responses to the Notice of Preparation (NOP).

This Draft EIR is organized in the following manner:

EXECUTIVE SUMMARY

The Executive Summary summarizes the characteristics of the proposed project, known areas of controversy and issues to be resolved, and provides a concise summary matrix of the project's environmental impacts and possible mitigation measures. This chapter identifies alternatives that reduce or avoid at least one significant environmental effect of the proposed project.

CHAPTER 1.0 – INTRODUCTION

Chapter 1.0 briefly describes the proposed project, the purpose of the environmental evaluation, identifies the lead, trustee, and responsible agencies, summarizes the process associated with preparation and certification of an EIR, identifies the scope and organization of the Draft EIR, and summarizes comments received on the NOP.

CHAPTER 2.0 – PROJECT DESCRIPTION

Chapter 2.0 provides a detailed description of the proposed project, including the location, intended objectives, background information, the physical and technical characteristics, including the decisions subject to CEQA, subsequent projects and activities, and a list of related agency action requirements.

CHAPTER 3.0 - ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

Chapter 3.0 contains an analysis of environmental topic areas as identified below. Each subchapter addressing a topical area is organized as follows:

Environmental Setting. A description of the existing environment as it pertains to the topical area.

Regulatory Setting. A description of the regulatory environment that may be applicable to the project.

Impacts and Mitigation Measures. Identification of the thresholds of significance by which impacts are determined, a description of cumulative-level impacts associated with the

environmental topic, identification of appropriate mitigation measures, and a conclusion as to the significance of each impact.

The following environmental topics are addressed in this section:

- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gases, Climate Change, and Energy
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Population
- Noise and Vibration
- Public Services, Utilities, and Recreation
- Transportation and Circulation
- Visual Impacts

CHAPTER 4.0 – OTHER CEQA-REQUIRED TOPICS

Chapter 4.0 evaluates and describes the following CEQA required topics: impacts considered less-than-significant, significant and irreversible impacts, growth-inducing effects, cumulative, and significant and unavoidable environmental effects.

CHAPTER 5.0 - ALTERNATIVES TO THE PROJECT

Chapter 5.0 provides a comparative analysis between the impacts of the proposed project and the selected alternatives. State CEQA Guidelines Section 15126.6 requires that an EIR describe a range of reasonable alternatives to the project, which could feasibly attain the basic objectives of the project and avoid and/or lessen any significant environmental effects of the project.

APPENDICES

This section includes all notices and other procedural documents pertinent to the Draft EIR, as well as technical material prepared to support the analysis.

1.8 COMMENTS RECEIVED ON THE NOTICE OF PREPARATION AND RECIRCULATED NOTICE OF PREPARATION

The City received one comment letter on the NOP and three comment letters on the Recirculated NOP. A copy of each letter is provided in Appendices A-1 and A-2 of this Draft EIR and the comment letters are summarized below. Comments that were provided on the initial NOP remain part of the administrative record for the project and are appropriately addressed in the EIR with any new comments that were received during the Recirculated NOP public comment period

- California Department of Transportation (Caltrans): Caltrans requested that the Draft EIR address potential impacts to the State Highway System within Foster City, including State Route 92. Caltrans suggested that the City include measures and policies to reduce vehicle trips within the City, and provided input on the scope and content of the Traffic Impact Study developed for the EIR.
- San Francisco Bay Conservation and Development Commission (BCDC): The BCDC requested that the EIR address climate change, scenic views, shoreline public access, recreation, biological resources, and permitting requirements.
- California State Lands Commission (CSLC): The CSLC requested that the EIR address mitigation requirements, biological resources, climate change, and cultural resources.
- California Department of Transportation (Caltrans): Caltrans requested that the EIR address sea level rise, and stated that the Caltrans letter submitted during the original NOP process should still be considered during preparation of the EIR.

The project to be analyzed in the EIR includes three inter-related components: (1) the proposed City of Foster General Plan Land Use and Circulate Element Update (2) an amendment to the City of Foster City General Plan Land Use Map and (3) a separate, stand-alone Climate Action Plan document. The revisions to the Land Use and Circulation Element and the General Plan Land Use Map are referred to as the "General Plan Update" component of the proposed project. The Climate Action Plan (CAP) is the third component of the proposed project. These three components are collectively referred to as the "project" or "proposed project" and provide the basis for the environmental analysis in this EIR.

The proposed update to the Land Use and Circulation Element includes minor revisions to many existing goals, policies, and associated text from the element, as well as new goals, policies, and actions to address sustainability, preservation of views, live/work housing units, encourage new development and redevelopment that meets the community's needs, encourage mixed use developments, and ensure that the City's transportation and circulation system meets the needs of the community and provides complete streets. (A complete street is a transportation facility that is planned, designed, operated, and maintained to provide safe mobility for all users, including bicyclists, pedestrians, transit vehicles, truckers, and motorists, appropriate to the function and context of the facility.) The update also reflects current codes, trends, design guidelines, master plans, and programs that have been initiated or adopted by the City since the last update, reflects existing conditions, and includes improvements necessary to accommodate currently proposed, approved, and anticipated development (see Chapter 3.11, Transportation and Circulation). The project also amends the Land Use Map to designate Bridgeview Park (formerly Werder Park) and Shorebird Park (formerly Destination Park) for parks uses; change the previously used "Elementary School" designation to "School;" and eliminate two previously designated study areas (Chess Drive Industrial and Marina Site). The proposed Land Use Map is shown on Figure 2-3). The proposed Climate Action Plan would provide a set of implementation measures and programs to address climate change through reducing greenhouse gas emissions associated with vehicle trips, land use, energy consumption, solid waste, and City operations.

2.1 BACKGROUND AND OVERVIEW

STATE GENERAL PLAN LAW

California Government Code Section 65300 et seq. requires all counties and cities in the State to prepare and maintain a general plan for the long-term growth, development, and management of the land within the jurisdiction's planning boundaries. The general plan acts as a "constitution" for development, and is the City's lead legal document in relation to growth, development, and resource management issues. Development regulations (e.g., zoning and subdivision standards) are required by law to be consistent with the General Plan.

General plans must address a broad range of topics, including, at a minimum, the following mandatory elements: land use, circulation, housing, conservation, open space, noise, and safety. At the discretion of each jurisdiction, the General Plan may combine these elements and may add optional elements relevant to the physical features of the jurisdiction.

The California Government Code also requires that a General Plan be comprehensive, internally consistent, and plan for the long term. The General Plan should be clearly written, easy to administer, and available to all those concerned with the community's development.

State planning and zoning law (California Government Code Section 65000 et seq.) establishes that zoning ordinances are required to be consistent with the general plan and any applicable specific plans, area plans, master plans, and other related planning documents. When amendments to the general plan are made, corresponding changes in the zoning ordinance may be required within a reasonable time to ensure consistency between the revised land use designations in the general plan (if any) and the permitted uses or development standards of the zoning ordinance (Gov. Code Section 65860, subd. [c]).

FOSTER CITY GENERAL PLAN

The General Plan is a dynamic, forward-looking document that establishes policies for maintaining the community's existing quality of life through build-out of the City and longer-term. The primary concerns of the General Plan are:

Maintain the Existing Quality of Life - Protect the integrity and quality of residential neighborhoods and commercial areas by establishing goals, policies and implementing regulations that:

- Assure property maintenance and quality design.
- Protect waterways and the community's water-orientation.
- Continue to emphasize that Foster City is a "master-planned" community with a balance of residential, commercial and recreational uses.

Plan for Potential Renovation and Longer-Term Community Needs - Plan for long-term City needs to balance the following:

- Assure long-term maintenance and preservation of community character, pride and identity.
- Consider the need for flexibility in responding to potential changing economic conditions that may affect neighborhood shopping centers and other commercial and industrial areas.
- Maintain the high quality condition of the City's housing stock and infrastructure.
- Address long-term housing, employment, and City fiscal needs.

The Foster City General Plan is intended to be useful to all its readers and still contain all necessary information and policies. To accomplish this objective, the plan is structured around six separate, but highly interrelated, elements. The list below identifies the elements of the Foster City General Plan, and identifies when these elements were last updated.

1. Land Use and Circulation Element (last amended in 2013, proposed update in 2015)
2. Housing Element (adopted February 2, 2015)[1]
3. Parks and Open Space Element (adopted 2009)
4. Noise Element (adopted 1993)
5. Safety Element (adopted 1995)
6. Conservation Element (adopted 2003)

Technical Appendices have been prepared for various elements which include background data, inventories, projections and other background information to provide a basis for the policies contained in the Plan elements.

Land Use and Circulation Element

The Land Use and Circulation Element addresses two topics mandated by the State of California to be addressed in a General Plan (Land Use and Circulation). The Land Use and Circulation Element includes the following components:

The Goals, Policies, and Programs section of the Land Use and Circulation Element contains a series of goals, policies and implementing programs. The goals, policies and programs provide guidance to the City on how to direct change, manage growth, and manage resources over the life of the General Plan. The following provides a description of each and explains the relationship of each:

- A **goal** is a description of the general desired result that the City seeks to create through the implementation of the General Plan.

- A **policy** is a specific statement that guides decision-making as the City works to achieve its goals. Once adopted, policies represent statements of City regulations. The General Plan's policies set out the standards that will be used by City staff, the Planning Commission, and the City Council in its review of land development projects, resource protection activities, infrastructure improvements, and other City actions. Policies are on-going and require no specific action on behalf of the City.

- A **program** is an implementation measure, procedure, technique or specific program to be undertaken by the City to help achieve a specified goal or implement an adopted policy. The City must take additional steps to implement each program in the General Plan. An implementation program is something that can and will be completed.

[1] The City Council of the City of Foster City held a Public Hearing on February 2, 2015, to review and take action on 1) a Negative Declaration of Environmental Impact on the Housing Element Update 2015-2023 (EA-14-009); and 2) an amendment to the Foster City General Plan to adopt the Housing Element Update for the 2015-2023 Planning Period (GP-13-002). The Housing Element Update is not included as a component of the project analyzed in this EIR.

The time period envisioned for the goals, policies and implementation measures is 10-15 years. This time period should include full development of the City and some redevelopment or change-of-use activities. The focus of the General Plan must be on managing changes so that it continues to achieve the community's vision. The goals, policies, and programs provide direction for decisions related to all land uses, as well as for those related to specific land use designations.

The Goals, Policies, and Programs portion of the Land Use and Circulation Element has been significantly reorganized, with the goals, policies, and programs organized around the themes of Neighborhood Compatibility, Land Use, Transportation and Mobility, Sustainability and Smart Growth, Redevelopment and Public Facilities and Services. For each topic, specific goals, policies, and implementing programs are identified.

The Land Use and Circulation Element focuses on past, present and future development issues affecting Foster City. It establishes a pattern for land use and sets out clear standards for the density of population and the intensity of development for each of the proposed land uses. The Element establishes a direct tie between the timing, amount, type and location of development with the traffic, service and infrastructure demands such development will generate.

These portions of the plan, and principally the Land Use section, bring together all land use issues, constraints and opportunities, balanced with the numerous needs and desires of the community. The Land Use and Circulation Element includes policies and programs affecting both development and redevelopment of land in Foster City.

The Land Use and Circulation Element also relates to many issues addressed in other parts of the General Plan. Among these are the preservation of open space, the provision of affordable housing, the conservation of natural resources, the control of noise, and the protection of life and property from natural or human hazards.

The Land Use and Circulation Element of the General Plan defines various land use designations by their allowable uses, minimum parcel sizes, and maximum development densities. The following describes the land use designations for the General Plan. Table 2-1 shows the total number of parcels and total acreages for each land use designation shown on the proposed Land Use Map.

TABLE 2-1: GENERAL PLAN LAND USE CATEGORIES

LAND USE DESIGNATION	*PARCELS*	*ACREAGE*
Residential Land Uses		
Single Family Residential	4,619	688.5
Two-Family Residential	19	3.6
Townhouse Residential	1,959	209.6
Condominium Residential	933	195.7
Apartment Residential	20	99.8
Mixed-Use, Commercial and Industrial Land Uses		
Town Center Commercial	337	104.2
Neighborhood Commercial	4	17.2
Service Commercial	22	26.0

LAND USE DESIGNATION	PARCELS	ACREAGE
Service Commercial with Housing	5	21.9
Waterfront Commercial	3	23.4
Light Industrial	40	37.2
Research/Office Park	83	252.6
Chess/Hatch Office Research	4	12.3
Apartment/Neighborhood Commercial	2	12.1
Civic Center Mixed Use	1	15.3
Public and Semi-Public Land Uses		
Schools	4	35.9
Parks and Recreation	32	132.0
Open Space	33	147.7
Public and Semi Public	14	35.3
TOTAL	8,152	2,070.3

SOURCE: FOSTER CITY COMMUNITY DEVELOPMENT DEPARTMENT, 2014

The City's existing land use categories are described below to assist the reader with understanding the General Plan Land Use Map; however, it is noted that these existing categories are not proposed to change.

RESIDENTIAL CATEGORIES

Single-Family Residential. Allows up to eight dwelling units per acre (du/ac). This is the single largest residential category. Single family homes are located in every residential neighborhood except one.

Two-Family Residential. Allows up to ten dwelling units per acre. This designation recognizes the small percentage of existing duplex homes in the City. The designation has been applied to a small area in the northeastern portion of the City, on Comet Drive (Neighborhood #1). Duplexes serve as a transition area between traditional single family detached homes and higher density multi-family developments. The density range and zoning requirements have been established in recognition that duplexes are an existing housing type intermediate to single-family detached homes and townhomes. Duplexes should provide the outward appearance of a single-family neighborhood, but at densities closer to those of townhomes.

Townhouse Residential. Allows up to 15 dwelling units per acre. Townhomes in Foster City generally function as attached single family homes and usually provide some private open space in addition to common areas.

Condominium Residential. Allows 15-35 dwelling units per acre. Condominium developments are usually constructed at a higher density than townhomes. Any open space areas are typically common to all residents.

Apartment Residential. Allows 20-35 dwelling units per acre. Apartment developments in Foster City generally provide the highest density living environment, although some apartment and condominium developments are very similar with respect to density and amenities.

COMMERCIAL AND INDUSTRIAL CATEGORIES

Town Center Commercial. This designation is reserved for the area located northwest of East Hillsdale Boulevard, bounded by Foster City Boulevard to the north and State Route 92 to the west. The area includes a 100-acre development known as Metro Center, in addition to Parkside Towers and other office developments. Metro Center is intended to serve as Foster City's downtown core. The highest intensity uses in the City would be allowed, with Floor Area Ratios (FAR) for office developments ranging from .55 to 2.0 FAR. Town Center office developments located outside Metro Center, have lower FAR's which range from .18 to 1.5 FAR.

Neighborhood Commercial. Reserved for small neighborhood convenience shopping centers whose primary focus is servicing the immediate neighborhood. Although uses allowed in the centers are mostly limited to neighborhood serving uses, a percentage of the floor area of each center may be occupied by uses which are community serving in nature. In addition, the City will allow housing or a mix of housing and commercial development at specifically designated "housing opportunity sites," consistent with Housing Element Policies. Floor Area Ratios (FAR) of neighborhood commercial centers generally range between .20 and .30 FAR.

Service Commercial. Includes a mix of uses providing general services. The area bounded by Foster City Boulevard, East Hillsdale Boulevard, and State Route 92 is designated Service Commercial and contains a mix of research and development firms, storage and professional offices. Also located in this area are food establishments, including several fast food restaurants, and a community theatre (Hillbarn). Land use intensities vary greatly in this area, from relatively low .03 to .12 FAR for restaurant and gas station uses, to higher intensity office developments with FAR's ranging from .20 to .98 FAR (although most developments fall in the lower end, .20 to .40 FAR, of this range).

Waterfront Commercial. This designation allows only for commercial development which is directly related to, and enhances the public use of, the waterfront without damaging environmental effects. Appropriate commercial uses would avoid impacting wetlands and could include restaurants, commercial recreation, marine-related retail and offices and marina berths. The site could also be used to expand the wetland areas in order to provide mitigation for off- site projects. At the present time, only the proposed Foster City Marina site is designated for waterfront commercial uses.

Light Industrial. Includes wholesale facilities, storage warehouses and the manufacturing, processing, repairing, or packaging of goods. Emission of fumes, noise, smoke or other pollutants or nuisances are strictly controlled. A limited amount of general office use is acceptable in this area provided the uses meet the requirements established for the M-1 (Light Industrial) zoning district. The M-1 zoning district is proposed to be amended to allow general office uses part of this element. FARs for developments in the industrial area range from .20 to .60 FAR.

Research/Office Park. Areas with this designation contain office, research and development, and manufacturing establishments whose operations are clean and quiet. Mixed-use projects which include some retail and residential uses in addition to office and research uses may, under certain conditions, be considered compatible with this designation. Such conditions include compatibility of uses and project design (land planning, architecture, etc.). Vintage Park, the Lincoln Centre area, the Mariners Point Golf site, and the Bayside Towers development are all designated for Research/Office Park use. The intensity of development varies, with FARs generally ranging from .30 along Foster City Boulevard to .44 for Bayside Towers, to a campus-wide average of .79 for the Gilead Campus within Vintage Park. The intensity of development for the vacant Vintage Park sites is anticipated to have an FAR up to 1.0.

Chess/Hatch Office Research. Areas with this designation allow commercial, office, industrial, biotechnology and other such compatible uses, including vehicle parking in both parking structures and at-grade parking lots on the project site. Incompatible uses such as housing, schools, day care, and other uses serving primarily children are prohibited. Vertically and horizontally mixed-use developments that maximize the use of land, organize land uses and pedestrian/vehicular circulation in a safe, logical and functional manner and establish a safe, logical and functional design relationship with adjacent land uses is allowed within this designation. Uses must meet the requirements of Chapter 17.68, General Performance Standards, of Title 17, Zoning, of the Foster City Municipal Code. FARs for developments in this area would range from 0.6 to 1.55.

OTHER CATEGORIES

Civic Center Mixed Use. This land use designation applies to the formerly City-Owned 15-acre parcel between Civic Center Drive and Balclutha Drive, and Foster City Boulevard and Shell Boulevard. This parcel is the remaining piece of the Civic Center Master Plan and is planned for a focal point for the City, capitalizing on its proximity to Leo Ryan Park, the Recreation/Senior Center, the Library and the North Peninsula Jewish Campus. A plan for the site was endorsed by the City Council in 2011 and includes approximately 400 age-qualified dwelling units, consisting of a mix of for-sale units, rental apartments and assisted living units; 30,000 square feet of commercial space including restaurants and retail establishments; as well as a public use component including a neighborhood square designed to host public and private events, outdoor seating, a farmers market, art displays and entertainment events. This designation allows a range of 20-35 dwelling units per acre in a multifamily setting, combined with a commercial component up to 0.5 FAR. Building heights will range from four to seven stories.

School. Includes only those properties owned by public school districts which have operational schools located on them.

Parks and Recreation. This designation is for improved open space lands whose primary purpose is recreation, and includes all local and regional parks.

Open Space. Open lands which are vacant of structures and improvements, and which are primarily maintained in their natural condition, are designated as open space. In some cases, maintained pathways or parking areas which enhance access to the open space areas are

considered compatible with this designation. The pedway along the perimeter of the City which provides access to San Francisco Bay is designated open space, as well as a large parcel of land located north of East Third Avenue along the northern boundary of the City and adjacent to San Mateo City wetlands.

Public and Semi-Public. Reserved for uses which are generally public serving in nature, including religious institutions, schools, government offices, and fire and police facilities.

CLIMATE ACTION PLAN

The preparation and adoption of a Climate Action Plan is not required by State law. However, Assembly Bill (AB) 32, also known as the Global Warming Solutions Act of 2006, identifies local governments as essential partners in achieving California's goal to reduce greenhouse gas (GHG) emissions. Local governments have primary authority to plan, zone, and permit how and where land is developed to accommodate population growth and the changing needs of their jurisdiction. Cities have varying degrees of responsibility for the collection and processing of waste and have responsibility for other environmental infrastructures, such as energy and water. Cities own and manage buildings and vehicle fleets and are able to form partnerships with private interests to mobilize and coordinate community action. Furthermore, cities are uniquely positioned to promote economic development that emphasizes sustainable development and local "green-collar" jobs, which are jobs in the environmental sectors of the economy.

Foster City has taken several steps towards environmental sustainability over the years, through the following policies and actions which have already been implemented. Most of the actions in the following list are from the City's *Environmental Sustainability Action Plan*[2], which was developed in 2009 by Foster City's Environmental Sustainability Task Force (ESTF). This Action Plan contains a set of goals, recommendations and a general framework that create a path to a more sustainable Foster City. The list has been updated to reflect further actions taken by the City since 2009.

Policies and Strategies

- Adoption of Resolution 2006-71, supporting efforts of all governments to develop policies and programs to reduce global warming.
- Adoption of Resolutions 2007-57 and 2009-17, supporting and then adopting the development of the San Mateo County Energy Strategy to reduce the impact of global warming and the corresponding climate change.
- Appointment of an Ad Hoc Environmental Sustainability Task Force which developed a Recommended Sustainability Action Plan.
- Appointment of a Transportation Committee to develop transportation recommendations.

[2] http://www.fostercity.org/city_hall/committees/upload/Final+W8.pdf

- Adoption of the Sustainable Foster City Plan, which is a sustainable economic development strategic plan that incorporates environmental sustainability as a core component of sustainable economic growth.

Carbon Emissions

Emissions from City Operations:

- Conducted an inventory of greenhouse gas (GHG) emissions from City operations. This inventory was used to create a prioritized action plan to reduce emissions, as detailed in the CAP. This action plan includes the setting of an emissions reduction goal for City operations. The City currently has a number of programs that reduce carbon emissions both from City operations and the community as a whole. Chapter 4 of the CAP documents the estimated reductions from existing and new efforts.

- Converted to a system by which water meters could be read remotely, reducing the need to routinely access on-site meters around the city by automobile.

- Benchmarked major City facilities, to track and compare ongoing energy use.

Promotion and Support of Mass Transportation:

- Worked as a member of the Peninsula Traffic Congestion Relief Alliance with employers to ensure that trip-reducing alternatives are available, introduced to employees, and publicized on a regular basis.

- Provided funding, along with a matching grant from C/CAG, for the Connections Shuttle from 2003 to mid-2012, a free in-town shuttle service that provided connections to recreational activities, shopping centers, and to other regional mass transit alternatives for Foster City residents and employees of local businesses. Due to budget reductions, the City Council decided not to fund the shuttle service after June 2012, however, a grant application for funding for a mid-day shuttle has been approved for fiscal years 2014/15 and 2015/16.

- Promoted the San Mateo County Transit (SamTrans) bus services, and the SamTrans Redi-Wheels paratransit services.

- Promoted the Alameda-Contra Costa (AC) Transit transbay bus service to and from Foster City.

- Promoted employer-operated shuttles to and from the San Mateo Caltrain Station and the Millbrae Intermodal Station from three areas of town: Lincoln Centre, North Foster City, and Mariners Island.

- Operated an on-demand Senior Express Shuttle to transport residents age 55 and older to events and activities in the region.

- Promoted the Peninsula Jewish Community Center (PJCC) Get Up and Go service, a low-cost shared ride transportation program for seniors who do not drive.

Bicycle Alternatives:

- Required that bicycle racks be installed at all new commercial/office developments in town. Bicycle racks are also on all shuttles.
- Maintained a bicycle/pedestrian path along the bayfront—a leg of the Bay Trail that connects with trails maintained in neighboring cities and allows for an easy commute by bicycle between Foster City and a number of Peninsula cities.

Foster City Employee Trip Reduction:

- Implemented an alternative schedule for most employees, reducing employee commuter trips from a traditional schedule.
- Implemented the option of employees telecommuting from home, keeping cars off the roadways while still maintaining a productive workforce.
- Participated in an annual Great Race for Clean Air, sponsored by the Spare the Air Team at the Bay Area Air Quality Management District.

City Fleet Fuel Efficiency:

- Increased the percentage of hybrids in the City fleet and reviewed other fuel efficient alternatives as vehicles are replaced.
- Replaced traditional vehicles with electric options for parks maintenance operations when appropriate.
- Maintained the City's vehicle fleet in peak condition in order to maximize performance and minimize carbon emissions.

Other Carbon-Reducing Policies:

- Reduced speed limits on most City streets to allow for residents' and businesses' use of Neighborhood Electric Vehicles (NEV) for intra-City transportation.
- Adopted regulations prohibiting the installation or replacement of wood burning appliances unless certain conditions are met to protect air quality.

Energy Conservation and Renewable Energy

- Eliminated permit fees for installation of solar panels.
- Installed Light Emitting Diode (LED) streetlights on all public streets. LED streetlights reduce energy use by up to 50 percent and require less maintenance and less frequent replacement.
- Converted all traffic and pedestrian signals to LEDs; these lights use about 20 percent of the electricity of the older halogen lights.

- Implemented energy conservation practices in building maintenance supplies, parts and systems in City facilities.
- Contracted with Thermal Mechanical to perform a wide range of energy efficiency upgrades in City facilities identified through the San Mateo County Energy Water program facilities audit.
- Installed computer-controlled heating, ventilation and air conditioning systems in some buildings to make them more energy efficient, and shutting off the systems during times when work areas may not be inhabited.
- Participated in the San Francisco Community Power Demand Response Program, reducing city-wide electricity use on peak demand days.
- Installed solar-powered speed safety signs near Bowditch Middle School.
- Converted City lighting systems to use energy efficient electronic ballasts.
- Joined Energy Upgrade California program to encourage energy efficiency retrofits by Foster City property owners.
- Joined CaliforniaFIRST to enable commercial customers to access Property-Assessed Clean Energy (PACE) financing.
- Contracted for solar photovoltaic installations on City buildings. Installation of PV system at the Library/Community Center is in progress.

Water Conservation

- Implemented a conservation-based tiered water rate structure, including advanced rebate and education programs to drive water conservation. The City has seen a 17% reduction in water consumption between 2009 and 2013 as a result.
- Worked as a member of the Bay Area Water Supply and Conservation Agency (BAWSCA), offers incentives for residents and businesses to conserve water, such as rebates for low-flow toilets and high-efficiency clothes washers.
- Worked in collaboration with local schools to provide "home audit" kits to fifth graders who report back water savings as part of a school project and taught water conservation to students on water utility facility field trips.
- Offered free informational resources, such as Water-Wise Gardening in the Bay Area guide for water customers.
- Installed low-flow toilets, state of the art irrigation systems and controllers, and drought tolerant plantings in order to reduce water usage in City facilities and parks.
- Replaced turf grass in selected parks with artificial turf which does not require irrigation.

- Installed water fixtures in City buildings that work on a sensor system to conserve water.

Recycling

- Worked as member of South Bay Waste Management Authority (SBWMA) to administer programs to meet and sustain a minimum 50 percent diversion rate mandated by the state.
- Promoted residential and commercial recycling efforts, thereby increasing the solid waste diversion rate over the last several years.
- Implemented residential curbside collection of batteries and cell phones in addition to providing a collection point at City Hall.
- Sponsored annual electronics recycling event.
- Recycled all used lamps and ballasts from City lighting systems.
- Recycled used printer cartridges.
- Purchased "in-unit" recycling containers that the garbage collection contractor distributes to residents of multi-family dwellings.
- Hosted free compost give-away events during the year to utilize green waste collection.
- Participated through the Fire Department in a food waste collection program.
- Passed an ordinance requiring a minimum of 50 percent of the debris generated from certain construction and demolition projects be diverted from landfills to recycling facilities.

Habitat Preservation and Protection

- Maintained storm water system in compliance with National Pollution Discharge Elimination System (NPDES) requirements, reducing pollution of Bay waters.
- Implemented the Foster City Lagoon Management Plan, which directs the use of environmentally friendly products and processes, rather than chemical treatment, to manage lagoon water quality whenever possible.
- Worked with the Audubon Society to create new seasonal wetlands for bird habitat as part of lagoon dredging project.

Other

- Worked as an active member of the Joint Venture Silicon Valley Network Climate Protection Taskforce, Sustainable Silicon Valley and International Council for Local Environmental Initiatives (ICLEI) – Local Governments for Sustainability, USA in order to pursue regional climate protection alternatives.

- Ensured that janitorial supplies used in City facilities are environmentally friendly including: low pH diluted cleaning concentrates and renewable resource paper products.

- Developed, through ESTF, goals and recommendations for the Sustainability Action Plan. ESTF met twice a month from July of 2008 through February of 2009. During these meetings, ESTF members learned about and discussed sustainability concepts, current City, county, regional, State and Federal efforts, and considered additional actions for Foster City. ESTF members were informed by dialogue with subject-matter experts and each other, conducted additional research and developed goals and recommendations in subcommittees. The Sustainability Action Plan was used as an important reference document for the Climate Action Plan.

2.2 PROJECT LOCATION

REGIONAL SETTING

Foster City is located in San Mateo County, midway between San Francisco and San Jose on the western shoreline of the San Francisco Bay, east of U.S. 101, which provides convenient access to San Francisco and the San Francisco Airport to the north, and Santa Clara County and San Jose Airport to the south. The City is bisected by State Route 92 (the J. Arthur Younger Freeway), which runs between Half Moon Bay to the west and Hayward and Highway 880 to the east via the San Mateo-Hayward Bridge. State Route 92 provides convenient access to the East Bay.

The City encompasses 12,345 acres, of which 9,726 acres are part of San Francisco Bay and Belmont Slough, and 2,619 acres are reclaimed marshland. This equates to approximately 4 square miles of land area. The City's regional location is shown on Figure 2-1.

STUDY AREA

The study area for this General Plan EIR is all of the land and parcels within the incorporated City limits of Foster City, as shown in Figure 2-2.

The distribution of land uses as provided in the Foster City General Plan is shown in Table 2-2. Since construction during the early years of Foster City was largely residential, the City has actively pursued commercial and light industrial development to achieve a more balanced mix of uses. Commercial, office, and industrial development not only provides a healthy and stable tax base, it also provides job opportunities within the City, which in turn can help reduce commuting by residents of Foster City and nearby communities.

TABLE 2-2: GENERAL PLAN LAND USES (ACREAGES)

LAND USE CATEGORY	*ACRES*	*PERCENT*
Residential	1214.7	46%
Public, Semi Public, Streets	503.3	20%
Parks, Open Space, Lagoons	448.8	17%
Commercial and Industrial	404.8	15%
Mixed Commercial and Housing	47.8	2%
Total	**2,619.3**	**100%**

SOURCE: FOSTER CITY COMMUNITY DEVELOPMENT DEPARTMENT, 2014

CITY BACKGROUND AND HISTORY

The *Foster City Snapshot* prepared for the General Plan Update provides the following background information regarding the City's history. Foster City had its beginnings as reclaimed marshlands devoted to dairy farming and evaporation ponds. At the turn of the century, the approximately 2,600 acres of tidal marshlands now occupied by Foster City were owned by Frank Brewer, and the land was called Brewer Island. Brewer eventually sold his land to the Leslie Salt Company and Schilling Estate Company.

During the late 1950s, T. Jack Foster, in association with Bay Area developer Richard Grant, purchased an option to acquire Brewer Island for the development of a complete community. In 1960, the California Legislature created the Estero Municipal Improvement District (EMID), the state's first such public agency. EMID was granted most of the governing powers associated with an incorporated municipality, except the powers to zone and approve development, and certain police powers. EMID was governed by a board of three directors representing the two landowners.

Because San Mateo County retained the authority to approve development permits, T. Jack Foster prepared a Master Plan for the development of Brewer Island (Foster City) and submitted it to the County in 1961. The plan envisioned a self-contained community with a variety of housing types, waterfront lots and parks, an internal lagoon for public recreation, marinas, offices, stores, industry, and public services. The City was to be developed as a cluster of nine residential neighborhoods, a Town Center, and an industrial area. Most of the neighborhoods were planned for a variety of housing, from single-family homes on individual lots to high-density apartments with a neighborhood commercial center within walking distance. The Town Center was to be focused on an interior lake, and include a combination of community and regional commercial services, offices, entertainment establishments, and parks.

One of the more difficult aspects of the plan for the City was how to handle drainage in an area that was basically flat and at sea level. The engineering firm of Wilsey and Ham developed a plan to raise the surface level of the island four to five feet and to dig a central drainage basin area that also would serve as a runoff storage area. This drainage basin is the Foster City Lagoon.

The County Board of Supervisors approved the Foster City plan and ground breaking for the first reclamation and development projects took place in August 1961. Due to the extensive fill,

compaction, and construction of facilities that had to precede any building construction, three years passed before the first homes were completed.

EMID was authorized to issue over $85.5 million in bonds in order to finance the improvements necessary for development of Brewer Island (the full $85.5 million was not issued). The bonds provided enough funding to build the lagoon, water systems, sewer system, roads, bridges, and other necessary improvements.

Foster City was incorporated in April 1971, with the newly elected City Council assuming the powers of the EMID Board. Shortly after incorporation, Foster City's Master Plan was amended and adopted as the City's General Plan. New elements and amendments have periodically been approved over the years, however the basic concepts of the original plan have been maintained.

2.3 PROJECT CHARACTERISTICS

The project to be analyzed in this EIR includes three inter-related components: (1) the proposed City of Foster General Plan Land Use and Circulate Element Update (2) an amendment to the City of Foster City General Plan Land Use Map and (3) a separate, stand-alone Climate Action Plan document. The revisions to the Land Use and Circulation Element and the General Plan Land Use Map are referred to as the "General Plan Update" component of the proposed project. The Climate Action Plan (CAP) is the third component of the proposed project. These three components are collectively referred to as the "project" or "proposed project" and provide the basis for the environmental analysis in this EIR.

The characteristics of the proposed project are described below, as well as the inter-relationship between the General Plan and the Climate Action Plan.

GENERAL PLAN UPDATE

Land Use and Circulation Element Update

The proposed Land Use and Circulation Element Update is a major revision of the 1993 Land Use and Circulation Element of the Foster City General Plan. Many of the development projects now completed or under construction were envisioned at the time the 1993 Land Use and Circulation Element was adopted. However, there have been some changes in the specific mix of housing and commercial building types in several large scale master-planned projects, notably the Pilgrim/Triton and Chess/Hatch areas, and the vacant land adjacent to the Civic Center.

- A significant amount of time has elapsed since the last Land Use Element was adopted in 1993. Build-out has not occurred exactly as originally forecast due to:
- The timing of development has been slower than projected;
- A decrease in average household size and an increase in the number of households;

- Jobs-housing balance being a more important issue now than in 1993, with a greater need to balance jobs and housing by increasing the number of local housing units and rezoning land from industrial to residential use;
- Responses to State and regional requirements for housing and regional housing goals; and
- The desire to construct more mixed use type development where housing is developed as part and in proximity to commercial uses.

The Land Use and Circulation Element Update includes numerous revisions to existing goals, policies, and implementation programs contained in the 1993 General Plan, as well as new goals, policies, and implementation programs. Tables have been provided in Appendix B, and on the City's website (http://tinyurl.com/LUCupdate) that depict the proposed changes to the goals, policies and programs of the Land Use and Circulation Element.

The proposed amendment to the Land Use and Circulation Element includes minor revisions to many existing goals, policies, and associated text from the element, as well as new goals, policies, and actions to address sustainability, preservation of views, live/work housing units, encourage new development and redevelopment that meets the community's needs, encourage mixed use developments, and ensure that the City's transportation and circulation system meets the needs of the community and provides complete streets. The update also reflects current codes, trends, design guidelines, master plans, and programs that have been initiated or adopted by the City since the last update. The Land Use and Circulation Element would also be updated to reflect existing conditions and to include improvements necessary to accommodate currently proposed, approved, and anticipated development (see Chapter 3.11, Transportation and Circulation).

General Plan Land Use Map Revisions

The General Plan Land Use Map identifies land use designations for each parcel within the city. The project proposes four changes to the General Plan Land Use Map:

1. **Shorebird Park** (formerly Destination Park**):** change from Waterfront Commercial to Park (Site A on Figure 2-3)
2. **Bridgeview Park** (formerly Werder Park**):** change from Open Space to Park (Site B on Figure 2-3)
3. **Elementary School (four sites):** change legend to School
4. **Study Areas:** eliminate two previously designated study areas, (1) Chess Drive Industrial and (2) Marina Site

The proposed General Plan Land Use Map is attached as Figure 2-3. Foster City's Sphere of Influence will continue to be co-terminus with the City limits boundary. A Sphere of Influence is defined (Government Code Section 54774) as the ultimate probable physical boundaries and service area of a local agency.

The proposed changes to the Land Use Map are minor, and would not change the development pattern within the City. The proposed change at Shorebird Park from Waterfront Commercial to

Park would acknowledge the City's park development project to create a passive park area adjacent to the levee separate from any waterfront commercial development that may or may not occur on the adjacent private lands; the proposed change at Bridgeview Park would recognize the City's park development project following the acquisition of this area from San Mateo County; the proposed change from Elementary School to School would assist in reducing redundant land use categories that serve essentially the same purpose; and the elimination of the two study areas reflects that development within these areas has occurred or is the subject of development applications since adoption of the previous Land Use Map, and the establishment of study areas for these areas is no longer relevant or necessary.

CLIMATE ACTION PLAN

The City's proposed Climate Action Plan (CAP) identifies existing and proposed initiatives to reduce greenhouse gas emissions. The CAP ensures that the City's future activities and development patterns conform to California climate change legislation. The CAP will also act as a tiering document for analyzing GHG emissions of future development pursuant to CEQA guidelines 15183.5(b)(2).

The purpose of the CAP is to identify how the City will achieve the state-recommended GHG emission reduction target of 15 percent by the year 2020 and to create a path to obtain 2050 State targets associated with Governor's Order S-03-05. The CAP provides goals and associated measures, also referred to as GHG reduction measures, in the sectors of energy use, transportation, land use, water, and solid waste. In addition, the CAP provides goals and measures for longer-term adaptation to the potential risks associated with climate change.

More specifically, the CAP:

- Identifies sources of greenhouse gas emissions from sources within the City's jurisdictional/political boundary and estimates how these emissions may change over time.

- Discusses the various outcomes of reduction efforts and how these reduction efforts can be implemented and advertised.

- Identifies baseline emissions (2005), projects 2020 and 2025 emission levels, and establishes a target for emission reductions (15% below 2005 levels by 2020).

- Provides energy use, transportation, land use, water use, and solid waste strategies to reduce Foster City's greenhouse gas emissions levels to 15 percent below 2005 levels by 2020.

- Provides methods for reducing the City's greenhouse gas emissions consistent with the direction of the State of California through the Global Warming Solutions Act (AB 32), Governor's Order S-03-05, Public Resources Code Section 21083.3(b,d), and CEQA Guidelines Section 15064.4. [The California Environmental Quality Act (CEQA) Guidelines encourage the adoption of policies or programs as a means of addressing comprehensively the cumulative impacts of projects. See State CEQA Guidelines, §15064(h)(3), §15130(d).]

- Provides substantial evidence that the emissions reductions estimated in the Climate Action Plan are feasible.

CAP Components

The CAP includes all of the elements identified under CEQA Guidelines Section 15183.5(b)(1), which identifies the elements that a plan for the reduction of GHGs should include. Specifically, the CAP complies with the provisions of CEQA Guidelines Section 15183(b)(1) by providing a quantified inventory of GHG emissions and by providing a level based on substantial evidence below which activities subject to the plan will not make a cumulatively considerable contribution to GHG impacts. That level is based on the State's AB 32 goals. The CAP also identifies and analyzes the emissions associated with specific actions, and sets forth performance standards to achieve the specified emissions goals. The analysis in the CAP and supporting appendices demonstrates that the specified emissions goals will be achieved by the measures identified in the CAP. Finally, the CAP includes monitoring measures, and the CAP will be adopted in a public process following environmental review.

The CAP includes the following chapters:

Executive Summary. The Executive Summary provides an overview of the information presented in the CAP.

Chapter 1: - Introduction. This chapter explains why the City has a CAP and the reader is introduced to the general purpose and mechanics of the CAP as well as the context of overall GHG science and regulation as related to the CAP. Further, the chapter provides background on sustainability efforts and public outreach that informed the CAP.

Chapter 2: Greenhouse Gas Emissions Inventory. This chapter provides the baseline inventory for GHG emissions in 2005, which is the foundation for the emissions forecasts in Chapter 3. A detailed description of City-wide sources of GHG emissions is provided, as well as a description of how the data was collected and analyzed. GHG emission levels in 2005 were 274,722 metric tons of CO_2 equivalents ($MTCO_2e$).

Chapter 3: Emissions Forecast and Reduction Goals. This chapter forecasts GHG emissions for 2020, 2025, and 2050, assuming the City continues with its current regulatory and policy path (business-as-usual). The City's progress in reducing GHG emissions is measured against these forecasts. The City's target of 15% below 2005 levels by 2020 for emissions reductions corresponds to the reduction targets established by the State. Additional reductions beyond 15% are encouraged.

Chapter 4: Reduction Measures. All actions (reduction measures) that will be implemented by the City to reduce GHG emissions are described. Each reduction measure includes a description of the measure and specific actions that the City will take to implement the measure.

Chapter 5: Implementation and Monitoring. This chapter identifies steps the City will take to ensure successful implementation of the CAP. This chapter address implementation responsibilities, timing of implementation, potential funding sources, and ongoing monitoring responsibilities and roles.

The measures in the Climate Action Plan are broadly grouped into seven categories:

- Energy (Community): energy efficiency upgrades to residential and commercial buildings through code adoption, funding programs, and urban forestation programs

- Energy (Municipal): energy efficiency upgrades and improvements by the City through revised building standards, solar systems, purchase of environmentally-friendly materials, and leveraging of funds.

- Transportation and Land Use (Community): policies in the General Plan that reduce automobile trips through compact and more efficient land use patterns that promote a balanced mix of land uses, encourage alternative modes of transportation, and encourage use of hybrid and electric cars.

- Transportation-Related Municipal Operations: policies that promote energy efficiency in the City fleet and promote telecommuting and flexible work schedules to reduce vehicle trips.

- Waste (Community): waste diversion from landfills to reduce the generation of methane and other greenhouse gases.

- Energy and Water: energy reduction in the heating and usage of water.

- Education: programs to increase awareness of conservation, sustainability, and the Climate Action Plan

The Climate Action Plan is available on the City's website at: http://tinyurl.com/LUCupdatehttp://tinyurl.com/LUCupdate

Relationship of the CAP to the General Plan

The Land Use and Circulation Element provides a vision and strategy to guide sustainability in the City over the timeframe of the General Plan. The CAP is a separate, stand-alone document that serves a tool that is linked to the General Plan through the Land Use and Circulation Element, primarily through General Plan Program LUC-H-2-a, which states:

> *The City will prepare, adopt and implement a comprehensive Climate Action Plan (CAP) to achieve its fair share of statewide emissions reductions for the 2020 timeframe consistent with AB32. The CAP will specify the strategies, measures and actions to be taken for each inventory sector (transportation, electricity, solid waste, etc.) to achieve the overall emission reduction target, and include an adaptive management process that can incorporate new technology and respond when goals are not being met.*
>
> *Responsibility: City Manager's Office and Community Development Department*
>
> *Timeframe: Upon completion of the Land Use and Circulation Element Update*

While the City's General Plan takes a broad and comprehensive approach to sustainability, the CAP focuses specifically on GHG reductions. The CAP identifies and quantifies the impact of the City's

sustainability vision, policies, and programs on GHG emissions. The sustainability components of the General Plan and the CAP function together as part of the City's comprehensive toolkit to achieve a vibrant and sustainable community.

2.4 PROJECT OBJECTIVES

The proposed project, which includes the Land Use and Circulation Element Update, the General Plan Land Use Map Update, and the Climate Action Plan, is intended to reflect the desires and vision of Foster City's residents, businesses, and decision-makers for the future development and operation of the City, and to reduce GHG emissions to address climate change issues to serve both the local community and the global population. Historically, Foster City has been committed to continuing the land use pattern envisioned in the original 1961 Master Plan and maintaining the design qualities, appearance and scale of its residential neighborhoods and commercial areas. In this regard, the primary objectives of the project are to:

- Update the Land Use and Circulation Element to eliminate goals, policies, and programs that are no longer relevant and ensure the Element reflects the goals, policies, and programs needed to guide the development and growth of the City while maintaining and enhancing the quality of life of the citizens.
- Update the Land Use Map to reflect current development patterns and planned parks improvements.
- Provide methods for reducing Foster City's greenhouse gas emissions consistent with the direction of the State of California through the Global Warming Solutions Act (AB 32), Governor's Order S-03-05, and Public Resources Code Section 21083.3.
- Create a programmatic tiering document that addresses the elements identified at CEQA Guidelines Section 15183.5(b)(1).
- Address new requirements of State law.

2.5 USES OF THE EIR AND REQUIRED AGENCY APPROVALS

This EIR may be used for the following direct and indirect approvals and permits associated with adoption and implementation of the proposed project.

CITY OF FOSTER CITY

The City of Foster City is the lead agency for the proposed project. The Land Use and Circulation Element Update, the General Plan Land Use Map Update, and the Climate Action Plan will be presented to the Planning Commission for review and recommendation and to the City Council for comment, review, and consideration for adoption. The City Council has the sole discretionary authority to approve and adopt the project. In order to approve the proposed project, the City Council would consider the following actions:

- Certification of the EIR;

- Adoption of required CEQA findings for the above action;
- Adoption of a Mitigation Monitoring and Reporting Program;
- Approval of the General Plan Land Use and Circulation Element Update;
- Approval of the General Plan Land Use Map Update; and
- Adoption of the Climate Action Plan.

SUBSEQUENT USE OF THE EIR

This EIR provides a review of environmental effects associated with implementation of the Land Use and Circulation Element Update, General Plan Land Use Map Update, and Climate Action Plan. When considering approval of subsequent activities under the proposed project, Foster City would utilize this EIR as the basis in determining potential environmental effects and the appropriate level of environmental review, if any, of a subsequent activity. Projects or activities successive to this EIR may include, but are not limited to, the following:

- Approval and funding of major projects and capital improvements;
- Future Specific Plan, Planned Unit Development, or Master Plan approvals;
- Amendment of the General Plan elements to incorporate mitigation measures, implement various measures of the CAP, or adopt other amendments or updates;
- Revision to the Foster City Municipal Code, including the Zoning Ordinance;
- Water, sewer, and other infrastructure master plans;
- Bicycle and Pedestrian Master Plan;
- Recreation and Open Space Master Plan;
- Development Plan approvals, such as tentative subdivision maps, variances, conditional use permits, and other land use permits;
- Development Agreements;
- Property rezoning consistent with the General Plan Land Use Map;
- Permit issuances and other approvals necessary for public and private development projects; and
- Issuance of permits and other approvals necessary for implementation of the General Plan.

Application of this EIR and the CAP to Future CEQA Reviews and Specific Projects

PROGRAM EIR

The CEQA Guidelines specifically identify the process for using the analysis in an EIR to streamline the environmental analysis of subsequent projects. Paragraphs (c) and (d) of CEQA Guidelines Section 15168 describe how a Program EIR may be used with later activities and how the Program EIR may be used to simplify the analysis for subsequent EIRs. CEQA Guidelines Section 15168(d)(3), specifically allows subsequent EIRs to solely discuss new effects which had not been considered before in the Program EIR. As described under CEQA Guidelines Section 15183(a), CEQA mandates that projects that are consistent with the development density established by a general plan for which an EIR was certified shall not require additional environmental review, except as might be necessary to examine whether there are project-specific significant effects which are peculiar to the project or its site. CEQA Guidelines Section 15183(b) provides that, in approving a project that meets the requirements of the section (that is, the project is consistent with development densities established in a community plan, general plan, or zoning for which an EIR was certified), the lead agency shall limit its examination of environmental effects to those which the agency determines, in an initial study or other analysis:

(1) Are peculiar to the project or the parcel on which the project would be located.

(2) Were not analyzed as significant effects in a prior EIR on the zoning action, general plan, or community plan, with which the project is consistent.

(3) Are potentially significant off-site impacts and cumulative impacts which were not discussed in the prior EIR prepared for the general plan, community plan or zoning action.

(4) Are previously identified significant effects which, as a result of substantial new information which was not known at the time the EIR was certified, are determined to have a more severe adverse impact than discussed in the prior EIR.

CEQA Guidelines Section 15183(c) states:

"(c) If an impact is not peculiar to the parcel or to the project, has been addressed as a significant effect in the prior EIR, or can be substantially mitigated by the imposition of uniformly applied development policies or standards, as contemplated by subdivision (e) below, then an additional EIR need not be prepared for the project solely on the basis of that impact."

CEQA Guidelines Section 15183.5 provides further support for this approach to tiering and streamlining the analysis of greenhouse gases, indicating that project-specific environmental documents may rely, through tiering or incorporation by reference, on an EIR containing a programmatic analysis of greenhouse gas emissions as provided in Sections 15152 (tiering), 15167 (staged EIRs), 15168 (program EIRs), 15175–15179.5 (Master EIRs), 15182 (EIRs Prepared for Specific Plans), and 15183 (EIRs Prepared for General Plans, Community Plans, or Zoning). This

Program EIR prepared by the City is intended to provide the analysis necessary for the City to use the document as a tiering and streamlining document as provided by CEQA Guidelines Sections 15168 and 15183.

STREAMLINING OF GHG ANALYSIS

CEQA Guidelines Section 15183.5 provides support for streamlined analysis of greenhouse gases impacts associated with later project-specific environmental documents. This EIR and CAP provide a programmatic analysis of greenhouse gas emissions and mitigation. The City intends to use this EIR as a tiering and streamlining document as allowed under Section 15183.5 of the CEQA Guidelines.

Section 15183.5(a) specifies that later project-specific environmental documents may tier from and/or incorporate by reference the programmatic review provided by this EIR. Project-specific environmental documents may rely on an EIR containing a programmatic analysis of greenhouse gas emissions as provided in Section 15152 (tiering), 15167 (staged EIRs), 15168 (Program EIRs), 15175–15179.5 (Master EIRs), 15182 (EIRs Prepared for Specific Plans), and 15183 (EIRs Prepared for General Plans, Community Plans, or Zoning).

Section 15183.5(b) allows for the City to determine, analyze, and mitigate significant greenhouse gas emissions in a plan for the reduction of greenhouse gas emissions; the CAP analyzes and mitigates greenhouse gas emissions and is consistent with the requirements of Section 15183(b)(1). As set forth in Section 15183.5(b) and pursuant to Sections 15064(h)(3) and 15130(d), the City may use the CAP to determine that a subsequent project's incremental contribution to greenhouse gas and climate change impacts is not cumulatively considerable if the project complies with the CAP.

Any project that is not consistent with the CAP would be required to analyze greenhouse gas emissions in a project-level environmental document and would not be able to tier from this EIR.

OTHER GOVERNMENTAL AGENCY APPROVALS

City approval of the proposed project would not require any actions or approvals by other public agencies. Subsequent projects and other actions to support implementation of the proposed project may require actions, including permits and approvals, by other public agencies that may include, but are not necessarily limited to:

- California Department of Fish and Wildlife (CDFW) approval of potential future streambed alteration agreements, pursuant to Fish and Wildlife Code. Approval of any future potential take of state-listed wildlife and plant species covered under the California Endangered Species Act.
- California Department of Transportation (Caltrans) approval of projects and encroachment permits for projects affecting state highway facilities.

- San Francisco Regional Water Quality Control Board (RWQCB) approval for National Pollution Discharge Elimination System compliance, including permits and Storm Water Pollution Prevention Plan approval and monitoring.
- U.S. Army Corps of Engineers (ACOE) approval of any future wetland fill activities, pursuant to the Clean Water Act.
- U.S. Fish and Wildlife Service (USFWS) approvals involving any future potential take of federally listed wildlife and plant species and their habitats, pursuant to the Federal Endangered Species Act.
- Bay Area Air Quality Management District (BAAQMD) approvals of permits for construction activities and operational activities that may emit criteria air pollutants.
- San Mateo County Transportation Authority (TA) approval and funding of regional transportation projects.
- Metropolitan Transportation Commission (MTC) approval and funding of regional transportation projects.

REFERENCES

Metropolitan Planning Group. *Foster City General Plan Update 2011 Snapshot Workbook* (*Foster City Snapshot*). 2011.

City of Foster City, 2014. *Foster City Draft Land Use and Circulation Element.*

Figure 2-1: Regional Location

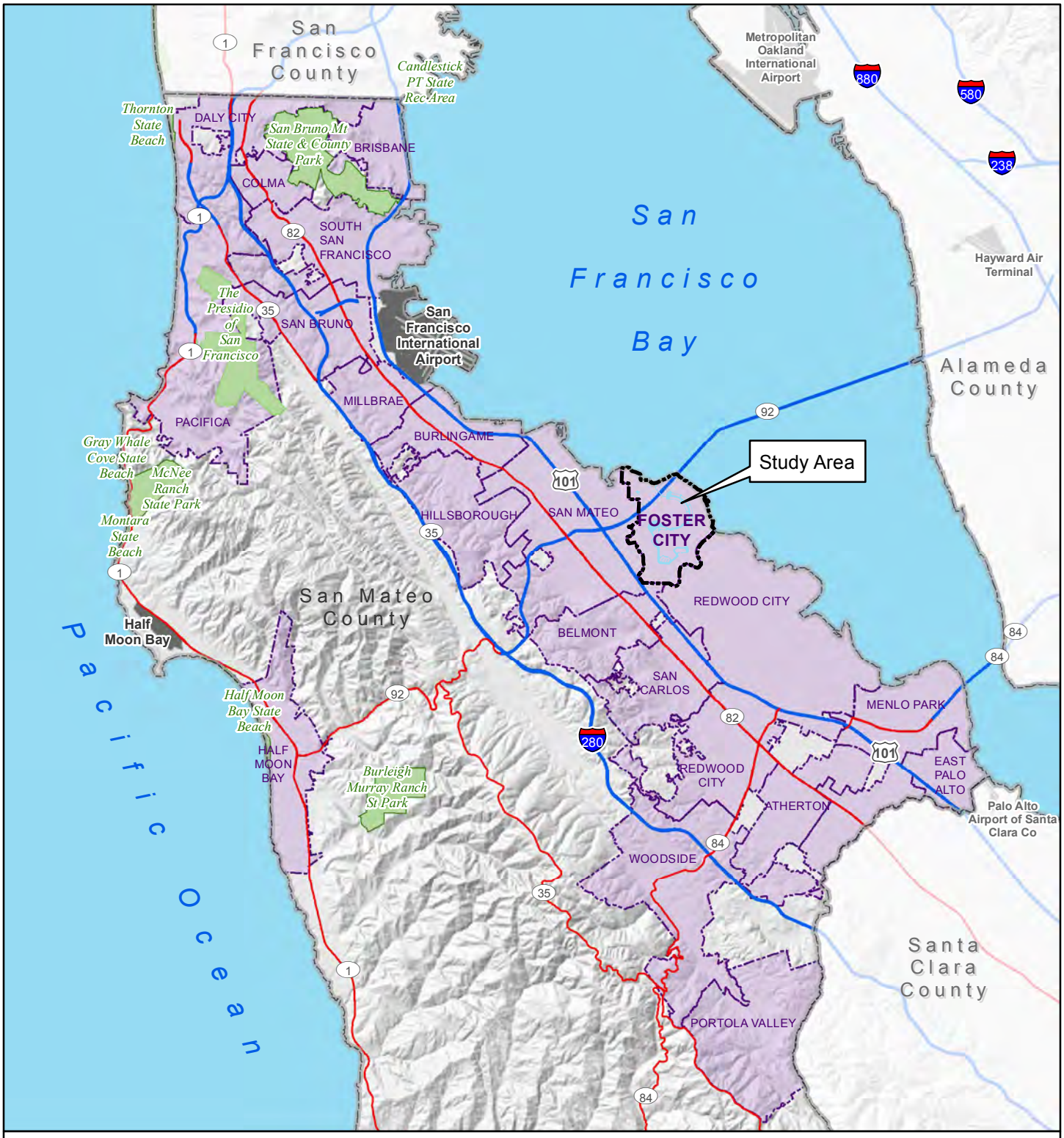
N W E S

0 5 10
Miles

Data source: California Spatial Information Library.
Map date: November 12, 2012.

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.



LEGEND

- Foster City Boundary
- Incorporated Areas of San Mateo County
- State or National Park
- Aiports

Figure 2-2: Project Location/Study Area

N

0 1 2 3
Miles

Data sources: San Mateo County GIS; Foster City GIS; ESRI StreetMap North America. Map date: November 12, 2012.

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.

Land Use Designation

- Single Family Residential
- Two Family Residential
- Apartment Residential
- Apartment/Neighborhood Com
- Neighborhood Com
- Condominium Residential
- Townhouse Residential
- School
- Light Industrial
- Open Space
- Parks and Recreation
- Research/Office Park
- Chess/Hatch Office Research
- Public and Semi Public
- Service Commercial
- Service Commercial with Housing
- Town Center Commercial
- Civic Center Mixed Use
- Waterfront Commercial
- Proposed Map Changes

A: Change from Waterfront Commercial to Park

B: Change from Open Space to Park

Figure 2-3: Proposed General Plan Land Use Map

0 500 1,000
Feet
1:26,000

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

Data source: Foster City GIS. Image courtesy of USGS & Microsoft Corporation. Map date: January 12, 2015.

This page left intentionally blank.

3.0 ENVIRONMENTAL ANALYSIS

This chapter consists of 12 sections that evaluate the environmental impacts of the proposed Foster General Plan Land Use and Circulate Element Update, an amendment to the City of Foster City General Plan Land Use Map, and the separate, stand-alone Climate Action Plan document, collectively, the "proposed project." In accordance with Appendix G of the CEQA Guidelines, the potential environmental effects of the proposed project are analyzed for the following environmental issue areas:

- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gases and Climate Change
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Population
- Noise and Vibration
- Public Services and Utilities
- Transportation and Circulation
- Visual and Aesthetic Resources

3.0.1 FORMAT OF THE ENVIRONMENTAL ANALYSIS

Each section in Chapter 3 generally follows the same format, and consists of the following subsections:

- The ***Existing Setting*** subsection describes current conditions with regard to the environmental factor reviewed.
- The ***Regulatory Setting*** subsection contains an overview of the federal, state, and local laws and regulations applicable to each environmental review topic.
- The ***Impacts and Mitigation Measures*** subsection includes the following:

- The ***Thresholds of Significance*** subsection identifies how an impact is judged to be significant in this EIR. These standards are based on the CEQA Guidelines and other regulatory criteria, where noted.

- The ***Impacts and Mitigation Measures*** provide an analysis of potential impacts associated with the proposed project, and explains why impacts were found to be significant or less than significant. This section identifies suggested measures that would mitigate each significant impact, where such measures are available. Following an identified mitigation measure, there is a statement whether the mitigation would reduce the impact to less than significant, or whether it would remain significant and unavoidable.

3.0.2 GENERAL PLAN BUILDOUT IMPACT ANALYSIS

This EIR analyzes potentially significant impacts associated with adoption and implementation of the proposed Land Use and Circulation Element Update, Land Use Map revision, and the Climate Action Plan, and assumes full buildout of the City's General Plan and Land Use Map as revised by the project. As shown on Figure 2-2, there are very minor land use changes proposed to the City's Land Use Map. None of the proposed changes would result in an increase in development potential or development intensity within the City compared to what would be allowed under the existing General Plan Land Use Map. Additionally, approval of the proposed project would not entitle or otherwise directly or indirectly approve or facilitate new development within the City. The analysis in this Draft EIR focuses on the potential impacts associated with buildout of the Foster City General Plan.

This Draft EIR also provides an analysis of overall cumulative impacts of the project taken together with other past, present, and probable future projects producing related impacts, as required by Section 15130 of the California Environmental Quality Act Guidelines (State CEQA Guidelines). The goal of this analysis is twofold: first, to determine whether the overall long-term impacts of all such projects would be cumulatively significant; and second, to determine whether the project itself would cause a "cumulatively considerable" incremental contribution to any such cumulatively significant impacts. (See State CEQA Guidelines Sections 15130[a]-[b], Section 15355[b], Section 15064[h], Section 15065[c]; *Communities for a Better Environment v. California Resources Agency* [2002] 103 Ca1.App.4th 98, 120.) In other words, the required analysis intends to first create a broad context in which to assess the project's incremental contribution to anticipated cumulative impacts, viewed on a geographic scale well beyond the project area itself, and then to determine whether the project's incremental contribution to any significant cumulative impacts from all projects is itself significant (i.e., "cumulatively considerable" in CEQA parlance).

The State CEQA Guidelines Section 15130(b)(1) provides two approaches to analyzing cumulative impacts. The first is the list approach, which requires a listing of past, present, and reasonably anticipated future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency. The second is the plan approach, wherein the relevant projections contained in an adopted general plan or related planning document that is designed to

evaluate regional or area-wide conditions contributing to the cumulative effect. For this Draft EIR, a combination of both the plan approach and the list approach been used to analyze cumulative impacts. The plan approach component assumes full buildout of the proposed Foster City General Plan and Land Use Map, as described in greater detail below. The list approach component assumes occupancy of vacant buildings, approved but not yet constructed developments, and pending developments.

GEOGRAPHIC AREA FOR CUMULATIVE ANALYSIS

Individual cumulative impacts may occur over different geographic areas. The cumulative discussions in Sections 3.1 through 3.12 explain the geographic scope of the area affected by each cumulative effect (e.g. watershed or air basin). The geographic area considered for each cumulative impact depends upon the impact that is being analyzed. For example, in assessing air quality impacts, all development within the air basin contributes to regional emissions of criteria pollutants, and basin-wide projections of emissions are the best tool for determining the cumulative effect. For most resource issues, the geographic area evaluated in this EIR includes other cities in San Mateo County in addition to Foster City.

CUMULATIVE BUILDOUT DEVELOPMENT ASSUMPTIONS

The cumulative buildout scenario for the proposed project includes growth anticipated for the City in the City's proposed General Plan Land Use and Circulation Element Update and proposed Land Use Map, and the growth that would be added with the occupancy of vacant buildings, approved but not yet constructed developments, and pending developments. The Foster City developments that are already approved, the subject of an application at the time this EIR was begun, or anticipated under the existing General Plan are shown in Table 3.0-1. The proposed General Plan Update does not commit the City to approving any anticipated or pending application. The locations of these developments are shown on Figure 3.11-6 (in the Transportation and Circulation Chapter).

TABLE 3.0-1: FOSTER CITY GENERAL PLAN – POTENTIAL DEVELOPMENT

Project Number	Project Name	Existing Land Uses[1]	Proposed Land Uses
1	Pilgrim-Triton Master Plan[2]	75,200 s.f. general office	253,900 s.f. office 32,000 s.f. retail 386 apartment units 20 townhouses
2	Chess Hatch Master Plan	190,000 s.f. office park	800,000 s.f. office
3	Gilead Integrated Master Plan[3]	459,000 s.f. office 550,000 s.f. laboratory	1,524,000 s.f. general office 953,000 s.f. laboratory 24,000 s.f. warehouse
4	Foster Square	--	266 units senior housing 24 bed assisted living facility 131 units assisted/independent living senior

Project Number	Project Name	Existing Land Uses[1]	Proposed Land Uses
			housing
5	Chess Hotel	--	121 room hotel
6	Marina	--	300 berths
7	Charter Square	55,000 s.f. retail	10,000 s.f. retail 95 townhouses
8	Harbor Cove Renovation	--	Adding 80 apartments
9	Harry's Hofbrau Site	8,840 s.f. retail	12,500 s.f. retail
10	Edgewater Place	123,300 s.f. retail	57,700 s.f. retail 154 condominiums
11	Beach Cove Apartments	--	Adding 239 apartments
12	Franciscan Apartments	--	Adding 104 apartments
13	Sand Cove Apartments	--	Adding 300 apartments
14	Shadow Cove Apartments	--	Adding 113 apartments
15	Lincoln Centre Campus Redevelopment	--	388,500 s.f. general office 166,500 s.f. laboratory 40,000 s.f. amenities

Notes: s.f. = square feet

1. Existing trip credit is applied for land uses that are currently occupied and would be replaced by the proposed land uses in the future. These land uses are currently generating traffic at the study locations and this traffic would be removed by the Proposed Land Uses. At locations 8 and 11-14, the additional apartments would not replace any existing land uses, therefore this column is blank at these sites.
2. Includes under-construction development at Triton Pointe (Parcel H) and Waverly (Parcel A) and the approved but not yet constructed development proposed at Pilgrim-Triton Phase C, Triton Pointe (Parcel I), Triton Point (Parcel I) and the remainder of Waverly.
3. Land uses that were currently under-construction buildings (such as New Buildings 355 and 309) or not fully occupied at the time of the NOP were not counted in the Existing Land Uses column.

Source: Fehr & Peers, February 2015

In addition to the build out of the Foster City General Plan, there is one approved project located in the City of San Mateo that would add traffic to study roadways under Cumulative Plus Project Conditions, and as such, is included in the list of cumulative development assumptions. This project is shown in Table 3.0-2 and on Figure 3.11-6.

TABLE 3.0-2: SAN MATEO PROJECTS

Project Number	Project Name	Existing Land Uses	Proposed Land Uses
SM1	400 Mariners Island Blvd	--	76 residential units
Notes: s.f. = square feet Source: Fehr & Peers, February 2015			

Under cumulative conditions, development in Foster City facilitated by the proposed Land Use Map is anticipated to be consistent with the City's currently adopted General Plan and Land Use Map, and would facilitate the same level and intensity of growth at full buildout.

CUMULATIVE GROWTH PROJECTIONS

Growth projections assist in understanding the potential impacts related to a wide range of environmental topics including traffic, air quality, utilities, and public services. The cumulative analysis in this EIR is based on the regional growth projections established by the Association of Bay Area Governments (ABAG)

ABAG developed growth projections for the region, *Projections 2013*, which consider anticipated rates of growth and the types of growth allowed by the adopted land use maps for each ABAG jurisdiction. The following discussion identifies past growth rates of the City's population, households, and employees, based on U.S. Census data, and provides ABAG's growth projections for 2020, 2030, and 2040.

POPULATION

From 1990 to 2010, the population of Foster City increased from 28,176 to 30,567. The majority of growth occurred from 2000 to 2010, with a 6.1 percent growth rate. ABAG's *Projections 2013* population projections for 2020, 2030, and 2040 show an increase in population at an average rate of 3.6 percent per year from 2010 through 2040. According to *Projections 2013*, the City's population is anticipated to increase to approximately 32,700 persons by 2030 and 33,900 by 2040, as shown in Table 3.0-3.

TABLE 3.0-3: POPULATION TRENDS AND FORECASTS

YEAR	*POPULATION (ABAG PROJECTIONS)*	*% CHANGE*
1990	28,176	--
2000	28,803	2.2%
2010	30,567	6.1%
2020	31,600	3.4%
2030	32,700	3.5%
2040	33,900	3.7%

SOURCE: US CENSUS, 2000; CALIFORNIA DEPARTMENT OF FINANCE, 1990; ABAG, 2013

HOUSEHOLDS

From 1990 to 2010, households in Foster City increased by 760, totaling 12,016 in 2010. Household growth occurred at similar rates during those two decades, 3.3 percent from 1990 to 2000 and 3.5 percent from 2000 to 2010. ABAG's projections for 2020, 2030, and 2040 show an increase in households at a rate of 2.5 percent per year from 2010 through 2040. In the ABAG projections, households in the City are anticipated to increase to approximately 12,690 by 2030 and to 12,950 in 2040, as shown in Table 3.0-4.

TABLE 3.0-4 HOUSEHOLD TRENDS

YEAR	HOUSEHOLDS	PERCENTAGE CHANGE
1990	11,256	--
2000	11,611	3.3%
2010	12,016	3.5%
2020	12,380	3.0%
2030	12,690	2.5%
2040	12,950	2.0%

SOURCE: U.S. CENSUS 2010, US CENSUS, 2000; ABAG, 2013

EMPLOYMENT

Foster City's work force encompasses a range of occupations and industries, including professional, technical, production, transportation, and services. The City's industrial and technological sectors have grown steadily since the late 1970s, spurred by the expansion of high-technology industries. According to ABAG projections, employment in the City decreased from 18,480 jobs in 2000 to 13,780 jobs in 2010. However, based on a Commercial Market Analysis prepared for the City by BAE Urban Economics in October 2013 using data from the California Employment Development Department, Foster City had 16,900 jobs as of August 2013. The Commercial Market Analysis indicates that employment in the City is higher than envisioned by ABAG in their *Projections 2013* analysis. The data indicates that ABAG has likely undercounted local employment. Therefore, ABAG's projection for employment growth is not used in this EIR analysis. Rather, the City's data, which uses the 16,900 jobs in August 2013 as a base and projects additional employment based on approved and anticipated developments, reports higher existing job levels and higher projected job growth, is used in order to provide a more conservative and more realistic assessment of future job growth levels. The City estimates that there are currently approximately 6,466,430 square feet of commercial, industrial, retain, and technological building space (jobs-generating uses) developed in the City. The existing and proposed Land Use Map would accommodate approximately 2,494,198 additional square feet of jobs-generating building space upon full buildout, for a total of 8,960,628 square feet.

TABLE 3.0-5 EMPLOYMENT TRENDS

YEAR	JOBS	PERCENTAGE CHANGE
2000	13,780	--
2010	18,247	32.4%
2020	21,321	16.8%
2030	24,935	16.9%
2040	27,560	10.5%

SOURCE: ABAG, 2013; FOSTER CITY COMMUNITY DEVELOPMENT DEPARTMENT, 2015.

This section describes the regional air quality, current attainment status of the air basin, local sensitive receptors, emission sources, and air quality impacts that are likely to result from project implementation.

The primary sources of data referenced for this section is derived from the following:

- Bay Area Air Quality Management District. 2010. Bay Area 2010 Clean Air Plan Adopted September 15, 2010.
- Bay Area Air Quality Management District. 2012. California Environmental Quality Act Air Quality Guidelines Updated May 2012.
- Bay Area Air Quality Management District. 1999. BAAQMD CEQA Guidelines: Assessing the Air Quality Impacts of Projects and Plans.
- Bay Area Air Quality Management District. 2010. http://www.baaqmd.gov/http://www.baaqmd.gov/
- C Donald Ahrens. 2006. Meteorology Today: An Introduction to Weather, Climate, & the Environment.
- California Air Resources Board. 2013. ARB Databases: Aerometric Data Analysis and Management System (ADAM). http://www.arb.ca.gov/html/databases.htm.

3.1.1 ENVIRONMENTAL SETTING

The Bay Area Air Quality Management District (BAAQMD) is the regional air quality agency for the San Francisco Bay Area Air Basin (SFBAAB), which comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, the southern portion of Sonoma, and the southwestern portion of Solano County. Air quality in this area is determined by such natural factors as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions. These factors along with applicable regulations are discussed below.

CLIMATE, TOPOGRAPHY, AIR POLLUTION POTENTIAL

The SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, which distort normal wind flow patterns. The Coast Range splits resulting in a western coast gap, Golden Gate, and an eastern coast gap, Carquinez Strait, which allow air to flow in and out of the SFBAAB and the Central Valley.

The climate is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell. During the summer, the Pacific high pressure cell is centered over the northeastern Pacific Ocean resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below to the surface because of the northwesterly flow produces a band of cold water off the California coast. The cool and moisture-laden air approaching the coast from the Pacific Ocean is further cooled by the presence of the cold water band resulting in condensation and the presence of fog and stratus clouds along the Northern California coast.

In the winter, the Pacific high-pressure cell weakens and shifts southward resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms. Weak inversions coupled with moderate winds result in a low air pollution potential.

High Pressure Cell

During the summer, the large-scale meteorological condition that dominates the West Coast is a semi-permanent high pressure cell centered over the northeastern Pacific Ocean. This high pressure cell keeps storms from affecting the California coast. Hence, the SFBAAB experiences little precipitation in the summer months. Winds tend to blow on shore out of the north/northwest.

The steady northwesterly flow induces upwelling of cold water from below. This upwelling produces a band of cold water off the California coast. When air approaches the California coast, already cool and moisture-laden from its long journey over the Pacific, it is further cooled as it crosses this bank of cold water. This cooling often produces condensation resulting in a high incidence of fog and stratus clouds along the Northern California coast in the summer.

Generally in the winter, the Pacific high weakens and shifts southward, winds tend to flow offshore, upwelling ceases and storms occur. During the winter rainy periods, inversions (layers of warmer air over colder air; see below) are weak or nonexistent, winds are usually moderate and air pollution potential is low. The Pacific high does periodically become dominant, bringing strong inversions, light winds and high pollution potential.

Topography

The topography of the SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys and bays. This complex terrain, especially the higher elevations, distorts the normal wind flow patterns in the SFBAAB. The greatest distortion occurs when low-level inversions are present and the air beneath the inversion flows independently of air above the inversion, a condition that is common in the summer time.

The only major break in California's Coast Range occurs in the SFBAAB. Here the Coast Range splits into western and eastern ranges. Between the two ranges lies San Francisco Bay. The gap in the western coast range is known as the Golden Gate, and the gap in the eastern coast range is the Carquinez Strait. These gaps allow air to pass into and out of the SFBAAB and the Central Valley.

Wind Patterns

During the summer, winds flowing from the northwest are drawn inland through the Golden Gate and over the lower portions of the San Francisco Peninsula. Immediately south of Mount Tamalpais, the northwesterly winds accelerate considerably and come more directly from the west as they stream through the Golden Gate. This channeling of wind through the Golden Gate produces a jet that sweeps eastward and splits off to the northwest toward Richmond and to the southwest toward San Jose when it meets the East Bay hills.

Wind speeds may be strong locally in areas where air is channeled through a narrow opening, such as the Carquinez Strait, the Golden Gate or the San Bruno gap. For example, the average wind speed at San Francisco International Airport in July is about 17 knots (from 3 p.m. to 4 p.m.), compared with only 7 knots at San Jose and less than 6 knots at the Farallon Islands.

The air flowing in from the coast to the Central Valley, called the sea breeze, begins developing at or near ground level along the coast in late morning or early afternoon. As the day progresses, the sea breeze layer deepens and increases in velocity while spreading inland. The depth of the sea breeze depends in large part upon the height and strength of the inversion. If the inversion is low and strong, and hence stable, the flow of the sea breeze will be inhibited and stagnant conditions are likely to result.

In the winter, the SFBAAB frequently experiences stormy conditions with moderate to strong winds, as well as periods of stagnation with very light winds. Winter stagnation episodes are characterized by nighttime drainage flows in coastal valleys. Drainage is a reversal of the usual daytime air-flow patterns; air moves from the Central Valley toward the coast and back down toward the Bay from the smaller valleys within the SFBAAB.

Temperature

Summertime temperatures in the SFBAAB are determined in large part by the effect of differential heating between land and water surfaces. Because land tends to heat up and cool off more quickly than water, a large-scale gradient (differential) in temperature is often created between the coast and the Central Valley, and small-scale local gradients are often produced along the shorelines of the ocean and bays. The temperature gradient near the ocean is also exaggerated, especially in summer, because of the upwelling of cold ocean bottom water along the coast. On summer afternoons the temperatures at the coast can be 35ºF cooler than temperatures 15 to 20 miles inland. At night this contrast usually decreases to less than 10º.

In the winter, the relationship of minimum and maximum temperatures is reversed. During the daytime the temperature contrast between the coast and inland areas is small, whereas at night the variation in temperature is large.

Precipitation

The SFBAAB is characterized by moderately wet winters and dry summers. Winter rains account for about 75 percent of the average annual rainfall. The amount of annual precipitation can vary greatly from one part of the SFBAAB to another even within short distances. In general, total annual rainfall can reach 40 inches in the mountains, but it is often less than 16 inches in sheltered valleys.

During rainy periods, ventilation (rapid horizontal movement of air and injection of cleaner air) and vertical mixing are usually high, and thus pollution levels tend to be low. However, frequent dry periods do occur during the winter where mixing and ventilation are low and pollutant levels build up.

Air Pollution Potential

The potential for high pollutant concentrations developing at a given location depends upon the quantity of pollutants emitted into the atmosphere in the surrounding area or upwind, and the ability of the atmosphere to disperse the contaminated air. The topographic and climatological factors discussed above influence the atmospheric pollution potential of an area. Atmospheric pollution potential, as the term is used here, is independent of the location of emission sources and is instead a function of factors described below.

WIND CIRCULATION

Low wind speed contributes to the buildup of air pollution because it allows more pollutants to be emitted into the air mass per unit of time. Light winds occur most frequently during periods of low sun (fall and winter, and early morning) and at night. These are also periods when air pollutant emissions from some sources are at their peak, namely, commute traffic (early morning) and wood burning appliances (nighttime). The problem can be compounded in valleys, when weak flows carry the pollutants upvalley during the day, and cold air drainage flows move the air mass downvalley at night. Such restricted movement of trapped air provides little opportunity for ventilation and leads to buildup of pollutants to potentially unhealthful levels.

INVERSIONS

An inversion is a layer of warmer air over a layer of cooler air. Inversions affect air quality conditions significantly because they influence the mixing depth, i.e., the vertical depth in the atmosphere available for diluting air contaminants near the ground. The highest air pollutant concentrations in the SFBAAB generally occur during inversions.

There are two types of inversions that occur regularly in the SFBAAB. One is more common in the summer and fall, while the other is most common during the winter. The frequent occurrence of elevated temperature inversions in summer and fall months acts to cap the mixing depth, limiting the depth of air available for dilution. Elevated inversions are caused by subsiding air from the subtropical high pressure zone, and from the cool marine air layer that is drawn into the SFBAAB by the heated low pressure region in the Central Valley.

The inversions typical of winter, called radiation inversions, are formed as heat quickly radiates from the earth's surface after sunset, causing the air in contact with it to rapidly cool. Radiation inversions are strongest on clear, low-wind, cold winter nights, allowing the build-up of such pollutants as carbon monoxide and particulate matter. When wind speeds are low, there is little mechanical turbulence to mix the air, resulting in a layer of warm air over a layer of cooler air next to the ground. Mixing depths under these conditions can be as shallow as 50 to 100 meters, particularly in rural areas. Urban areas usually have deeper minimum mixing layers because of heat island effects and increased surface roughness. During radiation inversions downwind transport is slow, the mixing depths are shallow, and turbulence is minimal, all factors which contribute to ozone formation.

Although each type of inversion is most common during a specific season, either inversion mechanism can occur at any time of the year. Sometimes both occur simultaneously. Moreover, the characteristics of an inversion often change throughout the course of a day. The terrain of the SFBAAB also induces significant variations among subregions.

SOLAR RADIATION

The frequency of hot, sunny days during the summer months in the SFBAAB is another important factor that affects air pollution potential. It is at the higher temperatures that ozone is formed. In the presence of ultraviolet sunlight and warm temperatures, reactive organic gases and oxides of nitrogen react to form secondary photochemical pollutants, including ozone.

Because temperatures in many of the SFBAAB inland valleys are so much higher than near the coast, the inland areas are especially prone to photochemical air pollution.

In late fall and winter, solar angles are low, resulting in insufficient ultraviolet light and warming of the atmosphere to drive the photochemical reactions. Ozone concentrations do not reach significant levels in the SFBAAB during these seasons.

SHELTERED TERRAIN

The hills and mountains in the SFBAAB contribute to the high pollution potential of some areas. During the day, or at night during windy conditions, areas in the lee sides of mountains are sheltered from the prevailing winds, thereby reducing turbulence and downwind transport. At night, when wind speeds are low, the upper atmospheric layers are often decoupled from the surface layers during radiation conditions. If elevated terrain is present, it will tend to block pollutant transport in that direction. Elevated terrain also can create a recirculation pattern by inducing upvalley air flows during the day and reverse downvalley flows during the night, allowing little inflow of fresh air.

The areas having the highest air pollution potential tend to be those that experience the highest temperatures in the summer and the lowest temperatures in the winter. The coastal areas are exposed to the prevailing marine air, creating cooler temperatures in the summer, warmer temperatures in winter, and stratus clouds all year. The inland valleys are sheltered from the marine air and experience hotter summers and colder winters. Thus, the topography of the inland valleys creates conditions conducive to high air pollution potential.

POLLUTION POTENTIAL RELATED TO EMISSIONS

Although air pollution potential is strongly influenced by climate and topography, the air pollution that occurs in a location also depends upon the amount of air pollutant emissions in the surrounding area or transported from more distant places. Air pollutant emissions generally are highest in areas that have high population densities, high motor vehicle use and/or industrialization. These contaminants created by photochemical processes in the atmosphere, such as ozone, may result in high concentrations many miles downwind from the sources of their precursor chemicals.

Peninsula Climatological Subregions

There are 11 climatological subregions within the SFBAAB. The City of Foster City is located within the peninsular region, which extends from northwest of San Jose to the Golden Gate. The Santa Cruz Mountains run up the center of the peninsula, with elevations exceeding 2000 feet at the southern end, decreasing to 500 feet in South San Francisco. Coastal towns experience a high incidence of cool, foggy weather in the summer. Cities in the southeastern peninsula experience warmer temperatures and fewer foggy days because the marine layer is blocked by the ridgeline to the west. San Francisco lies at the northern end of the peninsula. Because most of San Francisco's topography is below 200 feet, marine air is able to flow easily across most of the city, making its climate cool and windy.

The blocking effect of the Santa Cruz Mountains results in variations in summertime maximum temperatures in different parts of the peninsula. For example, in coastal areas and San Francisco the mean maximum summer temperatures are in the mid-60's, while in Foster City the mean maximum summer temperatures are in the low-80's. Mean minimum temperatures during the winter months are in the high-30's to low-40's on the eastern side of the Peninsula and in the low 40's on the coast.

Two important gaps in the Santa Cruz Mountains occur on the peninsula. The larger of the two is the San Bruno Gap, extending from Fort Funston on the ocean to the San Francisco Airport. Because the gap is oriented in the same northwest to southeast direction as the prevailing winds, and because the elevations along the gap are less than 200 feet, marine air is easily able to penetrate into the bay. The other gap is the Crystal Springs Gap, between Half Moon Bay and San Carlos. As the sea breeze strengthens on summer afternoons, the gap permits maritime air to pass across the mountains, and its cooling effect is commonly seen in Foster City.

Annual average wind speeds range from 5 to 10 mph throughout the peninsula, with higher wind speeds usually found along the coast. Winds on the eastern side of the peninsula are often high in certain areas, such as near the San Bruno Gap and the Crystal Springs Gap.

The prevailing winds along the peninsula's coast are from the west, although individual sites can show significant differences. For example, Fort Funston in western San Francisco shows a southwest wind pattern while Pillar Point in San Mateo County shows a northwest wind pattern. On the east side of the mountains winds are generally from the west, although wind patterns in this area are often influenced greatly by local topographic features.

Air pollution potential is highest along the southeastern portion of the peninsula. This is the area most protected from the high winds and fog of the marine layer. Pollutant transport from upwind sites is common. In the southeastern portion of the peninsula, air pollutant emissions are relatively high due to motor vehicle traffic as well as stationary sources. At the northern end of the peninsula in San Francisco, pollutant emissions are high, especially from motor vehicle congestion. Localized pollutants, such as carbon monoxide, can build up in "urban canyons." Winds are generally fast enough to carry the pollutants away before they can accumulate.

EXISTING AMBIENT AIR QUALITY: CRITERIA AIR POLLUTANTS

The California Air Resources Board (ARB) and the U.S. Environmental Protection Agency (EPA) currently focus on the following air pollutants as indicators of ambient air quality: ozone, particulate matter (PM), nitrogen dioxide (NO_2), CO, sulfur dioxide (SO_2), and lead. Because these are the most prevalent air pollutants known to be deleterious to human health, they are commonly referred to as "criteria air pollutants." Sources and health effects of the criteria air pollutants are summarized in Table 3.1-1.

TABLE 3.1-1 COMMON SOURCES OF HEALTH EFFECTS FOR CRITERIA AIR POLLUTANTS

POLLUTANTS	*SOURCES*	*HEALTH EFFECTS*
Ozone	Atmospheric reaction of organic gases with nitrogen oxides in sunlight	Aggravation of respiratory and cardiovascular diseases; reduced lung function; increased cough and chest discomfort
Fine Particulate Matter (PM_{10} and PM2.5)	Stationary combustion of solid fuels; construction activities; industrial processes; atmospheric chemical reactions	Reduced lung function; aggravation of respiratory and cardiovascular diseases; increases in mortality rate; reduced lung function growth in children
Nitrogen Dioxide (NO2)	Motor vehicle exhaust; high temperature stationary combustion; atmospheric reactions	Aggravation of respiratory illness
Carbon Monoxide (CO)	Incomplete combustion of fuels and other carbon-containing substances, such as motor vehicle exhaust; natural events, such as decomposition of organic matter	Aggravation of some heart diseases; reduced tolerance for exercise; impairment of mental function; birth defects; death at high levels of exposure
Sulfur Dioxide (SO2)	Combination of sulfur-containing fossil fuels; smelting of sulfur-bearing metal ore; industrial processes	Aggravation of respiratory diseases; reduced lung function
Lead	Contaminated soil	Behavioral and hearing disabilities in children; nervous system impairment

SOURCE: BAY AREA AIR QUALITY MANAGEMENT DISTRICT (2012)

Ozone, or smog, is not emitted directly into the environment, but is formed in the atmosphere by complex chemical reactions between reactive organic gases (ROG) and oxides of nitrogen (NOx) in the presence of sunlight. Ozone formation is greatest on warm, windless, sunny days. The main sources of NOX and ROG, often referred to as ozone precursors, are combustion processes (including motor vehicle engines) the evaporation of solvents, paints, and fuels, and biogenic sources. Automobiles are the single largest source of ozone precursors in the SFBAAB. Tailpipe

emissions of ROG are highest during cold starts, hard acceleration, stop-and-go conditions, and slow speeds. They decline as speeds increase up to about 50 mph, then increase again at high speeds and high engine loads. ROG emissions associated with evaporation of unburned fuel depend on vehicle and ambient temperature cycles. Nitrogen oxide emissions exhibit a different curve; emissions decrease as the vehicle approaches 30 mph and then begin to increase with increasing speeds.

Ozone levels usually build up during the day and peak in the afternoon hours. Short-term exposure can irritate the eyes and cause constriction of the airways. Besides causing shortness of breath, it can aggravate existing respiratory diseases such as asthma, bronchitis and emphysema. Chronic exposure to high ozone levels can permanently damage lung tissue. Ozone can also damage plants and trees, and materials such as rubber and fabrics.

Particulate Matter refers to a wide range of solid or liquid particles in the atmosphere, including smoke, dust, aerosols, and metallic oxides. Respirable particulate matter with an aerodynamic diameter of 10 micrometers or less is referred to as PM_{10}. $PM_{2.5}$ includes a subgroup of finer particles that have an aerodynamic diameter of 2.5 micrometers or less. Some particulate matter, such as pollen, is naturally occurring. In the SFBAAB most particulate matter is caused by combustion, factories, construction, grading, demolition, agricultural activities, and motor vehicles. Extended exposure to particulate matter can increase the risk of chronic respiratory disease. PM_{10} is of concern because it bypasses the body's natural filtration system more easily than larger particles, and can lodge deep in the lungs. The EPA and the state of California revised their PM standards several years ago to apply only to these fine particles. $PM_{2.5}$ poses an increased health risk because the particles can deposit deep in the lungs and contain substances that are particularly harmful to human health. Motor vehicles are currently responsible for about half of particulates in the SFBAAB. Wood burning in fireplaces and stoves is another large source of fine particulates.

Nitrogen Dioxide (NO_2) is a reddish-brown gas that is a by-product of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, nitrogen dioxide can increase the risk of acute and chronic respiratory disease and reduce visibility. NO_2 may be visible as a coloring component of a brown cloud on high pollution days, especially in conjunction with high ozone levels.

Carbon Monoxide (CO) is an odorless, colorless gas. It is formed by the incomplete combustion of fuels. The single largest source of CO in the SFBAAB is motor vehicles. Emissions are highest during cold starts, hard acceleration, stop-and-go driving, and when a vehicle is moving at low speeds. New findings indicate that CO emissions per mile are lowest at about 45 mph for the average light-duty motor vehicle and begin to increase again at higher speeds. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease or anemia, as well as fetuses. Even healthy people exposed to high CO concentrations can experience headaches, dizziness, fatigue, unconsciousness, and even death.

Sulfur Dioxide (SO_2) is a colorless acid gas with a pungent odor. It has potential to damage materials and it can have health effects at high concentrations. It is produced by the combustion of sulfur-containing fuels, such as oil, coal and diesel. SO2 can irritate lung tissue and increase the risk of acute and chronic respiratory disease.

Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.

Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, the EPA set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The EPA banned the use of leaded gasoline in highway vehicles in December 1995. As a result of the EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector and levels of lead in the air decreased dramatically.

Ambient Air Quality Standards and Designations

The current federal and state ambient air quality standards and attainment standards are presented in Table 3.1-2.

TABLE 3.1-2 AMBIENT AIR QUALITY STANDARDS AND DESIGNATIONS

POLLUTANT	AVERAGING TIME	CALIFORNIA		NATIONAL STANDARDS [A]		
		STANDARDS [B, C]	ATTAINMENT STATUS [D]	PRIMARY [C,E]	SECONDARY [C,F]	ATTAINMENT STATUS [G]
Ozone	1-hour	0.09 ppm (180 µg/m3)	N (Serious)	–[h]	Same as Primary Standard	–[h]
	8-hour	0.070 ppm (137 µg/m3)	–	0.075 ppm (147 µg/m3)		N
Carbon Monoxide (CO)	1-hour	20 ppm (23 mg/m3)	A	35 ppm (40 mg/m3)	–	U/A
	8-hour	9 ppm (10 mg/m3)		9 ppm (10 mg/m3)		
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 µg/m3)	–	0.053 ppm (100 µg/m3)	Same as Primary Standard	U/A
	1-hour	0.18 ppm (339 µg/m3)	A	–		–
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	–	–	0.030 ppm (80 µg/m3)	–	A
	24-hour	0.04 ppm (105 µg/m3)	A	0.14 ppm (365 µg/m3)	–	
	3-hour	–	–	–	0.5 ppm (1300 µg/m3)	
	1-hour	0.25 ppm (655 µg/m3)	A	–	–	–
Respirable Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m3	N	– h	Same as Primary Standard	U
	24-hour	50 µg/m3		150 µg/m3		

Pollutant	Averaging Time	California		National Standards [A]		
		Standards [B, C]	Attainment Status [D]	Primary [C,E]	Secondary [C,F]	Attainment Status [G]
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m3	N	15 µg/m3	Same as Primary Standard	N[j]
	24-hour	–	–	35 µg/m3		
Lead[i]	30-day Average	1.5 µg/m3	A	–	–	–
	Calendar Quarter	–	–	1.5 µg/m3	Same as Primary Standard	–
Sulfates	24-hour	25 µg/m3	A	No National Standards		
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m3)	U			
Vinyl Chloride i	24-hour	0.01 ppm (26 µg/m3)	–			
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient of 0.23 per kilometer — visibility of 10 miles or more (0.07—30 miles or more for Lake Tahoe) because of particles when the relative humidity is less than 70%.	U			

[a] National standards (other than ozone, PM, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. The PM_{10} 24-hour standard is attained when 99% of the daily concentrations, averaged over 3 years, are equal to or less than the standard. The $PM_{2.5}$ 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the EPA for further clarification and current federal policies.

[b] California standards for ozone, CO (except Lake Tahoe), SO_2 (1- and 24-hour), NO_2, PM, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[c] Concentration expressed first in units in which it was promulgated [i.e., parts per million (ppm) or micrograms per cubic meter (µg/m3)]. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[d] Unclassified (U): a pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.

Attainment (A): a pollutant is designated attainment if the state standard for that pollutant was not violated at any site in the area during a 3-year period.

Nonattainment (N): a pollutant is designated nonattainment if there was a least one violation of a state standard for that pollutant in the area.

Nonattainment/Transitional (NT): is a subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining the standard for that pollutant.

[e] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

[f] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[g] Nonattainment (N): any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.

Attainment (A): any area that meets the national primary or secondary ambient air quality standard for the pollutant.

Unclassifiable (U): any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant.

[h] The 1-hour ozone NAAQS was revoked on June 15, 2005 and the annual PM_{10} NAAQS was revoked in 2006.

[i] ARB has identified lead and vinyl chloride as toxic air contaminants with no threshold of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for this pollutant.

[j] U.S EPA lowered the 24-hour $PM_{2.5}$ standard from 65 µg/m3 to 35 µg/m3 in 2006. EPA issued attainment status designations for the 35 µg/m3standard on December 22, 2008. EPA has designated the Bay Area as nonattainment for the 35 µg/m3 $PM_{2.5}$ standard. The EPA designation will be effective 90 days after publication of the regulation in the Federal Register.

SOURCE: BAY AREA AIR QUALITY MANAGEMENT DISTRICT (2012)

Monitoring Data

The BAAQMD operates a regional air quality monitoring network that regularly measures the concentrations of the five major criteria air pollutants. Air pollutant monitoring data is available at http://www.arb.ca.gov/adam/welcome.html. Air quality conditions in the SFBAAB have improved significantly since the BAAQMD was created in 1955. Ambient concentrations and the number of days on which the region exceeds standards have declined dramatically. Neither federal or State ambient air quality standards have been violated in recent decades for nitrogen dioxide, sulfur dioxide, sulfates, lead, hydrogen sulfide, and vinyl chloride.

Emissions Inventory

The BAAQMD estimates emissions of criteria air pollutants from approximately nine hundred source categories. The estimates are based on BAAQMD permit information for stationary sources (e.g., manufacturing industries, refineries, dry-cleaning operations), plus more generalized estimates for area sources (e.g., space heating, landscaping activities, use of consumer products) and mobile sources (e.g., trains, ships and planes, as well as on-road and off-road motor vehicles). BAAQMD emissions inventory data is available at:

http://www.arb.ca.gov/ei/maps/statemap/dismap.htm.

EXISTING AMBIENT AIR QUALITY: TOXIC AIR CONTAMINANTS

In addition to the criteria air pollutants listed above, another group of pollutants, commonly referred to as toxic air contaminants (TACs) or hazardous air pollutants can result in health effects that can be quite severe. Many TACs are confirmed or suspected carcinogens, or are known or suspected to cause birth defects or neurological damage. Secondly, many TACs can be toxic at very low concentrations. For some chemicals, such as carcinogens, there are no thresholds below which exposure can be considered risk-free.

Industrial facilities and mobile sources are significant sources of TACs. The electronics industry, including semiconductor manufacturing, has the potential to contaminate both air and water due to the highly toxic chlorinated solvents commonly used in semiconductor production processes. Sources of TACs go beyond industry. Various common urban facilities also produce TAC emissions, such as gasoline stations (benzene), hospitals (ethylene oxide), and dry cleaners (perchloroethylene). Automobile exhaust also contains TACs such as benzene and 1,3-butadiene. Diesel particulate matter has also been identified as a TAC by the Air Resources Board (ARB). Diesel PM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. BAAQMD research indicates that mobile-source emissions of diesel PM, benzene, and 1,3-butadiene represent a substantial portion of the ambient background risk from TACs in the SFBAAB.

EXISTING AMBIENT AIR QUALITY: ODORS AND DUST

Other air quality issues of concern in the SFBAAB include nuisance impacts of odors and dust. Objectionable odors may be associated with a variety of pollutants. Common sources of odors include wastewater treatment plants, landfills, composting facilities, refineries and chemical

plants. Similarly, nuisance dust may be generated by a variety of sources including quarries, agriculture, grading and construction. Odors rarely have direct health impacts, but they can be very unpleasant and can lead to anger and concern over possible health effects among the public. Each year the BAAQMD receives thousands of citizen complaints about objectionable odors. Dust emissions can contribute to increased ambient concentrations of PM_{10}, and can also contribute to reduced visibility and soiling of exposed surfaces.

3.1.2 REGULATORY SETTING

Air quality with respect to criteria air pollutants and TACs within the SFBAAB is regulated by such agencies as the BAAQMD, ARB, and the Environmental Protection Agency (EPA). Each of these agencies develops rules, regulations, policies, and/or goals to attain the goals or directives imposed through legislation. Although the EPA regulations may not be superseded, both state and local regulations may be more stringent.

FEDERAL AIR QUALITY REGULATIONS

U.S. Environmental Protection Agency

At the federal level, EPA has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the Federal Clean Air Act (FCAA), which was enacted in 1963. The FCAA was amended in 1970, 1977, and 1990.

The FCAA required EPA to establish primary and secondary national ambient air quality standards (NAAQS). The FCAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The Federal Clean Air Act Amendments of 1990 (FCAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA has responsibility to review all state SIPs to determine conformation to the mandates of the FCAAA and determine if implementation will achieve air quality goals. If the EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area that imposes additional control measures. Failure to submit an approvable SIP or to implement the plan within the mandated timeframe may result in sanctions being applied to transportation funding and stationary air pollution sources in the air basin.

On January 9, 2013, EPA issued a final rule to determine that the Bay Area attains the 24-hour $PM_{2.5}$ national standard. This EPA rule suspends key SIP requirements as long as monitoring data continues to show that the Bay Area attains the standard. Despite this EPA action, the Bay Area will continue to be designated as "non-attainment" for the national 24-hour $PM_{2.5}$ standard until such time as the Air District submits a "redesignation request" and a "maintenance plan" to EPA, and EPA approves the proposed redesignation.

Federal Hazardous Air Pollutant Program

Title III of the FCAA requires the EPA to promulgate national emissions standards for hazardous air pollutants (NESHAPs). The NESHAP may differ for major sources than for area sources of hazardous air pollutants (HAPs) (major sources are defined as stationary sources with potential to emit more than 10 tons per year [TPY] of any HAP or more than 25 TPY of any combination of HAPs; all other sources are considered area sources). The emissions standards are to be promulgated in two phases. In the first phase (1992–2000), the EPA developed technology-based emission standards designed to produce the maximum emission reduction achievable. For area sources, the standards may be different, based on generally available control technology. In the second phase (2001–2008), the EPA is required to promulgate health risk–based emissions standards where deemed necessary to address risks remaining after implementation of the technology-based NESHAP standards. The FCAA required the EPA to promulgate vehicle or fuel standards containing reasonable requirements that control toxic emissions, at a minimum to benzene and formaldehyde. Performance criteria were established to limit mobile-source emissions of toxics, including benzene, formaldehyde, and 1,3-butadiene. In addition, §219 of the FCAA required the use of reformulated gasoline in selected U.S. cities (those with the most severe ozone nonattainment conditions) to further reduce mobile-source emissions.

STATE AIR QUALITY REGULATIONS

In 1992 and 1993, the California Air Resources Board requested delegation of authority for the implementation and enforcement of specified New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAPS) to the following local agencies: Bay Area and South Coast Air Quality Management Districts. EPA's review of the State of California's laws, rules, and regulations showed them to be adequate for the implementation and enforcement of these federal standards, and EPA granted the delegations as requested.

California Air Resources Board

ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA), which was adopted in 1988. The CCAA requires that all air districts in the state endeavor to achieve and maintain the California ambient air quality standards (CAAQS) by the earliest practical date. The act specifies that districts should focus particular attention on reducing the emissions from transportation and area-wide emission sources, and provides districts with the authority to regulate indirect sources.

ARB is primarily responsible for developing and implementing air pollution control plans to achieve and maintain the NAAQS. The ARB is primarily responsibility for statewide pollution sources and produces a major part of the SIP. Local air districts are still relied upon to provide additional strategies for sources under their jurisdiction. The ARB combines this data and submits the completed SIP to EPA.

Other ARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control and air quality management districts), establishing CAAQS

(which in many cases are more stringent than the NAAQS), determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, and off-road vehicles.

California Clean Air Act

The California Clean Air Act, Section 39610 (a), directs the ARB to "identify each district in which transported air pollutants from upwind areas outside the district cause or contribute to a violation of the ozone standard and to identify the district of origin of transported pollutants." The information regarding the transport of air pollutants from one basin to another was to be quantified to assist interrelated basins in the preparation of plans for the attainment of State ambient air quality standards. Numerous studies conducted by the ARB have identified air basins that are impacted by pollutants transported from other air basins (as of 1993). Among the air basins affected by air pollution transport from the SFBAAB are the North Central Coast Air Basin, the Mountain Counties Air Basin, the San Joaquin Valley Air Basin, and the Sacramento Valley Air Basin. The SFBAAB was also identified as an area impacted by the transport of air pollutants from the Sacramento region.

State Toxic Air Contaminant Programs

California regulates TACs primarily through the Tanner Air Toxics Act (AB 1807) (Tanner Act) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588) (Hot Spots Act). The Tanner Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB can designate a substance as a TAC. To date, ARB has identified over 21 TACs, and adopted the EPA's list of HAPs as TACs. Most recently, diesel exhaust particulate was added to the ARB list of TACs. Once a TAC is identified, ARB's then adopts an Airborne Toxics Control Measure for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate best available control technology (BACT) to minimize emissions. None of the TACs identified by ARB have a safe threshold.

The Hot Spots Act requires that existing facilities that emit toxic substances above a specified level:

1. Prepare a toxic emission inventory;
2. Prepare a risk assessment if emissions are significant;
3. Notify the public of significant risk levels;
4. Prepare and implement risk reduction measure.

ARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses, and off-road diesel equipment (e.g., tractors, generators). In February 2000, ARB adopted a new public transit bus fleet rule and emission standards for new urban buses. These new rules and standards provide for 1) more stringent emission standards for some new urban bus engines beginning with 2002 model year engines, 2) zero-emission bus demonstration and purchase requirements applicable to transit agencies, and 3) reporting requirements with which transit agencies must demonstrate

compliance with the urban transit bus fleet rule. Notable milestones include the low sulfur diesel fuel requirement, and tighter emission standards for heavy-duty diesel trucks (2007) and off-road diesel equipment (2011) nationwide. Over time, the replacement of older vehicles will result in a vehicle fleet that produces substantially less TACs than under current conditions. Mobile-source emissions of TACs (e.g., benzene, 1-3-butadiene, diesel PM) have been reduced significantly over the last decade, and will be reduced further in California through a progression of regulatory measures [e.g., Low Emission Vehicle/Clean Fuels and Phase II reformulated gasoline regulations) and control technologies. With implementation of ARB's Risk Reduction Plan, it is expected that diesel PM concentrations will be reduced by 75% in 2010 and 85% in 2020 from the estimated year 2000 level. Adopted regulations are also expected to continue to reduce formaldehyde emissions from cars and light-duty trucks. As emissions are reduced, it is expected that risks associated with exposure to the emissions will also be reduced.

LOCAL AND REGIONAL AIR QUALITY REGULATIONS

Bay Area Air Quality Management District

The BAAQMD attains and maintains air quality conditions in the SFBAAB through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of the BAAQMD includes the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, and issuance of permits for stationary sources of air pollution. The BAAQMD also inspects stationary sources of air pollution and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by the FCAA, FCAAA, and the CCAA.

The BAAQMD has regulated TACs since the 1980s. At the local level, air pollution control or management districts may adopt and enforce CARB's control measures. Under BAAQMD Regulation 2-1 (General Permit Requirements), Regulation 2-2 (New Source Review), and Regulation 2-5 (New Source Review), all nonexempt sources that possess the potential to emit TACs are required to obtain permits from BAAQMD. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including new source review standards and air toxics control measures. The BAAQMD limits emissions and public exposure to TACs through a number of programs. The BAAQMD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. In addition, the BAAQMD has adopted Regulation 11 Rules 2 and 14, which address asbestos demolition renovation, manufacturing, and standards for asbestos containing serpentine.

BAAQMD Air Quality Plans

As stated above, the BAAQMD prepares plans to attain ambient air quality standards in the SFBAAB. The BAAQMD prepares ozone attainment plans for the national ozone standard and clean air plans for the California standard both in coordination with the Metropolitan Transportation Commission and the Association of Bay Area Governments (ABAG).

With respect to applicable air quality plans, the BAAQMD prepared the 2010 Clean Air Plan to address nonattainment of the national 1-hour ozone standard in the SFBAAB. The purpose of the 2010 Clean Air Plan is to:

1. Update the Bay Area 2005 Ozone Strategy in accordance with the requirements of the California Clean Air Act to implement "all feasible measures" to reduce ozone;
2. Consider the impacts of ozone control measures on particulate matter (PM), air toxics, and greenhouse gases in a single, integrated plan;
3. Review progress in improving air quality in recent years;
4. Establish emission control measures to be adopted or implemented in the 2009-2012 timeframe.
5. Similarly, the BAAQMD prepared the 2010 Clean Air Plan to address nonattainment of the CAAQS.

BAAQMD CEQA Guidelines

In accordance with the 2010 Clean Air Plan, the BAAQMD developed and adopted thresholds of significance (Thresholds) that were incorporated into the 2010 *CEQA Air Quality Guidelines*.[1] The purpose of the *CEQA Air Quality Guidelines* is to assist lead agencies in the evaluation and mitigation of air quality impacts generated from new developments during the construction and operational phases of a project. The 2010 Thresholds established levels at which air pollution emissions would cause significant environmental impacts. The 2010 Thresholds include emission values for ozone precursors (ROG and NOx), $PM_{2.5}$, PM_{10}, local CO, TACs, and greenhouse gases (GHGs). Relative to the established Thresholds, the BAAQMD also developed and incorporated screening criteria into the 2010 *CEQA Air Quality Guidelines*. The screening criteria can be used to conservatively evaluate whether a proposed project would result in potentially significant air quality impacts and if more detailed air quality assessments are necessary.

On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA before adopting the 2010 Thresholds, because the 2010 Thresholds are considered a "project" subject to CEQA review. The court issued a writ of mandate ordering BAAQMD to set aside and cease dissemination of the adopted 2010 Thresholds until approved under CEQA. In view of the court's order, the BAAQMD updated the *CEQA Air Quality Guidelines* in 2012 to exclude the recommended use of the 2010 Thresholds and associated screening criteria for CEQA analysis.

On August 13, 2013, the California First Appellate District Court of Appeal reversed the trial court's decision by finding that the adoption of the 2010 Thresholds was not itself a "project" requiring CEQA review. The Court of Appeal's decision has since been appealed to the California Supreme Court, where the issue of using the 2010 Thresholds to evaluate the impact of existing environmental conditions on future project users is being challenged as a "reverse application" of

[1] BAAQMD, 2010b. *California Environmental Quality Act Air Quality Guidelines*. May.

the intended CEQA process. More specifically, the Supreme Court's review is limited to following: "Under what circumstances, if any, does the California Environmental Quality Act require an analysis of how existing environmental conditions will impact future residents or users (receptors) of a proposed project?"

In view of the trial court's order which remains in place pending final resolution of the case, lead agencies will need to determine appropriate air quality thresholds of significance based on substantial evidence in the record. Since the adoption process and scientific soundness of the 2010 Thresholds have not been challenged, the 2010 Thresholds and associated screening criteria are used in this EIR in conjunction with 2012 *CEQA Air Quality Guidelines*[2] for the evaluation of air quality impacts related to the proposed project.

Toxic Air Contaminants Regulation

The BAAQMD has regulated TACs since the 1980s. At the local level, air pollution control or management districts may adopt and enforce ARB's control measures. Under BAAQMD Regulation 2-1 (General Permit Requirements), Regulation 2-2 (New Source Review), and Regulation 2-5 (New Source Review), all nonexempt sources that possess the potential to emit TACs are required to obtain permits from BAAQMD. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including new source review standards and air toxics control measures. The BAAQMD limits emissions and public exposure to TACs through a number of programs. The BAAQMD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. In addition, the BAAQMD has adopted Regulation 11 Rules 2 and 14, which address asbestos demolition renovation, manufacturing, and standards for asbestos containing serpentine.

City of Foster City 2003 Conservation Element

The adopted City of Foster City General Plan identifies the following goals, policies, and conservation programs related to air quality within Chapter 8, Conservation Element (adopted in 2003):

CONSERVATION GOALS

Protect and Conserve Natural Resources

C-A Protect and conserve wildlife habitat, energy resources, land resources, air quality, and the quality and quantity of water resources.

CONSERVATION POLICIES

Protect and Conserve Natural Resources

C-3 Air Quality. Reduce the impact of development on local air quality.

C-4 Energy Conservation. Promote energy conservation in new and existing development

[2] BAAQMD, 2012a. *California Environmental Quality Act Air Quality Guidelines*. May.

CONSERVATION PROGRAMS

C-j Air Quality Impacts. Review proposed projects for their potential to affect air quality conditions.

Responsibility: Community Development Department.
Timeline: During Plan Review

C-k Air Pollution Sensitive Land Uses. To the extent feasible, separate air pollution sensitive land uses from sources of air pollution.

Responsibility: Community Development Department.
Timeline: During Plan Review

C-n Coordination with Other Agencies in Air Quality Improvements. Coordinate review of large projects with local, regional and state agencies to improve air quality.

Responsibility: Community Development Department.
Timeline: During Plan Review

C-o Title 24. Construct new buildings and additions to energy efficiency standards according to Title 24 of the California State Model Code.

Responsibility: Community Development Department.
Timeline: During Plan Review

C-p Solar Heating and Cooling. Encourage installation of solar panels for heating and cooling with solar energy.

Responsibility: Community Development Department.
Timeline: During Plan Review

C-q Solar Heating for Pools. Encourage property owners to heat all new and existing spas and swimming pools with solar energy.

Responsibility: Community Development Department.
Timeline: During Plan Review

C-r Energy Information and Outreach. Continue to expand and monitor information about energy conservation and establish a public outreach program to inform Foster City residents and businesses about the availability and importance of the information.

Responsibility: Community Development Department.
Timeline: Prepare brochure following adoption of this Element

Foster City Standard Conditions of Approval

Foster City has adopted Standard Conditions of Approval (SCOAs) for large new and redevelopment projects. The following SCOAs related to air quality would apply to any proposed large new or redevelopment project:

SCOA 9.12: The following controls shall be implemented at all construction sites within the project to control dust production and fugitive dust.

- Water all active construction areas at least twice daily and more often during windy periods; active areas adjacent to existing sensitive land uses shall be kept damp at all times, or shall be treated with non-toxic stabilizers to control dust;
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard;
- Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites;
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites; and
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
- Blowing dust shall be reduced by timing construction activities so that paving and building construction begin as soon as possible after completion of grading, and by landscaping disturbed soils as soon as possible.
- Water trucks shall be present and in use at the construction site.
- All portions of the site subject to blowing dust shall be watered as often as deemed necessary by the City in order to insure proper control of blowing dust for the duration of the project.
- Watering on public streets shall not occur.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the

California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations (CCR). Clear signage shall be provided for construction workers at all access points.

- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
- Streets will be cleaned by street sweepers or by hand as often as deemed necessary by the City Engineer.
- Watering associated with on-site construction activity shall take place between the hours of 8 a.m. and 7 p.m. and shall include at least one late-afternoon watering to minimize the effects of blowing dust.
- All public streets and medians soiled or littered due to this construction activity shall be cleaned and swept on a daily basis during the workweek to the satisfaction of the City.
- Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

THRESHOLDS OF SIGNIFICANCE

Long range plans (e.g., general plan, etc.) present unique challenges for assessing impacts because they contain development strategies for 20-year, or longer, time horizons. CEQA requires the lead agency to evaluate individual as well as cumulative impacts of general plans, and all feasible mitigation measures must be incorporated within the proposed plan to reduce significant air quality impacts.

The BAAQMD CEQA Guidelines provide guidance on how to evaluate air quality change impacts of long-range plans prepared within the SFBAAB pursuant to CEQA. Air quality impacts from future development pursuant to general plans can be divided into construction-related impacts and operational-related impacts. Construction-related impacts are associated with construction activities likely to occur in conjunction with future development allocated by the plan. Operational-related impacts are associated with continued and future operation of developed land uses, including increased vehicle trips and energy use.

Consistent with the Bay Area Air Quality Management District CEQA Guidelines, the proposed project will have a significant impact on the environment associated with air quality if it will:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Cause health risks associated with toxic air contaminants;
- Create objectionable odors;
- Conflict with regional plans.

(Note: Greenhouse gas emissions are addressed in a separate chapter of this EIR.)

IMPACTS AND MITIGATION MEASURES

Impact 3.1-1: Project implementation could conflict with or obstruct implementation of the applicable air quality plan (less than significant)

CEQA requires lead agencies to determine whether a project is consistent with all applicable air quality plans. The Bay Area Air Quality District's most current plan is the 2010 Clean Air Plan. The BAAQMD CEQA Guidelines recommends that lead agencies consider the following questions relative to this consistency determination:

1. Does the project support the primary goals of the 2010 Clean Air Plan?
2. Does the project include applicable control measures from the 2010 Clean Air Plan?
3. Does the project disrupt or hinder implementation of any 2010 Clean Air Plan control measures?

The primary goals of the 2010 Clean Air Plan are to:

- Attain air quality standards;
- Reduce population exposure and protect public health in the Bay Area; and
- Reduce greenhouse gas emissions and protect the climate.

The 2010 Clean Air Plan contains 55 control measures aimed at reducing air pollution in the Bay Area. Along with the traditional stationary, area, mobile source and transportation control measures, the 2010 Clean Air Plan contains a number of new control measures designed to protect the climate and promote mixed use, compact development to reduce vehicle emissions and exposure to pollutants from stationary and mobile sources.

The BAAQMD encourages project developers and lead agencies to incorporate these Land Use and Local Impact measures (LUM) and Energy and Climate measures into proposed project designs and plan elements. The BAAQMD CEQA Guidelines indicates that agencies approving projects should require all air quality plan control measures that can feasibly be incorporated into the project design or applied as mitigation, or justify the reasons, supported by substantial evidence, why a measure or measures are not incorporated into the project.

If approval of a project would not cause the disruption, delay or otherwise hinder the implementation of any air quality plan control measure, it may be considered consistent with the 2010 Clean Air Plan. Examples of how a project may cause the disruption or delay of control measures include a project that precludes an extension of a transit line or bike path, or proposes excessive parking beyond parking requirements.

Foster City is essentially a built-out community with distinct boundaries. New development will primarily come from redevelopment of underutilized infill sites at higher densities and intensities. The proposed changes to the General Plan Land Use and Circulation Element, and the proposed changes to the Foster City General Plan Land Use Map would not result in population increases

beyond those facilitated by the existing General Plan and the regional population projections prepared by ABAG. The ABAG regional population projections are used by the BAAQMD in the preparation of the 2010 Clean Air Plan.

The 2003 Foster City General Plan Conservation Element includes an extensive list of policies and actions that are specifically aimed at improving air quality. These applicable policies and actions are listed above under the Regulatory Setting section of this chapter. Additionally, SCOA 9.12, identified above under the Regulatory Setting, includes a range of controls to be implemented during the construction phase of projects in order to control fugitive dust and particulate matter.

The proposed Land Use and Circulation Element contains an extensive list of policies and actions, presented below, which are consistent with the intent of the Clean Air Plan control measures by promoting a compact urban development form, emphasizing infill development, and ensuring that land use patterns do not expose sensitive receptors to pollutant concentrations.

Additionally, the proposed Land Use and Circulation Element includes a wide range of policies and actions that would effectively reduce vehicle miles travelled throughout the Planning Area, through the use of complete streets and multi-modal transportation systems. These applicable policies and actions are described in greater detail in Section 3.11 (Transportation and Circulation).

The policies and actions included throughout the existing and proposed elements of the Foster City General Plan, most specifically within the 2003 Conservation Element and the proposed Land Use and Circulation Element, cover the breadth and intent of the air quality recommendations contained in the 2010 Clean Air Plan by promoting a compact and mixed-use development pattern that focuses new development at infill locations, prioritizes improvements to the bicycle and pedestrian network, and emphasizes the expansion of transit and alternative transportation options.

The 2010 Clean Air Plan's second primary goal is to address public health. The 2010 Clean Air Plan addresses public health through identifying control measures to maximize the reduction in population exposure to air pollutants and by including a category titled Land Use and Local Impacts Measures that is intended to address localized impacts of air pollution and to help local jurisdictions to pursue transit-oriented infill development in priority areas. The proposed Land Use and Circulation Element includes Policy LUC-D: Assure Safe Commercial and Industrial Uses, which requires commercial and industrial uses to operate safely and strictly control any industrial by-products, odors or emissions which may adversely affect the health or safety of Foster City residents or workers and the overall environment in Foster City, as provided in Chapter 17.68, General Performance Standards of the Foster City Municipal Code. Action LUC-D-9 dictates that the City will use a design review process for commercial and industrial projects to ensure that basic land uses, density, access, internal circulation, visual characteristics, noise, odors, fire hazards, vibrations, smoke, discharge of wastes and nighttime lighting do not negatively affect adjacent or nearby residential land uses. The above-referenced policies, in addition to the full list of policies identified below, demonstrate how the proposed Land Use and Circulation Element would assist in meeting the goals of the 2010 Clean Air Plan.

The 2010 Clean Air Plan's final primary goal of protecting the climate is to reduce greenhouse gases. The proposed Foster City Climate Action Plan, which is a component of the proposed project, includes an extensive list of measures that are specifically aimed at reducing greenhouse gas emissions/climate change. These policies and actions are discussed in more detail in Section 3.7 (Greenhouse Gases and Climate Change). The proposed Foster City Climate Action Plan was developed to meet the 2020 reduction target to comply with AB 32. Successful implementation of the Climate Action Plan would achieve a 15 percent GHG reduction goal by 2020, and achieve a 20 percent GHG reduction by 2025. The 15 percent GHG emission reduction target by 2020 means a reduction of 80,437 metric tons of CO_2e from the business as usual (BAU) projections by 2020, as described in greater detail in Section 3.7. Implementation of the Climate Action Plan component of the proposed project would assist the City in achieving a 15 percent reduction in GHG emissions by 2020, and would assist with the successful achievement of the GHG reduction priorities in the 2010 Clean Air Plan.

If approval of the proposed project would not cause the disruption, delay, or otherwise hinder the implementation of any air quality plan control measure, it may be considered consistent with the 2010 Clean Air Plan. The proposed project does not cause the disruption, delay, or otherwise hinder the implementation of any air quality plan control measure; therefore, it is consistent with the 2010 Clean Air Plan.

The policies and actions listed below demonstrate the City's commitment to promoting a compact development pattern that emphasizes alternative modes of transportation and reducing vehicle miles travelled. Additionally, implementation of the proposed project would not result in a population increase that would exceed applicable regional projections developed by ABAG and used by the BAAQMD to develop the 2010 Clean Air Plan. Additionally, as described above, implementation of the Foster City Climate Action Plan, which is a component of the proposed project, would effectively reduce GHG emissions by 15 percent by 2020 and 20 percent by 2025, which would further assist in meeting the goals of the 2010 Clean Air Plan.

Implementation of the proposed project, which includes the following policies and actions, would have a **less than significant** impact relative to this topic.

GENERAL PLAN LAND USE AND CIRCULATION ELEMENT GOALS, POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

GOAL LUC-C: Maintain a Variety of Land Uses. Maintain land designated for a variety of residential, commercial, light industrial, recreational and public institutional purposes which: (1) provide a mix of housing types, densities and tenure; (2) ensure that a variety of commercial and industrial goods, services and employment opportunities are available in Foster City; and (3) offer a range of recreational and public facilities to meet the needs Foster City's residents.

> ***LUC-C- 2: Jobs/Housing Balance.*** *The City will continue to strive to maintain a balance between the number of jobs in the City and the number of housing units available to house workers. To achieve and maintain such a balance, the City will encourage and support, through other policies and programs of this Element and the Housing Element, mixed use projects which provide both housing and employment opportunities, and whenever possible, the development of affordable housing.*

LUC-C- 4: ***Mixed Use Residential/Commercial Projects.*** *The City will encourage housing production by allowing mixed residential/commercial projects to be built with the residential portion of mixed use projects built at an appropriate density to reduce trips to and from and within the City, per Policy H-D-4-a. In allowing higher residential densities for mixed use projects, the project must comply with the goals and policies of the General Plan.*

LUC-D: Assure Safe Commercial and Industrial Uses. *Ensure that commercial and industrial uses are safe and strictly control any industrial by-products, odors or emissions which may adversely affect the health or safety of Foster City residents or workers and the overall environment in Foster City, as provided in Chapter 17.68, General Performance Standards of the Foster City Municipal Code.*

LUC-D- 2: ***Mixed Use Developments.*** *Allow and encourage vertically and horizontally mixed use developments that maximize the use of land, organize land uses and pedestrian/vehicular circulation in a safe, logical and functional manner and establish a safe, logical and functional design relationship with adjacent land uses.*

LUC-D- 9: ***Design Review of Commercial and Industrial Projects.*** *The City will use a design review process for commercial and industrial projects to ensure that basic land uses, density, access, internal circulation, visual characteristics, noise, odors, fire hazards, vibrations, smoke, discharge of wastes and nighttime lighting do not negatively affect adjacent or nearby residential land uses.*

LUC-D-10: ***Health and Safety Performance Standards for Industrial and Commercial Activities.*** *Industrial and commercial activities shall conform to the City's performance standards for noise, odor, vibration, glare, smoke, and waste. New or modified industrial or commercial developments shall be required to provide information on noise, odors, wastes, by-products, and the storage and handling of hazardous materials to the City prior to the issuance of a Certificate of Occupancy.*

LUC-E: ***Provide for Diversified Circulation Needs.*** *Develop, improve and maintain a circulation system which provides efficient and safe access for private vehicles, commercial vehicles, public transit, emergency vehicles, bicycles and pedestrians.*

LUC-E-2: ***Complete Streets.*** *The City will plan for a balanced, multimodal transportation network that meets the needs of all users of the streets, roads, and highways for safe and convenient travel.*

1. *Complete Streets Serving All Users. Foster City expresses its commitment to creating and maintaining Complete Streets that provide safe, comfortable, and convenient travel along and across streets (including streets, roads, highways, bridges, and other portions of the transportation system) through a comprehensive, integrated transportation network that serves all categories of users, including pedestrians, bicyclists, persons with disabilities, motorists, movers of commercial goods, users and operators of public transportation, seniors, children, youth, and families.*

2. *Context Sensitivity. In planning and implementing street projects, departments and agencies of Foster City shall maintain sensitivity to local conditions in both residential and business districts as well as urban, suburban, and rural areas, and shall work with residents, merchants, and other stakeholders to ensure that a strong sense of place ensues. Improvements that will be considered include sidewalks, shared use paths, bicycle lanes, bicycle routes, paved shoulders, street trees and landscaping, planting strips, accessible curb ramps, crosswalks, refuge islands, pedestrian signals, signs, street furniture, bicycle parking facilities, public transportation stops and facilities, transit priority signalization, and other features assisting in the provision of safe travel for all users, such as traffic calming circles, transit bulb outs, and road diets, as well as other features such as striping, signage and lighting.*

3. *Complete Streets Routinely Addressed by All Departments. All relevant departments and agencies of Foster City shall work towards making Complete Streets practices a routine part of everyday operations, approach every relevant project, program, and practice as an opportunity to improve streets and the transportation network for all categories of users, and work in coordination with other departments, agencies, and jurisdictions to maximize opportunities for Complete Streets, connectivity, and cooperation. The following projects provide opportunities: pavement resurfacing, restriping, accessing above and underground utilities, signalization operations or modifications, and maintenance of landscaping/related features.*

4. *All Projects and Phases. Complete Streets infrastructure sufficient to enable reasonably safe travel along and across the right of way for each category of users shall be incorporated into all planning, funding, design, approval, and implementation processes for any construction, reconstruction, retrofit, maintenance, operations, alteration, or repair of streets (including streets, roads, highways, bridges, and other portions of the transportation system), except that specific infrastructure for a given category of users may be excluded if an exemption is approved via the process set forth in section C.1 of this policy.*

LUC-E-2-a: ***Plan Consultation and Consistency.*** *Maintenance, planning, and design of projects affecting the transportation system shall be consistent with local bicycle, pedestrian, transit, multimodal, and other relevant plans, except that where such consistency cannot be achieved without negative consequences, consistency shall not be required if the head of the relevant department provides written approval explaining the basis of such deviation.*

LUC-E-2-b: ***Street Network/Connectivity.*** *As feasible, Foster City shall incorporate Complete Streets infrastructure into existing streets to improve the safety and convenience of users and to create employment, with the particular goal of creating a connected network of facilities accommodating each category of users, and increasing connectivity across jurisdictional boundaries and for existing and anticipated future areas of travel origination or destination.*

LUC-E-2-c: ***Bicycle and Pedestrian Advisory Consultation.*** *Transportation projects shall be reviewed by the Traffic Committee early in the planning and design stage, to provide comments and recommendations regarding Complete Streets features to be incorporated into the project.*

LUC-E-6: ***Create Opportunities for Transit Access.*** *Create opportunities to improve transit and access to regional transit with new or modified development, as appropriate.*

LUC-E-7: ***Coordination with Transit Agencies that Serve San Mateo County.*** *The City shall work with SamTrans, Alameda-Contra Costa Transit District (AC Transit), the Peninsula Traffic Congestion Relief Alliance, RIDES and other agencies that serve San Mateo County in defining new transit routes and improving the public transit and transportation system.*

LUC-E-7-a: ***Transit System Infrastructure.*** *The City will work with transit providers to facilitate the maintenance and improvement of the transit system infrastructure to enhance public use, including:*

a. Transit stops and bus lanes that are safe, convenient, clean and efficient;
b. Accessible transit stops that have clearly marked street-level designation;
c. Transit stops that are safe, sheltered, clean, and well lit;
d. Transit stops that are located along corridors within mixed-use or transit-oriented development areas.

LUC-E-7-c: ***Designation of New Bus Routes.*** *The City will work with transit providers to designate new bus routes, provide curbside space for bus stops, and require major commercial/industrial developments along bus routes to accommodate buses in their circulation plans. Bus turnouts or shelters will also be required to be provided by the development.*

LUC-E-8: ***Pedestrian, Bicycle and Neighborhood Electric Vehicle (NEV) Friendly Design.*** *Encourage bicycling, walking and use of NEVs instead of driving automobiles to reduce greenhouse gas emissions, save money on fuel and maintenance, and foster a healthier population. Prioritize pedestrian and bicycle-friendly improvements including bike lanes on main streets, an urban bike-trail system, bike parking, pedestrian crossings, and associated master plans with new or modified development, as appropriate.*

LUC-E-8-a: ***Bicycle and Pedestrian Access.*** *Make it a condition of approval that new, large-scale developments address transit, biking and walking access to the site.*

LUC-E-8-b: ***Development Standards for Bicycles.*** *The City will establish standards for new development and redevelopment projects to support bicycle use, including:*

a. Develop standards for safe pedestrian and bicyclist accommodations, including:
   i. "Complete Streets" policies that foster equal access by all users in the roadway design;
   ii. Bicycle and pedestrian access internally and in connection to other areas in the roadway design;
   iii. Safe access to public transportation and other non-motorized uses through construction of dedicated paths;
   iv. Safe road crossings at major intersections.

LUC-E-9: ***Bicycle Routes and Pedestrian Paths.*** *Maintain a system of bicycle routes and pedestrian paths, which will include separate bicycle lanes and posted bicycle routes. Pedestrian pathways and easements shall be maintained, either by the City, or, in the case of private ownership, according to a maintenance agreement or landscaping district agreement applicable to the pathway/easement.*

LUC-E-9-b: ***Bicycle Route and Pedestrian Path Improvement Program.*** *The City shall conduct a study with the following goals: 1) identify bike routes that may need enhancements that would increase cyclist safety going to schools, parks, shopping center or civic areas; and 2) identify major thoroughfares and any enhancements to those roadways that would allow cyclists to get to the levee and other common destinations safely. The purpose of the bicycle route system is to connect major work, shopping, school, civic, and recreational destinations throughout the City, while avoiding as many of the most heavily used street segments as possible.*

LUC-F-2: ***Traffic Reduction Programs.*** *The City will work with existing employers and developers of new non-residential development to participate in traffic reduction programs.*

LUC-F-2-a: ***Implementation of Traffic Reduction Programs.*** *As appropriate, require new non-residential developments to include a traffic reduction strategy with a variety of methods to reduce single-occupancy vehicles, provided programs exist.*

LUC-F-3: ***Employer-based Trip Reduction.*** *The City will work with employers to implement employer-based trip reduction programs that get people to high-boarding destinations such as employment centers and regional destinations, including:*

a. Coordinating with regional and local ridesharing organizations;
b. Encouraging Caltrain/bus passes;
c. Employer-based shuttles

LUC-F-3-a: ***Employer Shuttle Fair-Share.*** *Include as a condition of approval that employers shall fund, at a level commensurate with the transit demand, new or expanded employee shuttle services to transit hubs.*

LUC-G-2-a: ***Low Emission Vehicles.*** *The City will support and promote the use of low-emission vehicles, by:*

a. *Encouraging the necessary infrastructure to encourage the use of low-emission vehicles (LEV) and clean alternative fuels, such as development of electric vehicle charging facilities and conveniently located alternative fueling stations;*
b. *Encouraging new construction to include vehicle access to property wires outdoor receptacles to accommodate LEV and/or plug in electric hybrids (PHEV);*
c. *Encouraging transportation fleet standards to achieve the lowest emissions possible.*

LUC-H: ***Foster a More Sustainable Community.*** *Strive to be a community that meets the needs of the present without compromising the ability of future generations to meet their own needs by promoting land use strategies that decrease reliance on automobile use, increase the use of alternative modes of transportation, maximize efficient provision of services and reduce emissions of GHGs.*

LUC-H-1: ***Promote sustainability.*** *Encourage sustainability efforts of residents and business owners. Foster the use of technology to improve sustainability, e.g., irrigation controls coordinated with the weather, sustainable remodeling guidelines for homes, use of recycled water for landscaping irrigation, infrastructure for electric vehicles, etc.*

LUC-H-2: ***Reduce GHG Emissions.*** *The City will strive to reduce GHG emissions by reducing vehicle miles traveled by supporting trip reduction programs and encouraging the use of alternative fuels and transportation technologies.*

LUC-H-2-a: ***Climate Action Plan.*** *The City will prepare, adopt and implement a comprehensive Climate Action Plan (CAP) to achieve its fair share of statewide emissions reductions for the 2020 timeframe consistent with AB32. The CAP will specify the strategies, measures and actions to be taken for each inventory sector (transportation, electricity, solid waste, etc.) to achieve the overall emission reduction target, and include an adaptive management process that can incorporate new technology and respond when goals are not being met.*

LUC-H-2-b: ***Vehicle Idling.*** *The City will enforce State idling laws for commercial vehicles, including delivery and construction vehicles.*

LUC-H-3: ***Destinations within walking distance.*** *Maintain a strong base of neighborhood serving uses such as religious facilities, parks and open space, personal services and shopping opportunities within walking distance of existing and new residential neighborhoods.*

LUC-H-5-a: ***Tree and Landscape Program.*** *Include requirements for tree and landscape planting in all new developments and redevelopment in design review and landscape guidelines.*

LUC-K: Encourage Redevelopment of Under-utilized Properties with Increased Density/Intensity of Uses. *Encourage the aggregation and redevelopment of under-utilized properties and/or outdated buildings under multiple ownerships in the older commercial/industrial areas of the City, specifically the Chess Drive/Hatch Drive area.*

Impact 3.1-2: Project implementation may cause health risks associated with toxic air contaminants (less than significant with mitigation)

Controlling toxic air contaminants (TACs) became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. Environmental Protection Agency regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources. In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment. These are acrolein, benzene, 1,3-butidiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter.

The 2007 EPA rule requires controls that will dramatically decrease Mobile Source Air Toxics (MSAT) emissions through cleaner fuels and cleaner engines. According to a Federal Highway Administration (FHWA) analysis using EPA's MOBILE6.2 model, even if vehicle miles travelled (VMT) increases by 145 percent, a combined reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050. California maintains stricter standards for clean fuels and emissions compared to the national standards, therefore it is expected that MSAT trends in California will decrease consistent with or more than the U.S. EPA's national projections.

Currently, the ARB monitors toxics throughout California from 15 monitoring sites; however, there are no toxic air monitoring sites located in the City of Foster City. The closest toxic air monitoring sites to Foster City are in San Francisco and San Jose. As air toxics research continues, new tools and techniques will be developed for assessing health outcomes as a result of lifetime air toxics exposure.

Health risks associated with TACs are most pronounced in the areas adjacent to the freeway segments (i.e. U.S. 101 and S.R. 92). Under the Community Air Risk Evaluation (CARE) program, the BAAQMD has designated certain areas as "Impacted Communities" if the following occur: the areas (1) are close to or within areas of high TAC emissions, (2) have sensitive populations, defined as youth and seniors, with significant TAC exposures, and (3) have significant poverty. The City of Foster City is not mapped by the BAAQMD as an Impacted Community under the CARE program.

The proposed changes to the General Plan Land Use Map would not place new residential land uses in close proximity to U.S. 101 or S.R. 92, as there are no changes to any residential land use designations proposed as part of the project. Additionally, the proposed Land Use and Circulation

Element contains a number of policies and actions aimed at reducing VMT throughout the City, which may have beneficial effects in terms of reducing potential exposure to TACs. Health risks associated with TACs would not increase as a result of project implementation.

Regardless of the existing health risks associated with TACs, the BAAQMD CEQA Guidelines provide recommended policies for all communities to ensure reduced health risks associated with TACs. Foster City's General Plan was comprehensively updated in 1993 and the Conservation Element was updated and adopted in 2003, but does not include the BAAQMD recommended measures that address toxic air contaminant impacts. Therefore, this is considered to be a **potentially significant** impact.

The BAAQMD CEQA Guidelines provides numerous policy recommendations that are intended to reduce health risks associated with TACs. Implementation of the following mitigation measure would ensure consistency with the BAAQMD CEQA Guidelines related to TACs and reduce this potentially significant impact to a **less than significant** level.

MITIGATION MEASURES

Mitigation Measure 3.1-2: *Update the Foster City General Plan Conservation Element to include the following policies and action items. The following policies and action items shall apply during environmental review of individual projects effective immediately.*

> *Policy: Minimize exposure of sensitive receptors to concentrations of air pollutant emissions and toxic air contaminants.*
>
> *Policy: Require discretionary projects involving sensitive receptors such as children, the elderly, or people with illnesses that are proposed within 500 feet of the State Route 92 corridor to include an analysis of mobile source toxic air contaminant health risks. The analysis, if necessary, shall identify feasible mitigation measures to reduce health risks to acceptable levels.*
>
> *Action: Review all new industrial and commercial development projects for potential air quality impacts to residences and other sensitive receptors. The City shall ensure that mitigation measures and best management practices are implemented to reduce significant emissions of criteria pollutants.*
>
> *Action: Review development, infrastructure, and planning projects for consistency with BAAQMD requirements during the CEQA review process. Require project applicants to prepare air quality analyses to address BAAQMD and General Plan requirements, which include analysis and identification of:*
>
> 1. *Air pollutant emissions associated with the project during construction, project operation, and cumulative conditions.*
> 2. *Potential exposure of sensitive receptors to toxic air contaminants.*
> 3. *Significant air quality impacts associated with the project for construction, project operation, and cumulative conditions.*

4. *Mitigation measures to reduce significant impacts to less than significant or the maximum extent feasible where impacts cannot be mitigated to less than significant.*

Impact 3.1-3: General Plan implementation would not create objectionable odors (less than significant)

Objectionable odors can be generated from certain types of commercial and/or industrial land uses. In general, residential land uses are not associated with odor generation, but they do serve as sensitive receptors.

The BAAQMD CEQA Guidelines recommendation for assessing plan level odor impacts is to "identify the location of existing and planned odor sources in the plan area and policies to reduce potential odor impacts in the plan area." There are not any existing or planned sources of odors within the City of Foster City. The City does not contain any heavy industrial or processing operations that generate significant levels of odor that cause a public nuisance. Additionally, there are no landfills or other solid waste facilities in the City that generate nuisance odors.

The proposed changes to the Land Use and Circulation Element and the Land Use Map would not facilitate, approve, or otherwise result in the development of new odor-causing land uses within the City.

Consistent with the BAAQMD CEQA Guidelines' recommendations, the proposed Land Use and Circulation Element contains policies and actions that would reduce potential odor impacts from new development projects. Policy LUC-D: Assure Safe Commercial and Industrial Uses, ensures that commercial and industrial uses are safe and strictly control any industrial by-products, odors or emissions which may adversely affect the health or safety of Foster City residents or workers and the overall environment in Foster City, as provided in Chapter 17.68, General Performance Standards of the Foster City Municipal Code. Action LUC-D-9: Design Review of Commercial and Industrial Projects, states that the City will use a design review process for commercial and industrial projects to ensure that basic land uses, density, access, internal circulation, visual characteristics, noise, odors, fire hazards, vibrations, smoke, discharge of wastes and nighttime lighting do not negatively affect adjacent or nearby residential land uses. Action LUC-D-10: Health and Safety Performance Standards for Industrial and Commercial Activities, states that **i**ndustrial and commercial activities shall conform to the City's performance standards for noise, odor, vibration, glare, smoke, and waste. New or modified industrial or commercial developments shall be required to provide information on noise, odors, wastes, by-products, and the storage and handling of hazardous materials to the City prior to the issuance of a Certificate of Occupancy.

These policies and actions would ensure that future development that occurs following approval of the proposed project would not result in nuisance odors. As such, this is a **less than significant** impact.

Impact 3.1-4: The proposed project would not conflict with Regional Plans (less than significant)

Plan Bay Area is a long-range integrated transportation and land-use/housing strategy through 2040 for the San Francisco Bay Area. On July 18, 2013, the Plan was jointly approved by the Association of Bay Area Governments (ABAG) Executive Board and by the Metropolitan Transportation Commission (MTC). The Plan includes the region's Sustainable Communities Strategy and the 2040 Regional Transportation Plan and represents the next iteration of a planning process that has been in place for decades. Plan Bay Area is the successor to *Transportation 2035*, the long-range plan adopted by MTC in 2009.

Plan Bay Area marks the nine-county region's first long-range plan to meet the requirements of California's landmark 2008 Senate Bill 375, which calls on each of the state's 18 metropolitan areas to develop a Sustainable Communities Strategy to accommodate future population growth and reduce greenhouse gas emissions from cars and light trucks. Working in collaboration with cities and counties, the Plan advances initiatives to expand housing and transportation choices, create healthier communities, and build a stronger regional economy. To meet the goals of SB 375, more of the future development in the Bay Area is planned to be walkable and bikeable and close to public transit, jobs, schools, shopping, parks, recreation and other amenities.

The proposed project is consistent with *Plan Bay Area* on several fronts. The proposed Climate Action Plan demonstrates the City's commitment to reducing GHGs at the local level. This will be accomplished through a variety of measures and approaches, including increased access to public transportation, the use of alternative fuel vehicles, the use of green energy alternatives, and promoting a mix of land uses that facilitate non-auto transportation options. These measures contained within the Climate Action Plan would effectively reduce GHG emissions in Foster City by 15 percent by 2020 and by 20 percent by 2025. These reductions are consistent with AB 32 and SB 375, and would assist the region in meeting the goals established by *Plan Bay Area*.

The proposed Land Use and Circulation Element includes a range of policies and actions, which are identified under Impact 3.1-1, which would promote a compact, mixed-use urban form in Foster City that emphasizes the development and redevelopment of infill parcels at higher residential densities. The proposed Land Use Map furthers the City's historical development pattern that prioritizes the location of retail and employment centers in close proximity to residential areas, which provides for non-auto transportation options for travel.

The *Transportation Air Quality Conformity Analysis for Plan Bay Area* was prepared using population forecasts for each local jurisdiction as inputs into the regional travel demand model. The proposed project would not increase the population forecasts for Foster City beyond the levels accommodated by the existing General Plan. As such, the proposed project would not exceed the population estimates used to develop the regional travel demand model. The proposed project, including its anticipated population growth, does not conflict with the latest adopted and conforming Regional Transportation Plan. This is a **less than significant** impact.

This section provides a background discussion of the geomorphic provinces, bioregions, land cover types (CWHRS), and special status species found in Foster City. This section of the EIR analyzes the potential environmental effects on biological resources resulting from implementation of the proposed Land Use and Circulation Element Update, the Land Use Map Amendment and the CAP. No comments addressing biological resources were received during the public review period or scoping meeting for the Notice of Preparation.

As both the General Plan Update and the Climate Action Plan are broad level plans and do not include specific projects or details of future developments, formal, site-specific biological surveys or technical reports have not been performed as part of the preparation of this analysis. Biological resources within Foster City were identified through general city-wide field reconnaissance, a review of pertinent literature, and database queries. Data referenced for this section is derived primarily from the following sources:

- California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California (Skinner, Mark W. and Bruce M. Pavlik, Eds. 2001);
- A Manual of California Vegetation (Sawyer, John and Todd Keeler-Wolf 1995);
- Terrestrial vegetation of California (Barbour and Major 1988);
- Jepson Manual: Higher Plants of California (Hickman, James C. 1993);
- "Special Plants List." Natural Diversity Database. (California Dept. of Fish and Wildlife);
- "Special Animals List." Natural Diversity Database. (California Dept. of Fish and Wildlife);
- "Special Vascular Plants, Bryophytes, and Lichens List." Natural Diversity Database. (California Dept. of Fish and Wildlife).
- Army Corps of Engineers Wetland Delineation Manual. (ACOE 1987)

Key Terms

The following key terms are used throughout this section to describe biological resources and the associated regulatory framework:

Hydric Soils. One of the three wetland identification parameters, according to the federal definition of a wetland, hydric soils have characteristics that indicate they were developed in conditions where soil oxygen is limited by the presence of saturated soil for long periods during the growing season. There are approximately 2,000 named soils in the United States that may occur in wetlands.

Hydrophytic Vegetation. Plant types that typically occur in wetland areas. Nearly 5,000 plant types in the United States may occur in wetlands. Plants are listed in regional publications of the U.S. Fish and Wildlife Service (USFWS) and include such species as cattails, bulrushes, cordgrass, sphagnum moss, bald cypress, willows, mangroves, sedges, rushes, arrowheads, and water plantains.

Sensitive Natural Community. A sensitive natural community is a biological community that is regionally rare, provides important habitat opportunities for wildlife, are structurally complex, or

are in other ways of special concern to local, state, or federal agencies. CEQA identifies the elimination or substantial degradation of such communities as a significant impact. The California Department of Fish and Wildlife (CDFW) tracks sensitive natural communities in the California Natural Diversity Database (CNDDB).

Special-Status Species. Special-status species are those plants and animals that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or other agencies. Some of these species receive specific protection that is defined by federal or state endangered species legislation. Others have been designated as "sensitive" on the basis of adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities, and special districts to meet local conservation objectives. These species are referred to collectively as "special status species" in this EIR, following a convention that has developed in practice but has no official sanction. For the purposes of this assessment, the term “special status” includes those species that are:

- Federally listed or proposed for listing under the Federal Endangered Species Act (50 CFR 17.11-17.12);
- Candidates for listing under the Federal Endangered Species Act (61 FR 7596-7613);
- State listed or proposed for listing under the California Endangered Species Act (14 CCR 670.5);
- Species listed by the U.S. Fish and Wildlife Service (USFWS) or the CDFW as a species of concern (USFWS), rare (CDFW), or of special concern (CDFW);
- Fully protected animals, as defined by the State of California (California Fish and Wildlife Code Section 3511, 4700, and 5050);
- Species that meet the definition of threatened, endangered, or rare under CEQA (CEQA Guidelines Section 15380);
- Plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Wildlife Code Section 1900 et seq.); and
- Plants listed by the California Native Plant Society (CNPS) as rare, threatened, or endangered (List 1A and List 2 status plants in Skinner and Pavlik 1994).

Wetlands and Other Waters of the U.S. Wetlands are ecologically complex habitats that support a variety of both plant and animal life. In a jurisdictional sense, the federal government defines wetlands in Section 404 of the Clean Water Act as “areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support (and do support, under normal circumstances) a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3[b] and 40 CFR 230.3). Under normal circumstances, the federal definition of wetlands requires three wetland identification parameters be present: wetland hydrology, hydric soils, and hydrophytic vegetation. Examples of wetlands include freshwater marsh, seasonal wetlands, and vernal pool complexes that have a hydrologic link to other waters of the U.S (see definition below for "other waters of the U.S."). The U.S. Army Corps of Engineers

(USACE) is the responsible agency for regulating wetlands under Section 404 of the Clean Water Act, while the Environmental Protection Agency (EPA) has overall responsibility for the Act.

The CDFW does not normally have direct jurisdiction over wetlands unless they are subject to CDFW jurisdiction under Streambed Alteration Agreements or they support state-listed endangered species; however, CDFW is a trustee agency, meaning that they manage the wildlife and habitats of the state in trust pursuant to California law.

"Other waters of the U.S." refers to those hydric features that are regulated by the Clean Water Act but are not wetlands (33 CFR 328.4). To be considered jurisdictional, these features must exhibit a defined bed and bank and an ordinary high-water mark. Examples of other waters of the U.S. include rivers, creeks, intermittent and ephemeral channels, ponds, and lakes.

3.2.1 ENVIRONMENTAL SETTING

Foster City is located in San Mateo County and is bordered by the San Francisco Bay to the north and east, the Cities of Belmont and Redwood City to the south, and the City of San Mateo to the west. The City encompasses approximately 3.8 square miles (9.8 km^2) of land area, which is mostly urban with very limited natural open space areas.

Foster City is a master planned community first developed in the early 1960s. The majority of the land within the City limits is best characterized as urban/built up. Much of the biological diversity in Foster City is associated with the San Francisco Bay. Tidal marshes along the bay and rolling hills to the west characterize the region.

The major biological features within and adjacent to Foster City include: the Foster City Lagoon, Marina Lagoon, Belmont Slough, including a 57-acre Wildlife Refuge, and the San Francisco Bay shoreline. Each is discussed below and is illustrated in Figure 3.2-1:

Foster City Lagoon: The Foster City Lagoon is a unique water resource that provides storm drainage protection, while also functioning as a recreational, scenic, and biological resource. The Foster City Lagoon is a drainage detention basin that is designed to successfully withstand a storm of 100 year return frequency, or a storm of such severity that it is likely to occur only once each century. The lagoon therefore provides maximum drainage security for Foster City. Stormwater collected throughout the City flows to the Foster City Lagoon, with the exception of a small area off of Port Royal Avenue. All storm water enters the storm drain system through curb inlets and catch basins, and drains into the lagoon from which it flows or is pumped into the bay. The lagoon supports a form of chlorophyte algae along rocky portions of the southern and central portions of the lagoon. The majority of invertebrates in the lagoon system are found along these rock areas. The lagoon system supports a dense population of striped bass, which serves as a food source for birds. There are a variety of birds that inhabit the terrestrial and slough areas in the immediate area, ranging from the species normally associated with saltmarsh habitats to those normally associated with grassland habitats. The surface area of the Foster City Lagoon is approximately 212 acres and the average depth of the lagoon is approximately six feet. The average temperature of the lagoon is approximately 60° in the winter and 69° during summer. City maintenance staff

uses an environmentally safe pond dye that blocks sunlight disrupting photosynthesis, which impedes the growth of aquatic weeds. The secondary effect is the beautiful blue color, which is purely aesthetic

Marina Lagoon. The Marina Lagoon establishes the southwestern boundary of the City of Foster City and was originally Seal Slough similar to the Belmont Slough described above. The City of San Mateo converted it to a lagoon for storm drainage retention purposes and to serve as a boating area. The Marina Lagoon is an important visual and recreational amenity for the City of Foster City because it provides frontage along the water for the western boundary of the City of Foster City along Port Royal Avenue.

Belmont Slough and Wildlife Refuge. The Belmont Slough constitutes the southeastern boundary of the City of Foster City and continues to Redwood City. The Slough contributes three important functions as follows: it provides a flushing action to the Foster City Lagoon which maintains viability of the lagoon, it provides a similar action to control water levels in the Marina Lagoon, and it provides a natural wildlife refuge as a result of its tidal action, mudflats, and marshland vegetation. The Slough extends the waterfront amenities of the San Francisco Bay and provides a natural habitat for various wildlife species. A 57-acre wildlife sanctuary was set aside in 1974 in exchange for a permit to fill 382 acres of seasonal wetlands elsewhere in Foster City. The wildlife refuge is roughly bounded by Belmont Slough on the east, Beach Park Boulevard on the west, with its northern boundary about 540 feet south of Swordfish Street and its southern boundary at Baffin Court. The tidal wetlands and mudflats in this area contain feeding and resting habitat for numerous and diverse migratory shorebirds and some species of waterfowl who migrate along the Pacific flyway.

As part of a lagoon dredging project, the City enhanced wetlands at Sea Cloud Park between the sports fields and the levee. The enhanced wetland area provides low-lying areas that seasonally contain water as well as small upland areas to provide refuge areas for wildlife species.

The upland area adjacent to the tidal wetland provides an important buffer area for the adjacent wetlands. It also functions as a refuge area for wildlife species during high tides. Such escape covers, consisting of transitional upland habitats, are limited along the linear marsh. They also have the potential to support introduced wildlife populations which would assist in the recovery of declining species.

San Francisco Bay Shoreline: Due to its location on San Francisco Bay, Foster City has valuable shoreline resource. The shoreline resource extends along the eastern and northern boundary of the City's land area.

BIOREGIONS

Foster City is located within the Bay Area/Delta bioregion, which extends from the Pacific Ocean to the Sacramento Valley and San Joaquin Valley bioregions to the northeast and southeast, and a short stretch of the eastern boundary joins the Sierra Bioregion at Amador and Calaveras counties. The bioregion is bounded by the Klamath/North Coast on the north and the Central Coast Bioregion to the south. The Bay Area/Delta Bioregion is one of the most populous areas of the

state, encompassing the San Francisco Bay Area and the Sacramento-San Joaquin River Delta. The water that flows through the Delta supplies two-thirds of California's drinking water, irrigating farmland, and sustaining fish and wildlife and their habitat. The bioregion fans out from San Francisco Bay in a jagged semi-circle that takes in all or part of 12 counties: Alameda, Contra Costa, Marin, Napa, San Francisco, San Joaquin, San Mateo, Santa Clara, Solano, Sonoma, and parts of Sacramento, and Yolo. The habitats and vegetation of the Bay Area/Delta Bioregion are as varied as the geography.

CALIFORNIA WILDLIFE HABITAT RELATIONSHIP SYSTEM

The California Wildlife Habitat Relationship (CWHR) habitat classification scheme has been developed to support the CWHR System, a wildlife information system and predictive model for California's regularly-occurring birds, mammals, reptiles and amphibians. When first published in 1988, the classification scheme had 53 habitats. At present, there are 59 wildlife habitats in the CWHR System: 27 tree, 12 shrub, 6 herbaceous, 4 aquatic, 8 agricultural, 1 developed, and 1 non-vegetated.http://www.dfg.ca.gov/biogeodata/cwhr/wildlife_habitats.asp - Non-vegetated

According to the CWHR system there are eight cover types (wildlife habitat classifications) within and in the immediate vicinity of Foster City out of 59 found in the state. These include: Annual Grassland, Fresh Emergent Wetland, Marine, Riverine, Saline Emergent Wetland, Valley Foothill Riparian, Urban, and Water. A brief description of each cover type follows. Figure 3.2-2 illustrates land cover types based on the CWHR.

Annual Grassland habitat occurs mostly on flat plains to gently rolling foothills. Climatic conditions are typically Mediterranean, with cool, wet winters and dry, hot summers. The length of the frost free season averages 250 to 300 days (18 to 21 fortnights). Annual precipitation is highest in northern California.

Fresh emergent wetland habitats occur on virtually all exposures and slopes, provided a basin or depression is saturated or at least periodically flooded. They are most common on level to gently rolling topography. They are found in various depressions or at the edge of rivers or lakes. Soils are predominantly silt and clay, although coarser sediments and organic material may be intermixed. In some areas organic soils (peat) may constitute the primary growth medium. Climatic conditions are highly variable and range from the extreme summer heat to winter temperatures well below freezing.

Marine habitats extend from the upper limit of the unvegetated shore to the ocean. The shore zone of the marine habitat may occur in association with estuarine habitats where freshwater is discharged into the ocean through river systems. Also along the length of the State, several types of terrestrial habitat are associated with the shore zone. Marine habitats are used almost exclusively by seven species of marine mammals, and 31 pelagic birds. They receive extensive use by shore and wading birds, gulls, terns, sea ducks, and ospreys. Other species that use marine habitats in varying amounts are island foxes, river otters, raccoons, and common ravens. The endangered bald eagle feeds on fish taken from the marine habitats. Water temperatures vary with seasonal currents, but generally increase from north to south and will range between a low of

6 C (43 F) and a high of 21.5 C (71 F). Wind and wave action generally increase from south to north, with periods of highest activity associated with winter storms.

Riverine and Riparian habitats can occur in association with many terrestrial habitats. Riverine and riparian habitats are found adjacent to many rivers and streams. Riverine and riparian habitats are also found contiguous to lacustrine and fresh emergent wetland habitats. This habitat requires intermittent or continually running water generally originating at some elevated source, such as a spring or lake, and flows downward at a rate relative to slope or gradient and the volume of surface runoff or discharge. Velocity generally declines at progressively lower altitudes, and the volume of water increases until the enlarged stream finally becomes sluggish. Over this transition from a rapid, surging stream to a slow, sluggish river, water temperature and turbidity will tend to increase, dissolved oxygen will decrease and the bottom will change from rocky to muddy.

Saline Emergent Wetland habitat occurs along the margins of bays, lagoons, and estuaries sheltered from excessive wave action. At their lower margin they are exposed once every 24 hours; whereas, at their upper margin, submergence is short and infrequent, followed by weeks or months of continuous exposure. Soil salinity varies from that of seawater because of lagoon closure and evaporation, to brackish at sites influenced by heavy precipitation and run-off. Soils consist of thin veneers of fine silts, clays, and scattered plant remains. Saline emergent wetlands occur above intertidal sand and mud flats and below upland communities not subject to tidal action. The upper part of estuaries grade into brackish and freshwater marshes.

Valley-foothill riparian habitats are found in valleys bordered by sloping alluvial fans, slightly dissected terraces, lower foothills, and coastal plains. They are generally associated with low velocity flows, flood plains, and gentle topography. Valleys provide deep alluvial soils and a high water table. The substrate is coarse, gravelly or rocky soils more or less permanently moist, but probably well aerated. Frost and short periods of freezing occur in winter (200 to 350 frost-free days). This habitat is characterized by hot, dry summers, mild and wet winters. Temperatures range from 75° to 102° F in the summer to 29° to 44° F in the winter. Average precipitation ranges from 6-30 inches, with little or no snow. The growing season is 7 to 11 months.

Urban habitats are not limited to any particular physical setting. Three urban categories relevant to wildlife are distinguished: downtown, urban residential, and suburbia. The heavily-developed downtown is usually at the center, followed by concentric zones of urban residential and suburbs. There is a progression outward of decreasing development and increasing vegetative cover. Species richness and diversity is extremely low in the inner cover. The structure of urban vegetation varies, with five types of vegetative structure defined: tree grove, street strip, shade tree/lawn, lawn, and shrub cover. A distinguishing feature of the urban wildlife habitat is the mixture of native and exotic species.

SPECIAL-STATUS SPECIES

The following discussion is based on a background search of special-status species that are documented in the CNDDB, the CNPS Inventory of Rare and Endangered Plants, and the USFWS

endangered and threatened species lists. The background search was regional in scope and focused on the documented occurrences within a one-mile radius of the City limits.

The search revealed documented occurrences of the 23 special status species within Foster City: six plants, two invertebrates, one reptile, four mammals, and ten birds. In addition, there is one sensitive natural community: Northern Coastal salt marsh. Table 3.2-1 provides a list of these special-status species, their habitat, and current protective status. Figure 3.2-3 illustrates the location of each documented occurrence.

TABLE 3.2-1: SPECIAL STATUS SPECIES PRESENT OR POTENTIALLY PRESENT IN FOSTER CITY

SPECIES	STATUS	HABITAT
PLANTS		
Malacothamnus arcuatus Arcuate bush-mallow	--;--;1B.2	Chaparral. Gravelley Alluvium. 80-355M.
Malacothamnus davidsonii Davidson's bush-mallow	--;--;1B.2	Coastal scrub, riparian woodland, chaparral. Sandy washes. 180-855M.
Allium peninsulare var. franciscanum Franciscan onion	--;--;1B.2	Cismontane woodland, valley and foothill grassland. Clay soils; often on serpentine. Dry hillsides. 100-300M.
Chlorophyron maritimum ssp. Palustre Point Reyes bird's-beak	--;--;1B.2	Coastal salt marsh. Usually in coastal salt marsh with salicornia, distichlis, jaumea, partina, etc. 0-15M
Trichocoronis hydrophilium Saline clover	--;--;1B.2	Marshes and swamps, valley and foothill grassland, vernal pools. Mesic, alkaline sites. 0-300M.
Triphysaria floribunda *San Francisco owl's-clover*	--;--;1B.2	Coastal prairie, valley and foothill grassland. On serpentine and nonserpentine substrate. 10-160M.
INVERTEBRATES		
Speyeria zerene myrtleae Myrtle's silverspot	FE;--	Restricted to foggy, coastal dunes/hills of the point reyes peninsula; extirpated from coastal San Mateo County.
*Hydrochara ricksecker*i *Ricksecker's wáter scavenger beetle*	FSC;--	Aquatic.
REPTILES		
Thamnophis sitalis tetrataenia San Francisco garter snake	FE;CE	Vicinity of freshwater marshes, ponds and slow moving streams in San Mateo County and extreme northern Santa Cruz County. Prefers dense cover and water depths of at least one foot. Upland areas near water are also very important.
BIRDS		
Asio flammeus Short-eared owl	--/CSC	Found in swamp lands, both fresh and salt; lowland meadows; irrigated alfalfa fields. Tule patches/fall grass needed for nesting/daytime seclusion. Nests on dry ground in depression concealed in vegetation
Athene cuniculari Burrowing owl	FSC; CSC/ Raptor	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.
Charadrius alexandrines nivosus Western snowy plover	FT; CSC	Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.
Circus cyaneus Northern harrier	--/CSC	Coastal salt and fresh-water marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas.

SPECIES	STATUS	HABITAT
		Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.
Falco peregrinus anatum American peregrine falcon	FD/--	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nests consist of a scrape or depression or ledge in an open site.
Laterallus jamaicensis coturniculus California black rail	--/CT	Tidal salt marshes associated with heavy growth of pickleweed; also occurs in brackish marshes or freshwater marshes at low elevations
Melospiza melodia pusillula Alameda song sparrow	--/CSC	Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits salicornia marshes; nests low in grindelia bushes (high enough to escape high tides) and in salicornia.
*Phalacrocorax auritus** Double-crested cormorant	--/--	Colonia nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.
Rallus longirostris obsoletus California clapper rail	FE;CE	Salt-water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.
Sternula antillarum browni California least tern	FE; CE	Nests along the coast from San Francisco Bay south to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates; sand beaches, alkali flats, landfills, or paved roads.
MAMMALS		
Antrozous pallidus Pallid bat	--;CSC	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.
*Dipodomy venustus venustus** Santa Cruz kangaroo rat	--;--	Silverleaf manzanita mixed chaparral in the zayante sand hills ecosystem of the Santa Cruz mountains. Needs soft, well-drained sand.
*Lasiurus cinereus** hoary bat	--;--	Prefers open habitat or habitat mosaics, with access to trees for cover & open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. requires water.
Reithrodontomy raviventris Salt-marsh harvest mouse	FE;CE	Only in saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is primary habitat. Do not burrow, build loosely organized nests. Require higher areas for flood escape.

SOURCE: DFG CNDDB 2012

NOTES: STATUS IS SHOWN FOR (FEDERAL, STATE, CNPS). (__) INDICATES NO LISTING STATUS.
ABBREVIATIONS:
FE FEDERAL ENDANGERED
FT FEDERAL THREATENED
FC FEDERAL CANDIDATE
FSC FEDERAL SPECIES OF CONCERN
FD FEDERAL DELISTED
MBTA PROTECTED BY MIGRATORY BIRD TREATY ACT
CE CALIFORNIA ENDANGERED SPECIES
CT CALIFORNIA THREATENED
CP CALIFORNIA FULLY PROTECTED UNDER §3511, 4700, 5050 AND 5515 FG CODE
CSC CDFW SPECIES OF SPECIAL CONCERN

CR *CALIFORNIA RARE (PROTECTED BY NATIVE PLANT PROTECTION ACT)*
1B *CNPS - RARE, THREATENED, OR ENDANGERED*
2 *CNPS - RARE, THREATENED, OR ENDANGERED IN CALIFORNIA, BUT MORE COMMON ELSEWHERE*
4 *CNPS - PLANTS OF LIMITED DISTRIBUTION - A WATCH LIST*
**SOME OF THE SPECIES LISTED IN THE TABLE ABOVE DO NOT FALL INTO ANY OF THESE LISTING STATUSES, BUT ARE NONE-THE-LESS IDENTIFIED BY THE CNDDB, AND MAY BE AFFORDED SPECIAL PROTECTIVE STATUS.*

Special Status Communities

The search revealed documented occurrences of one sensitive natural community within Foster City and a brief description follows. Figure 3.2-3 illustrates the location of this natural community.

Northern Coastal Salt Marsh. Coastal salt marsh is restricted to the upper intertidal zone of protected shallow bays, lagoons, and estuaries. Salt marsh is a highly productive plant community consisting of plants that are tolerant of saline soils and regular tidal inundation. Diking and filling of marshlands for agriculture and development have severely diminished the acreage of the San Francisco Bay salt marshes. While only about 10 percent of the historic tidal marshes remain, substantial areas of valuable managed wetlands remain within the historic margins of the bay.

The salt marsh community is composed of relatively low-growing plants, ranging in height from several inches to over three feet. Plant composition changes with small differences in elevation along the edges of these marshes because of small differences in the frequency and duration of tidal inundation. Typically, bare mudflats are bordered by pure stands of the native cordgrass (*Spartina foliosa*) which at the mean high water level become replaced by a dense cover of pickleweed (*Salicornia virginica*). This vegetated marsh zone extending up to mean high water is commonly referred to as the low marsh community. The mid-marsh community typically occurs from about mean high water to mean higher high water. This zone is typically dominated by pickleweed, with some association of alkali heath (*Frankenia salina*), marsh rosemary (*Limonium californicum*), jaumea (*Jaumea carnosa*), sandspurreys (*Spergularia* spp.), and saltgrass (*Distichlis spicata*). Salt grass, marsh gumplant (*Grindelia stricta* var. *angustifolia*), and marsh rosemary dominate the upper marsh zone (above mean higher high water).

Coastal salt marsh communities also occur in non-tidal (diked) marshes. While sharing most of the dominant plant species, the altered hydrological conditions in the diked, non-tidal communities often do not support many of the rare or uncommon plant and animal species found in the more natural tidal marshes.

Several invasive, non-native cordgrasses (*Spartina alterniflora, S. densiflora, S. patens, and S. anglica*) have become established in San Francisco Bay. At present, the most significant invasions exist in south and central San Francisco Bay.

3.2.2 REGULATORY SETTING

There are a number of regulatory agencies whose responsibility includes the oversight of the natural resources of the state and nation including the CDFW, USFWS, USACOE, and the National Marine Fisheries Service. These agencies often respond to declines in the quantity of a particular habitat or plant or animal species by developing protective measures for those species or habitat

type. Federal and state agencies are increasingly involved with projects at the local level in San Francisco Bay area. The following is an overview of the federal, state, and local regulations that are applicable to implementing the General Plan.

FEDERAL

Federal Endangered Species Act

The Federal Endangered Species Act, passed in 1973, defines an endangered species as any species or subspecies that is in danger of extinction throughout all or a significant portion of its range. A threatened species is defined as any species or subspecies that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Once a species is listed it is fully protected from a "take" unless a take permit is issued by the United Stated Fish and Wildlife Service. A take is defined as the harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct, including modification of its habitat (16 USC 1532, 50 CFR 17.3). Proposed endangered or threatened species are those species for which a proposed regulation, but not a final rule, has been published in the Federal Register.

Migratory Bird Treaty Act

To kill, posses, or trade a migratory bird, bird part, nest, or egg is a violation of the Federal Migratory Bird Treaty Act (FMBTA: 16 U.S.C., §703, Supp. I, 1989), unless it is in accordance with the regulations that have been set forth by the Secretary of the Interior.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 USC Section 668) protect these birds from direct take and prohibits the take or commerce of any part of these species. The USFWS administers the act, and reviews federal agency actions that may affect these species.

Clean Water Act – Section 404

Section 404 of the CWA regulates all discharges of dredged or fill material into waters of the U.S. Discharges of fill material includes the placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes and subaqueous utility lines [33 C.F.R. §328.2(f)].

Waters of the U.S. include lakes, rivers, streams, intermittent drainages, mudflats, sandflats, wetlands, sloughs, and wet meadows. Wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" [33 C.F.R. §328.3(b)]. Waters of the U.S. exhibit a defined bed and bank and ordinary high water mark (OHWM). The OHWM is defined by the USACOE as "that line on shore

established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" [33 C.F.R. §328.3(e)].

The USACOE is the agency responsible for administering the permit process for activities that affect waters of the U.S. Executive Order 11990 is a federal implementation policy, which is intended to result in no net loss of wetlands.

Clean Water Act – Section 401

Section 401 of the CWA (33 U.S.C. 1341) requires an applicant who is seeking a 404 permit to first obtain a water quality certification from the Regional Water Quality Control Board. To obtain the water quality certification, the Regional Water Quality Control Board must indicate that the proposed fill would be consistent with the standards set forth by the state. California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Division 7 of the California Water Code) (Porter-Cologne Act). The Porter-Cologne Act grants the State Water Resources Control Board (SWRCB) and each of the RWQCBs power to protect water quality, and is the primary vehicle for implementation of California's responsibilities under the Federal Clean Water Act. The Porter-Cologne Act grants the SWRCB and the RWQCBs authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, or oil or petroleum product.

Department of Transportation Act - Section 4(f)

Section 4(f) has been part of Federal law since 1966. It was enacted as Section 4(f) of the Department of Transportation (DOT) Act of 1966 and set forth in Title 49 United States Code (U.S.C.), Section 1653(f). In January 1983, as part of an overall recodification of the DOT Act, Section 4(f) was amended and codified in 49 U.S.C. Section 303. This law established policy on Lands, Wildlife and Waterfowl Refuges, and Historic Sites as follows:

> *It is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites. The Secretary of Transportation shall cooperate and consult with the Secretaries of the Interior, Housing and Urban Development, and Agriculture, and with the States, in developing transportation plans and programs that include measures to maintain or enhance the natural beauty of lands crossed by transportation activities or facilities. The Secretary of Transportation may approve a transportation program or project (other than any project for a park road or parkway under section 204 of title 23) requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of a historic site of national, state, or local significance (as determined by the Federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if: a) There is no prudent and feasible alternative to using that land; and b) The*

program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

STATE

California Water Code

The Federal Clean Water Act places the primary responsibility for the control of surface water pollution and for planning the development and use of water resources with the states, although this does establish certain guidelines for the States to follow in developing their programs and allows the Environmental Protection Agency to withdraw control from states with inadequate implementation mechanisms.

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Division 7 of the California Water Code) (Porter-Cologne Act). The Porter-Cologne Act grants the State Water Resource Control Board (SWRCB) and each of the RWQCBs power to protect water quality, and is the primary vehicle for implementation of California's responsibilities under the Federal Clean Water Act. The Porter-Cologne Act grants the SWRCB and the RWQCBs authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, or oil or petroleum product.

Each RWQCB must formulate and adopt a water quality control plan (Basin Plan) for its region the regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that a RWQCB may include within its regional plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

The Water Code Section 13260 requires all dischargers of waste that may affect water quality in waters of the state to prepare and provide a water quality discharge report to the RWQCB. Section 13260a-c is as follows:

(a) Each of the following persons shall file with the appropriate regional board a report of the discharge, containing the information that may be required by the regional board:

(1) A person discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the state, other than into a community sewer system.

(2) A person who is a citizen, domiciliary, or political agency or entity of this state discharging waste, or proposing to discharge waste, outside the boundaries of the state in a manner that could affect the quality of the waters of the state within any region.

(3) A person operating, or proposing to construct, an injection well.

(b) No report of waste discharge need be filed pursuant to subdivision (a) if the requirement is waived pursuant to Section 13269.

(c) Each person subject to subdivision (a) shall file with the appropriate regional board a report of waste discharge relative to any material change or proposed change in the character, location, or volume of the discharge.

Fish and Wildlife Code §2050-2097 - California Endangered Species Act

The California Endangered Species Act (CESA) protects certain plant and animal species when they are of special ecological, educational, historical, recreational, aesthetic, economic, and scientific value to the people of the State. CESA established that it is State policy to conserve, protect, restore, and enhance endangered species and their habitats.

CESA was expanded upon the original Native Plant Protection Act and enhanced legal protection for plants. To be consistent with Federal regulations, CESA created the categories of "threatened" and "endangered" species. It converted all "rare" animals into the Act as threatened species, but did not do so for rare plants. Thus, there are three listing categories for plants in California: rare, threatened, and endangered. Under State law, plant and animal species may be formally designated by official listing by the California Fish and Wildlife Commission.

Fish and Wildlife Code §1900-1913 California Native Plant Protection Act

In 1977 the State Legislature passed the Native Plant Protection Act (NPPA) in recognition of rare and endangered plants of the state. The intent of the law was to preserve, protect, and enhance endangered plants. The NPPA gave the California Fish and Wildlife Commission the power to designate native plants as endangered or rare, and to require permits for collecting, transporting, or selling such plants. The NPPA includes provisions that prohibit the taking of plants designated as "rare" from the wild, and a salvage mandate for landowners, which requires notification of the CDFW 10 days in advance of approving a building site.

Fish and Wildlife Code §3503, 3503.5, 3800 - Predatory Birds

Under the California Fish and Wildlife Code, all predatory birds in the order Falconiformes or Strigiformes in California, generally called “raptors,” are protected. The law indicates that it is unlawful to take, posses, or destroy the nest or eggs of any such bird unless it is in accordance with the code. Any activity that would cause a nest to be abandoned or cause a reduction or loss in a reproductive effort is considered a take. This generally includes construction activities.

Fish and Wildlife Code §1601-1603 – Streambed Alteration

Under the California Fish and Wildlife Code, CDFW has jurisdiction over any proposed activities that would divert or obstruct the natural flow or change the bed, channel, or bank of any lake or stream. Private landowners or project proponents must obtain a “Streambed Alteration Agreement” from CDFW prior to any alteration of a lake bed, stream channel, or their banks. Through this agreement, the CDFW may impose conditions to limit and fully mitigate impacts on fish and wildlife resources. These agreements are usually initiated through the local CDFW warden

and will specify timing and construction conditions, including any mitigation necessary to protect fish and wildlife from impacts of the work.

Public Resources Code § 21000 - California Environmental Quality Act

The California Environmental Quality Act (CEQA) identifies that a species that is not listed on the federal or state endangered species list may be considered rare or endangered if the species meets certain criteria. Under CEQA public agencies must determine if a project would adversely affect a species that is not protected by FESA or CESA. Species that are not listed under FESA or CESA, but are otherwise eligible for listing (i.e. candidate, or proposed) may be protected by the local government until the opportunity to list the species arises for the responsible agency.

Species that may be considered for review are included on a list of "Species of Special Concern," developed by the CDFW. Additionally, the California Native Plant Society (CNPS) maintains a list of plant species native to California that have low numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. List 1A contains plants that are believed to be extinct. List 1B contains plants that are rare, threatened, or endangered in California and elsewhere. List 2 contains plants that are rare, threatened, or endangered in California, but more numerous elsewhere. List 3 contains plants where additional information is needed. List 4 contains plants with a limited distribution.

California Wetlands Conservation Policy

In August 1993, the Governor announced the "California Wetlands Conservation Policy." The goals of the policy are to establish a framework and strategy that will:

- Ensure no overall net loss and to achieve a long-term net gain in the quantity, quality, and permanence of wetland acreage and values in California in a manner that fosters creativity, stewardship, and respect for private property.
- Reduce procedural complexity in the administration of State and federal wetland conservation programs.
- Encourage partnerships to make landowner incentive programs and cooperative planning efforts the primary focus of wetland conservation and restoration.

The Governor also signed Executive Order W-59-93, which incorporates the goals and objectives contained in the new policy and directs the Resources Agency to establish an Interagency Task Force to direct and coordinate administration and implementation of the policy.

LOCAL

City of Foster City General Plan

The adopted City of Foster City General Plan identifies the following policies and conservation programs related to biological resources within Chapter 8 Conservation Element:

CONSERVATION POLICIES

Protect and Conserve Natural Resources

C-6 **Wildlife Habitat.** Protect the wildlife habitat located in the wildlife refuge, 100-foot regulated shoreline band, wetland areas and the Foster City lagoon system.

CONSERVATION PROGRAMS

C-e **Water Quality.** Continue existing programs to conserve and protect water quality in accordance with accepted standards.

C-f **Lagoon Water Quality.** Continue to implement the Lagoon Management Plan in order to conserve and protect lagoon water quality by exchanging water with the Bay, testing and monitoring the water quality in the lagoon system.

C-i **Water Quality Discharge.** Conserve and protect the quality of the water that is discharged into the San Francisco Bay through implementation of the Lagoon Management Plan.

C-x **Public Viewing Areas.** Expand public opportunities to learn about wetland areas and endangered species by creating public viewing areas with exhibits.

C-y **Wetland Habitat.** Protect wetland habitat from human disturbance by posting signs prohibiting trespassing on vegetation typical of wetland areas.

C-z **57 Acre Wildlife Refuge.** Prohibit development within 57 acre wildlife refuge.

C-aa **Projects in the Vicinity of Shoreline Band.** Strictly control development proposals in the vicinity of the shoreline band.

C-bb **National Pollution Discharge Elimination System (NPDES) Stormwater Management Plan.** Continue working with the county-wide task force to develop and implement a stormwater management plan to satisfy NPDES requirements.

3.2.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on biological resources if it will:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The City of Foster City's Environmental Review Guidelines identify the following Threshold of Significance: "Projects that propose the placement of residential, recreational, office, commercial, and/or retail land uses on: a) the east side of Beach Park Blvd, between Teal Street and Foster City Blvd.; and/or, b) within federally protected wetlands as defined by Section 404 of the Clean Water Act, shall be considered to have the potential to cause a significant adverse impact on the habitat of species deemed to be endangered by the United States and/or the State of California, including the Salt Marsh Harvest Mouse, the Clapper Rail, and the Flowering Popcorn Plant, and shall require the preparation of habitat protection and mitigation studies, prepared by qualified experts to be reviewed by the Planning Commission and/or City Council prior to approval of any land development or site use permits."

IMPACTS AND MITIGATION

Impact 3.2-1: Project implementation could result in direct or indirect effects on candidate, sensitive, or special-status species (Less than Significant)

Approval of the proposed project would not directly approve or entitle any development or infrastructure projects. However, implementation of the General Plan, including the Land Use and Circulation Element, would allow and facilitate future development within Foster City, which could result in adverse impacts to special-status plant and wildlife species, as well as sensitive natural habitat or wildlife movement corridors.

Special-Status Plant Species

The search of the California Natural Diversity Data Base revealed documented occurrences of six special status plant species within a one-mile radius of Foster City. Table 3.2-1 provides a list of special-status plant species that are documented, their habitat, and current protective status. Figure 3.2-3 illustrates the location of each documented occurrence.

None of the six special status plant species are federal or state listed; however, these species are listed as a CNPS List 1B.2 species. Habitats for most of these species are associated with natural upland habitats, which is largely limited within Foster City. The documented occurrences of special

status plants within Foster City are limited to the area surrounding the Foster City lagoon system, Belmont Slough and the associated 57-acre wildlife refuge, Marina Lagoon, and the shoreline.

Special-Status Wildlife Species

The search of the California Natural Diversity Data Base revealed documented occurrences of 17 special status animal species within a one-mile radius of Foster City including: two invertebrates, one reptile, 10 birds, and four mammals. Table 3.2-1 provides a list of the special-status animal species that are documented, their habitat, and current protective status. Figure 3.2-3 illustrates the location of each documented occurrence. Special-status wildlife species receive protection from various federal and state laws and regulations, including FESA and CESA. These regulations generally prohibit the taking of a species or direct impact to foraging and breeding habitat without a special permit.

ENDANGERED/THREATENED SPECIES

Of the special status species documented within one mile of Foster City, seven are listed as endangered and/or threatened. These include: Myrtle's silverspot (*Speyeria zerene myrtleae),* San Francisco garter snake (*Thamnophis sitalis tetrataenia),* Western snowy plover (*Charadrius alexandrines nivosus),* California black rail *(Laterallus jamaicensis coturniculus),* California clapper rail (*Rallus longirostris obsoletus),* California least tern (*Sternula antillarum browni*), and Salt-marsh harvest mouse (*Reithrodontomy raviventris).* Each of these species is discussed below.

The Myrtle's silverspot is a federal endangered invertebrate that is restricted to foggy, coastal dunes/hills of the Point Reyes peninsula. They are believed to be extirpated from coastal San Mateo County. This species is broadly documented to the west of the City limits. Optimal habitat for this species is not present within Foster City and there is a low likelihood of presence.

The San Francisco garter snake is a federal and state endangered reptile known to inhabit areas in the vicinity of freshwater marshes, ponds and slow moving streams in San Mateo County. They prefer dense cover and water depths of at least one foot. Upland areas near water are also very important habitat for this species. This species is broadly documented to the west of the City limits. Habitat for this species is present along the Foster City lagoon system, 57-acre wildlife refuge, Marina Lagoon, and the shoreline area.

The Western snowy plover is a federal threatened bird and a state species of special concern that inhabits sandy beaches, salt pond levees and shores of large alkali lakes. This species needs sandy, gravelly or friable soils for nesting. This species is documented along the shoreline area at Seal Slough and Smith Slough to the south of the City limits. This species is likely present at times within Foster City along the shoreline and undeveloped areas.

The California black rail is a state endangered bird that inhabits tidal salt marshes associated with heavy growth of pickleweed. They also occur in brackish marshes or freshwater marshes at low elevations. This species is documented along the shoreline area at Seal Slough. This species is likely present at times within Foster City along the shoreline and undeveloped areas.

The California clapper rail is a federal and state endangered bird that inhabits salt-water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. This species is

associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs. This species is documented along the shoreline area at Seal Slough and in the 57-acre wildlife refuge. This species is likely present at times within Foster City along the shoreline and undeveloped areas.

The California least tern is a federal and state endangered bird that nests along the coast from San Francisco Bay south to northern Baja California. They are a colonial breeder on bare or sparsely vegetated, flat substrates; sand beaches, alkali flats, landfills, or paved roads. This species is documented to the south of Foster City along Smith Slough. This species is likely present at times within Foster City along the shoreline and undeveloped areas.

The salt-marsh harvest mouse is a federal and state endangered bird that is only found in saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is the primary habitat for this species and they require higher areas for flood escape. They build loosely organized nests and do not burrow. This species is documented to the along Seal Slough and Smith Slough to the south of the City limits. This species is likely present at times within Foster City along Seal Slough, the San Francisco Bay shoreline, and the Belmont Slough/57-acre wildlife refuge.

FEDERAL SPECIES OF CONCERN/CALIFORNIA SPECIES OF SPECIAL CONCERN

Of the special status species documented within one mile of Foster City, seven are federal species of concern and/or California Species of Special Concern. These include: Ricksecker's water scavenger beetle (*Hydrochara ricksecker*i), Short-eared owl (*Asio flammeus*), Burrowing owl (*Athene cunicular*i), western snowy plover (*Charadrius alexandrines nivosus*) Northern harrier (*Circus cyaneus*), Alameda song sparrow (*Melospiza melodia pusillula*), and Pallid bat (*Antrozous pallidus*). Each of these species is discussed below.

The Ricksecker's water scavenger beetle is an aquatic invertebrate that is documented to the west of Foster City in a tributary to Seal Slough. This species has the potential to be present at times within Foster City in the aquatic areas.

The short eared owl is found in swamp lands (both fresh and salt), lowland meadows, irrigated alfalfa fields. They nest on dry ground in depressions that are concealed in vegetation. They are known to use tule patches, and are secluded during the day. This species is documented along the shoreline area at Smith Slough to the south of the City limits. This species has the potential to be present at times within Foster City in the undeveloped areas.

The burrowing owl inhabits open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. They are a subterranean nester that is dependent upon burrowing mammals, most notably, the California ground squirrel. This species is documented along the shoreline area just north of the 57-acre wildlife refuge to the north of the City limits. This species has the potential to be present at times within Foster City in the undeveloped areas.

The western snowy plover, which is also listed as a federal threatened bird as previously discussed, inhabits sandy beaches, salt pond levees and shores of large alkali lakes. This species needs sandy, gravelly or friable soils for nesting. This species is documented along the shoreline area at Seal

Slough and Smith Slough to the south of the City limits. This species is likely present at times within Foster City along the shoreline and undeveloped areas.

The northern harrier inhabits coastal salt and fresh-water marsh. They nest and forage in grasslands, from salt grass in desert sink to mountain cienagas. Their nests are on the ground in shrubby vegetation, usually at a marshes edge. Nests are built of a large mound of sticks in wet areas. This species is documented along the shoreline area at Smith Slough to the south of the City limits. This species has the potential to be present at times within Foster City with a higher likelihood in the undeveloped areas.

The Alameda song sparrow is a resident of salt marshes bordering the south arm of San Francisco Bay. They inhabit salicornia marshes and usually nest low in grindelia bushes or salicornia, but high enough to escape high tides. This species is documented to the northwest of the City limits. This species has the potential to be present at times within Foster City with a higher likelihood in the undeveloped areas.

The pallid bat inhabits deserts, grasslands, shrublands, woodlands and forests and is most common in open, dry habitats with rocky areas for roosting. Their roosts must protect the bats from high temperatures. They are very sensitive to disturbance of roosting sites. This species is documented to the south of the City limits. This species has a low likelihood of presence within Foster City.

OTHER SPECIES

There are also several species that are not listed under the federal or state endangered species act, and are not considered a federal species of special concern or California species of special concern, but are considered rare (regionally or locally), and for purposes of CEQA these species receive special consideration during environmental review (CEQA Guidelines Section 15380).

The American peregrine falcon is a federal delisted bird that inhabits areas near wetlands, lakes, rivers, or other water, and on cliffs, banks, dunes, mounds, and human-made structures. Their nests consist of a scrape or depression or ledge in an open site. This species is broadly documented to the west of the City limits. This species has the potential to be present at times within Foster City in both the developed and undeveloped areas.

The double-crested cormorant is a colonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state. They nest along the coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins. This species is broadly documented along SR 92 to the east of the City limits. This species has the potential to be present at times within Foster City.

Santa Cruz kangaroo rat inhabits silverleaf manzanita mixed chaparral in the zayante sand hills ecosystem of the Santa Cruz Mountains. They need soft well-drained sand. This species is broadly documented to the south of the City limits, but within a radius that extends into Foster City. Optimal habitat for this species is not present within Foster City and there is a low likelihood of presence.

The hoary bat prefers open habitat or habitat mosaics, with access to trees for cover & open areas or habitat edges for feeding. They roost in dense foliage of medium to large trees and feed primarily on moths. This species is broadly documented to the west of the City limits. This species has the potential to be present at times within Foster City.

Sensitive Natural Communities

In addition to the special-status species identified above, the CNDDB search revealed one sensitive natural community: Northern Coastal salt marsh. This sensitive natural community is restricted to the upper intertidal zone of protected shallow bays, lagoons, and estuaries. Salt marsh is a highly productive plant community consisting of plants that are tolerant of saline soils and regular tidal inundation. Diking and filling of marshlands for agriculture and development have severely diminished the acreage of the San Francisco Bay salt marshes. While only about 10 percent of the historic tidal marshes remain, substantial areas of valuable managed wetlands remain within the historic margins of the bay, including the shoreline of Foster City.

Conclusion

Construction and maintenance activities associated with future development projects under the proposed General Plan Update and Climate Action Plan could result in the direct and indirect loss or indirect disturbance of special status plant or animal species or their habitats that are known to occur, or have potential to occur, in the region. Impacts to special status species or their habitat could result in a substantial reduction in local population size, lowered reproductive success, or habitat fragmentation. Significant impacts on special status species associated with individual subsequent projects could include:

- increased mortality caused by higher numbers of automobiles in new areas of development;
- direct mortality from the collapse of underground burrows, resulting from soil compaction;
- direct mortality resulting from the movement of equipment and vehicles through construction areas;
- direct mortality resulting from removal of trees with active nests;
- direct mortality or loss of suitable habitat resulting from the trimming or removal of obligate host plants;
- direct mortality resulting from fill of wetlands features;
- loss of breeding and foraging habitat resulting from the filling of seasonal or perennial wetlands;
- loss of breeding, foraging, and refuge habitat resulting from the permanent removal of riparian vegetation;
- loss of suitable habitat for vernal pool invertebrates resulting from the destruction or degradation of vernal pools or seasonal wetlands;

- abandoned eggs or young and subsequent nest failure for special status nesting birds, including raptors, and other non-special status migratory birds resulting from construction-related noises;
- loss or disturbance of rookeries and other colonial nests;
- loss of suitable foraging habitat for special status raptor species;
- loss of migration corridors resulting from the construction of permanent structures or features; and
- impacts to fisheries/species associated with waterways.

Subsequent development projects will be required to comply with the adopted General Plan and adopted Federal, State, and local regulations for the protection of special status plants and animals, including habitat. Foster City's adopted General Plan Conservation Element establishes policies and programs that are designed to protect and conserve natural resources. Policy C-6 protects the wildlife habitat located in the wildlife refuge, 100-foot regulated shoreline band, wetland areas and the Foster City Lagoon. Program C-e ensures the continuation of existing programs to conserve and protect water quality in accordance with accepted standards. Program C-f continues to implement the Lagoon Management Plan in order to conserve and protect lagoon water quality by exchanging water with the Bay, testing and monitoring the water quality in the Lagoon. Program C-I conserves and protects the quality of the water that is discharged into the San Francisco Bay through implementation of the Lagoon Management Plan. Program C-x expands public opportunities to learn about wetland areas and endangered species by creating public viewing areas with exhibits. Program C-y protect wetland habitat from human disturbance by posting signs prohibiting trespassing on vegetation typical of wetland areas. Program C-z prohibits development within the 57 acre wildlife refuge. Program C-aa ensures strict control of development proposals in the vicinity of the shoreline band. Program C-bb ensures that the City continues working with the county-wide task force to develop and implement a stormwater management plan to satisfy NPDES requirements. These General Plan policies are intended to protect special status plants and animals, including habitat, from adverse effects associated with future development and improvement projects.

Implementation of the proposed project would not extend the boundaries of the City into previously undisturbed areas. As a result, potential impacts to the habitat and range of known candidate, sensitive and special status species in the area are not anticipated. Further, subsequent site-specific projects proposed under the project will require review under CEQA to further ensure that future development will not result in impacts on these species. Consequently, implementation of the proposed project is not anticipated to result in adverse impacts either directly or indirectly through habitat modifications, to these special-status species. Implementation of the existing General Plan policies and actions listed above, as well as Federal and State regulations, would reduce potential impacts to these resources to a **less than significant** level.

Impact 3.2-2: Project implementation may result in effects on riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service (Less than Significant)

There is very limited biological diversity within Foster City as a result of the urban development. The CNDDB documents Northern Coastal salt marsh, which is a sensitive natural community, in the 57-acre wildlife refuge and on the San Francisco Bay National Wildlife Refuge just southwest of the City limits. While not documented in the CNDDB, there is also limited Northern Coastal salt marsh along the shoreline band of Foster City. Northern Coastal salt marsh is the only documented sensitive natural community in Foster City. Riparian habitat in Foster City is limited to areas of Northern Coastal salt marsh.

Northern Coastal salt marsh is restricted to the upper intertidal zone of protected shallow bays, lagoons, and estuaries. Salt marsh is a highly productive plant community consisting of plants that are tolerant of saline soils and regular tidal inundation. Diking and filling of marshlands for agriculture and development have severely diminished the acreage of the San Francisco Bay salt marshes. While only about 10 percent of the historic tidal marshes remain, substantial areas of valuable managed wetlands remain within the historic margins of the bay, including Foster City.

The salt marsh community within Foster City is composed of relatively low-growing plants, ranging in height from several inches to over three feet. Plant composition changes with small differences in elevation along the edges of these marshes because of small differences in the frequency and duration of tidal inundation. Bare mudflats are bordered by stands of cordgrass (*Spartina spp.*) which at the mean high water level become replaced by pickleweed (*Salicornia virginica*). This vegetated marsh zone extending up to mean high water is commonly referred to as low marsh community. The mid-marsh community typically occurs from about mean high water to mean higher high water. This zone is typically dominated by pickleweed, with some association of alkali heath (*Frankenia salina*), marsh rosemary (*Limonium californicum*), jaumea (*Jaumea carnosa*), sandspurreys (*Spergularia* spp.), and saltgrass (*Distichlis spicata*). Salt grass, marsh gumplant (*Grindelia stricta* var. *angustifolia*), and marsh rosemary dominate the upper marsh zone (above mean higher high water).

The Conservation Element of the General Plan establishes policies and programs that are designed to protect and conserve these natural resources, including sensitive natural communities. Policy C-6 protects the wildlife habitat located in the wildlife refuge, 100-foot regulated shoreline band, wetland areas and the Foster City lagoon system. Program C-y protects wetland habitat from human disturbance by posting signs prohibiting trespassing on vegetation typical of wetland areas. Program C-z prohibits development within the 57 acre wildlife refuge. Program C-aa ensures strict control of development proposals in the vicinity of the shoreline band.

Project approval and implementation would not facilitate or allow any development projects within 57-acre refuge or the shoreline band of Foster City, which are the areas that contain Northern Coastal salt marsh.

Subsequent development projects will be required to comply with the adopted General Plan and adopted Federal, State, and local regulations for the protection of sensitive habitats, including Northern Coastal salt marsh and riparian habitat. As described above, Foster City's adopted General Plan Conservation Element establishes policies and programs that are designed to protect and conserve these natural resources.

There is very limited biological diversity within the developed portion of Foster City. Implementation of the proposed project would not extend the boundaries of the City into previously undisturbed areas, nor would it allow or facilitate development in areas containing sensitive natural habitat. As a result, the project is not anticipated to result in potential impacts to sensitive habitat in the City, including Northern Coastal salt marsh and riparian habitat. Further, subsequent site-specific projects proposed under the project will require review under CEQA to further ensure that future development will not result in impacts on these sensitive habitat types. Consequently, implementation of the proposed project is not anticipated to result in adverse impacts either directly or indirectly through habitat modifications, to these sensitive natural habitats. Implementation of the existing General Plan policies and actions listed above, as well as Federal and State regulations, would reduce potential impacts to these resources to a **less than significant** level.

Impact 3.2-3: Project implementation may result in effects on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means (Less than Significant)

Streams, rivers, vernal pools, and marshes are of high concern because they provide unique aquatic habitat (perennial and ephemeral) for many endemic species, including special-status plants, birds, invertebrates, and amphibians. These aquatic habitats oftentimes qualify as protected wetlands or jurisdictional waters and are protected from disturbance through the state and federal Clean Water Acts.

Within Foster City, protected wetlands are limited to the Belmont Slough/57-acre wildlife refuge, O'Neill Slough, the wetlands created inside the levee at Sea Cloud Park and the San Francisco Bay shoreline.

The Bay Conservation and Development Commission (BCDC) has planning and permit authority over the shoreline band. In addition, Section 404 of the CWA requires any project that involves disturbance to a wetland or water of the U.S. to obtain a permit that authorizes the disturbance. If a wetland or jurisdictional water is determined to be present, then a permit must be obtained from the USACE to authorize a disturbance to the wetland. Section 401 of the CWA requires a water quality certification by the RWQCB anytime that a project requires disturbance to a wetland or water of the U.S.

The Conservation Element of the General Plan establishes policies and programs that are designed to protect and conserve these natural resources, including federally protected wetlands. Policy C-6 protects the wildlife habitat located in the wildlife refuge, 100-foot regulated shoreline band,

wetland areas and the Foster City lagoon system. Program C-y protects wetland habitat from human disturbance by posting signs prohibiting trespassing on vegetation typical of wetland areas. Program C-z prohibits development within the 57 acre wildlife refuge. Program C-aa ensures strict control of development proposals in the vicinity of the shoreline band.

Project approval and implementation would not facilitate or allow any development projects within the Foster City lagoon system, Belmont Slough/57-acre wildlife refuge, Seal Slough, or the shoreline, which are the areas that contain federally protected wetlands. As future development, redevelopment, and infrastructure projects are considered by the City, each project will be evaluated for conformance with the Conservation Element of the General Plan. Any future project that has the potential to result in disturbance of fill of a wetland will require a biological study to evaluate the project relative to the adjacent wetland. There are no other federally protected wetlands within the remainder of Foster City, beyond those in the areas identified above.

Section 404 of the CWA requires any project that involves disturbance to a wetland or water of the U.S. to obtain a permit that authorizes the disturbance. If a wetland or jurisdictional water is determined to be present, then a permit must be obtained from the USACE to authorize a disturbance to the wetland. Although subsequent projects may disturb protected wetlands and/or jurisdictional waters, the regulatory process that is established through Section 404 of the CWA ensures that there is “no net loss” of wetlands or jurisdictional waters. If, through the design process, it is determined that a future development project cannot avoid a wetland or jurisdictional water, then the USACE would require that there be an equal amount of wetland created elsewhere to mitigate any loss of wetland.

Construction activities associated with individual future projects could result in the disturbance or loss of waters of the United States. This includes perennial and intermittent drainages; unnamed drainages; freshwater marshes; and other types of seasonal and perennial wetland communities. Wetlands and other waters of the United States could be affected through direct removal, filling, hydrological interruption (including dewatering), alteration of bed and bank, and other construction-related activities.

Because the proposed project is a planning document and thus, no physical changes will occur to the environment, adoption of the proposed project would not directly impact the environment. There is a reasonable chance that water features could be impacted throughout the buildout of the individual projects. The implementation of an individual project would require a detailed and site-specific review of the site to determine the presence or absence of water features. If water features are present and disturbance is required, Federal and State laws require measures to reduce, avoid, or compensate for impacts to these resources. The requirements of these Federal and State laws are implemented through the permit process.

Subsequent development projects will be required to comply with the General Plan and adopted Federal, State, and local regulations for the protection of sensitive natural communities, including protected wetlands. The adopted Conservation Element of the Foster City General Plan includes numerous policies and actions intended to protect wetlands and waters of the U.S. from adverse effects associated with future development and improvement projects. While future development

has the potential to result in significant impacts to protected water features, the implementation of the policies and actions listed above, as well as Federal and State regulations, would reduce impacts to these resources to a **less than significant** level.

Impact 3.2-4: Project implementation could result in interference with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites (Less than Significant)

Habitat loss, fragmentation, and degradation resulting from land use changes or habitat conversion can alter the use and viability of wildlife movement corridors (i.e. linear habitats that naturally connect and provide passage between two or more otherwise disjunct larger habitats or habitat fragments). Wildlife habitat corridors maintain connectivity for daily movement, travel, mate-seeking, and migration; plant propagation; genetic interchange; population movement in response to environmental change or natural disaster; and recolonization of habitats subject to local extirpation or removal. The suitability of a habitat as a wildlife movement corridor is related to, among other factors, the habitat corridor's dimensions (length and width), topography, vegetation, exposure to human influence, and the species in question.

Species utilize movement corridors in several ways. "Passage species" are those species that use corridors as thru-ways between outlying habitats. The habitat requirements for passage species are generally less than those for corridor dwellers. Passage species use corridors for brief durations, such as for seasonal migrations or movement within a home range. As such, movement corridors do not necessarily have to meet any of the habitat requirements necessary for a passage species' everyday survival. "Corridor dwellers" are those species that have limited dispersal capabilities – a category that includes most plants, insects, reptiles, amphibians, small mammals, and birds – and use corridors for a greater length of time.

Movement corridors for wildlife through Foster City are severely limited due to the density of urbanization. Wildlife movement through Foster City is primarily limited to the Foster City lagoon system, Belmont Slough/57-acre wildlife refuge, Marina Lagoon, and the San Francisco Bay shoreline. These areas provide habitat mostly for aquatic and avian wildlife.

The Conservation Element of the General Plan establishes policies and programs that are designed to protect and conserve movement/migration habitat. Policy C-6 protects the wildlife habitat located in the wildlife refuge, 100-foot regulated shoreline band, wetland areas and the Foster City lagoon system. Program C-e ensures the continuation of existing programs to conserve and protect water quality in accordance with accepted standards. Program C-f continues to implement the Lagoon Management Plan in order to conserve and protect lagoon water quality by exchanging water with the Bay, testing and monitoring the water quality in the lagoon system. Program C-I conserves and protects the quality of the water that is discharged into the San Francisco Bay through implementation of the Lagoon Management Plan. Program C-x expands public opportunities to learn about wetland areas and endangered species by creating public viewing areas with exhibits. Program C-y protect wetland habitat from human disturbance by posting signs

prohibiting trespassing on vegetation typical of wetland areas. Program C-z prohibits development within the 57 acre wildlife refuge. Program C-aa ensures strict control of development proposals in the vicinity of the shoreline band.

Foster City is essentially a built-out community with distinct boundaries. New development will primarily come from redevelopment of underutilized infill sites at higher densities and intensities. There are no new developments that would be allowed within any of the movement/migration habitat located in Foster City, given that all movement/migration habitat within Foster City is limited to the lagoons and shorelines, which are expressly protected by the General Plan Conservation policies and programs identified above. No aspect of the proposed project would allow or facilitate development within a migratory or species movement corridor. Therefore, this impact is considered **less than significant** and no mitigation is necessary.

Impact 3.2-5: Project implementation may conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (Less than Significant)

The proposed project consists of two policy documents, the Land Use and Circulation Element Update and the Climate Action Plan, in which local policies are established. The proposed Land Use and Circulation Element and Climate Action Plan do not conflict with the goals, policies, and programs contained in the existing adopted elements of the Foster City General Plan.

The existing Conservation Element of the General Plan establishes policies and programs that are designed to protect and conserve biological resources. Policy C-6 protects the wildlife habitat located in the wildlife refuge, 100-foot regulated shoreline band, wetland areas and the Foster City lagoon system. Program C-e ensures the continuation of existing programs to conserve and protect water quality in accordance with accepted standards. Program C-f continues to implement the Lagoon Management Plan in order to conserve and protect lagoon water quality by exchanging water with the Bay, testing and monitoring the water quality in the lagoon system. Program C-I conserves and protects the quality of the water that is discharged into the San Francisco Bay through implementation of the Lagoon Management Plan. Program C-x expands public opportunities to learn about wetland areas and endangered species by creating public viewing areas with exhibits. Program C-y protects wetland habitat from human disturbance by posting signs prohibiting trespassing on vegetation typical of wetland areas. Program C-z prohibits development within the 57 acre wildlife refuge. Program C-aa ensures strict control of development proposals in the vicinity of the shoreline band. The proposed project has been developed to be consistent with, and complimentary to, these Conservation policies and programs.

Subsequent development projects will be required to comply with the General Plan policies, as well as the Municipal Code. Implementation of the policies and actions listed above would ensure consistency with already established ordinances. This is a **less than significant** impact.

Impact 3.2-6: Project implementation would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan (Less than Significant)

There are no adopted habitat conservation plans, natural community conservation plans, or other local, regional, or State habitat conservation plan that are applicable to Foster City. Therefore, this impact is considered **less than significant** and no mitigation is necessary.

REFERENCES

The primary sources of data referenced for this section is derived from the following:

Barbour and Major. 1988. Terrestrial vegetation of California.

California Department of Conservation. 2002. California Geological Survey, Note 36.

California Dept. of Fish and Wildlife. 2012. "Special Animals List." Natural Diversity Database.

California Dept. of Fish and Wildlife. 2012. "Special Plants List." Natural Diversity Database.

California Dept. of Fish and Wildlife. 2012. "Special Vascular Plants, Bryophytes, and Lichens List." Natural Diversity Database.

California Dept. of Water Resources. 2009. California Water Plan Update 2009, North Coast Integrated Water Management, Volume 3, Regional Reports, Bulletin 160-09.

California Dept. of Water Resources. 2009. California Water Plan Update 2009, San Francisco Bay Integrated Water Management, Volume 3, Regional Reports, Bulletin 160-09.

California Dept. of Water Resources. 2010. Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report).

CalWater, California Interagency Watershed Mapping Committee. 2008. California Watershed Boundary Dataset (WBD).

City of Foster City, 2012. Community Info, History of Foster City, Creating the Land, accessed 10/8/12 at: http://www.fostercity.org/community_info/Creating-the-Land.cfm.

Hickman, James C. 1993. Jepson Manual: Higher Plants of California.

Holland, R.F., 1986. Preliminary descriptions of the terrestrial natural communities of California. State of California, The Resources Agency, Nongame Heritage Program, Dept. Fish & Game, Sacramento, Calif. 156 pp.

Sawyer, John and Todd Keeler-Wolf. 1995. A Manual of California Vegetation.

Seaber, P.R., Kapinos, F.P., and Knapp, G.L., 1987, Hydrologic Unit Maps: U.S. Geological Survey Water-Supply Paper 2294, 63 p.

Skinner, Mark W. and Bruce M. Pavlik, Eds. 2001. California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California.

State of California, California Biodiversity Council. 2008. Interagency Natural Areas Coordinating Committee (INACC)-Working Bioregions. Website accessed May 9, 2011. http://ceres.ca.gov/geo_area/bioregions/Bay_Delta/about.html.

United States Army Corps of Engineers. 1987. Wetland Delineation Manual.

Legend

- Foster City Boundary
- Water Feature
- Ecological Reserve*

Figure 3.2-1: Major Biological Features

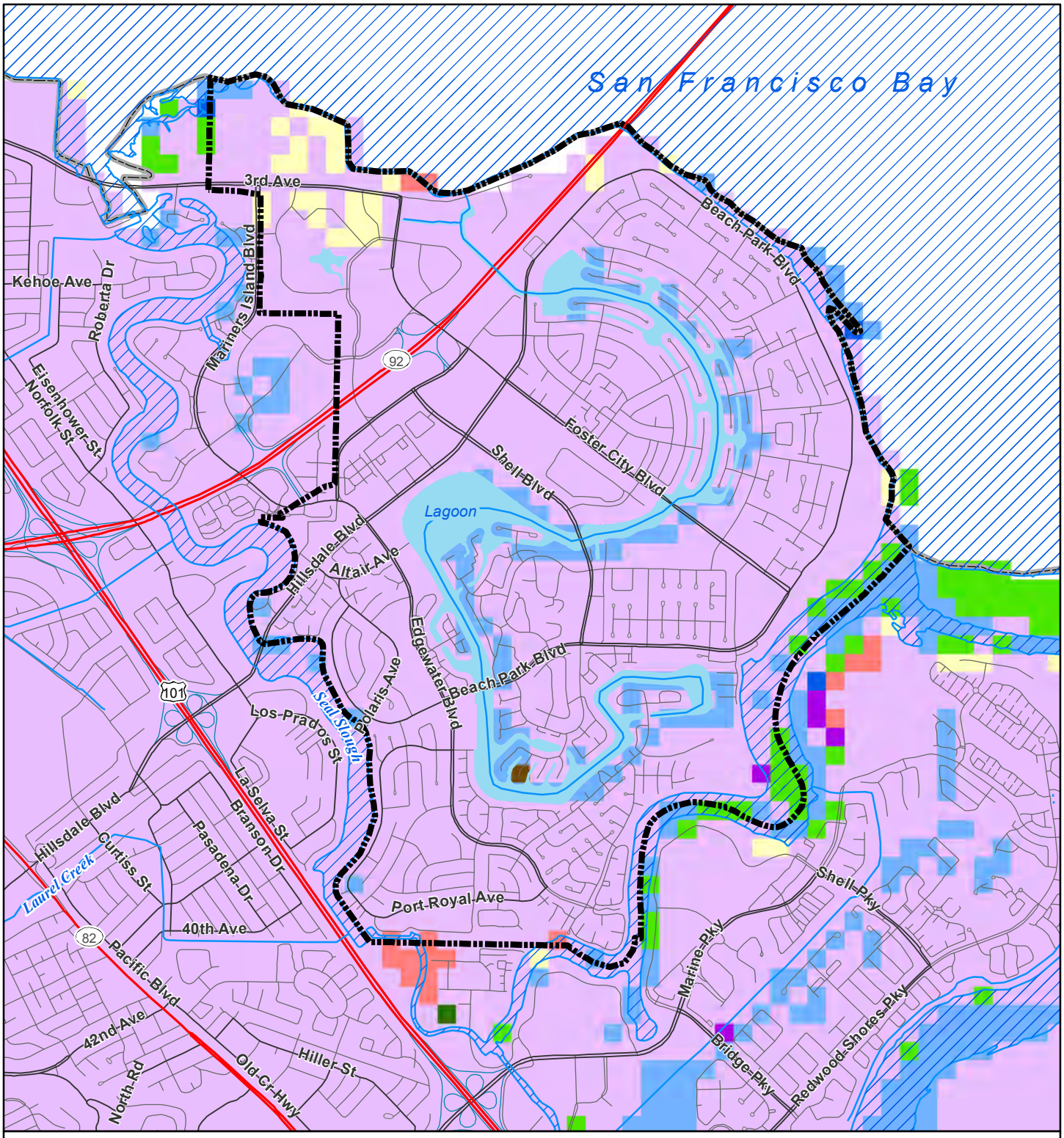
N

0 1,000 2,000
Feet

** Ecological Reserve boundary is approximate.*
Sources: California Department of Fish and Wildlife; San Mateo County GIS; Foster City GIS; National Hydrography Dataset. Map date: June 30, 2015.

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.



Wildlife-Habitat Relationship (WHR) Name

- Annual Grassland
- Freshwater Emergent Wetland
- Marine
- Riverine
- Saline Emergent Wetland
- Unknown Shrub Type
- Urban
- Valley Foothill Riparian
- Water

USGS Water Features

- Water Bodies
- Streams & Canals

Foster City Boundary

FOSTER CITY GENERAL PLAN UPDATE

Figure 3.2-2: Land Cover Map

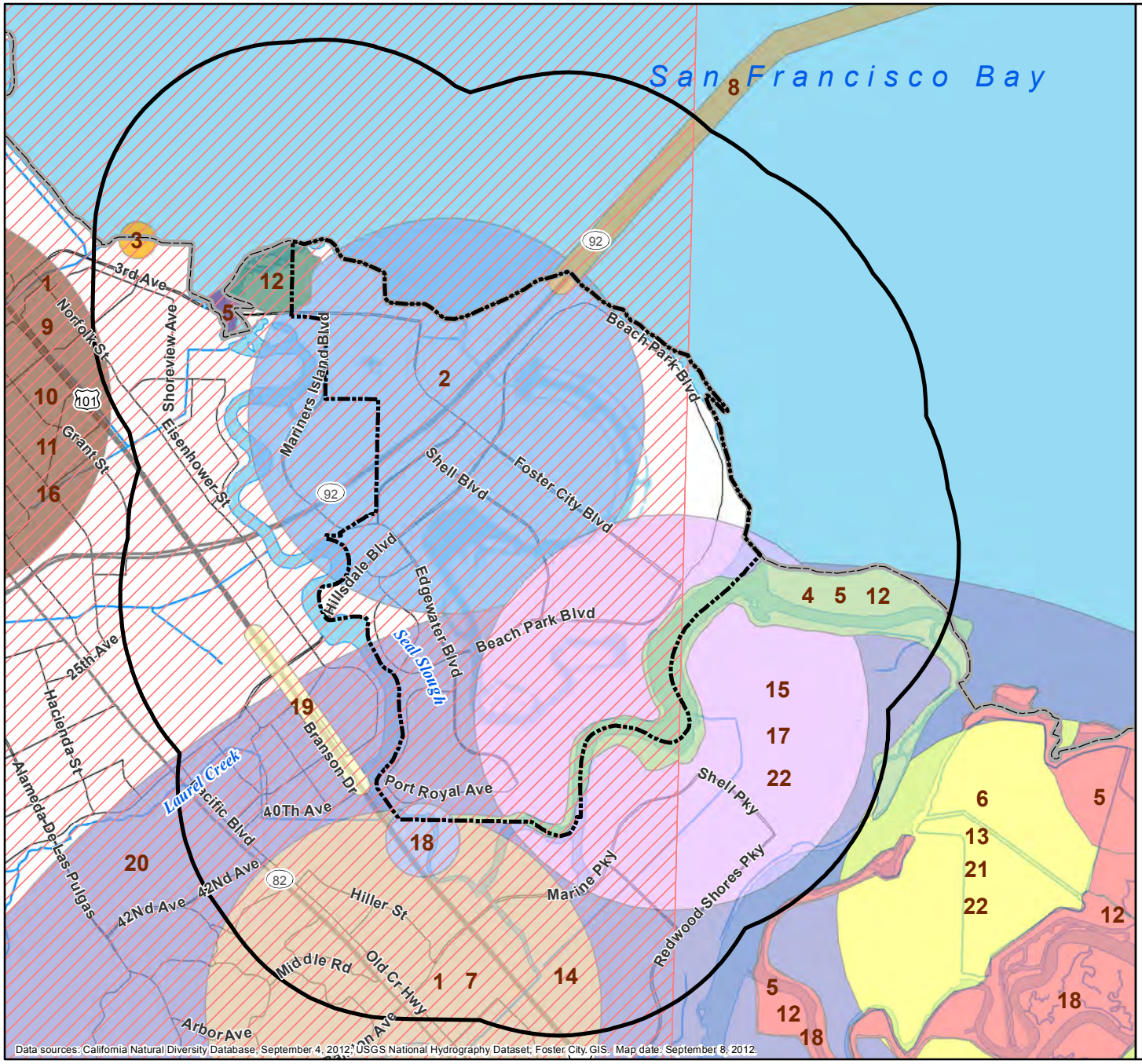
0 1,250 2,500
Feet

N

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

Data sources: California Department of Forestry and Fire Protection, Multi-Source Landcover data, 2002; USGS National Hydrography Dataset; Foster City GIS. Map date: September 7, 2012.

This page left intentionally blank.



Data sources: California Natural Diversity Database, September 4, 2012; USGS National Hydrography Dataset; Foster City GIS. Map date: September 8, 2012.

Figure 3.2-3: Special Status Species 1-mile Radius

Areas of Species Occurrences
(see table for list of species by common name)

- 12
- 5
- 3
- 5, 12, 18
- 6, 13, 21, 22
- 8
- 4, 5, 12
- 18
- 1, 7, 14
- 20
- 15, 17, 22
- 19
- 2
- 1, 9, 10, 11, 16

Sensitve EO's

- San Francisco garter snake
- American Peregrine Falcon

Map Label	Common Name	Count
1	Alameda song sparrow	2
2	arcuate bush-mallow	1
3	burrowing owl	1
4	California black rail	1
5	California clapper rail	3
6	California least tern	1
7	Davidson's bush-mallow	1
8	double-crested cormorant	1
9	Franciscan onion	1
10	hoary bat	1
11	Myrtle's silverspot	1
12	Northern Coastal Salt Marsh	3
13	northern harrier	1
14	pallid bat	1
15	Point Reyes bird's-beak	1
16	Ricksecker's water scavenger beetle	1
17	saline clover	1
18	salt-marsh harvest mouse	2
19	San Francisco owl's-clover	1
20	Santa Cruz kangaroo rat	1
21	short-eared owl	1
22	western snowy plover	2

0 2,000 4,000
Feet

N

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.

This section of the EIR assesses potential effects to cultural resources that could result from implementation of the proposed project. Cultural resources are defined as buildings, sites, districts, structures, or objects having historical, architectural, archaeological, cultural, or paleontological importance.

Information used to prepare this section was provided by Melinda Peak, Senior Historian/Archaeologist with Peak & Associates. No comment letters addressing cultural resources were received during the Notice of Preparation scoping period for the EIR.

3.3.1 ENVIRONMENTAL SETTING

The geographic setting for the analysis of cultural resources consists of all lands within the Foster City city limits.

PREHISTORIC PERIOD

In general, the Bay Area was lightly occupied prior to about 2000 B.C. by hunter/gatherer populations that did not concentrate on estuarine or marine food resources. Shellfish were eaten, but they are not predominant in the diet and sites are located inland as commonly as near the ocean or bay. About 2000 B.C. a radically different cultural focus, the Berkeley Pattern, takes over. This way of life does emphasize the resources available near shorelines and is commonly thought to represent the movement of Penutian speakers, such as the Ramaytush Ohlone (Costanoan), into the area, displacing Hokan speakers.

In contrast to the inferred population movement that ushered in the Berkeley Pattern, the next major shift in cultural pattern appears to develop in the area over time as a result of population expansion and technological development. The Augustine Pattern, from around A.D. 500 to Euro-American contact, shows an increased reliance on vegetable foods (necessary to support a denser population), more settlements, wide-ranging trading patterns with both neighboring and distant groups and several other traits reflecting a mature cultural development.

ETHNOGRAPHIC BACKGROUND

The old name for the native population of peninsula, Costanoan, derives from the Spanish term for coastal people and was not used by the Indian people. Modern descendants generally prefer the term Ohlone to refer to this linguistic grouping. Ohlone territory extended from the Carquinez Strait in the northeast to just south of Chalome Creek in the southeast and from San Francisco to the Sur River along the Coast. This vast territory was broken into eight different language based zones. These eight branches of the Ohlone family were separate languages, not dialects (Levy 1978). The language of the Ohlone in the project vicinity was Ramaytush. The Ramaytush occupied the land from San Francisco south through San Mateo County. It is estimated that the 1770 population of the Ramaytush was approximately 1,400.

Ancestors of the Ohlone moved into the San Francisco and Monterey Bay areas from the Delta of the San Joaquin and Sacramento rivers. These people divided up into what has been called “tribelets,’ small groups who spoke a common language, lived in a contiguous area and identified

themselves primarily as occupants of a central village. They situated their permanent villages on high ground above seasonal marshes that were inundated by high water for a few months of the year. Access to fresh drinking water was a criterion for selecting a village location. The tribelet was the basic unit of Ohlone political organization. Territorial boundaries of tribelets were defined by physiographic features.

The Ohlone followed a seasonal round of subsistence activities, gathering plant and animal foods and materials for baskets and other manufactures. They insured a sustained yield of plant and animal foods by careful management of the land (Levy 1978:491).

Between 1770 and 1797, the Franciscans established seven missions in Ohlone territory and effectively changed the Indian way of life. Unwilling recruits to the missions resisted control by Franciscans. In 1793, a runaway neophyte named Charquin began a three-year struggle during which tribes in the northeast Bay Area engaged in sporadic warfare with the Spanish. There was also resistance against Mission San Jose in 1800 (Castillo 1978:103). Levy (1978:486) reports that mission baptismal records demonstrate that the last Ohlone tribelets living an aboriginal existence had disappeared by 1810. By 1832, the Ohlone population had decreased to one-fifth or less than its pre-contact size. After the Mexican government secularized the missions (between 1834 and 1836), some Ohlone returned to traditional religious and subsistence practices while others worked on Mexican ranchos. Former mission residents formed multi-tribal Indian communities in Pleasanton and other locations within the aboriginal territory.

HISTORIC PERIOD

Early Spanish exploration of the Peninsula was fueled by the desire to establish missions in the region. Mission Dolores in San Francisco was dedicated in 1776. Many of the lands in what is now San Mateo County were claimed as land grants by early settlers. The ranchos were agricultural, used primarily for grazing cattle and sheep.

After the discovery of gold in California in 1848, thousands rushed to California seeking a new life. Although some mined, many others quickly realized the agricultural potential of the region. Unclaimed lands were taken up by the new settlers, and the large tracts of rancho lands provided a great deal of conflict. California acquired statehood in 1850, putting more pressure on the owners of the ranchos.

San Mateo County was established in 1856 from the southern portion of San Francisco County, with a later addition of a portion of Santa Cruz County in 1868. Most of the lands that now comprise Foster City were historically swamp and coastal marsh lands.

By 1868, these lands had been purchased, and there were numerous land owners of the marshy low lying lands (Official San Mateo County Map 1868). There do not appear to be any buildings indicated on the maps, and the land may have been purchased by speculators hoping the land would be reclaimed, and individuals using the land in part for grazing. The major creek channels are well-defined at this time, with the major creek in the study area identified as “Angelo Creek.” This creek follows roughly the course of what is now Belmont Slough along the east side of the City. The drainage later called Seal Slough is present.

By 1877, the creek channels had changed to some degree. Ownership was divided among many owners. Again, it is likely the land was in use for grazing, or bases for fishing.

The oyster industry had its beginnings in San Francisco Bay in 1872 when Samuel Penngrove planted eastern seed oysters. Soon after the initial planting, San Mateo bay lands became the most productive in the Bay Area for growing oysters. In 1874, John Stillwell Morgan acquired most of the bay lands of San Mateo County, including Penngrove's property, and developed the Morgan Oyster Company into a very successful business. The company became the sole source for oysters on the west coast. The peak year was 1897, with more than million dollars' worth of oysters harvested. After this time, the increasing pollution in the Bay caused a drop off in production. The holdings of the Morgan Oyster Company were sold off in 1923 (Postel 1988).

Major changes had occurred to the lands of the study area by 1909 (Official San Mateo County map 1909). A large portion of the northern lands of the study area had been acquired by W.P.A. Brewer, and were a portion of his estate. Tracts along the eastern line of the lands of what is now Foster City had been acquired by three owners. The Leslie Salt Company had acquired lands in the study area, totaling 879 acres.

Leslie Salt Company began making white table salt through solar evaporation in the area, with their first plant opening in 1904. Landowner C.E. Whitney and his family were primary owners of the Leslie salt company, a major industry in the west bay for a number of years. Although C.E. Whitney died in 1903, his family continued the business, incorporating in 1907. They retained ownership of part of the land in the study area (Postel 1980).

The more recent history of the Foster City is well documented, and covered in a number of publications including the 2005 book prepared by the Foster City Historical Society. Foster City was founded on the reclaimed lands of the marshes of Brewer Island, acquired by T. Jack Foster Sr. in 1958 from the Schilling Estate Company. Formal groundbreaking for the city occurred on August 21, 1961.

KNOWN CULTURAL RESOURCES

A record search was conducted through the Northwest Information Center of the California Historical Resources Information System. There are no recorded cultural resources within the City of Foster City. Several surveys have been conducted, with negative results. There are no known significant cultural resources as defined by CEQA, including historical resources, archeological resources and human remains, located within the study area.

NATIVE AMERICAN CONCERNS

A search of the Native American Heritage Commission Sacred Land File revealed that there are no Native American sacred lands within the study area. The Native American Heritage Commission provided contacts from the following Native American organizations for use during consultations: Ann Marie Sayers, Indian Canyon Mutsun Band of Costoanoan; Jakki Kehl; Ramona Garibay, Trina Marine Ruano Family; Irene Zwerlein, Joseph Mondragon, Melvin Ketchum III, and Jean-Marie Feyling, Amah/Mutsun Tribal Band; Rosemary Cambra, Muwekma Ohlone Indian Tribe of the SF

Bay Area; and Andrew Galvan, The Ohlone Indian Tribe. Letters were sent to all of the contacts requesting information on concerns and issues that they may have in the Foster City study area. No replies have been received to date.

Consultation with these Native American organizations is required prior to the approval and construction of individual projects.

PALEONTOLOGICAL RESOURCES

Paleontology is a branch of geology that studies prehistoric life forms other than humans, through the study of plant and animal fossils. Paleontological resources are fossilized remains of organisms that lived in the region in the geologic past and therefore preserve an aspect of the County's prehistory which is important in understanding the development of the region as a whole, as many of these species are now extinct. Like archaeological sites and objects (which pertain to human occupation), paleontological sites and fossils are non-renewable resources. They are found primarily in sedimentary rock deposits and are most easily found in regions that may have been uplifted and eroded, but they may also be found anywhere that subsurface excavation is being carried out (e.g., streambeds, under roads).

Fossils and Their Associated Formations

Geologic formations are the matrix in which most fossils are found, occasionally in buried paleosols (ancient soils). These formations are totally different from modern soils and cannot be correlated with soil maps that depict modern surface soils representing only a thin veneer on the surface of the earth. Geologic formations may range in thickness from a few feet to hundreds of thousands of feet, and form complex relationships below the surface. Geologic maps (available through the U.S. Geological Survey [USGS] or California Geological Survey) show the surface expression (in two dimensions) of geologic formations along with other geologic features such as faults, folds, and landslides. Although sedimentary formations were initially deposited one atop the other, much like a layer cake, over time the layers have been squeezed, tilted, folded, cut by faults and vertically and horizontally displaced, so that today, any one rock unit does not usually extend in a simple horizontal layer. If a sensitive formation bearing fossils can be found at the surface in an outcrop, chances are that same formation may extend not only many feet into the ground straight down, it may well extend for miles just below the surface. Consequently, predicting which areas are paleontologically sensitive is a difficult task.

Determining Paleontological Potential

The most general paleontological information can be obtained from geologic maps, but geologic cross sections (slices of the layer cake to view the third dimension) must be reviewed for each area in question. These usually accompany geologic maps or technical reports. Once it can be determined which formations may be present in the subsurface, the question of paleontological resources must be addressed. Even though a formation is known to contain fossils, they are not usually distributed uniformly throughout the many square miles the formation may cover. If the fossils were part of a bay environment when they died, perhaps a scattered layer of shells will be preserved over large areas. If on the other hand, a whale died in this bay, you might expect to find

fossil whalebone only in one small area of less than a few hundred square feet. Other resources to be considered in the determination of paleontological potential are regional geologic reports, site records on file with paleontological repositories and site-specific field surveys.

Paleontologists consider all vertebrate fossils to be of significance. Fossils of other types are considered significant if they represent a new record, new species, an oldest occurring species, the most complete specimen of its kind, a rare species worldwide, or a species helpful in the dating of formations. However, even a previously designated low potential site may yield significant fossils. The exact locations are considered proprietary and therefore not presented in CEQA documents (to prevent the removal or destruction of these important, nonrenewable resources).

3.3.2 REGULATORY SETTING

FEDERAL REGULATIONS

National Historic Preservation Act (NHPA)

The National Historic Preservation Act was enacted in 1966 as a means to protect cultural resources that are eligible to be listed on the National Register of Historic Places (NRHP). The law sets forth criteria that are used to evaluate the eligibility of cultural resources. The NRHP is composed of districts, sites, buildings, structures, objects, architecture, archaeology, engineering, and culture that are significant to American History.

Virtually any physical evidence of past human activity can be considered a cultural resource. Although not all such resources are considered to be significant and eligible for listing, they often provide the only means of reconstructing the human history of a given site or region, particularly where there is no written history of that area or that period. Consequently, their significance is judged largely in terms of their historical or archaeological interpretive values. Along with research values, cultural resources can be significant, in part, for their aesthetic, educational, cultural and religious values.

Section 106 of the National Historic Preservation Act

Specific regulations regarding compliance with Section 106 of the NHPA state that, although the tasks necessary to comply with Section 106 may be delegated to others, the federal agency is ultimately responsible for ensuring that the Section 106 process is completed according to statute. The Section 106 process is a consultation process that involves the State Historic Preservation Officer (SHPO) throughout; the process also calls for including Native American Tribes and interested members of the public, as appropriate, throughout the process. Implementing regulations for Section 106 (36 CFR 800) detail the following five basic steps.

1. Initiate the Section 106 process.

2. Identify and evaluate historic properties.

3. Assess the effects of the undertaking on historic properties within the area of potential effects (APE).

4. If historic properties are subject to adverse effects, the federal agency, the SHPO, and any other consulting parties (including Native American tribes) continue consultation to seek ways to avoid, minimize, or mitigate the adverse effect. A memorandum of agreement (MOA) is usually developed to document the measures agreed upon to resolve the adverse effects.

5. Proceed in accordance with the terms of the MOA.

American Indian Religious Freedom Act and Native American Graves and Repatriation Act

The American Indian Religious Freedom Act recognizes that Native American religious practices, sacred sites, and sacred objects have not been properly protected under other statutes. It establishes as national policy that traditional practices and beliefs, sites (including right of access), and the use of sacred objects shall be protected and preserved. Additionally, Native American remains are protected by the Native American Graves and Repatriation Act of 1990.

Department of Transportation Act - Section 4(f)

The Department of Transportation (DOT) Act of 1966, is set forth in Title 49 United States Code (U.S.C.). This law established that it is the policy of the United States Government to make a special effort to preserve historic sites. The Secretary of Transportation may approve a transportation program or project that requires the use of a historic site of national, state, or local significance only if: a) There is no prudent and feasible alternative to using that land; and b) The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

Other Federal Legislation

Historic preservation legislation was initiated by the Antiquities Act of 1966, which aimed to protect important historic and archaeological sites. It established a system of permits for conducting archaeological studies on federal land, as well as setting penalties for noncompliance. This permit process controls the disturbance of archaeological sites on federal land. New permits are currently issued under the Archaeological Resources Protection Act (ARPA) of 1979. The purpose of ARPA is to enhance preservation and protection of archaeological resources on public and Native American lands. The Historic Sites Act of 1935 declared that it is national policy to "Preserve for public use historic sites, buildings, and objects of national significance."

STATE REGULATIONS

California Register of Historic Resources

The California Register of Historical Resources (CRHR) was established in 1992 and codified in the Public Resource Code §5020, 5024 and 21085. The law creates several categories of properties that may be eligible for the CRHR. Certain properties are included in the program automatically, including: properties listed in the NRHP; properties eligible for listing in the NRHP; and certain classes of State Historical Landmarks. Determining the CRHR eligibility of historic and prehistoric

properties is guided by CCR §15064.5(b) and Public Resources Code (PRC) §21083.2 and 21084.1. NRHP eligibility is based on similar criteria outlined in Section 106 of the NHPA (16 U.S. Code [USC] 470).

Cultural resources, under CRHR and NRHP guidelines, are defined as buildings, sites, structures, or objects that may have historical, architectural, archaeological, cultural, or scientific importance. A cultural resource may be eligible for listing on the CRHR and/or NRHP if it:

- is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- is associated with the lives of persons important in our past;
- embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual or possesses high artistic values; or
- has yielded, or may be likely to yield, information important in prehistory or history.

If a prehistoric or historic period cultural resource does not meet any of the four CRHR criteria, but does meet the definition of a "unique" site as outlined in PRC §21083.2, it may still be treated as a significant resource if it is: an archaeological artifact, object or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- it contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information,
- it has a special and particular quality such as being the oldest of its type or the best available example of its type, or
- it is directly associated with a scientifically recognized important prehistoric or historic event.

California Environmental Quality Act

CEQA Guidelines §15064.5 provides guidance for determining the significance of impacts to archaeological and historical resources. Demolition or material alteration of a historical resource, including archaeological sites, is generally considered a significant impact. Determining the CRHR eligibility of historic and prehistoric properties is guided by CCR §15064.5(b) and Public Resources Code (PRC) §21083.2 and 21084.1. NRHP eligibility is based on similar criteria outlined in Section 106 of the NHPA (16 U.S. Code [USC] 470).

CEQA also provides for the protection of Native American human remains (CCR §15064.5[d]). Native American human remains are also protected under the Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001 et seq.), which requires federal agencies and certain recipients of federal funds to document Native American human remains and cultural items within their collections, notify Native American groups of their holdings, and provide an opportunity for repatriation of these materials. This act also requires plans for dealing with potential future collections of Native American human remains and associated funerary objects, sacred objects,

and objects of cultural patrimony that might be uncovered as a result of development projects overseen or funded by the federal government.

California Public Resources Code

Section 5097 of the Public Resources Code specifies the procedures to be followed in the event of the unexpected discovery of historic, archaeological, and paleontological resources, including human remains, historic or prehistoric resources, paleontological resources on nonfederal land. The disposition of Native American burial falls within the jurisdiction of the California Native American Heritage Commission (NAHC). Section 5097.5 of the Code states the following:

> *No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.*

California Health and Safety Code

Section 7050.5 of the California Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the county coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California Native American Heritage Commission. CEQA Guidelines (Section 15064.5) specify the procedures to be followed in case of the discovery of human remains on non-federal land. The disposition of Native American burials falls within the jurisdiction of the Native American Heritage Commission.

Senate Bill 18 (Burton, Chapter 905, Statutes 2004)

SB 18, authored by Senator John Burton and signed into law by Governor Arnold Schwarzenegger in September 2004, requires local (city and county) governments to consult with California Native American tribes to aid in the protection of traditional tribal cultural places ("cultural places") through local land use planning. This legislation, which amended §65040.2, §65092, §65351, §65352, and §65560, and added §65352.3, §653524, and §65562.5 to the Government Code; also requires the Governor's Office of Planning and Research (OPR) to include in the General Plan Guidelines advice to local governments for how to conduct these consultations. The intent of SB 18 is to provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places. These consultation and notice requirements apply to adoption and amendment of both general plans (defined in Government Code §65300 et seq.) and specific plans (defined in Government Code §65450 et seq.).

Assembly Bill 978

In 2001, Assembly Bill (AB) 978 expanded the reach of Native American Graves Protection and Repatriation Act of 1990 and established a state commission with statutory powers to assure that

federal and state laws regarding the repatriation of Native American human remains and items of patrimony are fully complied with. In addition, AB 978 also included non-federally recognized tribes for repatriation.

LOCAL REGULATIONS

Foster City Standard Conditions of Approval

Foster City has adopted Standard Conditions of Approval (SCOAs) for large new and redevelopment projects. The following SCOAs related to Cultural Resources would apply to any proposed large new or redevelopment project:

> **SCOA 9.19:** If paleontological resources are discovered during project activities, all work within 25 feet of the discovery shall be redirected and the Community Development Director immediately notified. A qualified paleontologist shall be contacted to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. Paleontological resources include fossil plants and animals, and evidence of past life such as trace fossils and tracks. Ancient marine sediments may contain invertebrate fossils such as snails, clam and oyster shells, sponges, and protozoa; and vertebrate fossils such as fish, whale, and sea lion bones. Fossil vertebrate land animals may include bones of reptiles, birds, and mammals. Paleontological resources also include plant imprints, petrified wood, and animal tracks.
>
> Upon completion of the assessment, the paleontologist shall prepare a report documenting the methods and results, and provide recommendations for the treatment of the paleontological resources discovered. This report shall be submitted to the project applicant, the Foster City Community Development Department, and the paleontological curation facility.
>
> Adverse effects to paleontological resources shall be avoided by project activities. If avoidance is not feasible (as determined by the City, in conjunction with the qualified paleontologist), the paleontological resources shall be evaluated for their significance. If the resources are not significant, avoidance is not necessary. If the resources are significant, adverse effects on the resources shall be avoided, or such effects shall be mitigated. Mitigation can include, but is not necessarily limited to: excavation of paleontological resources using standard paleontological field methods and procedures; laboratory and technical analyses of recovered materials; production of a report detailing the methods, findings, and significance of recovered fossils; curation of paleontological materials at an appropriate facility (e.g., the University of California Museum of Paleontology) for future research and/or display; an interpretive display of recovered fossils at a local school, museum, or library; and public lectures at local schools on the findings and significance of the site and recovered fossils. The City shall ensure that any mitigation involving excavation of the resource is implemented prior to project

construction or actions that could adversely affect the resource.

SCOA 9.20: If deposits of prehistoric or historic archaeological materials are encountered during project activities, all work within 25 feet of the discovery shall be redirected and the Community Development Director immediately notified. A qualified archaeologist shall be contacted to assess the find, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. Prehistoric materials can include flaked-stone tools (e.g., projectile points, knives, choppers) or obsidian, chert, basalt, or quartzite toolmaking debris; bone tools; culturally darkened soil (i.e., midden soil often containing heat-affected rock, ash and charcoal, shellfish remains, faunal bones, and cultural materials); and stone-milling equipment (e.g., mortars, pestels, handstones). Prehistoric archaeological sites often contain human remains. Historical materials can include wood, stone, concrete, or adobe footings, walls, and other structural remains; debris-filled wells or privies; and deposits of wood, glass, ceramics, metal and other refuse.

Upon completion of the assessment, the archaeologist shall prepare a report documenting the methods and results of the analysis, and provide recommendations for the treatment of the archaeological deposits discovered. The report shall be submitted to the project applicant, the Foster City Community Development Department and the Northwest Information Center. Project personnel shall not collect or move any archaeological materials or human remains. Adverse effects to such deposits shall be avoided by project activities. If avoidance is not feasible (as determined by the City, in conjunction with the qualified archaeologist), the archaeological deposits shall be evaluated for their eligibility for listing in the California Register. If the deposits are not eligible, avoidance is not necessary. If the deposits are eligible, avoidance of project impacts on the deposit shall be the preferred mitigation. If adverse effects on the deposits cannot be avoided, such effects must be mitigated. Mitigation can include, but is not necessarily limited to: excavation of the deposit in accordance with a data recovery plan (see CEQA Guidelines Section 15126.4(b)(3)(C)) and standard archaeological field methods and procedures; laboratory and technical analyses of recovered archaeological materials; production of a report detailing the methods, findings, and significance of the archaeological site and associated materials; curation of archaeological materials at an appropriate facility for future research and/or display; preparation of a brochure for public distribution that discusses the significance of the archaeological deposit; an interpretive display of recovered archaeological material sat a local school, museum, or library; and public lectures at local schools and/or historical societies on the findings and significance of the site and recovered archaeological materials. The City shall ensure that any mitigation involving excavation of the deposit is implemented prior to the resumption of actions that could adversely affect the deposit.

SCOA 9.21: If human remains are encountered, work within 25 feet of the discovery shall be directed and the County Coroner and the Community Development Director immediately notified. At the same time, an archaeologist shall be contacted to assess the situation and consult with agencies as appropriate. The project applicant shall also be

notified. Project personnel shall not collect or move any human remains and associated materials. If the human remains are of Native American origin, the Coroner shall notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods. Upon completion of the assessment, the archaeologist shall prepare a report documenting the methods and results and provide recommendations for the treatment of the human remains and any associated cultural materials, as appropriate and in coordination with the recommendations of the MLD. The project sponsor shall comply with these recommendations. The report shall be submitted to the project applicant, the Foster City Community Development Department, the MLD, and the Northwest Information Center.

3.3.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project is considered to have a significant impact on cultural resources if it will:

- Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5;
- Cause a substantial adverse change in the significance of archaeological resource pursuant to CEQA Guidelines §15064.5;
- Directly or indirectly destroy a unique paleontological resource; or
- Disturb any human remains, including those interred outside of formal cemeteries.

IMPACTS AND MITIGATION MEASURES

Impact 3.3-1: Project implementation could result in a substantial adverse change in the significance of a historical or archaeological resource (Less than Significant)

A substantial adverse change in the significance of an historic resource is defined in Section 15064.5 (b)(1) of the CEQA Guidelines as the "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired."

As described above, there are no known significant historical or archaeological resources located within the planning area. The vast majority of land within Foster City is developed and has been previously disturbed by construction and site grading activities. Site grading and construction activities can lead to the discovery of previously unknown cultural and historical resources.

Development and redevelopment in areas that have been previously disturbed is often considered less likely to result in the disturbance of a previously undiscovered resource.

While the proposed project does not directly propose any adverse changes to any historic or archaeological resources, future development allowed under the General Plan could affect unknown historical and archaeological resources, which have not yet been identified.

It has been generally held that prehistoric Native American sites are most likely to occur where several environmental factors combine to provide readily available resources, such as at the interface between valley and hills, coastal areas, and watersheds. Native Americans may have camped and collected shellfish in the Foster City region, and former high spots in the city could have been prehistoric campsites. Even with the massive tidal marsh filling that occurred during the development of Foster City, remnant historical or archaeological sites could exist and be preserved under the fill.

As future development and infrastructure projects are considered by the City, each project will be evaluated for conformance with the City's General Plan, Municipal Code, other applicable State and local regulations, and the City's SCOAs. Subsequent development and infrastructure projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA.

Based upon the general planning nature of the proposed project, development of detailed, site-specific information on this impact at this planning level is not feasible. However, damage to or destruction of historical and/or archaeological resources that are considered significant under local, state, or federal criteria would be a significant impact.

The City's General Plan does not currently contain policies or programs that specifically address the protection of archaeological resources. However, standard conditions of approval applied to development projects in the city require protective measures if cultural or historical resources are encountered during construction. Specifically, SCOA 9.20 ensures the proper handling of prehistoric or historic archaeological materials if encountered during project activities, and requires all work within 25 feet of the discovery to be halted, the Community Development Director to be immediately notified, and a qualified archaeologist contacted to assess the find, consult with agencies as appropriate, and make recommendations for the treatment of the discovery.

Given that there are no known historical or archaeological resources located within the city, there is very little potential for future development within the city to impact such resources. There will always be the potential that future construction activities could unearth or result in the discovery of a previously unknown cultural or historical resource. In the event that a previously unknown cultural, historical, or archaeological resource is discovered during construction activities, compliance with applicable State and federal regulations and the City's SCOAs, would ensure that any previously unknown cultural, historical, or archeological resource discovered during construction activities would be properly treated prior to continuation of ground disturbing activities. As such, potential adverse environmental impacts associated with cultural, historical,

and/or archaeological resources would be reduced to a l**ess than significant** level. No additional mitigation is required.

Impact 3.3-2: Project implementation could result in the inadvertent discovery of human remains (Less than Significant)

Indications are that humans have occupied the Bay Area for over 10,000 years and it is not always possible to predict where human remains may occur outside of formal burials. Therefore, excavation and construction activities, regardless of depth, may yield human remains that may not be interred in marked, formal burials. Under CEQA, human remains are protected under the definition of archaeological materials as being "any evidence of human activity." Additionally, Public Resources Code Section 5097 has specific stop-work and notification procedures to follow in the event that human remains are inadvertently discovered during project implementation.

As future development and infrastructure projects are considered by the City, each project will be evaluated for conformance with the City's General Plan, Municipal Code, SCOAs, and other applicable State and local regulations. Standard conditions of approval applied to development projects in the city require protective measures if human remains are encountered during construction. Specifically, SCOA 9.21 ensures the proper handling of human remains if encountered during project activities, and requires all work within 25 feet of the discovery to be halted, the County Coroner and the Community Development Director to be immediately notified, and the Native American Heritage Commission to be notified and consulted in order to identify a Most Likely Descendant (MLD) and make recommendations for the treatment of the discovery.

Subsequent development and infrastructure projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA. Under CEQA, human remains are protected under the definition of archaeological materials as being "any evidence of human activity." Public Resources Code Section 5097 has specific stop-work and notification procedures to follow in the event that Native American human remains are inadvertently discovered during development activities.

The "Stop-Work and Consultation Procedures" mandated by Public Resources Code 5097 state that in the event of discovery or recognition of any human remains during construction or excavation activities, the implementing agency shall cease further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the following steps are taken:

- The County Coroner has been informed and has determined that no investigation of the cause of death is required.
- If the remains are of Native American origin, either of the following steps will be taken:
    - The coroner will contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The coroner will make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave

goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains.

- The implementing agency or its authorized representative will retain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance when any of the following conditions occurs:
    - The Native American Heritage Commission is unable to identify a descendent.
    - The descendant identified fails to make a recommendation.
    - The implementing agency or its authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

Implementation of the requirements of SCOA 9.21, and Public Resources Code 5097 would ensure that all construction activities that inadvertently discover human remains implement required consultation methods to determine the disposition and historical significance of any discovered human remains. These requirements are applicable to all future projects within the City. Compliance with the requirements of SCOA 9.21, and Public Resources Code 5097 would ensure that potential impacts associated with the inadvertent discovery of human remains are reduced to a **less than significant level**. No additional mitigation is required.

Impact 3.3-3: Project implementation could result in damage to, or the destruction of, paleontological resources (Less than Significant)

There are no known paleontological resources located in the Foster City Planning Area. The majority of the land within the city consists of fill material placed on top of coastal marshes, wetlands, and tidal areas. As such, most the subsurface materials within the city consist of disturbed soils. Disturbed soils have very little potential to contain paleontological resources. It is possible, however, that a previously unknown paleontological resource could be discovered during future ground disturbing activities. As future development and infrastructure projects are considered by the City, subsequent development and infrastructure would be analyzed for potential environmental impacts, consistent with the requirements of CEQA.

The City's Standard Conditions of Approval, which are applied to development and redevelopment projects in the city, require protective standards to reduce impacts to paleontological resources. Specifically, SCOA 9.19 ensures the proper handling of paleontological materials if encountered during project construction, and requires all work within 25 feet of the discovery to be halted, the Community Development Director to be immediately notified, and a qualified paleontologist contacted to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery.

SCOA 9.19 provides guidance regarding the conservation of paleontological resources, ensuring that any unique paleontological resources discovered during future development activities are conserved appropriately. The implementation of SCOA 9.19, would ensure potential impacts to paleontological resources are reduced to **less than significant levels**. No additional mitigation is required.

Impact 3.3-4: Project implementation could result in damage to or the destruction of historical buildings (Less than Significant with Mitigation)

As the City reaches its fifty-year mark, many of the buildings present are reaching this age. Implementation of future development and infrastructure projects may occur near or in close vicinity to historic architectural resources (buildings/structures/features) that are 50 years old or older. Given the age of these resources, it is possible they are historically significant and eligible for listing in the California Register of Historic Resources (CRHR) or the National Register of Historic Places (NRHP). It is not believed that a systematic survey of architectural resources has been made, but such a survey would be a valuable initial step in identifying buildings with distinct characteristics or representative of particular styles.

Based upon the general planning nature of the proposed project, development of detailed, site-specific information on this impact at this planning level is not feasible. Nevertheless, the construction of individual projects may lead to physical demolition, destruction, relocation, or alteration of potential historical resources. The impact on architectural resources could be potentially significant and further studies would be required to determine the level of significance of this impact.

The City's General Plan does not currently contain policies or programs that specifically address the protection of historical architectural resources. Implementation of following mitigation measure would reduce potential impacts to historical architectural resources. This mitigation measure is applicable to future projects within the City, and will be incorporated into the City's General Plan as future updates to the General Plan are completed. This mitigation measure would reduce this impact to a **less than significant** level.

MITIGATION MEASURES

Mitigation Measure 3.3-4: *Update the Foster City General Plan Conservation Element to include the following policy language. The following policy shall apply during the construction of individual projects effective immediately.*

> *During environmental review of individual projects that would result in the destruction or demolition of a building or structure 50 years old or greater, City staff shall review and evaluate architectural resources proposed for destruction or demolition using criteria for listing in the California Register of Historic Resources, in order to determine if the structure is a qualified historical architectural resource. If it is determined that the structure proposed for destruction or demolition is not a qualified historical architectural resource, no further action is required.*
>
> *If it is determined that the structure is a qualified historical architectural resource, the resources shall be recorded by a qualified architectural historian on appropriate California*

Department of Parks and Recreation (DPR) 523 forms, photographed, and mapped. The DPR forms shall be produced and forwarded to the Central California Information Center. If federal funding or approval is required, then the implementing agency shall comply with Section 106 of the National Historic Preservation Act.

If architectural resources are deemed as potentially eligible for the California Register of Historic Resources or the National Register of Historic Places, the City shall consider avoidance through project redesign as feasible. If avoidance is not feasible, the City shall ensure that the historic resource is formally documented through the use of large-format photography, measured drawings, written architectural descriptions, and historical narratives. The documentation shall be entered into the Library of Congress, and archived in the California Historical Resources Information System. In the event of building relocation, the City shall ensure that any alterations to significant buildings or structures conform to the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings.

Impact 3.3-5: Project implementation could result in cumulative impacts to known and undiscovered cultural resources (Less than Cumulatively Considerable)

The cumulative setting area for cultural resources includes the entire area of San Mateo County. As described under the impact discussions above, construction of the individual development projects allowed under the land use designations of the City's General Plan would not result in impacts to known cultural or historical resources located within the planning area. It is possible, however, that future development projects may result in the discovery of previously unknown cultural resources, including archaeological, paleontological, historical, and Native American resources and human remains. However, Foster City is largely built-out and future development would occur on limited in-fill sites or as redevelopment on developed but underutilized sites.

As discussed above, in the event that a previously unknown cultural, historical, or archaeological resource is discovered during construction activities, implementation of the City's SCOAs (SCOA 9.20 and 9.21 discussed above) would ensure that this potentially significant impact is reduced to a less than significant level. Implementation of the City's SCOAs would ensure that any previously unknown cultural, historical, or archeological resource discovered during construction activities would be properly treated prior to continuation of ground disturbing activities.

Compliance with applicable General Plan policies and programs, as well as State and federal regulations, and the City's SCOAs will ensure the avoidance and/or minimize a cumulative loss of these important resources if they are found during project-specific surveys or construction and would reduce impacts associated with cumulative development to a less than significant level. Therefore, the proposed project's incremental contribution to cumulative cultural resource impacts would be **less than cumulatively considerable**.

REFERENCES

Foster City Historical Society

2005 *Images of American: Foster City*. Arcadia Publishing, Charleston, SC.

Hynding, Alan

1982 From Frontier to Suburb: The Story of the San Mateo Peninsula. Star Publishing.

Postel, Mitch(ell P.)

1980 More Than a Grain: The History of the Salt Industry in San Mateo County. *La Peninsula*. Summer, Volume XX: 3.

1988 Peninsula Portrait: An Illustrated History of San Mateo County. Windsor Publications, Northridge, CA.

This page left blank intentionally.

This section of the EIR assesses potential effects related to seismic and geologic hazards, and other soils-related impacts that could result from implementation of the proposed project. No comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic.

3.4.1 ENVIRONMENTAL SETTING

GEOLOGY

Geomorphic Provinces

California's geomorphic provinces are naturally defined geologic regions that display a distinct landscape or landform. Earth scientists recognize eleven provinces in California. Each region displays unique, defining features based on geology, faults, topographic relief and climate. These geomorphic provinces are remarkably diverse. They provide spectacular vistas and unique opportunities to learn about Earth's geologic processes and history.

Foster City lies within the Coast Range Geomorphic Province, which consists of mountain ranges (2,000 to 4,000, occasionally 6,000 feet elevation above sea level) and valleys trending northwest subparallel to the San Andreas Fault. Strata dip beneath alluvium of the Great Valley. To the west is the Pacific Ocean. The coastline is uplifted, terraced and wave-cut. The Coast Ranges are composed of thick Mesozoic and Cenozoic sedimentary strata. The northern and southern ranges are separated by a depression containing the San Francisco Bay. The northern Coast Ranges are dominated by irregular, knobby, landslide-topography of the Franciscan Complex. The eastern border is characterized by strike-ridges and valleys in Upper Mesozoic strata. In several areas, Franciscan rocks are overlain by volcanic cones and flows of the Quien Sabe, Sonoma and Clear Lake volcanic fields. The Coast Ranges are subparallel to the active San Andreas Fault. The San Andreas is more than 600 miles long, extending from Pt. Arena to the Gulf of California. West of the San Andreas is the Salinian Block, a granitic core extending from the southern extremity of the Coast Ranges to the north of the Farallon Islands.

Based on USGS mapping, Foster City is underlain by Quaternary Holocene-aged Bay Mud that is less than 9,600 years old and man-made artificial fills that have been placed in the areas that are developed.

Soils

Foster City was originally part of tidal marshlands known as Brewer’s Island. By 1897, an area of Brewer’s Island (the precursor of Foster City) was partially diked and drained, with additional areas diked and drained around 1901. The young Bay Mud dried over time and eventually about 2,220 acres became a dairy ranch, while another 550 acres were used as salt ponds. In the late 1950s, approximately 14 million cubic yards of sandy silt was pumped in from San Bruno Shoal to provide what has been historically documented as roughly 4 to 5 feet of fill throughout the area that was to be developed as Foster City. Foster City’s elevation is approximately seven feet above mean sea level.

Geotechnical evaluations on various sites within Foster City have been performed over the past 30 years. The geotechnical evaluations provide evidence of a surficial layer of fill that varies from approximately 4 to 5 feet below ground surface (bgs). The overlying sandy silt fill from San Bruno Shoal has compacted and formed an approximately stiff to hard surface. Beneath the surficial layer of fill is a layer of very soft to medium stiff very compressible organic clay deposits, generally referred to as young Bay Mud, extending to approximately 34 to 38 feet bgs. The uppermost 2 to 3 feet of the young Bay Mud is a moderately compressible medium-stiff desiccated crust. Stiff to very stiff clayey deposits, known as older Bay Mud underlie the young Bay Mud in a layer ranging from 2 to 11 feet thick, and beneath this is older stiff to very-stiff alluvial deposits interbedded with sandy silty clays to the limits of the depths explored, which is approximately 100 feet. According to the Natural Resource Conservation Service (2012), the soils within Foster City are classified as: Urban land-Orthents, reclaimed complex, 0 to 2 percent slopes.

Erosion Potential

The US Natural Resources Conservation Service (NRCS) delineates soil units and compiles soils data as part of the National Cooperative Soil Survey. The NRCS soil data includes several erosion factors that identify the erosion potential including: susceptibility of soil erosion by water (K factor), soil loss tolerance expressed in tons per acre per year (T factor), and runoff potential under similar storm and cover conditions (Hydrologic Group).

The soil erosion potential of the subsurface soils (i.e. Bay Mud) within Foster City is low, largely due to the slow permeability. The top 4-5 feet of soil fill is sandy silt that was pumped in in the late 1950s. There is no NRCS data on the erosion potential for the upper 4-5 feet of fill soils; however, sandy silt is generally considered a soil with a higher potential for soil erosion when compared to Bay Mud due to the higher permeability.

Expansive Soils

The NRCS delineates soil units and compiles soils data as part of the National Cooperative Soil Survey. The following description of linear extensibility (aka shrink-swell potential, or expansive potential) is provided by the NRCS Physical Properties Descriptions:

> *"Linear extensibility" refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.*
>
> *The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.*

The linear extensibility of the subsurface soils (i.e. Bay Mud) within Foster City is high. The top 4-5 feet of fill soil, however, is sandy silt that was pumped in in the late 1950s. There is no NRCS data

on the linear extensibility of the upper 4-5 feet of fill soil; however, sandy silt is generally considered a soil with low linear extensibility.

SEISMIC AND GEOLOGIC HAZARDS

Ground Shaking

Several scales may be used to measure the strength or magnitude of an earthquake. Magnitude scales (ML) measure the energy released by earthquakes. The Richter scale, which represents magnitude at the earthquake epicenter, is an example of an ML. As the Richter scale is logarithmic, each whole number represents a 10-fold increase in magnitude over the preceding number. The following table represents effects that would be commonly associated with Richter Magnitudes.

TABLE 3.4-1: RICHTER MAGNITUDES AND EFFECTS

MAGNITUDE	*EFFECTS*
< 3.5	Typically not felt
3.5 – 5.4	Often felt but damage is rare
5.4 – < 6	Damage is slight for well-built buildings
6.1 – 6.9	Destructive potential over ±60 miles of occupied area
7.0 – 7.9	"Major Earthquake" with the ability to cause damage over larger areas
≥ 8	"Great Earthquake" can cause damage over several hundred miles

SOURCE: ASSOCIATION OF BAY AREA GOVERNMENTS, 2011.

Moment Magnitude (Mw) is used by the United States Geological Service (USGS) to describe the magnitude of large earthquakes in the US. The value of *moment* is proportional to fault slip multiplied by the fault surface area. Thus, *moment* is a measurement that is related to the amount of energy released at the point of movement. The Mw scale is often preferred over other scales, such as the Richter, because it is valid over the entire range of magnitudes. *Moment* is normally converted to Mw, a scale that approximates the values of the Richter scale.

In contrast, other scales describe earthquake intensity, which can vary depending on local characteristics. The Modified Mercalli Scale (MM) expresses earthquake intensity at the surface on a scale of I through XII. While there are no known active faults located within Foster City, the area could experience considerable ground shaking generated by faults outside the city limits. For example, Foster City could experience intensities of MM VII to VIII generated by seismic events occurring in the region, most notably the San Andreas Fault (ABAG, 2011). The following table represents the potential effects of an earthquake based on the Modified Mercalli Intensities.

TABLE 3.4-2: MODIFIED MERCALLI INTENSITIES AND EFFECTS

MM	*EFFECTS*
I	Movement is imperceptible
II	Movement may be perceived (by those at rest or in tall buildings)
III	Many feel movement indoors; may not be perceptible outdoors
IV	Most feel movement indoors; Windows, doors and dishes will rattle
V	Nearly everyone will feel movement, sleeping people may be awakened;
VI	Difficulty walking; Many items fall from shelves, pictures fall from walls
VII	Difficulty standing; Vehicle shaking felt by drivers; Some furniture breaks
VIII	Difficulty steering vehicles; Houses may shift on foundations
IX	Well-built buildings suffer considerable damage; ground may crack
X	Most buildings and foundations and some bridges destroyed
XI	Most buildings collapse; Some bridges destroyed; Large cracks in ground
XII	Large scale destruction; Objects can be thrown into the air

SOURCE: ASSOCIATION OF BAY AREA GOVERNMENTS, 2012.

Seismic ground shaking hazards can be calculated as a probability of exceeding certain ground motion over a period of time, usually expressed in terms of "acceleration." The acceleration of the Earth during an earthquake can be described in terms of its percentage of gravity (g). For example, the 10% probability of exceedance in 50 years is an annual probability of 1 in 475 of being exceeded each year. This level of ground shaking has been used for designing buildings in high seismic areas. This probability level allows engineers to design buildings for larger ground motions than what we think will occur during a 50-year interval, which will make buildings safer than if they were only designed for the ground motions that we expect to occur in the next 50 years.

The California Geological Survey estimates a 10 percent probability of exceeding 60-70 percent of gravity at peak ground acceleration over the next 50 years in Foster City. As you move west toward the San Andres Fault, the estimates increase up to 70-80+ percent of gravity at peak ground acceleration. This level of ground motion translates into an earthquake that is very high intensity with the potential to damage strong modern buildings.

Faults

Faults are classified as Historic, Holocene, Late Quaternary, Quaternary, and Pre-Quaternary according to the age of most recent movement (California Geological Survey, 2002). These classifications are described as follows:

- **Historic:** faults on which surface displacement has occurred within the past 200 years;
- **Holocene:** shows evidence of fault displacement within the past 11,000 years, but without historic record;
- **Late Quaternary:** shows evidence of fault displacement within the past 700,000 years, but may be younger due to a lack of overlying deposits that enable more accurate age estimates;

- **Quaternary:** shows evidence of displacement sometime during the past 1.6 million years; and
- **Pre-Quaternary:** without recognized displacement during the past 1.6 million years.

Faults are further distinguished as active, potentially active, or inactive. (California Geological Survey, 2002).

- **Active:** An active fault is a Historic or Holocene fault that has had surface displacement within the last 11,000 years.
- **Potentially Active:** A potentially active fault is a pre-Holocene Quaternary fault that has evidence of surface displacement between about 1.6 million and 11,000 years ago.
- **Inactive:** An inactive fault is a pre-Quaternary fault that does not have evidence of surface displacement within the past 1.6 million years. The probability of fault rupture is considered low; however, this classification does not mean that inactive faults cannot, or will not, rupture.

The USGS estimates that there is a 62 percent probability that one or more moment magnitude (Mw) 6.7 or greater earthquakes will occur in the San Francisco Bay Area between 2002 and 2031. The probability of a Mw 6.7 or greater earthquake occurring along individual faults was estimated to be 21 percent along the San Andreas Fault, 27 percent along the Hayward Fault, 11 percent along the Calaveras Fault, and 10 percent along the San Gregorio Fault. In addition, there is a cumulative 14 percent chance of a background (other earthquake source, either mapped or undiscovered) event occurring. When predictions are expanded to 100 years, it is estimated that about three Mw 6.7 or greater events could occur during that time. Thus the probability of at least one Mw 6.7 or greater earthquake rises to the near certainty of about 96 percent when calculated for a 100-year span.

There are no known active, potentially active, or inactive faults located within Foster City. However, there are numerous faults located in the San Francisco Bay region. Figure 3.4-1 illustrates the location of these faults. The closest active faults are the San Andreas Fault and the Hayward Fault. These are discussed below:

- **San Andreas Fault System**: The San Andreas Fault system is an active fault located approximately 5.7 miles southwest of Foster City. The San Andreas Fault is the largest active fault in California, and extends from the Gulf of California to Cape Mendocino. It was the source of the 1906 MWMw 7.9 San Francisco earthquake. In the Bay Area, various segments of the fault include the southern Santa Cruz Mountains, possible source of the 1989 MWMw 7.0 Loma Prieta earthquake; the Peninsula segment; and the North Coast segment. These segments have been estimated to have a maximum earthquake of MWMw 7, MWMw 7.1, and MWMw 7.9, respectively.
- **Hayward Fault**. The Hayward Fault is an active fault located approximately 12.8 miles northwest of Foster City. The Hayward fault is approximately 62 miles long and has been divided into two fault segments: a longer southern segment and a shorter northern segment. This structure is considered to be the most likely source of the next major earthquake in the San Francisco Bay Area. A maximum earthquake of MWMw 6.9 has been estimated for both the northern and southern segments of the Hayward fault.

Historical Earthquakes

The Significant United States Earthquakes 1568 – 2009 data published by the USGS in the National Atlas identifies earthquakes that caused deaths, property damage, geologic effects or were felt by populations near the epicenter. No significant earthquakes were identified within Foster City; however, significant earthquakes were documented in the region. The following table presents the significant earthquakes in the region.

TABLE 3.4-3: SIGNIFICANT EARTHQUAKES IN THE REGION

RICHTER MAGNITUDE	INTENSITY	LOCATION	YEAR
6.0	N/A	American Canyon	2014
5.0	VII	Napa	2000
6.9	IX	Loma Prieta (San Andreas)	1989
5.4	N/A	Santa Cruz County	1989
6.2	N/A	Morgan Hill	1984
5.8, 5.8	VII	Livermore	1980
5.7	N/A	Coyote Lake	1979
5.7, 5.6	N/A	Santa Rosa	1969
5.3, 4.2	N/A	Daly City	1957
5.4	N/A	Concord	1954
6.5	N/A	Calaveras fault	1911
7.9	IX	San Francisco	1906
6.8	N/A	Mendocino	1898
6.2	N/A	Mare Island	1898
6.3	N/A	Calaveras fault	1893
6.2	VIII	Winters	1892
6.4	N/A	Vacaville	1892
6.8	VII	Hayward	1868
6.5	VIII	Santa Cruz Mountains	1865
6.8	N/A	San Francisco Peninsula	1838

- *SOURCE: UNITED STATE GEOLOGICAL SURVEY, 2012.*

Alquist-Priolo Fault Zones

An active earthquake fault, per California's Alquist-Priolo Act, is one that has ruptured within the Holocene Epoch (≈11,000 years). Based on this criterion, the California Geological Survey identifies Earthquake Fault Zones. These Earthquake Fault Zones are identified in Special Publication 42 (SP42), which is updated as new fault data become available. The SP42 lists all counties and cities within California that are affected by designated Earthquake Fault Zones. The Fault Zones are delineated on maps within SP42 (Earthquake Fault Zone Maps).

There are no Alquist-Priolo Earthquake Fault Zones located within Foster City; however, approximately 5.7 miles to the southwest lies the San Andreas Fault, which is delineated as an Alquist-Priolo Fault Zone. Additionally, approximately 12.8 miles to the northeast lies the Hayward

Fault, which is also delineated as an Alquist-Priolo Fault Zone. Figure 3.4-1 illustrates the location of the closest Alquist-Priolo Earthquake Fault Zone.

Surface Rupture

Surface rupture occurs when the ground surface is broken due to fault movement during an earthquake. Surface rupture generally can be assumed to occur along an active or potentially active major fault trace. No active or potentially active faults are located in Foster City; therefore, the potential for fault rupture in Foster City is low.

Liquefaction and Lateral Spreading

Liquefaction, which is primarily associated with loose, saturated materials, is most common in areas of sand and silt or on reclaimed lands. Cohesion between the loose materials that comprise the soil may be jeopardized during seismic events and the ground will take on liquid properties. Thus, liquefaction requires specific soil characteristics and seismic shaking.

Lateral spreading is a form of horizontal displacement of soil toward an open channel or other “free” face, such as an excavation boundary. Lateral spreading can result from either the slump of low-cohesion unconsolidated material or more commonly by liquefaction of either the soil layer or a subsurface layer underlying soil material on a slope. The lateral spreading hazard will tend to mirror the liquefaction hazard for a site.

In collaboration with the USGS Earthquake Hazard Program, the California Geological Survey (CGS) produces liquefaction Susceptibility Maps and identifies “Zones of Required Investigation” per the state’s Seismic Hazard Zonation Program.

The CGS Liquefaction Susceptibility Maps and “Zones of Required Investigation” are produced per the state’s Seismic Hazard Zonation Program. In Northern California, the areas of high liquefaction potential identified by the CGS are confined to the nine counties comprising the Bay Area, which includes San Mateo County. Figure 3.4-2 illustrates the liquefaction potential in the vicinity of Foster City.

Liquefaction potential in Foster City is designated as "Very High," with a few areas designed as "Moderate.” Development in areas determined to have a “Very High” liquefaction potential in regional studies require site specific geotechnical investigation prior to development. All development in Foster City requires geotechnical investigations.

Structural Damage

There are four seismic zones in the United States. The zones are numbered one through four, with Zone 4 representing the highest level of seismic hazard. There are more stringent design and construction standards for areas within Zones 3 and 4, which includes all of California. Foster City is located in Seismic Zone 4, the most seismically active of the four seismic zones in the United States. As such, building design in Foster City is subject to more stringent seismic design standards.

The susceptibility of a structure to damage from ground shaking is related to the structural design and construction quality, as well as the underlying foundation material. Newer buildings in California have generally been built to a seismic design standard that is anticipated to withstand ground shaking. However, seismic events can have particularly negative effects on older buildings constructed of unreinforced masonry, including materials such as brick, concrete and stone, pre-1940 wood frame houses, and pre-1973 tilt-up concrete buildings. In most cases, these older buildings require retrofit, or they risk significant structural damage during an earthquake.

Foster City is a relatively newer city, with construction beginning in approximately 1964. The existing structures are generally not in need of retrofit.

Tsunami

Tsunamis are standing waves created in the ocean that can follow seismic, landslide and other events. In California, water from the Pacific Ocean, including bays and estuaries, are a potential source of tsunamis. In 2009, a *Tsunami Inundation Map for Emergency Planning* (CEMA 2009) was prepared for many parts of the San Francisco Bay Area to assist cities and counties in identifying their tsunami hazard. The map is intended for local jurisdictional, coastal evacuation planning uses. In Foster City, the tsunami inundation line is outside of all developed areas. The inundation area extends into Belmont Slough on the southeastern side of Foster City. Additionally, the inundation area covers vacant land just west of the Mariner's Point Golf Links on the northern side of Foster City.

OTHER GEOLOGIC HAZARDS

Landslide

The California Geological Survey classifies landslides with a two-part designation based on Varnes (1978) and Cruden and Varnes (1996). The designation captures both the type of material that failed and the type of movement that the failed material exhibited. Material types are broadly categorized as either rock or soil, or a combination of the two for complex movements. Landslide movements are categorized as falls, topples, spreads, slides, or flows.

Landslide potential is influenced by physical factors, such as slope, soil, vegetation, and precipitation. Landslides require a slope, and can occur naturally from seismic activity, excessive saturation, and wildfires, or from human-made conditions such as construction disturbance, vegetation removal, wildfires, etc.

Within San Mateo County, the hillsides have a medium to very high susceptibility for landslides, while the valleys have a low susceptibility. Figure 3.4-3 illustrates the landslide potential in the vicinity of Foster City. Given the relatively level slopes throughout Foster City, the landslide potential is very low. This is not a significant constraint in Foster City. The landslide potential increases in the foothills and mountains to the west of Foster City.

Naturally Occurring Asbestos

The term "asbestos" is used to describe a variety of fibrous minerals that, when airborne, can result in serious human health effects. Naturally occurring asbestos is commonly associated with ultramafic rocks and serpentinite. Ultramafic rocks, such as dunite, peridotite, and pyroxenite, are igneous rocks comprised largely of iron-magnesium minerals. As they are intrusive in nature, these rocks often undergo metamorphosis, prior to their being exposed on the Earth's surface. The metamorphic rock serpentinite is a common product of the alteration process. Naturally occurring asbestos is mapped in San Mateo County in two mountainous locations. One location is approximately 4 miles west of Foster City, and the other is approximately 6 miles south of Foster City. There is no naturally occurring asbestos mapped within Foster City.

Volcanism

The USGS identifies two principal areas of volcanic hazards in Northern California: the Shasta, Medicine Lake Highland, and Lassen Peak Area and the Clear Lake Area. Mount Shasta and Lassen Peak are located at the southern terminus of the Cascade Range and the associated subduction zones along the west coast of North America. The Clear Lake Volcanic Field is markedly different in its origins and topographic characteristics. Relative to tectonic activity, the Coast Range has been subjected primarily to the lateral faulting of the San Andreas system. The largest volcanic feature within the Clear Lake Field is Mount Konocti, located along the south shore of Clear Lake.

The Clear Lake Volcanic Field is located approximately 150 miles north of Foster City. Relative to Foster City, the Clear Lake Volcanic Field is the nearest source of documented volcanic hazards. In contrast to the volcanoes of the southern Cascades, such as Lassen and Shasta, the Clear Lake Field is not associated with subduction. The Clear Lake and Sonoma volcanic phenomena are within the San Andreas Fault system. According to Wood and Kienle (1990), the field is lacking eruptive centers and volcanism tends to be non-explosive.

The most recent eruption for the Clear Lake Field is estimated to have occurred approximately 10,000 years before present. That event is thought to have produced mafic tephra generated by phreato-magmatic explosions. The USGS identifies the Clear Lake Field's "most probable" potential hazards as phreatic explosions, phreato-magmatic explosions and base surges. These events could result in "small-volume" tephra eruptions.

Therefore, given the nature of the most probable potential volcanic hazards and the distance from Foster City, the Clear Lake Field is not likely to generate significant impacts in Foster City.

3.4.2 REGULATORY SETTING

FEDERAL

Earthquake Hazards Reduction Act

The Earthquake Hazards Reduction Act of 1977 (42 USC, 7701 et seq.) requires the establishment and maintenance of an earthquake hazards reduction program by the federal government.

Executive Order 12699

This order implements provisions of the Earthquake Hazards Reduction Act for "federal, federally assisted or federally regulated new building construction" and requires the development and implementation of seismic safety programs by federal agencies.

STATE

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (formerly the Alquist-Priolo Special Studies Zone Act), signed into law December 1972, requires the delineation of zones along active faults in California. The purpose of the Alquist-Priolo Act is to regulate development on or near active fault traces to reduce the hazards associated with fault rupture and to prohibit the location of most structures for human occupancy across these traces.

Cities and counties must regulate certain development projects within the zones, which include withholding permits until geologic investigations demonstrate that development sites are not threatened by future surface displacement (Hart, 1997). Surface fault rupture is not necessarily restricted to the area within an Alquist-Priolo Zone.

California Building Standards Code (CBSC)

The CBSC is set forth in Title 24 of the California Code of Regulations (CCR). The CBSC includes codes that establish standards for new buildings, existing buildings, historical buildings, fire safety, and energy. The California Building Code (CBC) is contained within the California Building Standards Code. Per state law, building standards are enforceable only to the extent that they are centralized (in Title 24).

Caltrans Seismic Design Criteria

The California Department of Transportation (Caltrans) has Seismic Design Criteria (SDC), which is an encyclopedia of new and currently practiced seismic design and analysis methodologies for the design of new bridges in California. The SDC adopts a performance-based approach specifying minimum levels of structural system performance, component performance, analysis, and design practices for ordinary standard bridges. The SDC has been developed with input from the Caltrans Offices of Structure Design, Earthquake Engineering and Design Support, and Materials and Foundations. Memo20-1 outlines the bridge category and classification, seismic performance criteria, seismic design philosophy and approach, seismic demands and capacities on structural

components and seismic design practices that collectively make up Caltrans' seismic design methodology.

CA Health and Safety Code

Section 19100 et seq. of the California Health and Safety Code establishes the state's regulations for earthquake protection. This section of the code requires structural designs to be capable of resisting likely stresses produced by phenomena such as strong winds and earthquakes.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act was developed to protect the public from the effects of strong groundshaking, liquefaction, landslides, or other ground failure, and from other hazards caused by earthquakes. This act requires the State Geologist to delineate various seismic hazard zones and requires cities, counties, and other local permitting agencies to regulate certain development projects within these zones. Before a development permit is granted for a site within a seismic hazard zone, a geotechnical investigation of the site has to be conducted and appropriate mitigation measures incorporated into the project design.

Water Code

Division 7 of the California Water Code, commonly referred to as the Porter-Cologne Water Quality Control Act, created the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCB). In addition, water quality responsibilities are established for the SWRCB and RWQCBs.

LOCAL

City of Foster City General Plan

The adopted City of Foster City General Plan identifies the following goals, policies, and programs related to Geology and Soils within Chapter 7, Safety Element.

SAFETY POLICIES

Protect from Seismic and Geologic Hazards

S-1 **Use Most Current Uniform Codes.** The City will use the most current uniform codes to review permits for new and modified structures.

S-2 **Educate the Public about Seismic Hazards.** The City will offer programs regarding hazardous buildings and conditions and possible mitigation measures to minimize seismic and geologic hazards.

S-3 **Protect the City's Infrastructure and Emergency Facilities from Seismic and Geologic Hazards.** The City will take measures to prevent damage to the City's infrastructure and emergency facilities resulting from seismic and geologic hazards.

SAFETY PROGRAMS

Protect from Seismic and Geologic Hazards

S-a **Geotechnical and Engineering Reports.** The City will require site specific geotechnical and engineering reports for new structures.

S-b **Geotechnical Reports Library.** The City will establish a geotechnical report library at City Hall.

S-c **Seismic Safety Education.** The City will include seismic safety education in the Fire Department's public education programs, such as Neighborhood Emergency Response Team training and earthquake preparedness training.

S-d **Non-Structural Hazards Assessment.** The City will include an assessment of non-structural seismic hazards as part of annual inspections of businesses as part of a public education program.

S-e **Expand Seismic Hazards Identification Program.** The City will consider expansion of the City's Seismic Hazard Identification Program to include additional potentially hazardous types of buildings and/or a lower number of occupants.

S-f **Protect City's Infrastructure and Facilities.** The City will protect the City's infrastructure and facilities from damage due to seismic and geologic hazards through proper design and retrofitting older facilities to current standards.

Foster City Standard Conditions of Approval

Foster City has adopted Standard Conditions of Approval (SCOAs) for large new and redevelopment projects. The following SCOA's related to Geology and Soils would apply to any proposed large new or redevelopment project:

SCOA 2.2: Three (3) sets of a site specific, design level, fault zone geotechnical report satisfactory to the Chief Building Official, including one electronic or pdf version, shall be submitted for review and approval to the Building Division and contain design recommendations for grading, footings, retaining walls, and provisions for anticipated differential settlement for each construction site within the project area. Specifically:

- Each investigation shall include an analysis of expected ground motions at the site identified faults. The analysis shall be in accordance with applicable City ordinances and policies, and consistent with the most recent version of the California Building Code, which requires structural design that can accommodate ground accelerations expected from identified faults. The analysis presented in the geotechnical investigation report shall provide recommendations to minimize seismic damage to structures from total and differential settlements and to protect steel and concrete (and any other material that may be placed in the subsurface) from long-term deterioration caused by contact with corrosive on-site soils. All design measures, recommendations, design criteria, and specifications set forth in the final geotechnical investigation report shall be implemented.

- The investigations shall determine final design parameters for the walls, foundations, foundation slabs, surrounding related improvements, and infrastructure (utilities, roadways, parking lots and sidewalks).

- The investigations shall be reviewed and approved by a registered geotechnical engineer. All recommendations by the project engineer, geotechnical engineer, shall be included in the final design, as approved by the City of Foster City.

- The geotechnical report shall include a map prepared by a land surveyor or civil engineer that shows all field work and location of the "No Build" zone. The map shall include a statement that the locations and limitations of the geologic features are accurate representations of said features as they exist on the ground, were placed on this map by the surveyor, the civil engineer or under their supervision, and are accurate to the best of their knowledge.

- The geotechnical report for the project shall include evaluation of fixtures, furnishings, and fasteners with the intent of minimizing collateral injuries to building occupants from falling fixtures or furnishings during the course of a violent seismic event. Recommendations that are applicable to foundation design, earthwork, and site preparation that were prepared prior to or during the projects design phase, shall be incorporated in the project.

- Final seismic considerations for the site shall be submitted to and approved by the Building Division prior to commencement of the project.

- If deemed necessary by the Chief Building Official, a peer review may be required for the geotechnical report. Personnel reviewing the geologic report shall approve the report, reject it, or withhold approval pending the submission by the applicant or subdivider of further geologic and engineering studies to more adequately define active fault traces.

- A licensed geotechnical engineer or their representatives shall be retained to provide geotechnical observation and testing during all earthwork and foundation construction activities. The geotechnical engineer shall be allowed to evaluate any conditions differing from those encountered during the geotechnical investigation and shall provide supplemental recommendations, as necessary. At the end of construction, the geotechnical engineer shall provide a letter regarding contractor compliance with project plans and specifications and with the recommendations of the final geotechnical investigation report and any supplemental recommendations issued during construction. The letter shall be submitted for review to the Building Division.

The final geotechnical investigation report shall provide recommendations to minimize the potential damage to structures from total and differential settlement and to protect steel and concrete (and any other material that may be placed in the subsurface) from long-term deterioration caused by contact with corrosive on-site soils. All design measures, recommendations, design criteria, and specifications set forth in the final geotechnical investigation report shall be implemented.

SCOA 2.7: The applicant shall prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) designed to reduce potential adverse impacts to surface water quality during the construction period. The SWPPP shall be prepared by a Qualified SWPPP Developer (QSD). The SWPPP shall include the minimum BMPs required for the identified Risk level. BMP implementation shall be consistent with the BMP requirements in the most recent version of the California Stormwater Quality Association Stormwater Best Management Handbook-Construction. The SWPPP shall be designed to address the following objectives:

1. All pollutants and their sources, including sources of sediment associated with construction activity are controlled;

2. Where not otherwise required to be under a Regional Water Board permit, all non-stormwater discharges are identified and either eliminated, controlled, or treated;

3. Site Best Management Practices (BMPs) are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity to the Best Available Technology and Best Conventional Technology (BAT/BCT) standard; and

4. Stabilization BMPs installed to reduce or eliminate pollutants after construction are completed.

5. Best Management Practices (BMPs) shall be designed to mitigate construction-related pollutants and at a minimum, include the following:

    a) Practices to minimize the contact of construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) with stormwater. The SWPPP shall specify properly-designed centralized storage areas that keep these materials out of the rain.

    b) Reduce erosion of exposed soil which may include, but are not limited to: soil stabilization controls, watering for dust control, perimeter silt fences, placement of hay bales, and sediment basins. The potential for erosion is generally increased if grading is performed during the rainy season because disturbed soil can be exposed to rainfall and storm runoff.

    c) If grading must be conducted during the rainy season, the primary BMPs selected shall focus on erosion control (i.e. keeping sediment on the site). End-of-pipe sediment control measures (e.g. basins and traps) shall be used only as secondary measures. Ingress and egress from the construction site shall be carefully controlled to minimize off-site tracking of sediment. Vehicle and equipment wash-down facilities shall be designed to be accessible and functional during both dry and wet conditions.

6. The SWPPP shall specify a monitoring program to be implemented by the construction site supervisor, and shall include both dry and wet weather inspections. In addition, in

accordance with State Water Resources Control Board Resolution No. 2001-046, monitoring shall be required during the construction period for pollutants that may be present in the runoff that are "not visually detectable in runoff."

To educate on-site personnel and maintain awareness of the importance of stormwater quality protection, site supervisors shall conduct regular tailgate meetings to discuss pollution prevention. The frequency of the meetings and required personnel attendance list shall be specified in the SWPPP.

A QSD shall be responsible for implementing BMPs at the site. The QSD shall also be responsible for performing all required monitoring, and BMP inspection, maintenance and repair activities. The developer shall retain an independent monitor to conduct weekly inspections and provide written monthly reports to the City of Foster City Public Works Department to ensure compliance with the SWPPP. Water Board personnel, who may make unannounced site inspections, are empowered to levy considerable fines if it is determined that the SWPPP has not been properly prepared and implemented.

SCOA 5.3: Due to potential differential settlement, flexible connections shall be provided for gas, electric, sewer, water and other utilities. Hinged, reinforced slabs shall be provided at transitions from building to sidewalks, walkways and driveways.

3.4.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on geology and hazards if it will:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - Rupture of a known earthquake fault;
  - Strong seismic ground shaking; or
  - Seismic-related ground failure, including liquefaction.
- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides;
- Result in substantial soil erosion or the loss of topsoil;
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property; or
- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

The City of Foster City's Environmental Review Guidelines identify the following Threshold of Significance: "Projects that have the potential to impact the structural integrity of the Foster City levee through construction or other secondary effects shall be considered to have the potential to cause a significant environmental impact and therefore shall be required to prepare a geology and soils/seismic analysis to be prepared by qualified experts as part of an overall environmental assessment on the project." The proposed project is not anticipated to impact the structural integrity of the levee so this issue is not discussed further.

IMPACTS AND MITIGATION MEASURES

Impact 3.4-1: Implementation of the project has the potential to expose people or structures to potential adverse effects involving rupture of a fault, strong seismic ground shaking, or seismic-related ground failure, including liquefaction (less than significant)

Surface Rupture: Surface rupture occurs when the ground surface is broken due to fault movement during an earthquake. No active or potentially active faults are located in Foster City; therefore, the potential for fault rupture in Foster City is unlikely.

Ground Shaking: There are numerous faults located in the San Francisco Bay region including the San Andreas Fault located approximately 5.7 miles southwest of Foster City and the Hayward fault located approximately 12.8 miles northeast of Foster City. Fault rupture along these, or other faults in the region are not expected to directly affect Foster City; however, the ground shaking associated with ground rupture has the potential to indirectly affect Foster City.

The USGS estimates that there is a 62 percent probability that one or more Mw 6.7 or greater earthquakes will occur in the San Francisco Bay Area between 2002 and 2031. The probability of a Mw 6.7 or greater earthquake occurring along individual faults was estimated to be 21 percent along the San Andreas Fault and 27 percent along the Hayward Fault. In addition, there is a cumulative 14 percent chance of a background (other earthquake source, either mapped or undiscovered) event occurring. When predictions are expanded to 100 years, it is estimated that about three Mw 6.7 or greater events could occur during that time. Thus the probability of at least one Mw 6.7 or greater earthquake rises to the near certainty of about 96 percent when calculated for a 100-year span.

While there are no known active faults located within Foster City, the area could experience considerable ground shaking generated by the nearby San Andreas and Hayward faults, as well as other faults located in the region. The California Geological Survey estimates a 10% probability of exceeding 60-70 percent of gravity at peak ground acceleration over the next 50 years in Foster City. This level of ground motion translates into an earthquake that is very high intensity with the potential to damage strong modern buildings. ABAG estimates that Foster City could experience intensities of MM VII to VIII from seismic events occurring in the region.

Ground Failure: The potential for seismic induced liquefaction and lateral spreading in Foster City is considered "Very High," with a few areas considered "Moderate." Development in areas

considered to have a "Very High" seismic related liquefaction and lateral spreading potential pose a geologic hazard to structures and people unless special seismic design criteria are incorporated into the design.

Conclusion: Foster City is essentially a built-out community with distinct boundaries where new development will primarily come from redevelopment of underutilized infill sites at higher densities and intensities. Additionally, due to its age, there is likely a need for underground infrastructure replacement or upsizing to facilitate General Plan buildout.

The high potential for seismic related events in the region poses a variety of geologic hazards to structures and people. Ground shaking from earthquakes can cause significant structural damage of buildings. Severe structural damage to buildings can lead to structure failure, which places people at a significant risk to injury or death.

As future development and infrastructure projects are considered by the City, each project will be evaluated for conformance with the seismic design standards contained within the California Building Code, Foster City's General Plan, Zoning Ordinance, other applicable regulations and the City's SCOAs. Implementation of the proposed project, including any future development projects that may occur following adoption of the General Plan Update and Climate Action Plan would not increase the potential for seismic activity to occur in the region. Compliance with all applicable regulations and seismic design standards, which are required for all construction projects in California, and the City's SCOAs, would ensure that future projects are not unduly susceptible to the effects of seismic ground shaking.

The Safety Element of the existing General Plan establishes policies and programs that are designed to protect structures, improvements, and people, from geologic hazards, including seismic related hazards. Policy S-1 requires the use of the most current uniform codes to review permits for new and modified structures. Policy S-2 requires the City to educate the public about seismic hazards in Foster City. Policy S-3 requires the City to take measures to prevent damage to the City's infrastructure and emergency facilities resulting from seismic and geologic hazards. Program S-a requires site specific geotechnical and engineering reports for new structures. Program S-c requires the City to include seismic safety education in the Fire Department's public education programs. Program S-d requires the City to include an assessment of non-structural seismic hazards as part of annual inspections of businesses as part of a public education program. Program S-e requires the City to consider expansion of the City's Seismic Hazard Identification Program to include additional potentially hazardous types of buildings and/or a lower number of occupants. Program S-f ensures protection of the City's infrastructure and facilities from damage due to seismic and geologic hazards through proper design and retrofitting older facilities to current standards.

Additionally, the City's adopted Standard Conditions of Approval are designed to protect structures, improvements, and people, from geologic hazards including seismic related hazards. Specifically, SCOA 2.2 requires a site-specific, design level, fault zone geotechnical report with recommendations to minimize seismic damage prior to the issuance of a building permit.

Consistency with the General Plan policies and programs and the City's SCOAs require subsequent projects to prepare a site-specific design-level geotechnical investigation, prepared by a licensed professional, and submitted to the City Building Inspection Division for review and approval. A site-specific geotechnical investigation identifies the potential for damage related to seismic related ground shaking and ground failure. If a risk is identified, design criteria and specification options may include special foundation and structural designs for buildings and improvements as well as special treatment of problematic soils.

Consistency with the General Plan policies and programs and the City's SCOAs require building plans to be prepared by a licensed architect, and improvement plans to be prepared by a licensed civil engineer. Design criteria and specifications set forth in the design-level geotechnical investigation, building plans, and improvement plans would ensure impacts from ground shaking and ground failure are minimized in new construction and redevelopment projects. There are no additional significant adverse environmental impacts that are anticipated to occur associated with seismic ground shaking and ground failure. As such, there are no significant adverse environmental impacts associated with seismic ground shaking and ground failure that are anticipated to result from implementation of the General Plan Update and Climate Action Plan. Therefore, this impact is considered **less than significant** and no mitigation is necessary.

Impact 3.4-2: Implementation of the project has the potential to expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides (less than significant).

Landslide movements are categorized as falls, topples, spreads, slides, or flows. Landslide potential is influenced by physical factors, such as slope, soil, vegetation, and precipitation. Landslides require a slope, and can occur naturally from seismic activity, excessive saturation, and wildfires, or from human-made conditions such as construction disturbance, vegetation removal, wildfires, etc.

Within San Mateo County, the hillsides have a medium to very high susceptibility for landslides, while the valleys have a low susceptibility. However, within Foster City, there are no significant slopes or hillsides that would be subject to landslides. Given the relatively level slopes throughout Foster City, the landslide potential is very low. As such, there are no significant adverse environmental impacts associated with landslides or slope failure that are anticipated to result from implementation of the General Plan Update and Climate Action Plan. Therefore, this impact is considered **less than significant** and no mitigation is necessary.

Impact 3.4-3: Implementation of the project has the potential to result in substantial soil erosion or the loss of topsoil (less than significant)

The soil erosion potential of the subsurface soils (i.e. Bay Mud) within Foster City is low, largely due to the slow permeability. However, the there is no NRCS data on the erosion potential for the upper 4-5 feet of fill soils. Sandy silt is generally considered a soil with a higher potential for soil erosion when compared to Bay Mud due to the higher permeability.

Foster City is subject to the requirements of the San Mateo Countywide Water Pollution Prevention Program, which addresses construction and post-construction stormwater pollutants, including pollutants from erosion and sedimentation. There is a limited potential for erosion within the developed areas of Foster City due to the existing improvements and landscaping that are in place. New development, redevelopment, improvement projects that would involve some land clearing, mass grading, and other ground-disturbing activities could temporarily increase soil erosion rates during and shortly after project construction. Construction-related erosion could result in the loss of topsoil and could adversely affect water quality in nearby surface waters.

The Conservation Element of the existing General Plan establishes a program that is designed to minimize storm water related erosion. Program C-bb requires the City to continue working with the county-wide task force to develop and implement a National Pollution Discharge Elimination System (NPDES) Stormwater Management Plan to satisfy NPDES requirements. This program has been successfully implemented, and all new construction and development projects in the City are required to implement site-specific erosion control measures to reduce soil erosion during and after construction and ground-disturbing activities.

As future development, redevelopment, and infrastructure projects are considered by the City, each project will be evaluated for conformance with the California Building Code, the City's General Plan, Zoning Ordinance, SCOAs, and other regulations. In addition to compliance with the San Mateo Countywide Water Pollution Prevention Program, the Regional Water Quality Control Board as well as SCOA 2.7, requires a project specific Storm Water Pollution Prevention Plan (SWPPP) to be prepared for each projects that disturbs an area of one acre or larger. The SWPPPs include project specific best management measures that are designed to control drainage and erosion. Subsequent development, redevelopment, and infrastructure projects would also be analyzed for potential erosion impacts, consistent with the requirements of CEQA.

As such, there are no significant adverse environmental impacts associated with erosion or the loss of topsoil that are anticipated to result from implementation of the General Plan Update and Climate Action Plan. Therefore, this impact is considered **less than significant** and no mitigation is necessary.

Impact 3.4-4: Project implementation has the potential to result in development located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse (Less than Significant)

Development allowed under the General Plan Update and Climate Action Plan could result in the exposure of people and structures to conditions that have the potential for adverse effects associated with ground instability or failure. The potential for soils to become unstable within Foster City is present due to a variety of seismic and non-seismic factors. Risks within the Foster City Planning Area related to landslides, lateral spreading, subsidence, liquefaction, or collapse are discussed below:

Landslide: Within San Mateo County, the hillsides have a medium to very high susceptibility for landslides, while the valleys have a low susceptibility. However, within Foster City, there are no significant slopes or hillsides that would be subject to landslides, as shown in Figure 3.4-3. Given the relatively level slopes throughout Foster City, the landslide potential is very low. As such, there are no significant adverse environmental impacts associated with landslides or slope failure that are anticipated to result from implementation of the General Plan Update and Climate Action Plan.

Liquefaction and Lateral Spreading: Liquefaction is the temporary transformation of loose, saturated granular sediments from a solid state to a liquefied state as a result of seismic ground shaking. In the process, the soil undergoes transient loss of strength, which commonly causes ground displacement or ground failure to occur. Since saturated soils are a necessary condition for liquefaction, soil layers in areas where the groundwater table is near the surface have higher liquefaction potential than those in which the water table is located at greater depths.

Lateral spreading generally is a phenomenon where blocks of intact, non-liquefied soil moves down slope on a liquefied substrate of large areal extent. The potential for lateral spreading is present where open banks and unsupported cut slopes provide a free face (unsupported vertical slope face). Ground shaking, especially when inducing liquefaction, may cause lateral spreading toward unsupported slopes.

Regional studies by the USGS for the Bay Area provide information on Quaternary deposits and liquefaction susceptibility in the area. As shown in Figure 3.4-2, the potential for seismic induced liquefaction and lateral spreading in Foster City is considered “Very High" throughout the majority of land within the City limits, with a few areas considered "Moderate.” Development in areas considered to have a “Very High” seismic related liquefaction and lateral spreading potential pose a geologic hazard to structures and people unless special seismic design criteria are incorporated into the design.

Subsidence and Collapse: The majority of the City is underlain by approximately 40 to 60 feet of Bay Mud overlying alluvial deposits. Settlement of Bay Mud due to consolidation under the weight of existing fill may be incomplete, and introduction of new loads, such as additional fill, foundations, and buildings, would be expected to result in additional settlement. Differential settlement may occur below exterior improvements across subsurface features such as buried sloughs, abandoned levees, and/or in areas underlain by non-engineered fill, engineered fill, and native soils over Bay Mud. If unstable soils are not properly addressed during grading and foundation preparation, structural damage, warping, and cracking of roads, driveways, parking areas and sidewalks, and rupture of utility lines may occur. The introduction of new loads from new or redevelopment could result in additional settlement even without seismic related events. Development in areas with the potentially unstable soils pose a geologic hazard to structures and people unless special design criteria are incorporated into the design.

Conclusion: The potential for seismic or non-seismic related geologic hazards is present in Foster City as a result of the natural geology combined with the historical fills. As future development and infrastructure projects are considered by the City, each project will be evaluated for conformance with the CBSC, the General Plan, Zoning Ordinance, SCOAs, and other regulations.

Subsequent development and infrastructure projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA.

The Safety Element of the General Plan establishes policies and programs that are designed to protect structures, improvements, and people, from geologic hazards. Policy S-1 requires the use of the most current uniform codes to review permits for new and modified structures. Policy S-3 requires the City to take measures to prevent damage to the City's infrastructure and emergency facilities resulting from seismic and geologic hazards. Program S-a requires site specific geotechnical and engineering reports for new structures. S-f ensures protection of the City's infrastructure and facilities from damage due to seismic and geologic hazards through proper design and retrofitting older facilities to current standards.

Future development and improvement projects would be required to have a specific geotechnical study prepared and incorporated into the improvement design, consistent with the requirements of the State and City codes. In addition to the requirements associated with the CBSC, SCOAs, and the Municipal Code, the General Plan includes policies and actions to ensure that development, infrastructure, and other projects address potential ground failure and instability issues through compliance with applicable building standards, identification of potential geologic hazards, preparation of geotechnical studies, and appropriate site analysis and engineering measures to mitigate any identified hazards, including landslides, lateral spreading, liquefaction, and other potential ground failures, to an acceptable level. With the implementation of the policies and actions in the General Plan, as well as applicable State and City codes, potential impacts associated with ground instability or failure resulting from the proposed General Plan Update and Climate Action Plan would be **less than significant**.

Impact 3.4-5: Project implementation has the potential to result in development on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property (Less than Significant)

Expansive soil properties can cause substantial damage to building foundations, piles, pavements, underground utilities, and/or other improvements. Structural damage, such as warping and cracking of improvements, and rupture of underground utility lines, may occur if the expansive potential of soils is not considered during the design and construction of all improvements.

Linear extensibility is a method for measuring expansion potential. The expansion potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

The linear extensibility (expansive potential) of the subsurface soils (i.e. Bay Mud) within Foster City is high. However, the surficial soils are composed of 4-5 feet of sandy silt fill material that was pumped in in the late 1950s. There is no NRCS data on the linear extensibility of the upper 4-5 feet of the fill soil; however, the linear extensibility of sandy silt is lower than that of Bay Mud.

Foster City is essentially a built-out community with distinct boundaries where new development will primarily come from redevelopment of underutilized infill sites at higher densities and intensities. Additionally, due to its age, there is likely a need for underground infrastructure replacement or upsizing to facilitate General Plan buildout.

The expansive and corrosive soil properties of the subsurface (i.e. Bay Mud) could cause substantial damage to building foundations, piles, pavements, underground utilities, and/or other improvements. Structural damage, such as warping and cracking of improvements, and rupture of underground utility lines may occur if the expansive and corrosive potential of these soils is not considered during the design and construction of all improvements.

The linear extensibility of the 4-5 feet of fill material located throughout Foster City is not well documented largely due to the limited documentation of the original grading plans. It is generally believed that the fill material is homogeneous, but there may be soil inclusions. Historical accounts indicate that the fill material is sandy silt, but there is a potential for other materials, including dredge spoils of Bay Mud, to have been used in some locations. Fill depth is generally believed to be 4-5 feet, but the fill depth likely varies. There is not any documentation of expansive soils causing problems in Foster City, which is likely due to the fact the sandy silt is generally not a highly expansive soil.

As future development and infrastructure projects are considered by the City, each project will be evaluated for conformance with the California Building Code, City's General Plan, Zoning Ordinance, SCOAs, and other applicable regulations. Subsequent development and infrastructure projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA.

The Safety Element of the General Plan establishes policies and programs that are designed to protect from geologic hazards, including expansive soils. Policy S-1 requires the use of the most current uniform codes to review permits for new and modified structures. Program S-a requires site specific geotechnical and engineering reports for new structures. Program S-f ensures protection of the City's infrastructure and facilities from damage due to seismic and geologic hazards through proper design and retrofitting older facilities to current standards.

Additionally, due to the potential for differential settlement, SCOA 5.3 ensures that flexible connections are required for gas, electric, sewer, water and other utilities, and hinged, reinforced slabs are provided at transitions from building to sidewalks, walkways and driveways.

Consistency with the General Plan policies and programs and the City SCOAs will require a site-specific design-level geotechnical investigation, prepared by a licensed professional, and submitted to the City Building Inspection Division for review and confirmation. This will ensure compliance with the California Building Code, as amended by Foster City ordinances and Building Inspection Division guidance. A site-specific geotechnical investigation will identify the potential for damage related to expansive soils and non-uniformly compacted fill and engineered fill. If a risk is identified, design criteria and specification options may include removal of the problematic soils,

and replacement, as needed, with properly conditioned and compacted fill material that is designed to withstand the forces exerted during the expected shrink-swell cycles and settlements.

Design criteria and specifications set forth in the design-level geotechnical investigation, and compliance with the City's SCOAs, will ensure impacts from problematic soils are minimized. Therefore, the proposed General Plan Update and Climate Action Plan do not have the potential to result in development on expansive soil, creating substantial risks to life or property. As such, this impact is considered **less than significant** and no mitigation is necessary.

Impact 3.4-6: Project implementation does not have the potential to have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water (no impact)

Foster City is essentially a built-out community with distinct boundaries. The City is served by a wastewater collection and treatment system owned by Estero Municipal Improvement District (EMID) and operated by the Sewer Division of the Foster City Public Works Department.

New development will primarily come from redevelopment of underutilized infill sites at higher densities and intensities. All new waste water generated by new development will be collected and transmitted to the San Mateo Water Quality Treatment Control Plant for treatment. There will be no septic tanks or alternative waste water disposal systems utilized for new development. As such, there are no significant adverse environmental impacts associated with septic tanks or alternative waste water disposal systems that are anticipated to result from implementation of the General Plan Update and Climate Action Plan. Therefore, there is **no impact**, and no mitigation is necessary.

REFERENCES

The primary sources of data referenced for this section is derived from the following:

Association of Bay Area Governments. 2010. Multi-Jurisdictional Local Hazard Mitigation Plan for the San Francisco Bay Area.

Association of Bay Area Governments. 2001. The Real Dirt on Liquefaction-A Guide to the Liquefaction Hazard in Future Earthquakes Affecting the San Francisco Bay Area.

Association of Bay Area Governments. 2010. On Shaky Ground. The San Francisco Bay Area – Documentation for 2003 Mapping Updated in 2010 Association of Bay Area Governments Earthquake and Hazards Program

Brabb, E.E., Pampeyan, E.H., 1983. Geologic Map of San Mateo County, USGS Misc. Investigation I-1257-A.

California Department of Conservation. 2002. California Geological Survey, Note 36.

California Dept. of Water Resources. 2009. California Water Plan Update 2009, San Francisco Bay Integrated Water Management, Volume 3, Regional Reports, Bulletin 160-09.

California Department of Water Resources. 2003. California's Groundwater Bulletin 118-Update. October.

California Department of Water Resources. 1980. Groundwater Basins in California – A Report to the Legislature in Response to Water Code Section 12924. Bulletin 118 – 80. 73 p. January.

California Division of Mines and Geology. 1997. Guidelines for Evaluating Seismic Hazards in California. CDMG Special Publication 117.

California Geological Survey. 2002. California Geomorphic Provinces; Note 36. December.

California Geological Survey. 2012. Seismic Shaking Hazards in California Based on the USGS/CGS Probabilistic Seismic Hazards Assessment (PSHA) Model. 10% probability of being exceeded in 50 years. http://redirect.conservation.ca.gov/cgs/rghm/pshamap/psha12338.html.

California Geological Survey. 2011. Checklist for the Review of Engineering Geology and Seismology Reports for California Public Schools, Hospitals, and Essential Services Buildings.

California Geological Survey. 1999, Revised 2002. Simplified Fault Activity Map of California. Compiled by Charles W. Jennings and George J. Saucedo.

California Geological Survey. 1992. Fault Rupture Hazard Zones in California, Alquist-Priolo Special Studies Zone Act of 1972 with Index to Special Studies Zones Maps. California Geological Survey (formerly California Division of Mines and Geology, CDMG) Special Publication 42, Revised 1992. State of California Department of Conservation.

California Geological Survey. 2003. The Revised 2002 California Probabilistic Seismic Hazard Maps. Prepared by T. Cao, W.A. Bryant, B. Rowshandel, D. Branum, and C.J. Willis. California Geological Survey. June 2003.

City of Foster City, 2012. Community Info, History of Foster City, Creating the Land, accessed 10/8/12 at: http://www.fostercity.org/community_info/Creating-the-Land.cfm.

Ellsworth, W.L. 1990. "Earthquake History 1769-1989." The San Andreas Fault System, California. R.E. Wallace, ed. United States Geological Survey. Professional Paper 1515. Chapter 6.

Helley, E.J., Lajoie, K.R., 1979 (reprinted 1991). Flatlands Deposits of the San Francisco Bay Region with Maps, USGS Professional Paper 943. Jointly by DOI, HUD, USGS.

Jennings, C.W. 1994. Fault Activity Map of California and Adjacent Areas with Locations and Ages of Recent Volcanic Eruptions. California Division of Mines and Geology (CDMG), Geologic Data Map No. 6, Map Scale 1:750,000.

Lowney Associates, 2005. Geotechnical Investigation Gilead Sciences Research Expansion: NRB1, NRB2,and Annex Buildings, Foster City. Report No. 347-66A. November 8.

Lowney Associates, 2003. Geotechnical Peer Review, Vintage Park Campus, Foster City, California. Doc # 347-66. May 28.

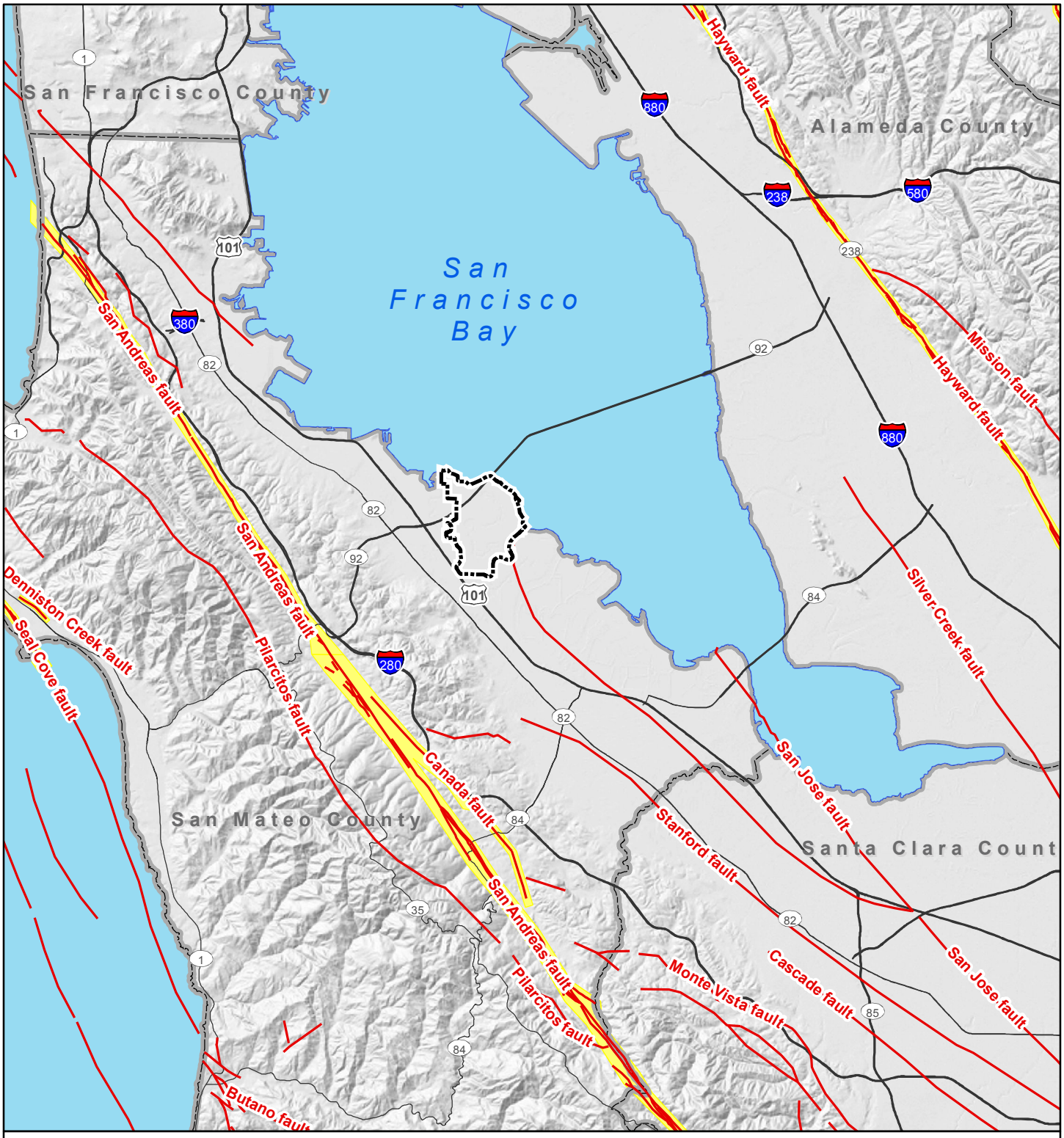
Norris, Robert M., Webb, Robert W., 1990. Geology of California, 2nd Edition, J. Wiley & Sons, Inc.

Natural Resources Conservation Service (NRCS), 2012. Web Soil Survey, USDA Mapping Website, accessed 10/8/12 at: websoilsurvey.nrcs.usda.gov.

Seaber, P.R., Kapinos, F.P., and Knapp, G.L., 1987, Hydrologic Unit Maps: U.S. Geological Survey Water-Supply Paper 2294, 63 p.

USGS Scientific Investigations, 2006. Geologic Map of San Francisco Bay Region, CA, Map 2918.

This page left blank intentionally.



Quaternary Faults

Alquist-Priolo Fault Zones

Foster City Boundary

Figure 3.4-1: Faults and Alquist-Priolo Zones

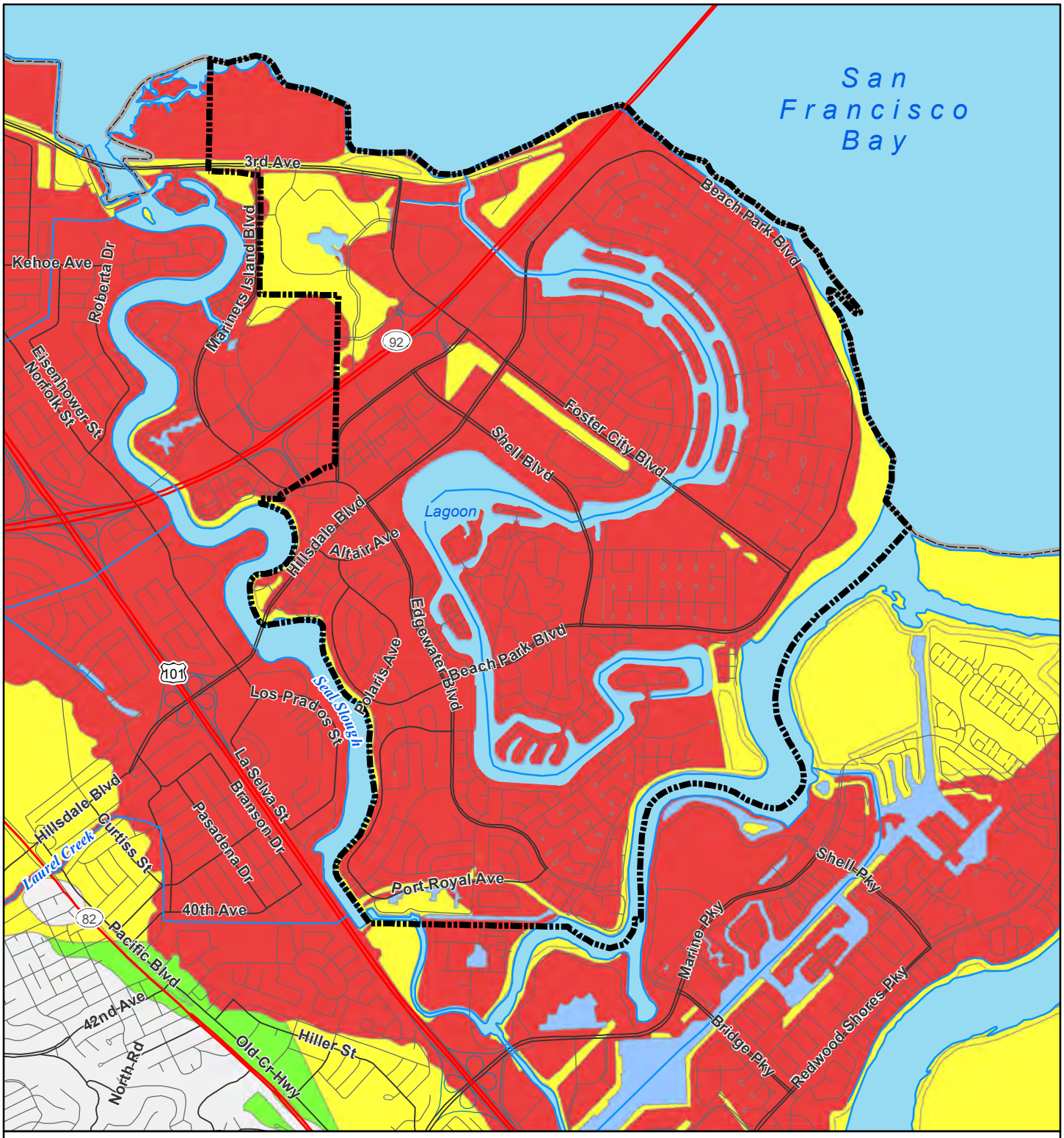
0 1 2 4
Miles

N

Data sources: California Geological Survey;
Foster City GIS; ESRI StreetMap North America. Map date: September 19, 2012.

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.



Susceptibility to Liquefaction

- Very High
- High
- Moderate
- Low
- Very Low
- Water

Foster City Boundary

Figure 3.4-2: Liquefaction Susceptibility

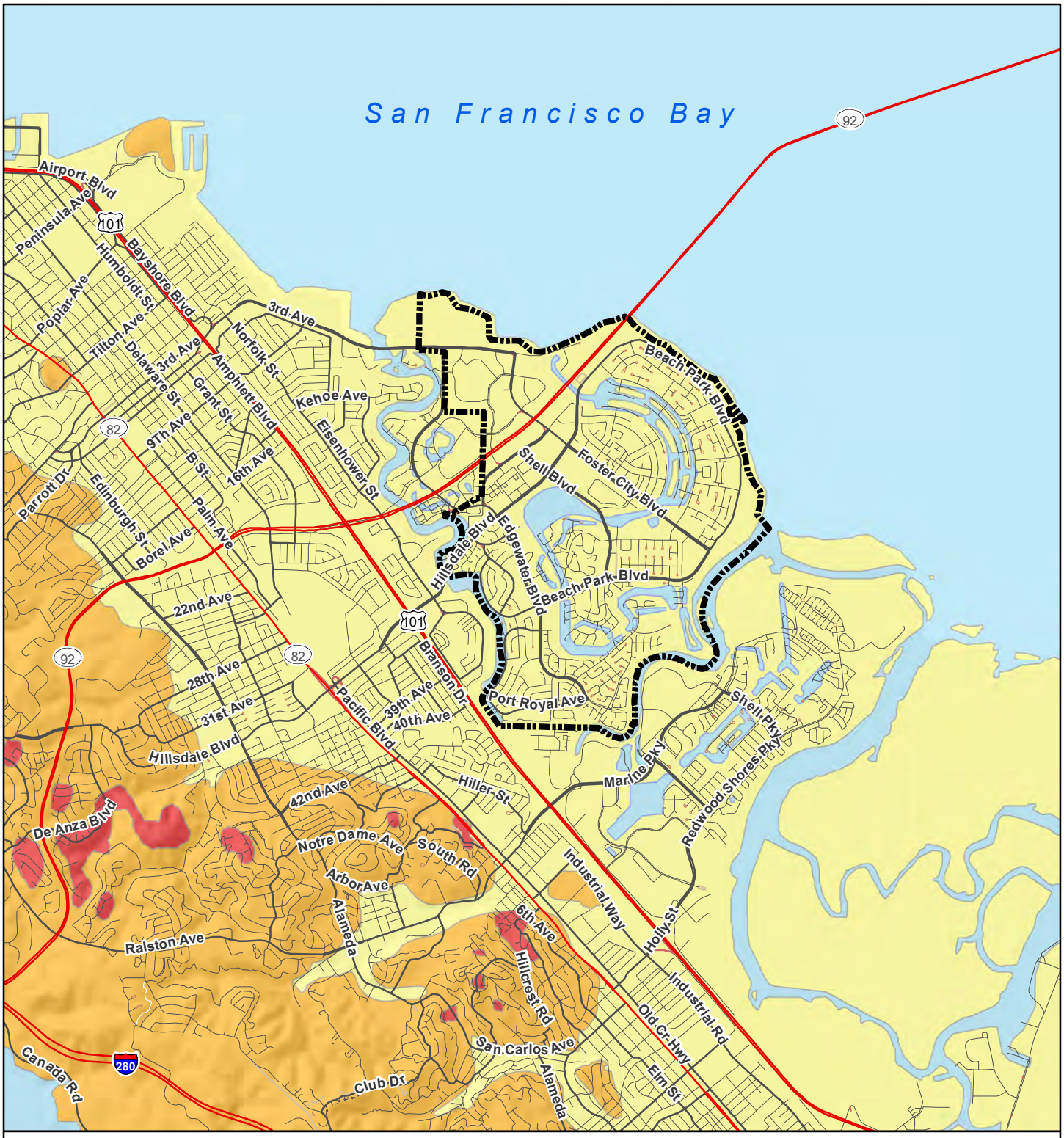
0 1,250 2,500
Feet

N

Data sources: U.S. Geological Survey in cooperation with the California Geologic Survey Open File Report 06-1037: Liquefaction Susceptibility, 2000; USGS National Hydrography Dataset; Foster City GIS. Map date: September 18, 2012.

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.



Landslide Potential

- Very Low (surficial deposits)
- Moderate (few landslides)
- Very High (mostly landslides)
- water

Foster City Boundary

Figure 3.4-3: Landslide Potential

0 1,250 2,500 5,000
Feet

N

Data sources: U.S. Department of the Interior, U.S. Geological Survey Open File Report 97-745 C: San Francisco Bay Region Landslide Folio Part C- Summary Distribution of Slides and Earth Flows in the San Francisco Bay Region, California, San Mateo County; Foster City GIS; ESRI StreetMap North America. Map date: September 19, 2012.

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.

This section addresses the project's potential to result in adverse impacts related to the generation of greenhouse gases (GHGs), energy consumption, and contributions to global climate change. This section includes a discussion of existing GHG emissions levels and sources within the City, energy consumption, as well as the potential adverse effects associated with climate change. This section addresses GHGs, energy consumption, and climate change from two perspectives: The first perspective is the project's direct contribution to climate change and GHGs as a result of project implementation, which assumes full buildout of the proposed General Plan Land Use Map and implementation of the proposed Land Use and Circulation Element. The second perspective is the project's effectiveness at meeting local, regional, and statewide GHG reduction goals.

As described in greater detail below, emissions of GHGs have the potential to adversely affect the environment in a cumulative context. The emissions from a single project will not cause global climate change, however, GHG emissions from multiple projects throughout the world could result in a cumulative impact with respect to global climate change. Therefore, the analysis of GHGs and climate change presented in this section is presented in terms of the proposed project's contribution to cumulative impacts and potential to result in cumulatively considerable impacts related to GHGs and climate change.

Cumulative impacts are the collective impacts of one or more past, present, and future projects that, when combined, result in adverse changes to the environment. In determining the significance of a proposed project's contribution to anticipated adverse future conditions, a lead agency should generally undertake a two-step analysis. The first question is whether the *combined* effects from *both* the proposed project *and* other projects would be cumulatively significant. If the agency answers this inquiry in the affirmative, the second question is whether "the proposed project's *incremental* effects are cumulatively considerable" and thus significant in and of themselves. The cumulative project list for this issue (climate change) comprises anthropogenic (i.e., human-made) GHG emissions sources across the globe and no project alone would reasonably be expected to contribute to a noticeable incremental change to the global climate. However, legislation and executive orders on the subject of climate change in California have established a statewide context and process for developing an enforceable statewide cap on GHG emissions. Given the nature of environmental consequences from GHGs and global climate change, CEQA requires that lead agencies consider evaluating the cumulative impacts of GHGs. Small contributions to this cumulative impact (from which significant effects are occurring and are expected to worsen over time) may be potentially considerable and, therefore, significant.

3.5.1 ENVIRONMENTAL SETTING

GREENHOUSE GASES AND CLIMATE CHANGE LINKAGES

Various gases in the Earth's atmosphere, classified as atmospheric greenhouse gases (GHGs), play a critical role in determining the Earth's surface temperature. Solar radiation enters Earth's atmosphere from space, and a portion of the radiation is absorbed by the Earth's surface. The Earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation.

Naturally occurring greenhouse gases include water vapor (H_2O), carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and ozone (O_3). Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also greenhouse gases, but they are, for the most part, solely a product of industrial activities. Although the direct greenhouse gases CO_2, CH_4, and N_2O occur naturally in the atmosphere, human activities have changed their atmospheric concentrations. From the pre-industrial era (i.e., ending about 1750) to 2005, concentrations of these three greenhouse gases have increased globally by 36, 148, and 18 percent, respectively (IPCC 2007)[1].

Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), ozone (O_3), water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs).

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, commercial, and agricultural sectors (California Air Resources Board, 2012)[2]. In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (California Air Resources Board, 2012).

As the name implies, global climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern, respectively. California produced 492 million gross metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2004 (California Energy Commission 2006a) [3]. By 2020, California is projected to produce 507 $MMTCO_2e$ per year.[4]

Carbon dioxide equivalents are a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the

---

[1] Intergovernmental Panel on Climate Change. 2007. "Climate Change 2007: The Physical Science Basis, Summary for Policymakers." http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg1_report_the_physical_science_basis.htm

[2] California Air Resources Board. 2012. "Greenhouse Gas Inventory Data, 2000-2009. http://www.arb.ca.gov/cc/inventory/data/data.htm

[3] California Energy Commission. 2006a. Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004. http://www.arb.ca.gov/cc/inventory/archive/archive.htm

[4] California Air Resources Board. 2010. "Functional Equivalent Document prepared for the California Cap on GHG Emissions and Market-Based Compliance Mechanisms."

greenhouse effect. This potential, known as the global warming potential of a GHG, is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Consumption of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2008, accounting for 36.9 percent of total GHG emissions in the state (California Air Resources Board, 2012). This category was followed by the electric power sector (including both in-state and out of-state sources) (24.8 percent) and the industrial sector (21.1 percent) (California Air Resources Board, 2012).

EFFECTS OF GLOBAL CLIMATE CHANGE

The effects of increasing global temperature are far-reaching and extremely difficult to quantify. The scientific community continues to study the effects of global climate change. In general, increases in the ambient global temperature as a result of increased GHGs are anticipated to result in rising sea levels, which could threaten coastal areas through accelerated coastal erosion, threats to levees and inland water systems and disruption to coastal wetlands and habitat.

If the temperature of the ocean warms, it is anticipated that the winter snow season would be shortened. Snowpack in the Sierra Nevada provides both water supply (runoff) and storage (within the snowpack before melting), which is a major source of supply for the state. The snowpack portion of the supply could potentially decline by 70 percent to 90 percent by the end of the 21st century (Cal EPA 2006)[5]. This phenomenon could lead to significant challenges securing an adequate water supply for a growing state population. Further, the increased ocean temperature could result in increased moisture flux into the state; however, since this would likely increasingly come in the form of rain rather than snow in the high elevations, increased precipitation could lead to increased potential and severity of flood events, placing more pressure on California's levee/flood control system.

Sea level has risen approximately seven inches during the last century and it is predicted to rise an additional 22 to 35 inches by 2100, depending on the future GHG emissions levels (Cal EPA 2006). If this occurs, resultant effects could include increased coastal flooding, saltwater intrusion and disruption of wetlands (Cal EPA 2006). As the existing climate throughout California changes over time, mass migration of species, or failure of species to migrate in time to adapt to the perturbations in climate, could also result. Under the emissions scenarios of the Climate Scenarios

5 California Environmental Protection Agency, Climate Action Team. 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature. http://www.climatechange.ca.gov/climate_action_team/reports/

report (Cal EPA 2006), the impacts of global warming in California are anticipated to include, but are not limited to, the following.

Public Health

Higher temperatures are expected to increase the frequency, duration, and intensity of conditions conducive to air pollution formation. For example, days with weather conducive to ozone formation are projected to increase from 25 percent to 35 percent under the lower warming range and to 75 percent to 85 percent under the medium warming range. In addition, if global background ozone levels increase as predicted in some scenarios, it may become impossible to meet local air quality standards. Air quality could be further compromised by increases in wildfires, which emit fine particulate matter that can travel long distances depending on wind conditions. The Climate Scenarios report indicates that large wildfires could become up to 55 percent more frequent if GHG emissions are not significantly reduced.

In addition, under the higher warming scenario, there could be up to 100 more days per year with temperatures above 90°F in Los Angeles and 95°F in Sacramento by 2100. This is a large increase over historical patterns and approximately twice the increase projected if temperatures remain within or below the lower warming range. Rising temperatures will increase the risk of death from dehydration, heat stroke/exhaustion, heart attack, stroke, and respiratory distress caused by extreme heat.

Water Resources

A vast network of man-made reservoirs and aqueducts capture and transport water throughout the state from northern California rivers and the Colorado River. The current distribution system relies on Sierra Nevada snow pack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snow pack, increasing the risk of summer water shortages.

The State's water supplies are also at risk from rising sea levels. An influx of saltwater would degrade California's estuaries, wetlands, and groundwater aquifers. Saltwater intrusion caused by rising sea levels is a major threat to the quality and reliability of water within the southern edge of the Sacramento/San Joaquin River Delta, a major state fresh water supply. Global warming is also projected to seriously affect agricultural areas, with California farmers projected to lose as much as 25 percent of the water supply they need; decrease the potential for hydropower production within the state (although the effects on hydropower are uncertain); and seriously harm winter tourism. Under the lower warming range, the snow dependent winter recreational season at lower elevations could be reduced by as much as one month. If temperatures reach the higher warming range and precipitation declines, there might be many years with insufficient snow for skiing, snowboarding, and other snow dependent recreational activities.

If GHG emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snow pack by as much as 70 percent to 90 percent. Under the lower warming scenario, snow pack losses are expected to be only half as large as those expected if temperatures were to rise to the higher warming range. How much snow pack will be lost depends in part on future precipitation patterns, the projections for

which remain uncertain. However, even under the wetter climate projections, the loss of snow pack would pose challenges to water managers, hamper hydropower generation, and nearly eliminate all skiing and other snow-related recreational activities.

Agriculture

Increased GHG emissions are expected to cause widespread changes to the agriculture industry reducing the quantity and quality of agricultural products statewide. Although higher carbon dioxide levels can stimulate plant production and increase plant water-use efficiency, California's farmers will face greater water demand for crops and a less reliable water supply as temperatures rise.

Plant growth tends to be slow at low temperatures, increasing with rising temperatures up to a threshold. However, faster growth can result in less-than-optimal development for many crops, so rising temperatures are likely to worsen the quantity and quality of yield for a number of California's agricultural products. Products likely to be most affected include wine grapes, fruits and nuts, and milk.

Crop growth and development will be affected, as will the intensity and frequency of pest and disease outbreaks. Rising temperatures will likely aggravate ozone pollution, which makes plants more susceptible to disease and pests and interferes with plant growth.

In addition, continued global warming will likely shift the ranges of existing invasive plants and weeds and alter competition patterns with native plants. Range expansion is expected in many species while range contractions are less likely in rapidly evolving species with significant populations already established. Should range contractions occur, it is likely that new or different weed species will fill the emerging gaps. Continued global warming is also likely to alter the abundance and types of many pests, lengthen pests' breeding season, and increase pathogen growth rates.

Forests and Landscapes

Global warming is expected to alter the distribution and character of natural vegetation thereby resulting in a possible increased risk of large of wildfires. If temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55 percent, which is almost twice the increase expected if temperatures stay in the lower warming range. However, since wildfire risk is determined by a combination of factors, including precipitation, winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throughout the state. For example, if precipitation increases as temperatures rise, wildfires in southern California are expected to increase by approximately 30 percent toward the end of the century. In contrast, precipitation decreases could increase wildfires in northern California by up to 90 percent.

Moreover, continued global warming will alter natural ecosystems and biological diversity within the state. For example, alpine and sub-alpine ecosystems are expected to decline by as much as 60 percent to 80 percent by the end of the century as a result of increasing temperatures. The productivity of the state's forests is also expected to decrease as a result of global warming.

Rising Sea Levels

Rising sea levels, more intense coastal storms, and warmer water temperatures will increasingly threaten the state's coastal regions. Historical records show that sea level in San Francisco Bay has risen about seven inches (18 cm) over the past 100 years. Scientists agree that the rate of sea level rise is accelerating, but projections of future sea levels vary considerably. Present California coastline projections reported by the California Natural Resources Agency and the California Energy Commission predict 10 to 18 inches of sea level rise by 2050 (using 2000 as the baseline) and between 40 and 55 inches by 2100, depending upon the emission scenario used[6]. Risks associated with sea level rise are discussed in greater detail in Section 3.7, Hydrology and Water Quality.

ENERGY CONSUMPTION

The consumption of nonrenewable energy (primarily gasoline and diesel fuel) associated with the operation of passenger, public transit, and commercial vehicles results in GHG emissions that ultimately result in global climate change. Alternative fuels such as natural gas, ethanol, and electricity (unless derived from solar, wind, nuclear, or other energy sources that do not produce carbon emissions) also result in GHG emissions and contribute to global climate change.

Electricity Consumption

California relies on a regional power system composed of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. Approximately 71 percent of the electrical power needed to meet California's demand is produced in the state. Approximately 29 percent of its electricity demand is imported from the Pacific Northwest and the Southwest (California Energy Commission, 2012)[7]. In 2010, California's in-state generated electricity was derived from natural gas (53.4 percent), large hydroelectric resources (14.6 percent), coal (1.7 percent), nuclear sources (15.7 percent), and renewable resources that include geothermal, biomass, small hydroelectric resources, wind, and solar (14.6 percent) (California Energy Commission, 2012).

According to the California Energy Commission (CEC), total statewide electricity consumption increased from 166,979 gigawatt-hours (GWh) in 1980 to 228,038 GWh in 1990, which is an estimated annual growth rate of 3.66 percent. The statewide electricity consumption in 1997 was 246,225 GWh, reflecting an annual growth rate of 1.14 percent between 1990 and 1997 (California Energy Commission Energy Almanac, 2012). Statewide consumption was 274,985 GWh in 2010, an annual growth rate of 0.9 percent between 1997 and 2010.

---

[6] The Impacts of Sea Level Rise on the San Francisco Bay: http://www.energy.ca.gov/2012publications/CEC-500-2012-014/CEC-500-2012-014.pdf

7 California Energy Commission (2012). Energy Almanac. Retrieved August 2012, from http://energyalmanac.ca.gov/overview/index.html

Oil

The primary energy source for the United States is oil, which is refined to produce fuels like gasoline, diesel, and jet fuel. Oil is a finite, nonrenewable energy source. World consumption of petroleum products has grown steadily in the last several decades. As of 2009, world consumption of oil had reached 96 million barrels per day. The United States, with approximately five percent of the world's population, accounts for approximately 19 percent of world oil consumption, or approximately 18.6 million barrels per day (The World Factbook 2009, Washington, DC: Central Intelligence Agency, 2009). The transportation sector relies heavily on oil. In California, petroleum based fuels currently provide approximately 96 percent of the state's transportation energy needs (California Energy Commission, 2012).

Natural Gas

Natural gas supplies are derived from underground sources and brought to the surface at gas wells. Once it is extracted, gas is purified and the odorant that allows gas leaks to be detected is added to the normally odorless gas. Natural gas suppliers, such as PG&E, then send the gas into transmission pipelines, which are usually buried underground. Compressors propel the gas through the pipeline system, which delivers it to homes and businesses.

The state produces approximately 12 percent of its natural gas, while obtaining 22 percent from Canada and 65 percent from the Rockies and the Southwest (California Energy Commission, 2012). In 2006, California produced 325.6 billion cubic feet of natural gas (California Energy Commission, 2012). PG&E is the largest publicly-owned utility in California and provides natural gas for residential, industrial, and agency consumers within the Bay Area, including the City of Foster City.

GREENHOUSE GAS EMISSIONS INVENTORY

The Foster City Climate Action Plan (CAP)[8] includes an inventory of GHG emissions in the City in the year 2005. The inventory is broken into two categories: municipal operations emissions and community-wide emissions.

Background

In 2010, the City of Foster City had completed a GHG Emissions Inventory for 2005, with support and training from the International Council for Local Environmental Initiatives (ICLEI). To assist San Mateo county jurisdictions meet BAAQMD's California Environmental Quality Act (CEQA) guidelines for Qualified GHG Reduction Strategies, the City/County Association of Governments of San Mateo County (C/CAG) utilized grants from the Bay Area Air Quality Management District (BAAQMD) and Pacific Gas and Electric Company (PG&E) from 2010 onwards to develop new tools. The new tools, termed the Regionally Integrated Climate Action Planning Suite, or RICAPS, were

[8] The terms "Climate Action Plan" and "CAP" are used interchangeably throughout this chapter.

utilized to make modifications to and strengthen the 2005 Greenhouse Gas Emissions Inventory, as well as calculate emissions for 2010 as part of forecasting emissions to 2020 and beyond.

The Inventory used the baseline year of 2005 because of the availability of reliable data and also to maintain consistency with California's Assembly Bill (AB) 32 and other agencies throughout the State. The Inventory is an important first step for the City to create a baseline against which it can measure future progress. The largest GHG emitters and opportunities for reduction are revealed through the Inventory, making it an integral component of the City's sustainability efforts.

It should be noted that GHG emissions inventorying is not an exact science. There is no standard protocol for community-wide inventories, and the protocol for calculating the GHG impact of City government operations is continually being improved by the State. There are sources of GHG emissions (e.g. refrigerants and water reservoirs) that scientists know contribute to GHGs, but are difficult or impossible to calculate at the local level. Furthermore, it is likely that new sources of GHGs will be able to be assessed in the future, and that the way of calculating present emissions will change drastically as technology and science develop. The City's Inventory should therefore be viewed as a study to inform policy decisions rather than a scientific measurement of GHGs.

Inventory Sources and Data Collection Process

An inventory of GHG emissions requires the collection of data from a variety of sectors and sources. The emissions inventory completed for the City of Foster City follows the standards outlined in the BAAQMD's GHG Plan Level Quantification Guidance[9], and the International Local Government GHG Emission Analysis Protocol (IEAP)[10]. Table 3.5-1 summarizes the sectors, emissions sources, and energy types included in Foster City's GHG inventory. Foster City does not have industrial and agricultural land uses, therefore those sectors have been omitted from the inventory.

TABLE 3.5-1: SECTORS AND EMISSIONS IN THE GHG INVENTORY

Sector	*Emissions sources*	*Energy types*
Residential	Energy and water use in residential buildings	Electricity Natural gas
Commercial	Energy and water use in commercial, government and institutional buildings	Electricity Natural gas
Transportation and Land Use	All road vehicles	Gasoline

[9] This report utilized BAAQMD's GHG Plan Level Quantification Guidance, last updated May 2012. http://www.baaqmd.gov/

[10] . The IEAP consists of the general principles and philosophy that any local government, regardless of location, should adhere to when inventorying GHGs from its government operations and community as a whole.

Sector	*Emissions sources*	*Energy types*
	Public transportation Off-road vehicles/equipment	Diesel Compressed natural gas Liquefied natural gas Biodiesel
Waste	Landfills Waste stream	Landfill gas (methane)
Water Treatment	Energy use for treatment processes Direct methane emissions from treatment process	Electricity

This inventory also utilized the most recent version of the Local Government Operations Protocol (LGOP, version 1.1)[11]. As the community-wide greenhouse gas emission protocol was still under development at the time the City's Climate Action Plan was written, the community-wide GHG inventory utilized industry-accepted methodologies for quantifying emissions that occur from combustion sources within city limits and from electricity consumption. Lifecycle emissions associated with goods and products procured by communities and residents are not included in this Greenhouse Gas Inventory.

Carbon dioxide equivalents are a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential (GWP) of a GHG, is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO2 were being emitted.

The GWP of a given gas describes its effect on climate change relative to a similar amount of carbon dioxide. According to the USEPA, the following six gasses are considered GHGs, and their respective GWP is shown in Table 3.5-2 below.

[11] Local Government Operations Protocol is a protocol used for the quantification and reporting of greenhouse gas emissions inventories. It was developed in partnership by California Air Resources Board, California Climate Action Registry, ICLEI – Local Governments for Sustainability, and The Climate Registry. Version 1.1, May 2010.

TABLE 3.5-2: GREENHOUSE GASES

Gas	*Chemical Formula*	*Activity*	*Global Warming Potential (CO_2e)*
Carbon Dioxide	CO_2	Combustion	1
Methane	CH_4	Combustion, Anaerobic Decomposition of Organics (Landfills, Wastewater), Fuel Handling	21
Nitrous Oxide	N_2O	Combustion, Wastewater Treatment	310
Hydrofluorocarbons	Various	Leaked Refrigerants, Fire Suppressants	43-11,700
Perfluorocarbons	Various	Aluminum Production, Semiconductor Manufacturing, HVAC Equipment Manufacturing	6,500-9,200
Sulfur Hexafluoride	SF_6	Transmission and Distribution of Power	23,900

Emission factors are used to convert energy usage or other activity data into associated emissions quantities. They are typically expressed in terms of emissions per unit of activity data (e.g. lbs CO_2/kWh).

Baseline Emissions Inventory for 2005

In the base year of 2005, the City of Foster City emitted approximately 274,722 metric tons of carbon dioxide equivalent[12] (CO2e) from the residential, commercial, transportation, waste, and municipal sectors. (Foster City has no industrial or agricultural sectors). Municipal sector emissions are calculated and reported because municipalities generally have more control over these emissions than emissions from the other community-wide sectors. The City of Foster City will implement specific policies and programs to reduce these municipal emissions. However, in the context of the community-wide inventory, the municipal emissions are included in the commercial sector. Burning fossil fuels in vehicles and for energy use in buildings and facilities is the largest contributor to Foster City's GHG emissions. Table 3.5-3 provides a summary of total citywide (i.e. community and municipal) GHG emissions.

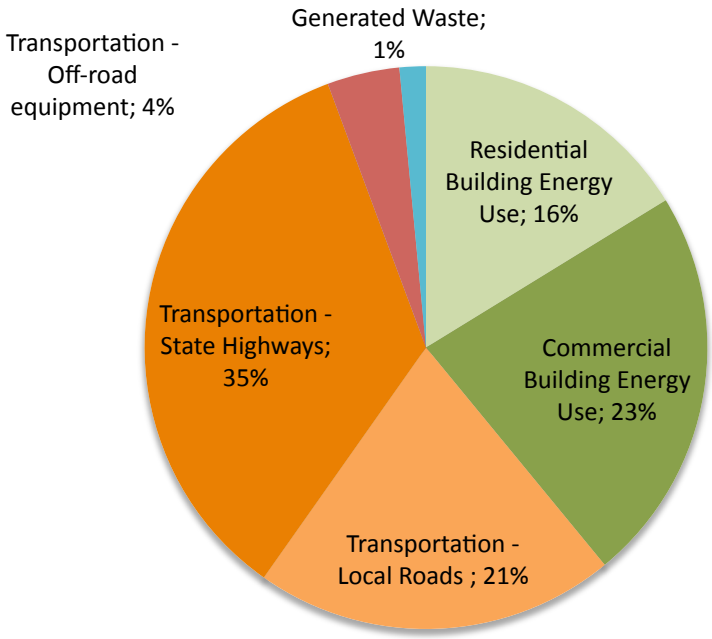
[12] Carbon dioxide equivalent is a unit of measure that normalizes the varying climate warming potencies of all six GHG emissions, which are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). For example, one metric ton of methane is equivalent to 21 metric tons of CO_2e. One metric ton of nitrous oxide is 310 metric tons of CO_2e.

TABLE 3.5-3: 2005 COMMUNITY EMISSIONS BY SECTOR

Sector	*Greenhouse Gas Emissions (metric tons CO_2e)*	*Percentage of Greenhouse Gas Emissions*
Residential Building Energy Use	44,594	16 %
Commercial Building Energy Use	62,674	23 %
Transportation – Local Roads	56,890	21 %
Transportation – State Highways	94,976	35 %
Transportation – Off-road equipment	11,435	4 %
Generated Waste	4,153	1 %
TOTAL	**274,722**	100 %

The residential, commercial, and industrial sectors represent emissions that result from electricity and natural gas used in both private and public sector buildings and facilities. The transportation sector includes emissions from private, commercial, and fleet vehicles driven within the City's geographical boundaries, as well as the emissions from transit vehicles and the City-owned fleet. Off-road equipment includes lawnmowers, garden equipment, and construction, industrial, and light commercial equipment. Exhibit 3.5-1 shows the proportion of Foster City's total GHG emissions from all major sources for 2005.

EXHIBIT 3.5-1: COMMUNITY EMISSIONS BY SECTOR[13] (2005)



As shown above, the largest categories of emissions are related to transportation (highway travel, local travel, and off-road equipment) and building energy use (both residential and commercial).

Electricity and Natural Gas Emissions

Data on electricity and natural gas usage was provided by PG&E. This included electricity and natural gas usage for both residential and commercial sectors. Direct access electricity and gas was also included, where the end use customer bought electricity or natural gas on the wholesale market from a competitive Energy Service Provider, rather than from PG&E. Although purchased from an alternative Energy Service Provider, the electricity is delivered through PG&E's transmission and distribution systems. Direct access gas may be delivered through PG&E's systems, or directly to customers. Estimations of electricity and natural gas purchased through Direct Access contracts were derived from county level Direct Access consumption figures, provided by the California Energy Commission. Table 3.5-4 shows the usage of electricity and natural gas in the residential and commercial sectors.

[13] While Foster City's water emissions are not displayed separately in the chart above, they have been accounted for in the commercial/industrial and residential building energy sectors.

TABLE 3.5-4: RESIDENTIAL AND COMMERCIAL USAGE OF ELECTRICITY AND NATURAL GAS, 2005

Sector	*Activity Amount*	*Emissions (metric tons CO_2e)*
Residential Electricity	73,390 Megawatt hours	16,418.1
Commercial Electricity	117,036 Megawatt hours	26,182.3
Direct Access Electricity	24,455 Megawatt hours	10,676.8
Total Electricity Usage	**214,881 Megawatt hours**	**53,277.2**
Residential Natural Gas	5,297,949 Therms	28,176.2
Commercial Natural Gas	3,129,995 Therms	16,646.3
Direct Access Natural Gas	1,723,863 Therms	9,168.1
Total Natural Gas Usage	**10,151,807 Therms**	**53,990.6**

It is important to note that emissions associated with the generation of electricity, which make up a significant portion of the greenhouse gasses associated with building energy, can vary widely from year to year. The GHG emissions associated with electricity use is based on an emissions factor specific to PG&E's territory, calculated annually by PG&E, and then made available to Cities[14]. PG&E's specific emissions factor is calculated by dividing PG&E's total emissions from their power plants (in pounds of CO_2) by the total amount of electricity (in megawatt-hours or MWh) delivered to end users. This factor varies year over year because PG&E's electricity sources change[15]. For PG&E, the variance is typically dependent on the availability of hydroelectric resources. During low precipitation years, there is less water available to generate emissions-free hydropower. Because of this, PG&E must compensate by supplying more electricity generated from natural gas or coal.

Emissions from natural gas usage are calculated using emissions factors from the same PG&E Power/Utility Protocol document mentioned above.

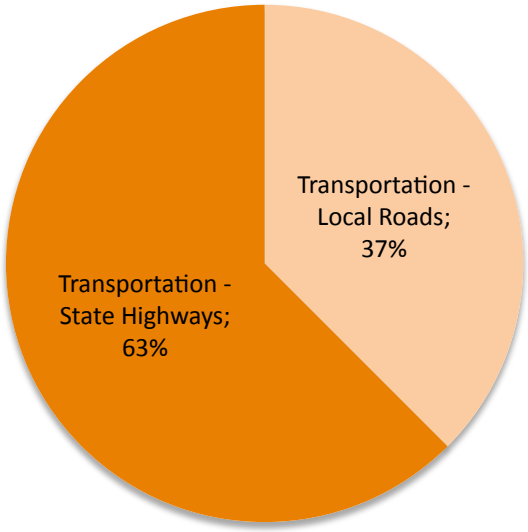
[14] The 2005 baseline inventory uses an emissions factor for 2005 listed in the local PG&E Power/Utility Protocol spreadsheet of the PG&E California Climate Action Registry Report. In future inventory years, the emission factor may be found in the Additional Optional Information tab of PG&E's Electric Power Sector report spreadsheet, which is part of PG&E's Report to The Climate Registry. A three-year average emissions factor could be used in the future to address the large variance that may occur from year to year.

[15] For instance, the utility specific emissions factor for PG&E in 2006 was 455.81 lbs/MWh, whereas in 2008 it was 641.35 lbs/MWh.

Transportation Emissions

Data for Vehicle Miles Traveled (VMT) for Local Roads and State Highways was obtained from the Department of Transportation and Caltrans Geographic Information Systems files respectively. The VMT for State Highways was split equally between jurisdictions for areas where the highway was on the border of two jurisdictions. Based on assumptions provided by the BAAQMD, VMT was broken down into gas and diesel portions based on a VMT mix assumption, then converted into gallons of fuel using fuel efficiency factors. Greenhouse gases were then calculated from the resulting fuel consumption using emission factors provided by the BAAQMD. Transportation GHG emissions are shown above in Table 3.5-3. As shown in this table, transportation emissions from State highways represents approximately 35 percent of the total GHG emissions in the City, while the emissions from local roads account for 21 percent of total citywide GHG emissions. Exhibit 3.5-2 shows the percentage of transportation-related GHG emissions from local roads and State highways.

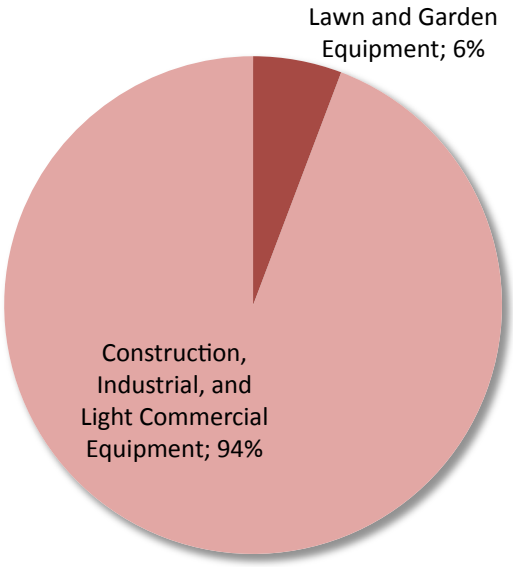
EXHIBIT 3.5-2: TRANSPORTATION EMISSIONS – HIGHWAYS V. LOCAL TRAVEL



Off-road Emissions

Emissions from mobile off-road sources in Foster City were estimated based on shares of countywide emissions from lawn and garden equipment and from construction, industrial, and light commercial equipment, following the methods in the San Mateo County Community-scale GHG Inventory template produced by ICLEI and the City and County Association of Governments of San Mateo County. Foster City's share of county-wide lawn and garden equipment emissions was estimated based on Foster City's share of households in the county. Off-road emissions are shown above in Table 3.5-3, and represent approximately four percent of total citywide GHG emissions. The percentage of off-road GHG emissions from household equipment and commercial equipment is shown in Exhibit 3.5-3 below.

EXHIBIT 3.5-3: OFF-ROAD EMISSIONS – HOUSEHOLD EQUIPMENT V. COMMERCIAL EQUIPMENT



Solid Waste

Foster City recorded two different types of solid waste for 2005: Landfill solid waste and Alternative Daily Cover. Landfill waste made up nearly all of the emissions recorded for 2005 at 99.8 percent, and Alternative Daily Cover at 0.2 percent. Most of the waste was transported to Ox Mountain Sanitary Landfill[16], with the rest transported and disposed at various other landfills in California. Alternative Daily Cover is material other than soil used as a temporary overlay on an exposed landfill face. Approved materials include processed green materials, sludge, ash and kiln residue, compost, construction and demolition debris, and special foams and fabrics.

Emissions from waste are due to organic materials decomposing in the anaerobic environment of a landfill, which produces methane—a GHG 21 times more potent than carbon dioxide. Organic materials (e.g., paper, plant debris, food waste, and so forth) generate methane within the anaerobic environment of a landfill, while non-organic materials do not (e.g., metal, glass, and so on). Table 3.5-5 shows the approximate breakdown of the materials Foster City sent to landfills in 2005. Materials that do not release GHGs as they decompose are included in the "All Other Waste" category.

[16] The Ox Mountain Sanitary Landfill began using methane capturing technologies to generate power in 2009, generating 11.5 megawatts of electricity, approximately twice that of most local landfills.

Emissions from the waste sector are an estimate of methane (CH_4) generation that will result from the anaerobic decomposition of all waste sent to landfill in the base year (2005). Although these emissions are attributed to the inventory year in which the waste is generated, the emissions themselves will occur over the approximately 100-year timeframe that the waste will decompose. This frontloading of emissions is the approach taken by the United States Environmental Protection Agency's (EPA) Waste Reduction Model (WARM). Attributing all future emissions to the year in which the waste was generated incorporates all emissions from actions taken during the inventory year into that year's greenhouse gas inventory. This facilitates comparisons of the impacts of actions taken between inventory years and between jurisdictions. It also simplifies analysis of the effectiveness of actions taken to reduce waste generation or divert waste from landfills.

The assumed waste composition is taken from the California Integrated Waste Management Board (CIWMB) in a 2004 report on waste characterization[17]. CIWMB was the former California state agency dealing with recycling and waste reduction, but was abolished in 2010 and its duties transferred to the California Department of Resources Recycling and Recovery (CalRecycle).

TABLE 3.5-5: ASSUMED WASTE COMPOSITION AND EMISSIONS

Waste Type used in calculations	*CIWMB's Waste Categories*	*Waste Share*	*Emissions (metric tons CO_2e)*
Paper Products	All paper types	21.0 %	872.1
Food Waste	Food	14.6 %	606.3
Plant Debris	Leaves and Grass, Prunings and Trimmings, Branches and Stumps, Agricultural Crop Residues, and Manure	6.9 %	286.6
Wood/Textiles	Textiles, Remainder/Composite Organics, Lumber, and Bulky Items	21.8 %	905.4
All Other Waste	The other category includes all inorganic material types reported: Glass, Metal, Electronics, Plastics, Non-organic C&D, and Special/Hazardous Waste	35.7 %	1482.6
Total		**100 %**	**4,153**

[17] Waste characterization: CIWMB 2004 Statewide Waste Characterization Study. This state average waste characterization accounts for residential, commercial and self-haul waste. http://www.ciwmb.ca.gov/Publications/default.asp?pubid=1097

Municipal Operations

Municipal Operations make up approximately one percent of the total GHG emissions in Foster City. Transportation-related emissions, including those generated from employee commutes and vehicle and transit fleets, account for the largest source at 48 percent of municipal operations. Buildings and facilities account for 26 percent of municipal emissions, with the Civic Center generating the most at 62 percent.

Emissions sources such as airport facilities, port facilities, power generation facilities, solid waste facilities, and other fugitive emissions besides leaked refrigerants were not included. This is because Foster City does not have any airport or port facilities, nor does it have power generation or solid waste facilities. With the exception of building and fire extinguisher refrigerants, gases from pressurized equipment due to leaks were not detected or recorded. Data from power generated and solid waste handled outside of City limits is included in the county or city data in which those facilities are located.

Table 3.5-6 and Exhibit 3.5-4 below show a summary of the emissions from municipal operations in 2005.

TABLE 3.5-6: 2005 FOSTER CITY MUNICIPAL OPERATIONS EMISSIONS BY SECTOR

Sector	*Government Operations Greenhouse Gas Emissions (metric tons CO_2e)*	*% of total Governments Operation Emissions*
Buildings and Other Facilities	777.8	26%
Streetlights and Traffic Signals	406.3	13%
Water Delivery Facilities	186.5	6%
Wastewater Facilities	29.1	1%
Refrigerants	19.7	1%
Government-generated Solid Waste	145.5	5%
Vehicle and Transit Fleet	695.4	23%
Employee Commute	772.9	25%
TOTAL	**3,033.1**	**100%**

EXHIBIT 3.5-4: MUNICIPAL OPERATIONS – GREENHOUSE GAS EMISSIONS

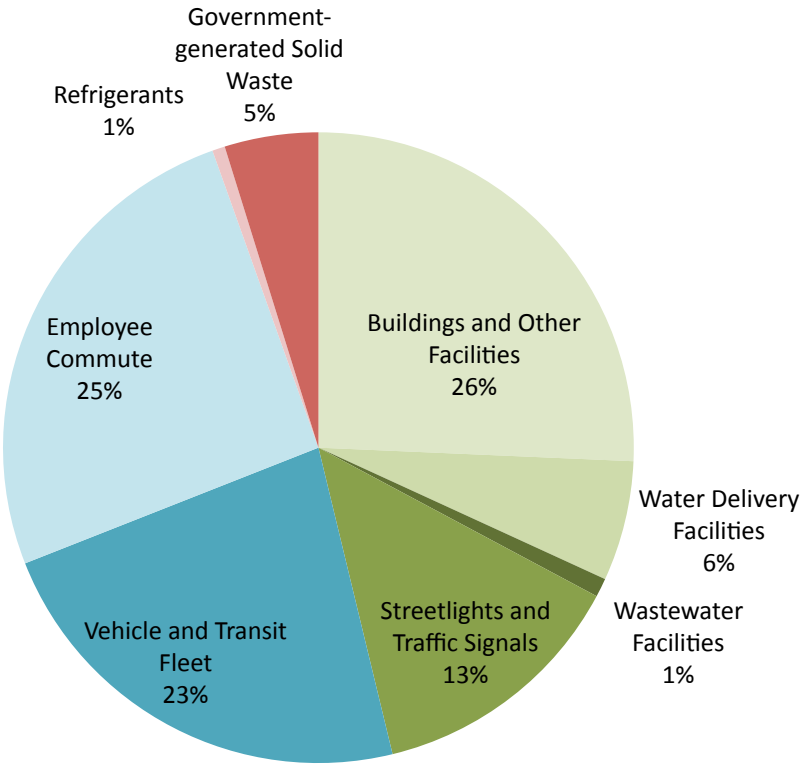


Table 3.5-7 below provides more details on the various sectors listed in above.

TABLE 3.5-7: DETAILED DESCRIPTIONS OF 2005 GOVERNMENT OPERATIONS SECTORS AND EMISSIONS

Sector	*Organizational and categorical descriptions*	*Type of Activity*	*Data Source*
Buildings and Other Facilities	Major Facilities included the Civic Center, Library and Community Center, Maintenance Facility, Recreation Building, Teen Center, and Parks / Restrooms / Ball Fields. Minor facilities included wireless transmitters for the purpose of cellular and data communications throughout Foster City.	Emissions generated from electricity and natural gas consumption.	City staff and PG&E
Water Delivery Facilities	Water Delivery Pumps, Sprinklers/Irrigation Control, Landscaping Irrigation, and other pumps and motors.	Emissions generated from electricity and natural gas consumption.	City staff & PG&E
Wastewater Facilities	Emergency Generators at 15 lift stations (ie. pumping stations) throughout Foster City.	Emissions generated from diesel fuel consumption.	City staff
Refrigerants	Refrigerant leaks and replaced fire extinguishers at municipal facilities.	Emissions generated from R22 and Halon 1211 refrigerants.	City staff
Vehicle and Transit Fleet	Fuel consumed and vehicle miles traveled for vehicles used for city business and managed by the Police, Parks and Recreation, Public Works, Fire, Community Development, City Manager, Finance, and Human Resources Departments, and the Senior Vehicle Fleet run by the City.	Emissions generated from Gasoline and Diesel consumption, with adjustments for different vehicle sizes. No Compressed Natural Gas (CNG) or biodiesel vehicles were used in 2005.	City staff
Government-generated Solid Waste	Waste generated from the Joint Powers Authority, Corporation Yard, Library, City Hall, Sea Cloud Park, and Recreation Center.	Emissions from landfill and landfill cover generated by government-run facilities in 2005.	Allied Waste of San Mateo County
Employee Commute	Fuel consumed and vehicle miles traveled by City employees to work.	Emissions generated from Gasoline and Diesel consumption, based on a detailed survey for City employees. Employees who responded to the City's survey did not use CNG or biodiesel vehicles.	City staff

3.5.2 REGULATORY SETTING

FEDERAL

The EPA is the federal agency responsible for implementing the Federal Clean Air Act (FCAA). The Supreme Court of the United States ruled on April 2, 2007 that CO_2 is an air pollutant as defined under the FCAA, and that EPA has the authority to regulate emissions of GHGs. In response to the mounting issue of climate change, EPA has taken actions to regulate, monitor, and potentially reduce GHG emissions.

Mandatory Greenhouse Gas Reporting Rule

On September 22, 2009, EPA issued a final rule for mandatory reporting of GHGs from large GHG emissions sources in the United States. In general, this national reporting requirement will provide EPA with accurate and timely GHG emissions data from facilities that emit 25,000 metric tons or more of CO_2 per year. This publically available data will allow the reporters to track their own emissions, compare them to similar facilities, and aid in identifying cost effective opportunities to reduce emissions in the future. Reporting is at the facility level, except that certain suppliers of fossil fuels and industrial greenhouse gases along with vehicle and engine manufacturers will report at the corporate level. An estimated 85 percent of the total U.S. GHG emissions, from approximately 10,000 facilities, are covered by this final rule.

Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the United States (U.S.). Pursuant to the Act, the National Highway Traffic and Safety Administration, which is part of the U.S. Department of Transportation (USDOT), is responsible for establishing additional vehicle standards and for revising existing standards.

Since 1990, the fuel economy standard for new passenger cars has been 27.5 mpg. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is determined on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the U.S. The Corporate Average Fuel Economy (CAFE) program, which is administered by the U.S. Environmental Protection Agency (EPA), was created to determine vehicle manufacturers' compliance with the fuel economy standards. The EPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. Based on the information generated under the CAFE program, the USDOT is authorized to assess penalties for noncompliance.

Energy Policy Act of 1992 (EPAct)

The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of

alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are included in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs.

Energy Policy Act of 2005

The Energy Policy Act of 2005 was signed into law on August 8, 2005. Generally, the act provides for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for a clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Federal Climate Change Policy

According to the EPA, "the United States government has established a comprehensive policy to address climate change" that includes slowing the growth of emissions; strengthening science, technology, and institutions; and enhancing international cooperation. To implement this policy, "the Federal government is using voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science." The federal government's goal is to reduce the greenhouse gas (GHG) intensity (a measurement of GHG emissions per unit of economic activity) of the American economy by 18 percent over the 10-year period from 2002 to 2012. In addition, the EPA administers multiple programs that encourage voluntary GHG reductions, including "ENERGY STAR", "Climate Leaders", and Methane Voluntary Programs. However, as of this writing, there are no adopted federal plans, policies, regulations, or laws directly regulating GHG emissions.

STATE

California Strategy to Reduce Petroleum Dependence (AB 2076)

AB 2076 (Chapter 936, Statutes of 2000) requires the CEC and the ARB to develop and submit to the Legislature a strategy to reduce petroleum dependence in California. The statute requires the strategy to include goals for reducing the rate of growth in the demand for petroleum fuels. In addition, the strategy is required to include recommendations to increase transportation energy efficiency as well as the use of non-petroleum fuels and advanced transportation technologies including alternative fuel vehicles, hybrid vehicles, and high-fuel efficiency vehicles.

The strategy, *Reducing California's Petroleum Dependence*, was adopted by the CEC and CARB in 2003. The strategy recommends that California reduce inroad gasoline and diesel fuel demand to 15 percent below 2003 demand levels by 2020 and maintain that level for the foreseeable future; the Governor and Legislature work to establish national fuel economy standards that double the fuel efficiency of new cars, light trucks, and sport utility vehicles (SUVs); and increase the use of non- petroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030.

Bioenergy Action Plan – Executive Order #S-06-06

Executive Order #S-06-06 establishes targets for the use and production of biofuels and biopower and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The executive order establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. The executive order also calls for the State to meet a target for use of biomass electricity, including biomass cogeneration facilities.

Governor's Low Carbon Fuel Standard (Executive Order #S-01-07)

Executive Order #S-01-07 establishes a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 through establishment of a Low Carbon Fuel Standard. The Low Carbon Fuel Standard shall be incorporated into the State Alternative Fuels Plan required by AB 1007 and is one of the proposed discrete early action GHG reduction measures identified by CARB pursuant to AB 32.

Senate Bill 97 (SB 97)

Senate Bill 97 was signed by the Governor on August 24, 2007. The bill required the Office of Planning and Research (OPR), by July 1, 2009, to prepare, develop, and transmit to the Resources Agency guidelines for the feasible mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions, as required by CEQA, including, but not limited to, effects associated with transportation or energy consumption. The Resources Agency was required to certify and adopt those guidelines by January 1, 2010. The OPR is required to periodically update the guidelines to incorporate new information or criteria established by the CARB pursuant to the California Global Warming Solutions Act of 2006.

Climate Action Program at Caltrans

In December 2006, the California Department of Transportation, Business, Transportation, and Housing Agency, issued a Climate Action Program. The goal of the Climate Action Program is to promote clean and energy efficient transportation, and provide guidance for mainstreaming energy and climate change issues into business operations. The overall approach to lower fuel consumption and CO_2 from transportation is twofold: (1) reduce congestion and improve efficiency of transportation systems through smart land use, operational improvements, and Intelligent Transportation Systems; and (2) institutionalize energy efficiency and GHG emission reduction measures and technology into planning, project development, operations, and maintenance of transportation facilities, fleets, buildings, and equipment.

The reasoning underlying the Climate Action Program is the conclusion that "the most effective approach to addressing GHG reduction, in the short-to-medium term, is strong technology policy and market mechanisms to encourage innovations. Rapid development and availability of alternative fuels and vehicles, increased efficiency in new cars and trucks (light and heavy duty), and super clean fuels are the most direct approach to reducing GHG emissions from motor vehicles (emission performance standards and fuel or carbon performance standards)."

Senate Bill 375

Senate Bill 375 (Stats. 2008, Ch. 728) was built on AB 32 (California's 2006 climate change law). SB 375's core provision is a requirement for regional transportation agencies to develop a Sustainable Communities Strategy (SCS) in order to reduce GHG emissions from passenger vehicles. The SCS is one component of the existing Regional Transportation Plan (RTP).

On July 18, 2013 the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) adopted Plan Bay Area, an integrated transportation and land-use strategy through 2040 that marks the nine-county region's first long-range plan to meet the requirements of Senate Bill 375, which calls on each of the state's 18 metropolitan areas to develop a Sustainable Communities Strategy to accommodate future population growth and reduce greenhouse gas emissions from cars and light trucks. Working in collaboration with cities and counties, Plan Bay Area advances initiatives to expand housing and transportation choices, create healthier communities, and build a stronger regional economy.

Additionally, SB 375 modified the state's Housing Element Law to achieve consistency between the land use pattern outlined in the SCS and the Regional Housing Needs Assessment allocation. The legislation also substantially improved cities' and counties' accountability for carrying out their housing element plans.

Assembly Bill 1493

In 2002, then Governor Gray Davis signed AB 1493. AB 1493 required the CARB to develop and adopt, by January 1, 2005, regulations that achieve "the maximum feasible reduction of greenhouse gases emitted by passenger vehicles and light-duty truck and other vehicles determined by the ARB to be vehicles whose primary use is noncommercial personal transportation in the state." To meet the requirements of AB 1493, CARB approved amendments to the California Code of Regulations (CCR) adding GHG emission standards to California's existing motor vehicle emission standards in 2004.

In response to AB 1493, CARB approved amendments to the California Code of Regulations (CCR) adding GHG emission standards to California's existing motor vehicle emission standards. Amendments to CCR Title 13 Sections 1900 (CCR 13 1900) and 1961 (CCR 13 1961), and adoption of Section 1961.1 (CCR 13 1961.1) require automobile manufacturers to meet fleet average GHG emission limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes beginning with the 2009 model year. Emission limits are further reduced each model year through 2016. For passenger cars and light-duty trucks 3,750 pounds or less loaded vehicle weight (LVW), the 2016 GHG emission limits are approximately 37 percent lower than during the first year of the regulations in 2009. For medium-duty passenger vehicles and light-duty trucks 3,751 LVW to 8,500 pounds gross vehicle weight (GVW), GHG emissions are reduced approximately 24 percent between 2009 and 2016.

CARB requested a waiver of federal preemption of California's Greenhouse Gas Emissions Standards. The intent of the waiver is to allow California to enact emissions standards to reduce carbon dioxide and other greenhouse gas emissions from automobiles in accordance with the

regulation amendments to the CCRs that fulfill the requirements of AB 1493. The EPA granted a waiver to California to implement its greenhouse gas emissions standards for cars.

California Executive Orders S-3-05 and S-20-06, and Assembly Bill 32

On June 1, 2005, then Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order was to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by 2020 and 3) 80 percent below the 1990 levels by the year 2050.

In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that ARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

CARB, which is part of Cal-EPA, develops air quality regulations at the state level. The state regulations mirror federal regulations by establishing industry-specific pollution controls for criteria, toxic, and nuisance pollutants. California also requires areas to develop plans and strategies for attaining state ambient air quality standards as set forth in the California Clean Air Act of 1988. In addition to developing regulations, CARB develops motor vehicle emission standards for California vehicles.

Assembly Bill 32- Climate Change Scoping Plan

On December 11, 2008 ARB adopted its *Climate Change Scoping Plan* (Scoping Plan), which functions as a roadmap of ARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. The Scoping Plan contains the main strategies California will implement to reduce CO_2e emissions by 169 million metric tons (MMT), or approximately 30 percent, from the State's projected 2020 emissions level of 596 MMT of CO_2e under a business-as-usual scenario. (This is a reduction of 42 MMT CO_2e, or almost 10 percent, from 2002–2004 average emissions, but requires the reductions in the face of population and economic growth through 2020.) The Scoping Plan also breaks down the amount of GHG emissions reductions ARB recommends for each emissions sector of the State's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO2e),
- the Low-Carbon Fuel Standard (15.0 MMT CO2e),
- energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO2e), and
- a renewable portfolio standard for electricity production (21.3 MMT CO2e).

Senate Bill 1368

SB 1368 requires the California Energy Commission (CEC) and the California Public Utilities Commission (CPUC) to set a global warming emissions standard for electricity used in California — regardless of whether it's generated in-state or purchased from plants in other states. The new standard applies to any new long-term financial contracts for base load electricity, and applies both to investor-owned utilities and municipal utilities. The standard for baseload generation owned by, or under long-term contract to publicly owned utilities, is and emissions performance standard (EPS) of 1,100 lbs CO_2 per megawatt-hour (MWh).

Senate Bills 1078 and 107 and Executive Order S-14-08

SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. In November 2008, Governor Schwarzenegger signed Executive Order S-14-08, which expands the state's Renewable Energy Standard to 33 percent renewable power by 2020.

Title 24 and the CALGreen Building Code

Title 24 is the California Building Standards code, and is updated every three years. The last update was in 2013. CALGreen is one of the 12 parts of Title 24. CALGreen is a set of mandatory green building standards for new construction that went into effect throughout California on January 1, 2011. The 2013 California Green Building Standards Code went into effect on January 1, 2014. These building standards apply to all new public and privately-constructed commercial and residential buildings. CALGreen is referred to officially as the California Green Building Standards Code and includes a matrix of mandatory requirements tailored to residential and non-residential building classifications, as well as two sets of voluntary measures (CALGreen Tier 1 and Tier 2) that provide a host of more stringent sustainable building practices and features. Among the key mandatory provisions are requirements that new buildings:

- reduce indoor potable water use by at least 20% below current standards;
- recycle or salvage at least 50% of construction waste;
- utilize low VOC-emitting finish materials and flooring systems;
- install separate water meters tracking non-residential buildings' indoor and outdoor water use;
- utilize moisture-sensing irrigation systems for larger landscape areas;
- receive mandatory inspections by local officials of building energy systems, such as HVAC and mechanical equipment, to verify performance in accordance with specifications in non-residential buildings exceeding 10,000 square feet; and
- earmark parking for fuel-efficient and carpool vehicles.

LOCAL

Bay Area Air Quality Management District CEQA Guidelines

The Bay Area Air Quality Management District (BAAQMD) encourages local governments to adopt a GHG Reduction Strategy that is consistent with AB 32 goals. The "qualified" GHG Reduction Strategy may streamline environmental review of community development projects. According to the BAAQMD, if a project is consistent with a Qualified GHG Reduction Strategy, then it can be presumed that the project will not have significant GHG impacts. This approach is consistent with the following State CEQA Guidelines, Section 15183.5.a:

"Lead agencies may analyze and mitigate the significant impacts of greenhouse gas emissions at a programmatic level, such as…a plan to reduce greenhouse gas emissions. Later project-specific environmental documents may tier from and/or incorporate by reference that existing programmatic review. Project-specific environmental documents may rely on an [Environmental Impact Report] containing a programmatic analysis of greenhouse gas emissions."

City/County Association of Governments of San Mateo County (C/CAG)

C/CAG is a council of governments consisting of the County of San Mateo and its 20 cities. The organization deals with topics such as transportation, air quality, stormwater runoff, hazardous waste, solid waste and recycling, land use near airports, abandoned vehicle abatement, and issues that affect quality of life in general. C/CAG supports a number of sustainability initiatives including the following:

San Mateo County Energy Watch. This program is a local government partnership between Pacific Gas and Electric Company (PG&E) and C/CAG to promote energy efficiency in municipal and non-profit buildings. SMC Energy Watch has provided staff assistance to support Foster City and other San Mateo County jurisdictions in the development of their Climate Action Plans. SMC Energy Watch also promotes and manages several rebate incentives and funding opportunities, of which Foster City has taken advantage.

Congestion Management Agency. C/CAG serves as the Congestion Management Agency for San Mateo County to identify strategies to respond to future transportation needs, develop procedures to alleviate and control congestion, and promote countywide solutions.

Sustainable Communities Strategy/Regional Transportation Plan. C/CAG is collaborating with local governments in San Mateo County as well as regional agencies to develop a Sustainable Communities Strategy (SCS) in compliance with the requirements of SB 375. The SCS will facilitate more focused development in priority development areas near public transit stations. The aim of the San Mateo County SCS is to better integrate land use with public transportation in order to reduce GHG emissions.

3.5.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the State CEQA Guidelines, the project will have a significant impact related to greenhouse gases and climate change if it will:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

IMPACTS AND MITIGATION

Impact 3.5-1: Project implementation may generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. (Less than Significant)

The proposed Climate Action Plan consists of goals, policies, and measures that would reduce GHG emissions from a wide range of sources and promote and increase sustainability within the City. The proposed Land Use and Circulation Element includes new goals, policies, and actions to address sustainability; promote live/work housing units in order to reduce vehicle trips; encourage new development and redevelopment that meets the community's needs and provides more jobs available to serve the local population; encourage mixed use developments that reduce vehicle miles travelled and promote opportunities to increase pedestrian connectivity; and ensure that the City's transportation and circulation system meets the needs of the community and provides complete streets that supports a multi-modal transportation network. The update also reflects current codes, trends, design guidelines, master plans, and programs that have been initiated or adopted by the City since the last update, as well as State programs and policies adopted for the purpose of reducing GHG emissions.

The proposed Land Use and Circulation Element and the proposed Climate Action Plan represent the City's primary tools for reducing GHG emissions and complying with regulations and policies aimed at addressing the causes and effects of climate change. The Climate Action Plan is the primary implementation tool for the City's comprehensive approach to this issue.

Overall, this would have a significantly positive impact on GHGs and climate change since it would result in a significant reduction in GHG emissions by 2020 compared to the "business as usual" scenario, as described under Impact 3.5-2 below. While approval of the Climate Action Plan and the Land Use and Circulation Element would not directly result in any new development or grant any entitlements for development beyond what has been identified in the General Plan and analyzed throughout this EIR, the project includes measures that may result in future improvements to municipal buildings, the City's circulation network, and private buildings throughout the City.

The improvements and implementation of the measures contained in the Climate Action Plan would primarily consist of energy efficiency upgrades, sidewalk connectivity, tree planting, the use of on-site solar energy generation, and other measures to reduce GHGs within areas of the City that have been previously developed. These types of improvements would generally be allowed under the adopted General Plan.

Implementation of the types of improvements identified above would temporarily result in construction emissions, which would generate small amounts of GHGs over the short-term. Construction-related GHGs are generated primarily from diesel exhaust and employee commute trips. Given the global and cumulative nature of GHGs, and the relatively short-term and small levels of GHGs that may be generated during the construction of energy efficiency improvements identified by the project and the project's long-term reduction in GHG emissions, the project would not result in a significant direct or indirect generation of GHGs. This is a **less than significant and less than cumulatively considerable** impact and no mitigation is required.

Impact 3.5-2: Project implementation may conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. (Less than Significant)

As described above, the proposed Climate Action Plan represents a comprehensive and long-term commitment by the City to reduce GHGs and the effects of climate change from community-wide and municipal operations over the life of the City's General Plan. The City has set an emissions reduction target of 15 percent below 2005 levels by 2020. This is consistent with State direction from the ARB Climate Change Scoping Plan, which provides the substantial evidence for establishing the emission reduction target. The proposed Climate Action Plan includes goals and measures that will be implemented by the City and by future development projects within the City over the life of the General Plan.

The proposed Climate Action Plan identifies existing and proposed initiatives to reduce greenhouse gas emissions. The Climate Action Plan ensures that the City's future activities and development patterns conform to California climate change legislation. The Climate Action Plan will also act as a tiering document for analyzing GHG emissions of future development pursuant to CEQA guidelines 15183.5(b)(2).

The purpose of the Climate Action Plan is to identify how the City will achieve the state-recommended GHG emission reduction target of 15 percent by the year 2020 and to create a path to obtain 2050 State targets associated with Governor's Order S-03-05. The Climate Action Plan provides goals and associated measures, also referred to as GHG reduction measures, in the sectors of energy use, transportation, land use, water, and solid waste. In addition, the Climate Action Plan provides goals and measures for longer-term adaptation to the potential risks associated with climate change.

More specifically, the Climate Action Plan:

- Identifies sources of greenhouse gas emissions from sources within the City's jurisdictional/political boundary and estimates how these emissions may change over time.

- Discusses the various outcomes of reduction efforts and how these reduction efforts can be implemented and advertised.

- Identifies baseline emissions (2005), projects 2020 and 2025 emission levels, and establishes a target for emission reductions (15% below 2005 levels by 2020).

- Provides energy use, transportation, land use, water use, and solid waste strategies to reduce Foster City's greenhouse gas emissions levels to 15 percent below 2005 levels by 2020.

- Provides methods for reducing the City's greenhouse gas emissions consistent with the direction of the State of California through the Global Warming Solutions Act (AB 32), Governor's Order S-03-05, Public Resources Code Section 21083.3(b,d), and CEQA Guidelines Section 15064.4. [The California Environmental Quality Act (CEQA) Guidelines encourage the adoption of policies or programs as a means of addressing comprehensively the cumulative impacts of projects. See State CEQA Guidelines, §15064(h)(3), §15130(d).]

- Provides substantial evidence that the emissions reductions estimated in the Climate Action Plan are feasible.

The Climate Action Plan includes all of the elements identified under CEQA Guidelines Section 15183.5(b)(1), which identifies the elements that a plan for the reduction of GHGs should include. Specifically, the Climate Action Plan complies with the provisions of CEQA Guidelines Section 15183(b)(1) by providing a quantified inventory of GHG emissions and by providing a level based on substantial evidence below which activities subject to the plan will not make a cumulatively considerable contribution to GHG impacts. That level is based on the State's AB 32 goals. The Climate Action Plan also identifies and analyzes the emissions associated with specific actions, and sets forth performance standards to achieve the specified emissions goals. The analysis in the Climate Action Plan and supporting appendices demonstrates that the specified emissions goals will be achieved by the measures identified in the Climate Action Plan. Finally, the Climate Action Plan includes monitoring measures, and the Climate Action Plan will be adopted in a public process following environmental review.

The Land Use and Circulation Element provides a vision and strategy to guide sustainability in the City over the timeframe of the General Plan. The Climate Action Plan is a separate, stand-alone document that serves a tool that is linked to the General Plan through the Land Use and Circulation Element, primarily through General Plan Program LUC-H-2-a, which states:

> *The City will prepare, adopt and implement a comprehensive Climate Action Plan (CAP) to achieve its fair share of statewide emissions reductions for the 2020 timeframe consistent with AB32. The CAP will specify the strategies, measures and actions to be taken for each inventory sector (transportation, electricity, solid waste, etc.) to achieve the overall*

emission reduction target, and include an adaptive management process that can incorporate new technology and respond when goals are not being met.

Responsibility: City Manager's Office and Community Development Department

Timeframe: Upon completion of the Land Use and Circulation Element Update

While the City's General Plan takes a broad and comprehensive approach to sustainability, the Climate Action Plan focuses specifically on GHG reductions. The Climate Action Plan identifies and quantifies the impact of the City's sustainability vision, policies, and programs on GHG emissions. The sustainability components of the General Plan and the Climate Action Plan function together as part of the City's comprehensive toolkit to achieve a vibrant and sustainable community.

In order to determine whether or not the emissions reduction strategies set forth by the project would meet the target reduction goal of 15 percent below 2005 levels by 2020, the City completed emissions forecasts for the years 2020 and 2025. Emissions forecasts depict what will happen if existing trends continue unchecked by the actions established by the project.

Emissions Forecasts

Based on the 2005 community and municipal operations emissions inventories described previously in this chapter, the City projected a forecast of future emissions for the years 2020, 2025 and 2050. The emission forecast represents a "business-as-usual" prediction of how GHG emissions would grow in the absence of GHG policies and measures to reduce GHG emissions. Conducting an emissions forecast is essential for developing the climate action plan because one must compare future reductions with future emissions levels, not current levels.

The projected business-as-usual GHG emissions are based on the emissions from the existing growth pattern and General Plan prior to the adoption of the proposed Climate Action Plan. More specifically, business-as-usual emissions would occur if the City of Foster City were to continue its 2005 patterns of travel, energy and water consumption, and waste generation and disposal. Therefore, the business-as-usual emissions are projected in the absence of any mitigation measures, policies or actions that would reduce emissions over time, including landmark State legislation described in the Regulatory Setting section above. Programs, policies, and measures implemented after 2005 are considered beyond business-as-usual. The projections from the baseline year of 2005 use growth factors specific to each of the different economic sectors. Table 3.5-8 below summarizes the results of the forecast to 2020, 2025, and 2050. The forecast to 2020 and 2050 assist in determining the annual reduction in emissions required by the year 2020 and 2050 to fulfill AB 32 and Executive Order S-3-05 respectively, whereas the forecast to 2025 assists in determining the annual reduction in emissions required by year 2025 for the Climate Action Plan to be used as a CEQA mitigation document for future projects. The 2025 forecast represents the total greenhouse gas emissions in 2025 due to the total potential buildout of Foster City, as planned for in the proposed Land Use and Circulation Element and proposed Land Use Map, which are components of the proposed project analyzed in this EIR.

TABLE 3.5-8: FOSTER CITY "BUSINESS AS USUAL" EMISSIONS FORECAST FOR 2020, 2025, AND 2050

Emissions Sources	2005 ($MTCO_2$)	Annual Growth Rate	2020 (Projected $MTCO_2e$)	2025 (Projected $MTCO_2e$)	2050 (Projected $MTCO_2e$)
Residential	44,594	0.39%	47,279	48,209	52,648
Commercial/Industrial	62,674	0.88%	71,438	74,624	88,967
Transportation	163,301	1.044%	190,830	201,001	245,888
Waste	4,153	0.39%	4,403	4,490	4,903
TOTAL	**274,722**	**0.89%**	**313,950** (14.3% increase from 2005)	**328,234** (19.5% increase from 2005)	**392,407** (42.8% increase from 2005)

The emissions forecast was projected for each sector, as specific factors would affect each sector differently (e.g. new building energy codes or new fuel economy standards for vehicles). This approach provides a better approximation of future emissions. The following explains how the emissions forecast was estimated for each sector:

- For the residential energy sector, the compounded annual population growth rate was calculated at 0.39 percent from 2005 through 2020, 2025, and 2050 using population projections from the Association of Bay Area Governments (ABAG)[18].

- For the commercial energy sector, the City of Foster City relied on the analysis contained within "California Energy Demand 2008-2018: Staff Revised Forecast,"[19] a report by the California Energy Commission (CEC), which shows that commercial floor space and the number of jobs have closely tracked the growth in energy use in the commercial sector. Using regional job projections for the San Francisco Bay Area from ABAG's *Projections 2009,*[20] the compounded annual growth in energy use in the commercial sector from 2005 to 2020 was calculated to be 0.88 percent. This growth rate was projected out to 2025 and 2050 to estimate commercial energy growth for these benchmark years as well.

- Title 24 Energy Efficiency Standards, established to reduce California's energy consumption for both residential and commercial energy sectors, were not considered in the business-

[18] Association of Bay Area Governments Projections 2009
[19] http://www.energy.ca.gov/2007publications/CEC-200-2007-015/CEC-200-2007-015-SF2.PDF
[20] http://www.abag.ca.gov/planning/currentfcst/regional.html

as-usual forecast calculations, as is typical practice in Climate Action Plans. These standards are upgraded to increasingly stringent standards every three to five years, and therefore would be difficult to reflect accurately as a global emissions reduction in the Climate Action Plan. Rather, its impact is reflected in the calculations for specific measures.

- For transportation, the City of Foster City relied on the Metropolitan Transportation Commission report, "Travel Forecasts Data Summary: Transportation 2035 Plan for the San Francisco Bay Area" from December 2008, in which MTC projects that average weekday vehicle miles of travel (VMT) will increase at an annual rate of 1.044 percent per year through 2020.[21] The recently passed Federal Corporate Average Fuel Economy standards and the State of California's pending tailpipe emission standards could significantly reduce the demand for transportation fuel in Foster City. An analysis of potential fuel savings from these measures has not been included in this business-as-usual forecast. Regardless of future changes in the composition of vehicles on the road as a result of State or Federal rulemaking, emissions from the transportation sector will continue to be largely determined by growth in VMT.

- For waste-related emissions growth, the primary determinate for growth in emissions for the waste sector is population. Therefore, the compounded annual population growth rate for 2005 to 2020, 2025, and 2050 of 0.39 percent (the same as the residential sector projection) was used to estimate future emissions in the waste sector.

Development patterns and the rate and pace of growth in the residential and jobs sectors are dictated largely by market conditions, and as such, can fluctuate over time. It is acknowledged that the City has recently approved some development projects that may not have been accounted for in the 2009 ABAG population and employment projects. These projects include the Gilead Sciences Corporate Campus Master Plan expansion, the Chess-Hatch Commercial/Industrial/Office redevelopment project, and the Pilgrim Triton Master Plan. Approval of these projects occurred after 2005, and could potentially lead to employment growth rates in excess of the ABAG projections. However, each of these projects are required to incorporate a range of GHG emissions reductions measures, which will further assist the City in meeting the emissions reduction targets described below. The GHG reduction plans, including required Transportation Demand Management Plans required for these projects are in accordance with, and consistent with, the measures and policies contained in the Climate Action Plan.

[21] Report available at: http://www.mtc.ca.gov/planning/2035_plan/Supplementary/T2035-Travel_Forecast_Data_Summary.pdf. Compounded annual growth rate for 2006-2020 is calculated from Table F.4 on Page 129 and Table F.5 on Page 131 of the report.

GHG Reduction Measures

The City's actions to reduce GHG emissions contained within the Climate Action Plan are referred to as *measures*. The measures in the Climate Action Plan are broadly grouped into seven categories:

- Energy (Community): energy efficiency upgrades to residential and commercial buildings through code adoption, funding programs, and urban forestation programs
- Energy (Municipal): energy efficiency upgrades and improvements by the City through revised building standards, solar systems, purchase of environmentally-friendly materials, and leveraging of funds.
- Transportation and Land Use (Community): policies in the General Plan that reduce automobile trips through compact and more efficient land use patterns that promote a balanced mix of land uses, encourage alternative modes of transportation, and encourage use of hybrid and electric cars.
- Transportation-Related Municipal Operations: policies that promote energy efficiency in the City fleet and promote telecommuting and flexible work schedules to reduce vehicle trips.
- Waste (Community): waste diversion from landfills to reduce the generation of methane and other greenhouse gases.
- Energy and Water: energy reduction in the heating and usage of water.
- Education: programs to increase awareness of conservation, sustainability, and the Climate Action Plan

All of the measures contained in the Climate Action Plan are identified and explained in detail in Chapter 4 of the Climate Action Plan. Detailed greenhouse gas reduction calculations are presented in Appendix B of the Climate Action Plan. Reductions for all measures, aggregated by policy topic and sector, are described in detail in the proposed Climate Action Plan, which is available for public review online at: http://tinyurl.com/LUCupdate.

The City needs to achieve 16,625 $MTCO_2e$ of annual GHG reductions to meet the 15 percent reduction target by the year 2020. As described above, the Climate Action Plan includes a range of measures designed to reduce GHG emissions in Foster City. The measures included in the Climate Action Plan have the potential to reduce greenhouse gas emissions by 16,838 metric tons (MT) of CO_2e by 2020.

Local implementation of all proposed measures in the Climate Action Plan and implementation of applicable Climate Action Plan measures by subsequent development projects, coupled with state-mandated efforts, would allow the City to achieve its reduction target of 15 percent by 2020. The City's 2020 target is consistent with AB 32; therefore, implementation of the goals and measures in the Climate Action Plan will place the City on a trajectory to be consistent with the State's recommended goal for local governments.

Appendix J presents the potential GHG emissions reductions (MT CO2e) for 2020 for each measure contained in the Climate Action Plan, and also includes a brief description of each measure, and identifies the current implementation status of each measure.

As shown in the table in Appendix J, full implementation of the Climate Action Plan would result in the City achieving the target threshold of a 15 percent GHG reduction by 2020

Climate Action Plan Implementation and Monitoring

While a number of the measures contained in the Climate Action Plan are voluntary, particularly those regarding existing development, the majority of reductions would occur in association with non-voluntary measures related to transportation and solid waste. Many of the measures contained in the Climate Action Plan would apply to future subsequent development projects. Future development projects must be reviewed for consistency with the General Plan, consistency with the Climate Action Plan, and must implement all applicable Climate Action Plan measures during project planning, design, construction, and implementation. By implementing applicable measures in the Climate Action Plan, subsequent development projects would assist the City in meeting the target reduction threshold of 15 percent below business as usual projections.

In order to ensure that the Climate Action Plan is successfully implemented over the life the updated General Plan, the City is committed to the following implementation measures as the path to achieve the target 15 percent reduction below 2005 levels by 2020 and the target 20 percent reduction below 2005 levels by 2025.

The following implementation measures and actions are contained in Chapter 5 of the Climate Action Plan, and are included in the Climate Action Plan to ensure the City is successful in the implementation of the Climate Action Plan.

Implementation Measure 1: Monitoring

Regularly monitor and report the City's progress toward achieving the reduction target.

Action Items:

- Action 1.1: Facilitate implementation of measures and actions related to municipal operations.
- Action 1.2: Provide support to City staff to facilitate implementation of measures and actions.
- Action 1.3: Prepare a progress report for review and consideration by the City Council, Planning Commission, and other applicable advisory bodies at least once every two-to-three years.
- Action 1.4: Develop and utilize a monitoring and reporting tool to assist with annual reports, which will include an implementation matrix for consolidated tracking and reporting on measure-by-measure progress.
- Action 1.5: Identify key staff responsible for Climate Action Plan reporting and monitoring.

- Action 1.6: Integrate the results of the ongoing monitoring and reporting into the General Plan annual report or other annual monitoring exercises.

Implementation Measure 2: Update GHG Inventory and Plan

Update the baseline greenhouse gas emissions inventory and Climate Action Plan at a minimum every five years.

Action Items:

- Action 2.1: Inventory 2015 GHG emissions no later than 2018.
- Action 2.2: Update the Climate Action Plan no later than 2018 to incorporate new technology, programs, and policies to reduce GHG emissions.
- Action 2.3: Consider updating and amending the Plan, as necessary, should the City find that specific reduction measures are not meeting intended GHG reductions.

Implementation Measure 3: Collaborative Partnerships

Continue to develop partnerships that support implementation of the Climate Action Plan.

Action Items:

- Action 3.1: Continue formal memberships and participation in local and regional organizations that provide tools and support for energy efficiency, energy conservation, greenhouse gas emissions reductions, adaptation, education, and implementation of this Plan, including the City/County Association of Governments of San Mateo County (C/CAG), San Mateo County Energy Watch and other jurisdictions in the Bay Area.

Implementation Measure 4: Funding Sources

Secure necessary funding to implement the Climate Action Plan.

Action Items:

- Action 4.1: Identify funding sources for reduction measures as part of annual reporting.
- Action 4.2: Ensure implementation through the inclusion of emissions reduction and adaptation measures in department budgets, the capital improvement program, and other plans as appropriate.
- Action 4.3: Pursue local, regional, state, and federal grants as appropriate to support implementation.

Implementation Measure 5: Development Review

Review future development projects for consistency with, and appropriate implementation of, the Climate Action Plan.

Action Items:

- Action 5.1: Amend the City's development review process to include steps that screen project applications for consistency with the Climate Action Plan.
- Action 5.2: Require new development projects to implement, where applicable and appropriate, the following Climate Action Plan Measures: EC1, EC4, EC8, TL1, TL2, WC2, WC4, WC5, EW2, and EW3.
- Action 5.3: Encourage new development projects to implement, where applicable and appropriate, the following Climate Action Plan Measures: EC2, EC3, EC5, EC7, EC9, TL3, TL4, and WC3.

In the event that the implementation of various measures may not reach the full target reduction potential due to the voluntary nature of some measures and the need for cooperation from outside organizations and agencies associated with other measures, the Climate Action Plan includes implementation and monitoring measures to assist in realizing the reduction targets. Action 1.3 requires the preparation of a Climate Action Plan implementation progress report every two to three years. If specific measures are identified as not providing the estimated reduction level, Action 2.3 calls on the City to consider updating and amending the Climate Action Plan, as necessary, should the City find that specific reduction measures are not meeting intended GHG reductions.

The City has taken extraordinary steps to develop a comprehensive and meaningful Climate Action Plan and updated Land Use and Circulation Element that will result in significant reductions in GHGs over the life of the General Plan. The proposed project represents a comprehensive effort to significantly reduce GHG emissions across a broad spectrum of community-wide and municipal emissions sectors. The City will have achieved compliance with AB 32 by adopting a Climate Action Plan that meets the statewide reduction targets.

The Climate Action Plan provides specific and concrete direction to the City and development community and includes numerous specific and enforceable measures that would apply to new development in order to reduce individual subsequent projects' contributions to climate change. The proposed Land Use and Circulation Element directly supports implementation of the Climate Action Plan. There are no conflicts or inconsistencies between the Climate Action Plan and the City's existing General Plan Elements, the proposed Land Use and Circulation Element, or the proposed Land Use Map.

Compliance with the Climate Action Plan and implementation of applicable Climate Action Plan measures would ensure that subsequent projects allowed under the proposed Land Use Map and Land Use and Circulation Element, which are consistent with the General Plan, would have a less

than cumulatively considerable contribution to climate change and greenhouse gases. The analysis presented above demonstrates that the implementation of the Climate Action Plan for all subsequent development projects associated with General Plan buildout would assist the City in meeting the projected business as usual reduction of more than 15 percent. Therefore, subsequent projects, including development projects, that are consistent with the General Plan and implement applicable Climate Action Plan measures, would not result in a significant or considerable cumulative contribution to climate change and the generation of GHGs. Therefore, this impact is **less than significant and less than cumulatively considerable**.

This page left intentionally blank

This section of the EIR assesses potential impacts of the proposed General Plan Update and the Climate Action Plan related to hazards and hazardous materials. Hazards include man-made or natural materials or man-made or natural conditions that may pose a threat to human health, life, property, or the environment. Hazardous materials and waste present health hazards for humans and the environment. These health hazards can occur during the manufacture, transportation, use, or disposal of such materials if not handled properly. Hazards to humans can also existing from natural or human induced wildfire and air traffic accidents.

No comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic.

3.6.1 ENVIRONMENTAL SETTING

HAZARDOUS MATERIALS AND WASTE

Hazardous Materials

A hazardous material is a substance or combination of substances which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either (1) cause or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating illness; or (2) pose a substantial present or potential hazard to human health and safety, or the environment when improperly treated, stored, transported, or disposed of. Hazardous materials, including hazardous chemicals, are mainly present because of industries involving chemical byproducts from manufacturing, petrochemicals, and hazardous building materials.

Hazardous Waste

Hazardous waste is the subset of hazardous materials that has been abandoned, discarded, or recycled and is not properly contained, including contaminated soil or groundwater with concentrations of chemicals, infectious agents, or toxic elements sufficiently high to increase human mortality or to destroy the ecological environment. If a hazardous material is spilled and cannot be effectively picked up and used as a product, it is considered to be hazardous waste. If a hazardous material site is unused, and it is obvious there is no realistic intent to use the material, it is also considered to be a hazardous waste. Examples of hazardous materials include flammable and combustible materials, corrosives, explosives, oxidizers, poisons, materials that react violently with water, radioactive materials, and chemicals.

Transportation of Hazardous Materials

The transportation of hazardous materials within the State of California is subject to various federal, State, and local regulations. It is illegal to transport explosives or inhalation hazards on any public highway not designated for that purpose, unless the use of the highway is required to permit delivery, or the loading of such materials (California Vehicle Code §§ 31602(b), 32104(a)). The California Highway Patrol (CHP) designates through routes to be used for the transportation of hazardous materials. Transportation of hazardous materials is restricted to these routes except in

cases where additional travel is required from that route to deliver or receive hazardous materials to and from users.

HAZARDOUS SITES

EPA Toxic Release Inventory

The EPA Toxic Release Inventory (TRI) does not identify any sites or facilities in Foster City that have reported or released hazardous materials or substances. Other facilities handling hazardous materials in the Foster City area do not report to TRI but have other EPA records and therefore are identified as sites with the potential to generate and/or manage hazardous waste. These facilities are identified in Table 3.6-1. None of the listed facilities have reported releases or discharges of hazardous materials, based on the most current EPA data.

TABLE 3.6-1: EPA IDENTIFIED FACILITIES WITH RELEASED OR POTENTIAL TO RELEASE HAZARDOUS MATERIAL

COMPANY	*CONTEXT/DESCRIPTION*
Chevron Station 92600	This facility does not report to the Toxics Release Inventory. Facility has the potential to release 20,000 pounds of hazardous air pollutant chemicals to the air. Facility has the potential to discharge toxic chemicals to the water. Facility has the potential to generate and/or manage at least 2,200 pounds of hazardous waste in a month.
PE Biosystems *(facility has closed)*	This facility does not report to the Toxics Release Inventory. Facility has the potential to release 20,000 pounds of hazardous air pollutant chemicals to the air. Facility has the potential to discharge toxic chemicals to the water. Facility has the potential to generate and/or manage at least 2,200 pounds of hazardous waste in a month.
Target #1122 *(located in San Mateo)*	This facility does not report to the Toxics Release Inventory. Facility has the potential to release 20,000 pounds of hazardous air pollutant chemicals to the air. Facility has the potential to discharge toxic chemicals to the water. Facility has the potential to generate and/or manage at least 2,200 pounds of hazardous waste in a month.
Gilead Sciences Inc	This facility does not report to the Toxics Release Inventory. Facility has the potential to release 20,000 pounds of hazardous air pollutant chemicals to the air. Facility has the potential to discharge toxic chemicals to the water. Facility has the potential to generate and/or manage at least 2,200 pounds of hazardous waste in a month.
San Mateo Water Quality Control *(located in San Mateo)*	This facility does not report to the Toxics Release Inventory. Facility has the potential to discharge toxic chemicals to the water.
CVS Pharmacy NO 9879	This facility does not report to the Toxics Release Inventory. Facility has the potential to release 20,000 pounds of hazardous air pollutant chemicals to the air. Facility has the potential to discharge toxic chemicals to the water. Facility has the potential to generate and/or manage at least 2,200 pounds of hazardous waste in a month.

SOURCE: HTTP://WWW2.EPA.GOV/TOXICS-RELEASE-INVENTORY-TRI-PROGRAM ACCESSED 02/18/2015

Envirostor Data Management System

The DTSC maintains the *Envirostor Data Management System*, which provides information on hazardous waste facilities (both permitted and corrective action) as well as any available site cleanup information. This site cleanup information includes: Federal Superfund Sites (NPL), State Response Sites, Voluntary Cleanup Sites, School Cleanup Sites, Corrective Action Sites, Tiered Permit Sites, and Evaluation/Investigation Sites. The hazardous waste facilities includes: Permitted–Operating, Post-Closure Permitted, and Historical Non-Operating.

GeoTracker

GeoTracker is the California Water Resources Control Board's data management system for managing sites that impact groundwater, especially those that require groundwater cleanup (Underground Storage Tanks, Department of Defense, Site Cleanup Program) as well as permitted facilities such as operating USTs and land disposal sites.

LEAKING UNDERGROUND STORAGE TANKS (LUST)

There are 16 locations with a Foster City address that are listed in the GeoTracker database for Leaking Underground Storage Tanks (LUST). Fifteen of the locations have undergone LUST cleanup and the State has closed the case.

The only open LUST case in Foster City is the ARCO #6139, located at 880 East Hillsdale Boulevard. The site is located on the southern corner of the intersection of Edgewater Boulevard and East Hillsdale Boulevard. The site is an active retail fuel dispensing facility with a station building and service area, four dispensers, one 20,000-gallon underground storage tank (UST), one 22,000-gallon split UST, one waste-oil UST, and one hydraulic hoist. The USTs are Containment Solutions, double-walled fiberglass with brine filled annular space. Currently the site has six groundwater monitoring wells, which have been monitored and sampled since 1987. The contaminant of concern at this facility is gasoline. Cleanup and monitoring efforts have been ongoing since 1987, and the case closure is anticipated by the State Water Resources Control Board to be completed by April 2015.

Solid Waste Information System (SWIS)

The Solid Waste Information System (SWIS) is a database of solid waste facilities that is maintained by the CA Integrated Waste Management Board (CIWMB). The SWIS data, which are updated three times per week, identify active, planned and closed sites. Foster City does not have any active or planned solid waste facilities within city boundaries. Three closed solid waste disposal sites are located adjacent to or near Foster City (Table 3.6-2).

TABLE 3.6-2: CIWMB CLOSED FACILITIES/SITES

NUMBER	NAME	ACTIVITY	REGULATORY	STATUS
41-AA-0010	3rd Ave LF/San Mateo Composting Site	Solid Waste Landfill	Permitted	Closed
41-AA-0166	Belmont Island Park Landfill	Solid Waste Disposal Site	Unpermitted	Closed
41-AA-0169	Redwood Shores Landfill	Solid Waste Disposal Site	Unpermitted	Closed

SOURCE: HTTP://WWW.CALRECYCLE.CA.GOV/SWFACILITIES/DIRECTORY/SEARCHLIST/

WILDLAND FIRE HAZARDS

Wildfires are a potential hazard to development and land uses located in large unmaintained open space, foothill and mountain areas. Foster City is located in a low-lying area totally surrounded by urban development. There are no unmaintained large open space areas within or surrounding the City. As such, the possibility of a wildland fire is non-existent.

HAZARDS FROM AIR TRAFFIC

The State Division of Aeronautics and the National Transportation Safety Board (NTSB) have each compiled extensive data regarding aircraft accidents around airports in California. According to the California Airport Land Use Planning Handbook (2002), prepared by the State Division of Aeronautics, 18.2 percent of general aviation accidents occur during takeoff and initial climb and 44.2 percent of general aviation accidents occur during approach and landing.

Facilities near Foster City

Three public airports serve San Mateo County: the Half Moon Bay Airport (HAF), the San Carlos Airport (SQL), and the San Francisco International Airport (SFO). Foster City is located within the vicinity of both SQL and SFO, each of which is governed by its own Comprehensive Airport Land Use Plan (CALUP).

State law requires an airport land use commission to prepare and adopt a CALUP for each public-use airport in the county. The CALUP is a tool used by airport land use commissions to fulfill their purpose of promoting airport/land use compatibility. The purpose of a CALUP is to provide for the orderly growth of each public airport and surrounding area and to safeguard the general welfare of the inhabitants within the vicinity of the airport and the public in general.

A CALUP is focused on the following three major concerns: 1) aircraft noise impact reduction; 2) the safety of persons on the ground and in aircraft flight; and 3) height restrictions and airspace protection. SQL and SFO are within the jurisdictions of the San Mateo County Comprehensive Land Use Plan (County CALUP) and the Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco Airport (SFO CALUP), respectively. CALUPs apply to geographic areas

near the airports. Applicable CALUP policies for both airports are discussed below. Noise-related considerations associated with these airports are specifically addressed in more detail in Section 3.9 of this EIR.

SAN CARLOS AIRPORT

The nearest airport facility in the Planning Area is the San Carlos Airport. Located approximately 5 miles from City Hall, the San Carlos Airport is home to approximately 327 general aviation aircraft and over 25 aviation related businesses. Between April 2013 and April 2014, the San Carlos Airport averaged approximately 306 aircraft operations (takeoffs and/or landings) per day.

San Carlos Airport provides a variety of emergency service and response functions including Air-Ambulance, Medivac flights, law enforcement patrols and it provides a base for other important emergency service activities and government agencies that add to the safety and security of the community.

The Airport is self-funded through airport user and business fees. Aviation is the top employer in San Mateo County and the Airport provides an important source of education and training for the pilots, mechanics and airport employees that fill the jobs in the industry.

The County CACLUP establishes two Airport Influence Areas (AIAs). Area A denotes locations where a real estate disclosure notice regarding the proximity of the nearby airport must be provided to a buyer or lessee of property within the boundary. Projects within Area A do not require detailed review. Area B denotes locations that are within either the mapped height restriction area for this airport or the 55 decibel (dB) Community Noise Equivalent Level (CNEL) aircraft noise contour. Area B defines the thresholds for triggering review and evaluation of proposed developments in proximity to the airport with respect to safety and noise compatibility. As shown in Figure 3.6-1, Foster City is located entirely within Area A, and a small area in the southeastern corner of the City is located within Area B.

In addition, certain types of land uses are recognized by the Airport Land Use Commission as hazardous to air navigation in the vicinity of SQL. These land uses include any of the following:

- Any use that would direct a steady or flashing light toward an aircraft engaged in an initial straight climb following takeoff or toward an aircraft engaged in a straight final approach toward a landing.
- Any use that would cause sunlight to be reflected toward an aircraft in an initial straight climb following takeoff or toward an aircraft engaged in a straight final approach toward a landing.
- Any use that would generate smoke or rising columns of air.
- Any use that would attract large concentrations of birds within approach/climb-out areas.

- Any use that would generate electrical interference that may interfere with aircraft communications or aircraft instrumentation.

SAN FRANCISCO INTERNATIONAL AIRPORT

The SFO CALUP also establishes two AIAs. Similar to the SQL CALUP, Area A shows locations where projects do not require detailed review. Area B is a combination of the outer boundaries of the Noise (CNEL 65 dB) and Safety Zone boundaries, the Federal Aviation Administration (FAA) height notification boundaries (i.e., 14 CFR Part 77 Conical Surface) or the outer boundary of the Terminal Instrument Procedures (TERPS) Approach and One- Engine Inoperative (OEI) Departure Surfaces.

Foster City is located approximately 5 miles southeast of SFO and is located within Area B of the AIA, as shown in Figure 3.6-2. Thus, the City of Foster City is included among the municipalities for which the Airport Land Commission exercises its statutory duties to review proposed land use policy actions (e.g., new or amended general plans or specific plans) and land use development proposals for consistency with the Noise, Safety, and Airspace Protection/Height Limitation elements of the SFO CALUP. To be compatible, a development must be consistent with the relevant policies contained in each element. In addition, a real estate disclosure notice regarding the proximity of the nearby airport would need to be provided to a buyer or lessee of property within the boundary.

Similar to SQL, proposed land uses with characteristics that may cause visual, electronic, or wildlife hazards, particularly bird strike hazards, to aircraft taking off or landing at SFO or in-flight are incompatible in Area B of the AIA. Specific development characteristics that may create hazards to aircraft in flight and which are deemed incompatible with airport uses include:

- Any sources of glare, such as highly reflective buildings or building features, or bright lights, including search lights or laser displays, which would interfere with the vision of pilots making approaches to SFO.
- Distracting lights that that could be mistaken by pilots on approach to SFO for airport identification lighting, runway edge lighting, runway end identification lighting, or runway approach lighting.
- Sources of dust, smoke, or water vapor that may impair the vision of pilots making approaches to SFO.
- Sources of electrical interference with aircraft or air traffic control communications or navigation equipment, including radar.
- Land uses that, as a regular byproduct of their operations, produce thermal plumes with the potential to rise high enough and at sufficient velocities to interfere with the control of aircraft in flight. Upward velocities of 4.3 meters (14.1 feet) per second at altitudes above 200 feet above the ground shall be considered as potentially interfering with the control of aircraft in flight.

- Any use that creates an increased attraction for wildlife, particularly large flocks of birds, that is inconsistent with FAA rules and regulations, including, but not limited to, FAA Order 5200.5A, Waste Disposal Sites On or Near Airports, FAA Advisory Circular 150/ 5200-33B, Hazardous Wildlife Attractants On or Near Airports, and any successor or replacement orders or advisory circulars. Exceptions to this policy are acceptable for wetlands or other environmental mitigation projects required by ordinance, statute, court order, or Record of Decision issued by a federal agency under the National Environmental Policy Act.

3.6.2 REGULATORY SETTING

FEDERAL

Environmental Protection Agency

The primary regulator of hazards and hazardous materials is the EPA, whose mission is to protect human health and the environment. Foster City is located within EPA Region IX, which includes Arizona, California, Hawaii and New Mexico.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) introduced active federal involvement to emergency response, site remediation, and spill prevention, most notably the Superfund program. The Act was intended to be comprehensive in encompassing both the prevention of, and response to, uncontrolled hazardous substances releases. CERCLA deals with environmental response, providing mechanisms for reacting to emergencies and to chronic hazardous material releases. In addition to establishing procedures to prevent and remedy problems, it establishes a system for compensating appropriate individuals and assigning appropriate liability. It is designed to plan for and respond to failure in other regulatory programs and to remedy problems resulting from action taken before the era of comprehensive regulatory protection.

Aviation Act of 1958

The federal Aviation Act resulted in the creation of the Federal Aviation Administration (FAA). The FAA was charged with the creation and maintenance of a National Airspace System.

Federal Aviation Regulations (CFR, Title 14)

The Federal Aviation Regulations (FAR) establish regulations related to aircraft, aeronautics and inspections and permitting.

FY 2001 Appropriations Act

Title IV of the Appropriations Act required the identification of "Urban Wildland Interface Communities in the Vicinity of Federal Lands that are at High Risk from Wildfire" by the US Departments of the Interior and Agriculture.

Hazardous Materials Transportation Act

The Hazardous Materials Transportation Act, as amended, is the basic statute regulating hazardous materials transportation in the United States. The purpose of the law is to provide adequate protection against the risks to life and property inherent in transporting hazardous materials in interstate commerce. This law gives the U.S. Department of Transportation (USDOT) and other agencies the authority to issue and enforce rules and regulations governing the safe transportation of hazardous materials (DOE 2002).

Natural Gas Pipeline Safety Act

The Natural Gas Pipeline Safety Act authorizes the U.S. Department of Transportation Office of Pipeline Safety to regulate pipeline transportation of natural (flammable, toxic, or corrosive) gas and other gases as well as the transportation and storage of liquefied natural gas. The Office of Pipeline Safety regulates the design, construction, inspection, testing, operation, and maintenance of pipeline facilities. While the federal government is primarily responsible for developing, issuing, and enforcing pipeline safety regulations, the pipeline safety statutes provide for State assumption of the intrastate regulatory, inspection, and enforcement responsibilities under an annual certification. To qualify for certification, a state must adopt the minimum federal regulations and may adopt additional or more stringent regulations as long as they are not incompatible.

Resource Conservation and Recovery Act

The 1976 Federal Resource Conservation and Recovery Act (RCRA) and the 1984 RCRA Amendments regulate the treatment, storage, and disposal of hazardous and non-hazardous wastes. The legislation mandated that hazardous wastes be tracked from the point of generation to their ultimate fate in the environment. This includes detailed tracking of hazardous materials during transport and permitting of hazardous material handling facilities.

The 1984 RCRA amendments provided the framework for a regulatory program designed to prevent releases from USTs. The program establishes tank and leak detection standards, including spill and overflow protection devices for new tanks. The tanks must also meet performance standards to ensure that the stored material will not corrode the tanks. Owners and operators of USTs had until December 1998 to meet the new tank standards. As of 2001, an estimated 85 percent of USTs were in compliance with the required standards.

STATE

State Oversight of Hazards and Hazardous Materials

The Department of Toxic Substances Control (DTSC) is chiefly responsible for regulation, handling, use and disposal of toxic materials while the State Water Resources Control Board (SWRCB) regulates discharge of potentially hazardous materials to waterways and aquifers and administers the basin plans for groundwater resources in the various regions of the State. The San Francisco Regional Water Quality Control Board (SFRWQCB) oversees surface and groundwater in Foster City. Programs intended to protect workers from exposure to hazardous materials and from accidental upset are covered under the Occupational Health and Safety Administration at both the federal level (OSHA) and at the State level through the California Division of Occupational Safety and Health (CAL/OSHA), as well as through the California Department of Health Services (DHS). Air quality is regulated through the California Air Resources Board and the Bay Area Air Quality Management District. The State Fire Marshal is responsible for the protection of life and property through the development and application of fire prevention engineering, education and enforcement; the California Department of Forestry and Fire Protection (CalFIRE) provides fire protection services for California's State- and privately-owned wildlands.

Aeronautics Act (Public Utilities Code §21001)

The Caltrans Division of Aeronautics bases the majority of its aviation policies on the Aeronautics Act. Policies include permits and annual inspections for public airports and hospital heliports and recommendations for schools proposed within two miles of airport runways.

Airport Land Use Commission Law (Public Utilities Code §21670 et seq.)

The law, passed in 1967, authorized the creation of Airport Land Use Commissions (ALUC) in California. Per the Public Utilities Code, the purpose of an ALUC is to protect *public health, safety, and welfare by encouraging orderly expansion of airports and the adoption of land use measures that minimizes exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses* (§21670). Furthermore, each ALUC must prepare an Airport Land Use Compatibility Plan (ALUCP). Each ALUCP, which must be based on a twenty-year planning horizon, should focus on broadly defined noise and safety impacts. The City/County Association of Governments of San Mateo County (C/CAG) Board of Directors serves as the ALUC for both SFO and San Carlos Airports.

Assembly Bill 337

Per AB 337, local fire prevention authorities and CalFire are required to identify "Very High Fire Hazard Severity Zones (VHFHSZ) in Local Responsibility Areas (LRA). Standards related to brush clearance and the use of fire resistant materials in fire hazard severity zones are also established.

CA Code of Regulations

Title 3 of the CCR pertains to the application of pesticides and related chemicals. Parties applying regulated substances must continuously evaluate application equipment, the weather, the treated lands and all surrounding properties. Title 3 prohibits any application that would:

- Contaminate persons not involved in the application
- Damage non-target crops or animals or any other public or private property
- Contaminate public or private property or create health hazards on said property

Title 8 of the CCR establishes California Occupational Safety and Health Administration (Cal OSHA) requirements related to public and worker protection. Topics addressed in Title 8 include materials exposure limits, equipment requirements, protective clothing, hazardous materials and accident prevention. Construction safety and exposure standards for lead and asbestos are set forth in Title 8.

Title 14 of the CCR establishes minimum standards for solid waste handling and disposal.

Title 17 of the CCR establishes regulations relating to the use and disturbance of materials containing naturally occurring asbestos.

Title 22 of the CCR sets forth definitions of hazardous waste and special waste. The section also identifies hazardous waste criteria and establishes regulations pertaining to the storage, transport and disposal of hazardous waste.

Title 26 of the CCR is a medley of State regulations pertaining to hazardous materials and waste that are presented in other regulatory sections. Title 26 mandates specific management criteria related to hazardous materials identification, packaging and disposal. In addition, Title 26 establishes requirements for hazardous materials transport, containment, treatment and disposal. Finally, staff training standards are set forth in Title 26.

Title 27 of the CCR sets forth a variety of regulations relating to the construction, operation and maintenance of the State's landfills. The title establishes a landfill classification system and categories of waste. Each class of landfill is constructed to contain specific types of waste (household, inert, special and hazardous).

CA Government Code Section 65302

This section, which establishes standards for developing and updating General Plans, includes fire hazard assessment and Safety Element content requirements.

California Health and Safety Code

Cal-EPA has established rules governing the use of hazardous materials and the management of hazardous wastes. Many of these regulations are embodied in the California Health and Safety Code. The code includes regulations that govern safe drinking water, substances control, land reuse and revitalization, remediation, restoration, and methamphetamine contaminated cleanups.

California Fire Code

The California Fire Code (CFC) is Part 9 of Title 24, California Code of Regulations, also referred to as the California Building Standards Code. The CFC incorporates the 2009 International Fire Code of the International Code Council with necessary California amendments. The purpose of the CFC is to establish the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety and general welfare from the hazards of fire, explosion or dangerous conditions in new and existing buildings, structures and premises, and to provide safety and assistance to fire fighters and emergency responders during emergency operations.

Public Resources Code

Section 4290 of the Public Resources Code (PRC) covers Fire Safe Regulations, establishing minimum road standards; signing for streets, roads and buildings; private water supply resources; and wildland fuel modification. Section 4291 of the PRC requires annual defensible space of 100 feet to be provided around all structures in or adjoining any mountainous area or land covered with forest, brush, grass, or other flammable material.

LOCAL

City of Foster City General Plan

The 1995 Safety Element of the Foster City General Plan contains the following goals, policies, and programs related to hazards.

SAFETY GOALS

Goal S-C: Protect from Fire and Dangerous Conditions. Protect the community from unreasonably risk to life and property caused by fires and dangerous conditions.

Goal S-D: Prepare to Respond to Emergencies. Minimize potential damage to life, environment and property through timely, well-prepared, and well-coordinated emergency preparedness, response plans, and programs.

SAFETY POLICIES

Protect from Seismic and Geologic Hazards

S-2 **Educate the Public about Seismic Hazards.** The City will offer programs regarding hazardous buildings and conditions and possible mitigation measures to minimize seismic and geologic hazards.

S-6 **Minimize Loss of Life, Injuries, and Property Damage Due to Fires.** The City will minimize loss of life, injuries, and property damage due to fires through review of development proposals, public education, and maintenance of well-trained fire suppression personnel.

S-7 **Hazardous Materials.** The City will protect the community from unreasonable risks associated with hazardous materials.

S-9 **Emergency Response.** The City will prepare to respond to emergencies through the City's Emergency Plan, training, and other measures.

S-10 **Water Supply.** The City will provide an adequate supply of water for daily use and emergency situations.

SAFETY PROGRAMS

Protect from Seismic and Geologic Hazards

S-a **Geotechnical and Engineering Reports.** The City will require site specific geotechnical and engineering reports for new structures.

S-d **Non-Structural Hazards Assessment.** The City will include an assessment of non-structural seismic hazards as part of annual inspections of businesses as part of a public education program.

S-i **Annual Inspections for Fire Safety and Hazardous Materials.** The city will conduct annual inspections of businesses and multi-family dwellings in order to ensure compliance with fire safety and hazardous materials requirements. The City will continue to provide inspections of residential care facilities at the request of the Department of Social Services.

S-j **Development Review for Fire Safety.** The City will review proposals for new and modified buildings to ensure that fire safety provisions are included as required by the most current uniform codes and local regulations.

S-k **Fire Education/Prevention.** The City will provide a fire education/prevention program to schools, businesses and the community through publications, training classes, and other means.

S-l **Annual Inspections for Fire Safety and Hazardous Materials.** The City will conduct annual inspections of businesses and multi-family dwellings in order to ensure compliance with fire safety and hazardous materials requirements.

S-m **Water Supply and Delivery.** The City will maintain a water supply and delivery system that can meet potential fire fighting demands through annual exercising of fire hydrants and periodic review of storage needs.

S-p **Emergency Response.** The City will prepare to respond to emergencies through the use of established procedures, programs of on-going training, periodic exercises of the City's Emergency Plan, and mutual aid agreements.

S-q **Emergency Plan.** The City will maintain the City's Emergency Plan indicating responsibilities and procedures for responding to an emergency.

Foster City Standard Conditions of Approval

Foster City has adopted Standard Conditions of Approval (SCOAs) for large new and redevelopment projects. The following SCOAs related to Hazards and Hazardous Materials would apply to any proposed large new or redevelopment project:

SCOA 1.22: The applicant shall prepare a project-specific Construction Risk Management Plan (CRMP) to protect construction workers, the general public, and the environment from subsurface hazardous materials previously identified and to address the possibility of encountering unknown contamination or hazards in the subsurface. The CRMP shall:

1) Provide procedures for evaluating, handling, storing, testing and disposing of soil and groundwater during project excavation and dewatering activities, respectively;

2) Require the preparation of a project specific Health and Safety Plan that identifies hazardous materials present, describes required health and safety provisions and training for all workers potentially exposed to hazardous materials in accordance with state and federal worker safety regulations, and designates the personnel responsible for Health and Safety Plan implementation;

3) Require the preparation of a contingency plan that shall be applied should previously unknown hazardous materials be encountered during construction activities. The contingency plan shall be developed by the contractor(s), with the approval of the City and/or appropriate regulatory agency, prior to demolition or issuance of the first building permit. The contingency plan shall include provisions that require collection of soil and/or groundwater samples in the newly discovered affected area by a qualified environmental professional prior to further work, as appropriate. The samples shall be submitted for laboratory analysis by a state-certified laboratory under chain-of-custody procedures. The analytical methods shall be selected by the environmental professional. The analytical results of the sampling shall be reviewed by the qualified environmental professional and submitted to the appropriate regulatory agency, if appropriate. The environmental professional shall provide recommendations, as applicable, regarding soil/waste management, worker health and safety training, and regulatory agency notifications, in accordance with local, state, and federal requirements. Work shall not resume in the area(s) affected until these recommendations have been implemented under the oversight of the City of regulatory agency, as appropriate; and

4) Designate personnel responsible for implementation of the CRMP. The CRMP shall be submitted to the Fire Department for review and approval prior to construction activities.

SCOA 1.23: The contractor(s) shall designate storage areas suitable for material delivery, storage, and waste collection. These locations must be as far away from catch basins, gutters, drainage courses, and water bodies as possible. All hazardous materials and wastes used or generated during project site development activities shall be labeled and stored in accordance with applicable local, state, and federal regulations. In addition, an accurate up-to-date inventory, including Material Safety Data Sheets, shall be maintained on-site to assist emergency response personnel in the event of a hazardous materials incident.

All maintenance and fueling of vehicles and equipment shall be performed in a designated, bermed area, or over a drip pan that will not allow run-off of spills. Vehicles and equipment shall be regularly checked and have leaks repaired promptly at an off-site location. Secondary containment shall be used to catch leaks or spills any time that vehicle or equipment fluids are dispensed, changed, or poured. (FIRE)

SCOA 1.24: Emergency Preparedness and Response Procedures shall be developed by the contractor(s) for emergency notification in the event of an accidental spill or other hazardous materials emergency during project site preparation and development activities. These Procedures shall include evacuation procedures, spill containment procedures, required personal protective equipment, as appropriate, in responding to the emergency. The contractor(s) shall submit these procedures to the City prior to demolition or development activities.

SCOA 1.25: For multi-family residential, voice evacuation shall be provided for all common areas (stairwells, corridors, entry/lobbies, elevator lobbies, etc…)

SCOA 9.22: If the presence of hazardous materials is found on site, site remediation may be required by the applicable state or local regulatory agencies. Specific remedies would depend on the extent and magnitude of contamination and requirements of the regulatory agency(ies). Under the direction of the regulatory agency(ies) and the City, a Site Remediation Plan shall be prepared, as required, by the applicant. The Plan shall: 1) specify measures to be taken to protect workers and the public from exposure to the potential hazards and, 2) certify that the proposed remediation would protect the public health in accordance with local, state, and federal requirements, considering the land use proposed. Excavation and earthworking activities associated with the proposed project shall not proceed until the Site Remediation Plan has been reviewed and approved by the regulatory oversight agency and is on file with the City.

SCOA 9.23: Engineering fill brought on-site shall be demonstrated, by analytical testing, not to pose an unacceptable risk to human health or the environment. Threshold criteria for acceptance of engineered fill shall be selected based on screening levels and protocols developed by regulatory agencies for protection of human health and leaching to groundwater (e.g., Water Board ESLs). The engineered fill shall be characterized by representative sampling in accordance with U.S. EPA's SW-846 Test Methods, by a qualified environmental professional and demonstrated to meet the threshold criteria above. The results of the sampling and waste characterization shall be submitted by the contractor(s) to the City and SMCEHD prior to construction.

SCOA 9.24: The contractor shall prepare a Waste Disposal and Hazardous Materials Transportation Plan prior to construction activities where hazardous materials or materials requiring off-site disposal would be generated. The Plan shall include a description of analytical methods for characterizing wastes, handling methods required to minimize the potential for exposure, and shall establish procedures for the safe storage of contaminated materials, stockpiling of soils, and storage of dewatered groundwater. The required

disposal method for contaminated materials (including any lead-based paint, asbestos, or other hazardous building materials requiring disposal, see SCOA 9.25, below), the approved disposal site, and specific routes used for transport of wastes to and from the project site shall be indicated. The Plan shall be prepared prior to demolition or development activities and submitted to the City. The Waste Disposal and Hazardous Materials Transportation Plan may be prepared as an addendum to the Waste Management Plan required by Chapter 15.44 (Ordinance 523) of the Foster City Municipal Code.

SCOA 9.25: Hazardous materials and wastes generated during demolition activities, such as fluorescent light tubes, mercury switches, lead based paint, asbestos containing materials, and PCB wastes, and subsurface hazardous building materials generated during grading and trenching activities, such as asbestos-cement piping, shall be managed and disposed of in accordance with the applicable universal waste and hazardous waste regulations. Federal and state construction worker health and safety regulations shall apply to the removal of hazardous building materials and demolition activities, and any required worker health and safety procedures shall be incorporated into the contractor's specifications for the project. The disposition of hazardous building material wastes shall also be considered in the preparation of the Waste Management Plan required pursuant to the City's Ordinance 523. Documentation of the surveys and abatement activities shall be provided to the City prior to the demolition of structures located at the project site.

Foster City Municipal Code

The Foster City Municipal Code contains numerous measures and policies related to fire prevention and the reduction of fire hazards. Fire reduction and prevention measures are found in the following chapters of the Foster City Municipal Code:

- Chapter 9.26: Property Maintenance
- Chapter 15.04: Building Code
- Chapter 15.24: Fire Code

Local Hazard Mitigation Plan

In November 2011 Foster City adopted the 2010 ABAG Multi-Jurisdictional Local Hazard Mitigation Plan as the City's Local Hazard Mitigation Plan. The Plan lists nine hazards that impact the Bay Area, five related to earthquakes (faulting, shaking, earthquake-induced landslides, liquefaction, and tsunamis) and four related to weather (flooding, landslides, wildfires, and drought).

The City of Foster City has reviewed the hazards identified and ranked the hazards based on past disasters and expected future impacts. The conclusion is that earthquakes (particularly shaking), flooding (including dam failure,) liquefaction, and tsunamis, pose a risk for potential loss. The City of Foster City does not face any natural disasters not listed in the ABAG multi-jurisdictional plan and no new hazards have been identified by the City of Foster City since the original development

of this plan in 2005. The Plan identifies a range of specific and ongoing steps to be implemented by the City in order to reduce hazards associated with the natural disasters identified above.

Certified Unified Program Agency (CUPA)

The California Environmental Protection Agency designates specific local agencies as Certified Unified Program Agencies (CUPA), typically at the county level. In Foster City, the San Mateo County Environmental Health Department is the designated CUPA. Each designated CUPA is responsible for the implementation of six statewide programs within its jurisdiction. These programs include:

- Underground storage of hazardous substances
- Hazardous Materials Business Plan (HMP) requirements
- Hazardous Waste Generator requirements
- California Accidental Release Prevention (Cal-ARP) program
- Uniform Fire Code hazardous materials management plan
- Above Ground Storage Tanks (Spill Prevention Control and Countermeasures Plan only)

Implementation of these programs involves:

- Permitting and inspection of regulated facilities
- Providing educational guidance and notice of changing requirements stipulated in State or Federal laws and regulations
- Investigations of complaints regarding spills or unauthorized releases
- Administrative enforcement actions levied against facilities that have violated applicable laws and regulations

San Mateo County Airport Land Use Commission

The purpose of the Airport Land Use Commission (ALUC) is to:

1. To protect each public use airport in San Mateo County from the encroachment of incompatible land uses.
2. To safeguard the general welfare of inhabitants within the vicinity of each airport and the public in general, by protecting them from adverse affects of aircraft noise and reducing the number of people exposed to airport/aircraft related hazards.
3. To ensure that no structures or land use characteristics adversely affect the navigation airspace in the vicinity of each airport to provide for the safe passage of aircraft in flight

These purposes are implemented through Airport Land Use Commissions, which are required in every county with a public use airport or with an airport served by a scheduled airline. The

City/County Association of Governments of San Mateo County (C/CAG) Board of Directors serves as the ALUC for both SFO and San Carlos Airports.

San Mateo County Comprehensive Airport Land Use Plan (1996)

The San Carlos Comprehensive Airport Land Use Plan (CLUP) establishes land use standards to protect the public from safety hazards and noise impacts and to prevent the encroachment incompatible land uses around the San Carlos Airport. Section IV of the CLUP is the Land Use Plan for the San Carlos Airport.

The CLUP establishes the following land use "Restriction Areas" within the plan boundaries:

CLUP Height Restriction Area: The height restrictions established by the CLUP ensure the protection of the navigable airspace surrounding the airport. The following height restriction areas apply within the CLUP:

- Primary Surface: A surface longitudinally centered along the runway, extending 200 feet beyond each end of the paved runway and having a width of 250.
- Horizontal Surface: 150 feet above the airport elevation, the perimeter of which is constructed by scribing an arc 10,000 feet out from the center of each end of the primary surface and connecting arcs with tangents.
- Conical Surface: A surface extending outward and upward from the periphery of the horizontal surface at a slope of 20:1 for a horizontal distance of 4,000 feet.
- Approach Surface: A surface longitudinally centered on the extended runway centerline, extending outward and upward 5,000 feet from each end of the primary surface at a slope of 34:1 for a length of 10,000 feet. The width of the surface starts the same as the Primary Surface, 250 feet, and flares to 1,250 feet at 5,000 feet.
- Transitional Surface: A surface extending outward and upward from the sides of the primary surface and from the sides of the approach surfaces at a slope of 7:1.

The City/County Association of Governments of San Mateo County (C/CAG) is in the process of preparing a comprehensive update to the San Carlos Airport Comprehensive Airport Land Use Compatibility Plan. A preliminary draft of the Plan was released for public review in November 2014. Adoption of the Final Plan is anticipated to occur in late 2015.

San Francisco International Airport Comprehensive Airport Land Use Compatibility Plan

Based on State law and guidance provided in the *California Airport Land Use Planning Handbook*, the SFO ALUCP has four primary areas of concern:

- Aircraft Noise Impact Reduction – To reduce the potential number of future airport area residents who could be exposed to noise impacts from airport and aircraft operations.

- Safety of Persons on the Ground and in Aircraft in Flight – To minimize the potential number of future residents and land use occupants exposed to hazards related to aircraft operations and accidents.
- Height Restrictions/Airspace Protection – To protect the navigable airspace around the Airport for the safe and efficient operation of aircraft in flight.
- Overflight Notification – To establish an area within which aircraft flights to and from the Airport occur frequently enough and at a low enough altitude to be noticeable by sensitive residents. Within this area, real estate disclosure notices shall be required, pursuant to State law.

The airport/land use compatibility policies and criteria contained in this ALUCP apply only to new development. Under State law, an airport land use commission has no jurisdiction over existing development unless that development is expanded or enlarged significantly, in which case it is treated as infill development subject to the policies in the ALUCP.

3.6.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact from hazards and hazardous materials if it will:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area;
- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area;

- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

IMPACTS AND MITIGATION MEASURES

Impact 3.6-1: Project implementation has the potential hazard to the public or the environment through the routine transport, use, disposal, or accidental release of hazardous materials (Less than Significant)

Future development, redevelopment, infrastructure, and other projects allowed under the proposed General Plan Update and Climate Action Plan may involve the transportation, use, and/or disposal of hazardous materials. Hazardous materials are typically used in industrial, agricultural, and commercial uses, as well as residential uses. Future uses may involve the transport and disposal of such materials from time to time. Future activities may involve equipment or construction activities that use hazardous materials (e.g., coatings, solvents and fuels, diesel-fueled equipment), cleanup of sites with known hazardous materials, the transportation of excavated soil and/or groundwater containing contaminants from areas that are identified as being contaminated, or disposal of contaminated materials at an approved disposal site. While hazardous materials may be associated with industrial and agricultural activities, hazardous materials may also be associated with the regular cleaning and maintenance of residential and other less intense uses. Accidental release of hazardous materials that are used in the construction or operation of a project may occur. There is also the potential for accidental release of pre-existing hazardous materials, either associated with previous activities on a site or naturally occurring hazards such as asbestos.

The use, transportation, and disposal of hazardous materials is regulated and monitored by local fire departments, Certified Unified Program Agencies (CUPAs), the State Division of Occupational Safety and Health, and the Department of Toxic Substances Control consistent with the requirements of federal, State, and local regulations and policies. Facilities that store hazardous materials on-site are required to maintain a Hazardous Materials Business Plan in accordance with State regulations. In the event of an accidental release of hazardous materials, the local CUPA, the Department of Health Services, and emergency management agencies (e.g., Police and Fire Departments) would respond. All future projects allowed under the proposed project would be required to comply with the provisions of federal, State, and local requirements related to hazardous materials. As future development, redevelopment, and infrastructure projects are considered by the City, each project would be evaluated for potential impacts, specific to the project, associated with hazardous materials as required under CEQA.

In addition to the requirements associated with State and federal regulations and the City Code, the General Plan includes policies and programs to address potential impacts associated with hazardous materials. Policy S-2 requires the City to develop programs to educate the public

regarding hazardous buildings and conditions and possible mitigation measures to minimize seismic and geologic hazards. Policy S-7 requires the City to protect the community from unreasonable risks associated with hazardous materials. Policy S-9 requires The City to prepare to respond to emergencies through the City's Emergency Operations Plan, training, and other measures. The Land Use and Circulation Element includes many policies which would reduce the potential of hazardous materials; these policies are included in the City's adopted General Plan.

Proposed Policy LUC D-9 requires the management of fumes, noise, smoke or other pollutants or nuisances so as to not become a hazard. Proposed Policy LUC D-10 incorporates performance standards for noise, odor, vibration, glare, smoke, and waste for commercial and industrial activities. Proposed Policy LUC D-11 requires all industrial businesses handling hazardous materials to submit a plan complying with the San Mateo County Hazardous Materials Plan. Policy LUC C-13 ensures that all existing and new businesses and land uses allowed meet the requirements of Chapter 17.68, General Performance Standards, of Title 17, Zoning, of the Foster City Municipal Code and the Estero Municipal Improvement District Code.

In addition to the policies described above, the General Plan provides programs to reduce the potential of public exposure to hazardous materials. Program S-a require site specific geotechnical and engineering reports for new structures. Thereby reducing the potential for accidental release. Program S-d compels the City to assess non-structural seismic hazards as part of annual inspections of businesses as part of a public education program. Program S-l obliges the City to conduct annual inspections of businesses and multi-family dwellings in order to ensure compliance with fire safety and hazardous materials requirements. Program S-q requires the maintaining of the City's Emergency Plan indicating responsibilities and procedures for responding to an emergency. Program LUC 7.b requires the Fire Department to perform annual inspections and that the inspection will ensure that all hazardous materials are handled properly and pertinent information regarding the materials is provided to the City.

Furthermore, Foster City has adopted Standard Conditions of Approval (SCOAs) relating to Hazardous Materials for large new and redevelopment projects. These standards include: SCOA 9.22, which requires, as necessary, a Remediation Plan to be prepared by the applicant if hazardous materials are found on site; SCOA 9.23 requires engineering fill brought on-site to be tested for hazardous materials that may pose an unacceptable risk to human health or the environment; SCOA 9.24 requires the preparation of a Waste Disposal and Hazardous Materials Transportation Plan prior to construction activities where hazardous materials or materials requiring off-site disposal would be generated; and SCOA 9.25 requires that hazardous materials and wastes generated during demolition activities, be managed and disposed of in accordance with the applicable universal waste and hazardous waste regulations.

As described above, the General Plan includes policies and programs to ensure that the City has adequate emergency response plans and measures to respond in the event of an accidental release of a hazardous substance. Compliance with applicable General Plan policies and programs, State and federal regulations, and the City's SCOAs, would ensure that potential impacts associated with the routine use, transport, storage, or disposal or accidental release of hazardous materials would be reduced or eliminated. As such, potential impacts of the proposed General

Plan Update and Climate Action Plan related to the routine transport, use, disposal, or accidental release of hazardous materials are **less than significant**, and no mitigation is required.

Impact 3.6-2: Project implementation has the potential to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. (Less than Significant)

The proposed General Plan Update and Climate Action Plan would allow land uses that may result in hazardous emissions or handle hazardous materials, substances, or waste in the vicinity of existing and future schools. All hazardous materials would be handled in accordance with federal, State, and county requirements, as described under Impact 3.6-1, which would limit the potential for a project to expose nearby uses, including schools, to hazardous emissions or an accidental release. Hazardous emissions are monitored by the Bay Area Air Quality Management District, Regional Water Quality Control Board, and Department of Toxic Substances Control, and the local CUPA. In the event of a hazardous materials spill or release, notification and cleanup operations would be performed in compliance with applicable federal, State, and local regulations and policies, including hazard mitigation plans. Compliance with all existing regulations and hazard mitigation plans as well as General Plan policies and actions, and the City's SCOAs, discussed under Impact 3.6-1, would ensure that the impact would be reduced or eliminated. As such, potential impacts resulting from the proposed General Plan Update and Climate Action Plan related to hazardous materials in the vicinity of a school would be **less than significant**, and no mitigation is required.

Impact 3.6-3: Project implementation has the potential to have projects located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (Less than Significant)

As listed previously under the Hazardous Sites section of this chapter, there are several sites in the City that are included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5. These sites are subject to various State and federal laws and regulators, including the CERCLA, EPA, DTSC, and RWQCB. Development allowed by the General Plan could create a hazard to the public or the environment through a disturbance or release of contaminated materials if the development occurs on or adjacent to contaminated sites without appropriate measures to contain or mitigate the existing contamination.

The adopted General Plan includes policies and programs to ensure that existing hazards, including those associated with known hazardous materials sites, are addressed prior to development. Policy H-A-4 requires the review of potential environmental impacts to ensure that the impacts on existing and prospective residents are considered when a new housing development is proposed. Proposed Policy LUC C-13 requires that all existing and new businesses and land uses allowed meet

the requirements of Chapter 17.68, General Performance Standards, of Title 17, Zoning, of the Foster City Municipal Code and the Estero Municipal Improvement District Code.

Programs H-A-4-b and H-A-4-d require site investigation and geotechnical studies prior to development in order to identify any hazards materials which might be located on the site. Program S-a requires engineering and geotechnical studies for new structures. During these site investigations/studies potentially hazardous materials sites would be identified. Compliance with applicable General Plan policies and programs, as well as State and federal regulations, would ensure that any potential impacts resulting from the proposed General Plan Update and Climate Action Plan and associated with the hazardous conditions on sites listed pursuant to Government Code Section 65962.5 would be **less than significant**.

Impact 3.6-4: Impact to people residing or working within two miles of a public airport, public use airport, or private airstrip (Less than Significant)

Hazards related to airports are typically grouped into two categories: air hazards and ground hazards. Air hazards jeopardize the safety of an airborne aircraft and expose passengers, pilots and crews to danger. Examples of air hazards include tall structures, glare-producing objects, bird and wildlife attractants, radio waves from communication centers, or other features that have the potential to interfere with take-off or landing procedures, posing a risk to aircraft. Ground hazards jeopardize the safety of current and future residents and/or workers in the vicinity of an airport. The most obvious ground hazard is a crash, which may produce a serious, immediate risk to those residing in or using areas adjacent to the airport. Most accidents occur during take-off and landing. Therefore, the higher the density around an airport, including transportation facilities, the higher the risk associated with this type of hazard.

Portions of the City lay within two miles of the San Carlos Airport. As discussed under the Regulatory Setting section of this chapter, land uses in the vicinity of the San Carlos Airport are regulated by the San Carlos Airport Comprehensive Land Use Compatibility Plan (1996). C/CAG is in the process of preparing a comprehensive update to the Plan, which is anticipated to be completed by late 2015. Figure 3.6-1 shows the Airport Influence Areas (AIAs) established by the 1996 Airport Land Use Plan. As shown on Figure 3.6-1, all of Foster City is located with AIA Area A, and a small portion of land in the southeastern corner of the City limits is located within AIA Area B.

Area A of the AIA Boundary for the San Carlos Airport includes requirements that mandate real estate disclosures related to potential noise issues associated with airport operations. Formal review of proposed projects for potential obstruction issues is limited to Area B of the AIA, within a 9,000-foot radius of San Carlos Airport.

The Preliminary Public Draft San Carlos Airport Comprehensive Land Use Compatibility Plan Update uses a different system of airport safety and compatibility zones than the system of zones used in the 1996 Plan. While this Updated Plan has not been adopted at the time of preparation of this EIR, it provides a good indication of the safety zones that will be in place during the life of

this proposed project. The Updated Plan identifies the following six airport zones for the San Carlos Airport:

- Zone 1: Runway protection zone and within runway object free area adjacent to the runway;
- Zone 2: Inner approach/departure zone;
- Zone 3: Inner turning zone;
- Zone 4: Outer approach/departure zone;
- Zone 5: Sideline zone; and
- Zone 6: Traffic pattern zone.

Preliminary Public Draft San Carlos Airport Comprehensive Land Use Compatibility Plan Update includes Exhibit 4-3, which identifies the location and extent of these zones. The City of Foster City is located immediately north of Zone 6 (Traffic Pattern Zone) and outside of all other San Carlos Airport Zones. Safety Compatibility Policy 2 in the Preliminary Public Draft San Carlos Airport Comprehensive Land Use Compatibility Plan Update states, "In Safety Zone 6, new residential development is compatible and is not restricted for safety reasons. Other compatibility policies (e.g., noise and airspace protection) may apply.

The take off and approach paths for the San Carlos Airport do not enter Foster City airspace. In addition, according to the 1996 Airport Land Use Plan, Foster City is located outside of the Avigation Easement Review Area (AERA). The AERA is a finite boundary that identifies a geographical area for which the CLUP considered the potential for land use/airport conflicts. The City is also located outside of the height restriction areas, which address potential hazards between tall structures and low-flying aircraft. The San Carlos Airport is obligated to comply with the requirements associated with State and federal airport safety regulations.

Foster City is located approximately 5 miles southeast of SFO and is located within Area B of the SFO AIA, as shown in Figure 3.6-2. Thus, the City of Foster City is included among the municipalities for which the Airport Land Commission exercises its statutory duties to review proposed land use policy actions (e.g., new or amended general plans or specific plans) and land use development proposals for consistency with the Noise, Safety, and Airspace Protection/Height Limitation elements of the SFO CALUP. To be compatible, a development must be consistent with the relevant policies contained in each element. In addition, a real estate disclosure notice regarding the proximity of the nearby airport would need to be provided to a buyer or lessee of property within the boundary.

The highest obstruction permitted within SFO AIA Area B is 210 feet. The proposed project does not include any land use designations or project components that would allow or facilitate development of structures in excess of 210 feet.

The adopted Foster City General Plan includes policies requiring new development to undergo environmental review including the potential for airport hazards. Policy H-A-4 requires the review of potential environmental impacts to ensure that the impacts on existing and prospective

residents are considered when a new housing development is proposed. Policy LUC C-13 requires that all existing and new businesses and land uses allowed meet the requirements of Chapter 17.68, General Performance Standards, of Title 17, Zoning, of the Foster City Municipal Code and the Estero Municipal Improvement District Code.

Future development, redevelopment, and infrastructure projects that may be implemented following adoption of the Land Use and Circulation Element Update and the Climate Action Plan would be evaluated for potential impacts, specific to the project, associated with airport safety as required under CEQA.

Additionally, Foster City is outside of the AERA for the San Carlos Airport, and the Preliminary Public Draft San Carlos Airport Comprehensive Land Use Compatibility Plan Update indicates that the City will be located outside of the pending Airport Safety Zones. Compliance with the adopted Foster City General Plan policies identified above would ensure that any future development projects in the City are reviewed for compliance and compatibility with all adopted Airport Land Use Plans, and implementation of the proposed project would not conflict with any adopted or pending airport land use compatibility plans. As such, the proposed General Plan Update and Climate Action Plan would not conflict with an airport land use compatibility plan, and would not expose residents, business, or structures to risks or hazards associated with nearby airport operations. This is a **less than significant** impact and no mitigation is required.

Impact 3.6-5: Project implementation may impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. (Less than Significant)

The proposed General Plan Update and Climate Action Plan would allow a variety of new development, including residential, commercial, industrial, and public service projects, which would result in increased jobs and population in the City. Roads and infrastructure improvements would occur to accommodate the new growth. Future projects are not anticipated to remove or impede evacuation routes and the General Plan does not include land uses, policies, or other components that conflict with adopted emergency response or evacuation plans.

The General Plan Update and Climate Action Plan would improve transportation systems throughout the City by including policies and programs designed to ensure that the City's emergency response plans are maintained and regularly updated. Existing General Plan Policy S-9 requires the City to prepare for emergencies through the Emergency Plan, training and additional measures. Proposed Policy LUC C-13 requires that all existing and new businesses and land uses allowed meet the requirements of Chapter 17.68, General Performance Standards, of Title 17, Zoning, of the Foster City Municipal Code and the Estero Municipal Improvement District Code. This would include the potential for these uses to interfere with the City's Emergency Plan. Program S-p requires the City to prepare to respond to emergencies through use of established procedures, programs of on-going training, periodic exercises of the City's Emergency Plan and mutual aid agreements. Program S-q obligates the City to maintain the City's Emergency Plan indicating responsibilities and procedures for responding to an emergency.

Additionally, Foster City has adopted Standard Conditions of Approval (SCOAs) relating to emergency preparedness and response for large new and redevelopment projects. Specifically, SCOA 1.24 requires contractors to submit emergency evacuation and response procedures to the City prior to demolition or development activities. Emergency preparedness and response procedures are to be developed for emergency notification in the event of an accidental spill or other hazardous materials emergency during project site preparation and development activities. These procedures include evacuation procedures, spill containment procedures, required personal protective equipment, as appropriate, in responding to the emergency.

The General Plan would also ensure that new development would conform to the Zoning Ordinance and any emergency considerations identified in the Ordinance. The City roadways would be required to maintain an acceptable level of service thereby allowing for adequate emergency access. Additionally, SCOA 1.24 described above requires site specific emergency plans and preparedness. As such, the proposed General Plan Update and Climate Action Plan would have a **less than significant impact** with regards to emergency response and evacuation plans, and no mitigation is required.

Impact 3.6-6: Project implementation may expose people or structures to a risk of loss, injury or death from wildland fires (No Impact)

All future projects allowed under the proposed General Plan Update and Climate Action Plan would be required to comply with the provisions of federal, State, and local requirements related to wildland fire hazards, including State fire safety regulations associated with wildland-urban interfaces, fire-safe building standards, and defensible space requirements.

Wildfires are a potential hazard to development and land uses located in large unmaintained open space, foothill and mountain areas. Foster City is located in a low-lying area totally surrounded by urban development. There are no unmaintained large open space areas within or surrounding the City. As such, the possibility of a wildland fire is non-existent. Therefore, the proposed General Plan Update and Climate Action Plan would not expose people or structures to a risk of loss, injury or death from wildland fires and this impact is **less than significant**.

This page left intentionally blank

Figure 3.6-1: San Carlos Airport

Legend

Airport Influence Area A

Airport Influence Area B

N

0 1 2

Miles

Sources: San Mateo County GIS; City/County Association of Governments of San Mateo County. Map date: February 25, 2015.

De Novo Planning Group

A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank

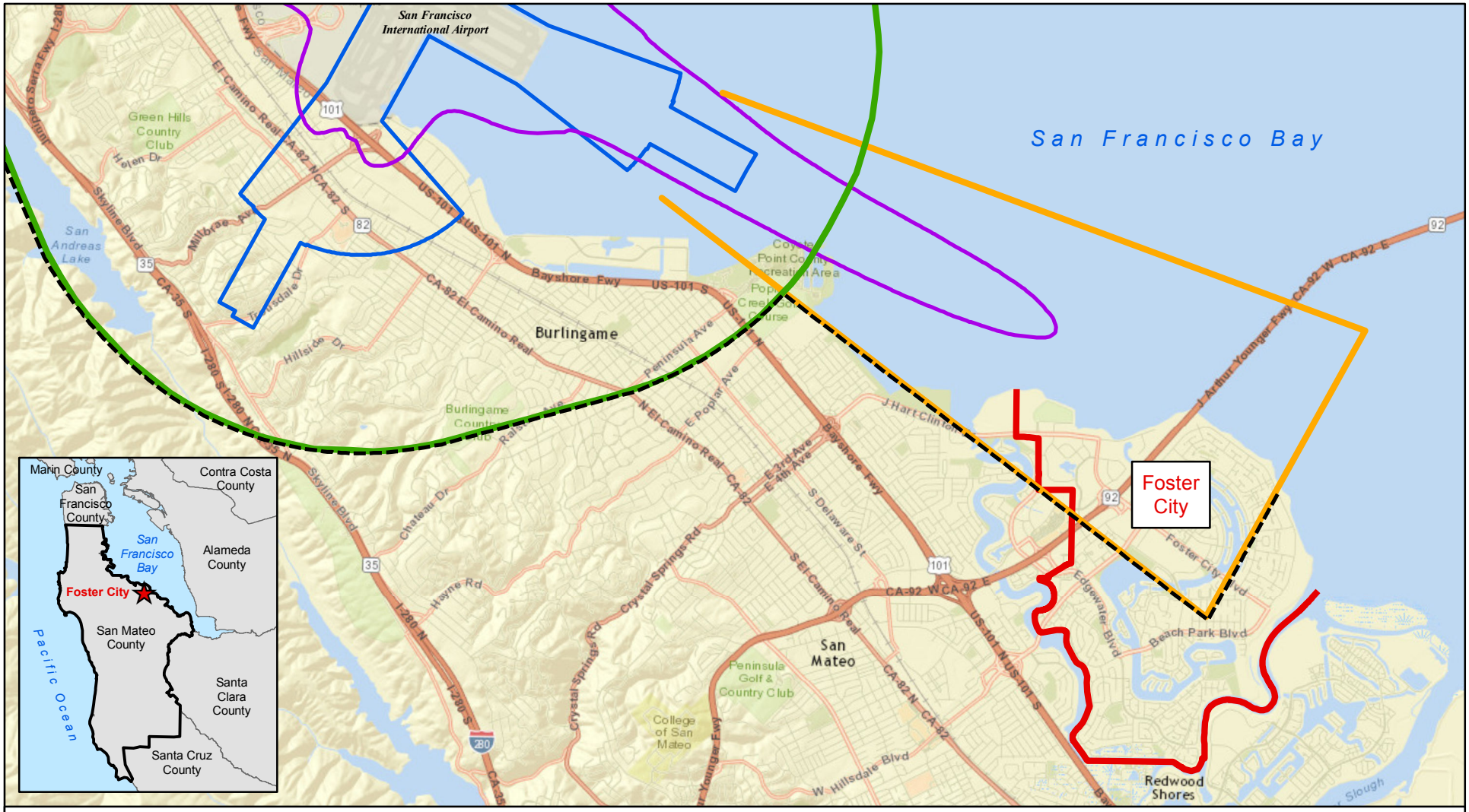


Figure 3.6-2: San Francisco Airport

Legend

- Airport Influence Area A - inset map
- Airport Influence Area B
- CNEL Countour, 2020 Forecast
- Outer Boundary of Safety Zones
- Outer Boundary of TERPS Approach and OEI Departure Surfaces
- 14 CFR Part 77 Conical Surface

N

0 0.5 1

Miles

De Novo Planning Group

A Land Use Planning, Design, and Environmental Firm

Sources: San Mateo County GIS; City/County Association of Governments of San Mateo County. Map date: February 25, 2015.

This page left intentionally blank

This section provides a background discussion of the regional hydrology, surface water bodies, seasonal and long-term hydrology, flooding, drainage, and water quality in Foster City and assesses potential impacts related to hydrology and water quality that could result from implementation of the proposed General Plan Update and Climate Action Plan. During the NOP scoping process, the San Francisco Bay Conservation and Development Commission (BCDC) requested that the EIR include an analysis of potential flooding impacts associated with sea level rise that may result from climate change. This issue is addressed below.

3.7.1 EXISTING SETTING

REGIONAL HYDROLOGY

Watersheds

A watershed is a region that is bound by a divide that drains to a common watercourse or body of water. Watersheds serve an important biological function, oftentimes supporting an abundance of aquatic and terrestrial wildlife including special-status species and anadromous and native local fisheries. Watersheds provide conditions necessary for riparian habitat.

The State of California uses a hierarchical naming and numbering convention to define watershed areas for management purposes. This means that boundaries are defined according to size and topography, with multiple sub-watersheds within larger watersheds. Table 3.7-1 shows the primary watershed classification levels used by the State of California. The second column indicates the approximate size that a watershed area may be within a particular classification level, although variation in size is common.

TABLE 3.7-1: STATE OF CALIFORNIA WATERSHED HIERARCHY NAMING CONVENTION

WATERSHED LEVEL	*APPROXIMATE SQUARE MILES (ACRES)*	*DESCRIPTION*
Hydrologic Region (HR)	12,735 (8,150,000)	Defined by large-scale topographic and geologic considerations. The State of California is divided into ten HRs.
Hydrologic Unit (HU)	672 (430,000)	Defined by surface drainage; may include a major river watershed, groundwater basin, or closed drainage, among others.
Hydrologic Area (HA)	244 (156,000)	Major subdivisions of hydrologic units, such as by major tributaries, groundwater attributes, or stream components.
Hydrologic Sub-Area (HSA)	195 (125,000)	A major segment of an HA with significant geographical characteristics or hydrological homogeneity.

SOURCE: CALWATER, CALIFORNIA INTERAGENCY WATERSHED MAPPING COMMITTEE 2008

HYDROLOGIC REGION/UNIT

Foster City is located within the San Francisco Bay Hydrologic Region. The San Francisco Bay hydrologic region covers approximately 4,506 square miles and includes all or portions of Marin, Napa, Sonoma, Solano, San Mateo, Santa Clara, Contra Costa, Santa Cruz, and Alameda counties.

Foster City is also within the San Francisco Bay Hydrologic Unit, which covers approximately 3,159 square miles (780,766 acres).

HYDROLOGIC AREAS

For watershed planning at the local level, hydrologic areas or subareas are generally used. Foster City lies within the San Francisco Bay Estuaries Hydrologic Area, which is approximately 398 square miles (98,503 acres). Figure 3.7-1 provides an illustration of the watersheds and hydrology of the region.

LOCAL HYDROLOGY

Climate

The climate in Foster City is typical of the San Francisco Bay area and is characterized by dry, mild summers and moist, cool winters. The average annualized high temperature is 71 F and the average low is 47 F. Average annual precipitation in the plan area is about 19 inches, with approximately 80 percent falling in the months of November through March. Wind is generally from the north-west with the mean hourly velocity of 10 miles per hour.

Drainage

The topography of Foster City is relatively flat with an existing ground surface elevation of between 5 and 7 feet above mean sea level. Foster City is almost entirely developed with residential uses and some commercial, offices, and industrial uses. These developed areas consist of extensive impervious surfaces including buildings, driveways, landscaping, roadways, and parking areas.

Stormwater collected throughout Foster City flows primarily to the Foster City Lagoon system, which serves as a drainage detention basin for storm water runoff (a small area near Port Royal Avenue flows to Marina Lagoon). The Foster City Lagoon system is designed and operated to store runoff from a 100-year storm event. Storm water enters the storm drain system through curb inlets and catch basins and drains into the Foster City Lagoon system and this flows or is pumped into the San Francisco Bay.

Hydrogeology

Foster City is within the Santa Clara Valley Groundwater Basin in the San Mateo Plain sub-basin, which is bounded by San Francisco Bay to the east, the Westside basin to the north (also referred to as Merced Valley basin), the Santa Cruz Mountains to the west, and San Francisquito Creek to the south. The basin is composed of alluvial fan deposits formed by tributaries to San Francisco Bay. The water-bearing formations comprise two groups; the Santa Clara Formation of the older Plio-Pleistocene age and the Quaternary age alluvial deposits. The alluvial deposits overlie the Santa Clara Formation and have a maximum depth of about 1,250 feet. The alluvial deposits thin out in the upland areas rising into the Santa Cruz Mountains. The groundwater depths in Foster City vary due to seasonal precipitation, infiltration rates, and tidal influences due to the proximity

of San Francisco Bay. Previous geotechnical investigations have encountered groundwater at a depth of three feet below ground surface.

FLOOD HAZARDS

FEMA Flood Zones

FEMA mapping provides important guidance for planning for flooding events and regulating development within identified flood hazard areas. FEMA's National Flood Insurance Program (NFIP) is intended to encourage State and local governments to adopt responsible floodplain management programs and flood measures. As part of the program, the NFIP defines floodplain and floodway boundaries that are shown on Flood Insurance Rate Maps (FIRMs). The FEMA Firm Map is shown on Figure 3.7-2.

Areas that are subject to flooding are indicated by a series of alphabetical symbols, indicating anticipated exposure to flood events.

- **ZONE A:** Subject to 100-year flooding with no base flood elevation determined. Identified as an area that has a one percent chance of being flooded in any given year.
- **ZONE AE:** Subject to 100-year flooding with base flood elevations determined.
- **ZONE AH:** Subject to 100-year flooding with flood depths between one and three feet being subject to areas of ponding with base flood elevations determined.
- **ZONE AO:** Subject to 100-year flooding with flood depths between one and three feet being subject to sheet flow on sloping terrain with average depths determined.
- **ZONE VE:** Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.
- **ZONE D:** Areas where flood hazards are yet to be determined.
- **ZONE X (Levee):** Areas protected by levees from the 1% annual chance (100-year) flood.

Foster City currently regulates its floodplains using the FIRM dated October 16, 2012. This FIRM designates Foster City's flood classification as Zone X (levee) for the land areas (areas protected by levees from 100-year flood; flood insurance is not mandatory), while the Foster City Lagoon and Marina Lagoon are Zone A (special flood hazard areas, no base flood elevations determined). FEMA has begun studies in the San Francisco Bay that will be used to update the FIRM. FEMA recently (July 2014) completed an engineering study of San Francisco Bay including detailed analyses of coastal hazards as part of the California Coastal Analysis and Mapping Project (CCAMP).

Based on the FEMA coastal flood hazard study, roughly 85 percent of Foster City's levee system does not meet the required freeboard elevation per Title 44 of the Code of Federal Regulations (CFR), Section 65.10 and therefore, the levee will not retain accreditation status when the FIRM is updated in mid-2016. Currently, land within the city limits is classified as Zone X, meaning

mandatory flood insurance is not required. While flood insurance is not mandatory, homeowners in Zone X can still purchase flood insurance through the National Flood Insurance Program (NFIP) at a lower rate for low-risk area. However, when the new maps become effective in 2016, Foster City will be designated as a high-risk Special Flood Hazard area and property owners with federally-backed loans will be required to purchase annual flood insurance and pay higher rates, unless progress is made to the satisfaction of FEMA to meet FEMA requirements.

The City is in the process of reviewing and assessing levee improvement alternatives that may be necessary to restore levee accreditation. For Foster City to be able to retain Zone X designation while the levee modifications are being done, the FEMA regional office has previously suggested that the City apply for levee seclusion mapping and a Zone A99 designation. The goal of the seclusion map is to maintain Zone X designation while the City secures funding, design, and construction completion of the levee improvements.[1]

Dam Inundation

Dam inundation maps show areas that lie within the potential dam failure inundation zone. Foster City lies within the inundation zone for Lower Crystal Springs Reservoir located approximately five miles west of the city, as shown on Figure 3.7-3.

The Lower Crystal Springs Dam is a gravity dam constructed across the San Mateo Creek, impounding water to form the Lower Crystal Springs Reservoir. It was among the first concrete gravity dams built in the western United States. The structure was completed in 1888, and has survived both the 1906 San Francisco earthquake and the 1989 Loma Prieta earthquake despite the fact that it is located directly on the San Andreas Fault.

The Lower Crystal Springs Dam is owned by the City and County of San Francisco, and has a capacity of 57,910 acre-feet. The water level at Lower Crystal Springs Dam has been lowered pending a major renovation designed to ensure that the dam would survive without failure during a major seismic and/or maximum probable flood event.

According to the Association of Bay Area Governments (2012), a failure of the Lower Crystal Springs Dam would send flood waters down the San Mateo Creek and overland areas through Hillsbourgh and into the northern part of San Mateo before heading southward into San Mateo and ultimately Foster City.

Tsunamis

A tsunami is a standing wave(s) created in the ocean that can follow seismic, landslide and other events. In California, water from the Pacific Ocean, including bays and estuaries, are a potential source of tsunamis.

In 2009, a *Tsunami Inundation Map for Emergency Planning* (CEMA 2009) was prepared for many parts of the San Francisco Bay Area to assist cities and counties in identifying their tsunami hazard

[1] Foster City Staff Report: Report on FEMA Coastal Flood Hazard Study and Levee Protection Planning for Foster City. Jeff Moneda, Director of Public Works/City Engineer. March 23, 2015.

(see Figure 3.7-2). The map is intended for local jurisdictional, coastal evacuation planning uses. In Foster City, the tsunami inundation line is outside of all developed areas. The inundation area extends into Belmont Slough on the southeastern side of Foster City. Additionally, the inundation area covers vacant land just west of the Mariner's Point Golf Links on the northern side of Foster City.

Seiche

A seiche is a standing wave(s) in enclosed or semi-enclosed basins such as lakes, bays or harbors. Seiches can be triggered in an otherwise still body of water by strong winds, changes in atmospheric pressure, earthquakes, tsunami or tides.

Detailed tidal records for the San Francisco Bay have been maintained for approximately 100 years, and during that time, a damaging seiche has not occurred. A seiche of approximately four inches occurred during the 1906 earthquake. It is unlikely that the San Francisco Bay would produce a damaging seiche. A seiche in the Foster City Lagoon is considered highly unlikely given the shallow water depth and lack of broad surface area.

Mudflows

Mudflows are a form of landslide, which is influenced by physical factors, such as slope, soil, vegetation, and precipitation. Mudflows require a slope, and can occur naturally from seismic activity, excessive saturation, and wildfires, or from human-made conditions such as construction disturbance, vegetation removal, wildfires, etc.

Within San Mateo County, the hillsides have a medium to very high susceptibility for landslides, while the valleys have a low susceptibility. Given the relatively level slopes throughout Foster City, the landslide potential is very low. As such, the mudslide potential is also very low.

Sea Level Rise

Global climate change is a natural phenomenon that results in the cooling and warming of the earth over geologic time. This process results in periods of glaciation with an associated sea level reduction, and warming with sea level rise. Today, global climate change is in a warming trend, which is anticipated to result in sea level rise.

Historical records show that sea level in San Francisco Bay has risen about seven inches (18 cm) over the past 100 years. Scientists agree that the rate of sea level rise is accelerating, but projections of future sea levels vary considerably. Present California coastline projections reported by the California Natural Resources Agency and the California Energy Commission predict 10 to 18 inches of sea level rise by 2050 (using 2000 as the baseline) and between 40 and 55 inches by 2100, depending upon the emission scenario used[2]. In 2009, the Bay Conservation and

[2] The Impacts of Sea Level Rise on the San Francisco Bay: http://www.energy.ca.gov/2012publications/CEC-500-2012-014/CEC-500-2012-014.pdf

Development Commission (BCDC) released *Living With a Rising Bay*, an assessment that included the following[3]:

- Increased flooding risk for 270,000 Bay Area residents with a 55 inch rise
- Estimated $36 billion in at-risk property by 2050, and $62 billion by 2100
- Estimated 95 percent of tidal wetlands vulnerable to sea level rise, which may increase flooding and erosion

In July 2012, the California Natural Resources Agency and the California Energy Commission released a revised report, *Climate Change Reports Highlight Impacts and Challenges for California,*[4] which confirmed the 2009 report and stated if population and development were kept at today's levels, a 100-year flood in 2100, after a 55-inch sea-level rise, would put at risk 480,000 people and $100 billion of property (in 2000 dollars) along San Francisco Bay and the open coast. New decision-support tools that incorporate sea-level rise into investment decisions for upgrading coastal infrastructure are vital to California's economy.[5]

The Pacific Institute, with support from the California Energy Commission (CEC), California Department of Transportation, and the Ocean Protection Council, has produced inundation maps for the shores of San Francisco Bay that indicate which areas are vulnerable to 16-inch and 55-inch rises in sea level.[6] The Bay shoreline, from Brisbane to East Palo Alto, is a typical San Francisco Bay low-lying shoreline which provides vital ecological, industrial, and residential functions yet it is already vulnerable to inundation from both tidal and fluvial sources. Both the San Francisco Airport and the Port of Redwood City are at risk, as are segments of critical transportation infrastructure including segments of Highway 101, approaches to the Dumbarton and San Mateo Bridges, and Caltrain railroad. As shown in Figure 3.7-5, because all of Foster City is located within this area, it is susceptible to this sea level rise.

According to a 2009 study[7] by the CEC, the Pacific Institute, and others, and confirmed by the 2012 report[8], 110,000 people living in areas of San Mateo County are vulnerable to a 100-year flood event with a 4.5-foot rise in sea level. The County infrastructure and facilities at risk from the same event include:

- $24 billion worth of buildings and contents, mostly along the Bay (replacement value);
- 530 miles of roadways;
- 10 miles of railroads;
- San Francisco Airport (SFO), including the 31 MW United Cogen power plant;

[3] San Francisco Bay Conservation and Development Commission. 2009. (April) Draft Staff Report. Living with a Rising Bay: Vulnerability and Adaptation in San Francisco Bay and on its Shoreline. Available at: http://www.bcdc.ca.gov/proposed_bay_plan/bp_1-08_cc_draft.pdf

[4] http://www.climatechange.ca.gov/adaptation/third_assessment/

[5] http://www.energy.ca.gov/2012publications/CEC-500-2012-007/CEC-500-2012-007.pdf

[6] Maps available at http://www.pacinst.org/reports/sea_level_rise/hazmaps.html

[7] Heberger, Matthew, Heather Cooley, Pablo Herrera, Peter H. Gleick, and Eli Moore (2009). The Impacts of Sea Level Rise on the California Coast. PIER Research Report, CEC-500-2009-024-D, Sacramento, CA: California Energy Commission.

[8] The impacts of Sea Level Rise on the San Francisco Bay: http://www.energy.ca.gov/2012publications/CEC-500-2012-014/CEC-500-2012-014.pdf

- Wastewater treatment plants operated by the Cities of South San Francisco/San Bruno, City of Millbrae, City of San Mateo, South Bayside System Authority, Mid-Coastside Sewer Authority, and SFO (total treatment capacity of approximately 44 MGD);
- 78 EPA-regulated hazardous materials sites;
- 34 square miles of coastal wetlands.

The range of current sea level rise estimates presents difficult challenges to cities that must decide how to expend limited resources to protect critical land uses and infrastructure. As the shoreline migrates landward, habitats and flood hazard areas will also shift. Past development of residential, commercial, and public access infrastructure may limit the flexibility of set-backs or adjustments to the Bay shoreline.

Extreme High Tide

Extreme high tides in San Francisco Bay result from the combined effects of astronomical high tides (related to the lunar cycle) and other factors, including winds, barometric pressure, ocean temperatures, and freshwater runoff. In California, the highest astronomical tides occur in the summer and winter, and therefore extreme high tides are most likely to occur during these times. The U.S. Army Corps of Engineers has developed an estimated 100-year high tide elevation for various locations in the San Francisco Bay (an extreme high tide with a probability of occurrence every 100 years). The elevation of the estimated 100-year tide at Foster City is approximately 7.1 feet.

WATER QUALITY

Stormwater Runoff

Potential hazards to surface water quality include the following nonpoint pollution problems: high turbidity from sediment resulting from erosion, contaminated street and lawn run-off from urban areas, and warm water drainage discharges into cold water systems.

The most critical period for surface water quality is following a rainstorm which produces significant amounts of drainage runoff into drainages at low flow, resulting in poor dilution of contaminates in the low flowing drainage. Such conditions are most frequent during the fall at the beginning of the rainy season when stream flows are near their lowest annual levels. Besides the greases, oils, pesticides, litter, and organic matter associated with such runoff, heavy metals such as copper, zinc, and cadmium can cause considerable harm to aquatic organisms when introduced to drainages in low flow conditions.

Surface water pollution is also caused by erosion. Excessive and improperly managed grading, vegetation removal, quarrying, logging, and agricultural practices all lead to increased erosion of exposed earth and sedimentation of watercourses during rainy periods. In slower moving water bodies these same factors often cause a buildup of siltation, which ultimately reduces the capacity of the water system to percolate and recharge groundwater basins, as well as adversely affecting both aquatic resources and flood control efforts.

Impaired Water Bodies

Section 303(d) of the federal Clean Water Act requires states to identify waters that do not meet water quality standards or objectives and thus, are considered "impaired." Once listed, Section 303(d) mandates prioritization and development of a Total Maximum Daily Load (TMDL). The TMDL is a tool that establishes the allowable loadings or other quantifiable parameters for a waterbody and thereby the basis for the states to establish Water quality-based controls. The purpose of TMDLs is to ensure that beneficial uses are restored and that water quality objectives are achieved.

There are three Section 303(d) listed impaired water bodies in the immediate vicinity of Foster City. The impaired water bodies include the Marina Lagoon (aka Seal Slough), San Francisco Bay Lower, and San Francisco Bay South. The cause of the impairment includes coliform, chlordane, DDT, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, polychlorinated biphenyls (PCBs), PCBs - dioxin-like, and selenium.

There are established TMDLs for mercury and PCBs on the San Francisco Bay Lower. There is a TMDL for mercury on the San Francisco Bay South. All other impairments are in need of a TMDL.

Groundwater Quality

The Regional Water Quality Control Board (RWQCB) has found that saltwater intrusion has occurred to groundwater within the San Mateo Plain sub-basin. Additionally, samples from wells within the sub-basin have found concentrations of nitrates/nitrogen in excess of maximum contaminant levels established by the California Department of Health Services and the United States Environmental Protection Agency.

3.7.2 REGULATORY SETTING

There are a number of regulatory agencies whose responsibility includes the oversight of the water resources of the state and nation including the Federal Emergency Management Agency, the US Environmental Protection Agency, the US Army Corps of Engineers, the State Water Resources Board, and the Regional Water Quality Control Board. The following is an overview of the federal, state and local regulations that are applicable to the proposed project.

FEDERAL

Clean Water Act of 1972

The Clean Water Act (CWA), initially passed in 1972, regulates the discharge of pollutants into watersheds throughout the nation. Section 402(p) of the act establishes a framework for regulating municipal and industrial stormwater discharges under the National Pollutant Discharge Elimination System (NPDES) Program. Section 402(p) requires that stormwater associated with industrial activity that discharges either directly to surface waters or indirectly through municipal separate storm sewers must be regulated by an NPDES permit.

The State Water Resources Control Board (SWRCB) is responsible for implementing the Clean Water Act and does so through issuing NPDES permits to cities and counties through regional water quality control boards. Federal regulations allow two permitting options for storm water discharges (individual permits and general permits). The SWRCB elected to adopt a statewide general permit (Water Quality Order No. 2003-0005-DWQ) for small Municipal Separate Storm Sewer Systems (MS4s) covered under the CWA to efficiently regulate numerous storm water discharges under a single permit. Permittees must meet the requirements in Provision D of the General Permit, which require the development and implementation of a Storm Water Management Plan (SWMP) with the goal of reducing the discharge of pollutants to the maximum extent practicable.

National Pollutant Discharge Elimination System (NPDES)

National Pollutant Discharge Elimination System (NPDES) permits are required for discharges of pollutants to navigable waters of the United States, which includes any discharge to surface waters, including lakes, rivers, streams, bays, the ocean, dry stream beds, wetlands, and storm sewers that are tributary to any surface water body. NPDES permits are issued under the Federal Clean Water Act, Title IV, Permits and Licenses, Section 402 (33 USC 466 et seq.)

The Regional Water Quality Control Board (RWQCB) issues these permits in lieu of direct issuance by the Environmental Protection Agency, subject to review and approval by the EPA Regional Administrator (EPA Region 9). The terms of these NPDES permits implement pertinent provisions of the Federal Clean Water Act and the Act's implementing regulations, including pre-treatment, sludge management, effluent limitations for specific industries, and anti- degradation. In general, the discharge of pollutants is to be eliminated or reduced as much as practicable so as to achieve the Clean Water Act's goal of "fishable and swimmable" navigable (surface) waters. Technically, all NPDES permits issued by the RWQCB are also Waste Discharge Requirements issued under the authority of the CWC.

These NPDES permits regulate discharges from publicly owned treatment works, industrial discharges, stormwater runoff, dewatering operations, and groundwater cleanup discharges. NPDES permits are issued for five years or less, and are therefore to be updated regularly. To expedite the permit issuance process, the RWQCB has adopted several general NPDES permits, each of which regulates numerous discharges of similar types of wastes. The SWRCB has issued general permits for stormwater runoff from construction sites statewide. Stormwater discharges from industrial and construction activities can be covered under these general permits, which are administered jointly by the SWRCB and RWQCB.

Rivers and Harbors Appropriation Act of 1899

One of the country's first environmental laws, this Act established a regulatory program to address activities that could affect navigation in Waters of the United States.

U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (USACE) is a federal agency that serves as a public engineering, design, and construction management agency. The USACE is responsible for investigating, developing, and maintaining water and environmental resources throughout the nation. The CWA authorizes the USACE to issue permits for discharges of dredged or fill (collectively referred to as fill) material into "waters of the United States." Projects for which fill permits are issued must be in compliance with EPA guidelines. The guidelines also prohibit discharges that would cause significant degradation of the aquatic environment or violate state water quality standards. The CWA grants the EPA veto authority over the USACE if it determines that a project will have an unacceptable adverse effect on municipal water supplies, shellfish beds, and fishing areas. The USACE also has permitting authority over navigable waters under Section 10 of the Rivers and Harbors Act of 1899. Navigable waters are defined as those waters that are subject to the ebb and flow of the tide and/or are presently, formerly, or may be used in the future to transport interstate or foreign commerce. Activities covered by the Rivers and Harbor Act include construction of in-stream or other infringing structures, such as piers, revetments, and breakwaters, or discharge of fill into navigable waterways.

National Flood Insurance Act of 1968

The National Flood Insurance Act of 1968 was motivated by a long history of property damage and loss of life due to flooding. The act led to the creation of the National Flood Insurance Program (NFIP). The NFIP goals are two-fold:

- To provide flood insurance for structures and contents in communities that adopt and enforce an ordinance outlining minimal floodplain management standards.
- To identify areas of high and low flood hazard and establish flood insurance rates for structures inside each flood hazard area.

Federal Emergency Management Agency (FEMA)

FEMA operates the National Flood Insurance Program (NFIP). Participants in the NFIP must satisfy certain mandated floodplain management criteria. The National Flood Insurance Act of 1968 has adopted as a desired level of protection, an expectation that developments should be protected from floodwater damage of the Intermediate Regional Flood (IRF). The IRF is defined as a flood that has an average frequency of occurrence on the order of once in 100 years, although such a flood may occur in any given year. Communities are occasionally audited by the Department of Water Resources to insure the proper implementation of FEMA floodplain management regulations.

Executive Order 11988 – Floodplain Management

Executive Order 11988 (Floodplain Management) requires federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid and direct indirect support of floodplain development wherever there is a practicable alternative. As such, each agency shall provide leadership and shall take action to

reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural beneficial values served by floodplains.

The Department of Transportation (DOT) Order 5650.2, which implements Executive Order 11988, prescribes policies and procedures for ensuring the proper consideration is given to the avoidance and mitigation of adverse floodplain impacts in agency actions, planning programs, and budget requests.

STATE

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne) (California Water Code Sections 13000-14290) entitles the SWRCB and nine RWQCBs the ultimate authority over California water quality policies and rights. Under this act, each RWQCB is authorized to regulate the discharge of waste that could affect the quality of the State's waters, including projects that do not require a federal permit through the US-ACOE. The Porter-Cologne Act also established the responsibility of the RWQCBs for adopting, implementing, and enforcing water quality control plans (Basin Plans), which set forth the State's water quality standards (i.e. beneficial uses of surface waters and groundwater) and the objectives or criteria necessary to protect those beneficial uses. The NPDES permits must be consistent with the Basin Plans, specifically the San Francisco Bay Basin Water Quality Control Plan for development within Foster City.

Assembly Bill 162

Assembly Bill 162 (AB 162) was signed into law in October 2007 and regulated the way in which individual cities' general plans must address the issue of flood management. AB 162 is intended to help ensure that local planning agencies consider and plan for the risks of floods as they prepare their general plans. Such planning is intended to complement the investments that California is making in levee reinforcements and related flood prevention capital projects.

California Code of Regulations

California Code of Regulations (CCR) Title 22, Chapter 15, Article 20 requires all public water systems to prepare a Consumer Confidence Report for distribution to its customers and to the Department of Health Services. The Consumer Confidence Report provides information regarding the quality of potable water provided by the water system. It includes information on the sources of the water, any detected contaminants in the water, the maximum contaminants levels set by regulation, violations and actions taken to correct them, and opportunities for public participation in decisions that may affect the quality of the water provided.

California Department of Health Services

The Department of Health Services, Division of Drinking Water and Environmental Management, oversees the Drinking Water Program. The Drinking Water Program regulates public water systems and certifies drinking water treatment and distribution operators. It provides support for small water systems and for improving their technical, managerial, and financial capacity. It provides

subsidized funding for water system improvements under the State Revolving Fund ("SRF") and Proposition 50 programs. The Drinking Water Program also oversees water recycling projects, permits water treatment devices, supports and promotes water system security, and oversees the Drinking Water Treatment and Research Fund for MTBE and other oxygenates.

San Francisco Bay Conservation and Development Commission

The San Francisco Bay Conservation and Development Commission (BCDC) is a state agency that has regulatory jurisdiction over the San Francisco Bay and its shoreline. BCDC's jurisdiction generally extends to all areas of the San Francisco Bay that are subject to tidal action, including sloughs and marshlands, to a 100-foot shoreline band surrounding the Bay, to salt ponds and managed wetlands as defined in the CWA, and certain designated waterways. Specifically, BCDC has jurisdiction over marshlands lying between mean high tide and five feet above mean sea level; tidelands (lying between mean high tide and mean low tide); and submerged lands (lands lying below mean low tide). Development located in BCDC's jurisdictional area requires an approval from BCDC in addition to any required local agency approvals.

San Mateo Countywide Water Pollution Prevention Program

The San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) was established in 1990 to reduce the pollution carried by stormwater into local creeks, the San Francisco Bay, and the Pacific Ocean.

The program is a partnership of the City/County Association of Governments (C/CAG), each incorporated city and town in the county, and the County of San Mateo, which share a common National Pollutant Discharge Elimination System (NPDES) permit. The Federal Clean Water Act and the California Porter-Cologne Water Quality Control Act require that large urban areas discharging stormwater into the San Francisco Bay or the Pacific Ocean have an NPDES permit to prevent harmful pollutants from being dumped or washed by stormwater runoff, into the stormwater system, then discharged into local waterbodies. San Mateo, Santa Clara, Alameda, Marin, Sonoma, Solano, San Francisco, Fairfield/Suisun, Vallejo and Contra Costa Counties have each obtained these permits. Certain types of businesses must also apply for individual coverage, by filing a Notice of Intent (NOI) with the State Water Resources Control Board

The Municipal Regional Permit (MRP) outlines the State's requirements for municipal agencies in San Mateo County to address the water quality and flow-related impacts of stormwater runoff. Some of these requirements are implemented directly by municipalities while others are addressed by the San Mateo Countywide Water Pollution Prevention Program on behalf of all the municipalities. The MRP is a comprehensive permit that requires activities related to construction sites, industrial sites, illegal discharges and illicit connections, new development, and municipal operations. The permit also requires a public education program, implementing targeted pollutant reduction strategies, and a monitoring program to help characterize local water quality conditions and to begin evaluating the overall effectiveness of the permit's implementation.

LOCAL

City of Foster City General Plan

The adopted City of Foster City General Plan identifies the following goals, policies, and programs related to hydrology and water quality within the Safety Element, and Conservation Element:

SAFETY POLICIES

Protect from Floods

S-4 **Flood Protection.** The City will maintain the City's levees and lagoon system for flood protection.

S-5 **Flood Plain Regulations.** The City will control development to minimize risks to persons and property within any special flood hazards area through flood plain regulations.

Prepare to Respond to Emergencies

S-10 **Water Supply.** The City will provide an adequate supply of water for daily use and emergency situations.

SAFETY PROGRAMS

Protect From Flood Hazards.

S-g **Maintain Levees and Lagoon for Flood Protection.** The City will maintain the City's levees and lagoon for flood protection pursuant to the "Operation and Maintenance Manual, Foster City Levees and Pump Station" and the "Lagoon Management Plan."

S-h **Flood Plain Regulations.** The City will evaluate any proposed development within special flood hazard areas for conformance with the City's flood plain regulations as contained in Chapter 15.36 of the Foster City Municipal Code.

Prepare to Respond to Emergencies

S-s **Monitoring of Water, Sewer and Lagoon Systems.** The City will provide and maintain a consolidated remote monitoring capability for the water distribution system, the wastewater collection system and the lagoon system that can be monitored 24 hours a day by Public Works staff or Police Department staff.

S-t **Water Supply.** The City will study the feasibility of adding water storage and/or supply facilities.

S-u **Water Delivery System.** The City will ensure the adequacy of the water delivery system through periodic testing, flushing, and replacement of parts as needed.

CONSERVATION POLICIES

Protect and Conserve Natural Resources

C-1 **Water Resources.** Conserve water resources in existing and new development.

C-2 **Water Quality Monitoring.** Continue to monitor the water quality of the lagoon.

CONSERVATION PROGRAMS

C-a **Water Saving Landscaping and Irrigation.** Promote the use of low-water-use landscaping and irrigation devices in parks, and during review of new projects and modifications to existing developments.

C-b **Property Owner Water Saving Techniques.** Encourage all property owners to implement the following conservation techniques: utilize drought tolerant plant materials, limit turf areas to 25% of landscaping, limit hours of the day for watering, retrofit with water-conserving fixtures, retrofit existing bathrooms and install new bathrooms with ultra low-flow toilets and water-conserving shower heads.

C-c **Water Emergencies.** Declare a state of water emergency when mandatory water conservation and/or water rationing is necessary and prepare newsletter articles and brochures to educate customers about water conservation.

C-d **Water Conservation Plan.** Update the City's Water Conservation Plan. This plan describes water system deficiencies, and water supply and demand within the District service area.

C-e **Water Quality.** Continue existing programs to conserve and protect water quality in accordance with accepted standards.

C-f **Lagoon Water Quality.** Continue to implement the Lagoon Management Plan in order to conserve and protect lagoon water quality by exchanging water with the Bay, testing and monitoring the water quality in the lagoon system.

C-i **Water Quality Discharge.** Conserve and protect the quality of the water that is discharged into the San Francisco Bay through implementation of the Lagoon Management Plan.

C-y **Wetland Habitat.** Protect wetland habitat from human disturbance by posting signs prohibiting trespassing on vegetation typical of wetland areas.

C-z **57 Acre Wildlife Refuge.** Prohibit development within 57 acre wildlife refuge.

C-aa **Projects in the Vicinity of Shoreline Band.** Strictly control development proposals in the vicinity of the shoreline band.

C-bb **National Pollution Discharge Elimination System (NPDES) Stormwater Management Plan.** Continue working with the county-wide task force to develop and implement a stormwater management plan to satisfy NPDES requirements.

Foster City Standard Conditions of Approval

Foster City has adopted Standard Conditions of Approval (SCOAs) for large new and redevelopment projects. The following SCOAs related to stormwater drainage and infrastructure would apply to any proposed large new or redevelopment project:

SCOA 1.13: Prior to issuance of a building permit, the plans shall demonstrate compliance with the San Mateo Countywide Water Pollution Prevention Program, (see http://flowstobay.org/bs_new_development.php) including, but not limited to, submittal of checklists related to impervious surface and stormwater:

1.13.1 C.3 and C.6 Data Collection Form

1.13.2 Project Applicant Checklist for NPDES Permit Requirements

1.13.3 Stormwater Requirements Checklist

1.13.4 Stormwater Control Plan: A Stormwater Control Plan (SWCP) shall be required and approved by the City prior to issuance of the first building permit. Any improvements identified in the SWCP shall be constructed prior to first occupancy to the satisfaction of the Public Works Director/City Engineer.

SCOA 2.4: Prior to issuance of a building permit, the Construction Best Management Practices (BMPs) related to stormwater prevention shall be included as notes on the building permit drawings (see http://www.fostercity.org/Services/permits/List-of-Forms.cfm).

SCOA 2.6: Prior to issuance of a building permit, any development involving one or more acres of total land area must obtain a General Permit from the State Water Resources Control Board. This permit requires the owner/developer to do the following:

a) Submit a Notice of Intent (NOI) to the State Water Resources Control Board prior to commencement of construction activity;

b) Copies of the NOI and the SWPPP must be submitted to the Engineering Division along with proof of compliance.

SCOA 2.7: The applicant shall prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) designed to reduce potential adverse impacts to surface water quality during the construction period. The SWPPP shall be prepared by a Qualified SWPPP Developer (QSD). The SWPPP shall include the minimum BMPs required for the identified Risk level. BMP implementation shall be consistent with the BMP requirements in the most recent version of the California Stormwater Quality Association Stormwater Best Management Handbook-Construction. The SWPPP shall be designed to address the following objectives:

1) All pollutants and their sources, including sources of sediment associated with construction activity are controlled;

2) Where not otherwise required to be under a Regional Water Board permit, all non-stormwater discharges are identified and either eliminated, controlled, or treated;

3) Site Best Management Practices (BMPs) are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater

discharges from construction activity to the Best Available Technology and Best Conventional Technology (BAT/BCT) standard; and

4) Stabilization BMPs installed to reduce or eliminate pollutants after construction are completed.

5) Best Management Practices (BMPs) shall be designed to mitigate construction-related pollutants and at a minimum, include the following:

    a. Practices to minimize the contact of construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) with stormwater. The SWPPP shall specify properly-designed centralized storage areas that keep these materials out of the rain.

    b. Reduce erosion of exposed soil which may include, but are not limited to: soil stabilization controls, watering for dust control, perimeter silt fences, placement of hay bales, and sediment basins. The potential for erosion is generally increased if grading is performed during the rainy season because disturbed soil can be exposed to rainfall and storm runoff.

    c. If grading must be conducted during the rainy season, the primary BMPs selected shall focus on erosion control (i.e. keeping sediment on the site). End-of-pipe sediment control measures (e.g. basins and traps) shall be used only as secondary measures. Ingress and egress from the construction site shall be carefully controlled to minimize off-site tracking of sediment. Vehicle and equipment wash-down facilities shall be designed to be accessible and functional during both dry and wet conditions.

6) The SWPPP shall specify a monitoring program to be implemented by the construction site supervisor, and shall include both dry and wet weather inspections. In addition, in accordance with State Water Resources Control Board Resolution No. 2001-046, monitoring shall be required during the construction period for pollutants that may be present in the runoff that are "not visually detectable in runoff."

To educate on-site personnel and maintain awareness of the importance of stormwater quality protection, site supervisors shall conduct regular tailgate meetings to discuss pollution prevention. The frequency of the meetings and required personnel attendance list shall be specified in the SWPPP.

A QSD shall be responsible for implementing BMPs at the site. The QSD shall also be responsible for performing all required monitoring, and BMP inspection, maintenance and repair activities. The developer shall retain an independent monitor to conduct weekly inspections and provide written monthly reports to the City of Foster City Public Works Department to ensure compliance with the SWPPP. Water Board personnel, who may make unannounced site inspections, are

empowered to levy considerable fines if it is determined that the SWPPP has not been properly prepared and implemented.

SCOA 2.8: The applicant shall fully comply with the C.3 provisions of the Municipal Regional Stormwater NPDES Permit (MRP). Responsibilities include, but are not limited to, designing Best Management Practices (BMPs) into the project features and operation to reduce potential impacts to surface water quality associated with operation of the project. These features shall be included in the design-level drainage plan and final development drawings. Specifically, the final design shall include measures designed to mitigate potential water quality degradation of runoff from all portions of the completed development.

All Stormwater control measures outlined in the San Mateo Countywide Water Pollution Prevention Program's January 2013 C.3 Stormwater Technical Guidance manual (or updated version) shall be incorporated into the project design. Low Impact Development features, including rainwater harvesting and reuse, and passive, low-maintenance BMPs (e.g., grassy swales, porous pavements) are required under the MRP. Higher-maintenance MBP's may only be used if the development of at-grade treatment systems is not possible, or would not adequately treat runoff. Funding for long-term maintenance for all BMPs must be specified (as the City will not assume maintenance responsibilities for these features).The applicant shall establish a self-perpetuating drainage system maintenance program for the life of the project that includes annual inspections of any stormwater detention devices and drainage inlets. Any accumulation of sediment or other debris would need to be promptly removed. In addition, an annual report documenting the inspection and any remedial action conducted shall be submitted to the Public Works Development for review and approval.

The City of Foster City Public Works Department shall ensure that the SWPPP and drainage plan are prepared and are adequate prior to approval of the first building permit for the site.

SCOA 5.12: Prior to issuance of a building permit, the improvement plans shall include the design for a stormwater collection system generally as required and approved by the City.

SCOA 5.13: Storm Water System

5.13.1 Prior to issuance of a building permit, the system shall be designed to be capable of handling a 25-year storm with the hydraulic grade line at least one foot below every grate, to the satisfaction of the Engineering Division.

5.13.2 Calculations and plans showing hydraulic gradelines shall be submitted as part of the improvement plans package.

5.13.3 Items of construction shall include at least the following:

- surface and subsurface storm drain facilities;
- manholes with manhole frames and covers;
- catch basins and laterals;

- construct all catch basins as silt detention basins;
- And together with appurtenances, to any or all of the above.

SCOA 5.15: Prior to issuance of a building permit, a complete storm drainage study of the proposed development must be submitted showing the amount of runoff, and existing and proposed drainage structure capacities. This study shall be subject to review and approval by the Engineering Division. All needed construction improvements will be made by the applicants. No overloading of the existing system will be permitted. A hydrology/hydraulic analysis shall be completed on the existing storm drain system to verify it is adequately sized to handle the run-off from the project.

SCOA 5.16: Prior to issuance of a building permit, existing storm drain pipe lines on the project site and downstream thereof shall be televised to verify they have not become filled with sediment and cleaned out if necessary.

SCOA 5.17: Prior to issuance of a building permit, should the City determine that the City's storm drain system or storm drain pumping capacity requires expansion or modification as a result of the applicants' development, the applicants shall pay for all necessary improvement costs. The timing and amount of payment shall be as determined by the City.

SCOA 5.18: Post-construction survey reports shall be completed on the existing storm drain system. Any necessary repairs to restore the facilities shall be an element of the report. If required, the existing storm drains shall be cleaned as necessary during and at the completion of the project.

SCOA 9.5: The property owners/tenants are prohibited from discharging any commercial fertilizers, pesticides or herbicides into the lagoon or water features.

SCOA 9.9: The applicant/property owners/tenants shall control accumulations of petroleum wastes and other pollutants in the streets and parking areas by frequent sweeping.

3.7.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on the environment associated with hydrology and water quality if it will:

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion, siltation, run-off or flooding on- or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- Place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- Expose people or structures to significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- Result in inundation by seiche, tsunami or mudflow.

The City of Foster City's Environmental Review Guidelines identify the following Thresholds of Significance:

- Projects that have the potential to impact the City's lagoon system in its functionality as the City storm drain system and storm drainage detention basin shall be considered to have a potentially significant environmental impact and therefore shall be required to prepare a hydrology and water quality impact analysis to be prepared by qualified experts as part of an overall environmental assessment on the project.
- Projects that have the potential to impact the chemistry of the City's lagoon shall be considered to have a potentially significant environmental impact and therefore shall be required to prepare a hydrology and water quality impact analysis to be prepared by qualified experts as part of an overall environmental assessment on the project.

IMPACTS AND MITIGATION

Impact 3.7-1: Project implementation could result in a violation of water quality standards or waste discharge requirements (Less than Significant)

Construction-Related Water Quality Impacts: Grading, excavation, removal of vegetation cover, and loading activities associated with future construction activities could temporarily increase runoff, erosion, and sedimentation. Construction activities also could result in soil compaction and wind erosion effects at construction sites and staging areas.

As required by the Clean Water Act and by the City's SCOAs (SCOA 1.13, 2.4, 2.6, and 2.7), each subsequent development, redevelopment, or improvement project will require an approved Storm Water Pollution Prevention Plan (SWPPP) that includes best management practices for grading and preservation of topsoil. A SWPPP is not required if the project will disturb less than one acre. SWPPPs are designed to control storm water quality degradation to the extent practicable using best management practices during and after construction.

Future development, redevelopment, and infrastructure projects must submit the SWPPP with a Notice of Intent to the Regional Water Quality Control Board (RWQCB) to obtain a General Permit. The RWQCB is an agency responsible for reviewing the SWPPP with the Notice of Intent, prior to issuance of a General Permit for the discharge of storm water during construction activities. The RWQCB accepts General Permit applications (with the SWPPP and Notice of Intent) after specific projects have been approved by the lead agency. The lead agency for each specific project that is larger than one acre is required to obtain a General Permit for discharge of storm water during construction activities prior to commencing construction (per the Clean Water Act).

Development-Related Water Quality Impacts: Existing development, as well as new development, redevelopment, and infrastructure projects under the proposed project would introduce constituents into the storm water that are typically associated with urban runoff. These constituents include sediments, petroleum hydrocarbons, pesticides, fertilizers, and heavy metals such as lead, zinc, and copper. These pollutants tend to build up during the dry months of the year. Precipitation during the early portion of the wet season (generally from November to April)

washes away most of these pollutants, resulting in high pollutant concentrations in the initial wet weather runoff. This initial runoff is referred to as the "first flush" of storm events. Subsequent periods of rain would result in less concentrated pollutant levels in the runoff.

The amount and type of runoff generated by the various future projects may be greater than under existing conditions, due to potential increases in impervious surfaces. There may be a corresponding increase in urban runoff pollutants and first flush roadway contaminants, as well as an increase in nutrients and other chemicals from landscaped areas. These constituents would result in water quality impacts to onsite and offsite drainage flows to area waterways. The San Francisco Bay (South and Lower) and marina Lagoon/Seal Slough are included in the Section 303(d) list of impaired water bodies. Discharges of urban runoff into these water bodies may contribute to the existing impairment.

Foster City's storm drainage discharges are permitted under a County-wide NPDES permit. On February 11, 2009, the San Francisco Bay RWQCB issued, for public comment, a revised Tentative Order to NPDES Permit No. CAS6 12008 to implement a new Municipal Regional Stormwater Permit (MRP) for all Bay Area communities, including Foster City as a San Mateo Permittee. The series of permit amendments issued by the San Francisco Bay RWQCB imposed new requirements on the San Mateo Permittees, including new policies that govern new and redevelopment projects within its jurisdiction. The requirements address subjects such as erosion and sedimentation reduction, general stormwater pollution prevention, post construction best management practices and controls incorporation, impervious surface minimization, sensitive area restoration and protection, and watershed planning.

Additionally, as described above under the Regulatory Setting section of this chapter, the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) includes guidance on pollution reduction activities for construction sites, industrial sites, illegal discharges, and illicit connections, new development, and municipal operations. The program also includes public education efforts, target pollutant reduction strategies, and a monitoring program. These local programs are now in force in all major cities in San Mateo County and greatly reduce pollutant discharges into surface waters. Future projects are also required to comply with the requirements of SCOAs 2.8, 5.12, 5.13, and 5.15 which requires BMPs and other stormwater control measures that ensure project compliance with the SMCWPPP.

Conclusion: Foster City is essentially a built-out community with distinct boundaries. New development will primarily come from redevelopment of underutilized infill sites at higher densities and intensities. The adopted General Plan establishes policies and programs that are designed to protect water quality during and after construction for existing and future development. Program S-s requires 24 hour monitoring of the water, wastewater, and lagoon system. Policy C-2 requires the continuation of monitoring water quality of the lagoon. Program C-e requires the City to continue existing programs to conserve and protect water quality in accordance with accepted standards. Program C-f requires the City to continue to implement the Lagoon Management Plan in order to conserve and protect lagoon water quality by exchanging water with the Bay, testing and monitoring the water quality in the lagoon system. Program C-I requires the City to conserve and protect the quality of the water that is discharged into the San

Francisco Bay through implementation of the Lagoon Management Plan. Program C-bb requires the City to continue working with the county-wide task force to develop and implement a stormwater management plan to satisfy NPDES requirements. Additionally, future projects would be subject to the requirements of the City's SCOAs, as identified above, in order to ensure compliance with all SWPPP and SMCWPPP requirements related to stormwater controls and surface water quality.

New development, redevelopment, improvement projects that would involve some land clearing, mass grading, and other ground-disturbing activities could temporarily increase storm water pollution during and shortly after project construction if they are not properly managed. The Clean Water Act requires a SWPPP with the Notice of Intent to be submitted to the RWQCB prior to issuance of a General Permit for the discharge of storm water during construction activities. The SWPPP will provide the best management practices necessary to minimize and avoid construction related storm water pollution.

New development that may occur as a result of proposed General Plan Update and Climate Action Plan would be required to comply with the policies, actions, and regulations identified above which include numerous requirements that would reduce the potential for project implementation to result in increased water quality impacts that may violate water quality standards or waste discharge requirements. The Clean Water Act and regulations enforced by the Regional Water Quality Control Board would ensure that construction-related impacts to water quality are minimized and future projects comply with all applicable laws and regulations. Therefore, implementation of the proposed General Plan Update and Climate Action Plan would be required to comply with all water quality standards and waste discharge requirements. As such, this impact is **less than significant**.

Impact 3.7-2: Project implementation could result in the depletion of groundwater supplies or interfere substantially with groundwater recharge (Less than Significant)

Foster City is essentially a built-out community and water service is provided by Estero Municipal Improvement District (EMID). All water provided to existing and new development will come from EMID. EMID's water source does not include groundwater, and as such, the provision of water to new development that may occur as a result of project implementation would not lead to the depletion of groundwater supplies as no groundwater would be used. Additionally, Foster City is not located above a groundwater recharge area, and there are no groundwater aquifers located below the City. As such, new development that may occur as a result of proposed General Plan Update and Climate Action Plan would not substantially interfere with groundwater recharge. Therefore, this impact is considered **less than significant** and no mitigation is necessary.

Impact 3.7-3: Project implementation could alter the existing drainage pattern in a manner which would result in substantial erosion, siltation, flooding, or polluted runoff (Less than Significant)

Foster City is essentially a built-out community with distinct boundaries. New development will primarily come from redevelopment of underutilized infill sites at higher densities and intensities.

Foster City is subject to the requirements of the San Mateo Countywide Water Pollution Prevention Program, which discusses subjects such as erosion and sedimentation reduction. There is a limited potential for erosion within the developed areas of Foster City due to the existing improvements and landscaping that are in place. New development, redevelopment, improvement projects that would involve some land clearing, mass grading, and other ground-disturbing activities could temporarily increase soil erosion rates during and shortly after project construction. Construction-related erosion could result in the loss of topsoil and could adversely affect water quality in nearby surface waters.

The Conservation Element of the General Plan establishes a program that is designed to minimize storm water related erosion. Program C-bb requires the City to continue working with the county-wide task force to develop and implement a National Pollution Discharge Elimination System (NPDES) Stormwater Management Plan to satisfy NPDES requirements.

As future development, redevelopment, and infrastructure projects are considered by the City, each project will be evaluated for conformance with the California Building Code, the City's General Plan, Zoning Ordinance, Standard Conditions of Approval, and other regulations. In addition to compliance with the San Mateo Countywide Water Pollution Prevention Program, the Regional Water Quality Control Board will require a project specific Storm Water Pollution Prevention Plan (SWPPP) to be prepared for each projects that disturbs an area of one acre or larger. The SWPPPs will include project specific best management measures that are designed to control drainage and erosion. Subsequent development, redevelopment, and infrastructure projects would also be analyzed for potential erosion impacts, consistent with the requirements of CEQA. Future projects are also required to comply with the requirements of SCOAs 2.8, 5.12, 5.13, and 5.15 which requires BMPs and other stormwater control measures that ensure project compliance with the SMCWPPP.

The General Plan includes policies to minimize impacts associated with flooding and drainage patterns, including changes in drainage patterns that could affect the City's levee and lagoon system. The Safety Element of the General Plan establishes policies and programs that are designed to protect from floods and to prepare for emergencies. Policy S-4 requires the City to maintain the City's levees and lagoon system for flood protection. Policy S-5 requires the City to control development to minimize risks to persons and property within any special flood hazards area through flood plain regulations. Program S-g requires the City to maintain the City's levees and lagoon for flood protection pursuant to the "Operation and Maintenance Manual, Foster City Levees and Pump Station" and the "Lagoon Management Plan." Program S-h requires the City to evaluate any proposed development within special flood hazard areas for conformance with the City's flood plain regulations as contained in Chapter 15.36 of the Foster City Municipal Code.

New development that may occur as a result of proposed General Plan Update and Climate Action Plan would be required to comply with the policies, actions, and regulations identified above and under Impact 3.7-1 which include numerous requirements that would reduce the potential for project implementation to result in alterations to the existing drainage pattern that would result in substantial erosion, siltation, flooding, or polluted runoff. Compliance with the Clean Water Act and regulations enforced by the Regional Water Quality Control Board would ensure that construction-related impacts to water quality are minimized and future projects comply with all applicable laws and regulations. The implementation of the General Plan policies and actions listed above, combined with compliance with Federal and State regulations, would ensure that implementation of the proposed General Plan Update and Climate Action Plan would have a **less than significant** impact from these issues.

Impact 3.7-4: Project implementation could otherwise substantially degrade water quality, including the Foster City Lagoon (Less than Significant)

Water Quality Impacts from Discharges to 303(d) Listed Water Bodies and to the Foster City Lagoon: There are three water bodies in the immediate vicinity of Foster City have Section 303(d) listed impaired water bodies. The impaired water bodies include the Marina Lagoon (aka Seal Slough), San Francisco Bay Lower, and San Francisco Bay South. The pollutants originate from a variety of sources, but generally include urban non-point sources of runoff from vehicles, landscaping, rooftops, trash, and illicit dumping. In addition to 303(d) listed water bodies, the City's Environmental Review Guidelines establish chemistry (water quality) impacts to the Foster City Lagoon as a threshold of significance.

Under the CWA listing, impaired water bodies have no remaining assimilative capacity or ability to accommodate additional quantities of these contaminants, irrespective of concentration. Projects are required to comply with requirements of approved TMDLs, as regulated in the region by the RWQCB through issuance of Waste Discharge Requirements and NPDES permit amendments. There are established TMDLs for Mercury and PCBs on the San Francisco Bay Lower. There is a TMDL for Mercury on the San Francisco Bay South. All other impairments are in need of a TMDL.

The General Plan addresses water chemistry and quality impacts through policies and programs that are designed to protect water quality, which will minimize impacts to impaired water bodies and to the Foster City Lagoon. Program S-s requires 24 hour monitoring of the water, wastewater, and lagoon system. Policy C-2 requires the continuation of monitoring water quality of the lagoon. Program C-e requires the City to continue existing programs to conserve and protect water quality in accordance with accepted standards. Program C-f requires the City to continue to implement the Lagoon Management Plan in order to conserve and protect lagoon water quality by exchanging water with the Bay, testing and monitoring the water quality in the lagoon system. Program C-I requires the City to conserve and protect the quality of the water that is discharged into the San Francisco Bay through implementation of the Lagoon Management Plan. Program C-bb requires the City to continue working with the county-wide task force to develop and implement a stormwater management plan to satisfy NPDES requirements. Future projects are also required to

comply with the requirements of SCOAs 2.8, 5.12, 5.13, and 5.15 which requires BMPs and other stormwater control measures that ensure project compliance with the SMCWPPP.

As future development, redevelopment, and infrastructure projects are considered by the City, each project will be evaluated for conformance with the General Plan, Zoning Ordinance, and other regulations. In addition to compliance with the San Mateo Countywide Water Pollution Prevention Program, the Regional Water Quality Control Board will require a project specific Storm Water Pollution Prevention Plan (SWPPP) to be prepared for each projects that disturbs an area of one acre or larger. The SWPPPs will include project specific best management measures that are designed to control drainage and erosion. Subsequent development, redevelopment, and infrastructure projects would also be analyzed for potential water quality impacts, consistent with the requirements of CEQA. Therefore, this impact is considered **less than significant** and no mitigation is necessary.

Impact 3.7-5: Project implementation could place housing and structures within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map (Less than Significant)

Foster City currently regulates its floodplains using the FIRM dated October 16, 2012. This FIRM designates Foster City's flood classification as Zone X (levee) for the land areas (areas protected by levees from 100-year flood; flood insurance is not mandatory), while the Foster City Lagoon and Marina Lagoon are Zone A (special flood hazard areas, no base flood elevations determined). Figure 3.7-2 depicts the FEMA flood zones mapped Foster City and the immediate vicinity.

FEMA has begun studies in the San Francisco Bay that will be used to update the FIRM. FEMA recently (July 2014) completed an engineering study of San Francisco Bay including detailed analyses of coastal hazards as part of the California Coastal Analysis and Mapping Project (CCAMP).

Based on the FEMA coastal flood hazard study, roughly 85 percent of Foster City's levee system does not meet the required freeboard elevation per Title 44 of the Code of Federal Regulations (CFR), Section 65.10 and therefore, the levee will not retain accreditation status when the FIRM is updated in mid-2016. Currently, land within the city limits is classified as Zone X, meaning mandatory flood insurance is not required. While flood insurance is not mandatory, homeowners in Zone X can still purchase flood insurance through the National Flood Insurance Program (NFIP) at a lower rate for low-risk area. However, when the new maps become effective in 2016, Foster City will be designated as a high-risk Special Flood Hazard area and property owners with federally-backed loans will be required to purchase annual flood insurance and pay higher rates, unless progress is made to the satisfaction of FEMA to meet FEMA requirements.

New development will include infill, redevelopment, and infrastructure projects. There will always be the potential for flooding as a result of levee failure; however, Foster City has established policies and program in the General Plan that are designed to ensure that the levees are maintained and people/structures are protected from flooding.

The Safety Element of the General Plan establishes policies and programs that are designed to protect from floods and to prepare for emergencies. Policy S-4 requires the City to maintain the City's levees and lagoon system for flood protection. Policy S-5 requires the City to control development to minimize risks to persons and property within any special flood hazards area through flood plain regulations. Program S-g requires the City to maintain the City's levees and lagoon for flood protection pursuant to the "Operation and Maintenance Manual, Foster City Levees and Pump Station" and the "Lagoon Management Plan." Program S-h requires the City to evaluate any proposed development within special flood hazard areas for conformance with the City's flood plain regulations as contained in Chapter 15.36 of the Foster City Municipal Code.

The City is in the process of reviewing and assessing levee improvement alternatives that may be necessary to restore levee accreditation. For Foster City to be able to retain Zone X designation while the levee modifications are being done, the FEMA regional office has previously suggested that the City apply for levee seclusion mapping and a Zone A99 designation. The goal of the seclusion map is to maintain Zone X designation while the City secures funding, design, and construction completion of the levee improvements.[9]

All of the developable areas of Foster City are currently located outside of the 100-year flood hazard area, with the exception of the area designated Waterfront Commercial that is outside the levee east of Beach Park Boulevard between Tarpon and Halibut Streets. A separate EIR would be required to analyze any proposed development of this area.

The proposed General Plan Update and Climate Action Plan would not permit or otherwise approve new development that is not currently permitted by the existing General Plan. As such, there is no potential for the proposed General Plan Update and Climate Action Plan to place housing or structures within the 100-year flood hazard area. The pending changes to the FEMA FIRM map as a result of the pending loss of levee accreditation would occur regardless of whether or not the proposed project is adopted, and the proposed project has no bearing on this outside federal process. As described above, the City is in the process of assessing a range of levee improvement options in order to regain accreditation. Therefore, this impact is considered **less than significant** and no additional mitigation is necessary.

Impact 3.7-6: Project implementation may expose people or structures to a significant risk of loss, injury, or death involving flooding as a result of failure of a levee or dam, seiche, tsunami, or mudflow (Less than Significant)

Levees: Foster City is protected by levees that have been constructed. FEMA inspects the levees for design standards as well as maintenance and improvement records. Failure of a levee could result in inundation within Foster City. However, FEMA formally notified Foster City that a revised Flood Insurance Rate Map (FIRM) became effective on October 16, 2012 as a result of the City of

[9] Foster City Staff Report: Report on FEMA Coastal Flood Hazard Study and Levee Protection Planning for Foster City. Jeff Moneda, Director of Public Works/City Engineer. March 23, 2015.

San Mateo's Bayfront Levee Improvements Project. The recent certification of the levees provides a reasonable expectation that the levees are safe from failure.

Dams: Foster City lies within the inundation zone for Lower Crystal Springs Reservoir located approximately five miles west of the city. This is a gravity dam constructed across the San Mateo Creek, impounding water to form the Lower Crystal Springs Reservoir. According to the Association of Bay Area Governments (2012), a failure of the Lower Crystal Springs Dam would send flood waters down the San Mateo Creek and overland areas through Hillsbourgh and into the northern part of San Mateo before heading southward into San Mateo and ultimately Foster City, as shown on Figure 3.7-3. Inundation levels would be two feet or less and would take over two hours to reach Foster City.

The Lower Crystal Springs Dam has withstood significant earthquakes in the region (i.e. 1906 and Loma Prieta). The Dam is undergoing a major renovation designed to ensure that the dam would survive without failure during a major seismic and/or maximum probable flood event. There is a reasonable expectation that the Dam is safe from failure.

Seiches: In Foster City, seiches have not historically been a flooding concern. Detailed tidal records for the San Francisco Bay have been maintained for approximately 100 years, and during that time, a damaging seiche has not occurred. A seiche of approximately four inches occurred during the 1906 earthquake. It is unlikely that the San Francisco Bay would produce a damaging seiche.

Tsunamis: In Foster City, the tsunami inundation line is outside of all developed areas, as shown on Figure 3.7-4. The inundation area extends into Belmont Slough on the southeastern side of Foster City. Additionally, the inundation area covers vacant land just west of the Mariner's Point Golf Links on the northern side of Foster City.

Mudflows: Mudflows are a form of landslide, which is influenced by physical factors, such as slope, soil, vegetation, and precipitation. Given the relatively level slopes throughout Foster City, the landslide potential, and thus mudslide potential, is very low.

Conclusion: Foster City is essentially a built-out community and is protected from flooding by levees. There will always be the potential for flooding as a result of levee or dam failure or tsunamis; however, Foster City has established policies and program in the General Plan that are designed to protect from floods and to prepare for emergencies. Policy S-4 requires the City to maintain the City's levees and lagoon system for flood protection. Policy S-5 requires the City to control development to minimize risks to persons and property within any special flood hazards area through flood plain regulations. Program S-g requires the City to maintain the City's levees and lagoon for flood protection pursuant to the "Operation and Maintenance Manual, Foster City Levees and Pump Station" and the "Lagoon Management Plan." Program S-h requires the City to evaluate any proposed development within special flood hazard areas for conformance with the City's flood plain regulations as contained in Chapter 15.36 of the Foster City Municipal Code.

As future development, redevelopment, and infrastructure projects are considered by the City, each project will be evaluated for conformance with the General Plan, Zoning Ordinance, and other regulations that are intended to protect people and structures from significant flood events.

There are no additional significant adverse environmental impacts associated with this environmental topic which are anticipated to occur. Therefore, this impact is considered **less than significant** and no mitigation is necessary.

Impact 3.7-7: Project implementation may expose people or structures to a significant risk of loss, injury, or death involving flooding as a result of sea level rise (Significant and Unavoidable)

According to a 2009 report prepared by the San Francisco Bay Conservation and Development Commission (BCDC) titled, *Living With a Rising Bay: Vulnerability and Adaptation in San Francisco Bay and on the Shorline* (April 7, 2009), global warming could to result in a 16-inch (0.4 meters) sea level rise in San Francisco Bay by mid-century (2050). By the year 2100, the sea level could rise up to 55 inches (1.4 meters). As shown in Figure 3.7-5, nearly all of Foster City would be inundated in the event that such anticipated increases in sea level occur.

While the precise timing and extent of any increase in the level of San Francisco Bay cannot be predicted, the City acknowledges the potential vulnerability of both existing and proposed development in the plan area to a rising Bay.

The existing General Plan and the proposed Land Use and Circulation Element do not currently contain goals, policies, and programs related to sea level rise. The proposed Climate Action Plan addresses sea level rise through a comprehensive approach to reducing GHG emissions in Foster City, however, the reduction in GHG emissions achieved through implementation of the Climate Action Plan may not provide meaningful assistance in reducing the potential for sea level rise in the Bay.

However, there is significant uncertainty regarding the issue of sea level rise. The actual severity of any sea level rise would dictate the appropriate level of mitigation and response from the City. Such measures could include strengthening or raising levees, creating new levees, participating in regional mitigation to address rising sea levels within the Bay as a whole, creation of new tidal wetlands, any combination of these measures, or other measures not listed here. Some of these measures may be separate City projects requiring separate CEQA review. Notably, the areas in Foster City that would be most vulnerable to the effects of rising sea level are already developed. Consequently, while implementation of the proposed project could contribute to the cumulative effects of a rising sea level, it would not directly cause any new adverse environmental effects relating to a rising sea level. And while new development anticipated under the proposed project could contribute to the adverse effects caused by sea level rise, such new development is also expected to increase the range and feasibility of possible mitigation measures to address such effects by providing fees and other revenues that would not otherwise be available to fund the costs of such mitigation.

Mitigation Measure 3.7-7 would require the City to update the General Plan Safety Element to include policies and actions aimed at adapting and responding to rising sea levels. The implementation of this mitigation measure would lead to a Sea Level Rise Response Strategy, and

would require the development review process o incorporate consideration or, and measures to mitigate the risks of, sea level rise.

Notwithstanding the foregoing, given the significant uncertainty about sea level rise and possible avoidance and/or reduction measures, implementation of the proposed General Plan Update and Climate Action Plan may expose people or structures to a significant risk of loss, injury, or death involving flooding as a result of sea level rise. Therefore, this impact is considered **significant and unavoidable.**

MITIGATION MEASURES

Mitigation Measure 3.7-7: *Update the Foster City General Plan Safety Element to include the following policies and action item.*

> ***New Safety Policy 1:*** *Incorporate consideration of, and measures to mitigate the risks of, sea level rise into the planning process.*
>
> ***New Safety Policy 2:*** *Prepare response plans that will help Foster City adapt and respond to climate change.*
>
> ***New Safety Action 1:*** ***Sea Level Rise Response Strategy.*** *Prepare response strategies that address sea level rise and increased flooding, and other climate change induced events such as flooding, landslides, and soil erosion. Include response strategies to address sea level rise on Foster City's levee system.*

REFERENCES

The primary sources of data referenced for this section is derived from the following:

California Department of Conservation. 2002. California Geological Survey, Note 36.

California Dept. of Water Resources. 2012. Dams Owned and Operated by a Federal Agency and Dams within the Jurisdiction of the State of California. www.water.ca.gov/damsafety/damlisting/index

California Dept. of Water Resources. 2010. Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report).

California Dept. of Water Resources. 2009. California Water Plan Update 2009, San Francisco Bay Integrated Water Management, Volume 3, Regional Reports, Bulletin 160-09.

CalWater, California Interagency Watershed Mapping Committee. 2008. California Watershed Boundary Dataset (WBD).

California Department of Water Resources. 2003. California's Groundwater Bulletin 118-Update. October.

California Department of Water Resources. 1980. Groundwater Basins in California – A Report to the Legislature in Response to Water Code Section 12924. Bulletin 118 – 80. 73 p. January.

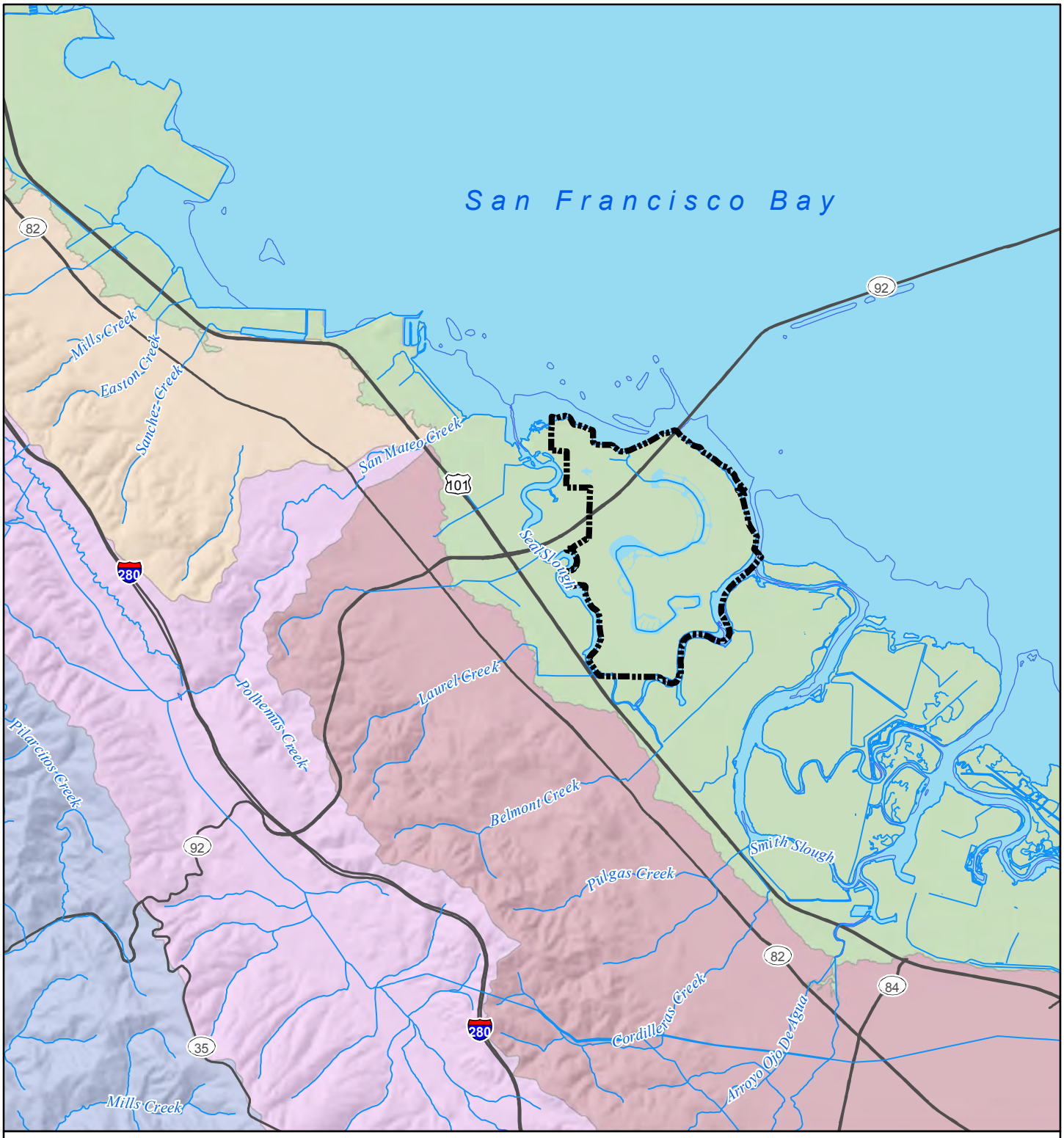
California Energy Commission (CEC). 2012. The Impacts of Sea Level Rise on the San Francisco Bay: http://www.energy.ca.gov/2012publications/CEC-500-2012-014/CEC-500-2012-014.pdfhttp://www.energy.ca.gov/2012publications/CEC-500-2012-014/CEC-500-2012-014.pdf

Estero Municipal Improvement District (EMID). 2010. 2010-2015 Urban Water Management Plan.

San Francisco Bay Conservation and Development Commission (BCDC). 2009. Living With a Rising Bay: Vulnerability and Adaptation in San Francisco Bay and on the Shorline (April 7, 2009),

Seaber, P.R., Kapinos, F.P., and Knapp, G.L., 1987, Hydrologic Unit Maps: U.S. Geological Survey Water-Supply Paper 2294, 63 p.

U.S. EPA. http://watersgeo.epa.gov/. My Waters Mapper. 2012.



Watersheds

- Arroyo Leon
- Colma Creek-Frontal San Francisco Bay Estuaries
- Cordileras Creek-Frontal San Francisco Bay Estuaries
- San Francisco Bay Estuaries
- San Mateo Creek Frontal
- Oakland Inner Harbor-San Francisco Bay

Foster City Boundary

Figure 3.7-1: Watersheds

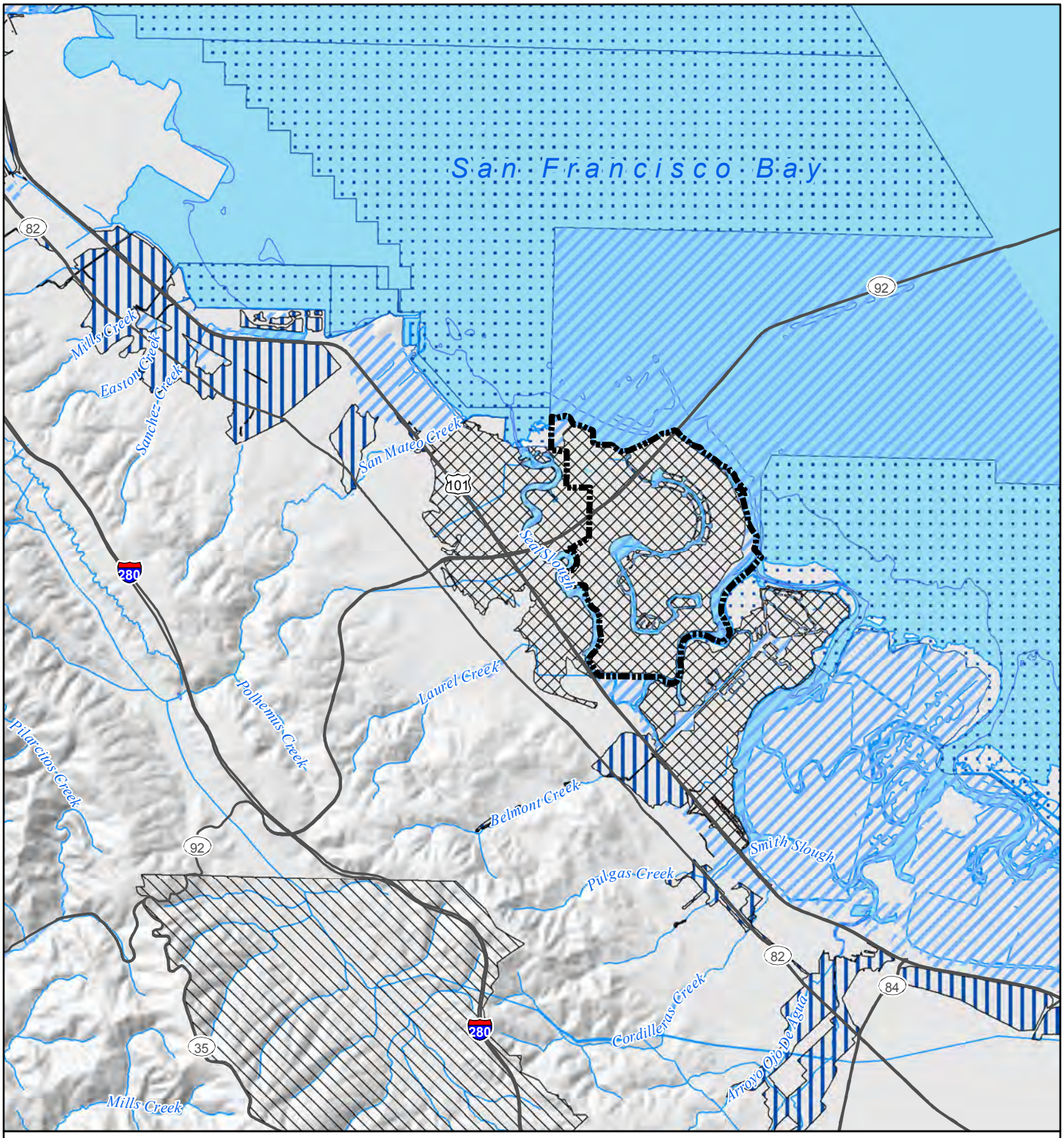
0 0.5 1
Miles
1:100,000

N

Data sources: USGS National Hydrography Dataset; CalWater 2.1.1, National Resources Conservation Service, IWMC; Foster City GIS. Map date: September 21, 2012.

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.



Foster City Boundary

Figure 3.7-2: Flood Hazards Map

FEMA Flood Zone Designations

- A, AE, AH, AO - High risk areas (100-yr flood zones)
- VE - Coastal area with 1% or greater chance of flooding (with additional storm wave hazard)
- 0.2% Annual chance of flood hazard (500-yr zone)
- D - Possible but undetermined flood hazard
- X-Levee: Area of minmal risk due to protection by levee

0 0.5 1
Miles
1:100,000

N

Data sources: FEMA Digital Flood Insurance Rate Map Database, San Mateo County, California, effective date 10/16/2012; USGS National Hydrography Dataset; Foster City GIS. Map date: September 30, 2012.

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.

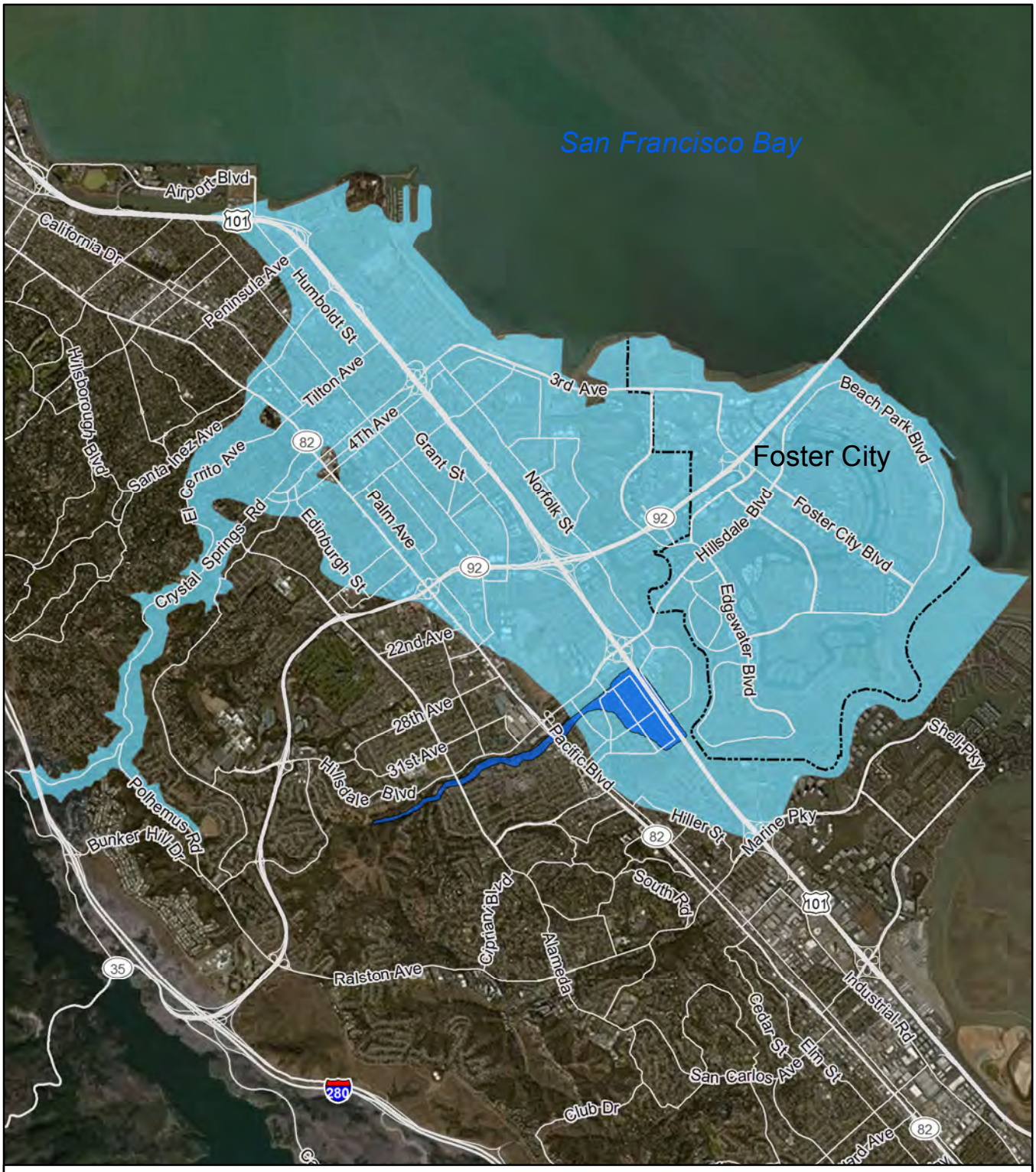


Figure 3.7-3: Dam Inundation Areas

Legend

- Laurel Creek Dam Inundation Area
- Lower Crystal Springs Dam Inundation Area

N

0 1,500 3,000

Feet

Sources: San Mateo County GIS; California Emergency Management Agency, Version DVD 3, April 2009. Image from ArcGIS Online BING Map Service. Map date: March 5, 2015.

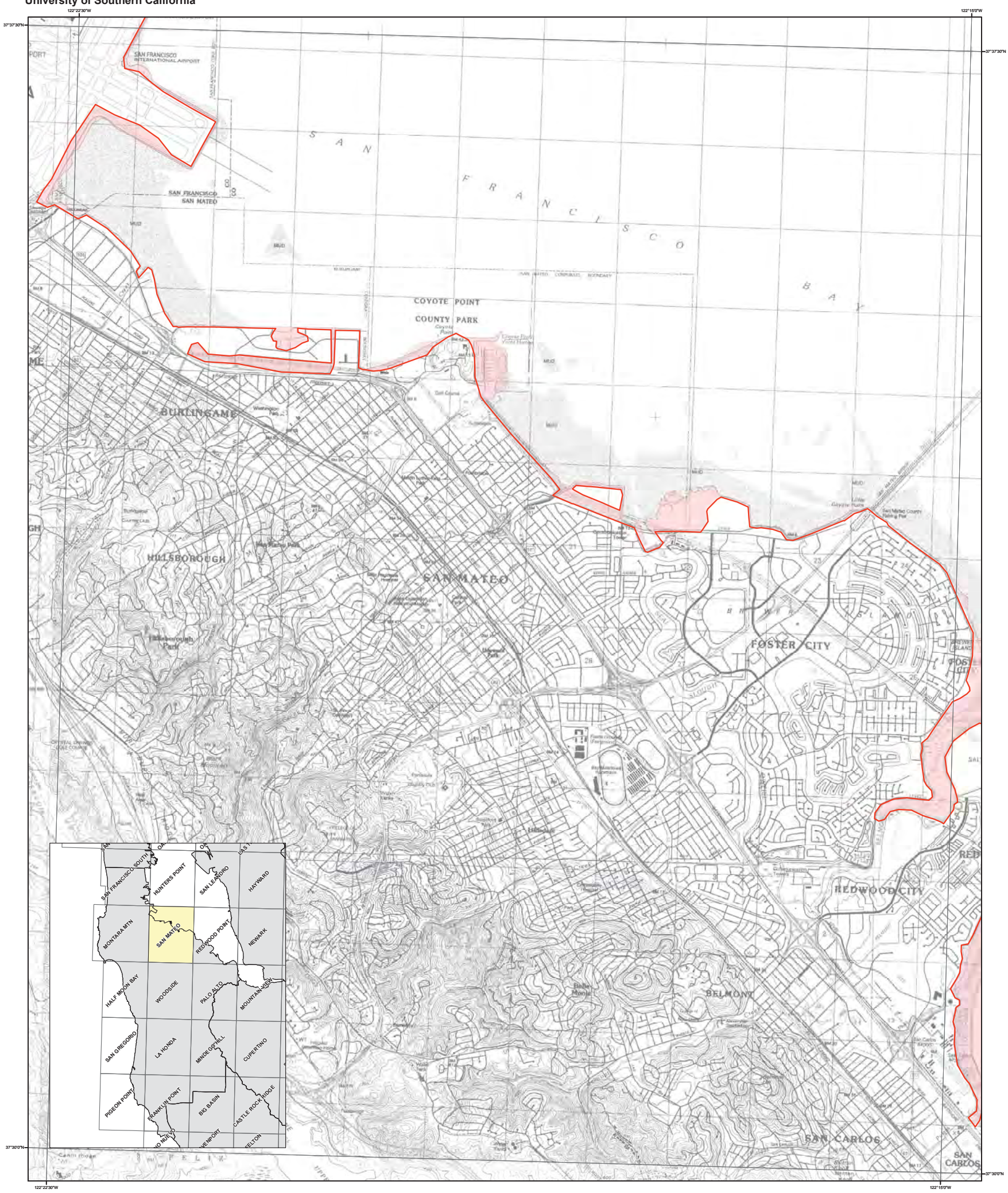
De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank

California Emergency Management Agency
California Geological Survey
University of Southern California

Tsunami Inundation Map for Emergency Planning
San Mateo Quadrangle

State of California
County of San Mateo



METHOD OF PREPARATION

Initial tsunami modeling was performed by the University of Southern California (USC) Tsunami Research Center funded through the California Emergency Management Agency (CalEMA) by the National Tsunami Hazard Mitigation Program. The tsunami modeling process utilized the MOST (Method of Splitting Tsunamis) computational program (Version 0), which allows for wave evolution over a variable bathymetry and topography used for the inundation mapping (Titov and Gonzalez, 1997; Titov and Synolakis, 1998).

The bathymetric/topographic data that were used in the tsunami models consist of a series of nested grids. Near-shore grids with a 3 arc-second (75- to 90-meters) resolution or higher, were adjusted to "Mean High Water" sea-level conditions, representing a conservative sea level for the intended use of the tsunami modeling and mapping.

A suite of tsunami source events was selected for modeling, representing realistic local and distant earthquakes and hypothetical extreme undersea, near-shore landslides (Table 1). Local tsunami sources that were considered include offshore reverse-thrust faults, restraining bends on strike-slip fault zones and large submarine landslides capable of significant seafloor displacement and tsunami generation. Distant tsunami sources that were considered include great subduction zone events that are known to have occurred historically (1960 Chile and 1964 Alaska earthquakes) and others which can occur around the Pacific Ocean "Ring of Fire."

In order to enhance the result from the 75- to 90-meter inundation grid data, a method was developed utilizing higher-resolution digital topographic data (3- to 10-meters resolution) that better defines the location of the maximum inundation line (U.S. Geological Survey, 1993; Intermap, 2003; NOAA, 2004). The location of the enhanced inundation line was determined by using digital imagery and terrain data on a GIS platform with consideration given to historic inundation information (Lander, et al., 1993). This information was verified, where possible, by field work coordinated with local county personnel.

The accuracy of the inundation line shown on these maps is subject to limitations in the accuracy and completeness of available terrain and tsunami source information, and the current understanding of tsunami generation and propagation phenomena as expressed in the models. Thus, although an attempt has been made to identify a credible upper bound to inundation at any location along the coastline, it remains possible that actual inundation could be greater in a major tsunami event.

This map does not represent inundation from a single scenario event. It was created by combining inundation results for an ensemble of source events affecting a given region (Table 1). For this reason, all of the inundation region in a particular area will not likely be inundated during a single tsunami event.

References:

Intermap Technologies, Inc., 2003, Intermap product handbook and quick start guide: Intermap NEXTmap document on 5-meter resolution data, 112 p.

Lander, J.F., Lockridge, P.A., and Kozuch, M.J., 1993, Tsunamis Affecting the West Coast of the United States 1806-1992: National Geophysical Data Center Key to Geophysical Record Documentation No. 29, NOAA, NESDIS, NGDC, 242 p.

National Atmospheric and Oceanic Administration (NOAA), 2004, Interferometric Synthetic Aperture Radar (IfSAR) Digital Elevation Models from GeoSAR platform (EarthData): 3-meter resolution data.

Titov, V.V., and Gonzalez, F.I., 1997, Implementation and Testing of the Method of Tsunami Splitting (MOST): NOAA Technical Memorandum ERL PMEL – 112, 11 p.

Titov, V.V., and Synolakis, C.E., 1998, Numerical modeling of tidal wave runup: Journal of Waterways, Port, Coastal and Ocean Engineering, ASCE, 124 (4), pp 157-171.

U.S. Geological Survey, 1993, Digital Elevation Models: National Mapping Program, Technical Instructions, Data Users Guide 5, 48 p.

PURPOSE OF THIS MAP

This tsunami inundation map was prepared to assist cities and counties in identifying their tsunami hazard. It is intended for local jurisdictional, coastal evacuation planning uses only. This map, and the information presented herein, is not a legal document and does not meet disclosure requirements for real estate transactions nor for any other regulatory purpose.

The inundation map has been compiled with best currently available scientific information. The inundation line represents the maximum considered tsunami runup from a number of extreme, yet realistic, tsunami sources. Tsunamis are rare e v e n t s ; due to a lack of known occurrences in the historical record, this map includes no information about the probability of any tsunami affecting any area within a s p e c i f i c period of time.

Please refer to the following websites for additional information on the construction and/or intended use of the tsunami inundation map:

State of California Emergency Management Agency, Earthquake and Tsunami Program:
http://www.oes.ca.gov/WebPage/oeswebsite.nsf/Content/B1EC51BA215931768825741F005E8D80?OpenDocument

University of Southern California – Tsunami Research Center:
http://www.usc.edu/dept/tsunamis/2005/index.php

State of California Geological Survey Tsunami Information:
http://www.conservation.ca.gov/cgs/geologic_hazards/Tsunami/index.htm

National Oceanic and Atmospheric Agency Center for Tsunami Research (MOST model):
http://nctr.pmel.noaa.gov/time/background/models.html

MAP BASE

Topographic base maps prepared by U.S. Geological Survey as part of the 7.5-minute Quadrangle Map Series (originally 1:24,000 scale). Tsunami inundation line boundaries may reflect updated digital orthophotographic and topographic data that can differ significantly from contours shown on the base map.

DISCLAIMER

The California Emergency Management Agency (CalEMA), the University of Southern California (USC), and the California Geological Survey (CGS) make no representation

or warranties regarding the accuracy of this inundation map nor the data from which the map was derived. Neither the State of California nor USC shall be liable under any circumstances for any direct, indirect, special, incidental or consequential damages with respect to any claim by any user or any third party on account of or arising from the use of this map.

Table 1: Tsunami sources modeled for the San Mateo County coastline.

Sources (M = moment magnitude used in modeled event)		Areas of Inundation Map Coverage and Sources Used	
		San Francisco Bay	Pescadero
Local Sources	Point Reyes Thrust Fault	X	
	Rodgers Creek-Hayward Faults	X	
	San Gregorio Fault	X	
Distant Sources	Cascadia Subduction Zone-full rupture (M9.0)	X	
	Central Aleutians Subduction Zone #1 (M8.9)	X	X
	Central Aleutians Subduction Zone #2 (M8.9)	X	
	Central Aleutians Subduction Zone #3 (M9.2)	X	X
	Chile North Subduction Zone (M9.4)	X	
	1960 Chile Earthquake (M9.3)	X	
	1964 Alaska Earthquake (M9.2)	X	X
	Japan Subduction Zone #2 (M8.8)	X	
	Kuril Islands Subduction Zone #2 (M8.8)	X	
	Kuril Islands Subduction Zone #3 (M8.8)	X	
	Kuril Islands Subduction Zone #4 (M8.8)	X	
	Marianas Subduction Zone (M8.6)	X	X

Figure 3.7-4: Tsunami Inundation Map for Emergency Planning

State of California - County of San Mateo
San Mateo Quadrangle
June 15, 2009

LEGEND

Tsunami Inundation Line
Tsunami Inundation Area

0.5 0.25 0 0.5 1 Miles
1,000 500 0 1,000 2,000 3,000 4,000 5,000 Feet
0.5 0.25 0 0.5 1 Kilometers

Cal EMA CALIFORNIA EMERGENCY MANAGEMENT AGENCY
USC UNIVERSITY OF SOUTHERN CALIFORNIA
CGS CALIFORNIA GEOLOGICAL SURVEY

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank

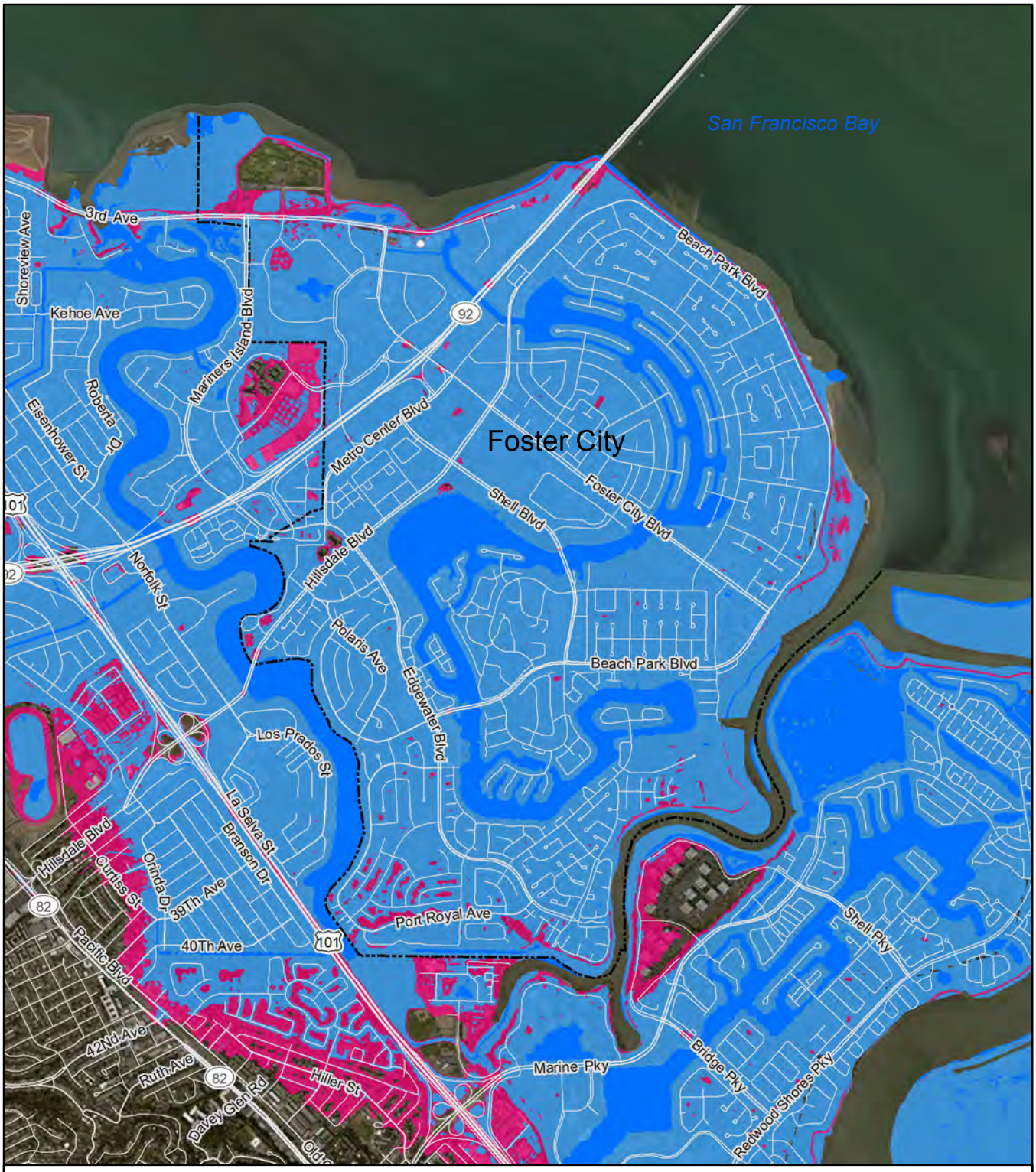


Figure 3.7-5: Sea Level Rise

Legend

Local mean sea level

Areas at risk from a 100-yr coastal flood event

Current area at risk

Area at risk with a 1.4 meter sea-level rise

N

0 1,000 2,000

Feet

Sources: San Mateo County GIS; Knowles, Noah. 2010. Potential Inundation Due to Rising Sea Levels in the San Francisco Bay Region. San Francisco Estuary and Watershed Science, 8:1. Available at http://escholarship.org/uc/search?entity=jmie_sfews;volume=8;issue=1. Data from website: http://cascade.wr.usgs.gov. Image from ArcGIS Online BING Map Service. Map date: March 5, 2015.

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank

The purpose of this EIR section is to address at a programmatic level the consistency of the proposed General Plan Update and Climate Action Plan with applicable local land use and planning regulations and policies, and to identify if this project would impact the City by inducing substantial population growth or removing housing. This section identifies the existing land use conditions, analyzes the project's consistency with relevant planning documents and policies adopted for the purpose of avoiding or mitigating an environmental effect, and recommends mitigation measures to avoid or minimize the significance of potential environmental impacts. General Plan policies associated with other specific environmental topics (aesthetics, air quality, biological resources, cultural resources, geology/soils, greenhouse gas, hazards, hydrology/water quality, noise, public services, recreation, transportation, and utilities) are discussed in the relevant sections of this EIR.

Information in this section is based on information provided by the following reference materials: *Plan Bay Area* (ABAG 2013); Population and Housing Estimates for Cities, Counties, and the State, *January 1, 2011-2014*, with 2010 Benchmark (DOF) 2014; *Foster City Housing Element (*City of Foster City 2014); *Zoning* – Title 17 of the Foster City Municipal Code; *Projections 2013* (ABAG 2014) and review of ground and aerial photographs.

There were no comments related to this environmental topic raised during the NOP scoping process.

3.8.1 ENVIRONMENTAL SETTING

EXISTING SETTING

Foster City is located in the eastern portion of San Mateo County. Foster City is bordered by the City of San Mateo to the west, Redwood City to the southeast, a small area of the City of Belmont to the south, and San Francisco Bay to the north/northeast, as shown in Figure 2.0-2.

Physical Characteristics of Foster City

Foster City occupies land that is typical of many of the tidal marshes and small embayments fringing San Francisco Bay that have been reclaimed for urban development. In the early 1960's, perimeter dikes were constructed to drain salt ponds and some 18 million tons of fill were added to raise the ground level of the future city by four feet.

The present appearance of the City has been dictated by the natural, mainly water-oriented constraints of the island. To develop the City, marshes and sloughs on the island were diked and filled, and an artificial lagoon and lake were then created. Marina Lagoon and Belmont Slough, which are natural waterways bordering the City, have been incorporated into the City design. The City's primary physical characteristics consist of water features and urban development.

LAND USE PATTERNS

Foster City is a planned community consisting of an office, commercial, and industrial base located generally northwest of East Hillsdale Boulevard and nine distinct residential neighborhoods, each centered around water bodies and neighborhood amenities, including retail establishments, open space, and parks.

The City's residential uses are located mainly southeast of East Hillsdale Boulevard in nine neighborhoods, most containing a mixture of single-family detached units, townhouses, condominiums, and rental apartments. Commercial uses in these nine neighborhoods are limited to those found in five shopping centers scattered throughout the neighborhoods. City administrative offices, recreation facilities, and emergency services are also located southeast of East Hillsdale Boulevard. The lands approximately northwest of East Hillsdale Boulevard consist mainly of offices, retail uses, and light industry. This portion of Foster City is dominated by master-planned projects, including Metro Center, Vintage Park, Pilgrim-Triton, Chess-Hatch, several hotels, and other light industrial parks and office campuses.

The distribution of land uses as provided in the Foster City General Plan is shown in Table 3.8-1. Since construction during the early years of Foster City was largely residential, the City has actively pursued commercial and light industrial development to achieve a more balanced mix of uses. Commercial, office, and industrial development not only provides a healthy and stable tax base, it also provides job opportunities within the City, which in turn can help reduce commuting by residents of Foster City and nearby communities.

Table 3.8-1: General Plan Land Uses (Acreages)

LAND USE CATEGORY	ACRES	PERCENT
Residential	1214.7	46%
Public, Semi Public, Streets	503.3	20%
Parks, Open Space, Lagoons	448.8	17%
Commercial and Industrial	404.8	15%
Mixed Commercial and Housing	47.8	2%
Total	**2,619.3**	**100%**

SOURCE: FOSTER CITY COMMUNITY DEVELOPMENT DEPARTMENT, 2014

Residential Neighborhoods

The original Foster City Master Plan envisioned a mix of housing types in each neighborhood in order to achieve a range of design, housing costs and tenure types, including apartments, townhomes, condominiums and single family detached homes. Foster City has been purposely planned to contain a mix of housing types. In 2014, there are an estimated 12,458 housing units in Foster City, 38 percent of the units being single-family detached homes, 20 percent single family attached, 7 percent in structures of 2-4 units, and 35 percent in structures with 5 or more units. Higher density development has resulted in most market rate rentals units being affordable to moderate income households. (*Foster City Housing Element*, 2014).

Office Commercial

Regionally-oriented commercial office uses are located on the northwest side of East Hillsdale Boulevard and include two areas:

1. Metro Center, a 100 acre mixed-use development; and,
2. The East Hillsdale Boulevard corridor between Metro Center and Werder Park.

Light Industrial, Research and Development

There are three distinct areas which include light industrial and research and development uses:

1. Hatch Drive/Chess Drive,
2. Lincoln Centre, and
3. Vintage Park.

Schools

Approximately 36 acres of Foster City's land area is currently devoted to public schools. There are currently four operational public schools, three elementary schools and one middle school, which are under the jurisdiction of the San Mateo-Foster City School District.

Parks and Recreation

Approximately 105 acres of land in the City is dedicated to community and neighborhood parks, including an approximately 7.9 mile long pedestrian pedway atop the levee which runs along the perimeter of the City. Each residential neighborhood in the City has an easily accessible park or open space area. Additional passive-use open space areas include a wildlife refuge, which borders Belmont Slough on the south west side of the City, and an undeveloped marina site (of which a portion consists of submerged lands). An additional open space area is located along the northern boundary of the City, north of East Third Avenue and adjacent to wetlands in the City of San Mateo.

Public and Semi-Public Facilities

Uses located on lands designated for Public and Semi-Public uses include eight churches, the Civic Center complex, including the City's Government Center, library, and North Peninsula Jewish Campus, and the City's water treatment and corporation yard maintenance facilities located on East Third Avenue.

Water Features

The City has five primary water features, each described below.

San Francisco Bay. The San Francisco Bay (Bay) borders the City to the east and provides the water for tidal action and drainage to Belmont Slough, Marina Lagoon, and Foster City Lagoon. An extensive levee system protects Foster City from the tidal action of San Francisco Bay. San Francisco Bay provides recreational opportunities, including the City's bayshore pathway/park system.

Belmont Slough. The Belmont Slough provides a source of water to the Foster City and Marina Lagoons, which helps to maintain the natural viability of the lagoons, and provides a natural wildlife refuge as a result of its tidal action, mud flats, and marshland vegetation. Approximately 57 acres of wetlands along Belmont Slough were established as a wildlife sanctuary in 1976.

Foster City Lagoon. This lagoon is functionally an artificially constructed storm drainage retention basin that also offers opportunities for recreational use. The lagoon was designed with a number of "islands" in order to create many waterfront lot opportunities.

Marina Lagoon. Marina Lagoon forms part of the western boundary of Foster City adjacent to the City of San Mateo. The Marina Lagoon was originally a slough (Seal Slough) converted by the City of San Mateo to a lagoon. It serves as a storm water basin, a boating area to residents with property fronting the lagoon, and is also accessible publicly via a pathway system.

Vintage Park Lake. Vintage Park Lake, which serves as a drainage catch basin, is located in the northern area of Foster City. There is a public access easement along the lake that provides pedestrian trails and open space access opportunities.

Population and Housing

Foster City's population has grown over the last several decades as shown by Table 3.8-2. The most current population estimates for Foster City, from the California Department of Finance, estimate the current population to be 32,168. From 1990 to 2010, the population of Foster City increased from 28,176 to 30,567. The majority of growth occurred from 2000 to 2010, with a 6.1 percent growth rate.

The most current household estimates for Foster City, from the California Department of Finance, estimate the current number of households to be 12,312. From 1990 to 2010, households in Foster City increased by 760, totaling 12,016 in 2010. Household growth occurred at similar rates during those two decades, 3.3 percent from 1990 to 2000 and 3.5 percent from 2000 to 2010.

Table 3.8-2: Demographic Trends

	1990	2000	2010	1990-2000 CHANGE	2000-2010 CHANGE	AVG. ANNUAL CHANGE
Population	28,176	28,803	30,567	2.2%	6.1%	0.4%
Households	11,256	11,611	12,016	3.2%	3.5%	0.3%

SOURCE: US CENSUS, 2000 AND 2010; CALIFORNIA DEPARTMENT OF FINANCE, 1990 AND 2014; ABAG, 2013

3.8.2 REGULATORY SETTING

The regulatory framework discussion describes adopted laws and regulations that guide land use decisions.

STATE

California General Plan Law

Government Code Section 65300 requires that each county and city adopt a General Plan "for the physical development of the county or city, and any land outside its boundaries which bears relation to its planning."

The General Plan consists of a statement of development policies and includes a diagram or diagrams and text setting forth objectives, principles standards, and plan proposals. It is a comprehensive long-term plan for the physical development of the county or city and is considered a "blueprint" for development. The General Plan must contain seven state-mandated elements: Land Use, Open Space, Conservation, Housing, Circulation, Noise, and Safety. It may also contain any other elements that the county or city wishes to include. The land use element designates the general location and intensity of designated land uses to accommodate housing, business, industry, open space, education, public buildings and grounds, recreation areas, and other land uses.

The 2003 General Plan Guidelines, established by the Governor's Office of Planning and Research (OPR) to assist local agencies in the preparation of their general plans, further describe the mandatory land use element as a guide to planners, the general public, and decision makers prescribing the ultimate pattern of development for the county or city.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) was developed to protect the quality of the environment and the health and safety of persons from adverse environmental effects. Discretionary projects are required to be reviewed consistent with the requirements of CEQA to determine if there is potential for the project to cause a significant adverse effect on the environment. Depending on the type of project and its potential effects, technical traffic, noise, air quality, biological resources, and geotechnical reports may be needed. If potential adverse effects can be mitigated, a mitigated negative declaration is required. If potentially adverse effects cannot be mitigated, an environmental impact report is required. These documents have mandated content requirements and public review times. Preparation of CEQA documents can be costly and, despite maximum time limits set forth in the Public Resources Code, can extend the processing time of a project by a year or longer.

San Francisco Bay Conservation and Development Commission, San Francisco Bay Plan

In 1965, the Bay Conservation and Development Commission (BCDC) was established to prevent the unnecessary filling of San Francisco Bay and to increase public access along the Bay shoreline. BCDC has jurisdiction over development in the shoreline areas, the area within a band measured 100 feet landward from the shoreline of the Bay, and certain salt ponds, managed wetlands, and waterways. The San Francisco Bay Plan provides the policy framework to guide future uses of the Bay and shoreline. The Plan focuses on priority uses, water quality, size of the Bay, marshes and mudflats, and related issues. Shoreline development, filling, dredging, new construction, major remodeling, changes in land use, and subdivisions in this area are subject to review and approval by BCDC.

LOCAL

San Mateo County Comprehensive Airport Land Use Plan (1996)

The Comprehensive Airport Land Use Plan (CLUP) establishes land use standards to protect the public from safety hazards and noise impacts and to prevent the encroachment incompatible land uses around the San Carlos Airport. Section IV of the CLUP is the Land Use Plan for the San Carlos Airport.

The CLUP establishes the following land use "Restriction Areas" within the plan boundaries:

<u>CLUP Height Restriction Area:</u> The height restrictions established by the CLUP ensure the protection of the navigable airspace surrounding the airport. The following height restriction areas apply within the CLUP:

- Primary Surface: A surface longitudinally centered along the runway, extending 200 feet beyond each end of the paved runway and having a width of 250.
- Horizontal Surface: 150 feet above the airport elevation, the perimeter of which is constructed by scribing an arc 10,000 feet out from the center of each end of the of the primary surface and connecting arcs with tangents.
- Conical Surface: A surface extending outward and upward from the periphery of the the horizontal surface at a slope of 20:1 for a horizontal distance of 4,000 feet.
- Approach Surface: A surface longitudinally centered on the extended runway centerline, extending outward and upward 5,000 feet from each end of the primary surface at a slope of 34:1 for a length of 10,000 feet. The width of the surface starts the same as the Primary Surface, 250 feet, and flares to 1,250 feet at 5,000 feet.
- Transitional Surface: A surface extending outward and upward from the sides of the primary surface and from the sides of the approach surfaces at a slope of 7:1.

The City/County Association of Governments of San Mateo County (C/CAG) is in the process of preparing a comprehensive update to the San Carlos Airport Comprehensive Airport Land Use Compatibility Plan. A preliminary draft of the Plan was released for public review in November 2014. Adoption of the Final Plan is anticipated to occur in late 2015.

San Francisco International Airport Comprehensive Airport Land Use Compatibility Plan

Based on State law and guidance provided in the *California Airport Land Use Planning Handbook*, the SFO ALUCP has four primary areas of concern:

- Aircraft Noise Impact Reduction – To reduce the potential number of future airport area residents who could be exposed to noise impacts from airport and aircraft operations.
- Safety of Persons on the Ground and in Aircraft in Flight – To minimize the potential number of future residents and land use occupants exposed to hazards related to aircraft operations and accidents.
- Height Restrictions/Airspace Protection – To protect the navigable airspace around the Airport for the safe and efficient operation of aircraft in flight.
- Overflight Notification – To establish an area within which aircraft flights to and from the Airport occur frequently enough and at a low enough altitude to be noticeable by sensitive residents. Within this area, real estate disclosure notices shall be required, pursuant to State law.

The airport/land use compatibility policies and criteria contained in this ALUCP apply only to new development. Under State law, an airport land use commission has no jurisdiction over existing development unless that development is expanded or enlarged significantly, in which case it is treated as infill development subject to the policies in the ALUCP.

Foster City General Plan

The Foster City General Plan was adopted in May 1993 and includes six elements (date of most recent amendment shown in parentheses next to each element title): Land Use and Circulation (2013, and proposed to be updated as part of this proposed project), Housing (2015), Parks and Open Space (2009), Noise (1993), Safety (1995), and Conservation (2009).

Land uses in Foster City have been developed based on the Land Use Map, goals, and policies established by the General Plan. The General Plan establishes a framework of goals, policies, and actions to identify how future development, provision of infrastructure, and conservation of resources will occur.

LAND USE AND CIRCULATION ELEMENT

The Land Use and Circulation Element provides a goal and policy framework for future land use and development decisions. The Land Use Map identifies the type of growth allowed at each parcel within the City.

Land Use Designations

Table 3.8-3 summarizes General Plan land use designations for Foster City by acreage and number of parcels. Land use designations under the adopted 1993 General Plan, as amended through 2013, are shown on Figure 2-3. A brief description of each of the 1993 General Plan land use designations is provided below. These descriptions are based on the text of the 1993 General Plan, as amended through 2013.

Table 3.8-3: General Plan Land Use Categories

LAND USE DESIGNATION	PARCELS	ACREAGE
Residential Land Uses		
Single Family Residential	4,619	688.5
Two-Family Residential	19	3.6
Townhouse Residential	1,959	209.6
Condominium Residential	933	195.7
Apartment Residential	20	99.8
Mixed-Use, Commercial and Industrial Land Uses		
Town Center Commercial	337	104.2
Neighborhood Commercial	4	17.2
Service Commercial	22	26.0
Service Commercial with Housing	5	21.9
Waterfront Commercial	3	23.4
Light Industrial	40	37.2
Research/Office Park	83	252.6
Chess/Hatch Office Research	4	12.3
Apartment/Neighborhood Commercial	2	12.1
Civic Center Mixed Use	1	15.3
Public and Semi-Public Land Uses		
Schools	4	35.9
Parks and Recreation	32	132.0
Open Space	33	147.7
Public and Semi Public	14	35.3
TOTAL	8,152	2,070.3

SOURCE: FOSTER CITY COMMUNITY DEVELOPMENT DEPARTMENT, 2014

The City's existing land use categories are described below to assist the reader with understanding the General Plan Land Use Map; however, it is noted that these existing categories are not proposed to change, although some of the descriptive text is proposed to be updated.

Residential Categories

Single-Family Residential. Allows up to eight dwelling units per acre (du/ac). This is the single largest residential category, and single family homes are located in every residential neighborhood except one.

Two-Family Residential. Allows up to ten du/ac. This designation recognizes the small percentage of existing duplex homes in the City. The designation has been applied to a small area in the northeastern portion of the City, on Comet Drive (Neighborhood #1). Duplexes serve as a transition area between traditional single family detached homes and higher density multi-family developments. The density range and zoning requirements have been established in recognition that duplexes are an existing housing type intermediate to single-family detached homes and townhomes. Duplexes should provide the outward appearance of a single-family neighborhood, but at densities closer to those of townhomes.

Townhouse Residential. Allows up to 15 du/ac. Townhomes in Foster City generally function as attached single family homes and usually provide some private open space in addition to common areas.

Condominium Residential. Allows 15-35 du/ac. Condominium developments are usually constructed at a higher density than townhomes. Any open space areas are typically common to all residents.

Apartment Residential. Allows 20-35 du/ac. Apartment developments in Foster City generally provide the highest density living environment, although some apartment and condominium developments are very similar with respect to density and amenities.

Commercial and Industrial Categories

Town Center Commercial. This designation is reserved for the area located northwest of East Hillsdale Boulevard, bounded by Foster City Boulevard to the north and State Route 92 to the west. The area includes a 100-acre development known as Metro Center, in addition to Parkside Towers and other office developments. Metro Center is intended to serve as Foster City's downtown core. The highest intensity uses in the City would be allowed, with Floor Area Ratios (FAR) for office developments ranging from .55 to 2.0 FAR. Town Center office developments located outside Metro Center, have lower FAR's which range from .18 to 1.5 FAR.

Neighborhood Commercial. Reserved for small neighborhood convenience shopping centers whose primary focus is servicing the immediate neighborhood. Although uses allowed in the centers are mostly limited to neighborhood serving uses, a percentage of the floor area of each center may be occupied by uses which are community serving in nature. In addition, the City will allow housing or a mix of housing and commercial development at specifically designated "housing opportunity sites", consistent with Housing Element Policies. FAR of neighborhood commercial centers generally range between .20 and .30 FAR.

Service Commercial. Includes a mix of uses providing general services. The area bounded by Foster City Boulevard, East Hillsdale Boulevard, and State Route 92 is designated Service Commercial and contains a mix of research and development firms, storage and professional offices. Also located in this area are food establishments, including several fast food restaurants, and a community theatre (Hillbarn). Land use intensities vary greatly in this area, from relatively low .03 to .12 FAR for restaurant and gas station uses, to higher intensity office developments with FAR's ranging from .20 to .98 FAR (although most developments fall in the lower end, .20 to .40 FAR, of this range).

Waterfront Commercial. This designation allows only for commercial development which is directly related to, and enhances the public use of, the waterfront without damaging environmental effects. Appropriate commercial uses would avoid impacting wetlands and could include restaurants, commercial recreation, marine-related retail and offices and marina berths. The site could also be used to expand the wetland areas in order to provide mitigation for off- site projects. At the present time, only the proposed Foster City Marina site is designated for waterfront commercial uses.

Light Industrial. Includes wholesale facilities, storage warehouses and the manufacturing, processing, repairing, or packaging of goods. Emission of fumes, noise, smoke or other pollutants or nuisances are strictly controlled. A limited amount of general office use is acceptable in this area provided the uses meet the requirements established for the M-1 (Light Industrial) zoning district. The M-1 zoning district is proposed to be amended to allow general office uses part of this element. FARs for developments in the industrial area range from .20 to .60 FAR.

Research/Office Park. Areas with this designation contain office, research and development, and manufacturing establishments whose operations are clean and quiet. Mixed-use projects which include some retail and residential uses in addition to office and research uses may, under certain conditions, be considered compatible with this designation. Such conditions include compatibility of uses and project design (land planning, architecture, etc.). A large portion of Vintage Park and the Lincoln Centre area, and the Bayside Towers development are all designated for Research/Office Park use. The intensity of development found in Vintage Park and Lincoln Centre are very similar, with FARs generally ranging from .20 to .60 FAR in Vintage Park, and .26 to .56 FAR in Lincoln Centre. The intensity of development for Bayside Towers and vacant Vintage Park sites is anticipated to have an FAR up to 1.0.

Chess/Hatch Office Research. Areas with this designation allow commercial, office, industrial, biotechnology and other such compatible uses, including vehicle parking in both parking structures and at-grade parking lots on the project site. Incompatible uses such as housing, schools, day care, and other uses serving primarily children are prohibited. Vertically and horizontally mixed-use developments that maximize the use of land, organize land uses and pedestrian/vehicular circulation in a safe, logical and functional manner and establish a safe, logical and functional design relationship with adjacent land uses is allowed within this designation. Uses must meet the

requirements of Chapter 17.68, General Performance Standards, of Title 17, Zoning, of the Foster City Municipal Code. FARs for developments in this area would range from 0.6 to 1.55 .

The intensity of development found in Vintage Park and Lincoln Centre are very similar, with an FAR generally ranging from .20 to .60 in Vintage Park, and .26 to .56 in Lincoln Centre. The intensity of development for the East Third Avenue, Bayside Towers, and vacant Vintage Park sites is anticipated to a have an FAR up to 1.0.

Other Categories

School. This designation includes only those properties owned by public school districts which have operational schools located on them.

Parks and Recreation. This designation is for improved open space lands whose primary purpose is recreation, and includes all local and regional parks.

Open Space. Open lands which are vacant of structures and improvements, and which are primarily maintained in their natural condition, are designated as open space. In some cases, maintained pathways or parking areas which enhance access to the open space areas are considered compatible with this designation. The pedway along the perimeter of the City which provides access to San Francisco Bay is designated open space, as well as a large parcel of land located north of East Third Avenue along the northern boundary of the City and adjacent to San Mateo City wetlands.

Public and Semi-Public. Reserved for uses which are generally public serving in nature, including religious institutions, schools, government offices, and fire and police facilities.

Foster City Zoning Code

The Foster City Zoning Code is the main tool to address the physical standards for development in the City. The Zoning Code identifies land use districts, which implement the Land Use Map of the General Plan and provide a greater degree of specificity regarding the permitted and conditionally allowed land uses within each zone. The Zoning Code establishes development standards for each zoning district, requires architectural review for new development and most modifications to structures and other improvements, and establishes performance standards for hazards and potential nuisances.

Foster City Architectural and Solar Guidelines

In order to promote a high quality of architectural design for Single Family (R-1) districts, the City has established design review for public and private development proposals. The guidelines are intended to guide the City's decision-makers, Planning staff, and project applicant toward a well-designed project that satisfies the applicant's needs while also meeting the City's goals and objectives for a well-designed community.

3.8.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on land use and planning and population and housing if it will:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect;
- Conflict with any applicable habitat conservation plan or natural community conservation plan;
- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

IMPACTS AND MITIGATION MEASURES

Impact 3.8-1: Project implementation has the potential to physically divide an established community (Less than Significant)

The City's General Plan establishes the City's vision for future growth and development. The Introduction to the General Plan identifies one of the primary concerns as maintaining the existing quality of life, specifically to "*Protect the integrity and quality of residential neighborhoods and commercial areas by establishing goals, policies and implementing regulations*…" As a master-

planned community, Foster City has nine distinct residential neighborhoods and three commercial/office/industrial areas, as described previously. The proposed project does not involve any changes to the City's Land Use Map that would divide existing communities and does not propose new goals or policies that would result in any physical division of existing communities. The proposed Climate Action Plan, described in Chapter 2.0, is a plan for the reduction of greenhouse gas emissions and does not include any land use changes nor does it require any future projects or improvements that would divide an established community.

Specifically, the proposed project would amend land uses at two locations to conform to the land uses of two new parks; Bridgeview Park and Shorebird Park.

Proposed Land Use Element Goal LUC-A and implementing Policy LUC A-1 (formerly Policy LUC-7) address the preservation of the identify and qualities of the City's residential neighborhoods through assuring that all new development, renovation or remodeling are harmoniously designed and operated to integrate with the existing neighborhood.

New development and redevelopment projects would be designed to complement the character of existing communities and provide connectivity between existing development and new development, as described in the proposed Land Use and Circulation Element. The proposed project does not include any new areas designated for urbanization or new roadways, infrastructure, or other features that would divide existing communities. The proposed project would have a **less than significant** impact associated with the physical division of an established community.

Impact 3.8-2: Project implementation has the potential to conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted to avoid or mitigate an environmental effect (No Impact)

Foster City Land Use Plans, Policies, and Regulations.

The proposed amendment to the Land Use and Circulation Element includes minor revisions to many existing goals, policies, and associated text from the element, as well as new goals, policies, and actions to address sustainability, preservation of views, live/work housing units, encourage new development and redevelopment that meets the community's needs, encourage mixed use developments, and ensure that the City's transportation and circulation system meets the needs of the community and provides complete streets. The update also reflects current codes, trends, design guidelines, master plans, and programs that have been initiated or adopted by the City since the last update. The project would amend the Land Use Map to designate Bridgeview Park and Shorebird Park for parks uses (see Figure 2-3). The Land Use and Circulation Element would also be updated to reflect existing conditions and to include improvements necessary to accommodate currently proposed, approved, and anticipated development (see Chapter 3.11, Transportation and Circulation). The proposed Climate Action Plan would provide a set of

implementation measures and programs to address climate change through reducing greenhouse gas emissions associated with vehicle trips, land use, energy consumption, solid waste, and City operations.

As set forth by state law, the General Plan serves as the primary planning document for the City and subordinate documents and plans would be updated to be consistent with the General Plan. The proposed amendments to the Land Use and Circulation Element build on the overall themes of the General Plan through continuing to focus on maintaining the integrity and high quality living environment of the City's residential neighborhoods; achieving a successful build-out that balances jobs and housing, infrastructure capacity with development needs, and responding to longer-term land use and circulation needs in an appropriate manner. The proposed element carries forward and enhances policies and measures from the adopted Land Use and Circulation Element that were intended for environmental protection and would not remove or conflict with the General Plan or other City plans, policies, or regulations adopted for environmental protection.

The Land Use and Circulation Element would not require modifications to the City's Zoning Ordinance in order to provide consistency between the General Plan and zoning. The Land Use and Circulation Element was developed to be consistent with the Zoning Ordinance, and would not result in any conflicts or inconsistencies. Additionally, the proposed Land Use Map and the Climate Action Plan are also consistent with the Zoning Ordinance, as these documents serve as implementation tools of the Land Use and Circulation Element and do not contain and provisions or components that would conflict with the Zoning Ordinance.

The proposed Climate Action Plan addresses sustainability and reduction of greenhouse gas emissions. As such, the Climate Action Plan reduces potential environmental impacts associated with transportation, air quality, and climate change and would assist the City in being consistent with the AB 32 targets and the Sustainable Communities Strategy/Metropolitan Transportation Plan, as discussed in Chapter 3.5. The Climate Action Plan is fully consistent with the Land Use and Circulation Element, and constitutes the City's primary implementation tool to achieve the sustainability principals outlined in the Land Use and Circulation Element.

With the exception of the modification to Bridgeview Park and Shorebird Park, the Land Use Map does not include any parcel land use re-designations. The proposed project would modify the existing descriptions of the General Plan land use designations by updating allowable FARs and the allowable density of areas. Specifically, additional density is permitted above the density ranges described in the residential land use designations, described under the Regulatory Setting section of this chapter, pursuant to California Density Bonus Law, Chapter 17.86 Density Bonuses, and other incentives designed to provide affordable housing. Additionally, the FARs in the Research/Office Park land use designation would be revised to allow FARs generally ranging from .30 along Foster City Boulevard, to .44 for Bayside Towers to a campus-wide average of .79 for the Gilead Campus within Vintage Park. The intensity of development for the vacant Vintage Park sites is anticipated to have an FAR up to 1.0.

The proposed Land Use and Circulation Element has been prepared to be consistent with other elements of the General Plan and carries forward policies from the adopted element that address adequate public facilities and services, visual resources, and open space. The changes to the Land Use and Circulation Element and the proposed Climate Action Plan would not conflict with the adopted General Plan, including policies and actions that have been adopted to address potential environmental impacts, nor would they conflict with other plan, policies, or regulations adopted to mitigate an environmental effect.

The other sections of this EIR address the proposed project's consistency with City plans, policies, and regulations that are adopted in order to reduce or avoid an environmental impact. Sections 3.1 through 3.7, and Sections 3.9 through 3.12, address potential impacts associated with air quality, biological resources, cultural resources, geology and soils, greenhouse gases and climate change, hazards and hazardous materials, hydrology and water quality, noise, public services and utilities, transportation and circulation, and visual resources. As described in greater detail in each of these respective EIR sections, the proposed project is consistent with all applicable City policies and programs adopted to reduce, mitigate, or avoid an environmental impact. These sections provide extensive details, and specific substantial supporting evidence to this effect.

As future development and infrastructure projects are considered by the City, each project will be evaluated for conformance with the City's General Plan, Zoning Ordinance, Standard Conditions of Approval, and other relevant plans and regulations. Subsequent development and infrastructure projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA. The Land Use and Circulation Element includes policies and actions related to land use planning and coordination with local agencies, and the Climate Action Plan includes a detailed list of measures and programs that new development must implement in order to reduce GHG emissions. As described throughout the other relevant sections of this EIR, the proposed project would have **no impact** related to potential conflicts with plans, policies, and regulations adopted by Foster City to avoid or minimize environmental impacts.

BCDC San Francisco Bay Plan: The Land Use and Circulation Element update would change one land use designation within the shoreline and area under BCDC jurisdiction. The Bridgeview Park site would change from Open Space to Park. The application of the Park designation to the Werder Park site would facilitate limited parks infrastructure development, including picnic tables, a small parking area for trails access, and informational signage. Intensive recreational infrastructure, such as ball fields and sports complexes is not proposed or contemplated for the Werder Park site. Future development, infrastructure, and other projects in the area of BCDC's jurisdiction would be reviewed by BCDC for conformance with the San Francisco Bay Plan. The proposed project would have **no impact** related to potential conflicts with the San Francisco Bay Plan.

Airport Land Use Compatibility Plans: The proposed project's consistency with the San Carlos Airport Comprehensive Land Use Compatibility Plan and the San Francisco International Airport Comprehensive Airport Land Use Compatibility Plan is addressed under Impact 3.6-4 in Section 3.6

of this EIR (Hazards), and under Impact 3.9-3 in Section 3.9 of this EIR (Noise). As described in greater detail in these sections, the proposed project would not conflict with any of the safety or noise requirements of these two relevant airport land use compatibility plans, and no mitigation is required. As such, there is **no impact**.

Impact 3.8-3: Project implementation may conflicts with an applicable habitat conservation plan or natural community conservation plan (No Impact)

There are no applicable Habitat Conservation Plans or Natural Community Conservation Plans that have been adopted by or for Foster City. Therefore, there is **no impact** associated with this topic. Habitat and natural community issues are addressed in Chapter 3.2, Biological Resources.

Impact 3.8-4: Project implementation has the potential to induce substantial population growth (Less than Significant)

The adopted Land Use and Circulation Element accommodates future growth in Foster City, including new businesses, expansion of existing businesses, mixed-use development, and new residential uses. Infrastructure and services would need to accommodate future growth that is already envisioned for the City. The proposed project would change land use designations at Bridgeview Park and Shorebird Park for parks uses (see Figure 2-3). These changes would not induce population growth, as residential uses or significant jobs-generating uses are not permitted within the Parks designation.

The proposed project would also amend the Land Use and Circulation Element to include new and modified goals, policies, and actions that address maintaining the integrity and high quality living environment of the city's residential neighborhoods; achieving a successful build-out that balances jobs and housing, infrastructure capacity with development needs, and responding to longer-term land use and circulation needs in an appropriate manner. As an update to the Land Use and Circulation Element and a new Climate Action Plan, the proposed project does not propose any specific development projects nor would any development, infrastructure, or other projects receive entitlements as part of the proposed project. The proposed project would accommodate growth through a continuation of the existing Land Use Map that would allow for increased residential and retail development, in comparison to existing conditions. Adoption of the Climate Action Plan would not induce population growth in the City, as the Climate Action Plan does not facilitate residential development, nor does it designate any sites for residential development.

Given the historical and current population, housing, and employment trends, growth in the Foster City and the surrounding region is inevitable. However, growth under the proposed Land Use and Circulation Element and Climate Action Plan would remain within the general growth levels projected statewide and is not anticipated to exceed any growth projections or limitations that have been adopted to avoid an environmental effect.

ABAG's *Projections 2013* population projections for 2020, 2030, and 2040 show an increase in population at an average rate of 0.36 percent per year from 2010 through 2040. The City's population is anticipated to increase to approximately 33,900 persons by 2040, as shown in Table 3.8-4.

TABLE 3.8-4: POPULATION TRENDS

YEAR	POPULATION	% CHANGE
1990	28,176	--
2000	28,803	2.2%
2010	30,567	6.1%
2020	31,600	3.4%
2030	32,700	3.5%
2040	33,900	3.7%

SOURCE: US CENSUS, 2000; CALIFORNIA DEPARTMENT OF FINANCE, 1990; ABAG, 2013

ABAG's *Projections 2013* considers anticipated rates of growth and the types of growth allowed by the adopted land use maps for each ABAG jurisdictions. The proposed Foster City Land Use Map would result in the same level of projected population growth as projected under the existing Land Use Map, and would not exceed the estimates and projections completed by ABAG.

Growth allowed under the proposed project would assist the City in accommodating its fair share of statewide housing needs, which are allocated by the State Department of Housing and Community Development to the Association of Bay Area Governments on a regular basis. Foster City's allocation for 2007 through 2014 was 486 residential units and the allocation for 2014 through 2022 is 430 residential units.

The adopted General Plan includes policies and actions that mitigate environmental impacts associated with growth, such as air quality, noise, traffic, water supply, and water quality effects. Additionally, this Draft EIR includes mitigation measures, where appropriate, to reduce or eliminate potentially significant impacts associated with specific environmental issues associated with growth. Chapters 3.1 through 3.7 and 3.9 through 4.0 provide a discussion of environmental effects associated with development allowed under the proposed project.

With implementation of adopted and proposed General Plan policies and actions intended to guide growth and provide services necessary to accommodate growth, the land uses allowed under the proposed General Plan Update and Climate Action Plan would not induce growth that would exceed adopted thresholds, estimates, or projections. Therefore, population and housing growth associated with the proposed project would result a **less than significant** impact.

Impact 3.8-5: Project implementation does not have the potential to displace substantial numbers of people or existing housing (Less than Significant)

While the proposed project does not directly propose any development, it would allow for the development and redevelopment of lands within the City that are currently occupied by people and existing housing units. Residences may be removed as part of future development activities allowed under the proposed project; however, the proposed project would accommodate approximately 638 new housing units in the city limits, which would provide adequate replacement housing opportunities for any displacement that occurs.

The most current household estimates for Foster City, from the California Department of Finance, estimate the current number of households to be 12,312. From 1990 to 2010, households in Foster City increased by 760, totaling 12,016 in 2010. Household growth occurred at similar rates during those two decades, 3.3% from 1990 to 2000 and 3.5% from 2000 to 2010. ABAG's projections for 2020, 2030, and 2040 show an increase in population at a rate of 0.25 percent per year from 2010 through 2040. Households in the City are anticipated to increase to approximately 12,950 by 2040, as shown in Table 3.8-5.

TABLE 3.8-5: HOUSEHOLD TRENDS

YEAR	*HOUSEHOLDS*	*% CHANGE*
1990	11,256	--
2000	11,611	3.3%
2010	12,016	3.5%
2020	12,380	3.0%
2030	12,690	2.5%
2040	12,950	2.0%

SOURCE: US CENSUS, 2000; CALIFORNIA DEPARTMENT OF FINANCE, 1990; ABAG, 2013

While the proposed General Plan Update and Climate Action Plan may result in redevelopment that would remove existing residences, the proposed project would ultimately allow for an increase in the total number of residences in the City and provide housing opportunities for persons that may be displaced as a result of development. This provision of replacement "housing opportunities" is essentially a self-mitigating aspect as a result of implementation of the proposed project. Therefore, impacts of the proposed project on the displacement of people or housing are considered **less than significant**.

RESOURCES

Foster City, 1993. Foster City General Plan. Adopted May 1993, amended through 2010. Foster City, CA.

Association of Bay Area Governments. *Projections 2013* (ABAG 2014).

San Francisco Bay Conservation and Development District. San Francisco Bay Plan. Accessed at: http://www.bcdc.ca.gov/laws_plans/plans/sfbay_plan#2.

State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2013 and 2014, with 2010 Benchmark.* Sacramento, California, January 2015.

State of California, Department of Finance, Demographic Research Unit. *Historical and Projected State and County Births, 1970-2021, with Actual and Projected Fertility Rates by Mother's Age and Race/Ethnicity, 2000-2021.* Sacramento, California: October 2012.

State of California, Department of Finance, Demographic Research Unit. *Immigration by County, 1984-2011.* Sacramento, California: No date.

This page left intentionally blank

This section of the EIR assesses potential effects, impacts and mitigation measures related to noise and vibration associated with implementation of the proposed project. There were no comments received during the NOP scoping period related to this environmental topic. The analysis in this section was completed by j.c. brennan and associates, a firm specializing in acoustical analyses for CEQA and land use planning projects.

3.9.1 ENVIRONMENTAL SETTING

KEY TERMS

Acoustics The science of sound.

Ambient Noise The distinctive acoustical characteristics of a given area consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.

Attenuation The reduction of noise.

A-Weighting A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.

Decibel or dB Fundamental unit of sound, defined as ten times the logarithm of the ratio of the sound pressure squared over the reference pressure squared.

dBA A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

CNEL Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.

Frequency The measure of the rapidity of alterations of a periodic acoustic signal, expressed in cycles per second or Hertz.

Impulsive Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.

Ldn Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.

Leq Equivalent or energy-averaged sound level.

Lmax The highest root-mean-square (RMS) sound level measured over a given period of time.

L(n) The sound level exceeded a described percentile over a measurement period. For instance, an hourly L50 is the sound level exceeded 50 percent of the time during the one hour period.

Loudness A subjective term for the sensation of the magnitude of sound.

Noise Unwanted sound.

SEL A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event

FUNDAMENTALS OF ACOUSTICS

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (Leq), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The Leq is the foundation of the composite noise descriptor, Ldn, and shows very good correlation with community response to noise.

The day/night average level (Ldn) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because Ldn represents a 24-hour average, it tends to disguise short-term variations in the noise environment. CNEL is similar to Ldn, but includes a +3 dB penalty for evening noise. Table 3.9-1 lists several examples of the noise levels associated with common situations.

TABLE 3.9-1: TYPICAL NOISE LEVELS

COMMON OUTDOOR ACTIVITIES	NOISE LEVEL (DBA)	COMMON INDOOR ACTIVITIES
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

SOURCE: CALTRANS, TECHNICAL NOISE SUPPLEMENT, TRAFFIC NOISE ANALYSIS PROTOCOL. NOVEMBER 2009.

EFFECTS OF NOISE ON PEOPLE

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction;
- Interference with activities such as speech, sleep, and learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

Sensitive receptors are land uses or groups of people that are most susceptible to increases in noise levels or the annoying or harmful effects of exposure to excessive noise levels. Examples of sensitive receptors include but are not necessarily limited to schools, hospitals, libraries, senior care facilities, and residential areas.

EXISTING NOISE LEVELS

Traffic Noise Levels

The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD 77-108) was used to develop Ldn (24-hour average) noise contours for all highways and major roadways in the project study area. The model is based upon the CALVENO noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver and the acoustical characteristics of the site. The FHWA Model predicts hourly Leq values for free-flowing traffic conditions, and is generally considered to be accurate within 1.5 dB. To predict Ldn values, it is necessary to determine the hourly distribution of traffic for a typical 24-hour period.

Existing traffic volumes were obtained from the traffic modeling performed for the project study area. Day/night traffic distribution for State Routes 92 and 101 were based upon continuous hourly noise measurement data collected for these roadways. Using these data sources and the FHWA traffic noise prediction methodology, traffic noise levels were calculated for existing conditions. Table 3.9-2 shows the results of this analysis. Appendix B provides the complete traffic modeling inputs and results for existing traffic conditions.

Traffic noise levels are predicted at the sensitive receptors (existing residences) at the closest typical setback distance along each project-area roadway segment. Typical setback distances are measured from the roadway centerline to the nearest sensitive building façade or outdoor activity area, whichever is closer to the roadway. In some locations, sensitive receptors may be located at distances which vary from the assumed calculation distance and may experience shielding from intervening barriers or sound walls. However, the traffic noise analysis is believed to be representative of the majority of sensitive receptors located closest to the project-area roadway segments analyzed in this report. The project-area roadway segments analyzed in this report were selected based on the trip distribution patterns and traffic volumes identified in the traffic impact analysis, and were selected in order to represent significant roadways throughout all sectors of the City.

The actual distances to noise level contours may vary from the distances predicted by the FHWA model due to roadway curvature, grade, shielding from local topography or structures, elevated roadways, or elevated receivers. The distances reported in Table 3.9-2 are generally considered to be conservative estimates of noise exposure along roadways in Foster City. As shown in Table 3.9-2, the highest traffic noise levels are found adjacent to State Routes 92 and 101, and on East Hillsdale Avenue between Norfolk Street and Altair Avenue.

TABLE 3.9-2: PREDICTED EXISTING TRAFFIC NOISE LEVELS

ROADWAY	SEGMENT	NOISE LEVEL AT CLOSEST RECEPTORS (LDN)[1]	DISTANCES TO TRAFFIC NOISE CONTOURS, LDN (FEET)		
			70 DB	65 DB	60 DB
US 101 (Bayshore Fwy.)	North of East Hillsdale	68.7[2]	122	263	567
US 101 (Bayshore Fwy.)	South of East Hillsdale	62.9[2]	134	288	622
Beach Park Blvd.	Edgewater to Foster City	62.6	19	41	89
Beach Park Blvd.	North of Foster City	56.2	7	16	34
Chess Drive	West of Vintage Park	57.7	15	32	70
Chess Drive	East of Vintage Park	59.3	19	42	90
Edgewater Boulevard	SR92 to Metro Center	63.0	29	63	135
Edgewater Boulevard	Metro Center to E. Hillsdale	64.7	38	81	175
Edgewater Boulevard	E. Hillsdale to Beach Park	66.3	43	92	198
Edgewater Boulevard	South of Beach Park	64.6	26	56	121
East Hillsdale Avenue	Norfolk to Altair	68.0	55	118	255
East Hillsdale Avenue	Altair to Edgewater	65.8	40	85	184
East Hillsdale Avenue	Edgewater to Shell	62.2	30	65	141
East Hillsdale Avenue	Shell to Foster City	60.6	23	51	109
East Hillsdale Avenue	Foster City to Pilgrim	60.6	18	38	83
East Hillsdale Avenue	East of Pilgrim	61.2	20	42	91
East Third Avenue	West of Mariners Island	54.3	36	78	168
East Third Avenue	Mariners Island to Foster City	61.5	27	59	127
Foster City Boulevard	E. Third to Vintage Park	58.6	17	37	80
Foster City Boulevard	Vintage Park to Chess	59.5	20	43	92
Foster City Boulevard	Chess to Metro Center	62.7	32	70	151

TABLE 3.9-2: PREDICTED EXISTING TRAFFIC NOISE LEVELS

ROADWAY	SEGMENT	NOISE LEVEL AT CLOSEST RECEPTORS (LDN)[1]	DISTANCES TO TRAFFIC NOISE CONTOURS, LDN (FEET)		
			70 DB	65 DB	60 DB
Foster City Boulevard	Metro Center to E. Hillsdale	62.0	29	63	137
Foster City Boulevard	E. Hillsdale to Marlin	64.8	34	72	156
Foster City Boulevard	Marlin to Beach Park	58.3	10	22	47
Metro Center Boulevard	Vintage Park to Shell	60.3	23	49	105
Metro Center Boulevard	Shell to EB SR92	59.8	21	45	98
Shell Boulevard	Metro Center to E. Hillsdale	60.4	16	35	75
Shell Boulevard	E. Hillsdale to Beach Park	63.0	24	51	111
State Route 92	US 101 to Mariner's Island Blvd./Edgewater Blvd.	65.1[2]	95	204	440
State Route 92	Mariner's Island Blvd./Edgewater Blvd. to Foster City Blvd.	62.9[2]	85	182	392
State Route 92	East of Foster City Blvd.	66.6	260	559	1205
Vintage Park Drive	Metro Center to Chess	59.1	19	41	88
Vintage Park Drive	Chess to Foster City	54.7	10	21	44

NOTES: DISTANCES TO TRAFFIC NOISE CONTOURS ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS.

[1] TRAFFIC NOISE LEVELS ARE PREDICTED AT THE CLOSEST SENSITIVE RECEPTOR OR AT A DISTANCE OF 100 FEET IN COMMERCIAL/RETAIL AREAS.

[2] ACCOUNTS FOR SHIELDING FROM EXISTING FREEWAY NOISE BARRIERS.

SOURCE: FEHR & PEERS TRANSPORTATION ENGINEERS, CALTRANS, J.C. BRENNAN & ASSOCIATES, INC., 2012.

Aviation Noise Levels

Aircraft preparing for landing at San Francisco International Airport (SFO) and general aviation from the San Carlos Municipal Airport are also significant noise sources in the City of Foster City. Jet aircraft noise is most significant in the northeastern portion of Foster City. Planes on their final approach to the San Francisco International Airport fly at an altitude as low as 1,500 feet over Foster City on approach to runways 28 L/R.

Two parallel approach paths are used for landings at the San Francisco International Airport and it is, therefore, quite common for two planes at a time to be landing and for several others to be circling overhead waiting to land. The westernmost path is above the eastern portion of Foster City. The other path is over the Bay. Most of the larger aircraft use the landing path above Foster City. The aircraft fly over Foster City in an attempt to achieve an early line-up with the runway while they lock onto the navigational system of the Airport.

Noise abatement procedures for SFO are overseen by the Aircraft Noise Abatement Office (ANAO). San Francisco International Airport's Fly Quiet Program is an Airport Community Roundtable initiative implemented by the Aircraft Noise Abatement Office. Its purpose is to encourage individual airlines to operate as quietly as possible at SFO. The program promotes a participatory approach in complying with noise abatement procedures and objectives by grading an airline's performance and by making the

scores available to the public via newsletters, publications, and public meetings. Fly Quiet offers a dynamic venue for implementing new noise abatement initiatives by praising and publicizing active participation rather than a system that admonishes violations from essentially voluntary procedures.

The Arrival Quality Rating is the latest addition to the Fly Quiet Program. In an effort to further reduce nighttime noise in neighboring communities, this rating is designed to maximize over-bay approaches to Runways 28 L/R between 11:00 p.m. and 6:00 a.m. Airlines arriving to Runways 28 L/R during these hours are assessed based on which approach flight path was used, either over the water or community. Over-the-bay approaches are rated good, versus over-the-communities, which are rated poor.

During good weather conditions, aircraft typically use Runways 28 L/R for landing. Aircraft established on a 9-mile final approach to Runway 28L will directly over fly Foster City and aircraft which are established on final for 28R will fly along the Foster City shoreline. Regardless of time of day, Runway 28R is the preferred arrival runway via the Quiet Bridge Visual Approach path which is located approximately .75 miles from the shoreline out over the bay and used by aircraft arriving from the east and south. Aircraft arriving from the north can also participate in this rating by requesting Air Traffic Control for a right downwind which routes the aircraft over water versus a left downwind that routes aircraft over residential areas.

To evaluate the arrival performance of each airline, two gates and a corridor have been created to identify these flights as good, marginal and poor, and which path was taken. To capture poor performers a corridor, shaped like a baseball diamond, which encapsulates most of Foster City and Redwood Shores was created. The marginal gate is designed to identify flights that fly along the outer edge of Foster City, or just off the shoreline and the good gate extends out over a large portion of the bay to capture flights that use over water approaches to SFO. During the noise monitoring conducted for this project, the Foster City Shortcut report indicated 10 gross offenders and a total of 14 total gate crossings.

The noise monitoring conducted at Site C (residential receptor at 821 Crane Avenue), shown on Figure 3.9-1, indicates that approximately 332 aircraft overflights occurred during the 24-hour noise monitoring period. Approximately 59 of these overflights occurred during evening (7 pm – 10 pm) hours and 52 overflights were recorded during nighttime (10 pm – 7 am) hours. The average sound exposure level (SEL) was measured to be 83 dB with a range of approximately 75-94 dB SEL. The measured 24-hour CNEL was 64.6 dB at this location. It should be noted that this is only a 24-hour measurement of CNEL and should not be compared to the annualized CNEL noise contours reported for the San Francisco International Airport.

While the State of California requires that the cities and counties evaluate community noise levels down to an Ldn or CNEL of 60 dB, the Division of Aeronautics and the Federal Aviation Administration use a threshold CNEL of 65 dB to determine airport noise impact boundaries. The San Mateo Airport Land Use Commission also uses the 65 dB CNEL contour as the noise impact boundary for SFO consistent with noise restrictions in the California Administrative Code, Title 21, Subchapter 6, “Noise Standards.” Local plans, policy actions or development activities that affect areas within that boundary must receive ALUC

approval or have a finding of overriding consideration prior to local permit issuance. The federal government uses a 65 dB CNEL boundary to determine areas eligible for federal grant money for noise insulation projects. The 65 CNEL contour for San Francisco International Airport does not impinge on the land use area of the City of Foster City, as shown by Figure 3.9-2. The 65 CNEL contour for both existing and future conditions is over the Bay north of Highway 92. The fact that the 65 CNEL contour is used as the cutoff for airport noise impacts has been a source of frustration to the citizens of the City of Foster City which are impacted by aircraft noise but not at a high enough level to receive federal funds to improve the noise situation.

Noise levels generated the San Carlos Airport near Foster City are reported to be between 55-60 dB CNEL, as shown by Figure 3.9-3.

Fixed Noise Sources

The production of noise is a result of many industrial processes, even when the best available noise control technology is applied. Noise exposures within industrial facilities are controlled by federal and state employee health and safety regulations (OSHA and Cal-OSHA), but exterior noise levels may exceed locally acceptable standards. Commercial, recreational and public service facility activities can also produce noise which affects adjacent sensitive land uses. These noise sources can be continuous and may contain tonal components which have a potential to annoy individuals who live nearby. In addition, noise generation from fixed noise sources may vary based upon climatic conditions, time of day and existing ambient noise levels.

In the City of Foster City, fixed noise sources typically include parking lots, loading docks, parks, schools, and other commercial/retail use noise sources (HVAC, exhaust fans, etc.)

From a land use planning perspective, fixed-source noise control issues focus upon two goals:

1. To prevent the introduction of new noise-producing uses in noise-sensitive areas, and
2. To prevent encroachment of noise sensitive uses upon existing noise-producing facilities.

The first goal can be achieved by applying noise level performance standards to proposed new noise-producing uses. The second goal can be met by requiring that new noise-sensitive uses in near proximity to noise-producing facilities include mitigation measures that would ensure compliance with noise performance standards.

Fixed noise sources which are typically of concern include but are not limited to the following:

- HVAC Systems
- Pump Stations
- Steam Valves
- Generators
- Air Compressors
- Conveyor Systems
- Pile Drivers
- Cooling Towers/Evaporative Condensers
- Lift Stations
- Steam Turbines
- Fans
- Heavy Equipment
- Transformers
- Grinders

- Drill Rigs
- Welders
- Outdoor Speakers
- Chippers
- Loading Docks
- Gas or Diesel Motors
- Cutting Equipment
- Blowers
- Cutting Equipment
- Amplified music and voice

The types of uses which may typically produce the noise sources described above, include, but are not limited to: wood processing facilities, pump stations, industrial/agricultural facilities, trucking operations, tire shops, auto maintenance shops, metal fabricating shops, shopping centers, drive-up windows, car washes, loading docks, public works projects, batch plants, bottling and canning plants, recycling centers, electric generating stations, race tracks, landfills, sand and gravel operations, special events such as concerts, and athletic fields. Typical noise levels associated with various types of stationary noise sources are shown in Table 3.9-3.

Table 3.9-3: Typical Stationary Source Noise Levels

Use	Noise Level at 100 feet, Leq [1]	Distance to Noise Contours, feet			
		50 dB Leq (No Shielding)	45 dB Leq (No Shielding)	50 dB Leq (With 5 dB Shielding)	45 dB Leq (With 5 dB Shielding)
Auto Body Shop	56 dB	200	355	112	200
Auto Repair (Light)	53 dB	141	251	79	141
Busy Parking Lot	54 dB	158	281	89	158
Cabinet Shop	62 dB	398	708	224	398
Car Wash	63 dB	446	792	251	446
Cooling Tower	69 dB	889	1,581	500	889
Loading Dock	66 dB	596	1,059	335	596
Lumber Yard	68 dB	794	1,413	447	794
Maintenance Yard	68 dB	794	1,413	447	794
Outdoor Music Venue	90 dB	10,000	17,783	5,623	10,000
Paint Booth Exhaust	61 dB	355	631	200	355
Skate Park	60 dB	316	562	178	316
School Playground / Neighborhood Park	54 dB	158	281	89	158
Truck Circulation	48 dB	84	149	47	84
Vendor Deliveries	58 dB	251	446	141	251

[1] Analysis assumes a source-receiver distance of approximately 100 feet, no shielding, and flat topography. Actual noise levels will vary depending on site conditions and intensity of the use. This information is intended as a general rule only, and is not suitable for final site-specific noise studies.

Source: j.c. brennan & associates, Inc. 2012.

COMMUNITY NOISE SURVEY

A community noise survey was conducted to document ambient noise levels at various locations throughout the City. Short-term noise measurements were conducted at six locations throughout the City on August 16, 2012 during daytime and nighttime periods. In addition, continuous 24-hour noise monitoring at three sites was also conducted throughout the City to record day-night statistical noise level trends. The data collected included the hourly average (Leq), median (L50), and the maximum level (Lmax) during the measurement period. Noise monitoring sites and the measured noise levels at each site are summarized in Table 3.9-4 and Table 3.9-5. Figure 3.9-1 shows the locations of the noise monitoring sites. Appendix C provides the complete results of the continuous noise monitoring data.

Noise monitoring sites were generally selected to show the range of ambient noise conditions that exist at various sensitive receptor locations throughout the City. Site A shows the noise exposure that occurs at residential uses closest to SR 101. Site B shows the noise exposure for residential uses near SR 92 and under the flight path for SFO arrivals. Site C was selected to represent the noise exposure from SFO arrivals, without substantial contribution for other noise sources, such as freeways or arterial roadways. Sites 1-6 were selected to represent general ambient noise levels at various locations throughout the City, including both recreational areas and sensitive receptor locations.

Community noise monitoring equipment included Larson Davis Laboratories (LDL) Model 820 and Model 824 precision integrating sound level meters equipped with LDL ½" microphones. The measurement systems were calibrated using a LDL Model CAL200 acoustical calibrator before and after testing. The measurement equipment meets all of the pertinent requirements of the American National Standards Institute (ANSI) for Type 1 (precision) sound level meters.

TABLE 3.9-4: EXISTING CONTINUOUS 24-HOUR AMBIENT NOISE MONITORING RESULTS

SITE	LOCATION	LDN (DBA)	MEASURED HOURLY NOISE LEVELS, DBA					
			DAYTIME (7:00 AM - 10:00 PM)			NIGHTTIME (10:00 PM – 7:00 AM)		
			LEQ	L50	LMAX	LEQ	L50	LMAX
A	18 Lyme Ln. – Front yard	58	48-61	46-54	58-87	46-54	44-52	60-72
B	1925 Beach Park Blvd. – Front yard	71	67-71	65-71	76-82	55-67	53-66	68-83
C	821 Crane Ave. – Front yard	64	60-64	52-58	74-87	47-61	44-52	65-77

SOURCE – J.C. BRENNAN & ASSOCIATES, INC. – 2012

TABLE 3.9-5: EXISTING SHORT-TERM COMMUNITY NOISE MONITORING RESULTS

SITE	LOCATION	TIME[1]	MEASURED SOUND LEVEL, DB			NOTES	LOCATION COORDINATES
			LEQ	L50	LMAX		
1	Vintage Park / Velocity Way	2:07 pm	53	51	63	Aircraft flyovers to north, wind, traffic noise to south	37.567516° -122.280744°
		10:14 pm	55	53	64	Aircraft flyovers to north, corona noise from high voltage lines	
2	Leo J. Ryan Park – Near Teen Center	4:33 pm	54	54	60	Traffic, wind, aircraft noise to north and south	37.556435° -122.269350°
		11:30 pm	48	46	56	Traffic, aircraft	
3	Vacant Parcel at City Hall	3:48 pm	58	57	71	Traffic, wind, aircraft	37.560088° -122.268141°
		11:49 pm	55	53	63	Traffic, aircraft	
4	Catamaran Park	3:11 pm	52	51	62	Aircraft, park activities	37.553154° -122.265954°
		10:56 pm	48	45	60	Traffic, aircraft	
5	On Levee path at Beach Park Blvd. & Tarpon St.	4:09 pm	56	55	63	Wind, distant traffic on SR 92, aircraft, joggers, birds	37.560937° -122.247795°
		11:13 pm	57	50	68	Traffic, aircraft, waves breaking	
6	Sea Cloud Park	2:37 pm	48	47	57	Park activities, distant traffic and aircraft to north and south	37.544496° -122.259350°
		10:39 pm	43	42	52	Traffic, aircraft, sprinklers	

1 - ALL COMMUNITY NOISE MEASUREMENT SITES HAVE TEST DURATIONS OF 10:00 MINUTES.

SOURCE - J.C. BRENNAN & ASSOCIATES, INC. 2012.

The results of the community noise survey shown in Table 3.9-4 and 3.9-5 indicate that existing transportation noise sources were the major contributor of noise observed during daytime and nighttime hours. Noise from aircraft overflights was observed at all locations.

3.9.2 REGULATORY SETTING

FEDERAL

Federal Highway Administration (FHWA)

The FHWA has developed noise abatement criteria that are used for federally funded roadway projects or projects that require federal review. These criteria are discussed in detail in Title 23 Part 772 of the Federal Code of Regulations (23CFR772).

Environmental Protection Agency (EPA)

The EPA has identified the relationship between noise levels and human response. The EPA has determined that over a 24-hour period, an Leq of 70 dBA will result in some hearing loss. Interference with activity and annoyance will not occur if exterior levels are maintained at an Leq of 55 dBA and interior levels at or below 45 dBA. Although these levels are relevant for planning and design and useful for informational purposes, they are not land use planning criteria because they do not consider economic cost, technical feasibility, or the needs of the community.

The EPA has set 55 dBA Ldn as the basic goal for residential environments. However, other federal agencies, in consideration of their own program requirements and goals, as well as difficulty of actually achieving a goal of 55 dBA Ldn, have generally agreed on the 65 dBA Ldn level as being appropriate for residential uses. At 65 dBA Ldn activity interference is kept to a minimum, and annoyance levels are still low. It is also a level that can realistically be achieved.

Department of Housing and Urban Development (HUD)

HUD was established in response to the Urban Development Act of 1965 (Public Law 90-448). HUD was tasked by the Housing and Urban Development Act of 1965 (Public Law 89-117) "to determine feasible methods of reducing the economic loss and hardships suffered by homeowners as a result of the depreciation in the value of their properties following the construction of airports in the vicinity of their homes."

HUD first issued formal requirements related specifically to noise in 1971 (HUD Circular 1390.2). These requirements contained standards for exterior noise levels along with policies for approving HUD-supported or assisted housing projects in high noise areas. In general, these requirements established the following three zones:

- 65 dBA Ldn or less - an acceptable zone where all projects could be approved.
- Exceeding 65 dBA Ldn but not exceeding 75 dBA Ldn - a normally unacceptable zone where mitigation measures would be required and each project would have to be individually evaluated for approval or denial. These measures must provide 5 dBA of attenuation above the attenuation provided by standard construction required in a 65 to 70 dBA Ldn area and 10 dBA of attenuation in a 70 to 75 dBA Ldn area.
- Exceeding 75 dBA Ldn - an unacceptable zone in which projects would not, as a rule, be approved.

HUD's regulations do not include interior noise standards. Rather a goal of 45 dBA Ldn is set forth and attenuation requirements are geared towards achieving that goal. HUD assumes that using standard construction techniques, any building will provide sufficient attenuation so that if the exterior level is 65 dBA Ldn or less, the interior level will be 45 dBA Ldn or less. Thus, structural attenuation is assumed at 20 dBA. However HUD regulations were promulgated solely for residential development requiring government funding and are not related to the operation of schools or churches.

The federal government regulates occupational noise exposure common in the workplace through the Occupational Health and Safety Administration (OSHA) under the EPA. Noise exposure of this type is dependent on work conditions and is addressed through a facility's or construction contractor's health and safety plan. With the exception of construction workers involved in facility construction, occupational noise is irrelevant to this study and is not addressed further in this document.

Federal Transit Administration

The Federal Transit Administration (FTA) has identified vibration impact criteria for sensitive buildings, residences, and institutional land uses near rail transit and railroads. The thresholds for residences and buildings where people normally sleep (e.g., nearby residences) are 72 VdB for frequent events (more than 70 events of the same source per day), 75 VdB for occasional events (30 to 70 vibration events of the same source per day), and 80 VdB for infrequent events (less than 30 vibration events of the same source per day). These criteria are summarized in Table 3.9-6.

TABLE 3.9-6: GROUNDBORNE VIBRATION IMPACT CRITERIA

LAND USE CATEGORY	GROUNDBORNE VIBRATION IMPACT LEVELS (VDB RE 1 μINCH/SEC, RMS)		
	FREQUENT EVENTS[1]	OCCASIONAL EVENTS[2]	INFREQUENT EVENTS[3]
CATEGORY 1 Buildings where vibration would interfere with interior operations.	65 VdB[4]	65 VdB[4]	65 VdB[4]
CATEGORY 2 Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB
CATEGORY 3 Institutional land uses with primarily daytime use.	75 VdB	78 VdB	83 VdB

Notes:
1. "Frequent Events" is defined as more than 70 vibration events of the same source per day. Most rapid transit projects fall into this category.
2. "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day. Most commuter trunk lines have this many operations.
3. "Infrequent Events" is defined as fewer than 30 vibration events of the same kind per day. This category includes most commuter rail branch lines.
4. This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration sensitive manufacturing or research should always require detailed evaluation to define the acceptable vibration levels. Ensuring low vibration levels in a building requires special design of HVAC systems and stiffened floors.

SOURCE: U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL TRANSIT ADMINISTRATION, TRANSIT NOISE AND VIBRATION IMPACT ASSESSMENT, MAY 2006, FTA-VA-90-1003-06.

STATE

California Department of Transportation (Caltrans) – Traffic Noise

Caltrans has adopted policy and guidelines relating to traffic noise as outlined in the Traffic Noise Analysis Protocol (Caltrans 1998b). The noise abatement criteria specified in the protocol are the same as those specified by FHWA.

California Department of Transportation (Caltrans) – Noise Insulation

The State establishes exterior sound transmission control standards for new hotels, motels, dormitories, apartment houses, and dwellings (other than detached single-family) as set forth in the 2010 California Building Code (Chapter 12, Section 1207.11). Interior noise levels attributable to exterior environmental noise sources shall not exceed 45 dBA DNL in any habitable room. When exterior noise levels (the higher of existing or future) where residential structures are to be located exceed 60 dBA DNL, a report must be submitted with the building plans describing the noise control measures that have been incorporated into the design of the project to meet the noise limit.

California Department of Transportation (Caltrans) – Construction Vibration

There are no applicable State plans, policies, regulations, or laws related to ground-borne vibration from construction activities, but guidance developed by the California Department of Transportation (Caltrans) has been used in past construction vibration impact assessments of projects developed in San José. Caltrans uses a vibration limit of 12.7 mm/sec (0.5 inches/sec), PPV for buildings structurally sound and designed to modern engineering standards. A conservative vibration limit of 5 mm/sec (0.2 inches/sec), PPV has been used for buildings that are found to be structurally sound but structural damage is a major concern. For historic buildings or buildings that are documented to be structurally weakened, a conservative limit of 2 mm/sec (0.08 inches/sec), PPV is often used to provide the highest level of protection. All of these limits have been used successfully and compliance to these limits has not been known to result in appreciable structural damage. All vibration limits referred to herein apply on the ground level and take into account the response of structural elements (i.e., walls and floors) to ground-borne excitation.

Governor's Office of Planning and Research (OPR)

OPR has developed guidelines for the preparation of general plans (Office of Planning and Research, 1998). The guidelines include land use compatibility guidelines for noise exposure.

California Building Standards Code (CBSC)

The State of California establishes exterior sound transmission control standards for new hotels, motels, dormitories, apartment houses, and dwellings other than detached single-family dwellings as set forth in the 2013 California Building Standards Code (Title 24, Part 2, Section 1207). Interior noise levels attributable to exterior environmental noise sources shall not exceed 45 dBA L_{dn} in any habitable room. When exterior noise levels (the higher of existing or future) where residential structures are to be located exceed 60 dBA L_{dn}, a report must be submitted with the building plans describing the noise control measures that have been incorporated into the design of the project to meet the noise limit.

LOCAL

Existing City Noise Thresholds

The existing (1993) City of Foster City General Plan Noise Element Goals and Policies are provided below.

NOISE GOALS

Goal N-A **Assure that the Noise Impacts of New Development or Redevelopment of Property is Done in a Manner that is Compatible with Existing Land Uses**

Assure the appropriateness of new development with the noise environment of Foster City and establish mitigation measure for any changes in land use as are reasonably necessary to assure compatibility with the surrounding area.

Goal N-B **Preserve and Improve the "Quiet Ambiance: Within Existing Neighborhoods**

Protect neighborhoods by providing an acceptable noise level throughout the community and by identifying and alleviating or minimizing existing noise problems where possible.

NOISE POLICIES

New Development, Changes in Use or Redevelopment of Property

N-1 **Land Use Compatibility Standards.** New development exposed to transportation noise sources must meet acceptable exterior noise level standards. The "normally acceptable" noise standards for new land uses are established in the Noise and Land Use Compatibility Guidelines (see Noise Element Background section) as modified below:

a) The goal for maximum outdoor noise levels in residential areas is an Ldn of 60 dB. This level is a requirement to guide the design and location of future development and a goal for the reduction of noise in existing development. However, 60 Ldn is a goal which cannot necessarily be reached in all residential areas within the realm of economic or aesthetic feasibility. This goal will be applied where outdoor use is a major consideration (e.g.., backyards in single-family housing developments and recreation areas in multi-family housing projects). The outdoor standard will not normally be applied to the small decks associated with apartments and condominiums but these will be evaluated on a case-by-case basis. Where the city determines that providing an Ldn of 60 dB or lower outdoors is not feasible, the outdoor goal may be increased to an Ldn of 65 dB.

b) The indoor noise level as required by the State of California Noise Insulation Standards must not exceed an Ldn of 45 dB in multi-family dwellings. This indoor criterion shall also be the maximum acceptable indoor noise level in new single-family homes.

c) Interior noise levels in new single-family and multi-family residential units exposed to an Ldn of 60 dB or greater should be limited to a maximum instantaneous noise level in the bedrooms of 50 dBA. Maximum instantaneous noise levels in other rooms should not exceed 55 dB.

d) Appropriate interior noise levels in commercial, industrial, and office buildings are a function of the use of space. For example, the noise level in private offices should generally be quieter than for data processing rooms. Interior noise levels in offices generally should be maintained at 45 Leq (hourly average) or less.

e) If an area currently is below the desired noise standard, an increase in noise up to the maximum should not necessarily be allowed. The impact of a proposed project on an existing land use should be evaluated in terms of the increase in existing noise levels and potential for adverse community impact, regardless of the compatibility guidelines.

N-2 **Noise Contour Map.** The City will review development proposals to assure consistency with noise standards by using the noise contours shown on map GP-15 (a large scale version of this map is available at the Foster City Community Development Department).

N-3 **Acoustical Studies.** The City will use the noise guidelines and contours to determine if additional noise studies are needed for a proposed new development.

N-4 **Residential and Other Noise Sensitive Uses in Commercial or Industrial Areas.** New residential or other noise sensitive development or activities will not be allowed where the noise level due to commercial or industrial noise sources will exceed the noise level standards as set forth in the table below, as modified:

Noise and Land Use Compatibility Standards for Industrial and Commercial Noise Sources

Category	Cumulative Duration of Noise Event in Any One-Hour Period (in minutes)	**Exterior Noise Level Standards**	
		Daytime (7 am - 10 pm)	Nighttime (10 pm - 7 am)
1	30	50	45
2	15	55	50
3	5	60	55
4	1	65	60
5	0	70	65

a. In the event the measured ambient noise level exceeds the applicable noise level standard in any category expressed in the table, the applicable standard will be adjusted so as to

equal the ambient noise level to establish a noise standard capable of being enforced through the City's Noise Ordinance.

b. Each of the noise level standards specified in the table above will be reduced by 5 dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises due to the greater annoyance factor associated with these types of noise.

N-5 **Mitigating Impacts on Surrounding Uses.** The City will require proposals to reduce noise impacts on adjacent properties through the following and other means, as appropriate:

a. Screen and control noise sources such as parking, outdoor activities and mechanical equipment.

b. Increase setbacks for noise sources from adjacent dwellings.

c. Wherever possible do not remove fences, walls or landscaping that serve as noise buffers, although design, safety and other impacts must be addressed.

d. Use soundproofing materials and double glazed windows.

e. Control hours of operation, including deliveries and trash pickup to minimize noise impacts.

N-6 **Noise Sensitive Uses.** The City will protect schools, hospitals, libraries, churches, convalescent homes and other noise sensitive uses from noise levels exceeding those allowed in residential areas. Projects located near noise sensitive uses should be oriented away from noise sources unless mitigation measures are included in development plans and regulation occurs of the activities or uses generating noise that might cause noise disturbances for noise sensitive uses.

N-7 **Compliance with State Noise Insulation Standards.** The adopted Noise Element will serve as a guideline for compliance with the State's noise insulation standards. Recognizing the need to provide acceptable habitation environments, State law requires noise insulation of new multi-family dwellings constructed within the 60 dB Ldn noise exposure contours. !t is a function of the Noise Element to provide noise contour information around all major sources in support of the sound transmission control standards (Chapter 2-35, Part 2, Title 24, California Administrative Code).

Protect Existing Neighborhoods

N-8 **Protecting Existing Residential Areas.** Protect the noise environment in existing residential areas. In general, the city will require the evaluation of mitigation measures for projects that would cause the Ldn to increase by 3 dB or more, if the increase would result in an Ldn greater than 60 dB or if the Ldn already exceeds 60 dB. Projects with the potential to generate significant adverse community controversy must also be evaluated. Noise created by

commercial or industrial sources associated with new projects, developments or new or existing activities conducted by existing developments or companies shall be controlled so as not to exceed the noise level standards set forth in "Noise and Land Use Compatibility Standards for Industrial and Commercial Noise Sources" table as measured at any affected residential land use.

N-9 **Noise Source Control.** The City will work with property owners and will enforce noise standards to control noise at its source to maintain existing noise levels to assure that noise levels do not exceed acceptable noise standards as established in the Noise and Land Use Compatibility Guidelines.

N-10 **City Street Improvements.** City street improvements will be designed to reduce noise levels in adjacent areas. The City will require soundwalls, earth berms, setbacks and other noise reduction techniques as conditions of development approval and as appropriate given design, use, site layout and other considerations.

N-11 **Coordination with Other Agencies.** Encourage other agencies to reduce noise levels generated by roadways, airports, and other facilities. The City will work with the county Airport Land Use Commission (ALUC), State Office of Noise Control (ONC) and other agencies to reduce noise generated from sources outside the City's jurisdiction.

N-12 **Enforcement Approach.** The City will administer the policies identified in the Noise Element and comply with State requirements for certain other noise control programs through specific local enforcement programs.

N-13 **Noise Ordinance.** The City will apply the quantitative noise ordinance standards (Chapter 17.68, General Performance Standards) throughout the City.

N-14 **Vehicle Noise.** The City will strive to reduce traffic noise levels, especially as they impact residential area and will continue enforcement of vehicle noise standards through noise readings and enforcement actions.

Foster City Standard Conditions of Approval

Foster City has adopted Standard Conditions of Approval (SCOAs) for large new and redevelopment projects. The following SCOAs related to Noise would apply to any proposed large new or redevelopment project:

SCOA 2.9: The construction contractor shall designate a “noise disturbance coordinator” who shall be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall determine the cause of the noise complaints (e.g., beginning work too early, bad muffler) and institute reasonable measures warranted to correct the problem. A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site. The construction contractor shall protect all downstream sanitary sewer lines

from construction debris while performing sanitary sewer construction. Means to prevent construction debris must be used and shall be inspected by the construction inspector.

SCOA 7.1: Three (3) sets of an acoustical analysis, including one electronic or pdf version, shall be submitted, prepared by a licensed professional, specifying the manner in which interior noise levels will be reduced to the required Community Noise Equivalency Level (CNEL) per Title 24 of the California Administrative Code. The details of noise attenuation recommended in the report will be subject to the review and approval of the Chief Building Official.

SCOA 9.1: Construction activities shall be limited to the hours of 8 a.m. to 5 p.m. on weekdays unless deviations from this schedule are approved in advance by the City. Nonconstruction activities may take place between the hours of 7 a.m. and 8 a.m. on weekdays and 9 a.m. and 4 p.m. on Saturdays but must be limited to quiet activities and shall not include the use of engine-driven machinery. No actual construction activities may take place between 7 a.m. and 8 a.m., except when post-tension slab foundations are being poured, the concrete pumper may be set up but no concrete may be poured. Forklifts shall be allowed to operate onsite between the hours of 5 p.m. and 6:30 p.m. on weekdays. The Planning Commission reserves the right to rescind this condition and further restrict construction activities in the event that the public health, safety and welfare are not protected due to noise levels emanating from the construction project.

SCOA 9.2: In order to minimize construction noise impacts, all engine-driven construction vehicles, equipment and pneumatic tools shall be required to use effective intake and exhaust mufflers; equipment shall be properly adjusted and maintained; all construction equipment shall be equipped with mufflers in accordance with OSHA standards.

SCOA 9.10: The construction contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.

SCOA 9.11: The construction contractor shall locate equipment staging in areas that will create the greatest possible distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.

3.9.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the project will have a significant impact related to noise if it will result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;

- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels within two miles of a public airport or public use airport; or
- For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

IMPACTS AND MITIGATION MEASURES

Generally, a project may have a significant effect on the environment if it will substantially increase the ambient noise levels for adjoining areas or expose people to severe noise levels. In practice, more specific professional standards have been developed. These standards state that a noise impact may be considered significant if it would generate noise that would conflict with local project criteria or ordinances, or substantially increase noise levels at noise sensitive land uses. The potential increase in traffic noise from the project is a factor in determining significance. Research into the human perception of changes in sound level indicates the following:

- A 3dB change is barely perceptible,
- A 5dB change is clearly perceptible, and
- A 10dB change is perceived as being twice or half as loud.

A limitation of using a single noise level increase value to evaluate noise impacts is that it fails to account for pre-project-noise conditions. Table 3.9-7 is based upon recommendations made by the Federal Interagency Committee on Noise (FICON) to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. The recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, it has been accepted that they are applicable to all sources of noise described in terms of cumulative noise exposure metrics such as the Ldn.

TABLE 3.9-7: SIGNIFICANCE OF CHANGES IN NOISE EXPOSURE

Ambient Noise Level Without Project, L_{dn}	Increase Required for Significant Impact
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more

SOURCE: FEDERAL INTERAGENCY COMMITTEE ON NOISE (FICON)

Based on the Table 3.9-7 data, an increase in the traffic noise level of 1.5 dB or more would be significant where the pre-project noise level exceeds 65 dB Ldn. Extending this concept to higher noise levels, an increase in the traffic noise level of 1.5 dB or more may be significant where the pre-project

traffic noise level exceeds 75 dB Ldn. The rationale for the Table 3.9-7 criteria is that, as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause annoyance.

VIBRATION STANDARDS

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception of the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

The Foster City General Plan Noise Element does not have specific policies pertaining to vibration levels. However, vibration levels associated with construction activities are addressed as potential noise impacts associated with project implementation.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 3.9-8 indicates that the threshold for damage to structures ranges from 2 to 6 peak particle velocity in inches per second (in/sec p.p.v). One-half this minimum threshold or 1 in/sec p.p.v. is considered a safe criterion that would protect against architectural or structural damage. The general threshold at which human annoyance could occur is noted as 0.1 in/sec p.p.v.

TABLE 3.9-8: EFFECTS OF VIBRATION ON PEOPLE AND BUILDINGS			
PEAK PARTICLE VELOCITY INCHES/SECOND	PEAK PARTICLE VELOCITY MM/SECOND	HUMAN REACTION	EFFECT ON BUILDINGS
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage.

SOURCE: CALTRANS. TRANSPORTATION RELATED EARTHBORNE VIBRATIONS. TAV-02-01-R9601 FEBRUARY 20, 2002.

Impact 3.9-1: Traffic Noise Sources (less than significant)

To describe future noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. Direct inputs to the model included traffic volumes provided by Fehr and Peers Transportation Consultants. The FHWA model is based upon the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly Leq values for free-flowing traffic conditions. To predict Ldn/CNEL values, it is necessary to determine the day/night distribution of traffic and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

Table 3.9-9 shows the future noise levels associated with traffic on the local roadway network under buildout of the proposed General Plan Land Use Map. Appendix D provides the complete traffic modeling inputs and results for cumulative and cumulative plus project conditions.

Implementation of the proposed project, which includes implementation of the Climate Action Plan, the Land Use and Circulation Element Update, and buildout of the proposed General Plan Land Use Map, would not contribute to an exceedance of the City's transportation noise standards and would not result in significant increases in traffic noise levels at existing sensitive receptors. As indicated by Table 3.9-9, the related noise level increases under buildout of the General Plan Land Use Map, which accounts for and includes Climate Action Plan and Land Use and Circulation Element implementation, are predicted to increase between 0.3 and 3.4dB. These changes would not exceed the FICON criteria shown in Table 3.9-7, nor would the increases cause an exceedance of the City's 60 dB Ldn residential exterior traffic noise standard. Therefore, this is a **less than significant impact**.

TABLE 3.9-9: EXISTING TRAFFIC NOISE LEVELS VS. PROPOSED PROJECT (GENERAL PLAN BUILDOUT) TRAFFIC NOISE LEVELS

Roadway	Segment	Noise Levels (Ldn, dB) at Closest Receptors[1]			Distance to Proposed General Plan Buildout Traffic Noise Contours, feet[2]		
		Existing Traffic Noise Levels	Proposed General Plan Buildout Noise Levels	Change (dB)	70 dB Ldn	65 dB Ldn	60 dB Ldn
US 101 (Bayshore Fwy.)	North of East Hillsdale	68.7[2]	69.3[2]	0.6	134	288	621
US 101 (Bayshore Fwy.)	South of East Hillsdale	62.9[2]	63.4[2]	0.5	146	315	679
Beach Park Blvd.	Edgewater to Foster City	62.6	62.9	0.3	20	44	94
Beach Park Blvd.	North of Foster City	56.2	57.0	0.8	8	18	38
Chess Drive	West of Vintage Park	57.7	58.5	0.8	17	37	79
Chess Drive	East of Vintage Park	59.3	60.0	0.7	22	47	100
Edgewater Boulevard	SR92 to Metro Center	63.0	64.3	1.3	35	76	164
Edgewater Boulevard	Metro Center to E. Hillsdale	64.7	65.5	0.8	43	92	198
Edgewater Boulevard	E. Hillsdale to Beach Park	66.3	66.8	0.5	46	99	213
Edgewater Boulevard	South of Beach Park	64.6	65.5	0.9	30	64	139
East Hillsdale Avenue	Norfolk to Altair	68.0	68.3	0.3	58	124	267
East Hillsdale Avenue	Altair to Edgewater	65.8	66.2	0.4	42	90	194
East Hillsdale Avenue	Edgewater to Shell	62.2	62.8	0.6	33	72	154
East Hillsdale Avenue	Shell to Foster City	60.6	61.2	0.6	26	55	119
East Hillsdale Avenue	Foster City to Pilgrim	60.6	61.1	0.5	19	41	88
East Hillsdale Avenue	East of Pilgrim	61.2	61.7	0.5	21	45	97
East Third Avenue	West of Mariners Island	54.3	56.7	2.4	52	112	241
East Third Avenue	Mariners Island to Foster City	61.5	64.7	3.2	44	95	205
Foster City Boulevard	E. Third to Vintage Park	58.6	60.3	1.7	23	49	105

TABLE 3.9-9: EXISTING TRAFFIC NOISE LEVELS VS. PROPOSED PROJECT (GENERAL PLAN BUILDOUT) TRAFFIC NOISE LEVELS

Roadway	Segment	Noise Levels (Ldn, dB) at Closest Receptors[1]			Distance to Proposed General Plan Buildout Traffic Noise Contours, feet[2]		
		Existing Traffic Noise Levels	Proposed General Plan Buildout Noise Levels	Change (dB)	70 dB Ldn	65 dB Ldn	60 dB Ldn
Foster City Boulevard	Vintage Park to Chess	59.5	61.0	1.5	25	54	116
Foster City Boulevard	Chess to Metro Center	62.7	63.8	1.1	38	83	178
Foster City Boulevard	Metro Center to E. Hillsdale	62.0	62.7	0.7	33	71	152
Foster City Boulevard	E. Hillsdale to Marlin	64.8	65.2	0.4	36	78	167
Foster City Boulevard	Marlin to Beach Park	58.3	56.5	-1.8	8	16	35
Metro Center Boulevard	Vintage Park to Shell	60.3	61.4	1.1	27	57	123
Metro Center Boulevard	Shell to EB SR92	59.8	60.9	1.1	25	53	115
Shell Boulevard	Metro Center to E. Hillsdale	60.4	61.5	1.1	19	41	88
Shell Boulevard	E. Hillsdale to Beach Park	63.0	63.8	0.8	27	59	126
State Route 92	US 101 to Mariner's Island Blvd./Edgewater Blvd.	65.1[2]	65.7[2]	0.6	104	224	483
State Route 92	Mariner's Island Blvd./Edgewater Blvd. to Foster City Blvd.	62.9[2]	63.5[2]	0.6	92	199	429
State Route 92	East of Foster City Blvd.	66.6	67.2	0.6	287	618	1332
Vintage Park Drive	Metro Center to Chess	59.1	60.5	1.4	23	50	108
Vintage Park Drive	Chess to Foster City	54.7	58.1	3.4	16	35	75

NOTES: DISTANCES TO TRAFFIC NOISE CONTOURS ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS.

[1] TRAFFIC NOISE LEVELS ARE PREDICTED AT THE CLOSEST SENSITIVE RECEPTOR OR AT A DISTANCE OF 100 FEET IN COMMERCIAL/RETAIL AREAS.

[2] ACCOUNTS FOR SHIELDING FROM EXISTING FREEWAY NOISE BARRIERS.

SOURCE: FEHR & PEERS TRANSPORTATION ENGINEERS, CALTRANS, J.C. BRENNAN & ASSOCIATES, INC., 2012.

Impact 3.9-2: Stationary Noise Sources (less than significant)

Implementation of the proposed project could result in the future development of land uses that generate noise levels in excess of applicable Foster City noise standards for non-transportation noise sources. Such land uses may include commercial area loading docks, industrial uses, HVAC equipment, car washes, daycare facilities, auto repair, as well as recreational uses. While the General Plan does not specifically propose any new noise generating uses, the project does allow development and redevelopment in accordance with the Land Use Plan and established Zoning, which may result in new noise sources and could expose sensitive uses to elevated transportation-related noise levels.

The existing 1993 General Plan includes policies and actions that are intended to reduce noise associated with transportation and stationary noise sources. Specifically, policies N-1, N-3, N-4, N-5, N-6, N-7, N-8, N-9, N-10, N-13, and N-14 would reduce noise associated with transportation and stationary noise sources through a range of measures and approaches. These existing noise-related policies include requirements for the preparation of project-specific noise studies, compliance with adopted City standards and thresholds of interior and exterior noise level exposure, the use of mitigation measures and techniques to reduce noise exposure, and land use compatibility standards.

Additionally, standard conditions of approval applied to development projects in the city require protective measures to reduce noise from stationary sources. Specifically, SCOA 7.1 requires an acoustical analysis to be prepared by a licensed professional, specifying the manner in which interior noise levels will be reduced to the required Community Noise Equivalency Level (CNEL) per Title 24 of the California Administrative Code.

Implementation of the existing noise policies and actions of the existing (1993) General Plan, and compliance with the City's SCOAs, will reduce any noise impacts from stationary noise sources resulting from the proposed General Plan Update and Climate Action Plan to a **less than significant** level.

Impact 3.9-3: Airport Noise (Less than Significant)

Implementation of the proposed project would not result in the creation of new noise-sensitive land uses within the 65 dB CNEL airport noise contours as shown by Figures 3.9-2 and 3.9-3. However, implementation of the proposed project could result in the creation of new noise-sensitive land uses within over-flight areas of the San Francisco International airport, thereby presenting the potential for annoyance from single event noise.

Single-event noise associated with aircraft overflights is also of concern when evaluating aircraft noise effects in terms of land use compatibility. Single-event noise is the maximum sound level produced by an individual approach overflight at a specific location, often described in terms of Lmax, which is the maximum sound level recorded for each event. A different measurement of single-event noise, also commonly used when evaluating aircraft noise, is the SEL. The SEL describes the event's mean energy level over the duration of the noise event. As would be expected, single-event noise levels for aircraft overflights within the Planning Area would be greatest and most frequent near the airport's primary flight paths.

The existing 1993 General Plan includes policies and actions intended to reduce noise impacts throughout the City. Policy N-1 requires new development projects to conform with the City's exterior noise level standard of 60 dB Ldn, as well as interior noise level standards of 45 dB Ldn with maximum instantaneous noise levels of 50-55 dBA. With the implementation of the 1993 General Plan policies and actions, the noise impact of the proposed General Plan Update and Climate Action Plan relative to airports would be **less than significant**.

Impact 3.9-4: Construction Noise (Significant and Unavoidable)

New development, maintenance of roadways, installation of public utilities and infrastructure generally require construction activities. These activities include the use of heavy equipment and impact tools. Table 3.9-10 provides a list of the types of equipment which may be associated with construction activities, and their associated noise levels.

TABLE 3.9-10: CONSTRUCTION EQUIPMENT NOISE

Type of Equipment	Predicted Noise Levels, L_{max} dB				Distances to Noise Contours (feet)	
	Noise Level at 50'	Noise Level at 100'	Noise Level at 200'	Noise Level at 400'	70 dB L_{max} contour	65 dB L_{max} contour
Backhoe	78	72	66	60	126	223
Compactor	83	77	71	65	223	397
Compressor (air)	78	72	66	60	126	223
Concrete Saw	90	84	78	72	500	889
Dozer	82	76	70	64	199	354
Dump Truck	76	70	64	58	100	177
Excavator	81	75	69	63	177	315
Generator	81	75	69	63	177	315
Jackhammer	89	83	77	71	446	792
Pneumatic Tools	85	79	73	67	281	500
Pile Driver	101	95	89	83	1,174	3,155

Source: Roadway Construction Noise Model User's Guide. Federal Highway Administration. FHWA-HEP-05-054. January 2006. j.c. brennan & associates, Inc. 2012.

Activities involved in construction would typically generate maximum noise levels ranging from 90 to 101 dB at a distance of 50 feet, with the highest noise levels generated by activities such as pile driving. Pile driving activities also generate sound levels that travel considerably further distances than other construction activities, as indicated in the noise contour data in Table 3.9-10. Construction could result in periods of significant ambient noise level increases and the potential for annoyance. However, the City of Foster City Noise Ordinance establishes allowable hours of operation and noise limits for construction activities as follows:

17.68.030 Noise

17.68.030 E-4 Prohibited Acts. *Permitting the operation of any tools, or equipment used in construction, repair, alteration, demolition or landscape maintenance prior to seven-thirty a.m. or after eight p.m. on weekdays and before nine a.m. or after eight p.m. on weekends and legal holidays, in a*

residential district or within one hundred yards of a residential district, or during other hours such that the noise level from a single or multiple sources exceeds one hundred dBA at the producer's property plane unless prior city authorization is obtained, pursuant to Section 17.68.030(F)(7).

17.68.110 Screening of construction materials and equipment.

In all districts, the following restrictions shall apply to all types of construction or remodeling work, both interior and exterior:

A. In order to assure public safety and minimize the unattractive short-term aspects of construction in the neighborhood, screening shall be provided for any construction materials or equipment not contained within an existing fenced yard for longer than twenty-four hours (with the exception of those materials and/or quantities of materials found not to cause a public health, safety or welfare concern as determined by the community development director), consisting of a six-foot tall chain-link fence (no portion of which contains barbed wire) with a dark green (or other color approved by the community development director) vinyl or canvas liner placed on the exterior of the fence and shall be placed around any yard or any portion of a yard which the chief building official shall identify as requiring such.

B. All required fencing shall be in place prior to the commencement of any work on site, shall remain in place for such time as required by the chief building official and shall be removed prior to the issuance of an occupancy permit. The gate to the fence shall be locked at all times that the fenced area is left unattended by either the owner or resident, the contractor or subcontractors. All construction materials and equipment, including temporary or portable equipment, such as generators, storage containers or facilities, shall be stored within the interior of the fenced area when construction activities are not occurring.

C. Building materials, construction equipment and tools, or other items related to the construction or demolition work to be performed, shall be stored behind and below required fencing/screening unless special approval to place or store the materials or items is granted by the community development director.

D. If placed anywhere on site, portable toilets shall be placed within the interior of the temporarily fenced area at all times or as approved in advance of placement by the community development director. (Ord. 542 § 2 Exh. A(2), 2007)

In addition, standard conditions of approval for major projects are implemented by the City to further restrict construction hours and reduce potential construction noise impacts, particular for major projects located in the vicinity of residences or other sensitive receptors. Examples of recent construction noise reduction conditions imposed on projects by the City include:

- Limitations on construction hours in excess of the City's Noise Ordinance requirements.

- During all project site excavation and on-site grading, fit all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.
- Locate stationary noise generating equipment such as air compressors or portable power generators as far as possible from sensitive receptors. Construct temporary noise barriers to screen stationary noise-generating equipment when located near adjoining sensitive land uses. Temporary noise barriers could reduce construction noise levels by 5 dBA.
- Locate equipment staging in areas that will create the greatest possible distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.
- Utilize "quiet" air compressors and other stationary noise sources where such technology exists.
- Route all construction traffic to and from the project site via designated truck routes and prohibit construction-related heavy truck traffic in residential areas where feasible.
- Control noise from construction workers' radios to a point that they are not audible at existing residences bordering the project site.
- Prepare and submit to the City for approval a detailed construction plan identifying the schedule for major noise-generating construction activities.
- Pre-drill foundation pile holes to minimize the number of impacts required to seat the pile.
- Use multiple pile driving rigs to expedite pile driving activities.
- Use "acoustical blankets" to shroud the pile hammer.

Additionally, adopted Standard Conditions of Approval, which are applied to development projects in the city, require protective measures to reduce noise during construction and demolition activities. Specifically, SCOA 2.9 requires construction projects to designate a "noise disturbance coordinator" to address any local complaints relating to construction noise; SCOA 9.1 limits construction activities to the hours of 8 a.m. to 5 p.m. on weekdays unless deviations from this schedule are approved in advance by the City; SCOA 9.2 requires all engine-driven construction vehicles, equipment and pneumatic tools to be equipped with effective intakes and exhaust mufflers; SCOA 9.10 requires the construction contractor to place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site; and SCOA 9.11 requires construction equipment staging to be located in areas that will create the greatest possible distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction stages.

All future construction activities in Foster City will be subject to the requirements of the City of Foster City Noise Ordinance Section 17.68.030 with respect to limits on construction noise. Additionally, major construction projects will be subject to the conditions of approval stated above to further reduce and

limit construction noise, particularly for projects in the vicinity of residential areas or other sensitive receptors. However, regardless of the above-referenced measures to reduce construction noise, there remains the potential for future development and redevelopment projects allowed under the proposed General Plan Update and Climate Action Plan to generate temporary construction noise in excess of City standards, which may cause temporary nuisance noise impacts to adjacent land uses. As such, this impact is considered **significant and unavoidable**, and no additional feasible mitigation is available that would reduce this impact to a less than significant level.

Impact 3.9-5: Construction Vibration (Less than Significant with Mitigation)

The primary vibration-generating activities associated with future development and redevelopment activities facilitated by the proposed project would occur during construction when activities such as grading, pile driving, utilities placement, and parking lot construction occur.

Construction activities may generate perceptible vibration when heavy equipment or impact tools (e.g., jackhammers, hoe rams, pile drivers) are used. Construction activities often include demolition of existing structures, excavation, site preparation work, foundation work, and new building framing and finishing.

For structural damage, the California Department of Transportation uses a vibration limit of 0.5 inches/second, peak particle velocity (in/sec, PPV) for buildings structurally sound and designed to modern engineering standards.

Table 3.9-11 presents typical vibration levels that could be expected from construction equipment at a distance of 25 feet. Construction activities such as drilling, the use of jackhammers, rock drills and other high-power or vibratory tools, and rolling stock equipment (tracked vehicles, compactors, etc.) may generate substantial vibration in the immediate vicinity. Jackhammers typically generate vibration levels of 0.035 in/sec PPV and drilling typically generates vibration levels of 0.09 in/sec PPV at a distance of 25 feet.

TABLE 3.9-11: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

EQUIPMENT		PPV AT 25 FT. (IN/SEC)	APPROXIMATE LV AT 25 FT. (VDB)
Pile Driver (Impact)	upper range	1.158	112
	typical	0.644	104
Pile Driver (Sonic)	upper range	0.734	105
	typical	0.170	93
Clam shovel drop		0.202	94
Hydromill (slurry wall)	in soil	0.008	66
	in rock	0.017	75
Vibratory Roller		0.210	94
Hoe ram		0.089	87
Large bulldozer		0.089	87
Caisson drilling		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

SOURCE: TRANSIT NOISE AND VIBRATION IMPACT ASSESSMENT, UNITED STATES DEPARTMENT OF TRANSPORTATION, OFFICE OF PLANNING AND ENVIRONMENT, FEDERAL TRANSIT ADMINISTRATION, MAY 2006.

The Table 3.9-11 data indicate that construction vibration levels anticipated for typical project construction are less than the 0.2 in/sec p.p.v. threshold of damage to buildings and less than the 0.1 in/sec threshold of annoyance criteria at distances of 100 feet. Most project construction would likely occur at distances greater than 100 feet from sensitive receptors.

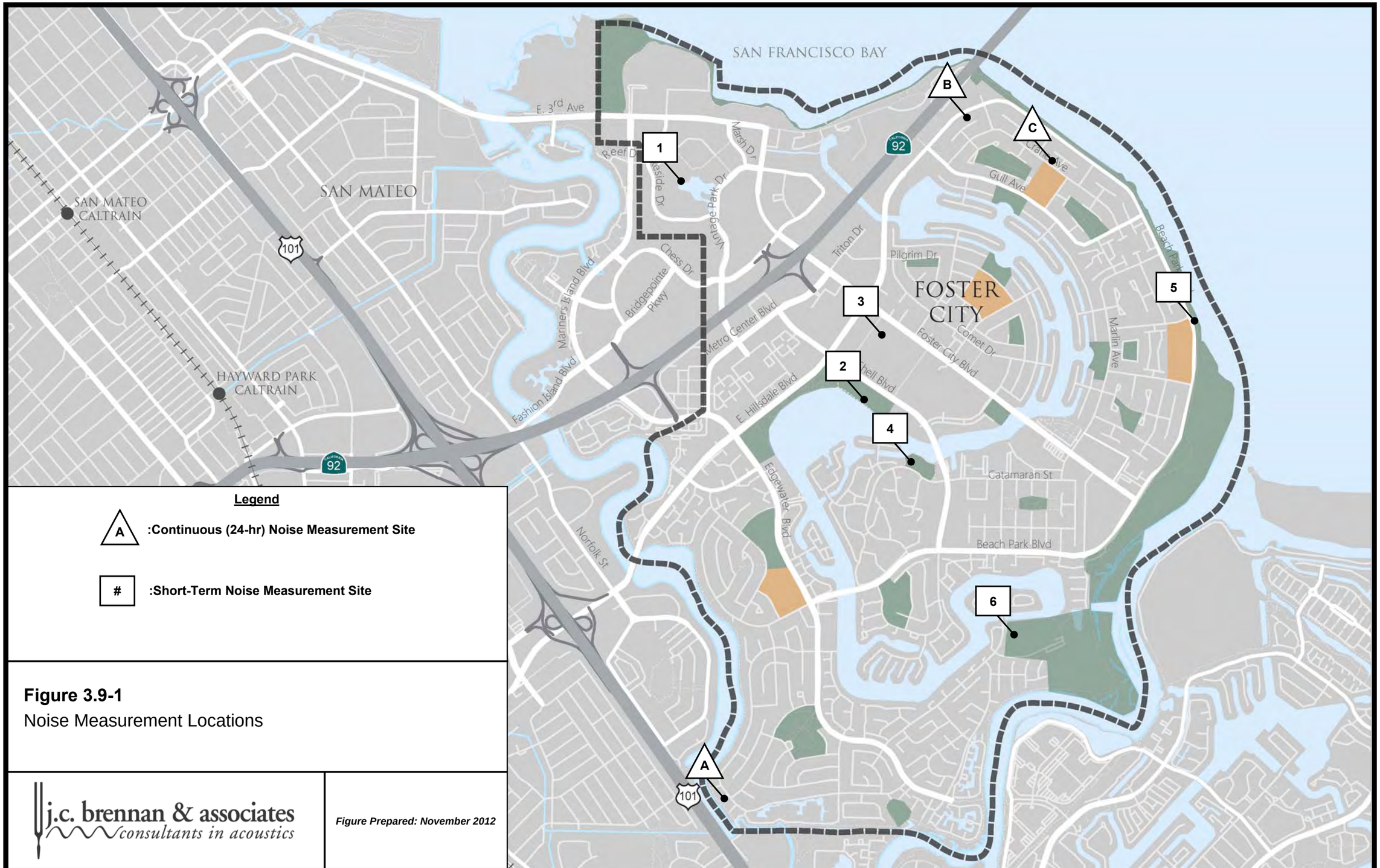
However, projects that require the use of pile drivers may result in vibration levels that exceed the vibration threshold of 0.5 in/sec p.p.v., which has the potential for damage to existing buildings and annoyance to sensitive receptors could occur at distances less than 100 feet. Therefore, this impact would be considered **potentially significant**.

The following mitigation measure would apply to subsequent projects developed under the proposed General Plan Update and Climate Action Plan. Additionally, this measure shall be added as a policy to the Foster City General Plan Noise Element during the next update of the City's Noise Element. Implementation of the following mitigation measure would ensure that potential impacts associated with vibration during construction activities are reduced to a **less than significant** level.

Mitigation Measure 3.9-5: *Update the Noise Element of the Foster City General Plan to include the following policy language. The following policy shall apply during environmental review of major projects that involve the use of pile drivers or other heavy equipment or construction techniques that may result in significant levels of groundborne vibration.*

Projects shall be designed and implemented to reduce adverse construction vibration impacts to sensitive receptors, as feasible, when vibration-related construction activities are to occur within 100 feet or less from existing sensitive receptors. Measures to reduce noise and vibration effects may include, but are not limited to:

- *Phase demolition, earth-moving and ground-impacting operations so as not to occur in the same time period.*
- *The pre-existing condition of all buildings within a 100-foot radius will be recorded in order to evaluate damage from construction activities. Fixtures and finishes within a 100-foot radius of construction activities susceptible to damage will be documented (photographically and in writing) prior to construction. All damage will be repaired back to its pre-existing condition.*
- *Substituting vibration-generating equipment with equipment or procedures that would generate lower levels of vibration. For instance, in comparison to impact piles, drilled piles or the use of a sonic or vibratory pile driver are preferred alternatives where geological conditions would permit their use.*
- *Other specific measures as they are deemed appropriate by the implementing agency to maintain consistency with adopted policies and regulations regarding vibration.*



Legend

A :Continuous (24-hr) Noise Measurement Site

:Short-Term Noise Measurement Site

Figure 3.9-1
Noise Measurement Locations

j.c. brennan & associates
consultants in acoustics

Figure Prepared: November 2012

This page left intentionally blank

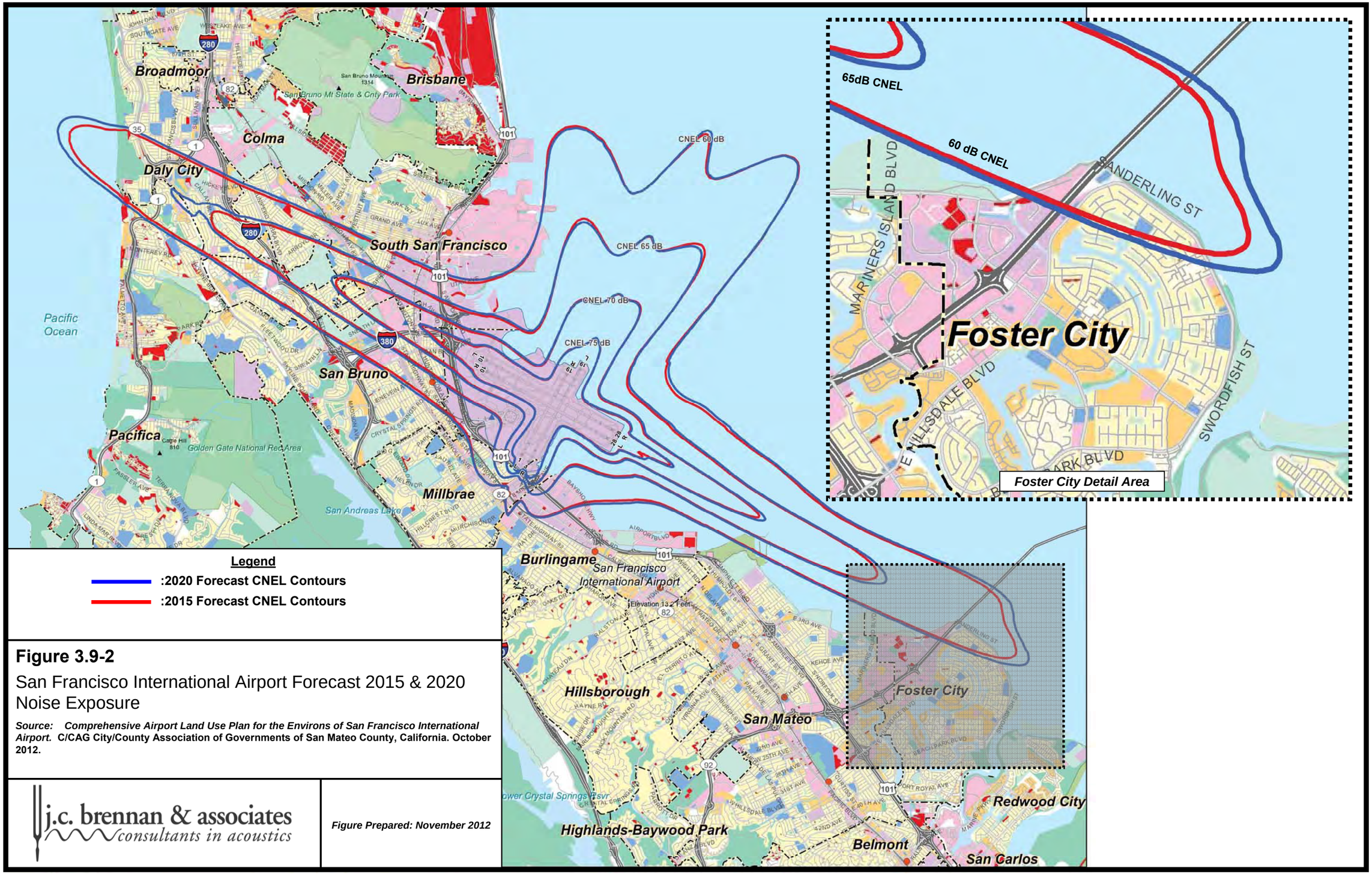


Figure 3.9-2

San Francisco International Airport Forecast 2015 & 2020 Noise Exposure

Source: ***Comprehensive Airport Land Use Plan for the Environs of San Francisco International Airport.*** **C/CAG City/County Association of Governments of San Mateo County, California. October 2012.**

j.c. brennan & associates
consultants in acoustics

Figure Prepared: November 2012

This page left intentionally blank

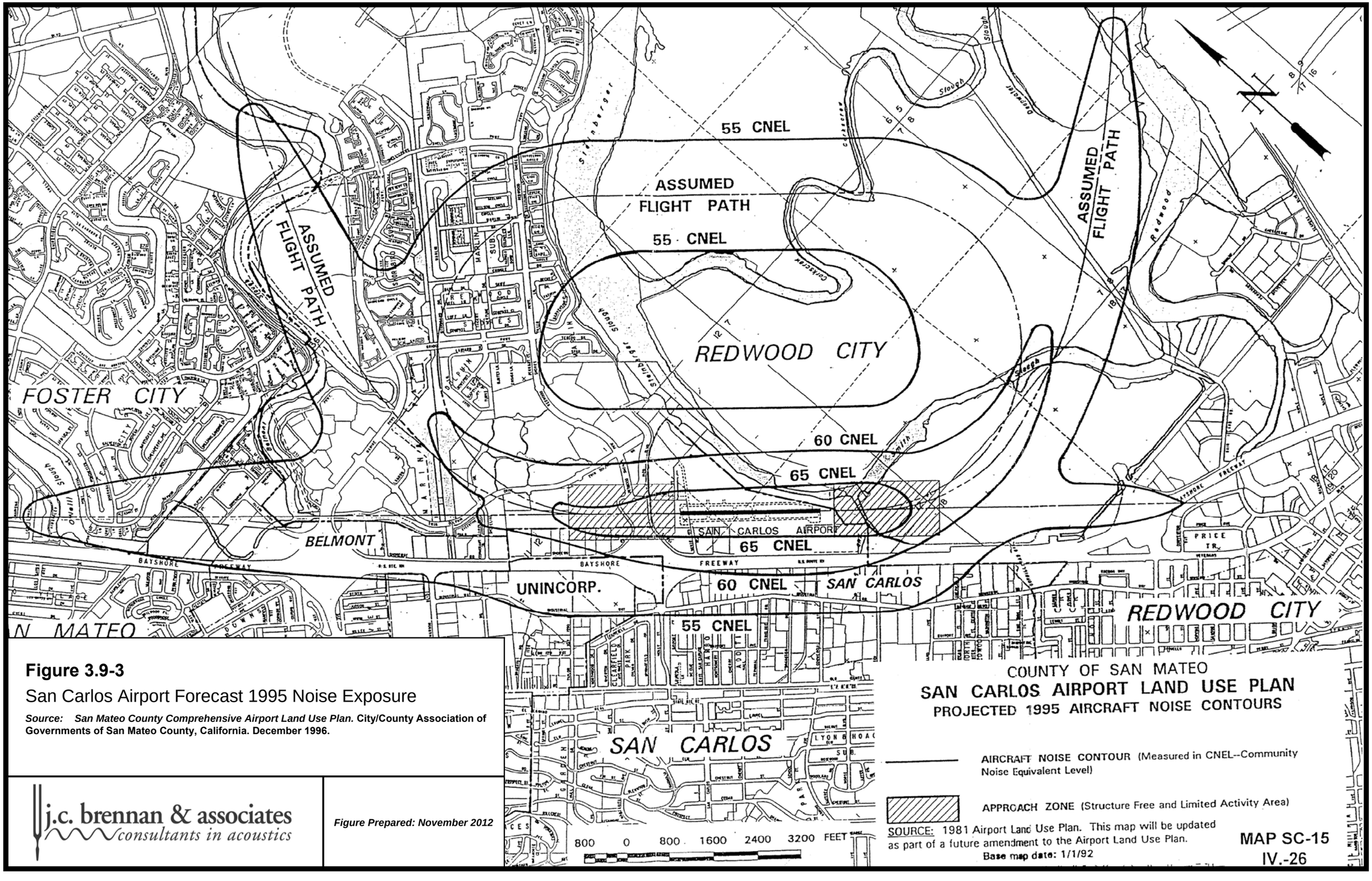


Figure 3.9-3

San Carlos Airport Forecast 1995 Noise Exposure

Source: ***San Mateo County Comprehensive Airport Land Use Plan.*** **City/County Association of Governments of San Mateo County, California. December 1996.**

j.c. brennan & associates
consultants in acoustics

Figure Prepared: November 2012

This page left intentionally blank

This section of the EIR assesses potential impacts of implementing the proposed General Plan Update and Climate Action Plan on public services, including fire protection, law enforcement, schools, parks and recreation facilities, other public facilities, and to utilities, including water supply, wastewater, and solid waste, serving Foster City. No comments regarding public services and utilities were received during the Notice of Preparation scoping period for the EIR.

3.10.1 EXISTING CONDITIONS

FIRE PROTECTION AND EMERGENCY RESPONSE

The Foster City Fire Department (FCFD) protects lives, property and the environment from fire and exposure to hazardous materials, manages the City's emergency operations center, provides emergency medical care, provides non-emergency services, educates the public regarding fire prevention and emergency preparedness, responds to non-emergency service calls on an "as available" basis, and enforces fire prevention codes.

The FCFD is dispatched through Public Safety Communications along) with other fire agencies in San Mateo County, in which the closest unit responds to emergency calls, regardless of jurisdiction. The FCFD also has an Automatic Aid agreement with the City of Hayward Fire Department for the San Mateo Bridge. In addition, the FCFD participates in the Master Mutual Aid System for the State of California, which provides fire resources throughout the State. The FCFD provides Advanced Life Support (ALS) with a paramedic assigned to every fire engine.

The Foster City Fire Station 28 is located at 1040 E. Hillsdale Boulevard. The FCFD equipment consists of two fire engines, one fire boat, and one command vehicle as well as one fire engine and one fire truck held in "reserve" for use when one of the front line vehicles has to be taken out of service for maintenance or repair. Once both of FCFD's engines are dispatched to a call, the County communications sends an engine from another jurisdiction to respond to incidents in Foster City.

The FCFD has 33 full time employee positions, including fire captains and firefighters, a management coordinator, and an administrative secretary. The FCFD participates in ahared services model with the City of San Mateo, which provides for the Fire Chief, Deputy Fire Chief, Battalion Chiefs and a Emergency Preparedness Coordinator. In addition, Foster City and San Mateo have a contract for service with the Belmont Fire Protection District for a Fire Chief, Administrative Battalion Chief and Operational Battalion Chief services.

From 2005, through 2014, annual calls received by the Fire Department ranged from a low of 1,513 in 2009 to a high of 2243 in 2013. The majority calls received each year were for medical emergencies. In 2014, medical emergencies accounted for 42percent of calls, followed by 31percent classified as false alarms or non-emergency, 14 percent service calls, 11 percent other emergency, and 3percent fire calls. FCFD has an average call time of 4 to 6 minutes and achieves a

98 percent response rate for medical responses, meaning that FCFD responds to all medical calls within 6 minutes, 59 seconds, 98 percent of the time.

TABLE 3.10-1: 2011 FIRE DEPARTMENT CALL VOLUME INFORMATION

TYPE OF CALL	*PROPORTION OF TOTAL CALLS*
Medical	42 percent
False Alarms / Non-Emergency	31 percent
Service	14 percent
Other Emergency	11 percent
Fires	3 percent
Total Calls	2,243

Source: Foster City, 2015

Every fire agency earns a rating calculated by the Insurance Service Office (ISO). This rating, known as a Public Protection Classification (PPC), is utilized by many insurance providers to calculate insurance premiums within the district. Ratings range from 1 to 10. Class 1 generally represents superior property fire protection, and Class 10 indicates that the area's fire-suppression program does not meet ISO's minimum criteria. An audit by the Insurance Services Office upgraded the Foster City Fire Department from a Class 3 to a Class 2 Fire Protection Rating effective December 2000.

LAW ENFORCEMENT

The Foster City Police Department, located at 1030 E. Hillsdale Boulevard, consists primarily of the Administration and Field Operations/Patrol Divisions. The Administration Division is responsible for criminal investigations, crime prevention, youth services, crime analysis, evidence and property control, budget preparation, press and community relations. It is also responsible for records processing and storage, computer analysis and maintenance, radio communications and dispatch services for the Police Department. The Field Operations Division consists of the uniformed officers who enforce laws, make arrests, respond to calls for service, and conduct investigations. The division includes the traffic unit, the canine unit, the bicycle unit, field training officers, evidence technicians and community service officers. The Field Operations Division also focuses on intervention and prevention of youth-related crime and violence, drug activity, and domestic violence.

Crimes by Category

Statistics on the number of crimes by category of crime in Foster City from 2008 through 2013, as reported by the California Department of Justice, are shown in Table 3.10-2 below.

TABLE 3.10-2 CRIMES BY CATEGORY

	2008	*2009*	*2010*	*2011*	*2012*	*2013*
Violent Crimes	17	11	24	26	18	15
Homicide	0	0	0	1	0	0
Forcible Rape	1	2	1	1	0	2
Robbery	3	4	2	2	3	3
Agg. Assault	13	5	21	22	15	10
Property Crimes	233	299	255	395	345	305
Burglary	62	129	103	107	83	69
Larceny-Theft	326	333	273	255	239	216
Vehicle Theft	27	33	40	33	23	20
Arson	4	6	1	8	1	4

SOURCE: FEDERAL BUREAU OF INVESTIGATION, CRIMINAL JUSTICE INFORMATION SERVICES DIVISION, OFFENSES KNOWN TO LAW ENFORCEMENT TABLES (2008-2013). ACCESSED MARCH 2015.

As shown in the table, the majority of crimes committed in Foster City consist of non-violent property and non-violent larceny crimes. Between 2008 and 2013, one homicide was reported in Foster City.

SCHOOLS

Public school services in Foster City are provided by the San Mateo-Foster City School District (SMFCSD) and the San Mateo Union High School District (SMUHSD). School services, enrollment, and standards for each of these school districts are discussed below.

San Mateo-Foster City School District

The SMFCSD operates 20 schools serving the communities of San Mateo and Foster City, including 16 elementary and four middle schools. SMFCSD district-wide enrollment averaged 10,324 students annually for the 10-year period between 2002 and 2012, and increased to 11,705 students during the 2013/14 school year (California Department of Education, Educational Demographics Unit).

The public elementary and middle schools serving Foster City are Audubon School, Bowditch Middle School, Brewer Island Elementary School, and Foster City Elementary School. Historical enrollment for these schools is shown in Table 3.10-3. While there are elementary schools assigned to each neighborhood, students are allowed to transfer to non-assigned schools.

TABLE 3.10-3: GRADES 1-8 PUBLIC SCHOOL ENROLLMENT

YEAR	AUDUBON ELEMENTARY	BREWER ISLAND ELEMENTARY	FOSTER CITY ELEMENTARY	BOWDITCH MIDDLE SCHOOL
2001-02	476	479	739	965
2002-03	484	489	741	974
2003-04	473	503	766	990
2004-05	527	502	782	978
2005-06	538	521	780	957
2006-07	547	565	752	955
2007-08	569	578	716	964
2008-09	611	638	780	938
2009-2010	629	675	772	952
2010-2011	639	692	791	942
2011-2012	632	715	800	939
2012-2013	656	722	857	954
2013-2014	671	707	887	992

SOURCE: CALIFORNIA DEPARTMENT OF EDUCATION, EDUCATIONAL DEMOGRAPHICS UNIT, CALIFORNIA PUBLIC SCHOOL ENROLLMENT-SCHOOL REPORT (2002-2014). ACCESSED MARCH 17, 2015.

San Mateo Union High School District

The SMUHSD provides high school education to the communities of Burlingame, Foster City, Hillsborough, Millbrae, San Mateo, and San Bruno. The SMUHSD operates six high schools, one continuation high school, one alternative education school, and one adult school. SMHUSD district-wide enrollment averaged 8,466 students annually over the 10-year period from 2002 to 2012, which decreased to a low of 8,163 students during the 2013/14 school year. Aragon High School, Hillsdale High School, and San Mateo High School, all located in San Mateo, are the primary public high schools attended by Foster City students. Historical enrollment for these schools is shown in Table 3.10-4.

TABLE 3.10-4: GRADES 9-12 PUBLIC SCHOOL ENROLLMENT

YEAR	ARAGON HIGH SCHOOL	HILLSDALE HIGH SCHOOL	SAN MATEO HIGH SCHOOL
2001-02	1,550	1,119	1,405
2002-03	1,565	1,207	1,375
2003-04	1,520	1,254	1,354
2004-05	1,519	1,290	1,401
2005-06	1,570	1,205	1,502
2006-07	1,523	1,186	1,432
2007-08	1,602	1,197	1,449
2008-09	1,670	1,171	1,396
2009-2010	1,632	1,273	1,349
2010-2011	1,587	1,321	1,348
2011-2012	1,499	1,318	1,373
2012-2013	1,441	1,350	1,408
2013-2014	1,441	1,348	1,469

SOURCE: CALIFORNIA DEPARTMENT OF EDUCATION, EDUCATIONAL DEMOGRAPHICS UNIT, CALIFORNIA PUBLIC SCHOOL ENROLLMENT-SCHOOL REPORT (2002-2014). ACCESSED MARCH 17, 2015.

LIBRARIES AND OTHER COMMUNITY FACILITIES

Existing Facilities

FOSTER CITY LIBRARY

The Foster City Library is part of the San Mateo County Library system. The San Mateo County Library is a Joint Powers Authority (JPA) and comprised of the cities of Atherton, Belmont, Brisbane, East Palo Alto, Foster City, Half Moon Bay, Millbrae, Pacifica, Portola Valley, San Carlos, Woodside, and the unincorporated areas of the county.

The Foster City Library includes collections for children and adults in Russian, Hindi, Chinese, Spanish, and Japanese as well as English. There are many study tables, comfortable lounge reading chairs, public computers, a room for teens, a library for children, ample free parking and free WiFi access. Homework help with a professional tutor is available for free Monday through Thursday after school. Story times for children are presented Monday through Saturday, with a monthly bi-lingual story time in Mandarin and English. Programs and activities for all ages and interests are offered throughout the year. The Library is open every day of the week.

COMMUNITY CENTER

The Community Center is located on the top floor of the Library and is operated by the Parks & Recreation Department. The facility features a large multi-purpose room suitable for small wedding receptions, parties, corporate meetings, trainings and community events. In addition, there are two medium sized rooms that are great for meetings and trainings. This facility does not feature a kitchen, so all food must be brought in by a caterer.

RECREATION CENTER

The William E. Walker Recreation Center is a multi-purpose facility designed to meet the recreational needs of the Foster City community. Many of the classrooms feature a view of the Lagoon and are perfect for meetings, workshops or small parties. The Recreation Center includes programs for seniors, teens and youths as well as water activities and sports programs.

SOLID WASTE GENERATION RATES AND VOLUMES

Recology provides solid waste collection service in the City of Foster City. Recology offers a variety of residential and commercial services, including trash, recycling, green cans (for clean yard waste), and debris boxes to Foster City. Recology collects solid waste from the City and hauls it to the Shoreway Environmental Center where readily visible recyclable materials are separated from gross refuse.

The California Department of Resources Recycling and Recovery (CalRecycle) is the state's leading authority on recycling, waste reduction, and product reuse. CalRecycle collects an Electronic Annual Report (EAR), a legally required annual self-evaluation of solid waste diversion performance, from local jurisdictions.

The California Department of Resources Recycling and Recovery (CalRecycle) tracks and monitors solid waste generation rates on a per capita basis. Per capita solid waste generation rates and total annual solid waste disposal volumes for Foster City between 2009 and 2013 are shown in Table 3.10-5 below.

TABLE 3.10-5: SOLID WASTE GENERATION RATES

YEAR	*WASTE GENERATION RATE (LBS/PERSON/DAY)*	*TOTAL DISPOSAL TONNAGE (TONS/YEAR)*
2009	3.3	18,403
2010	3.0	16,495
2011	2.7	14,940
2012	2.5	13,906
2013	2.6	14,836

SOURCE: HTTP://WWW.CALRECYCLE.CA.GOV/LGCENTRAL/REPORTS/JURISDICTION/REVIEWREPORTS.ASPX ACCESSED MARCH 2015.

As shown in the table above, both the per capita waste generation rate and the total annual disposal tonnage in Foster City has been trending downward consistently from 2009 through 2012, with a slight increase occurring in 2013.

In accordance with AB 939, which required municipalities to aggressively pursue municipal solid waste (MSW) source reduction and recycling, the City continues to meet and exceed all AB 939 goals. The various solid waste management actions adopted by the City include, but are not

limited to, recycling and yard waste programs for residents and businesses, public education and public outreach, school recycling, City office recycling programs, and purchasing policies.

The South Bayside Waste Management Authority (SBWMA), also known as RethinkWaste, is a joint powers authority with twelve member agencies (the cities of Belmont, Burlingame, East Palo Alto, Foster City, Menlo Park, Redwood City, San Carlos, and San Mateo, the towns of Atherton and Hillsborough, the County of San Mateo and the West Bay Sanitary District). Under a franchise agreement, solid waste collection, transportation, and disposal services are provided to the member agencies.

Shoreway Environmental Center

The Shoreway Environmental Center (Shoreway) is a state-of-the-art recycling and transfer station facility owned by RethinkWaste and operated by South Bay Recycling (SBR). Shoreway has several buildings, including a Transfer Station, Materials Recovery Facility (where all of the recyclables are processed,) Public Recycling Center, Environmental Education Center, Recology's offices, and SBR's offices.

Data from Recology San Mateo County and Allied Waste (the previous service provider) provides annual tonnages for the solid waste stream of the SBWMA's service area. Between 2001 and 2010, total tons of residential recycling collected increased by 25 percent for the Recology San Mateo County service area. Compost collection increased 29 percent for the same period, and garbage decreased by nearly 18 percent. 2011 marked the first time that residents set out more compost (food scraps and yard trimmings) than garbage. Tons collected totaled more than 16,000 tons higher for compost compared to landfill-bound trash.

TABLE 3.10-6: 2011 SOLID WASTE STREAM COMPARISON (SBWMA SERVICE AREA)

TYPE	*2010 TONNAGE*	*2011 TONNAGE*	*PERCENT CHANGE*
Recycling	35,507	40,655	+25.07
Compost	58,306	75,373	+28.29
Garbage	71,840	59,300	-17.46
Total			

Source: http://www.recologysanmateocounty.com/press_room/curbside_recycling_increase.php

Corinda Los Trancos Canyon Landfill

After solid waste is collected and sorted at the Shoreway Environmental Center, it is transported to the Corinda Los Trancos Canyon, also known as Ox Mountain, landfill, located in Half Moon Bay. Los Trancos landfill is permitted by the California Integrated Waste Management Board to receive 3,598 tons per day or 1.3 million tons per year. The landfill's remaining capacity is 44.6 million cubic yards, which represents approximately 173 acres of the landfill's total acreage of 2,786 acres. The closure date of the current disposal area is anticipated to be January 1, 2018. The owner of the landfill has a permit for expansion of the landfill. When the permit expires or the Corinda Los

Trancos Canyon area reaches capacity, either Los Trancos Canyon will be expanded further or nearby Apanolio Canyon will be opened for fill (CalRecycle, 2012). Expansion into the adjacent Apanolio Canyon would increase the disposal area by approximately 285 acres, extending the anticipated closure date to 2083 (CalRecycle, 1986).

Hazardous Solid Waste Disposal

Foster City's hazardous wastes are disposed of at the Kettleman Hills Facility, Landfill B-18, which is operated by Chemical Waste Management, Inc. The Kettleman Hills Facility is located in the San Joaquin Valley along Interstate 5, approximately midway between San Francisco and Los Angeles. The facility is approved under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and permitted under the Toxic Substances Control Act (TSCA) and the Resource Conservation and Recovery Act (RCRA) to manage hazardous waste materials. The Kettleman Hills Landfill B-18 encom-passes 499 acres and has a total capacity of 10.7 million cubic yards, of which six million cubic yards (56 percent) are remaining. According to the California Department of Resources Recycling and Recovery (Cal Recycle), no closure date has been identified for the landfill[1].

WATER SUPPLY

The Estero Municipal Improvement District (EMID) owns and operates a water supply and distribution system that supplies potable water to Foster City and the Mariner's Island portion of the City of San Mateo. EMID's potable water supply comes from water purchased from the San Francisco Public Utilities Commission (SFPUC), which is treated by SFPUC to meet all drinking water standards. Information in this section is based on EMID's 2010-2015 Urban Water Management Plan (UWMP) and the Water Supply Assessment prepared for the Lincoln Center Life Sciences Research Campus Project EIR (Urban Planning Partners, April 2015).

Water Sources

EMID, serving a population of approximately 37,000, is located midway between San Francisco and San Jose and includes the City of Foster City and a small portion of San Mateo. It is 10 miles south of the San Francisco International Airport. The service area of EMID consists of the City of Foster City and the Mariner's Island area of the City of San Mateo. The majority of customers are residential users with a broad cross-section of offices, commercial businesses, and a small number of industrial businesses.

Today, the City of Foster City is almost built-out with a number of redevelopment projects in various stages of planning. The population served by EMID is expected to be approximately 40,000,

[1] California Department of Resource, Recycling and Recovery, 2013. Facility/Site Summary Details: Kettleman Hills. http://www.calrecycle.ca.gov/SWFacilities /Directory/16-AA-0023/Detail/. March 4, 2013.

which includes Foster City and a portion of San Mateo. Table 3.10-7 shows the projected population in 5-year increments anticipated until the year 2035. The percent increases for the population growth are also shown in the table.

TABLE 3.10-7: EMID SERVICE AREA CURRENT AND PROJECTED POPULATION

	2015	*2020*	*2025*	*2030*	*2035*
Service Area Population	37,088	37,924	38,492	38,869	39,223
% Increase	--	2.3	1.5	1.0	0.9

SOURCE: ESTERO MUNICIPAL IMPROVEMENT DISTRICT, 2010-2015 URBAN WATER MANAGEMENT PLAN.

EMID purchases all of its water from the San Francisco Public Utilities Commission (SFPUC) as a contractual member of the Bay Area Water Supply Conservation Agency (BAWSCA). The SFPUC's water system consists of three regional water supply and conveyance systems: the Hetch Hetchy system, the Alameda system, and the Peninsula system. The Hetch Hetchy system is supplied by runoff from the upper Tuolumne River watershed on the western slope of the central Sierra Nevada Mountains. The Alameda system includes conveyance facilities connecting the Hetch Hetchy aqueducts and the Alameda water sources to the Peninsula system. The Peninsula system includes water facilities that connect the EMID and other Peninsula customers to the SFPUC distribution system and the Bay Division Pipelines. EMID does not have any groundwater or recycled water sources to supplement its supply.

EMID does not hold any existing water rights—all of its water supply assurances are the result of its contract with the SFPUC. In 1984, the SFPUC executed a Settlement Agreement and Master Water Sales Contract with the members of BAWSCA. The Contract is governed by the Master Sales Agreement (MSA), which expired in June of 2009. In August of 2009, BAWSCA and its member agencies signed a new Water Supply Agreement and Individual Water Sales Contract with SFPUC. The Contract runs through June 30, 2034 and guarantees a supply assurance of 184 million-gallons-per-day (MGD) to BAWSCA member agencies. The portion of that supply assurance to EMID, and BAWSCA's recent water demand projections for EMID through 2035, is shown in Table 3.10-8. Table 3.10-8 shows that EMID water demand is, and will remain, significantly lower than its SFPUC assured supply.

TABLE 3.10-8: EMID CURRENT AND FUTURE WATER SUPPLY AND DEMAND (ACRE FEET/YEAR)

	2015	*2020*	*2025*	*2030*	*2035*
Normal Year Supply	6,608	6,608	6,608	6,608	6,608
EMID Demand Projections	4,495	4,551	4,506	4,473	4,484
Annual Excess	2,113	2,057	2,102	2,135	2,135
Percent Excess	32	31	32	32	32

SOURCE: BAWSCA, 2014 REGIONAL DEMAND AND CONSERVATION PROJECTIONS; ESTERO MUNICIPAL IMPROVEMENT DISTRICT, 2010-2015 URBAN WATER MANAGEMENT PLAN.

Although the Master Agreement and accompanying Water Supply Contract expire in 2034, the Supply Assurance (which quantifies San Francisco's obligation to supply water to its individual wholesale customers) survives their expiration and continues indefinitely.

According to SFPUC's Water System Improvement Program (WSIP), the supply assurance is subject to reductions in the event of drought, water shortage or earthquake, or rehabilitation/maintenance of the system. Table 3.10-9 shows SFPUC's projected deliveries to EMID for a single dry year and for five consecutive dry years, based on the 2015 allocation of 6,608 AFY. The SFPUC WSIP calls for 10 percent supply reductions in the first 2 dry years, followed by 20 percent reductions for the next 3 dry years. The percent reductions would be the same for any given five consecutive dry years. During the periods of supply reductions, EMID would have to reduce demand by implementing the Water Shortage Contingency Plan adopted in 1993.

TABLE 3.10-9: PROJECTED EMID SUPPLY ASSURANCE FOR A SINGLE AND MULTIPLE DRY YEARS

	2015	*DRY YEAR 1*	*DRY YEAR 2*	*DRY YEAR 3*	*DRY YEAR 4*	*DRY YEAR 5*
Supply (AFY)	6,608	5,947	5,947	5,286	5,286	5,286
% Reduction	--	10%	10%	20%	20%	20%

SOURCE: ESTERO MUNICIPAL IMPROVEMENT DISTRICT, 2010-2015 URBAN WATER MANAGEMENT PLAN.

Water Treatment, Distribution and Storage Facilities

As discussed above, the majority of the SFPUC's water supply originates in the upper elevations of the Sierra Nevada Mountains, in the Tuolumne Watershed. The SFPUC treats its water to meet all drinking water standards, and EMID receives the already treated water from the SFPUC and distributes it to its customers. As a retailer, EMID has no direct control over its water supply and treatment. EMID has only one main source of water supply, a 24-inch transmission main that is connected to SFPUC's 54-inch Crystal Springs No. 2 line. The connection point is located in the City of San Mateo, on Crystal Springs Road.

In addition to the 24-inch transmission main, EMID has two separate 12-inch emergency supply connections with California Water Service Company (which serves the City of San Mateo) and with Mid-Peninsula Water Agency (formerly called Belmont County Water District, which serves the City of Belmont, San Carlos, and part of Redwood City). EMID has agreements with both agencies that allow EMID to use these connections during emergency situations. Both the California Water Service Company and the Mid-Peninsula Water Agency are members of the BAWSCA.

EMID has four at-grade water storage tanks with a total capacity of 20 million gallons for emergencies and peak and fire flow demand. Booster pumps are necessary to pump water from the storage tanks into the distribution system. The booster pump station has two electrical pumps and four engine drive pumps. The engine driven pumps are powered by natural gas with propane backup.

Water Quality

The major water source originates from spring snowmelt flowing down the Tuolumne River to the Hetch Hetchy Reservoir, where it is stored. This water source meets all federal and state criteria for watershed protection. Additionally, stringent disinfection treatment practices, extensive bacteriological-quality monitoring, and high operational standards are maintained.

Hetch Hetchy water is supplemented with surface water from two local watersheds. Rainfall and runoff from the Alameda Watershed – within the greater 128,424-acre Southern Alameda Creek Watershed and spanning more than 35,000 acres in Alameda and Santa Clara counties - are collected in the Calaveras and San Antonio reservoirs and treated at the Sunol Valley Water Treatment Plant.

Rainfall and runoff from the 23,000-acre Peninsula Watershed in San Mateo County are stored in Crystal Springs, San Andreas, and Pilarcitos reservoirs and treated at the Harry Tracy Water Treatment Plant in San Bruno.

In 2011, the Hetch Hetchy Watershed provided approximately 85 percent of the total water supply, with the remainder contributed by the two local watersheds.

In order to ensure that tap water is safe to drink, the United States Environmental Protection Agency (USEPA) and California Department of Public Health (CDPH) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. CDPH regulations also establish limits for contaminants in bottled water that provide the same protection for public health.

SFPUC Water Quality Division regularly collects and tests water samples from reservoirs and designated sampling points throughout the system to ensure that the water delivered to you meets or exceeds federal and state drinking water standards. In 2011, Water Quality staff conducted more than 69,875 drinking water tests in the transmission and distribution systems. This monitoring effort is in addition to the extensive treatment process control monitoring performed by treatment plant staff and online instruments. In addition to monitoring done by SFPUC, EMID staff conducts water quality monitoring and testing throughout EMID's service area to assure compliance with the California Department of Public Health (CDPH) standards.

WASTEWATER

Wastewater collection services for Foster City are provided by EMID and wastewater treatment is provided at the jointly owned San Mateo Wastewater Treatment Plan. EMID's wastewater collection system consists of more than 66 miles of sanitary sewer lines, more than 8.5 miles of sewer force mains, 44 pumping stations, 15 permanent standby generators, and four portable generators. After collection, wastewater is pumped to the San Mateo/EMID Wastewater Treatment Plant (WWTP) for treatment.

Wastewater treatment is provided by the San Mateo Wastewater Treatment Plant, which operates under a Joint Powers Agreement between the City of San Mateo and EMID. EMID owns approximately 25 percent of the treatment plant. The treatment plan has an average daily dry weather flow capacity of 15.7 MGD, of which 4.3 MGD is the purchased capacity for EMID per the Joint Powers Agreement (JPA). In 2013, the WWTP had an average daily dry weather flow of 12.3 MGD. EMID's actual average daily flow was 3.1 MGD. In 2012, the treatment plant's maximum daily dry weather capacity was 22.0 MGD and its maximum peak hour dry weather capacity is 39.5 MGD. According to the Foster City Public Works Director, the daily dry/wet weather capacity of the plant, which has not been reconfigured since 2012, has not changed significantly. Based on current flow data, average daily flows are below the capacities indicated in the JPA.

PARKS AND RECREATION

Parkland

Foster City has 22 parks within the four square miles comprising the City's boundaries. Construction of two new parks began in 2014, with completion dates schedule for 2015. These two parks include Shorebird Park (formerly known as Destination Park) and Bridgeview Park (formerly known as Werder Park). The 22 parks range in size from 0.2 acre to 24 acres for a total of approximately 108 acres of parkland. These parks offer many recreational facilities such as boat launching facilities, playgrounds, picnic areas, athletic courts, etc. In addition to parkland within the City, the City Lagoon adds another 212 acres of recreational facilities for the City's residents. The developed parkland to population ratio for the City is approximately 3.85 acres/1000 residents. Note: The acreage figure for the City of Foster City does not include the recreational waterways (212 acres), walkways, the levee pedway, windsurf area, or satellite facilities (35 acres). With the inclusion of recreational waterways, the City's parkland to population ration is significantly higher than 5 acres/1000 residents.

TABLE 3.10-10: PARKLAND

RESOURCE	*ACREAGE*	*FACILITIES*
Major Parks		
Shorebird Park	3.91	2,4,13
Bridgeview Park	2.63	4,13
Leo J. Ryan Memorial Park	20.73	1,2,3,5,6,8,9, 13,21
Boat Park/Dog Park	3.18	1,2,3,4,6,13
Erckenbrack Park	3.48	2,4,5,6,13,15
Gull Park	3.14	4,5,6,13,15
Marlin Park	3.13	4,5,6,13,15

RESOURCE	*ACREAGE*	*FACILITIES*
Catamaran Park	5.88	3,4,5,6,8,9,11,13,15,18
Farragut Park	3.86	4,6,13,15
Sea Cloud Park	23.90	2,4,6,10,11,13,15
Port Royal Park	3.98	2,4,6,11,13,15
Boothbay Park	11.21	2,4,6,8,9,10,11,13,14,15,18,22
Edgewater Park	8.53	4,6,8,9,10,13
Total Acres Major Parks	*97.56*	
Green Areas/Slot Parks		
Killdeer Park	1.53	4,6,15
Shad Park	2.16	6,8,15
Pompano Circle	0.56	6
Sunfish Park	2.41	6,8,15
Ketch Park	1.60	4,6,8,15
Turnstone Park	1.53	6,8,15
Gateshead Park	0.12	4,6
Leo Park	0.15	6
Arcturus Park	0.75	2,6,15
Total Acres Green Areas/Slot Parks	*10.81*	
Total Parkland Acres	***108.37***	
Facilities Key: 1. Boat launching Facilities 2. Parking 3. Boardwalk 4. Picnic Tables 5. Beach 6. Lawn area 7. Multipurpose Court	8. Basketball Court 9. Tennis Court 10. Baseball Diamond 11. Soccer Field 12. Football Field 13. Restrooms 14. Barbecues	15. Tot Lot/Play Apparatus 16. Outdoor Amphitheater 17. Par Course 18. Volleyball Court 19. Meeting Room 20. Auditorium 21. Skate Park

SOURCE: CITY OF FOSTER CITY GENERAL PLAN, PG 5-8, AND CITY OF FOSTER CITY, 2015.

Walkway, Pedway and Bicycle Facilities

In addition to parks, Foster City has several other recreational amenities. These include "passive" landscaped walkways, and the pedway/bike path. Walkways are connector paths between a street and a park, school or other street. Some pedestrian walkways are completely paved and others have landscaping on either side of the path and one or more benches. These walkways also have play areas for tots in addition to benches and pathway lighting. The pedway is another unique recreational amenity found in the City of Foster City. The pedway consists of a concrete pathway constructed atop a levee that runs approximately seven miles, encircling almost the entire city and providing public access to the San Francisco Bay, Belmont Slough and Marina Lagoon. Most of the pedway is raised above street level and is separated from streets or developed areas with landscaping. The paved pathway has viewpoints with benches for viewing of the waterfront. The pedway can be used for running, walking and biking around the city.

The City of Foster City Bikeway System Report presents information on bikeway systems and recommends improvements for implementation in the City of Foster City. The bikeway system consists of a combination of bike paths, bike lanes and bike routes. Bike lanes are utilized wherever existing roadway widths and traffic configurations allow, as long as the lengths and locations of the lanes make them safer than continued bike routes would be. Implementation of the system involves five new bike paths, new bike lanes, new bike routes and upgrading of existing bike paths in two areas.

Recreation Programs

Foster City has an extensive recreation program that includes many seasonal outdoor activities. New programs are offered quarterly and have doubled in number within the last few years. Some recreation programs are geared toward certain age groups. Separate crafts classes are offered to tots, youths, teens and adults. The 55+ Club is a group of senior men and women who gather weekly to socialize and recreate in the Senior Wing of the William E. Walker Recreation Center. The club also sponsors full day or longer shopping or recreational excursions. The most popular and consistently offered programs are preschool, tot crafts, youth and teen dances, art, adult fitness, sports, special workshops, and holiday special events.

Open Space

WATERWAYS

The largest and most unique permanent open spaces in the City of Foster City are the waterways. These include San Francisco Bay, Belmont Slough, Marina Lagoon, the Foster City Lagoon, and Vintage Park.

San Francisco Bay

The Bay is the primary source of water for most of the City of Foster City's waterways and constitutes the north and northeastern boundaries of the City of Foster City. Uses of Lower San Francisco Bay water include navigation, active water recreation, passive water recreation, ocean commercial and sport fishing, wildlife habitat, preservation of rare and endangered species, fish

migration, shellfish harvesting and estuarine habitat. The pedway system along the Bay provides recreational opportunities such as boating, fishing, walking, observation of wildlife, and biking.

Belmont Slough

The Belmont Slough forms the southeastern boundary of Foster City and continues to Redwood City. The Slough contributes three important functions as follows: it provides a flushing action to the Foster City Lagoon which maintains viability of the lagoon, it provides a similar action to control water levels in the Marina Lagoon, and it provides a natural wildlife refuge as a result of its tidal action, mudflats, and marshland vegetation. A minimum of fifteen species of birds, ranging from the species normally associated with saltmarsh habitats to those normally associated with grassland habitats inhabit the terrestrial and slough areas in the immediate vicinity.

The Foster City Lagoon

The Foster City Lagoon was entirely man-made and is used as a storm drainage retention basin with gates at the south end and pumps at the north end. Surface drainage is collected and drained into the lagoon system where it is discharged by gravity or pumped into San Francisco Bay at the north end of the lagoon. Water from the Bay is taken into the lagoon system through tide gates located at the southeast end of the lagoon.

As a part of the original development of the City of Foster City, a system of islands and canals were constructed in order to increase the number of residential lots with lagoon frontage. The lagoon supports a number of marine organisms and serves as resting and feeding sites for waterfowl. The recreational uses of the lagoon system include boating, windsurfing and swimming, along with passive recreational uses which are enhanced by the many views provided from waterfront land uses. Bridges were constructed to accommodate most sailboats. Power boats are restricted to only electrically-powered motors on the Foster City Lagoon.

Marina Lagoon

The Marina Lagoon, establishes the southwestern boundary of Foster City and was originally Seal Slough, a slough similar to the Belmont Slough described above. The City of San Mateo converted it to a lagoon for storm drainage retention purposes and to serve as a boating area.

PUBLIC OPEN SPACE WITHIN DEVELOPMENTS

This category includes permanent open spaces that were set aside during the development of surrounding property. Most of these spaces were established as part of a Planned Development (PD) District.

Metro Center Town Green

The Town Green is a one acre park which privately owned but has public access easement. The park is circular, surrounded by a public pathway, is landscaped and hosts outdoor art. The lawn provides a passive recreation area for workers and shoppers to have lunch, rest and/or watch noon concerts.

Vintage Park Lake and Plazas

This artificial water system was constructed as part of the Vintage Park development. The lake has a public access easement and also serves as a drainage catch basin. The Vintage Park development also includes several small open areas near the existing lake. Most of the open areas are small plazas except for the green area and pathway around the lake. The circular green area provides opportunities for passive recreation within the development. A pedestrian pathway links these open areas with the remainder of the development and with the Vintage Park Lake.

Visa Park

Visa Park is a 0.70 acre park which is privately owned and includes a public access easement. The park is trapezoid shaped, surrounded by a public pathway, is landscaped and hosts a walking path, lawn area and seating area. The lawn provides a passive recreation area for workers and residents.

Pilgrim/Triton Park

The Pilgrim/Triton Park is approximately 1.5 acres total, with 0.7 acres completed as part of Phase A (The Plaza). The park is privately owned and has a public access easement. The park is surrounded by a public pathway, is fully landscaped and has a tot-lot, bocce courts and a lawn area.

ELECTRICITY AND GAS

The Pacific Gas & Electric Company (PG&E) provides electricity and natural gas service to customers in Foster City. PG&E charges connection and user fees for all new development in addition to sliding rates for electrical and natural gas service based on use.

3.10.2 REGULATORY SETTING

STATE

Fire Protection and Emergency Response

FIRE PROTECTION

The California Fire Code contains regulations relating to construction and maintenance of buildings and the use of premises. Topics addressed in the Code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions to protect and assist first responders, industrial processes, and many other general and specialized fire safety requirements for new existing buildings and premises.

Schools

CALIFORNIA DEPARTMENT OF EDUCATION

The California Department of Education (CDE) School Facilities Planning Division (SFPD) prepared a School Site Selection and Approval Guide that provides criteria for locating appropriate school sites in the State of California. School site and size recommendations were changed by the CDE in 2000 to reflect various changes in educational conditions, such as lowering of class sizes and use of advanced technology. The expanded use of school buildings and grounds for community and agency joint use and concern for the safety of the students and staff members also influenced the modification of the CDE recommendations.

Specific recommendations for school size are provided in the School Site Analysis and Development Guide. This document suggests a ratio of 1:2 between buildings and land. CDE is aware that in a number of cases, primarily in urban settings, smaller sites cannot accommodate this ratio. In such cases, the SFPD may approve an amount of acreage less than the recommended gross site size and building-to-ground ratio.

Certain health and safety requirements for school site selection are governed by state regulations and the policies of the SFPD relating to:

- Proximity to airports, high-voltage power transmission lines, railroads, and major roadways;
- Presence of toxic and hazardous substances;
- Hazardous facilities and hazardous air emissions within one-quarter mile;
- Proximity to high-pressure natural gas lines, propane storage facilities, gasoline lines, pressurized sewer lines, or high-pressure water pipelines;
- Noise;
- Results of geological studies or soil analyses;
- Traffic and school bus safety issues.

THE KINDERGARTEN-UNIVERSITY PUBLIC EDUCATION FACILITIES BOND ACT OF 2002 (PROP 47)

This act was approved by California voters in November 2002 and provides for a bond issue of $13.05 billion to fund necessary education facilities to relieve overcrowding and to repair older schools. Funds will be targeted at areas of greatest need and must be spent according to strict accountability measures. Funds will also be used to upgrade and build new classrooms in the California Community Colleges, the California State University, and the University of California in order to provide adequate higher education facilities to accommodate growing student enrollment.

LEROY F. GREENE SCHOOL FACILITIES ACT OF 1998 (SB 50)

The "Leroy F. Greene School Facilities Act of 1998," also known as Senate Bill No. 50 or SB 50 (Chapter 407, Statutes of 1998), governs a school district's authority to levy school impact fees. This comprehensive legislation, together with the $9.2 billion education bond act approved by the voters in November 1998 known as "Proposition 1A", reformed methods of school construction financing in California. SB 50 instituted a new school facility program by which school districts can apply for state construction and modernization funds. It imposed limitations on the power of cities and counties to require mitigation of school facilities impacts as a condition of approving new development and provided the authority for school districts to levy fees at three different levels:

- Level I fees are the current statutory fees allowed under Education Code 17620. This code section provides the basic authority for school districts to levy a fee against residential and commercial construction for the purpose of funding school construction or reconstruction of facilities. These fees vary by district for residential construction and commercial construction and are increased biannually.

- Level II fees are outlined in Government Code Section 65995.5, allowing school districts to impose a higher fee on residential construction if certain conditions are met. These conditions include having a substantial percentage of students on multi-track year-round scheduling, having an assumed debt equal to 15–30 percent of the district's bonding capacity (percentage is based on revenue sources for repayment), having at least 20 percent of the district's teaching stations housed in relocatable classrooms, and having placed a local bond on the ballot in the past four years which received at least 50 percent plus one of the votes cast. A Facility Needs Assessment must demonstrate the need for new school facilities for unhoused pupils is attributable to projected enrollment growth from the construction of new residential units over the next five years.

- Level III fees are outlined in Government Code Section 655995.7. If State funding becomes unavailable, this code section authorizes a school district that has been approved to collect Level II fees to collect a higher fee on residential construction. This fee is equal to twice the amount of Level II fees. However, if a district eventually receives State funding, this excess fee may be reimbursed to the developers or subtracted from the amount of state funding.

Solid Waste

CALIFORNIA INTEGRATED WASTE MANAGEMENT ACT (AB 939 ABD SB 1322)

The California Integrated Waste Management Act of 1989 (AB 939) requires every city, town, and county in the state to prepare a Source Reduction and Recycling Element (SRRE) to its Solid Waste Management Plan that identifies how each jurisdiction will meet the mandatory state waste diversion goals of 25 percent by 1995 and 50 percent by 2000. The purpose of AB 939 is to "reduce, recycle, and re-use solid waste generated in the state to the maximum extent feasible."

The term "integrated waste management" refers to the use of a variety of waste management practices to safely and effectively handle the municipal solid waste stream with the least adverse

impact on human health and the environment. The act has established a waste management hierarchy, as follows:

- Source reduction;
- Recycling;
- Composting;
- Transformation; and
- Disposal.

SOLID WASTE PER CAPITA DISPOSAL MEASUREMENT ACT (SB 1016)

Subsequent legislation (SB 1016) effective in 2008 changed from a measurement of diversion rates to the per capita disposal measurement system to make the process of goal measurement as established by the Integrated Waste Management Act of 1989 (AB 939) simpler, more timely, and more accurate. SB 1016 builds on AB 939 compliance requirements by implementing a simplified measure of jurisdictions' performance. SB 1016 accomplishes this by changing to a disposal-based indicator--the per capita disposal rate--which uses only two factors: a jurisdiction's population (or in some cases employment) and its disposal as reported by disposal facilities. The per capita disposal rate approach is not determinative of jurisdiction compliance. CalRecycle will use per capita disposal as an indicator in evaluating program implementation and local jurisdiction performance. CalRecycle's evaluation will be focused on how jurisdictions are implementing their programs.

CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD MODEL ORDINANCE

Subsequent to the Integrated Waste Management Act, additional legislation was passed to assist local jurisdictions in accomplishing the goals of AB 939. The California Solid Waste Re-use and Recycling Access Act of 1991 (Sections 42900-42911 of the Public Resources Code) directs the California Integrated Waste Management Board (CIWMB) to draft a “model ordinance” relating to adequate areas for collecting and loading recyclable materials in development projects.

The model ordinance is used as the basis for imposing recycling conditions on new development projects and on existing projects that add 30 percent or more to their existing floor area. The model ordinance requires that any new development project, for which an application is submitted on or after September 1, 1994, include “adequate, accessible, and convenient areas for collecting and loading recyclable materials.” For subdivisions of single-family detached homes, recycling areas are required to serve only the needs of each home within that subdivision.

FOSTER CITY MUNICIPAL CODE

The City’s Municipal Code Chapter 15.44 Recycling and Salvaging of Construction and Demolition Debris implements procedures for demolition and new construction projects. This Code requires a

minimum of a 50 percent landfill diversion for all full demolition, all new construction, all roofing and all commercial and residential additions and/or alteration projects within the City.

Water Supply

CALIFORNIA CODE OF REGULATIONS

California Code of Regulations (CCR) Title 22, Chapter 15, Article 20 requires all public water systems to prepare a Consumer Confidence Report for distribution to its customers and to the Department of Health Services. The Consumer Confidence Report provides information regarding the quality of potable water provided by the water system. It includes information on the sources of the water, any detected contaminants in the water, the maximum contaminants levels set by regulation, violations and actions taken to correct them, and opportunities for public participation in decisions that may affect the quality of the water provided.

URBAN WATER MANAGEMENT PLANNING ACT

The Urban Water Management Planning Act has as its objectives the management of urban water demands and the efficient use of urban water. Under its provisions, every urban water supplier is required to prepare and adopt an urban water management plan. An "urban water supplier" is a public or private water supplier that provides water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. The plan must identify and quantify the existing and planned sources of water available to the supplier, quantify the projected water use for a period of 20 years, and describe the supplier's water demand management measures. The urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. The Department of Water Resources must receive a copy of an adopted urban water management plan.

SENATE BILL 610 (SB 610) AND ASSEMBLY BILL 901 (AB 901)

During the 2001 regular session of the State Legislature, SB 610 and AB 910 – Water Supply Planning – were signed and became effective January 1, 2002. SB 610 amends Public Resources Code Section 21151.0, requiring any EIR, negative declaration, or mitigated negative declaration for a qualifying project to include consultation with affected water supply agencies (current law applies only to notices of preparation). SB 610 also amends Water Code Sections 10656 and 10657 to restrict State funding for agencies that fail to submit their Urban Water Management Plan to the Department of Water Resources, and Water Code Section 10910 to describe the water supply assessment that must be undertaken for projects referred under PRC Section 21151.9. Water agencies would be given 90 days from the start of consultation in which to provide a water supply assessment of the CEQA lead agency; Water Code Section 10910 would also specify the circumstances under which a project for which a water supply assessment was once prepared would be required to obtain another assessment. AB 910 amends Water Code Section 10631, expanding the contents of the Urban Water Management Plans to include further information on future water supply projects and programs.

SENATE BILL 221

Senate Bill (SB) 221 adds Government Code Section 66455.3, requiring that the local water agency be sent a copy of any proposed residential subdivision of more than 500 dwelling units within five days of the subdivision application being accepted as complete for processing by the city or county. It also adds Government Code Section 66473.7, establishing detailed requirements for determining whether a "sufficient water supply" exists to support any proposed residential subdivisions of more than 500 dwellings, including any such subdivision involving a development agreement. When approving a qualifying subdivision tentative map, the city or county must include a condition requiring a sufficient water supply to be available. Proof of availability must be requested of and provided by the applicable public water system. If there is no public water system, the city or county must undertake the analysis described in Section 66473.7. The analysis must include consideration of effects on other users of water and groundwater.

Wastewater

STATE WATER RESOURCES CONTROL BOARD/REGIONAL WATER QUALITY CONTROL BOARD

In California, all wastewater treatment and disposal systems fall under the overall regulatory authority of the State Water Resources Control Board (SWRCB) and the nine California Regional Water Quality Control Boards (RWQCBs), who are charged with the responsibility of protecting beneficial uses of state waters (ground and surface) from a variety of waste discharges, including wastewater from individual and municipal systems. Foster City falls within the jurisdiction of the San Francisco RWQCB.

The RWQCB's regulatory role often involves the formation and implementation of basic water protection policies. These are reflected in the individual RWQCB's Basin Plan, generally in the form of guidelines, criteria and/or prohibitions related to the siting, design, construction, and maintenance of on-site sewage disposal systems. The SWRCB's role has historically been one of providing overall policy direction, organizational and technical assistance, and a communications link to the state legislature.

The RWQCBs may waive or delegate regulatory authority for on-site sewage disposal systems to counties, cities or special districts. Although not mandatory, it is commonly done and has proven to be administratively efficient. In some cases this is accomplished through a Memorandum of Understanding (MOU), whereby the local agency commits to enforcing the Basin Plan requirements or other specified standards that may be more restrictive. The RWQCBs generally elect to retain permitting authority over large and/or commercial or industrial on-site sewage disposal systems, depending on the volume and character of the wastewater.

Parks and Recreation

QUIMBY ACT

The Quimby Act (California Government Code Section 66477) states that "the legislative body of a city or county may, by ordinance, require the dedication of land or impose a requirement of the payment of fees in lieu thereof, or a combination of both, for park or recreational purposes as a

condition to the approval of a tentative or parcel map." Requirements of the Quimby Act apply only to the acquisition of new parkland and do not apply to the physical development of new park facilities or associated operations and maintenance costs. The Quimby Act seeks to preserve open space needed to develop parkland and recreational facilities; however, the actual development of parks and other recreational facilities is subject to discretionary approval and is evaluated on a case-by-case basis with new residential development.

Electricity

CALIFORNIA PUBLIC UTILITIES COMMISSION

The California Public Utilities Commission (CPUC) regulates privately owned electric, telecommunications, natural gas, water, and transportation companies.

LOCAL

Fire Protection and Emergency Response

CITY OF FOSTER CITY GENERAL PLAN

The adopted City of Foster City General Plan identifies the following goals, policies, and programs related to fire protection and emergency response services.

Safety Element Policies

S-6 **Minimize Loss of life, Injuries, and Property Damage Due to Fires.** The City will minimize loss of life, injuries, and property damage due to fires through review of development proposals, public education, and maintenance of well-trained fire suppression personnel.

S-9 **Emergency Response.** The City will prepare to respond to emergencies through the City's Emergency Plan, training, and other measures.

Safety Element Programs

S-j **Development Review for Fire Safety.** The City will review proposals for new and modified buildings to ensure that fire safety provisions are included as required by the most current uniform codes and local regulations.

S-k **Fire Education/Prevention.** The City will provide a fire education/prevention program to schools, businesses, and the community through publications, training classes, and other means.

S-l **Annual Inspections for Fire Safety and Hazardous Materials.** The City will conduct annual inspections of businesses and multi-family dwellings in order to ensure compliance with fire safety and hazardous materials requirements. The City will continue to provide inspections of residential care facilities at the request of the Department of Social Services.

S-p. **Emergency Response.** The City will prepare to respond to emergencies through the use of established procedures, programs of on-going training, periodic exercises of the City's Emergency Plan, and mutual aid agreements.

S-q **Emergency Plan.** The City will maintain the City's Emergency Plan indicating responsibilities and procedures for responding to an emergency.

Law Enforcement

CITY OF FOSTER CITY GENERAL PLAN

The adopted City of Foster City General Plan identifies the following goals, policies, and programs related to law enforcement and police services.

Safety Element Policies

S-11 **Police Services.** The City will provide police services necessary to maintain community order and public safety.

S-12 **Crime Prevention.** The City will provide crime prevention and other programs to educate the public and maintain and improve communication with community groups and organizations.

Safety Element Programs

S-v **Police Services.** The City will provide adequate personnel, training, and equipment to support the provision of public services.

S-w **Crime Prevention.** The City will provide a variety of crime prevention program to educate and involve the community, including but not ;limited to Neighborhood Watch, Apartment Watch, Business Watch, newsletters, security surveys, and programs with community groups and organizations.

S-x **Development Review for Crime Prevention.** The City will review proposals for new and modified building for compliance with crime prevention requirements.

Solid Waste

CITY OF FOSTER CITY GENERAL PLAN

The adopted City of Foster City General Plan identifies the following goals, policies, and programs related to solid waste services.

Conservation Element Policies

C-5 **Solid Waste.** Reduce the generation of solid waste through recycling and other methods.

Conservation Element Programs

C-s **Citywide Recycling Program.** Continue the citywide residential recycling program for glass, aluminum and newspaper and establish a citywide commercial recycling program for white paper and cardboard.

C-t **Source Reduction and Recycling Element.** Implement Source Reduction and Recycling Element in accordance with State regulations.

C-u **Recycling Information.** Inform all Foster City residents and businesses about recycling opportunities.

C-v **Recycling Bins Incentives.** Waive fees and simplify the review process for trash enclosures around recycling bins.

C-w **City Procurement.** Prepare a City-wide procurement policy for the purchase of recycled products.

MUNICIPAL CODE CHAPTER 15.44.030 RECYCLING AND SALVAGING OF CONSTRUCTION AND DEMOLITION DEBRIS, Landfill Diversion Requirements.

A. It is required that at least the following specified percentages of construction and demolition (C&D) debris waste tonnage generated from every covered project shall be diverted from landfills by using recycling, reuse, salvage and other diversion programs:

1. All Full Demolition Projects (Residential and Commercial). A minimum of 50 percent of total generated C&D debris tonnage from demolition projects shall be diverted.

2. All New Construction Projects (Residential and Commercial). Projects shall be required to divert a minimum of 50 percent of total generated C&D debris tonnage.

3. All Roofing Projects (Residential and Commercial). Covered projects that replace wood shake, tile, concrete or composite, shall also divert a minimum of 50 percent of total C&D debris tonnage generated.

4. Commercial Alteration (Tenant Improvement) Projects. At least 50 percent of total generated C&D debris tonnage from alteration projects whose value exceeds one hundred thousand dollars shall be diverted.

5. Residential Additions and Alterations. At least 50 percent of total generated C&D debris tonnage from residential additions/alterations whose value exceeds one hundred thousand dollars shall be diverted.

B. Separate calculations prepared by the applicant and certified by the chief building official shall be required for the demolition portion and for the construction portion of projects involving both demolition and construction. (Ord. 523 § 2 (part), 2005)

Water Supply

CITY OF FOSTER CITY GENERAL PLAN

The adopted City of Foster City General Plan identifies the following goals, policies, and programs related to water supply.

Conservation Element Policies

C-1 **Water Resources.** Conserve water resources in existing and new development.

C-2 **Water Quality Monitoring.** Continue to monitor the water quality of the lagoon.

C-a **Water Saving Landscaping and Irrigation.** Promote the use of low-water-use landscaping and irrigation devices in parks, and during review of new projects and modifications to existing developments.

C-b **Property Owner Water Saving Techniques.** Encourage all property owners to implement the following conservation techniques: utilize drought tolerant plant materials, limit turf areas to 25 percent of landscaping, limit hours of the day for watering, retrofit with water-conserving fixtures, retrofit existing bathrooms and install new bathrooms with ultra low-flow toilets and water-conserving shower heads.

C-c **Water Emergencies.** Declare a state of water emergency when mandatory water conservation and/or water rationing is necessary and prepare newsletter articles and brochures to educate customers about water conservation.

C-d **Water Conservation Plan.** Update the City's Water Conservation Plan. This plan describes water system deficiencies, and water supply and demand within the District service area.

URBAN WATER MANAGEMENT PLAN

The 2010-2015 UWMP was prepared by EMID in accordance with the Urban Water Management Planning Act and adopted by the EMID Board of Directors on May 16, 2011. The UWMP identifies EMID's annual water demands, projected demand and supply, and water use reduction and conservation measures.

Parks and Recreation

CITY OF FOSTER CITY GENERAL PLAN

The adopted City of Foster City General Plan identifies the following goals, policies, and programs related to parks and recreation within Chapter 5, Parks and Open Space Element.

Parks and Open Space Policies

PC-1 **Recreation Needs.** Respond to the recreation needs identified in the Parks and Open Space Element of the City of Foster City General Plan and meet the long-term projected recreation needs and preferences of individuals and groups within the community.

PC-2 **Park In-Lieu Fees.** Exact park-in-lieu fees according to California Government Code 66477 and the City of Foster City Municipal Code Section 16.36.080 to fund park development and improvements, and use the interest earned on fees to fund maintenance of park facilities. Utilize the park-in-lieu fees to construct the improvements and maintenance projects identified in the annually updated five-year Capital Improvements Program.

PC-3 **New Residential Development.** Require that all new multi-family residential projects provide a significant amount of on-site open space/recreation facilities for residents or provide a combination of park in-lieu fees and on-site recreational facilities

PC-4 **Park Improvements.** Improve existing parks by adding new facilities to those with identified deficiencies. Work with San Mateo County to provide public use of the Werder Pier restroom facility in conjunction with evaluating other locations for a public restroom facility for use by pedestrians using the levee pedway.

PC-5 **Park Facilities Maintenance and Inspection.** Continue regular maintenance and inspection of park facilities to prolong the life of equipment and insure the safety and enjoyment of park users.

PC-6 **Playfields.** Provide and maintain safe and functional playfields for youth and adult baseball, softball, soccer, and football programs.

PC-7 **Bike Path System.** Develop a City of Foster City bike path system to connect major work, shopping, school, civic and recreational destinations throughout the city.

PC-8 **Recreational Use of Pedestrian Walkways.** Improve the recreational use of existing pedestrian walkways where appropriate.

PC-9 **Pedway and Bikeway System Maintenance and Improvement.** Continue to maintain, expand and improve the existing walkway and pedway system.

PC-10 **Improvements in Open Space.** Design any improvements in open space areas to minimize adverse impacts to habitats, including provision of a buffer to minimize human disturbances, views or other open space resources.

PC-11 **Lagoons and Waterways.** Recreational Opportunities. Continue to promote a wide variety of recreational opportunities on the City of Foster City Lagoon system.

Parks and Open Space Programs

PC-c **Implement the City of Foster City Bikeway System Report**. Implement the City of Foster City Bikeway System Report, adopted by the City Council on January 7, 1991.

PC-d **Improve Facilities**. Perform maintenance and specific improvements to parks and recreation facilities as identified in the Capital Improvement Program Five Year Plan.

PC-e **Park Inspections.** Perform and document monthly inspections of park amenities and infrastructure.

PC-f **Playfield Inspections**. Inspect playfields during weekly maintenance.

PC-g **Levee Pedway Maintenance.** Maintain the levee pedway, repairing and resurfacing when necessary.

PC-h **Existing Pedway Enhancement.** Enhance the existing pedway system by providing observation points, water fountains, additional and replacement landscaping, trash cans, additional paved access points with hand rails and additional benches along the pathways.

PC-k **Public Access.** Require dedication of open space lands or public access easements as a part of new development or redevelopment along the Bay or the Belmont Slough.

PC-l **Wetlands Enhancement.** Improve wetland areas in accordance with state and federal regulations to enhance the natural characteristics of the wetlands.

PC-r **Parks and Recreation Committee.** The City of Foster City shall use the Parks and Recreation Committee to advise the City of Foster City and the Parks and Recreation Department on proposed park projects and City of Foster City recreational programs.

PC-s **Shoreline Band.** Work with the Bay Conservation Development Commission and the Association of Bay Area Governments to protect and enhance the 100-foot shoreline band for conservation and recreation.

PC-t **Court Resurfacing.** The City of Foster City shall resurface and paint tennis and basketball courts every five years or as necessary in conjunction with the CIP Five Year plan.

PC-aa **Lagoons and Waterways: Recreational Opportunities.** The City of Foster City shall promote the use of the lagoon for recreational purposes by allowing special events to occur on the lagoon, maintaining public beaches and boat ramps for access to the lagoon and maintaining the lagoon for use by boaters and windsurfers.

PC-bb **Shared Use Facilities.** The City of Foster City shall continue to work with the San Mateo-Foster City School District to share facilities with the school district and provide activities and programs at schools within the City of Foster City.

PC-cc **Maintenance of Lagoon Pathways.** The City of Foster City shall develop a program to identify which parties are responsible for maintenance of the areas adjacent to the lagoon.

Foster City Standard Conditions of Approval

Foster City has adopted Standard Conditions of Approval (SCOAs) for large new and redevelopment projects. The following SCOAs related to Public Services and Utilities would apply to any proposed large new or redevelopment project:

> **SCOA 2.4:** Prior to issuance of a building permit, the Construction Best Management Practices (BMPs) related to stormwater prevention shall be included as notes on the building permit drawings (see http://www.fostercity.org/Services/permits/List-of-Forms.cfm).

SCOA 5.5: Prior to issuance of a building permit, the applicants, at their expense, shall have a registered civil engineer prepare a complete sewer system capacity study of the on- and off-site sewer system (including lift stations) which services the project (both upstream and downstream). The study shall meet the approval of the City Engineer. All needed construction improvements shall be installed by the applicants at applicants' sole cost. No on-site or downstream overloading of existing sewer system will be permitted.

SCOA 5.6: The applicant shall prepare a sewer flow projection study and a hydraulic capacity study, to be submitted to the Foster City Public Works Department for review, to verify that the existing sewer system is properly sized to meet the projected increase in wastewater generation on the project site. The studies shall show the new connecting points to the existing sewers and model the estimated flows and peaking factors, as they relate to the changes in land use for the proposed project.

SCOA 5.7: Prior to issuance of a building permit, the improvement plans shall include the design of a wastewater collection system.

SCOA 5.8: Wastewater collection system items of construction should include at least the following:

- 5.8.1: The locations and numbers of on-site pump stations with permanent standby power, telemetry system and controls. All shall be as approved by the Engineering Division.
- 5.8.2: Modification to and addition of permanent standby power to which the proposed system is contributing sewage, if required.
- 5.8.3: Sanitary sewer mains.
- 5.8.4: Manholes with manhole frames and covers.
- 5.8.5: Cleanouts.
- 5.8.6: Wye branches and laterals.
- 5.8.7: And together with appurtenances to any or all of the above.

SCOA 5.9: Each project building shall include sewer inspection cleanouts at accessible outside locations to allow for wastewater sampling (commercial/industrial only).

SCOA 5.10: The applicant shall prepare pre-construction and post-construction CCTV survey reports on the existing wastewater collection system and force mains, to be submitted to the Foster City Public Works Department for review.

SCOA 5.11: The existing sewer system should be capped at the property line unless it is going to be reused. Lateral should not be abandoned in place.

SCOA 5.12: Prior to issuance of a building permit, the improvement plans shall include the design for a stormwater collection system generally as required and approved by the City.

SCOA 5.13: Storm Water System

- 5.13.1: Prior to issuance of a building permit, the system shall be designed to be capable of handling a 25-year storm with the hydraulic grade line at least one foot below every grate, to the satisfaction of the Engineering Division.
- 5.13.2: Calculations and plans showing hydraulic gradelines shall be submitted as part of the improvement plans package.
- 5.13.3: Items of construction shall include at least the following:
    - surface and subsurface storm drain facilities;
    - manholes with manhole frames and covers;
    - catch basins and laterals;
    - construct all catch basins as silt detention basins;
    - And together with appurtenances, to any or all of the above.

SCOA 5.14: All storm drain lines and related storm drainage appurtenances located both within the property boundaries of the development site and associated offsite private easements shall be privately owned and maintained. Prior to issuance of a building permit, the applicants shall submit to the City Engineer evidence of easements granted for offsite storm drainage facilities. Said easements shall provide the applicants the right at any time, or from time to time, to construct, maintain, operate, replace, remove, and renew all offsite storm drainage facilities, and appurtenant structures in, upon, over and across such easements.

SCOA 5.15: Prior to issuance of a building permit, a complete storm drainage study of the proposed development must be submitted showing the amount of runoff, and existing and proposed drainage structure capacities. This study shall be subject to review and approval by the Engineering Division. All needed construction improvements will be made by the applicants. No overloading of the existing system will be permitted. A hydrology/hydraulic analysis shall be completed on the existing storm drain system to verify it is adequately sized to handle the run-off from the project.

SCOA 5.16: Prior to issuance of a building permit, existing storm drain pipe lines on the project site and downstream thereof shall be televised to verify they have not become filled with sediment and cleaned out if necessary.

SCOA 5.17: Prior to issuance of a building permit, should the City determine that the City's storm drain system or storm drain pumping capacity requires expansion or modification as a result of the applicants' development, the applicants shall pay for all necessary improvement costs. The timing and amount of payment shall be as determined by the City.

SCOA 5.18: Post-construction survey reports shall be completed on the existing storm drain system. Any necessary repairs to restore the facilities shall be an element of the report. If required, the existing storm drains shall be cleaned as necessary during and at the completion of the project.

SCOA 5.19: Prior to the issuance of a building permit, the improvement plans shall include the design of a domestic water system to the satisfaction of the Engineering Division.

SCOA 5.20: Distribution System

- 5.20.1: Water lines shall be designed for fire flows to meet California Fire Code and Fire Department requirements.
- 5.20.2: Items of construction shall include at least the following:
  -backflow prevention devices;
  - water mains - minimum main size is 8 in. in any area. Fire flow determined for buildings/areas per "The Guide for Determining Required Fire Flow; Insurance Services Office; Municipal Survey Service".
  - valves;
  - tees;
  - fittings;
  - hydrants;
  - meters;
  - services;
  - and together with appurtenances to any or all of the above;
  - all water mains serving fire hydrants, shall be a minimum of 8" in diameter

SCOA 5.21: All City/District-owned water systems and on-site water mains shall be looped and meet the requirements of the State Department of Health Services, the City Public Works Department, and the City Fire Marshal.

SCOA 5.22: Prior to the issuance of a building permit, the applicant shall submit a design for all required backflow prevention devices in accordance with the Department of Health Services requirements. The size and type of the backflow prevention devices are subject to approval by the City/District Engineer. In addition, the required double check valve assembly shall be located on the drawings and provisions included for screening. All backflow prevention assembly devices that tie into the domestic water supply must be “lead free” “LF” devices per the California Health and Safety Code (CA H&SC) and installed in accordance to USC specifications.

SCOA 5.23: Prior to the issuance of a building permit, fire mains shall be designed to Fire Department specifications. Fire mains shall be constructed according to those specifications.

SCOA 5.24: Prior to the issuance of a building permit, the applicant shall indicate on-site hydrants, blue reflective pavement markers and mains at locations approved by the Fire Department. Hydrants shall meet the following requirements:

- Fire hydrants shall be installed not more than 250 ft. apart -in some –

- instances distances may be less and must meet Foster City Fire Department requirements.
- All new fire hydrants or replacement of existing hydrants shall conform with current E/PW standards.
- Placement shall conform to current E/PW standards.

SCOA 5.25: To properly evaluate necessary improvements, a complete water system capacity study of the on- and off-site water system which services the proposed project shall be paid for by the project developer and prepared by a registered civil engineer retained by the City/District prior to approval of a building permit. The study shall meet the approval of the City/District Engineer and include a fire flow analysis, a system demand analysis, and a system capacity analysis specific to the proposed development.

SCOA 5.26: The applicant shall prepare a detailed water pipe hydraulic flow analysis, to be submitted to the Foster City Public Works Department, to determine whether the existing water distribution system is properly sized to meet the projected new water demands on the project site. The analysis shall take account of fire flows and peak hourly flows.

SCOA 5.27: Prior to the issuance of a building permit, the applicant shall submit a request for all required water meters, including payment for the meters. The applicant shall provide calculations supporting the size and type of the meters. The size and type of the meters are subject to approval by the City/District Engineer.

SCOA 5.28: The applicant shall prepare pre-construction survey report on the existing water distribution system in the vicinity of the project site, to be submitted to the Foster City Public Works Department for review.

SCOA 5.29: The applicant shall prepare a post-construction survey report on the existing water distribution system in the vicinity of the project site, to be submitted to the Foster City Public Works Department for review. Any necessary repairs to the existing water supply infrastructure shall be included in this report. The applicant shall be responsible for constructing and financing any such repairs.

SCOA 5.30: Prior to issuance of a building permit, in order to facilitate water meter installation for commercial spaces and the accommodation of “eateries”, the applicant shall provide plans and specifications for a looped water line so that it passes along the frontage of all commercial spaces. The utility plan shall indicate the location of the water line to ensure the water line is installed on the private property being developed and not within City/District right of way. The City/District charges a higher sewer rate based upon water usage for “eateries” and as commercial spaces are modified, there needs to be a mechanism to separately track the differing water usage. Based on the development review, the City/District may consider other options from the applicant that can meet this requirement.

SCOA 5.31: The developer shall be responsible for the cost of water line inspection ports, as determined by the City Engineer.

SCOA 5.32: Prior to issuance of a building permit, the improvement plans shall show all proposed electric, cable TV, gas and communication lines within the development to the satisfaction of the Engineering Division. All utilities shall be underground.

SCOA 5.33: Prior to commencement of work, as required by California Government Code 4216, Underground Service Alert (USA) shall be contacted by the contractor to provide information on the location of underground utilities in the public right of way prior to earth work activities at the site. In addition to contacting USA, the applicant and/or contractor shall also be responsible for verifying locations of all utilities on the project site.

SCOA 5.34: Prior to issuance of a building permit, plans shall indicate that all new roadway surfaces or fire lanes shall be capable of providing continuous service for vehicles with a gross vehicle weight of at least 68,000 lbs.

SCOA 5.35: Prior to installation, the location(s) of all above-ground utility equipment (Post Indicating Valves (P.I.V.), Backflow/Cross-Connection Devices, Fire Department Connections (FDC), and other such utilities shall be staked and the locations approved by staffs of the Planning/Code Enforcement Division, Building Inspection Division, Fire Department, and Public Works Department. Prior to installation, the applicant shall arrange a joint field meeting with representatives from each of the Departments/Divisions listed above to confirm and verify locations for each above-ground utility component.

CITY OF FOSTER CITY MUNICIPAL CODE

CHAPTER 16.36 PARK AND RECREATIONAL FACILITIES

Chapter 16.36 of the City's Municipal Code is intended to assure adequate park and recreational resources and facilities for new city residents without causing a detrimental impact to existing city park and recreational resources and facilities. Chapter 16.36 requires dedication of land at a ratio of five acres per one thousand project residents, or payment of a comparable amount of in-lieu fees.

3.10.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on public services if it would:

- Result in substantial adverse physical impacts associated with the provisions of new or physically altered government facilities, and/or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:
    - Fire Protection
    - Police Protection
    - Schools
    - Other public facilities;
- Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Have insufficient water supplies available to serve the project from existing entitlements and resources, or if new or expanded entitlements are needed;
- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that is has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Not be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs;
- Not comply with federal, State, and local statutes and regulations related to solid waste;
- Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or

- Include or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

Consistent with the City of Foster City/Estero Municipal Improvement District Environmental Review Guidelines, the proposed project will have a significant impact on public services and utilities if it would:

- Exceed the capacity or disrupt the supply of water to the City, and in particular the one main distribution point to the City, located at the northwestern quadrant of the City

along E. Third Ave., shall be considered to have a potentially significant environmental impact and therefore shall be required to prepare a water supply assessment to be prepared by qualified experts as part of an overall environmental assessment on the project;

- Exceed the capacity or disrupt the operation of EMID's lift stations and sewer collection system shall be considered to have a potentially significant environmental impact and therefore shall be required to prepare a utility and service systems analysis to be prepared by qualified experts as part of an overall environmental assessment on the project;
- Exceed the Estero Municipal Improvement District's waste water treatment capacity or disrupt the operation of the waste water treatment plant shall be considered to have a potentially significant environmental impact and therefore shall be required to prepare a waste water treatment capacity analysis to be prepared by qualified experts as part of an overall environmental assessment on the project, which may also require review by outside agencies if additional capacity is required; and/or
- Disrupt or damage existing utility lines or facilities shall be considered to have a potentially significant environmental impact and therefore shall be required to prepare an analysis to be prepared by qualified experts as part of either an overall environmental assessment on the project or as a "stand-alone" evaluation to be part of the Initial Study, which may also require review by outside agencies if additional capacity is required.

IMPACTS AND MITIGATION MEASURES

Impact 3.10-1: Project implementation could result in adverse physical impacts on the environment associated with governmental facilities and the provision of public services (Less than Significant)

Foster City is essentially a built-out community with distinct boundaries, and new development will primarily come from redevelopment of underutilized infill sites at higher densities and intensities. Development and growth in the City under the General Plan would result in increased demand for public services, including fire protection, law enforcement, schools, parks, libraries, and other public and governmental services. The General Plan includes policies and programs to ensure that public services are provided at acceptable levels and to ensure that development and growth does not outpace the provision of public services.

As the demand for services increases, there may be a need to incrementally increase staffing and equipment in order to maintain acceptable service ratios, response times, and other performance standards. Service levels and staffing ratios for services such as police protection and fire protection go through an annual budgeting process during which citywide priorities are

established and service levels monitored, allowing adjustments where needed. Any added personnel would be funded through the City's General Fund. Revenue and taxes generated by new development would contribute to the City's General Fund for such purposes as funding added personnel. Additional officers or firefighters needed to meet the City's desired staffing levels would be accommodated by existing facilities. Staffing levels do not relate to physical impacts on the environment, and thus are not considered an impact under CEQA.

New or expanded service structures (e.g., offices, maintenance and administrative buildings, schools, parks, fire departments, libraries, etc.) may be needed to provide for adequate staffing, equipment, and appropriate facilities to serve growth in the City. However, given that Foster City is a nearly builtout community, and buildout of the General Plan would not result in a substantial increase in population or service demand, any new or expanded facilities would be minor, and would likely occur at existing facilities and sites, rather than on new sites. The potential future expansion of existing sites and facilities at currently developed locations would minimize or eliminate the potential for physical impacts on the environment.

Schools serving the City are experiencing capacity issues, and the need to expand existing school sites, or construct new school facilities continues to be monitored by the school districts. Foster City Elementary, Brewer Island Elementary, and Bowditch Middle school are operating at 99, 99 and 98 percent capacity, respectively. Audubon Elementary is operating at between 88 percent and 87 percent capacity, with room for 90 to 108 new students. It is recognized that the schools are at or near capacity and as development in the area continues to intensify, school capacity is a concern.

In February 2008, 75.5 percent of voters in San Mateo and Foster City supported a $175,000,000 bond to improve the overall quality and safety of local elementary and middle schools. The Measure L bond offers the opportunity to address capacity issues by adding classrooms and buildings to existing schools. The SMFCSD continues to move forward with its Measure L Projects. Most notably, a 14,000+ square-foot, 10- classroom building is currently under construction at Audubon Elementary in Foster City. In November 2013, 53.5 percent of voters in San Mateo County defeated a $130,000,000 bond to address school capacity challenges, update classroom technology, and improve energy efficiency at each school.[2] Following the failure of Measure P, the Next Steps Advisory Committee (NSC) was appointed as an advisory committee in February 2014 and is now evaluating other options to address school capacity and equity issues.[3]

---

[2] League of Women Voters of California Education Fund. Measure P, School Bond San Mateo-Foster City School District, accessed April 22, 2015. http://www.smartvoter.org/2013/11/05/ca/sm/meas/P/

[3] San Mateo-Foster City School District. Next Steps Advisory Committee (NSC). http://www.smfc.k12.ca.us/Next_Steps_Committee, accessed April 22, 2015.

School districts impose impact fees on new developments to help cover the cost of potential school facility construction or expansion. New development in Foster City is required to provide necessary funding and/or capital facilities for the school system, as determined by State-mandated development impact fees.

Existing facilities, including schools, may be expanded at their current location. New facilities, including schools, may also be constructed. The Schools, Public and Semi-Public, and Parks and Recreation land use designations would accommodate new public facilities necessary to provide community services. There may be environmental impacts associated with the construction or expansion of the facilities and schools needed to provide public services.

As future development, redevelopment, and infrastructure projects, including new governmental facilities and/or schools, are considered by the City or the school districts, each project will be evaluated for conformance with the City's General Plan, Zoning Ordinance, SCOAs, and other applicable regulations. Subsequent development and infrastructure projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA.

The existing Foster City General Plan includes a range of policies and programs to ensure that public services are provided in a timely fashion, are adequately funded, and that new development funds its fair share of services.

- Policy S-6 requires review of development proposals, public education and maintenance of well-trained fire suppression personnel to reduce the potential for impact to the City's residents and properties.
- Policy S-11 requires adequate police services necessary to maintain community order and public safety. Additionally, the proposed Land Use and Circulation Element carries forward policies and programs from the adopted General Plan to ensure that school, library, and public services and infrastructure are adequately planned and provided.

The proposed Land Use and Circulation Element also includes a range of policies and programs to ensure that public services are provided in a timely fashion, are adequately funded, and that new development funds its fair share of services.

- Policy LUC-L-1 obligates the City to maintain a five-year Capital Improvement Program (CIP) which supports policies in the General Plan to maintain, improve or expand City-wide facilities and infrastructure.
- Policy LUC-L-3 requires all new residential developments include recreational facilities within the development and/or contribute to the City's park in-lieu fund.
- Policy LUC-L-4 requires that any new residential development not part of an existing neighborhood with park access to include a recreation area for residents.

- Policy LUC-L-5 requires the City to maintain and improve its system of parks, pedestrian pathways, and waterfront recreation areas.
- Policy LUC-L-7 requires the coordination in the design of school facilities to integrate them into the neighborhood.
- Policy LUC-L-10 requires new projects which require construction or expansion of public improvements shall pay their pro rata fair share of the costs necessary to improve or expand infrastructure necessary to serve them, including streets and street improvements, parks, water storage tanks, sewer and water service, and other public services.
- Policy LUC-L-3 requires all new residential developments include recreational facilities within the development and/or contribute to the City's park in-lieu fund.
- Policy LUC-L-4 requires that any new residential development not part of an existing neighborhood with park access to include a recreation area for residents.
- Policy LUC-L-5 requires the City to maintain and improve its system of parks, pedestrian pathways, and waterfront recreation areas.

The existing General Plan includes programs which assist in the reduction of impacts to government facilities and public services.

- Program S-f protects the City's infrastructure and facilities from damage due to seismic and geologic hazards through the proper design and retrofitting the older facilities to current standards.
- Program S-v requires the City to provide adequate personnel, training and equipment to support the provision of police services.
- Program PC-bb requires the City to continue to work with the San Mateo-Foster City School District to share facilities with the school district and provide activities and programs at schools within the City of Foster City.
- Program PC-cc requires the development of a program to identify which parties are responsible for maintenance of the areas adjacent to the lagoon.

The proposed Land Use and Circulation Element includes programs to ensure adequate parks and recreation facilities, including:

- Program LUC-L-5-a which requires the City to adopt and regularly review a Parks Facilities Plan which addresses the need for new, and maintenance of existing, park facilities.
- Programs LUC-L-11-a requires the evaluation of recommendations contained in the infrastructure studies to determine whether to construct improvements to the water system in the Capital Improvement Program.

Additionally, recently adopted Standard Conditions of Approval applied to development projects in the city, require standard measures to ensure the provisions of public services and utilities. SCOAs mentioned previously, require new development to include a variety of measures addressing utility and infrastructure standards and improvements that ensure the delivery of services including: improvement measures and standards for water delivery, emergency services for fire protection, sewer capacity, stormwater, and wastewater.

As previously stated, increased levels of staffing and equipment may be needed to serve growth allowed under the proposed project. The environmental effect of providing the public services is associated with the physical impacts of providing new and expanded facilities. The specific impacts of providing new and expanded facilities cannot be determined at this time, as the proposed project does not propose development nor does it designate specific sites for new or expanded public facilities. However, the facilities would be primarily provided on sites with land use designations that allow such uses, and the environmental impacts of constructing and operating the governmental facilities would likely be similar to those associated with new development, redevelopment, and infrastructure projects under the General Plan. These impacts are described in the relevant chapters (Chapters 3.1 through 3.12, and 4.0) of this Draft EIR.

As such, there are no significant adverse impacts on the environment associated with governmental facilities and the provision of public services that are anticipated to result from implementation of the proposed Land Use and Circulation Element Update, the amendment to the Land Use Map Amendment and the CAP. This is a **less than significant** impact.

Impact 3.10-2: Project implementation has the potential to increase the demand for additional water supply which may result in the construction or expansion of water facilities or exceed the existing water supply available to the City. (Less than Significant)

Implementation of the project would result in increased population growth within the Planning Area, and a corresponding increase in the demand for additional water supplies. This increase in population growth would be accommodated by buildout of the General Plan and the corresponding General Plan Land Use Map.

The cumulative water demand in the EMID service area was considered in the Water Supply Assessment for the Lincoln Center Life Sciences Research Campus Project EIR in April 2015, completed under California Senate Bill 610 and California Water Code 10912.[4] Future water demand is also projected and assessed in the EMID 2010-2015 UWMP.

[4] California Department of Water Resources, Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001. http://www.water.ca.gov/pubs/use/sb_610_sb_221_guidebook/guidebook.pdf

Table 3.10-11 shows the anticipated SFPUC water supply assurance every 5 years between 2015 and 2035 (assuming no supply disruptions or critical multi-year droughts), projected demand within the EMID service area as determined by the Bay Area Water Supply and Conservation Agency (BAWSCA), additional demand associated with major proposed development projects in the EMID service area, and water supply remaining after accounting for expected demand.

As indicated in Table 3.10-11, EMID is under contract to receive 6,608 acre-feet per year from the SFPUC, assuming no significant supply disruptions or prolonged drought conditions. This water supply is assured through 2034, with provisions for extension to 2044. Taking into account major anticipated development projects within the EMID service area, EMID would have a sufficient water supply to meet expected demand associated with buildout of the Foster City General Plan. The expected water supply surplus would range from 1,296 acre feet per year in 2020 to 1,363 acre feet per year in 2035.

TABLE 3.10-11: EMID WATER SUPPLY AND DEMAND PROJECTIONS (AFY)

	2015	*2020*	*2025*	*2030*	*2035*
Normal SFPUC Water Supply Assurance	6,608	6,608	6,608	6,608	6,608
EMID Water Demand	4,495	4,551	4,506	4,473	4,484
Major Projects Demand	0	761	761	761	761
Total System Demand	4,495	5,312	5,267	5,234	5,245
Est. Remaining SFPUC Supply	2,113	1,296	1,341	1,374	1,363
Est. Remaining Supply Reliability, %	32%	20%	20%	21%	21%

SOURCE: BAY AREA WATER SUPPLY AND CONSERVATION AGENCY, 2014; ESTERO MUNICIPAL IMPROVEMENT DISTRICT, 2010-2015 URBAN WATER MANAGEMENT PLAN.

In the event of prolonged drought conditions, EMID would implement the Water Shortage Contingency Plan, which would result in reduced water demand of up to 20 percent within the service area. The Water Shortage Contingency Plan would thus ensure an adequate water supply within the EMID service area if the SFPUC reduces water deliveries to EMID by 10 to 20 percent (as would occur during a prolonged drought). For instance, a 20 percent reduction in water demand would reduce the overall demand during year five of a 5-year drought starting in 2030 to approximately 4,187 AFY with the new projects. The anticipated supply that year, taking into account a 20 percent reduction in water deliveries from the SFPUC, would be 5,286 acre-feet (AF). Thus even under a 5-year drought scenario starting in 2030, EMID would still be able to provide adequate water to all existing and anticipated development and maintain a water surplus of approximately 1,099 AF.

Therefore, the water demand associated with the project and all foreseeable General Plan buildout development could be accommodated during multiple dry years (such as those that could result from global climate change), through implementation of the mandatory demand reductions outlined in the Water Shortage Contingency Plan.

The existing Foster City General Plan includes a range of policies and programs to ensure that public services are provided in a timely fashion, are adequately funded, and that new development funds its fair share of services. For example:

- Policy C-1 requires the conservation of water resources in existing and new development.
- Program C-a promotes the use of low-water-use landscaping and irrigation devices in parks, and during review of new projects and modifications to existing developments.
- Program C-b encourages all property owners to implement conservation techniques.
- Program C-c allows for the declaration of a state of water emergency when mandatory water conservation and/or water rationing is necessary.
- Program C-d requires an update of the City's Water Conservation Plan.
- Program C-i provides for the conservation and protection of the quality of the water that is discharged into the San Francisco Bay through implementation of the Lagoon Management Plan.

The Land Use and Circulation Element retains and carries forward numerous policies from the adopted Land Use and Circulation Element to ensure that public services and infrastructure are adequately planned and provided.

- Policy LUC-L-1 obligates the City to maintain a five-year Capital Improvement Program (CIP) which supports policies in the General Plan to maintain, improve or expand City-wide facilities and infrastructure.
- Policy LUC-L-10 requires new projects which require construction or expansion of public improvements shall pay their pro rata fair share of the costs necessary to improve or expand infrastructure necessary to serve them, including streets and street improvements, parks, water storage tanks, sewer and water service, and other public services.

Additionally recently adopted Standard Conditions of Approval applied to development projects in the city, require standards to ensure an adequate water system capacity. Specifically, SCOA 5.25 requires new development to properly evaluate necessary improvements and complete a water system capacity study of on-and off-site water system which services the proposed project. The study shall meet the approval of the City/District Engineer and include a fire flow analysis, a system demand analysis, and a system capacity analysis specific to the proposed development.

As demonstrated in the analysis above, and based on the analyses contained in the 2010-2015 UWMP and the Water Supply Assessment for the Lincoln Center Life Sciences Research Campus Project EIR (April 2015), the proposed project would not increase the demand for additional water supply which may result in the construction or expansion of water facilities or exceed the existing water supply available to the City. This is a **less than significant** impact.

Impact 3.10-3: Project implementation may exceed wastewater treatment requirements, require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, or result in inadequate wastewater capacity. (Less than Significant)

Implementation of the proposed General Plan Update and Climate Action Plan would allow increased population growth within the Planning Area, and a corresponding increase in the demand for additional wastewater treatment capacity. This increase in population growth would be accommodated by buildout of the General Plan and the corresponding General Plan Land Use Map.

Wastewater generated by any future development under the proposed project would be treated at the WWTP. As described above, EMID owns approximately 25 percent of the treatment plant. The treatment plan has an average daily dry weather flow capacity of 15.7 MGD, of which 4.3 MGD is the purchased capacity for EMID per the Joint Powers Agreement (JPA). In 2013, the WWTP had an average daily dry weather flow of 12.3 MGD. EMID's average daily flow as of 2014 was 2.4 MGD. In 2012, the treatment plant's maximum daily dry weather capacity was 22.0 MGD and its maximum peak hour dry weather capacity is 39.5 MGD. According to the Foster City Public Works Director, the daily dry/wet weather capacity of the plant, which has not been reconfigured since 2012, has not changed significantly. Based on current flow data, average daily flows are below the capacities indicated in the JPA. The net increase of flow to the WWTP as a result of the proposed project would not exceed the City's daily flow capacity of 4.3 MGD.

Additionally, the proposed Land Use and Circulation Element includes a wide range of policies and programs to ensure that public services and infrastructure are adequately planned and provided.

- Policy LUC-L-1 obligates the City to maintain a five-year Capital Improvement Program (CIP) which supports policies in the General Plan to maintain, improve or expand City-wide facilities and infrastructure.
- Policy LUC-L-12 requires EMID to continue to work with the City of San Mateo to ensure that the jointly owned Wastewater Treatment Plant is adequate to meet the needs of the District and applicable state, regional and federal regulations.
- Policy LUC-L-13 requires EMID to continue to maintain the wastewater transport system to provide a safe, reliable, and adequate system to meet present and future needs.

- Policy LUC-L-10 requires new projects which require construction or expansion of public improvements shall pay their pro rata fair share of the costs necessary to improve or expand infrastructure necessary to serve them, including streets and street improvements, parks, water storage tanks, sewer and water service, and other public services.

It is also noted that in November 2011, the City of San Mateo initiated the development of a Wastewater Treatment Plant (WWTP) Master Plan to evaluate the facility needs for future growth, to meet existing and future regulations, and to replace/repair aging infrastructure. Furthermore, the 2013 National Pollutant Discharge Elimination System (NPDES) waste discharge permit for the treatment plant required a coordinated Capital Improvement Program for the collection system and treatment plant be submitted to the Regional Water Quality Control Board (RWQCB) by the end of 2014. The City of San Mateo submitted the coordinated CIP plan to the RWQCB in December 2014. In January 2015, the Foster City City Council adopted a resolution providing concurrence to the City of San Mateo for the award of a professional services agreement to CH2M Hill for a one-year contract, with automatic extensions for five additional years, to provide project management services to support a 20-year comprehensive Capital Improvement Program (The Clean Water Program) for the WWTP.

In addition, the City's SCOA's state that project applicants shall complete a sewer system capacity study, and that all needed construction improvements shall be installed by the applicants. According to the SCOA, a sewer flow projection study and a hydraulic capacity study must also be competed, to verify that the existing sewer system is properly sized to meet the projected increase in wastewater generation on the project site.

Because wastewater treatment demand resulting from implementation of the proposed project would be accommodated well within EMID's allocated daily flow capacity at the WWTP, no new wastewater facilities would be required to serve the project, and therefore the proposed project would have a **less than significant** impact on wastewater treatment and disposal.

Impact 3.10-4: Project implementation has the potential to exceed landfill capacity and/or cause incompliance with solid waste statutes or regulation. (Less than Significant)

The implementation of the proposed General Plan Update and Climate Action Plan would allow for infill and redevelopment projects that would result in solid waste generation over existing levels. The increase in solid waste generation would increase the demand for waste collecting and recycling services from Recology San Mateo County. The City's population is anticipated to increase to approximately 33,900 persons upon full buildout of the General Plan. Based on a per capita generation of 0.485 tons of solid waste each year, as established by CalRecycle, the project would accommodate uses that would result in approximately 16,441.5 tons of solid waste per year.

The Shoreway Environmental Center (Shoreway) is a state-of-the-art recycling and transfer station facility. This facility includes a transfer station, a Materials Recovery Facility (MRF), office building,

and an Education Center. As part of the remodeling of the Shoreway completed in 2011, an increase in the allowed maximum volume of material processed through the center from 130,000 tons per year to 176,000 tons per year. Maximum permitted thoughput for the facility is 3,000 tons per day. The project would not exceed the permitted capacity.

It is anticipated that development accommodated by the proposed project would increase the waste that would be disposed of at the Los Trancos landfill located in Half Moon Bay. The Los Trancos landfill is permitted by the California Integrated Waste Management Board to receive 3,598 tons per day or 1.3 million tons per year. The remaining capacity of the landfill's disposal area is 44.6 million cubic yards, which translates to a 12-year life through 2018. When the Los Trancos canyon disposal site is closed, it is anticipated that an adjacent canyon within the landfill will be opened, extending the landfill life through 2083.

As stated previously in this document, the City has been able to reduce the amount of solid waste going to landfills by 6,203 tons between 2005 and 2010. However, future growth in the City would increase the population and as a result possibly increase the amount of solid waste produced by the City. However, continuation and expansion of the existing solid waste programs in the City would act to further reduce this waste and thus reduce the potential for new for the expansion of existing solid waste facilities.

Existing General Plan Policy C-5 identifies the City's desire to reduce solid waste. Currently, the City participates in a recycling program with pick up services provided by Recology San Mateo County. The General Plan provides a number of programs that would assist in the reduction of solid waste in the City.

Program C-s requires the continuation of the citywide residential recycling program for glass, aluminum and newspaper and establish a citywide commercial recycling program for white paper and cardboard.

Program C-w requires the City to prepare a City-wide procurement policy for the purchase of recycled products.

The implementation of General Plan Program C-u, providing recycling information to the City's residents and business, would assist in the reduction of solid waste as does Program C-v, which waives fees for recycling bins.

Program C-t may be the most successful in reducing waste as it calls for the creation of a Source Reduction and Recycling Element. Implementation of the City's waste reduction programs and continued implementation of the General Plan policies and programs would reduce waste generated by the City.

Solid waste generation resulting from implementation of the proposed General Plan Update and Climate Action Plan would not exceed landfill capacity of landfills serving the city. Additionally,

any subsequent development under the proposed General Plan Update and Climate Action Plan would be required to comply with the waste reduction policies described above.

The proposed project would not require the construction of new landfill facilities and would not cause the City or other agencies to be out of compliance with State regulations related to solid waste. The planned and scheduled closure of the Los Trancos canyon disposal site and the planned opening of the adjacent canyon within the landfill, extending the landfill life through 2083, will occur regardless of the proposed project, and is not a direct or indirect result of any growth or increase in solid waste that would result from the General Plan update and the Climate Action Plan. Therefore, this impact is considered **less than significant**.

Impact 3.10-5: Project implementation may result in adverse physical impacts associated with the deterioration of existing parks and recreation facilities or the construction of new parks and recreation facilities (Less than Significant)

Growth accommodated by the proposed General Plan Update and Climate Action Plan would include a range of uses that would increase the population of the City. This growth would likely also result in increased demand for parks and recreation facilities. It is anticipated that over the life of the General Plan, use of regional parks and recreation facilities may increase, due to new residents as well as tourists visiting the City. Use of neighborhood parks may also increase, but the level of increase would be less since new residential subdivisions and residential projects would be required to provide adequate parks and open space and/or in-lieu fees to ensure that adequate parks and recreation facilities are provided to serve the development. The additional demand on existing parks and recreational facilities would increase the need for maintenance and improvements. These improvements could have environmental impacts, although the exact impacts cannot be determined since the potential improvements are unknown.

Consistent with the City's General Plan requirements and Parks and Recreation Facilities Ordinance, new development would be required to either provide parks facilities or pay in-lieu fees. The provision of new parks and recreation facilities would reduce the potential for adverse impacts and physical deterioration of existing parks and recreation facilities, by providing additional facilities to accommodate the demand for parks and recreation facilities.

In addition to ensuring that new and expanded parks and recreation facilities are provided to accommodate new growth, the General Plan includes policies and programs to ensure that parks and recreation facilities are adequately maintained and identifies improvements to existing facilities to serve both existing and planned growth. Improvements at existing parks and recreation facilities may include regular maintenance and a range of improvements, such as new signage, new and/or expanded trails systems, new and/or expanded restrooms, picnic facilities, play structures, to ensure that new facilities are provided to serve new growth. These improvements to existing facilities would likely have environmental impacts similar to those associated with new development under the General Plan. This Draft EIR addresses the potential impacts of new development and identifies mitigation measures where appropriate.

As future development and infrastructure projects, including improvements to existing parks and recreation facilities, are considered by the City, each project will be evaluated for conformance with the City's General Plan, Zoning Ordinance, and other applicable regulations. Subsequent development and infrastructure projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA.

The existing General Plan establishes many policies and programs that would ensure that existing parks and recreation districts are improved and maintained, by providing for a range of improvements appropriate to serve growth and ensure on-going improvement and maintenance of existing facilities.

- Policy PC-1 requires the City to meet the long-term projected recreation needs of the City's residents.
- Policy PC-4 pursues partnerships to provide services and maintain park facilities and Policy PC-2 ensures that parks and recreational facilities have adequate funding sources.
- Policy PC-3 requires that all new multi-family residential projects provide a significant amount of on-site open space/recreation facilities for residents or provide a combination of park in-lieu fees and on-site recreational facilities.
- Policy PC-4 implements the improvement of existing parks by adding new facilities to those with identified deficiencies, while Policy PC-5 calls for the continuance of regular maintenance and inspection of park facilities.
- Policy PC-6 requires the provision and maintenance of safe and functional playfields.
- Policies PC-7, PC-8 and PC-9 call for the development, improvement and maintenance of bike paths and pedestrian walkways.
- Policy PC-10 require that the design of any improvements in open space areas minimize adverse impacts to habitats, including provision of a buffer to minimize human disturbances, views or other open space resources.
- Policy PC-11 calls for the continuance of a wide variety of recreational opportunities on the City of Foster City Lagoon system.

In addition to General Plan policies, the General Plan also has a variety of programs to enhance and protect park and recreational facilities in the City.

- Program PC-d requires the maintenance and specific improvements to parks and recreation facilities as identified in the Capital Improvement Program Five Year Plan.
- Program PC-e requires monthly inspections of park amenities and infrastructure. Program PC-r allows for public input through the Parks and Recreation Committee.

- Program PC-c requires the implementation of the City of Foster City Bikeway System Report. Programs PC-f, PC-g, and PC-t call for the inspection and maintenance of the City's playfields, play courts and the levee pedway.
- Program PC-h requires the enhancement of the existing pedway system, while Program PC-cc establishes the development of a program to identify which parties are responsible for maintenance of the areas adjacent to the lagoon.
- To increase the amount of open space lands and public access to open space the City included Program PC-k in the General Plan.
- Program PC-l requires the improvement of wetland areas in accordance with state and federal regulations to enhance the natural characteristics of the wetlands.
- Program PC-s establishes the City's desire to work with the Bay Conservation Development Commission and the Association of Bay Area Governments to protect and enhance the 100-foot shoreline band for conservation and recreation.
- Program PC-aa requires the City to promote the use of the lagoon for recreational purposes Finally, Program PC-r requires the Parks and Recreation Committee to advise the City of Foster City and the Parks and Recreation Department on proposed park projects and City of Foster City recreational programs.

The proposed Land Use and Circulation Element includes policies and programs from the adopted element to ensure the maintenance of existing parks and recreation facilities and provision of new parks and recreation facilities, including:

- Policy LUC –L-2 requires that access be maintained to neighborhood parks so that such parks are within walking distance to the majority of residents.
- Program LUC-L-5-a requires the City to adopt and regularly review a Parks Facilities Plan. This plan will be used as a basis for establishing needed park in-lieu fees and review of the City's adopted Capital Improvements Program.

While growth under the General Plan would result in use and deterioration of parks and recreation facilities, improvements to and regular maintenance of existing facilities is not anticipated to result in blight or substantial adverse impacts, given that the City has an excellent track record of prioritizing park and public recreation facilities maintenance, which are valued amenities to the community. The City has adequate staff and adequate budget resources to continue to provide high quality parks and recreational services, facilities, and resources to the community. Therefore, this impact is considered **less than significant** and no mitigation is necessary.

Impact 3.10-6: Project implementation may result in adverse physical impacts on the environment associated with construction of new parks and recreation facilities (Less than Significant)

Development under the General Plan may include new parks and recreation facilities to serve new growth and to meet existing parks and recreation needs. The General Plan supports the creation of new parks and recreation facilities. Neighborhood and community parks can be accommodated in the Parks and Recreation designations, while the Open Space designation reserves areas for pedways and land in its natural state.

The National Recreation and Park Association has established standards for the number of acres of parkland per 1,000 population. The recommended minimum standard is three acres per 1,000 population. In jurisdictions where the amount of existing neighborhood and community park land exceeds three acres per 1,000 population, the legislative body may adopt a higher standard not to exceed five acres/1,000 persons. Because the City of Foster City has more than three acres per 1,000, the City of Foster City uses the five-acre per 1,000 persons standard.

At a ratio of five acres of parkland per 1,000 residents, development during the planning horizon of the General Plan would result in the need for approximately 169.5 acres of parkland based on an estimated buildout population 33,900.

As described previously in this section the City's 22 parks range in size from 0.2 acre to 24 acres for a total of approximately 108 acres of parkland. These parks offer many recreational facilities such as boat launching facilities, playgrounds, picnic areas, athletic courts, etc. In addition to parkland within the City, the City Lagoon adds another 212 acres of recreational facilities for the City's residents, and walkways, the levee pedway, windsurf areas, and satellite facilities add an additional 35 acres, for a total of approximately 355 acres of parks and recreation area in the City; all of which are counted towards the City's parks acreage-to-population ratio. With the inclusion of recreational waterways, the City's parkland to population ratio is 10.47 acres per 1,000 residents, which is significantly higher than 5 acres/1000 residents.

As future parks and recreation projects are considered by the City, each project will be evaluated for conformance with the General Plan, Zoning Ordinance, and other applicable regulations. Parks and recreation projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA.

The General Plan establishes policies and programs that would ensure that parks and recreational facilities and opportunities are provided to serve new growth and the City's existing population as described under Impact 3.10-5 above. The environmental impacts associated with constructing and operation new parks and recreation facilities would be consistent with impacts associated developments allowed under the General Plan, such as impacts associated with construction activities including air quality, drainage, and noise, and impacts associated with operation including traffic, noise, air quality, hazards, and land stability. These impacts as described in the relevant chapters (Chapters 3.1 through 3.12 and 4.0) of this Draft EIR. Additionally, all new

discretionary development projects are required to undergo the environmental review process as established by CEQA. Furthermore, the City of Foster City/Estero Municipal Improvement District Environmental Review Guidelines requires all projects needing a permit or approval from the City to undergo environmental review.

As explained above, Implementation of the proposed project would not increase the demand for parks and recreational facilities in the City, and would not require the construction of new parks or recreational facilities because the project would not facilitate significant population growth in the City or directly result in new development that would increase the demand for parks and recreational facilities. Therefore, this impact is considered **less than significant** and no mitigation is necessary.

Resources

Allied Waste Services. *2004, 2005, 2006 Annual Tonnage Report*. 3/19/2008.

CalRecycle, 2014. CalRecycle Solid Waste Information System (SWIS) Facilities Directory located at: http://www.calrecycle.ca.gov/SWFacilities/Directory/41-AA-0002/Detail/. Accessed March 2015.

CalRecycle, 2012. Jurisdiction Disposal Tonnage Trend (Foster City, 2007-2011). http://www.calrecycle.ca.gov/LGCentral/Reports/Jurisdiction/ReviewReports.aspx. Accessed September 12, 2012.

CalRecycle, 2012. Jurisdiction Disposal By Facility (Foster City, 2011). http://www.calrecycle.ca.gov/LGCentral/Reports/Jurisdiction/ReviewReports.aspx. Accessed September 12, 2012.

CalRecycle (California Waste Management Board), 1986. Agenda Item #10, December 10-11, 1986.

CalRecycle 2013. Facility/Site Summary Details: Kettleman Hills. http://www.calrecycle.ca.gov/SWFacilities /Directory/16-AA-0023/Detail/. March 4, 2013.

California Department of Education, 2014. School Enrollment Data. Accessed via: http://dq.cde.ca.gov/dataquest/. March 2015.

California Department of Justice, 2014. Criminal Justice Jurisdictional Trend – 2012. Accessed via: http://oag.ca.gov/crime/jt_cjsc/2010. March 2015.

City of San Mateo & Estero Municipal Improvement District Joint Powers Agreement, Exhibit A, July 17, 1989.

Estero Municipal Improvement District, 2011. 2010-2015 Urban Water Management Plan. Foster City, CA. May 16, 2011.

Foster City. *Recommended Sustainability Action Plan.* Foster City. Ad Hoc Environmental Sustainability Task Force.

City of Foster City/Estero Municipal Improvement District, 2012. *2011-12 Final Budget*.

Foster City, 2011. *Annual Report Summary CalRecycle Electronic Annual Report - 2010*. Foster City, 2011.

Foster City, 2012. *Water Supply Assessment for the Gilead Integrated Corporate Campus Master Plan and Subsequent EIR*.

Foster City/Estero Municipal Improvement District, 2007. *2007 Sewer Smart Summit Presentation*. September 25, 2007.

Foster City/Estero Municipal Improvement District, 2008. *Water Supply Assessment.*

Metropolitan Planning Group/Foster City, 2011. *Foster City General Plan Update 2011 Snapshot Workbook*.

City of San Mateo/EMID, 2000. *Amendment to "Joint Powers Agreement Between City of San Mateo and the Estero Municipal Improvement District for Construction and Operation of the Wastewater Treatment Plant*. September 5, 2000.

City of San Mateo, 2008. *Administrative Report: Wet Weather Capacity Analysis and Alternatives Evaluation*. September 18, 2008.

Urban Planning Partners, Inc., 2015. *Water Supply Assessment for the Lincoln Center Life Sciences Research Campus Project.*

This EIR chapter describes the potential impacts to the transportation system associated with adoption of the proposed General Plan Update and the Climate Action Plan. The impact analysis examines the roadway network, bus service, bicycle facilities, and sidewalks as components of the overall transportation system in Foster City and in adjacent sections of San Mateo. To provide a context for the impact analysis, this chapter begins with a description of the environmental setting. The setting describes the existing physical and operational conditions for the transportation system. Following the setting is the regulatory framework influencing the transportation system and providing the basis for impact significance thresholds used in the impact analysis. Next, a summary of proposed General Plan policies that affect the transportation system are described. The chapter concludes with the impact analysis findings and recommended mitigation measures.

3.11.1 TRANSPORTATION SETTING

Foster City's transportation system is comprised of the roadway network, bus service, bicycle facilities, and sidewalks. Descriptions and maps of these facilities are presented in this chapter. The existing AM and PM peak-hour traffic volumes and lane configurations for the study intersections are presented, followed by the operational analysis results (isolated intersection level of service calculations and VISSIM model results). Existing freeway volumes and operations are also presented.

TRANSIT SYSTEM

Transit service within Foster City is provided by various agencies. San Mateo County Transit District (SamTrans) and Alameda-Contra Costa Transit District (AC Transit) provide bus service, while the Peninsula Traffic Congestion Relief Alliance operates shuttles connecting to Bay Area Rapid Transit (BART) and Caltrain stations. Figure 3.11-1 illustrates the transit routes throughout Foster City. Descriptions of these routes, the hours of operation, and their service headways (time between arrivals) are described below and summarized in Table 3.11-1.

TABLE 3.11-1: EXISTING TRANSIT SERVICE

Service Provider	Name/Description	Hours of Operation/Headway
SamTrans	251 – Caltrain Connection	11:30 a.m. – 8:16 p.m. Weekdays (60 minutes) 8:30 a.m. – 7:19 p.m. Saturdays (120 minutes)
	256 – Caltrain Connection	6:25 a.m. – 5:27 p.m. Weekdays (60 minutes) 7:30 a.m. – 8:22 p.m. Saturdays (120 minutes)
	54 – School Service	7:39 a.m. – 8:05 a.m. Weekdays (one bus) 1:50 p.m. – 3:40 p.m. Weekdays (six buses)
	57 – School Service	7:00 a.m. – 7:30 a.m. Weekdays (one bus) 2:00 p.m. – 3:57 p.m. Weekdays (two buses)
AC Transit	M – Transbay Service	5:57 a.m. – 6:53 p.m. Weekdays (30 minutes)
BART/Caltrain Shuttle	North Foster City Shuttle	6:35 a.m. – 9:55 a.m. Weekday (30 minutes) 4:12 a.m. – 7:17 p.m. Weekday (30 minutes)
Caltrain Shuttle	Lincoln Centre Shuttle	6:56 a.m. – 9:34 a.m. Weekday (40 minutes) 3:15 p.m. – 7:03 p.m. Weekday (40 minutes)
	Mariners Island Area (PCA) Shuttle	6:56 a.m. – 10:20 a.m. Weekday (45 minutes) 3:09 p.m. – 6:37 p.m. Weekday (45 minutes)
Source: SamTrans; AC Transit; Peninsula Traffic Congestion Relief Alliance at http://www.commute.org/; accessed February 2015.		

SamTrans

SamTrans operates Route 251, Route 256, Route 54, and Route 57 in Foster City. Route 251 provides a connection between the Hillsdale Shopping Center and Hillsdale Caltrain station in San Mateo to Foster City and the Bridgepointe Shopping Center. Route 256 operates along the same route as Route 251 but in the opposite direction for the loop within Foster City. Routes 54 and 57 serve the weekday morning and afternoon school commute to/from Bowditch Middle School and Hillsdale High School in San Mateo and Foster City, respectively.

In addition to its traditional bus routes, SamTrans runs paratransit service for persons with disabilities through its Redi-Wheels program. The Foster City Parks & Recreation Department's Senior Express Shuttle also operates on-demand service for Foster City residents who are 50 years and over.

AC Transit

AC Transit provides transbay service between Hayward and San Mateo. Line M operates across the San Mateo Bridge (SR 92) and travels on Foster City Boulevard, Chess Drive, Vintage Park Drive, Metro Center Boulevard, and E. Hillsdale Boulevard in Foster City.

BART/Caltrain Shuttle

The North Foster City Shuttle provides service operated by the Peninsula Traffic Congestion Relief Alliance between the Millbrae Intermodal Station (serving BART and Caltrain) and businesses and office buildings in the North Foster City Area during commute hours, Monday through Friday.

Caltrain Shuttles

The Peninsula Traffic Congestion Relief Alliance operates two other shuttle buses during weekday commute hours: Lincoln Centre Shuttle and Mariners Island Area Shuttle. The Lincoln Centre Shuttle runs between the Hillsdale Caltrain Station and businesses in the Lincoln Centre Area in North Foster City, whereas the Mariners' Island Area Shuttle provides service between the Hillsdale Caltrain Station and businesses in the San Mateo and Foster City border areas.

BICYCLE FACILITIES

Bicycle facilities include Class I bike paths, Class II bike lanes, and Class III bike routes. Class I bike paths are paved multi-use pathways that are separated from roadways by space or a physical barrier. Class II bike lanes are lanes on the outside edge of roadways that are intended for the exclusive use of bicycles and are designated with special signing and pavement markings. Class III bike routes are roadways designated for bicycle use with only a bike route sign and possibly sharrows.

The bicycle facilities in Foster City are shown on Figure 3.11-2. Class III bicycle routes are designated on Edgewater Boulevard south of Beach Park Boulevard, Vintage Park Drive, East 3rd Avenue, Lakeside Drive, Metro Center Boulevard, East Hillsdale Boulevard, Beach Park Boulevard, Gull Avenue, Catamaran Street, Shell Boulevard, Marlin Avenue, Grebe Street and Foster City Boulevard. Class II on-street striped bicycle lanes are located on Edgewater Boulevard from Beach Park Boulevard north to the city limits and on Mariners Island Boulevard north to East 3rd Avenue. Class I multi-use paths are provided near and along the Bay shoreline, East Hillsdale Boulevard from the Marina Lagoon to Shell Boulevard, and on Metro Center Boulevard to Edgewater Boulevard. Additional segments of bicycle paths run through Sea Cloud Park and connect with the

bicycle path at the Bay, and a segment runs through Vintage Park connecting to bicycle routes on either side. Figure 3.11-2 also includes existing bicycle facilities in the City of San Mateo.

PEDESTRIAN FACILITIES

Pedestrian facilities include sidewalks, marked and enhanced crosswalks, curb ramps, median refuges, and pedestrian-scale lighting. Sidewalks are provided along both sides of many streets within Foster City, with marked crosswalks and curb ramps at intersections. One exception is along East 3rd Avenue, which has sidewalks only on the south side of the street. A segment of the Bay Trail, which includes a Class I multi-use pathway, provides pedestrian access along the bay shoreline from the City limits at the Mariners Point Golf just north of East 3rd Avenue to the southern City limits adjacent to Belmont and Redwood City. At smaller intersections where a local street meets a main arterial, such as the intersection of Foster City Boulevard/Polynesia Drive, marked crosswalks rarely exist and traffic is often uncontrolled on the larger roadway. Pedestrian signals with pedestrian activated push buttons are provided at signalized intersections. Medians are often present on the wide boulevards, but median curb cuts are rarely provided for pedestrian refuge.

EXISTING ROADWAY NETWORK

Regional auto access to the City is provided by SR 92 and US 101. Major City streets include Foster City Boulevard, Vintage Park Drive, Chess Drive, Metro Center Boulevard, East Hillsdale Boulevard, Edgewater Boulevard, Shell Boulevard and Beach Park Boulevard. Key roadways in the City of San Mateo providing access to Foster City include East 3rd Avenue and Mariners Island Boulevard. Speed limits on roadways in Foster City range from 25 miles per hour (mph) on local streets to 35 to 45 mph on arterials. The speed limit is 55 mph on SR 92 and 65 mph on US 101. The existing roadway network is presented on Figure 3.11-3.

Table 3.11-2 provides a comparison of average daily traffic (ADT) volumes between 1992 and 2015 on key roadway segments. In general, ADT has increased over time with a few exceptions. Roadways with the largest increases in ADT include eastbound East 3rd Avenue, southbound Foster City Boulevard, and both directions on Chess Drive and Metro Center Boulevard. Table 3.11-2 also shows 2015 AM and PM peak hours and peak hour volumes.

TABLE 3.11-2: ROADWAY VOLUMES

Roadway Segment	Direction	Average Daily Trips (ADT)		2015 Peak Hour Volumes			
				AM Peak Hour		PM Peak Hour	
		1992	2015	Time	Volume	Time	Volume
East 3rd Avenue west of Mariners Island Boulevard	Westbound	7,600	8,000	7:45-8:45	1,200	4:45-5:45	960
	Eastbound	6,000	9,000	7:45-8:45	1,180	5:00-6:00	1,420
Beach Park Boulevard between Edgewater Boulevard & Shell Boulevard	Westbound	5,800	5,500	7:45-8:45	620	5:15-6:15	500
	Eastbound	5,500	5,300	7:45-8:45	500	5:15-6:15	640
Chess Drive east of Vintage Park Drive	Westbound	2,700	4,700	8:15-9:15	650	1:00-2:00	330
	Eastbound	5,300	8,500	11:00-12:00	560	5:00-6:00	1,070
Foster City Boulevard over State Route 92	Northbound	19,200	17,500	7:45-8:45	1,940	12:30-1:30	1,340
	Southbound	8,000	11,700	8:00-9:00	800	5:00-6:00	1,650
East Hillsdale Boulevard between Edgewater Boulevard & Shell Boulevard	Westbound	12,600	11,900	7:45-8:45	1,170	5:00-6:00	990
	Eastbound	12,200	12,300	8:00-9:00	950	5:00-6:00	1,250
Metro Center Boulevard east of Vintage Park Drive	Westbound	4,000	8,000	10:45-11:45	600	12:00-1:00	710
	Eastbound	2,000	5,600	11:00-12:00	370	5:00-6:00	770

Notes:

1. 1992 ADT on East Hillsdale Boulevard and Beach Park Boulevard average of recorded roadway volumes between Edgewater Boulevard and Shell Boulevard.

Sources:

1. Fehr & Peers, February 2015.
2. Existing (1992) Average Daily Traffic Counts, City of Foster City General Plan.

The major roadways serving Foster City are described below. On-street parking is not allowed on City roadways except where noted in the roadway descriptions below.

SR 92 is a freeway that runs in an east-west direction from Half Moon Bay, near the coast, to Hayward on the east side of San Francisco Bay via the San Mateo Bridge. SR 92 has partial interchanges (hook ramps) with Fashion Island Boulevard, Edgewater Boulevard, Metro Center Boulevard, and Chess Drive. It is generally three travel lanes in each direction east of US 101 and two travel lanes in each direction west of US 101, with auxiliary lanes between interchanges.

two travel lanes in each direction west of US 101, with auxiliary lanes between interchanges. Average daily volumes on SR 92 through Foster City range from 142,000 vehicles between US 101 and Mariners Island Boulevard to 95,000 vehicles at the San Mateo Bridge.

US 101 is a freeway that provides regional north-south access. In the vicinity of Foster City, US 101 generally has four travel lanes in each direction with one or two auxiliary lanes between interchanges. An auxiliary lane in both directions was recently completed on this freeway segment north of East 3rd Avenue. Although US 101 does not run directly through Foster City, it provides the primary north-south regional access to the City via interchanges at SR 92, East Hillsdale Boulevard, and East 3rd Avenue in the City of San Mateo. Average daily traffic volumes on US 101 through Foster City range from 229,000 vehicles at East Hillsdale Avenue to 260,000 vehicles north of SR 92.

East 3rd Avenue is a four-lane divided roadway that runs in an east-west direction along the northern San Francisco Bay shoreline north of SR 92. It has a full access interchange with US 101 in the City of San Mateo. The ADT on East 3rd Avenue west of Mariners Island Boulevard is 8,000 (westbound) and 9,000 (eastbound).

Mariners Island Boulevard (City of San Mateo) is a four-lane divided roadway that extends from East 3rd Avenue in the north to SR 92 where it becomes Edgewater Boulevard. Access to eastbound SR 92 is provided at the intersection of Mariners Island Boulevard / Edgewater Boulevard / SR 92 ramps. On-street parking is allowed on both sides of Mariners Island Boulevard north of Trader Lane.

Vintage Park Drive extends from Foster City Boulevard in the north to Metro Center Boulevard just past SR 92 in the south. It is a four-lane divided roadway.

Foster City Boulevard is a four to six-lane arterial that extends from East 3rd Avenue, across SR 92, to Beach Park Boulevard. It is a major north-south arterial in Foster City. On-street parking is allowed along northbound Foster City Boulevard from Bounty Drive to approximately 450 feet south of East Hillsdale Boulevard. The ADT on Foster City Boulevard over State Route 92 is 17,500 (northbound) and 11,700 (southbound).

Chess Drive extends eastward from Bridgepointe Parkway past Foster City Boulevard and then curves around to the north and west to intersect with Foster City Boulevard at Vintage Park Drive. Access to westbound SR 92 is provided via hook ramps just west of Foster City Boulevard. Chess Drive is four-lanes wide west of Foster City Boulevard and two-lanes wide to the east. On-street parking is allowed along Chess Drive to the east of Hatch Drive. The ADT on Chess Drive east of Vintage Park Drive is 4,700 (westbound) and 8,500 (eastbound).

Bridgepointe Parkway is a four-lane east-west roadway that extends from Chess Drive to Mariners Island Boulevard where it becomes Fashion Island Boulevard in the City of San Mateo. Access to

westbound SR 92 is provided via hook ramps just west of Bridgepointe Parkway. Fashion Island Boulevard has a full access interchange with US 101.

Metro Center Boulevard is a four-lane east-west roadway that runs parallel to SR 92 to the south and extends between Edgewater Boulevard and Foster City Boulevard where it becomes Triton Drive. Access to eastbound SR 92 is provided by hook ramps just west of Foster City Boulevard. The ADT on Metro Center Boulevard east of Vintage Park Drive is 8,000 (westbound) and 5,600 (eastbound).

East Hillsdale Boulevard is a four to six-lane divided arterial that runs in an east-west direction to the south of SR 92. It has a full access interchange with US 101 in the City of San Mateo. The ADT on East Hillsdale Boulevard between Edgewater Boulevard and Shell Boulevard is 11,900 (westbound) and 12,300 (eastbound).

Edgewater Boulevard is the continuation of Mariners Island Boulevard south of SR 92. It is four lanes wide with on-street parking south of East Hillsdale Boulevard.

Shell Boulevard is a four-lane roadway that runs generally in a north-south direction. It extends southward from Metro Center Boulevard, providing parallel access to Foster City Boulevard and Edgewater Boulevard. On-street parking is allowed on southbound Shell Boulevard between Bounty Drive and Civic Center Drive.

Beach Park Boulevard is a two to four-lane roadway that runs along the eastern edge of Foster City until it turns into East Hillsdale Boulevard, just south of SR 92. It is a two-lane residential street west of Edgewater Boulevard with on-street parking on both sides of the street. It is a four-lane roadway east of Edgewater Boulevard with on-street parking allowed north of Foster City Boulevard. The ADT on Beach Park Boulevard between Edgewater Boulevard and Shell Boulevard is 6,400 (westbound) and 6,000 (eastbound).

3.11.2 STUDY LOCATIONS AND ANALYSIS METHODS

Table 3.11-3 presents a summary of the changes in the proposed General Plan from the existing General Plan that will affect transportation as well as a summary of the analysis assumptions. The proposed General Plan Update does not include any changes to the land uses or roadway network. As part of the proposed General Plan Update, the method used to evaluate intersection operations and the LOS policy are being updated.

TABLE 3.11-3: FOSTER CITY GENERAL PLAN ASSUMPTIONS

	Category	Existing General Plan (1993 General Plan)	Proposed General Plan (2015 General Plan)
Land Uses	General Plan Buildout Year	Forecast Year of 2005	Forecast Year of 2040
	Land Uses	Land uses shown in Table 3.11-10	Land uses shown in Table 3.11-10
Roadway Network	Overall	Existing plus Fully Funded Roadway Improvements shown in Table 3.11-13	Existing plus Fully Funded Roadway Improvements shown in Table 3.11-13
Policies	LOS Method	Circular 212 (V/C Ratio)	2000 HCM (Delay)
	LOS Policy	LOS D except LOS E or F accepted at Chess Drive/SR 92 Ramps, Foster City Boulevard/Metro Center Boulevard, and East Hillsdale Boulevard/Edgewater Boulevard per LUC-50 (1993 General Plan)	LOS D except LOS E or F accepted at the Chess Drive/SR 92 Ramps, Foster City Boulevard/Chess Drive, Foster City Boulevard/Metro Center Boulevard per updated traffic analysis
Source: Fehr & Peers, February 2015.			

STUDY LOCATIONS

This study evaluated impacts of General Plan buildout on 23 intersections and seven freeway segments. The study area was selected based on local traffic patterns and engineering judgment and is consistent with other studies conducted in Foster City. The study area is comprehensive; the impacts are well-contained within the study area and no impacts are anticipated beyond these borders. The study locations are listed below and shown on Figure 3.11-4 Intersections marked with an asterisk (*) are located in the City of San Mateo.

Study Intersections

1. East 3rd Avenue and US 101 Northbound On-Ramp*
2. East 3rd Avenue and Norfolk Street*
3. Mariners Island Boulevard and East 3rd Avenue
4. Foster City Boulevard and East 3rd Avenue
5. Foster City Boulevard and Vintage Park Drive/Chess Drive
6. Vintage Park Drive and Chess Drive
7. SR 92 Westbound Ramps and Chess Drive
8. Foster City Boulevard and Chess Drive
9. SR 92 Eastbound Ramps and Edgewater Boulevard/Mariners Island Boulevard
10. Edgewater Boulevard and Metro Center Boulevard
11. Vintage Park Drive and Metro Center Boulevard
12. Shell Boulevard and Metro Center Boulevard

13. SR 92 Eastbound Ramps and Metro Center Boulevard
14. Foster City Boulevard and Metro Center Boulevard/Triton Drive
15. Norfolk Street and East Hillsdale Boulevard*
16. Altair Avenue and East Hillsdale Boulevard
17. Edgewater Boulevard and East Hillsdale Boulevard
18. Shell Boulevard and East Hillsdale Boulevard
19. Foster City Boulevard and East Hillsdale Boulevard
20. East Hillsdale Boulevard and Pilgrim Drive
21. Edgewater Boulevard and Beach Park Boulevard
22. Foster City Boulevard and Marlin Avenue
23. Foster City Boulevard and Beach Park Boulevard

Freeway Segments

1. US 101, north of East 3rd Avenue
2. US 101, between East 3rd Avenue and SR 92
3. US 101, between SR 92 and East Hillsdale Boulevard
4. US 101, south of East Hillsdale Boulevard
5. SR 92, between US 101 and Mariners Island Boulevard/Edgewater Boulevard
6. SR 92, Mariners Island Boulevard/Edgewater Boulevard and Foster City Boulevard
7. SR 92, east of Foster City Boulevard

ANALYSIS SCENARIOS

The operations of the intersections and the freeway segments were evaluated during the time periods when traffic volumes are highest, during the morning and evening commute periods (7:00 to 9:00 am and 4:00 to 6:00 pm). Since this is a General Plan analysis, conditions with the proposed changes were conducted for the long-term planning horizon. While the buildout for the General Plan is expected to be completed by 2025, the future year traffic analysis is based on projected conditions for the year 2040. This approach is consistent with the model horizon year from the current VTA-C/CAG travel demand model and the 2013 ABAG land use projections. To ensure model land use files were adequate for the study, the base (2013) and future year (2040) model files were reviewed to ensure land uses in Foster City matched the proposed General Plan Update. In addition, base model roadway volumes were reviewed to ensure they adequately matched existing traffic patterns. Based on these assessments, the base (2013) and future year (2040) model files were found to be adequate for this study.

The operations of the intersections and the freeway segments were evaluated for the following scenarios:

- *Existing Conditions*: Existing volumes obtained from counts collected in February 2015 and existing roadway/intersection configurations.

- *Cumulative Plus General Plan Buildout Conditions*: Projected conditions in 2040 including projected traffic from the approved and probable future development projects in the General Plan Update and regional growth. Cumulative Plus General Plan Buildout Conditions includes selected roadway system improvements.

Cumulative No Project Conditions would be the same as Cumulative Plus General Plan Buildout Conditions as the land use and transportation system assumptions are the same.

ANALYSIS METHODS

Evaluation of traffic conditions on local streets involves analysis of intersection operations, as intersections represent the locations where the roadway capacity is most constrained. Intersection and freeway mainline segment operations were evaluated with level of service calculations. Level of service (LOS) is a qualitative description of operations ranging from Level A, when the roadway facility has excess capacity and vehicles experience little or no delay, to Level F, where the volume of vehicles exceeds the capacity resulting in long queues and excessive delays. Typically, LOS E represents "at-capacity" conditions and LOS F represents "over-capacity" conditions. At signalized intersections operating at LOS F, for example, drivers may have to wait through multiple signal cycles.

Methods used to evaluate intersection operations are periodically updated to incorporate the latest research. The Transportation Research Board Circular 212 method was used to evaluate intersection operations for the previous version of the General Plan. The General Plan Update incorporates more recent methods presented in the Transportation Research Board's 2000 *Highway Capacity Manual* (2000 HCM) to evaluate intersection operations.

Nineteen of the 23 study intersections were evaluated using the Traffix software package, which incorporates the methods from Chapter 16, Signalized Intersections, and Chapter 17, Unsignalized Intersections, of the 2000 HCM. These methods evaluate the operations of intersections that function independently. All of the study intersections are signalized, with the exception of East 3rd Avenue / US-101 Northbound On-Ramp (side-street stop), Foster City Boulevard / Marlin Avenue (all-way stop), and Foster City Boulevard / Beach Park Boulevard (all-way stop). The intersections in the SR 92/Foster City Boulevard interchange complex, namely the intersections on Chess Drive and on Metro Center Boulevard with Foster City Boulevard and the SR 92 eastbound and westbound ramps, interact with each other as vehicle queues often extend between intersections and affect operations at the adjacent intersections. These four intersections were evaluated using a VISSIM micro-simulation software package to account for those interactions. Freeway analysis was conducted according to the methodology adopted by the San Mateo City/County Association of Governments (C/CAG).

Each method is briefly described below.

Signalized Intersections –2000 Highway Capacity Manual

The method from Chapter 16 of the 2000 HCM bases signalized intersection operations on the average control delay experienced by motorists traveling through the intersection. Control delay incorporates delay associated with deceleration, acceleration, stopping, and moving up in the queue. This method uses various intersection characteristics (such as traffic volumes, lane geometry, and signal phasing) to estimate the average control delay. Table 3.11-4 summarizes the relationship between average delay per vehicle for each LOS rating for signalized intersections.

TABLE 3.11-4: SIGNALIZED INTERSECTION LOS CRITERIA

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Operations with very low delay occurring with favorable progression and/or short cycle length.	< 10
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10 to 20
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20 to 35
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35 to 55
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	> 55 to 80
F	Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	> 80
Sources: *Highway Capacity Manual – Special Report 209* (Transportation Research Board, 2000).		

Signalized Intersections – Simulation

The Chapter 16 HCM method is appropriate only when intersection operations are not influenced by upstream or downstream intersections. When intersections are congested or when their operations are otherwise influenced by adjacent intersections, the analysis tool recommended by the HCM is simulation. With simulation, detailed models are prepared to evaluate the effects of individual vehicles moving on the roadway system. Average delay values are obtained from the model output and correlated to LOS based on the thresholds presented in Table 3.11-4. A VISSIM simulation model was used for the following four study intersections located within the Foster City Boulevard and SR 92 interchange area:

- SR 92 Westbound Ramps and Chess Drive (Intersection #7)
- Foster City Boulevard and Chess Drive (Intersection #8)

- SR 92 Eastbound Ramps and Metro Center Boulevard (Intersection #13)
- Foster City Boulevard and Metro Center Boulevard/Triton Drive (Intersection #14)

Unsignalized Intersections

Traffic conditions at the unsignalized study intersections (stop sign-controlled intersections) were evaluated using the method from Chapter 17 of the 2000 HCM. With the 2000 HCM method, operations are defined by the average control delay per vehicle (measured in seconds) for each stop-controlled movement or movement that must yield the right-of-way. At four-way stop-controlled intersections, the control delay is calculated for the entire intersection and for each approach. The delays and corresponding LOS for the entire intersection are reported. At two-way stop-controlled intersections the movement with the highest delay and corresponding LOS are reported. Table 3.11-5 summarizes the relationship between delay and LOS for unsignalized intersections. Generally, the delay ranges for each LOS are lower than for signalized intersections because drivers expect to have less delay at unsignalized intersections.

TABLE 3.11-5: UNSIGNALIZED INTERSECTION LOS CRITERIA

Level of Service	Description	Average Control Delay Per Vehicle (Seconds) -HCM 2000-
A	Little or no traffic delays	< 10
B	Short traffic delays	> 10 to 15
C	Average traffic delays	> 15 to 25
D	Long traffic delays	> 25 to 35
E	Very long traffic delays	> 35 to 50
F	Extreme traffic delays with intersection capacity exceeded	> 50
Source: *Highway Capacity Manual – Special Report 209* (Transportation Research Board, 2000).		

Freeway Mainline Operations

Freeway mainline operations were evaluated using the 1994 HCM volume-to-capacity ratio method, per C/CAG guidelines and presented in Table B-1 of the appendices of the 2013 Congestion Management Plan (CMP) for San Mateo County. The level of service descriptions and the maximum V/C for each LOS designation are presented in Table 3.11-6.

TABLE 3.11-6: FREEWAY SEGMENT LOS CRITERIA

Level of Service[1]	Description	Maximum Volume-to-Capacity Ratio
A	Free flow operations with average operating speeds at, or above, the speed limit. Vehicles are unimpeded in their ability to maneuver.	0.28
B	Free flow operations with average operating speeds at the speed limit. Ability to maneuver is slightly restricted. Minor incidents cause some local deterioration in operations.	0.46
C	Stable operations with average operating speeds near the speed limit. Freedom to maneuver is noticeably restricted. Minor incidents cause substantial local deterioration in service.	0.67
D	Speeds begin to decline slightly with increasing flows. Freedom to maneuver is more noticeably restricted. Minor incidents create queuing.	0.85
E	Operations at capacity. Vehicle spacing causes little room to maneuver but speeds exceed 50 mph. Any disruption to the traffic stream can cause a wave of delay that propagates throughout the upstream traffic flow. Minor incidents cause serious breakdown of service with extensive queuing. Maneuverability is extremely limited.	1.00
F	Operations with breakdowns in vehicle flow. Volumes exceed capacity causing bottlenecks and queue formation.	N/A

Notes:

1. The speed limit is 55 mph on SR 92 and 65 mph on US 101. For consistency, freeway mainline LOS is based on a 65 mph free-flow speed for all study freeway segments per Table B-1 of the 2013 CMP.

Source: Transportation Research Board, *Highway Capacity Manual,* 2000.

3.11.3 EXISTING ROADWAY CONDITIONS

EXISTING INTERSECTION TRAFFIC VOLUMES AND LANE CONFIGURATIONS

Weekday morning (7:00 to 9:00 am) and evening (4:00 to 6:00 pm) peak hour intersection turning movement counts were collected for 18 of the 23 study intersections in May and September 2014 for the Lincoln Centre Office Redevelopment Transportation Impact Analysis Report (Fehr & Peers, March 2015) and the Harbor Cove Transportation Impact Analysis Report (Fehr & Peers, November 2014). Turning movement counts for the remaining study intersections were collected in February 2015. The counts were conducted on non-holiday weekdays when local area schools were in normal session. Figures 3.11-5A and 3.11-5B presents the existing intersection turning movement volumes. The traffic counts are shown in Appendix E.

The traffic counts collected for this study were compared to the traffic counts conducted for the Gilead Sciences Integrated Corporate Campus Master Plan Subsequent EIR ("Gilead Sciences SEIR") in March 2012. Traffic volumes have increased substantially along East 3rd Avenue, Foster City

Boulevard, and the SR 92/Metro Center Boulevard interchange during the PM peak hour. Traffic volumes on eastbound East 3rd Avenue between Norfolk Street and Foster City Boulevard and on southbound Foster City Boulevard at Chess Drive have increased by approximately 500 to 800 vehicles (90 to 200 percent) since 2012. During the AM peak hour, traffic has increased along East 3rd Avenue between 20 to 40 percent. Although some development has occurred since 2012, much of this increase in traffic is due to traffic bypassing congestion at the US 101/SR 92 interchange to reach the San Mateo Bridge or destinations within Foster City.

EXISTING INTERSECTION OPERATIONS

The existing LOS analysis results using the 2000 HCM method and the VISSIM simulation for the four intersections near the SR 92 / Foster City Boulevard interchange are presented in Table 3.11-7. The results show that most of the intersections are operating at LOS D or better with two intersections currently operating at LOS E during either the AM or PM peak period.

The LOS calculations for the isolated intersection analysis are included in Appendix F. The LOS calculations for the VISSIM simulation analysis are included in Appendix G.

TABLE 3.11-7: EXISTING INTERSECTION LOS

Intersection	Control	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
1. East 3rd Avenue and US 101 Northbound On-Ramp[2]	SSS	23 (SB)	C	11 (SB)	B
2. East 3rd Avenue and Norfolk Street[2]	Signal	**56**	**E**	43	D
3. Mariners Island Boulevard and East 3rd Avenue	Signal	18	B	20	C
4. Foster City Boulevard and East 3rd Avenue	Signal	<10	A	11	B
5. Foster City Boulevard and Vintage Park Drive	Signal	18	B	30	C
6. Vintage Park Drive and Chess Drive	Signal	29	C	44	D
7. SR 92 Westbound Ramps and Chess Drive[3]	Signal	21	C	23	C
8. Foster City Boulevard and Chess Drive[3]	Signal	26	C	**75**	**E**
9. SR 92 Eastbound Ramps and Edgewater Boulevard/Mariners Island Boulevard	Signal	29	C	28	C
10. Edgewater Boulevard and Metro Center Boulevard	Signal	31	C	28	C
11. Vintage Park Drive and Metro Center Boulevard	Signal	35	D	38	D
12. Shell Boulevard and Metro Center Boulevard	Signal	32	C	35	C
13. SR 92 Eastbound Ramps and Metro Center Boulevard[3]	Signal	17	B	29	C
14. Foster City Boulevard and Metro Center Boulevard/Triton Drive[3]	Signal	29	C	34	C
15. Norfolk Street and East Hillsdale Boulevard[2]	Signal	40	D	38	D
16. Altair Avenue and East Hillsdale Boulevard	Signal	<10	A	<10	A
17. Edgewater Boulevard and East Hillsdale Boulevard	Signal	32	C	36	D
18. Shell Boulevard and East Hillsdale Boulevard	Signal	19	B	24	C

Intersection	Control	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
19. Foster City Boulevard and East Hillsdale Boulevard	Signal	30	C	25	C
20. East Hillsdale Boulevard and Pilgrim Drive	Signal	22	C	23	C
21. Edgewater Boulevard and Beach Park Boulevard	Signal	54	D	37	D
22. Foster City Boulevard and Marlin Avenue	AWS	24	C	12	B
23. Foster City Boulevard and Beach Park Boulevard	AWS	21	C	<10	A

Notes: SSS = Side-street stop, AWS = All-way stop

1. For signalized and all-way stop controlled intersections, the delay shown is the weighted average for all movements in seconds per vehicle. For side-street stop controlled intersection, the delay shown is the worse approach delay.
2. Study intersection is in San Mateo.
3. Intersections analyzed using the VISSIM microsimulation model.

Source: Fehr & Peers, February 2015.

EXISTING FREEWAY VOLUMES AND OPERATIONS

Traffic demand volumes were developed for six freeway segments (Segments A, B, C, D, E, and F as shown in Figure 3.11-4) during the morning and evening peak periods. These demand volumes were developed based on Caltrans' PeMS mainline and ramp count database, where available, observations of bottlenecks and queues, and demand volumes that were developed as part of the US 101-Holly Interchange Project Approval/Environmental Document (PA/ED).[1] Volumes on the other segments were developed by adding the on-ramp volumes and subtracting the off-ramp volumes. The resulting volumes were converted to Passenger Car Equivalents, based on Caltrans data showing that 3.5 percent of the traffic on US 101 and 2.0 percent of the traffic on SR 92 consist of trucks and other heavy vehicles. The resulting traffic volumes and freeway analysis results are presented in Table 3.11-8. The freeway operations vary depending on the peak hour, direction, and segment, ranging from LOS B to LOS F. The following segments on SR 92 or US 101 currently exceed their CMP LOS threshold:

- Southbound US 101, north of East Hillsdale Boulevard – LOS F during the PM peak hour
- Northbound US 101, south of East Hillsdale Boulevard – LOS F during the PM peak hour
- Southbound US 101, south of East Hillsdale Boulevard – LOS F during the AM and PM peak hours
- Eastbound SR 92, east of Foster City Boulevard – LOS F during the PM peak hour

These congested operations are primarily caused by bottlenecks on northbound US 101 north of SR 92, southbound US 101 south of East Hillsdale Boulevard, and eastbound SR 92 east of Foster

[1] Fehr & Peers, 2014. Final Traffic Forecasting Report for the US 101/Holly Street Interchange PA/ED

City Boulevard. In addition, several segments on northbound or southbound US 101 north of SR 92 operate at LOS F during the AM or PM peak hours. However, these operations are consistent with the CMP LOS standard of F for this segment. The remaining freeway segments operate at LOS E or better under Existing Conditions.

Existing average annual daily traffic (AADT) volumes for the study freeway segments were also obtained from the 2013 Traffic Volumes on the California State Highway System (Caltrans, 2013) and are shown in Appendix H.

TABLE 3.11-8: EXISTING FREEWAY SEGMENT LOS

Segment	CMP LOS Standard	Peak Hour	Direction	Volume[1]	LOS
A. US 101, north of East 3rd Avenue	F	AM	Northbound	10,669	F
			Southbound	9,417	E
		PM	Northbound	10,041	E
			Southbound	11,271	F
B. US 101, between East 3rd Avenue and SR 92	F	AM	Northbound	11,760	F
			Southbound	9,560	E
		PM	Northbound	10,712	F
			Southbound	11,507	F
C. US 101, north of East Hillsdale Boulevard	E	AM	Northbound	7,747	D
			Southbound	9,568	E
		PM	Northbound	10,053	E
			Southbound	**10,661**	**F**
D. US 101, south of East Hillsdale Boulevard	E	AM	Northbound	7,380	D
			Southbound	**10,712**	**F**
		PM	Northbound	**10,608**	**F**
			Southbound	**10,712**	**F**
E. SR 92, between US 101 and Mariners Island Boulevard/Edgewater Boulevard	E	AM	Eastbound	4,688	D
			Westbound	4,936	C
		PM	Eastbound	6,742	E
			Westbound	5,829	D
F. SR 92, Mariners Island Boulevard/Edgewater Boulevard and Foster City Boulevard	E	AM	Eastbound	3,287	B
			Westbound	4,655	C
		PM	Eastbound	6,484	D
			Westbound	4,675	C
G. SR 92, east of Foster City Boulevard	E	AM	Eastbound	2,301	B
			Westbound	5,209	D
		PM	Eastbound	**7,038**	**F**

Segment	CMP LOS Standard	Peak Hour	Direction	Volume[1]	LOS
			Westbound	3,108	B

Notes: **Bold** indicates locations where segment operations exceed CMP thresholds;

1. Volumes presented are passenger-car equivalents.

Source: Fehr & Peers, February 2015

3.11.4 REGULATORY SETTING

State and local laws, regulations, and ordinances that pertain to transportation and traffic resources within the project area are presented below.

STATE

California Department of Transportation (Caltrans)

The California Department of Transportation is responsible for the maintenance and operation of state routes and highways. In Foster City, Caltrans' facilities include SR 92 and US 101. Caltrans maintains a volume monitoring program and reviews local agencies' planning documents (such as this EIR) to assist in its forecasting of future volumes and congestion points. The Guide for the Preparation of Traffic Impacts Studies (December 2002) published by Caltrans is intended to provide a consistent basis for evaluating traffic impacts to State facilities. The City recognizes that "Caltrans endeavors to maintain a target LOS at the transition between LOS 'C' and LOS 'D' on State highway facilities"; however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS (Guide for the Preparation of Traffic Impact Studies, December 2002). In addition, Caltrans states that for existing State highway facilities operating at less than the target LOS, the existing LOS should be maintained.

REGIONAL AND LOCAL

Metropolitan Transportation Commission

The Metropolitan Transportation Commission (MTC) is the transportation planning, coordinating, and financing agency for the nine-county San Francisco Bay Area (Bay Area). It is responsible for developing the regional transportation plan and prioritizing regional transportation projects for state and federal funding.

City/County Association of Governments of San Mateo County

The City/County Association of Governments (C/CAG) of San Mateo County is the County's Congestion Management Agency (CMA). It prepares a Congestion Management Plan (CMP), which identifies improvements and strategies to relieve congestion on regional transportation facilities,

and sets funding priorities. The CMP is required to be consistent with the MTC planning process and projects for the Regional Transportation Improvement Program (RTIP). C/CAG also provides guidelines for the analysis of land use projects and their impacts to the designated CMP roadway system.

The San Mateo County CMP roadway system comprises 53 roadway segments and 16 intersections. The CMP facilities in Foster City include US 101 and SR 92. The LOS Standards for these facilities vary by roadway segment:

- SR 92 from US 101 to Alameda County Line, LOS E
- US 101 from Peninsula Avenue to SR 92, LOS F
- US 101 from SR 92 to Whipple Road, LOS E

San Mateo County Transportation Authority

The San Mateo County Transportation Authority (TA) was formed in 1988. The TA administers the proceeds from Measure A, the voter approved half-cent sales tax, to fund a variety of transportation-related projects and programs. TA projects in the vicinity of Foster City include auxiliary lanes on US 101.

1993 Foster City General Plan

All cities in California are required to prepare and adopt a General Plan. The General Plan presents the community's long-range view regarding its physical development. Specifically it contains goals, policies, and programs addressing the development and redevelopment of land, preservation of parks and open spaces, provision of housing, conservation of natural resources, improvement of the transportation system, control of noise, and protection from hazards.

The Foster City General Plan currently in place was completed in 1993. The applicable circulation goals, policies, and programs related to transportation impacts are:

Goals

LUC-F Provide Adequate Services and Facilities. Ensure that new and existing developments can be adequately served by municipal services and facilities.

LUC-I Provide for Diversified Transportation Needs. Develop, improve, and maintain a circulation system which provides efficient and safe access for private vehicles, commercial vehicles, public transit, emergency vehicles, bicycles, and pedestrians.

LUC-J Maintain Acceptable Operating Conditions on the City's Road Network. Maintain acceptable operating conditions on the City's road network at or above LOS D and encourage the maximum effective use of public and private vehicles, reduce the

growth in peak hour traffic volumes, and reduce single passenger trips.

LUC-K Provide Adequate Parking. Ensure that adequate off-street parking is incorporated into modified projects and designed for safe and effective circulation.

Policies

LUC-50 Traffic Level of Service Standards. The City shall seek to achieve a traffic service level of "C" or better on City streets and level of "D" or better during peak traffic hours, although it will be necessary to accept level of service "E" or "F" at the Chess Drive/SR 92 Ramps, the Foster City Boulevard/Metro Center Boulevard/Triton Drive, and the East Hillsdale Boulevard/Edgewater Boulevard intersections, through the following means:

a. Traffic Systems Management (TSM).

b. Street maintenance.

c. Capital Improvement Program and coordination with federal, state, county, and district funding programs for street and other transportation improvements.

d. Developer payment of pro rata fair share of traffic improvement costs for new developments.

LUC-51 Improvements to Existing Streets. The City will maintain and improve the existing system of major and collector streets, including:

a. East Hillsdale Boulevard, Edgewater Boulevard, Foster City Boulevard, Beach Park Boulevard, East 3rd Avenue (within the City limits), Metro Center Boulevard, Shell Boulevard, Chess Drive and Vintage Park shall be maintained as arterial (major) streets.

b. Collector streets, currently shown on Map GP-5, Street Network Map, shall be maintained as such.

LUC-52 Traffic Systems Management (TSM). The City will participate in an ongoing joint effort with several neighboring cities to adopt and enforce a Traffic Systems Management (TSM) program. The program shall require the participation of all future and existing commercial and industrial employers.

LUC-53 Bicycle Routes and Pedestrian Paths**.** Maintain a system of bicycle routes and pedestrian paths, which will include separate bicycle lanes and posted bicycle routes. Pedestrian pathways and easements shall be maintained, either by the City, or, in the case of private ownership, according to a maintenance agreement or landscaping district agreement applicable to the pathway/easement.

LUC-54 Coordination with SamTrans. The City shall work with SamTrans in defining new routes and improving the public transit and transportation system.

LUC-55 Access to New Commercial and Industrial Projects. New commercial and industrial developments shall be designed so that, wherever necessary and possible, entrance to the projects can be gained by way of left-or right-turn only lanes. Only the minimum number of entrance or exit points shall be allowed as are needed to ensure safe and efficient internal traffic flow and to reduce through traffic delays on public roads serving the project.

LUC 56 Private Streets and Public Loop or Cul-de-Sac Streets. The City will enforce design standards for private streets and public loop or cul-de-sac streets to ensure that they meet minimum requirements for two-way traffic, parking, and emergency access. Private streets and public loop or cul-de-sac streets may be approved with narrower than standard widths, provided that emergency access and parking can be safely accommodated. They are not intended to provide curb-side parking, and the roads are designed to serve only those residences on that street or within that development.

LUC-58 Off-Street Parking Requirements. The City shall maintain off-street parking requirements based on use permits of record, the historical parking patterns of residential and non-residential projects, and related information developed by the Urban Land Institute, Institute of Transportation Engineers, or other reliable sources.

LUC-59 Bicycle Parking. Secured bicycle parking shall be encouraged for all commercial and industrial buildings. The City will continue to allow required parking to be reduced with bicycle parking spaces provided, per Chapter 17.62 of the Municipal Code.

LUC-60 Parking and Internal Circulation in Project Design. The City shall continue to incorporate parking and internal circulation design into its overall review of project design. The review shall include compliance with City off-street parking design standards and ratios.

LUC-61 Capital Improvement Program (CIP). The City will continue to maintain a five-year Capital Improvement Program (CIP), which supports policies in the General Plan to maintain, improve, or expand City-wide facilities and infrastructure.

LUC-65 Adequacy of Public Infrastructure and Services. New projects that require construction or expansion of public improvements shall pay their pro rata fair share of the costs necessary to improve or expand infrastructure necessary to serve them, including streets and street improvements, parks, water storage tanks, sewer and water service, and other public services. The City has established several assessment districts to pay for needed municipal improvements. Facilities benefiting a specific development must be provided by the developer of that project.

Circulation Programs

LUC-o Periodically Monitor Traffic Conditions. The City will periodically monitor traffic conditions on arterial and selected collector streets to determine levels of service and safety conditions. Traffic counts will be updated regularly at all major street intersections to determine levels of service, safety conditions, and if additional traffic control measures are warranted or if changes in the sequence of traffic signal cycles are necessary.

LUC-p Bicycle Route and Pedestrian Path Master Plan and Improvement Program. The City shall implement the Foster City Bikeway System Report and improve pedestrian circulation. Major streets with sufficient width that are part of the system will have separate bicycle lanes. Streets that are part of the system but are not wide enough for separate bicycle lanes will have posted "bicycle route" signs at regular intervals. The purpose of the bicycle route system is to connect major work, shopping, school, civic, and recreational destinations throughout the City, while avoiding as many of the most heavily used street segments as possible.

LUC-q Designation of New Bus Routes. The City will designate new bus routes in consultation with SamTrans, provide curbside space for bus stops, and require major commercial/industrial developments along bus routes to accommodate buses in their circulation plans.

LUC-t Updating of the Capital Improvement Program (CIP). The City will update the five-year CIP at least every year in conjunction with the Annual Report on the General Plan to identify street improvements and maintenance that will be necessary to achieve goals for traffic levels of service and other needs. The plan shall identify funding sources, including property taxes, special taxes, City share of gasoline and sales taxes, state funds, federal funds, developer fees, assessment districts, and private maintenance agreements. Additionally, the five-year CIP will budget for traffic improvements identified in the General Plan.

City of San Mateo 2030 General Plan

The City of San Mateo completed the 2030 General Plan Update in 2010. The applicable circulation goals, policies, and programs related to transportation impacts are:

Goals

Goal 2 Maintain a street and highway system which accommodates future growth while maintaining acceptable levels of service.

Policies

C 2.1 Acceptable Levels of Service. Maintain a Level of Service no worse than mid LOS D, average delay of 45.0 seconds, as the acceptable Level of Service for all intersections within the City.

C 2.7: Exceeding the Acceptable Level of Service. In addition to paying the transportation impact fee, a development project may be required to fund off-site circulation improvements which are needed as a result of project generated traffic, if:

a. The level of service at the intersection drops below mid-level LOS D (average delay of more than 45 seconds) when the project traffic is added, and

b. An intersection that operates below its level of service standard under the base year conditions experiences an increase in delay of four or more seconds, and

c. The needed improvement of the intersection(s) is not funded in the applicable five-year City Capital Improvement Program from the date of application approval.

Applicable LOS Criteria

Based on the state and local laws, regulations, and ordinances presented above, acceptable LOS thresholds were determined for the purpose of this study. As shown in Table 3.11-9, in Foster City, acceptable intersection operations are defined as LOS D or better. In San Mateo, acceptable operations are defined as mid-range LOS D (defined as an average of 45 seconds of delay per vehicle) or better. C/CAG developed thresholds for acceptable freeway operations as part of their Congestion Management Program (CMP). The CMP threshold for most of the freeway segments in the study area is LOS E. The threshold for US 101 north of SR 92 to Peninsula Avenue is LOS F due to pre-existing congestion levels.

TABLE 3.11-9: LOCALLY-ACCEPTABLE LOS CRITERIA

Jurisdiction	Facility Type	Worst Acceptable LOS	Maximum Acceptable Average Vehicular Delay or V/C Ratio
City of Foster City	Signalized Intersections	LOS D[1]	55 seconds/vehicle[2]
City of Foster City	Unsignalized Intersections	LOS D	35 seconds/vehicle[2]
City of San Mateo	Signalized Intersections	Mid-range LOS D	45 seconds/vehicle[2]
San Mateo C/CAG	Freeway Segments	LOS E[3]	V/C = 1.00

Notes:

1. The currently adopted 1993 Foster City General Plan Land Use and Circulation Policy LUC-50 stated that it was necessary to accept LOS E or F at the following intersections: Chess Drive/SR 92 Ramps, Foster City Boulevard/Triton Boulevard/Metro Center Boulevard, and East Hillsdale Boulevard/Edgewater Boulevard. This policy is revised in the updated General Plan to remove East Hillsdale Boulevard/Edgewater Boulevard but include the intersection of Foster City/Chess Drive (as described in Chapter 4).
2. Based on 2000 *Highway Capacity Manual* (HCM).
3. LOS F is considered acceptable on US 101 north of SR 92 to Peninsula Avenue due to existing congestion levels.

Source: *City of Foster City General Plan, City of San Mateo General Plan*

3.11.5 IMPACTS AND MITIGATION MEASURES

For the purposes of the traffic analysis, General Plan buildout is anticipated to occur in 2040. Therefore, Cumulative Plus General Plan Buildout Conditions were evaluated with a horizon year of 2040. Two methods were used to develop traffic forecasts. Since the amount and location of future development in Foster City and nearby portions of San Mateo are reasonably well known due to on-going planning efforts, traffic was estimated for each development project and added to the existing volumes to obtain traffic projections for the study intersections. Traffic projections for the regional roadway facilities including US 101, SR 92, and East 3rd Avenue also include regional growth. The C/CAG travel demand forecasting model was used to develop freeway projections, consistent with C/CAG guidelines.

TRAFFIC VOLUMES

The cumulative traffic volumes include existing traffic plus traffic generated by occupancy of vacant buildings, approved but not yet constructed developments, and pending developments. The Foster City developments included in the existing General Plan are shown in Table 3.11-10. The proposed General Plan Update would not modify this list of developments. Growth in traffic volumes on regional facilities is described later. The locations of these developments are shown on Figure 3.11-6.

TABLE 3.11-10: FOSTER CITY GENERAL PLAN – PROPOSED DEVELOPMENT

Project Number	Project Name	Existing Land Uses[1]	Proposed Land Uses
1	Pilgrim-Triton Master Plan[2]	75,200 s.f. general office	253,900 s.f. office 32,000 s.f. retail 386 apartment units 20 townhouses
2	Chess Hatch Master Plan	190,000 s.f. office park	800,000 s.f. office
3	Gilead Integrated Master Plan[3]	459,000 s.f. office 550,000 s.f. laboratory	1,524,000 s.f. general office 953,000 s.f. laboratory 24,000 s.f. warehouse
4	Foster Square	--	266 units senior housing 24 bed assisted living facility 131 units assisted/independent living senior housing
5	Chess Hotel	--	121 room hotel
6	Marina	--	300 berths
7	Charter Square	55,000 s.f. retail	10,000 s.f. retail 95 townhouses
8	Harbor Cove Renovation	--	Adding 80 apartments
9	Harry's Hofbrau Site	8,840 s.f. retail	12,500 s.f. retail
10	Edgewater Place	123,300 s.f. retail	57,700 s.f. retail 154 condominiums
11	Beach Cove Apartments	--	Adding 239 apartments
12	Franciscan Apartments	--	Adding 104 apartments
13	Sand Cove Apartments	--	Adding 300 apartments
14	Shadow Cove Apartments	--	Adding 113 apartments
15	Lincoln Centre Campus Redevelopment	--	388,500 s.f. general office 166,500 s.f. laboratory 40,000 s.f. amenities

Notes: s.f. = square feet

1. Existing trip credit is applied for land uses that are currently occupied and would be replaced by the proposed land uses in the future. These land uses are currently generating traffic at the study locations and this traffic would be removed by the Proposed Land Uses. At locations 8 and 11-14, the additional apartments would not replace any existing land uses, therefore this column is blank at these sites.
2. Includes under-construction development at Triton Pointe (Parcel H) and Waverly (Parcel A) and the

approved but not yet constructed development proposed at Pilgrim-Triton Phase C, Triton Pointe (Parcel I), Triton Point (Parcel I) and the remainder of Waverly.

3. Land uses that were currently under-construction buildings (such as New Buildings 355 and 309) or not fully occupied at the time of the NOP were not counted in the Existing Land Uses column.
4. This development is located in the City of San Mateo.

Source: Fehr & Peers, February 2015

In addition to the build out of the Foster City General Plan, there is one approved project located in the City of San Mateo that would add traffic to study roadways under Cumulative Plus Project Conditions. This project is shown in Table 3.11-11 and on Figure 3.11-6.

TABLE 3.11-11: SAN MATEO PROJECTS

Project Number	Project Name	Existing Land Uses	Proposed Land Uses
SM1	400 Mariners Island Blvd	--	76 residential units

Notes: s.f. = square feet

Source: Fehr & Peers, February 2015

Trip Generation Estimates

Fehr & Peers developed trip generation estimates for the developments shown in Tables 3.11-10 and 3.11-11 using the following two data sources: site specific trip generation rates for a biomedical research campus and the Institute of Transportation Engineers' (ITE) *Trip Generation Manual (9th Edition)*. The site specific trip generation rates applied to the Gilead Sciences Integrated Master Plan and Lincoln Centre Campus Redevelopment were developed for the Gilead Sciences Master Plan EIR, as calculated by Kimley-Horn and Associates, Inc.[2] Fehr & Peers reviewed these rates and found them to be appropriate for use for the project due to the similar land use types and campus location. These rates are likely more reflective of the development than conventional trip generation resources, as the Institute of Transportation Engineers' (ITE) *Trip Generation Manual (9th Edition)* does not have rates for a directly comparable use. Fehr & Peers applied trip generation rates and equations presented in the *ITE Trip Generation Manual* to the remaining developments shown in Tables 3.11-10 and 3.11-11.

Where appropriate, vehicle trip reductions were applied to mixed-use developments to account for trips that would occur among the uses (internalization), and pass-by reductions were applied to retail uses to account for trips that are already on the roadway network and would stop at the site and therefore not be new trips.[3] The reduction amounts were derived from ITE's Trip *Generation*

[2] Kimley-Horn, 2008. *Analysis of Gilead Sciences General Development Plan Traffic Impacts*.

[3] The trip rates presented in the *ITE Trip Generation Manual* are for stand-alone land uses and overestimate new vehicle trips when there is a mix of land uses on-site or would attract vehicle trips that are already on the road. Therefore, these

Handbook, 2nd Edition, 2004. Because the pass-by reduction rates indicated by the *Trip Generation Handbook* are relatively high for similarly-sized retail establishments, to be conservative, a maximum PM pass-by percentage of 40 percent was used. Pass-by reduction rates of 20 percent and 10 percent were used for daily and AM peak hour trips, respectively. Trips generated by existing uses were subtracted from trips generated by proposed uses to determine the net number of trips added to the surrounding roadway system, where appropriate.

Table 3.11-12 summarizes the trip generation estimates. The detailed calculations and equations are presented in Appendix I. Overall, the developments associated with the General Plan buildout and the 400 Mariners Island Boulevard development (in San Mateo) are projected to add 36,230 daily, 4,090 AM peak hour, and 4,482 PM peak hour vehicle trips to existing traffic volumes.

TABLE 3.11-12: TRIP GENERATION SUMMARY

Trip Type	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
		In	Out	Total	In	Out	Total
General Plan Buildout	36,230	2,975	1,115	4,090	1,284	3,198	4,482
Source: Fehr & Peers, February 2015							

Trip Distribution and Assignment

Trip distribution refers to the general geographic direction to and from which the trips generated by a development project will approach and depart the site, and the percentage of traffic for each direction. Trip assignment refers to the specific intersection turning movements and freeway segments that the trips generated by a development project would take to reach the trip destination.

The vehicle trips generated by General Plan buildout were distributed and assigned on the freeway segments and through the study intersections based on the trip distribution percentages presented for the various land uses in the Foster City Multi-Project Traffic Analysis.[4] The trip distribution methodology used for the Foster City Multi-Project Traffic Analysis was developed in 2008 and was based on C/CAG travel forecast data and Census 2000 information. The percentages used in the Foster City Multi-Project Traffic Analysis were compared to more recent information presented in the Census Longitudinal Employer-Household Dynamics Survey and 2008–2012 American Community Survey. The percentages of office trips originating from the north via US 101, the west via SR 92, and within Foster City were adjusted to account for changing demographic

vehicle trip reductions reduce the chance of overestimating the trips generation by the proposed land uses and produce a more accurate and defensible trip estimate.

[4] Fehr & Peers, 2008. *Foster City Multi-Project Traffic Analysis.*

information and household location. AM and PM peak-hour trip distribution and trip assignments are shown in Figure 3.11-7 and Figures 3.11-8A and 3.11-8B, respectively.

Regional Traffic Growth

Traffic projections for US 101 and SR 92 through San Mateo and Foster City were developed from freeway forecasts using the C/CAG travel demand forecasting model. The current C/CAG travel demand model covers both San Mateo and Santa Clara Counties and is maintained by Santa Clara Valley Transportation Authority (VTA) staff. To ensure model land use files were adequate for the study, the base (2013) and future year (2040) model files were reviewed to ensure land uses in Foster City matched the proposed General Plan Update. In addition, base model roadway volumes were reviewed to ensure they adequately matched existing traffic patterns. Once the future land uses and existing traffic volumes were deemed acceptable, the model was run for the base and future years. The annual growth rate for traffic volumes between the 2013 and 2040 developed from model forecasts was then applied to the existing freeway volumes collected in 2014 and 2015 to produce future year forecasts. Additionally, traffic volumes at study intersections along East 3rd Avenue and Foster City Boulevard were adjusted to account for projected growth in cut-through traffic between US 101 and the San Mateo Bridge. Existing counts and future year forecasted freeway volumes are shown in Appendix H.

CUMULATIVE ROADWAY IMPROVEMENTS

The Foster City Multi-Project Traffic Analysis recommended a series of roadway improvements to accommodate future proposed development at Gilead Sciences (South Campus), Chess Drive Offices, Foster Square (current 15-acre site adjacent to City Hall), and Pilgrim/Triton. Each improvement was assigned funding responsibility based on the number of added trips. Funding for the roadway improvements has been collected from the Pilgrim-Triton and Gilead Sciences projects based on the terms of their Development Agreements. Additional funding has been provided by the developers of Chess Drive Offices and the Foster Square site in conjunction with their approvals, based on the contribution of their projects to traffic impacts, as identified in the Multi-Project Traffic Analysis. The Triton Drive widening project funded by the developer of Phase A of the Pilgrim-Triton development was completed in 2014.

The relevant improvements presented in the Foster City Multi-Project Traffic Analysis are shown in Table 3.11-13 and Figure 3.11-9.

TABLE 3.11-13: CUMULATIVE ROADWAY SYSTEM IMPROVEMENTS

Improvement	Assigned Responsibility	Included in Cumulative Conditions
1. Lengthen northbound left-turn lane on Foster City Boulevard at Chess Drive to 650 feet	All[1]	Yes
2. Lengthen westbound left-turn lane on Chess Drive at Foster City Boulevard to 300 feet	Chess Office	Yes
3. Construct northbound right-turn lane from Foster City Boulevard at Chess Drive	Chess Office	Yes
4. Construct 2nd westbound through lane on Chess Drive at Foster City Boulevard	Chess Office	Yes

Notes:

- "All" refers to the following projects included in the Foster City Multi-Project Traffic Analysis: Chess Drive Office, Gilead Sciences, Pilgrim-Triton, and Foster Square.

Source: Fehr & Peers, February 2015

INTERSECTION VOLUMES AND OPERATIONS

The trip assignment for General Plan Buildout was added to existing traffic volumes to develop volumes for Cumulative Plus General Plan Buildout Conditions shown on Figure 3.11-10. Cumulative year traffic volumes along East 3rd Avenue and Foster City Boulevard include growth in cut-through traffic between US 101 and the San Mateo Bridge. The intersection LOS analysis results for Cumulative Plus General Plan Buildout Conditions are presented in Table 3.11-14.

The proposed General Plan Update, in combination with other reasonably foreseeable development, would add traffic to intersections currently operating at unacceptable levels or cause intersection operations to degrade from acceptable levels under Existing Conditions to unacceptable levels under Cumulative Plus General Plan Buildout Conditions at the following five study intersections.

2. East 3rd Avenue and Norfolk Street – LOS F in the AM peak hour, LOS E in the PM peak hour
6. Vintage Park Drive and Chess Drive – LOS E in the PM peak hour
7. SR 92 Westbound Ramps and Chess Drive – LOS F in the PM peak hour
8. Foster City Boulevard and Chess Drive – LOS F in the PM peak hour
14. Foster City Boulevard and Metro Center Boulevard/Triton Drive – LOS F in the PM peak hour

The deterioration in traffic operations at local intersections is due to traffic generated by the buildout of the General Plan and projected growth in regional traffic along East 3rd Avenue and

Foster City Boulevard. The traffic operations at East 3rd Avenue and Norfolk Street would worsen due to traffic added generated by the General Plan Buildout, which would worsen existing traffic along East 3rd Avenue. The worsening congestion around the Foster City Boulevard / Metro Center Drive interchange would be caused by adding traffic to the existing queues at the SR 92 Eastbound on-ramp and causing the vehicle queue to extend and block southbound Foster City Boulevard and eastbound Chess Drive movements. Traffic operations at the intersection of Vintage Park Drive and Chess Drive would worsen due to traffic traveling to Metro Center Drive and bypassing the congestion on Foster City Boulevard.

TABLE 3.11-14: CUMULATIVE INTERSECTION LOS SUMMARY - UPDATED GENERAL PLAN

Intersection	Control	Existing Conditions				Cumulative Plus General Plan Buildout Conditions			
		AM		PM		AM		PM	
		Delay[1]	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. East 3rd Avenue and US 101 Northbound On-Ramp[2]	SSS	23 (SB)	C	11 (SB)	B	34 (SB)	D	24 (SB)	C
2. East 3rd Avenue and Norfolk Street[2]	Signal	**56**	**E**	43	D	**>80**	**F**	**56**	**E**
3. Mariners Island Boulevard and East 3rd Avenue	Signal	18	B	20	C	25	C	25	C
4. Foster City Boulevard and East 3rd Avenue	Signal	<10	A	11	B	15	B	12	B
5. Foster City Boulevard and Vintage Park Drive	Signal	18	B	30	C	29	C	33	C
6. Vintage Park Drive and Chess Drive	Signal	29	C	44	D	32	C	**56**	**E**
7. SR 92 Westbound Ramps and Chess Drive[3]	Signal	21	C	23	C	51	D	**>80**	**F**
8. Foster City Boulevard and Chess Drive[3]	Signal	26	C	**75**	**E**	37	D	**>80**	**F**
9. SR 92 Eastbound Ramps and Edgewater Boulevard/Mariners Island Boulevard	Signal	29	C	28	C	32	C	30	C
10. Edgewater Boulevard and Metro Center Boulevard	Signal	31	C	28	C	37	D	34	C
11. Vintage Park Drive and Metro Center Boulevard	Signal	35	D	38	D	36	D	41	D
12. Shell Boulevard and Metro Center Boulevard	Signal	32	C	35	C	33	C	36	D
13. SR 92 Eastbound Ramps and Metro Center Boulevard[3]	Signal	17	B	29	C	33	C	42	D
14. Foster City Boulevard and Metro Center Boulevard/Triton Drive[3]	Signal	29	C	34	C	49	D	**>80**	**F**

Intersection	Control	Existing Conditions				Cumulative Plus General Plan Buildout Conditions			
		AM		PM		AM		PM	
		Delay[1]	LOS	Delay	LOS	Delay	LOS	Delay	LOS
15. Norfolk Street and East Hillsdale Boulevard[2]	Signal	40	D	38	D	43	D	39	D
16. Altair Avenue and East Hillsdale Boulevard	Signal	<10	A	<10	A	<10	A	<10	A
17. Edgewater Boulevard and East Hillsdale Boulevard	Signal	32	C	36	D	36	D	44	D
18. Shell Boulevard and East Hillsdale Boulevard	Signal	19	B	24	C	24	C	29	C
19. Foster City Boulevard and East Hillsdale Boulevard	Signal	30	C	25	C	39	D	27	C
20. East Hillsdale Boulevard and Pilgrim Drive	Signal	22	C	23	C	22	C	23	C
21. Edgewater Boulevard and Beach Park Boulevard	Signal	43	D	37	D	54	D	37	D
22. Foster City Boulevard and Marlin Avenue	AWS	24	C	12	B	31	D	14	B
23. Foster City Boulevard and Beach Park Boulevard	AWS	21	C	<10	A	22	C	<10	A

Notes: SSS = Side-Street Stop, AWS = All-Way Stop

1. For signalized and all-way stop controlled intersections, the delay shown is the weighted average for all movements in seconds per vehicle. For side-street stop controlled intersection, the delay shown is the worse approach delay.
2. Study intersection is in San Mateo.
3. Intersection analyzed using the VISSIM microsimulation model.

Source: Fehr & Peers, February 2015.

FREEWAY VOLUMES AND OPERATIONS

The Cumulative Plus General Plan Buildout Conditions freeway volumes and analysis results are presented in Table 3.11-15. Traffic volumes would increase on all mainline segments. The following segments on SR 92 or US 101 would exceed their CMP LOS threshold with the addition of traffic due to cumulative development:

- Northbound US 101, north of East Hillsdale Boulevard – LOS F during the PM peak hour
- Southbound US 101, north of East Hillsdale Boulevard – LOS F during the PM peak hour
- Northbound US 101, south of East Hillsdale Boulevard – LOS F during the PM peak hour
- Southbound US 101, south of East Hillsdale Boulevard – LOS F during the AM and PM peak hours
- Eastbound SR 92, between US 101 and Mariners Island Boulevard/Edgewater Boulevard – LOS F during the PM peak hour

- Eastbound SR 92, east of Foster City Boulevard – LOS F during the PM peak hour

This deterioration in freeway LOS is largely due to regional traffic growth and, to a lesser extent, development in Foster City.

In addition, several segments on northbound or southbound US 101 north of SR 92 operate at LOS F during the AM or PM peak hours. However, these operations are consistent with the CMP LOS standard of F for this segment. The remaining freeway segments operate at LOS E or better under Cumulative Conditions. Cumulative daily traffic volumes with the General Plan Buildout on the study freeway segments are shown in Appendix H.

TABLE 3.11-15: CUMULATIVE FREEWAY SEGMENT LOS

Segment	CMP LOS Standard	Peak Hour	Direction	Existing Conditions		Cumulative Conditions	
				Volume[1]	LOS	Volume[1]	LOS
A. US 101, north of East 3rd Avenue	F	AM	Northbound	10,669	F	11,297	F
			Southbound	9,417	E	10,065	E
		PM	Northbound	10,041	E	10,412	F
			Southbound	11,271	F	13,343	F
B. US 101, between East 3rd Avenue and SR 92	F	AM	Northbound	11,760	F	12,432	F
			Southbound	9,560	E	10,057	E
		PM	Northbound	10,712	F	10,991	F
			Southbound	11,507	F	13,601	F
C. US 101, north of East Hillsdale Boulevard	E	AM	Northbound	7,747	D	8,264	D
			Southbound	9,568	E	9,803	E
		PM	Northbound	10,053	E	**10,589**	**F**
			Southbound	**10,661**	**F**	**12,675**	**F**
D. US 101, south of East Hillsdale Boulevard	E	AM	Northbound	7,380	D	9,407	E
			Southbound	**10,712**	**F**	**11,343**	**F**
		PM	Northbound	**10,608**	**F**	**10,904**	**F**
			Southbound	**10,712**	**F**	**13,330**	**F**
E. SR 92, between US 101 and Mariners Island Boulevard/Edgewater Boulevard	E	AM	Eastbound	4,688	D	5,743	D
			Westbound	4,936	C	5,966	D
		PM	Eastbound	6,742	E	**7,689**	**F**
			Westbound	5,829	D	7,778	E
F. SR 92, Mariners Island Boulevard/Edgewater Boulevard and Foster City Boulevard	E	AM	Eastbound	3,287	B	4,323	C
			Westbound	4,655	C	5,678	D
		PM	Eastbound	6,484	D	7,428	E
			Westbound	4,675	C	6,585	D

Segment	CMP LOS Standard	Peak Hour	Direction	Existing Conditions		Cumulative Conditions	
				Volume[1]	LOS	Volume[1]	LOS
G. SR 92, east of Foster City Boulevard	E	AM	Eastbound	2,301	B	3,201	C
			Westbound	5,209	D	6,302	E
		PM	Eastbound	**7,038**	**F**	**8,046**	**F**
			Westbound	3,108	B	4,903	D

Notes: **Bold** indicates locations where segment operations exceed CMP thresholds;

1. Volumes presented are passenger-car equivalents.

Source: Fehr & Peers, February 2015

VEHICLE MILES TRAVELED

The following presents the method used to calculate the daily Vehicle Miles Traveled (VMT) generated by land uses in Foster City due to the General Plan using the C/CAG travel demand forecasting model.

The intent of the VMT inventory for Foster City is to identify the vehicle trips that are attributable to land uses within the City and produced by the buildout of the General Plan. Per the recommended calculation method for passenger vehicle emissions from the ICLEI *U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions, Appendix D* (October 2012), VMT for Foster City was calculated from the combination of the following trip types:

- All Internal City-City (I-I) trips: All trips starting and ending in Foster City.
- One-half of External-Internal City (X-I) trips: One-half of trips with an origin outside of Foster City and a destination in Foster City.
- One-half of Internal City-External (I-X) trips: One-half of trips with an origin within Foster City and a destination outside of Foster City.

Trips without an origin or destination in Foster City are not included in these VMT estimates (known as External-External (X-X) trips); the City has no control over the amount of through traffic on regional roadways such as SR 92, and that traffic is not directly related to land uses within Foster City.

The results of the VMT estimates for Foster City using the C/CAG travel demand forecasting model for Existing (Year 2013) Conditions and Cumulative (Year 2040) Conditions are presented below in Table 3.11-16. The daily VMT has been separated into 5-mph speed bins in order to be used in air quality analyses.

TABLE 3.11-16: VMT ANALYSIS RESULTS

Speed Bins (miles per hour)	Existing		Cumulative Conditions	
	Daily VMT	Percent of Total	Daily VMT	Percent of Total
0.0 – 7.50	968	0.2%	2,577	0.3%
7.51 – 12.50	1,445	0.2%	3,434	0.4%
12.51 – 17.50	3,908	0.6%	11,390	1.4%
17.51 – 22.50	17,910	2.9%	37,723	4.7%
22.51 – 27.50	65,321	10.6%	93,180	11.5%
27.51 – 32.50	48,008	7.8%	93,399	11.5%
32.51 – 37.50	55,551	9.0%	93,204	11.5%
37.51 – 42.50	32,941	5.4%	76,393	9.4%
42.51 – 47.60	55,893	9.1%	90,932	11.2%
47.61 – 52.50	68,319	11.1%	62,202	7.7%
52.51 – 57.50	91,667	14.9%	87,560	10.8%
57.51 – 62.50	132,401	21.6%	120,032	14.8%
62.51 – 67.50	39,762	6.5%	36,698	4.5%
Total	*614,095*	-	*808,724*	-
Source: Fehr & Peers, February 2015				

From Year 2013 to Year 2040, VMT in Foster City is expected to increase by approximately 32 percent. This increase is likely due to two factors. First, the General Plan buildout predicts a growth of approximately 1,100 housing units and 9,500 jobs, which would contribute to an imbalance of housing to employment in the City (the current balance is approximately 12,000 housing units and 14,500 jobs). Second, 8,700 of the jobs anticipated by the General Plan would be located in areas to the north SR 92, which has little housing supply compared to the rest of the City.

THRESHOLDS OF SIGNIFICANCE

The criteria for evaluating the significance of a project's environmental impacts are based on the State of California Environmental Quality Act (CEQA) Guidelines and applicable standards recognized by Foster City, San Mateo, and C/CAG. According to the CEQA Guidelines, transportation impacts are considered significant if a proposed project would:

- Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant

components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

- Conflict with an applicable congestion management program, including, but not limited to, level of service (LOS) standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks (because the project site is not located within an airport land use plan or within two miles of an airport, this topic is not discussed further).
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Result in inadequate emergency access.
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

To evaluate impacts at study intersections and freeway segments, the following specific thresholds were used. The land use designation changes in the General Plan would create a significant traffic impact if, as a result of the resulting added traffic would:

- Cause an intersection operating acceptably to exceed the applicable LOS threshold;
- Increase the average intersection delay by 4 seconds per vehicle or more at an intersection exceeding its LOS threshold (similar to C/CAG requirements);
- Cause a freeway segment to exceed its Congestion Management Program (CMP) LOS standard; or
- Increase the volume of a freeway segment that exceeds the CMP LOS standard by 1 percent or more of the freeway segment's capacity;

Transit impacts would be considered significant if the General Plan would:

- Disrupt existing transit services or facilities.
- Interfere with planned transit services or facilities;
- Create demand for public transit services above the level provided or planned; or
- Conflict or create inconsistencies with adopted transit system plans, guidelines, policies or standards.

Bicycle and pedestrian impacts would be considered significant if the project would:

- Disrupt existing or planned bicycle or pedestrian facilities; or

- Create inconsistencies with adopted bicycle or pedestrian system plans, guidelines, or policy standards.

IMPACTS AND MITIGATION MEASURES

Impact 3.11-1: Implementation of the proposed project may result in cumulative impacts to intersection levels of service (Less than Significant)

Cumulative impacts were identified by comparing Cumulative Plus General Plan Buildout Conditions intersection LOS results to Existing Conditions intersection LOS results presented in Table 3.11-14. Cumulative impacts were identified for those intersections that would degrade from an acceptable level to an unacceptable level between Existing and Cumulative Plus General Plan Buildout Conditions and if the proposed General Plan Update would cause vehicle delay at the intersection to increase by more than four seconds. The following five intersections would operate unacceptably under Cumulative Plus General Plan Buildout Conditions:

3. East 3rd Avenue and Norfolk Street – LOS F in the AM peak hour, LOS E in the PM peak hour
9. Vintage Park Drive and Chess Drive – LOS E in the PM peak hour
10. SR 92 Westbound Ramps and Chess Drive – LOS F in the PM peak hour
11. Foster City Boulevard and Chess Drive – LOS F in the PM peak hour
15. Foster City Boulevard and Metro Center Boulevard/Triton Drive – LOS F in the PM peak hour

The proposed General Plan Update would not generate added traffic or vehicle delay to these study intersections. Therefore, the proposed General Plan Update's contribution to these cumulative impacts is **less-than-significant** and no mitigation is required.

The following policies and actions are included in the updated Land Use and Circulation Element relating to traffic operations. While implementation of the proposed General Plan Update would not result in significant impacts to intersection operations, based on the results of the traffic analysis, minor changes are recommended to Policy LUC-F-1, as shown below.

LUC-F*: Maintain Acceptable Operating Conditions on the City's Road Network.* *Maintain acceptable operating conditions on the City's road network at or above LOS D, or equivalent measurement, and encourage the maximum effective use of public and private vehicles, reduce the growth in peak hour traffic volumes and reduce single passenger trips.*

> ***LUC-F-1: Traffic Level of Service Standards.*** *The City shall seek to achieve a traffic service level of "C" or better on City streets and level of "D" or better during peak traffic hours, although it will be necessary to accept level of service "E" or "F" at the Chess Drive/SR 92 Ramps, the Foster City Boulevard/Metro Center Boulevard/Triton Drive, and Foster City Boulevard/Chess Drive intersections due to their role as an access point to the freeway system. The level of service standard will be maintained through the following means:*

a. Intelligent Transportation Systems (ITS).

b. Transportation Demand Management (TDM) for development projects.

c. Capital Improvement Program and coordination with federal, state, county, and district funding programs for street and other transportation improvements.
d. Developer payment of pro rata fair share of traffic improvement costs for new developments.

LUC-F-1-a: System Monitoring. *The City will monitor traffic and congestion to determine when and where the City needs new transportation or circulation facilities in order to increase access and efficiency.*

LUC-F-1-b: Signal Synchronization. *The City will review signal timing programs to enhance traffic flow and efficiency and determine where emissions reduction benefits can be demonstrated, including maintenance of the synchronization system, and will coordinate with adjoining jurisdictions as needed to optimize transit operation while maintaining a free flow of traffic.*

LUC-F-1-c: Periodically Monitor Traffic Conditions. *The City will periodically monitor traffic conditions on arterial and selected collector streets to determine levels of service and safety conditions. Traffic counts will be updated and visual monitoring performed regularly at all major street intersections to determine levels of service, safety conditions, and if additional traffic control measures are warranted or if changes in the sequence of traffic signal cycles are necessary.*

LUC-F-1-d Traffic Calming. *Develop guidelines for traffic calming techniques, as needed.*

LUC-F-2: Traffic Reduction Programs. *The City will work with existing employers and developers of new non-residential development to participate in traffic reduction programs.*

LUC-F-2-a: Implementation of Traffic Reduction Programs. *As appropriate, require new non-residential developments to include a traffic reduction strategy with a variety of methods to reduce single-occupancy vehicles, provided programs exist.*

LUC-F-3: Employer-based Trip Reduction. *The City will work with employers to implement employer-based trip reduction programs that get people to high-boarding destinations such as employment centers and regional destinations, including:*

a. Coordinating with regional and local ridesharing organizations;

b. Encouraging Caltrain/bus passes;

c. Employer-based shuttles

LUC-F-3-a: Employer Shuttle Fair-Share. *Include as a condition of approval that employers shall fund, at a level commensurate with the transit demand, new or expanded employee shuttle services to transit hubs.*

> ***LUC-F-3-b: Vintage Park Transit Service.*** *As areas are redeveloped, the City shall encourage transit providers to re-route bus lines or designate a new bus line to serve employees of this development, as appropriate. The City has provided some existing curbside areas for bus stops, and new ones shall be provided by the developer as needed. The City shall consult with SamTrans to determine the optimum routes for a new bus line.*

In addition to the above General Plan policies, several improvement measures are recommended for consideration to improve traffic operations and would be the responsibility of individual development projects to construct them and/or pay their fair share costs:

- Lincoln Centre Drive/East 3rd Avenue – Signalize this intersection and include marked crosswalks with pedestrian signal heads and curb ramps on all approaches.
- Vintage Park Drive / Chess Drive – Restripe northbound Vintage Park Drive to replace the outside through lane with a shared through right-lane.
- Foster City Boulevard / Chess Drive / Metro Center Drive Interchange – Add a second right-turn lane on southbound Foster City Boulevard at Metro Center Drive and retime the traffic signal in the PM peak hour at Foster City Boulevard/Chess Drive to provide additional green time to the southbound approach by shifting time from the eastbound through movement. (Improvement subject to Caltrans approval).

Impact 3.11-2: Implementation of the proposed project would contribute vehicle trips to freeway segments that would exceed their CMP LOS threshold (Less than Significant)

Cumulative impacts were identified by comparing Cumulative Plus General Plan Buildout Conditions mainline LOS results to Existing Conditions mainline LOS results presented in Table 3.11-15. The proposed project would not generate added traffic to these study mainline segments. Therefore, the proposed project's contribution to these cumulative impacts is **less-than-significant** and no mitigation is required.

Impact 3.11-3: Implementation of the proposed project would not impact pedestrian or bicycle facilities (Less than Significant)

The anticipated buildout under the General Plan Update would result in increased pedestrian and bicycle activity due to additional employees, residents, and visitors. This level of increased activity would be served from the existing network of pedestrian and bicycle facilities. The proposed Climate Action Plan includes measure TL 2: Implement Complete Streets and Pedestrian and Bicycle-friendly Design, which would implement Class II bike lanes on main streets, an urban bike-trail system, bike parking, and pedestrian crossings throughout the City. Implementation of this measure would enhance the City's pedestrian and bicycle network. The proposed project will not adversely affect existing or planned pedestrian or bicycle facilities and will therefore have a **less-than-significant** impact on pedestrians and bicyclists. The following policies and actions are included in the updated Land Use and Circulation Element, and are carried over from the City's

1993 General Plan. These policies require and encourage an integrated network of bicycle and pedestrian paths throughout the City, and require the incorporation of pedestrian and bicycle friendly design facilities in new development projects.

LUC-E-8: Pedestrian, Bicycle, and Neighborhood Electric Vehicle (NEV) Friendly Design. *Encourage bicycling, walking, and use of NEVs instead of driving automobiles to reduce greenhouse gas emissions, save money on fuel and maintenance, and foster a healthier population. Prioritize pedestrian and bicycle-friendly improvements including bike lanes on main streets, an urban bike-trail system, bike parking, pedestrian crossings, and associated master plans with new or modified development, as appropriate.*

LUC-E-8-a: Bicycle and Pedestrian Access. *Make it a condition of approval that new, large-scale developments address transit, biking and walking access to the site.*

LUC-E-8-b: Development Standards for Bicycles. *The City will establish standards for new development and redevelopment projects to support bicycle use, including:*

a. Develop standards for safe pedestrian and bicyclist accommodations, including:

i. "Complete Streets" policies that foster equal access by all users in the roadway design;

ii. Bicycle and pedestrian access internally and in connection to other areas through easements;

iii. Safe access to public transportation and other non-motorized uses through construction of dedicated paths;

iv. Safe road crossings at major intersections.

LUC-E-9: Bicycle Routes and Pedestrian Paths*. Maintain a system of bicycle routes and pedestrian paths, which will include separate bicycle lanes and posted bicycle routes. Pedestrian pathways and easements shall be maintained, either by the City, or, in the case of private ownership, according to a maintenance agreement or landscaping district agreement applicable to the pathway/easement.*

LUC-E-9-a: Pedestrian and Bicycle Safety. *Provide safe and convenient access for pedestrians and bicyclists to, across, and along major roadways. The City shall conduct a study of all intersections in the City from a comprehensive perspective which would consider the needs of pedestrians, bicyclists and motorists. The study will include an examination of potential options to address not only current conditions but also conditions anticipated by future development, including enforcement of traffic laws applicable to pedestrians and bicycles. The City will also prepare a study that reviews highly used intersections by pedestrians that are going to Foster City schools and recreational amenities such as the levee and parks and identify ways to increase pedestrian safety at those intersections.*

LUC-E-9-b: Bicycle Route and Pedestrian Path Improvement Program. *The City shall conduct a study with the following goals: 1) identify bike routes that may need enhancements that would increase cyclist safety going to schools, parks,*

shopping center or civic areas; and 2) identify major thoroughfares and any enhancements to those roadways that would allow cyclists to get to the levee and other common destinations safely. The purpose of the bicycle route system is to connect major work, shopping, school, civic, and recreational destinations throughout the City, while avoiding as many of the most heavily used street segments as possible.

Impact 3.11-4: Implementation of the proposed project would not impact transit facilities (Less than Significant)

The buildout of the General Plan would result in increased transit ridership due to additional employees, residents, and visitors. This level of increased activity would be generally served by the existing transit network. Individual development projects would be required to contribute to expansion of existing shuttle services or provide new shuttle services to local transit hubs, such as the East Hillsdale Caltrain Station and the Millbrae BART/Caltrain station, at a level commensurate with the project's shuttle ridership demand at buildout. The project sponsor would be required to prepare an analysis of its projected shuttle ridership, develop a plan for how the ridership will be accommodated, and submit the plan to the City for approval during the use permit process.

The proposed project will not generate additional transit ridership and create demand for public transit services above the level provided or planned. Nor will the proposed project affect existing or planned transit facilities or conflict with adopted transit system plans, guidelines, policies, or standards. Therefore, the proposed project would have a **less-than-significant** impact on transit accessibility or ridership. The following policies are included in the updated Land Use and Circulation Element, and are carried over from the City's 1993 General Plan. These policies require efforts to maintain and expand access to transit options throughout the City, and to increase public access to transit.

LUC-E-6: Create Opportunities for Transit Access*. Create opportunities to improve transit and access to regional transit with new or modified development, as appropriate.*

LUC-E-7: Coordination with Transit Agencies that Serve San Mateo County. *The City shall work with SamTrans, Alameda-Contra Costa Transit District (AC Transit), the Peninsula Traffic Congestion Relief Alliance, RIDES and other agencies that serve San Mateo County in defining new transit routes and improving the public transit and transportation system.*

LUC-E-7-a: Transit System Infrastructure. *The City will work with transit providers to facilitate the maintenance and upgrade of the transit system infrastructure to enhance public use, including:*

a. Transit stops and bus lanes that are safe, convenient, clean and efficient;

b. Accessible transit stops that have clearly marked street-level designation;

c. Transit stops that are safe, sheltered, clean, and well lit;

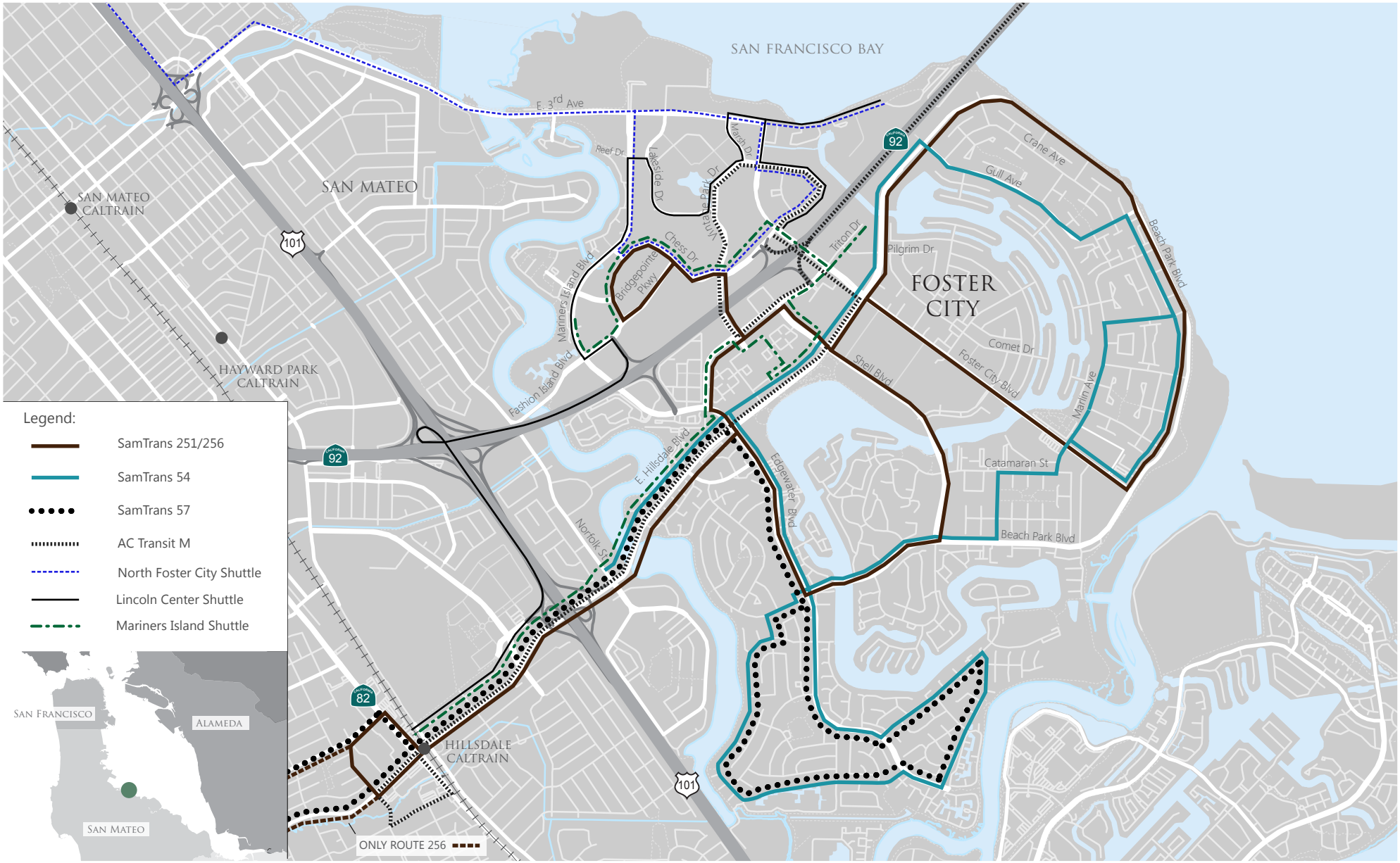
d. Transit stops that are located along corridors within mixed-use or transit-oriented development areas.

LUC-E-7-b: Public Transit Information. *The City will provide information regarding public transit at City Hall, the Recreation Center, the City's web site, and other locations to promote the use of public transit.*

LUC-E-7-c: Designation of New Bus Routes. *The City will work with transit providers to designate new bus routes, provide curbside space for bus stops, and require major commercial/industrial developments along bus routes to accommodate buses in their circulation plans. Bus turnouts or shelters will also be required to be provided by the development.*

Impact 3.11-5: Implementation of the proposed project would not impact air traffic or aviation facilities (less than significant)

The proposed project would result in increased air travel ridership due to additional employees, residents, and visitors. However, additional residents and employment associated with the proposed project would not contribute substantially to demand for commercial air travel because population growth under buildout of the General Plan would not result in appreciable increases in regional population levels, and the region is adequately served by major international and local airports. Therefore, the proposed project would not substantially increase flight operations. In addition, no buildings or features would be constructed on-site that would interfere with flight operations at local airports. This is a **less-than-significant** impact.



Note: Only Transit routes providing service to Foster City are shown.

Not to Scale

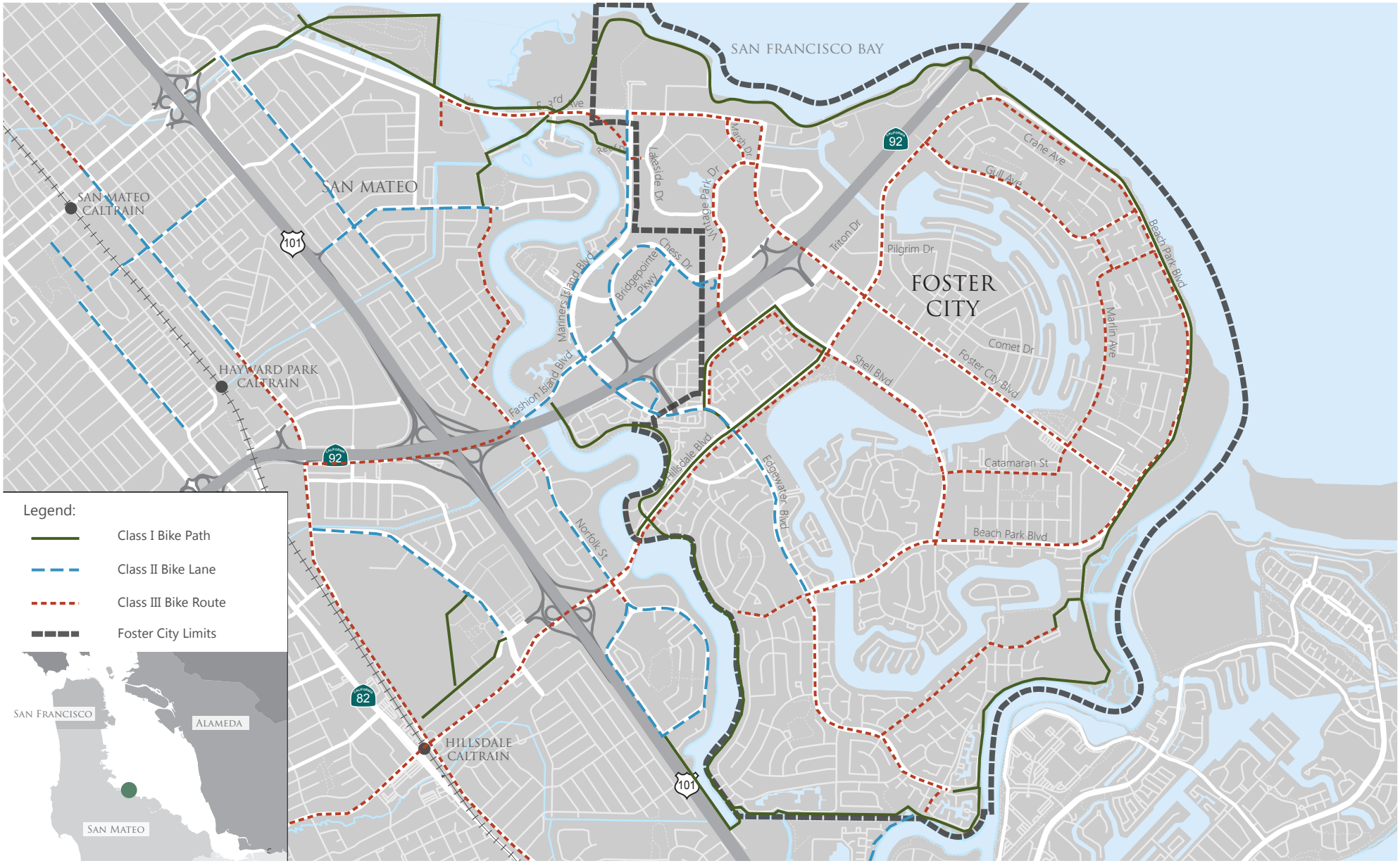
FEHR PEERS

SF12-0627 Foster City General Plan\Graphics

FOSTER CITY TRANSIT ROUTES

FIGURE 3.11-1

This page left intentionally blank.



N

Not to Scale

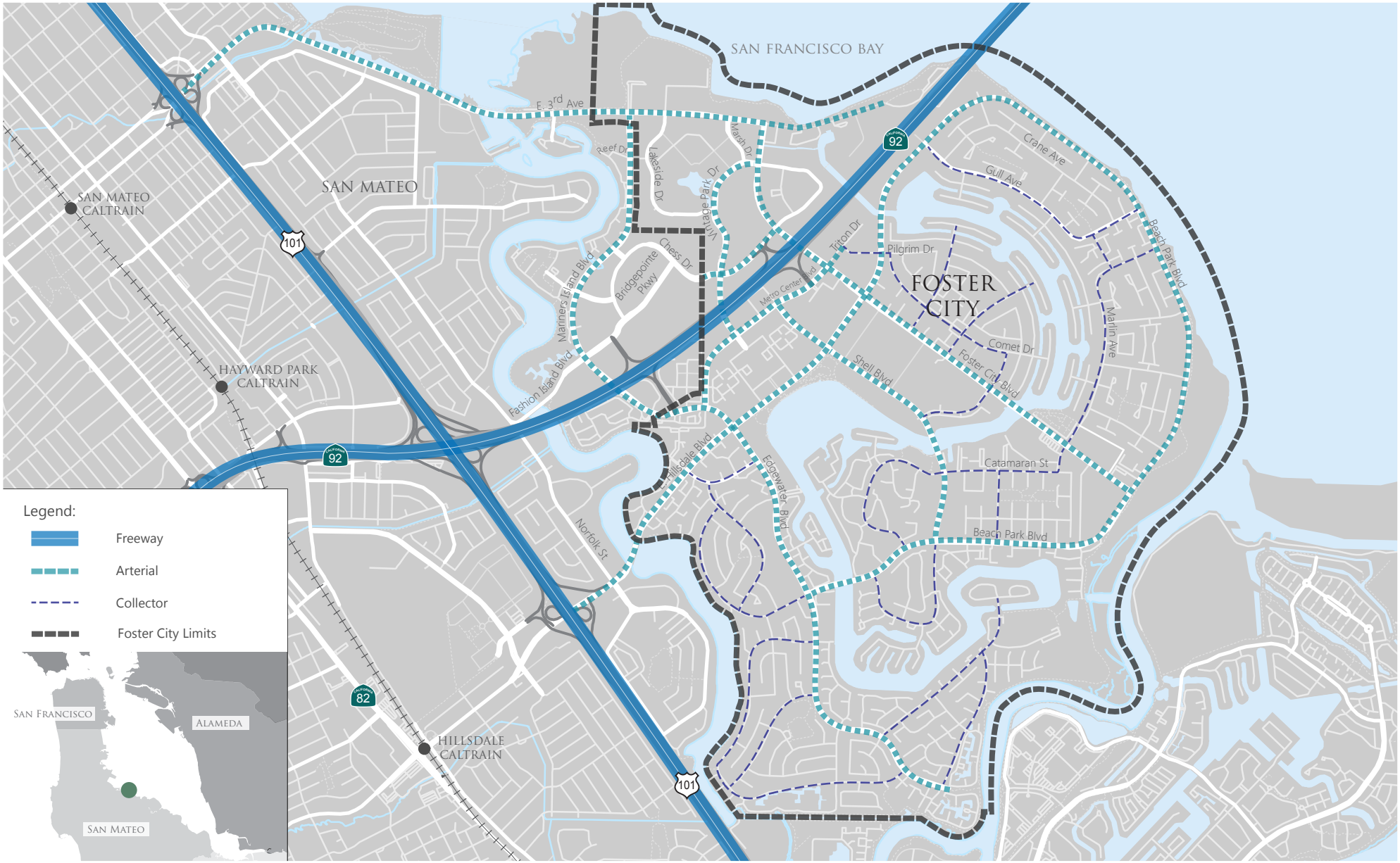
FEHR PEERS

SF12-0627 Foster City General Plan\Graphics

FOSTER CITY BICYCLE FACILITIES

FIGURE 3.11-2

This page left intentionally blank.



N

Not to Scale

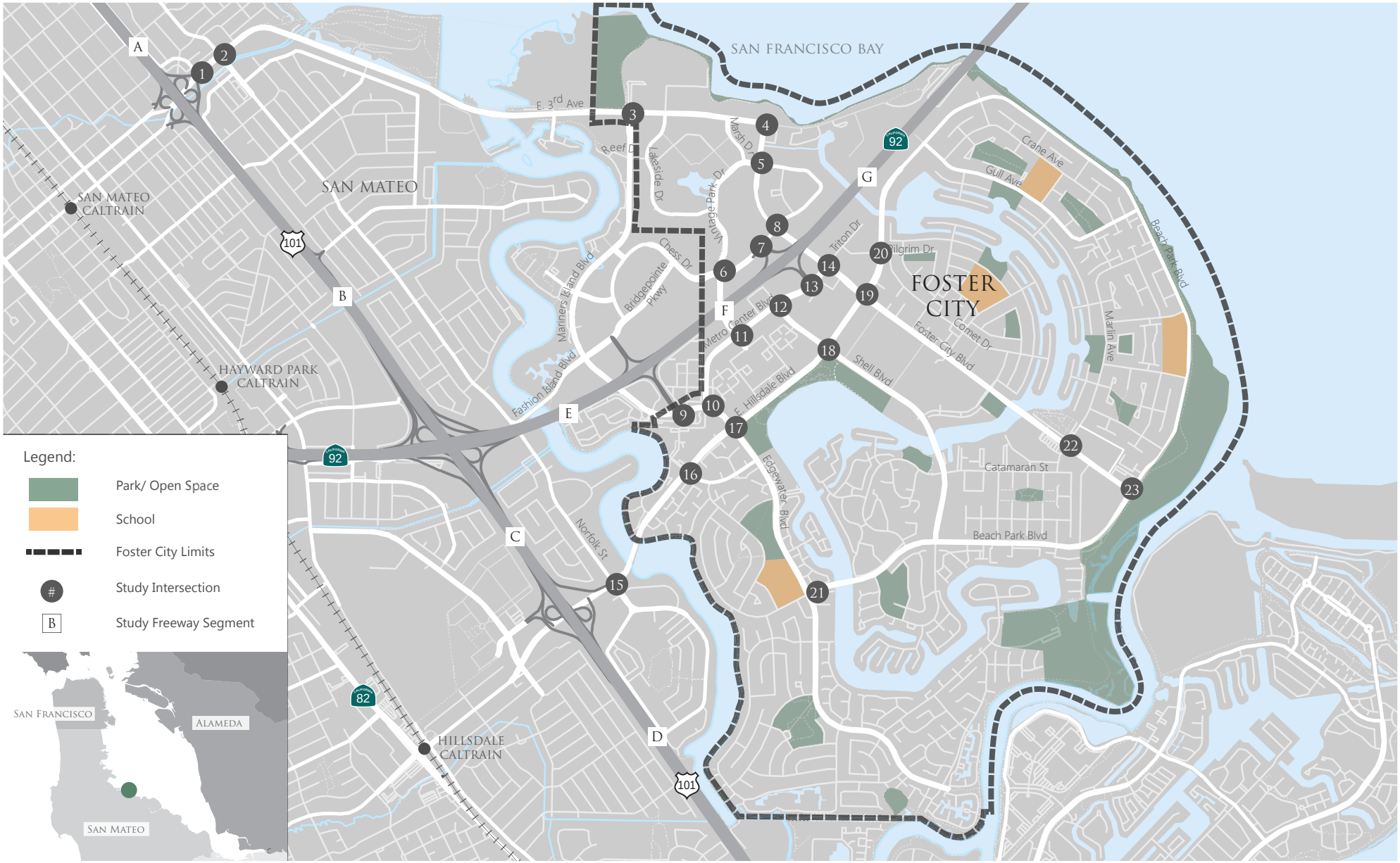
FEHR PEERS

SF12-0627 Foster City General Plan\Graphics

EXISTING ROADWAY NETWORK

FIGURE 3.11-3

This page left intentionally blank.



FEHR PEERS

SF12-0627 Foster City General Plan\Graphics

STUDY INTERSECTIONS AND FREEWAY SEGMENTS

FIGURE 3.11-4

This page left intentionally blank.

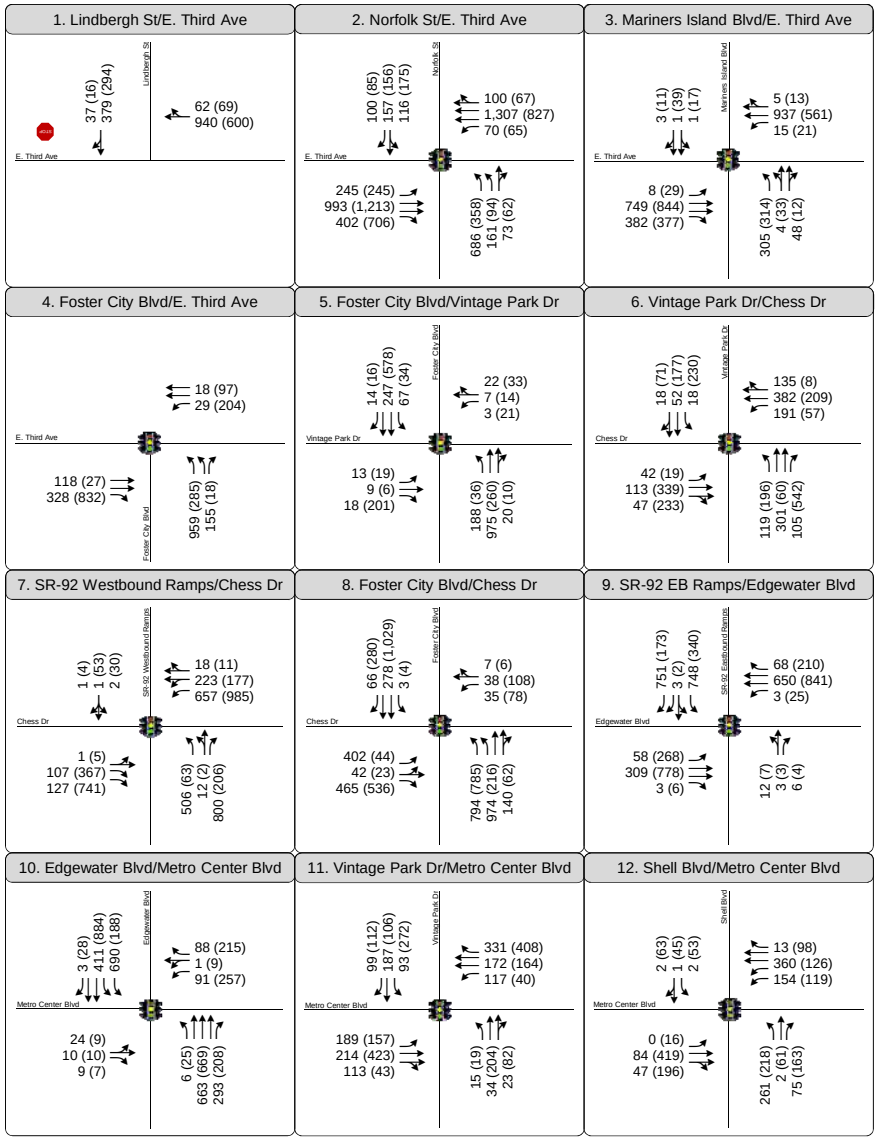


Figure 3.11-5A
Peak Hour Traffic Volumes, Traffic Control, and Lane Configurations
Existing Conditions

This page left intentionally blank.

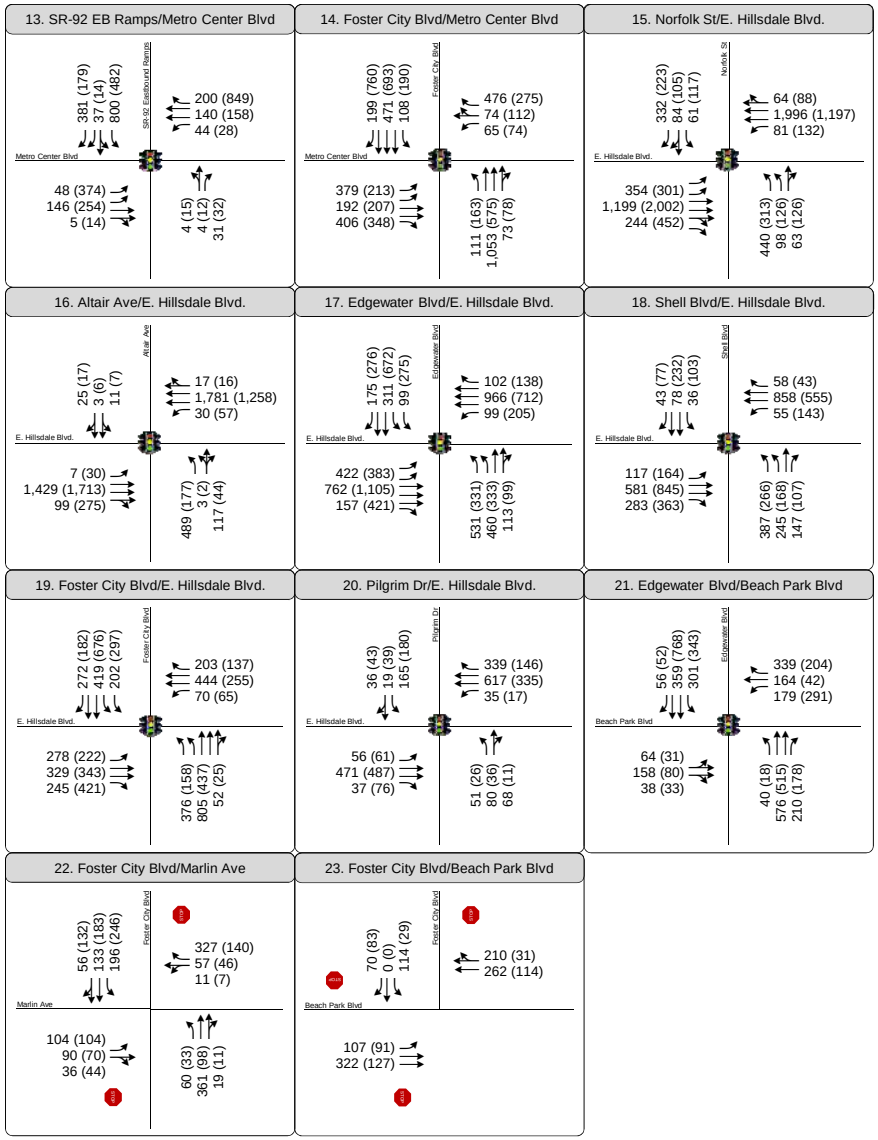
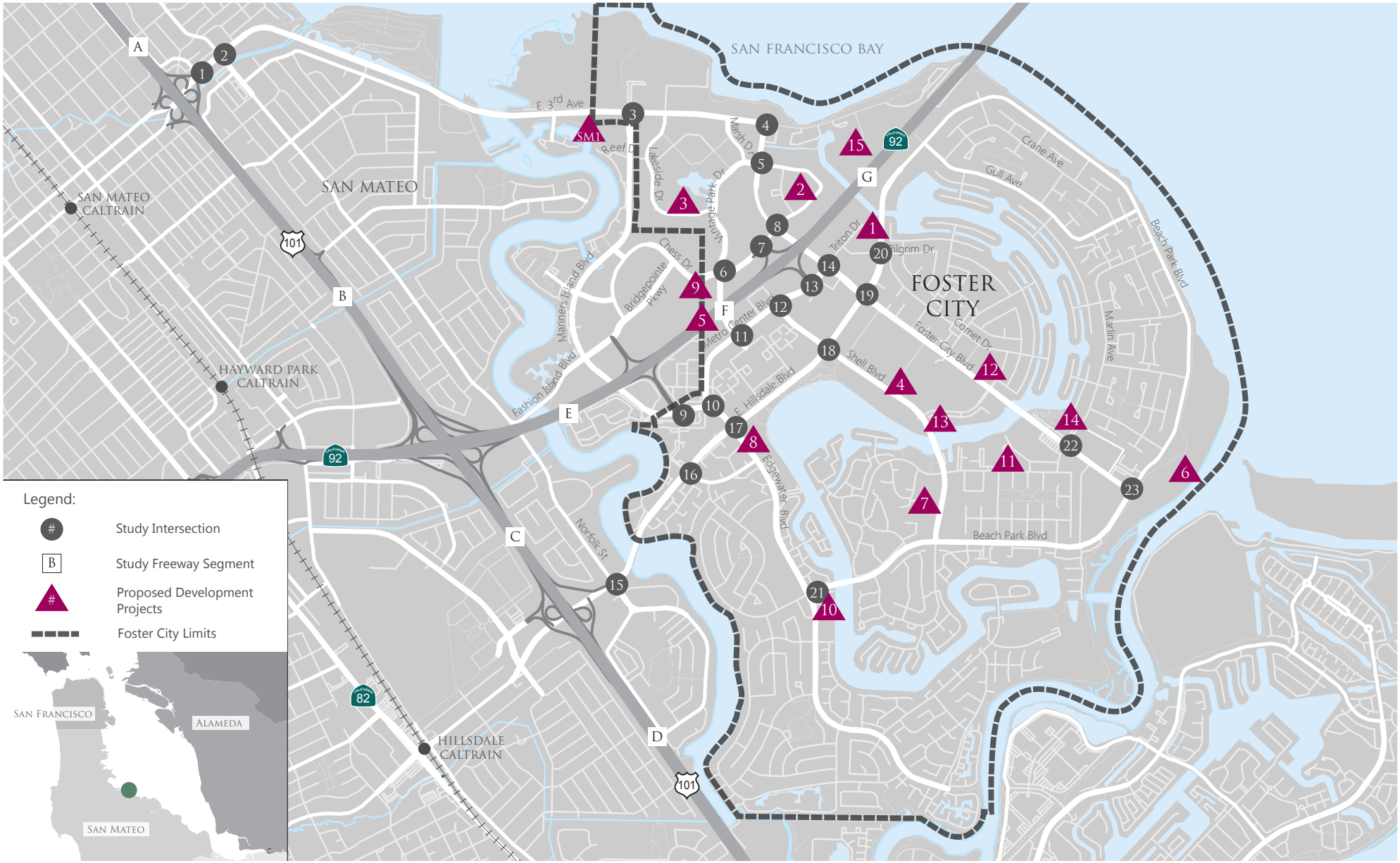


Figure 3.11-5B
Peak Hour Traffic Volumes, Traffic Control, and Lane Configurations
Existing Conditions

This page left intentionally blank.



Not to Scale

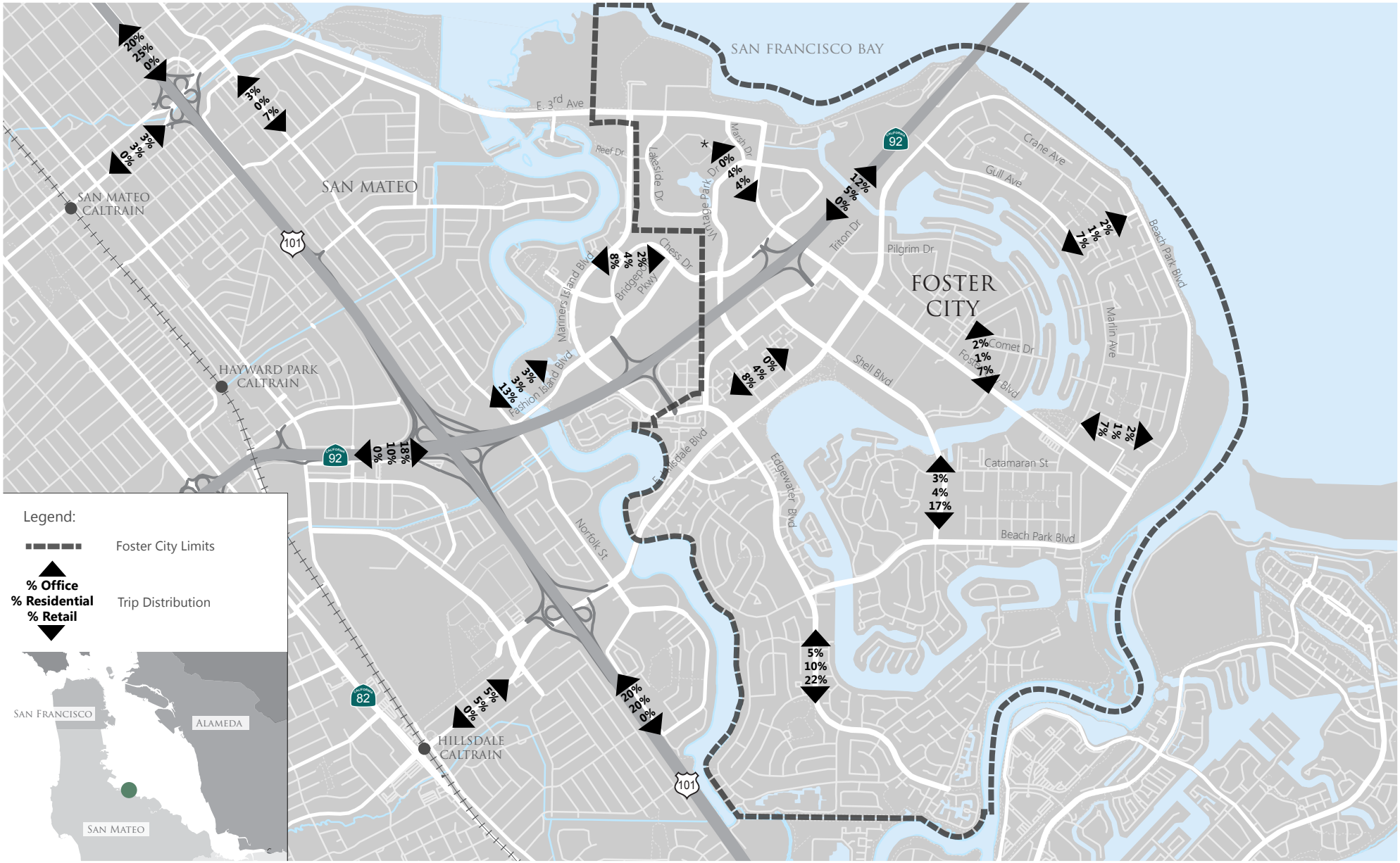
FEHR PEERS

SF12-0627 Foster City General Plan\Graphics

CUMULATIVE DEVELOPMENT LOCATIONS

FIGURE 3.11-6

This page left intentionally blank.



*Represents trips traveling to/from Vintage Park complex from the rest of Foster City.

N

Not to Scale

FEHR PEERS

SF12-0627 Foster City General Plan\Graphics

TRIP DISTRIBUTION

FIGURE 3.11-7

This page left intentionally blank.

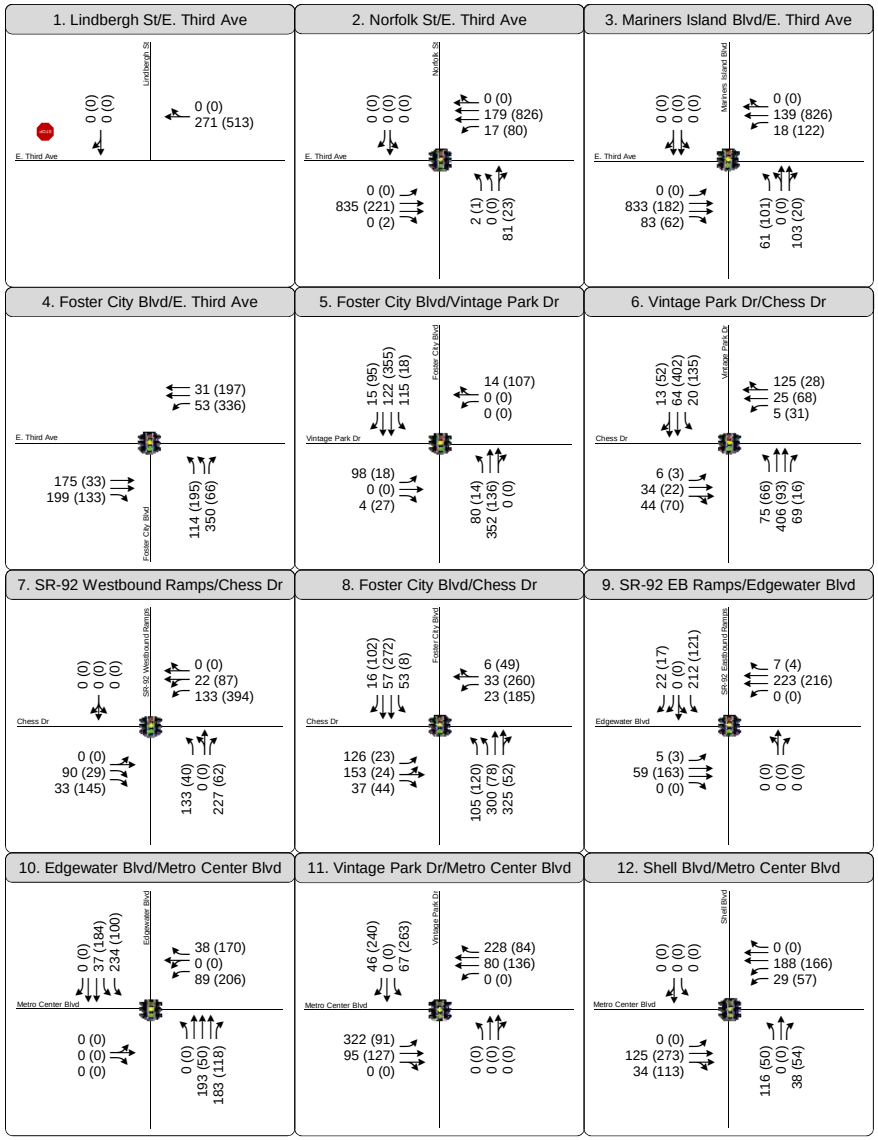


Figure 3.11-8A
Peak Hour Traffic Volumes, Traffic Control, and Lane Configurations
Trip Assignment

This page left intentionally blank.

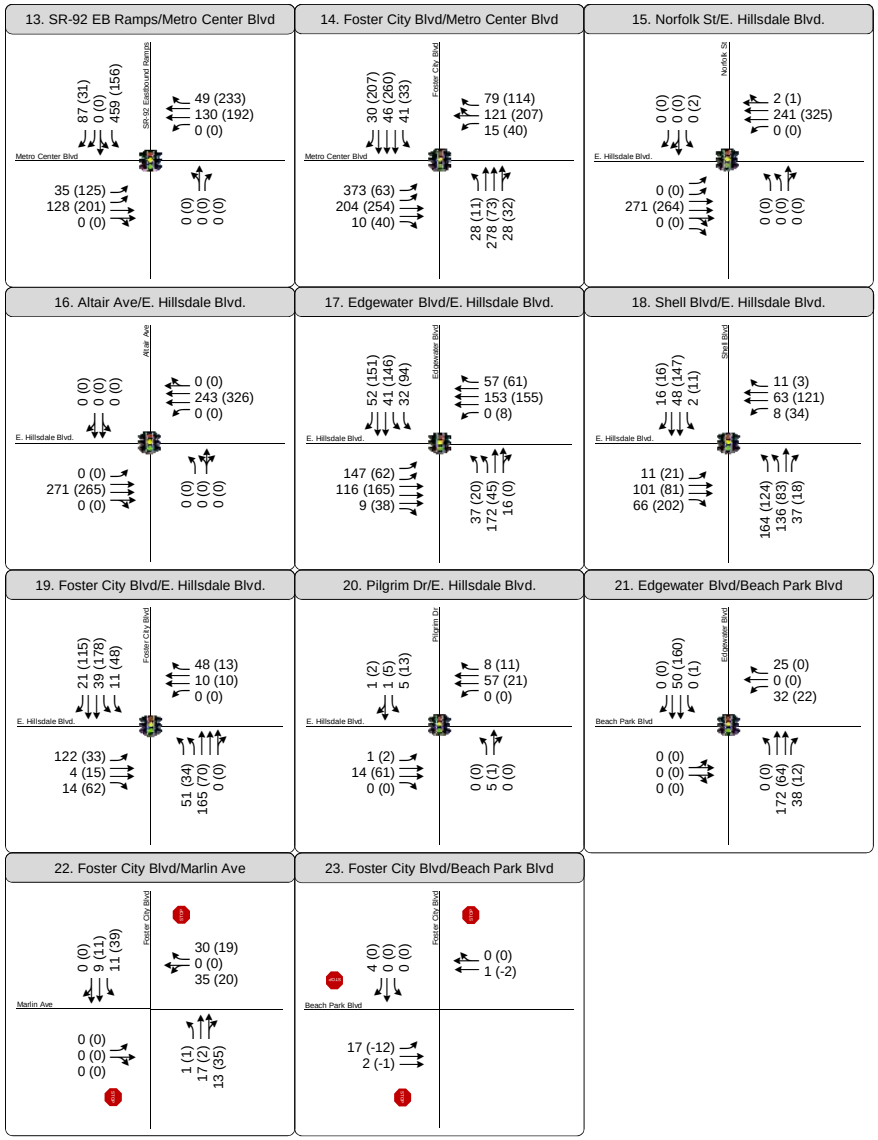
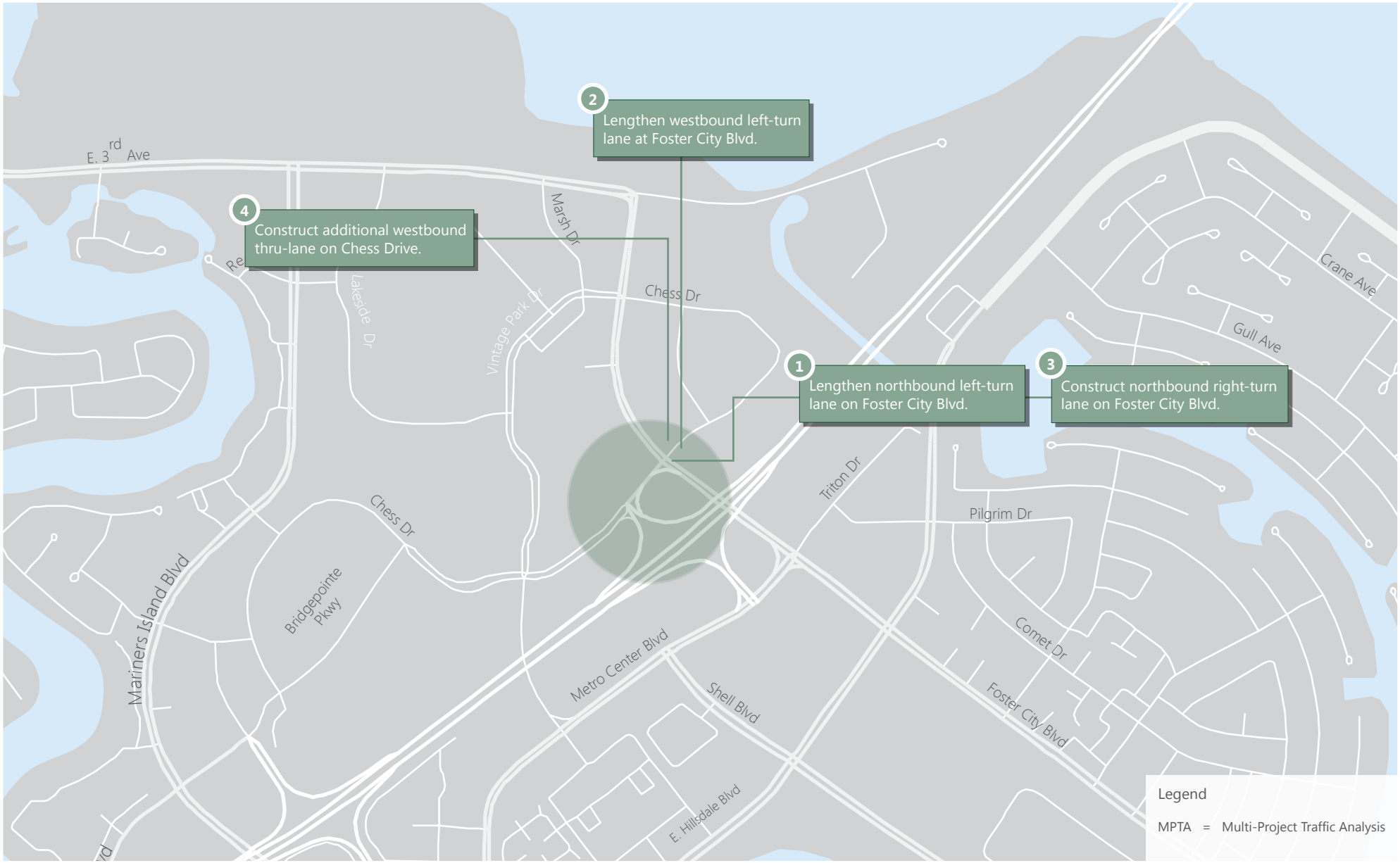


Figure 3.11-8B
Peak Hour Traffic Volumes, Traffic Control, and Lane Configurations
Trip Assignment

This page left intentionally blank.



Notes:
1) Project numbers refer to Table 3.11-13

Not to Scale

FEHR PEERS

SF12-0627 Foster City General Plan\Graphics

CUMULATIVE ROADWAY IMPROVEMENTS

FIGURE 3.11-9

This page left intentionally blank.

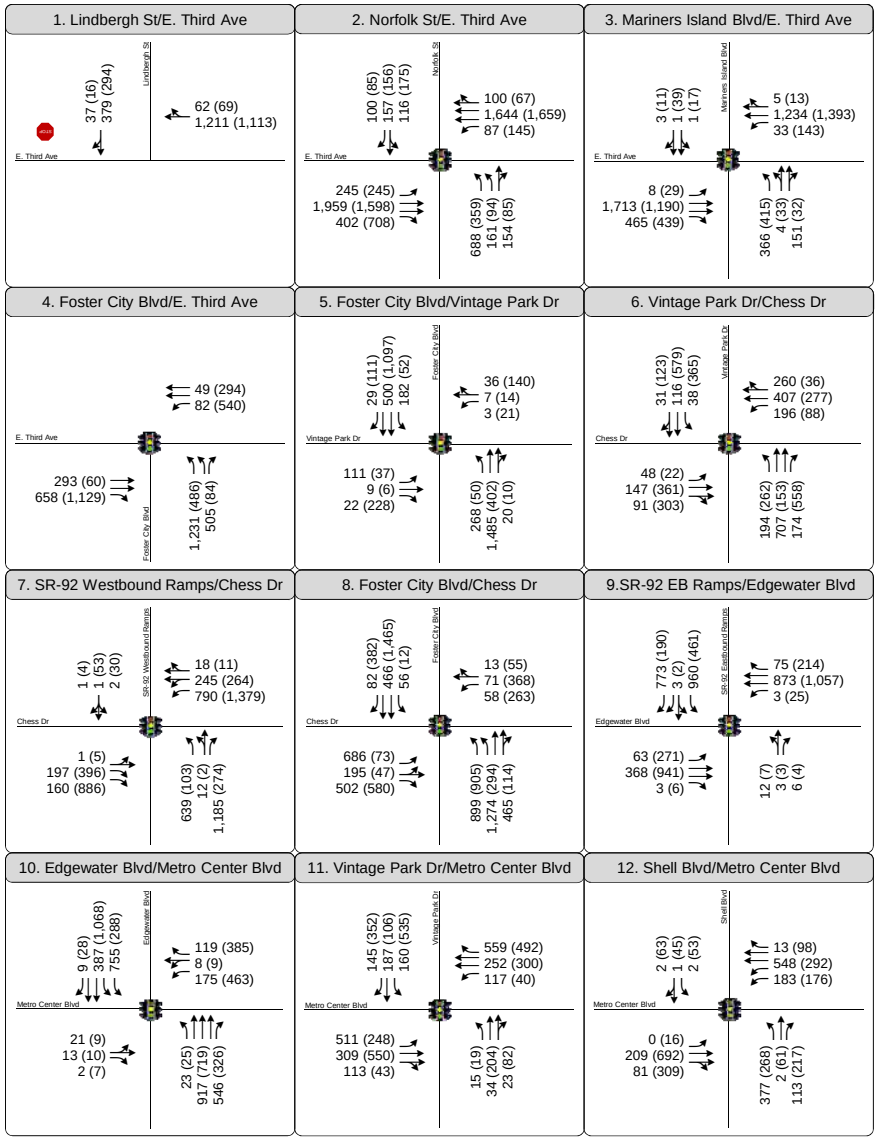


Figure 3.11-10A
Peak Hour Traffic Volumes, Traffic Control, and Lane Configurations
Cumulative Plus General Plan Buildout Conditions

This page left intentionally blank.

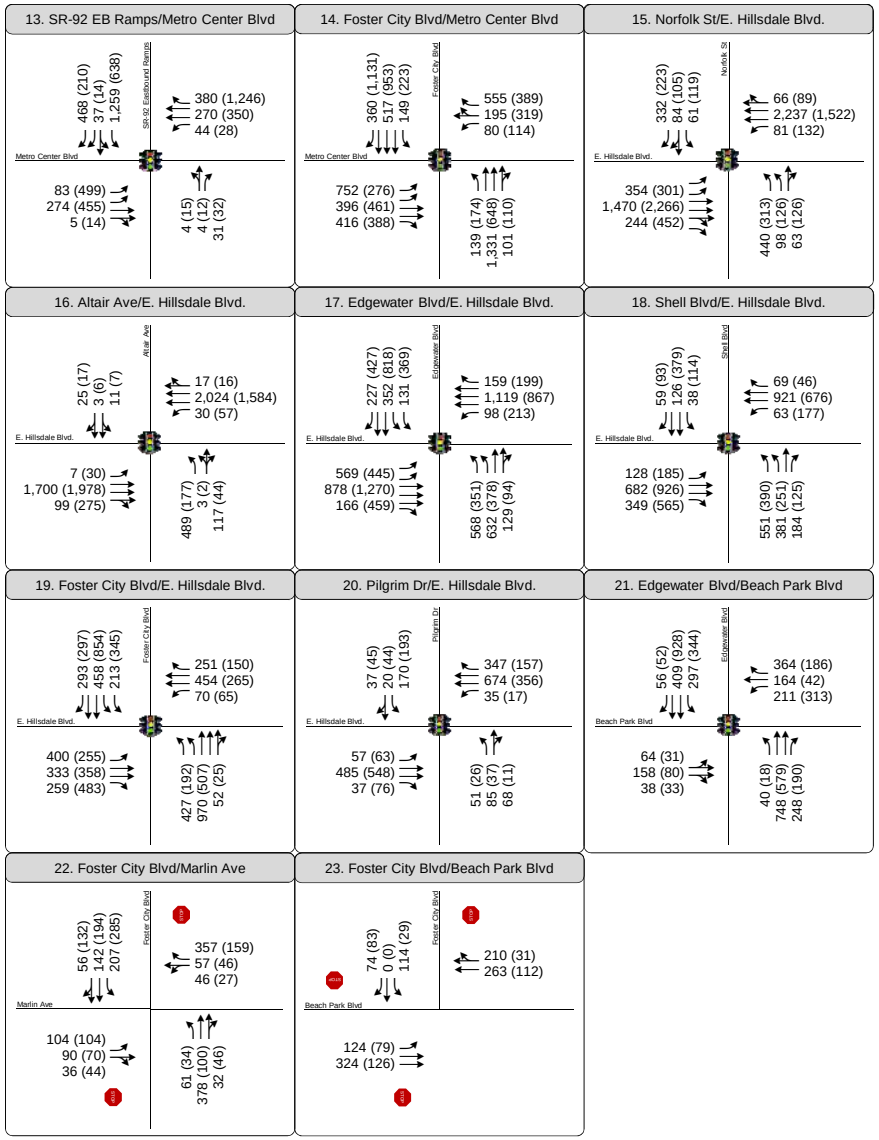


Figure 3.11-10B
Peak Hour Traffic Volumes, Traffic Control, and Lane Configurations
Cumulative Plus General Plan Buildout Conditions

This page left intentionally blank.

This section reviews and summarizes Foster City's visual and aesthetic resources and assesses the potential impact on these resources as a result of implementation of the proposed General Plan Update and Climate Action Plan.

This section was prepared based on existing reports and literature for Foster City. Additional sources of information included the California Department of Transportation's (Caltrans) Designated Scenic Route map.

This section is organized with an existing setting, regulatory setting, and impact analysis. No comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic.

Concepts and Terminology

The aesthetic value of an area is a measure of its visual character and quality, combined with the viewer response to the area (Federal Highway Administration 1983). Scenic quality can best be described as the overall impression that an individual viewer retains after driving through, walking through, or flying over an area (U.S. Bureau of Land Management 1980). Viewer response is a combination of viewer exposure and viewer sensitivity. Viewer exposure is a function of the number of viewers, number of views seen, distance of the viewers, and viewing duration. Viewer sensitivity relates to the extent of the public's concern for a particular viewshed. These terms and criteria are described in detail below.

Visual Character. Natural and artificial landscape features contribute to the visual character of an area or view. Visual character is influenced by geologic, hydrologic, botanical, wildlife, recreational, and urban features. Urban features include those associated with landscape settlements and development, including roads, utilities, structures, earthworks, and the results of other human activities. The perception of visual character can vary significantly seasonally, even hourly, as weather, light, shadow, and elements that compose the viewshed change. The basic components used to describe visual character for most visual assessments are the elements of form, line, color, and texture of the landscape features (U.S. Forest Service 1974; Federal Highway Administration 1983). The appearance of the landscape is described in terms of the dominance of each of these components.

Visual Quality. Visual quality is evaluated using the well-established approach to visual analysis adopted by Federal Highway Administration, employing the concepts of vividness, intactness, and unity (Federal Highway Administration 1983), which are described below.

- Vividness is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns.
- Intactness is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements; this factor can be present in well-kept urban and rural landscapes, and in natural settings.

- Unity is the visual coherence and compositional harmony of the landscape considered as a whole; it frequently attests to the careful design of individual components in the landscape.

Visual quality is evaluated based on the relative degree of vividness, intactness, and unity, as modified by visual sensitivity. High-quality views are highly vivid, relatively intact, and exhibit a high degree of visual unity. Low-quality views lack vividness, are not visually intact, and possess a low degree of visual unity.

Viewer Exposure and Sensitivity. The measure of the quality of a view must be tempered by the overall sensitivity of the viewer. Viewer sensitivity or concern is based on the visibility of resources in the landscape, proximity of viewers to the visual resource, elevation of viewers relative to the visual resource, frequency and duration of views, number of viewers, and type and expectations of individuals and viewer groups.

The importance of a view is related, in part, to the position of the viewer to the resource; therefore, visibility and visual dominance of landscape elements depend on their placement within the viewshed. A viewshed is defined as all of the surface area visible from a particular location (e.g., an overlook) or sequence of locations (e.g., a roadway or trail) (Federal Highway Administration 1983). To identify the importance of views of a resource, a viewshed must be broken into distance zones of foreground, middle ground, and background. Generally, the closer a resource is to the viewer, the more dominant it is and the greater its importance to the viewer. Although distance zones in a viewshed may vary between different geographic region or types of terrain, the standard foreground zone is 0.25–0.5 mile from the viewer, the middle ground zone is from the foreground zone to 3–5 miles from the viewer, and the background zone is from the middle ground to infinity (U.S. Forest Service 1974).

Visual sensitivity depends on the number and type of viewers and the frequency and duration of views. Visual sensitivity is also modified by viewer activity, awareness, and visual expectations in relation to the number of viewers and viewing duration. For example, visual sensitivity is generally higher for views seen by people who are driving for pleasure, people engaging in recreational activities such as hiking, biking, or camping, and homeowners. Sensitivity tends to be lower for views seen by people driving to and from work or as part of their work (U.S. Forest Service 1974; Federal Highway Administration 1983; U.S. Soil Conservation Service 1978). Commuters and non-recreational travelers have generally fleeting views and tend to focus on commute traffic, not on surrounding scenery; therefore, they are generally considered to have low visual sensitivity. Residential viewers typically have extended viewing periods and are concerned about changes in the views from their homes; therefore, they are generally considered to have high visual sensitivity. Viewers using recreation trails and areas, scenic highways, and scenic overlooks are usually assessed as having high visual sensitivity.

Judgments of visual quality and viewer response must be made based in a regional frame of reference (U.S. Soil Conservation Service 1978). The same landform or visual resource appearing in different geographic areas could have a different degree of visual quality and sensitivity in each

setting. For example, a small hill may be a significant visual element on a flat landscape but have very little significance in mountainous terrain.

3.12.1 ENVIRONMENTAL SETTING

The City of Foster City is situated along the southwestern coast of the San Francisco Bay, east of San Mateo. The City is midway between San Francisco and San Jose, and ten minutes from San Francisco International Airport. Tidal marshes along the bay and rolling hills to the west characterize the region. These visual and scenic resources are described in greater detail below.

SCENIC HIGHWAYS AND CORRIDORS

Scenic Highways

A scenic highway is generally defined by Caltrans as a public highway that traverses an area of outstanding scenic quality, containing striking views, flora, geology, or other unique natural attributes. A highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view.

The status of a proposed State scenic highway changes from eligible to officially designated when the local governing body applies to Caltrans for scenic highway approval, adopts a Corridor Protection Program, and receives notification that the highway has been officially designated a Scenic Highway. According to the California Scenic Highway Mapping System, administered by Caltrans, there are no officially designated scenic highways or scenic corridors in Foster City.

NATURAL SCENIC RESOURCES

Foster City encompasses an outstanding variety of natural vistas and landscapes. The largest and most unique permanent scenic resources in the City of Foster City are the waterways. These include San Francisco Bay, Belmont Slough, Marina Lagoon, the Foster City Lagoon and Canal system, and Vintage Park Lake.

The following section describes the significant scenic resources found in the City as described in the Foster City General Plan.

San Francisco Bay. The San Francisco Bay is one of the City of Foster City's main amenities because of its open space and recreational qualities. The Bay is the primary source of water for most of the City of Foster City's waterways and constitutes the north and northeastern boundaries of the City of Foster City. Uses of Lower San Francisco Bay water include navigation, active water recreation, passive water recreation, ocean commercial and sport fishing, wildlife habitat, preservation of rare and endangered species, fish migration, shellfish harvesting and estuarine habitat. The pedway system along the Bay provides recreational opportunities such as boating, windsurfing, kite boarding, fishing, walking, observation of wildlife, and biking.

Beach Park Boulevard, East Third Avenue and the pedway provide the primary public views of San Francisco Bay.

Belmont Slough. The Belmont Slough constitutes the southeastern boundary of the City of Foster City and continues to Redwood City. The Slough contributes three important functions as follows: it provides a flushing action to the Foster City Lagoon which maintains viability of the lagoon, it provides a similar action to control water levels in the Marina Lagoon, and it provides a natural wildlife refuge as a result of its tidal action, mudflats, and marshland vegetation. The Slough extends the waterfront amenities of the San Francisco Bay and provides a natural habitat for various wildlife species.

The pedway system affords the best views of the Belmont Slough and provides an opportunity to view bird species that frequent the Slough. A minimum of fifteen species of birds, ranging from the species normally associated with saltmarsh habitats to those normally associated with grassland habitats inhabit the terrestrial and slough areas in the immediate vicinity.

Marina Lagoon. The Marina Lagoon establishes the southwestern boundary of the City of Foster City and was originally Seal Slough similar to the Belmont Slough described above. The City of San Mateo converted it to a lagoon for storm drainage retention purposes and to serve as a boating area. The Marina Lagoon is an important visual and recreational amenity for the City of Foster City because it provides frontage along the water for the western boundary of the City of Foster City along Port Royal Avenue. The pedway and East Hillsdale Boulevard, especially at the Bridge, provide the best views of the Marina Lagoon in the City of Foster City.

The Foster City Lagoon. The Foster City Lagoon significantly contributes to Foster City's open space network because it extends waterfront amenities to the interior of the City rather than just along its boundaries.

The Foster City Lagoon was entirely man-made and is used as a storm drainage retention basin with gates at the south end and pumps at the north end. Surface drainage is collected and drained into the lagoon system where it is discharged by gravity or pumped into San Francisco Bay at the north end of the lagoon. Water from the Bay is taken into the lagoon system through tide gates located at the southeast end of the lagoon.

The recreational uses of the lagoon system include boating, windsurfing and swimming, along with passive recreational uses which are enhanced by the many views provided from waterfront land uses.

Views of the Foster City Lagoon system are provided from the City of Foster City Parks (Sea Cloud Park, Leo Ryan Park, Gull Park and Marlin Park) and individual residences. The best view of the system is provided from an airplane.

Vintage Park Lake. This artificial water system was constructed as part of the Vintage Park development. The lake has a public access easement over it and also serves as a drainage catch basin. The Vintage Park development also includes several small open areas near the existing lake. Most of the open areas are small plazas except for the green area and pathway around the lake. The circular green area provides opportunities for passive recreation within the development. A pedestrian pathway links these open areas with the remainder of the development and with the Vintage Park Lake.

3.12.2 REGULATORY SETTING

FEDERAL

There are no federal regulations that apply to the proposed project related to visual resources in the study area.

STATE

California Department of Transportation – California Scenic Highway Program

California's Scenic Highway Program was created by the Legislature in 1963 to preserve and protect scenic highway corridors from change, which would diminish the aesthetic value of lands adjacent to highways. The State laws governing the Scenic Highway Program are found in the Streets and Highways Code, Section 260 et seq.

The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been so designated. These highways are identified in Section 263 of the Streets and Highways Code. A list of California's scenic highways and map showing their locations may be obtained from the Caltrans Scenic Highway Coordinators.

If a route is not included on a list of highways eligible for scenic highway designation in the Streets and Highways Code Section 263 et seq., it must be added before it can be considered for official designation. A highway may be designated scenic depending on the extent of the natural landscape that can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view.

When a local jurisdiction nominates an eligible scenic highway for official designation, it must identify and define the scenic corridor of the highway. A scenic corridor is the land generally adjacent to and visible from the highway. A scenic highway designation protects the scenic values of an area. Jurisdictional boundaries of the nominating agency are also considered, and the agency must also adopt ordinances to preserve the scenic quality of the corridor or document such regulations that already exist in various portions of local codes. These ordinances make up the scenic corridor protection program.

To receive official designation, the local jurisdiction must follow the same process required for official designation of State Scenic Highways. The minimum requirements for scenic corridor protection include:

- Regulation of land use and density of development;
- Detailed land and site planning;
- Control of outdoor advertising (including a ban on billboards);
- Careful attention to and control of earthmoving and landscaping; and
- Careful attention to design and appearance of structures and equipment.

Local

City of Foster City General Plan

The adopted City of Foster City General Plan identifies the following goals, policies, and programs related to visual and aesthetic resources within Chapter 5 Parks and Open Space Element and Chapter 8 Conservation Element.

PARKS AND OPEN SPACE POLICIES

PC-10 **Improvements in Open Space.** Design any improvements in open space areas to minimize adverse impacts to habitats, including provision of a buffer to minimize human disturbances, views or other open space resources.

PC-12 **Bayfront Open Space System.** Provide a continuous open space system along San Francisco Bay and the Belmont Slough.

PC-13 **Wetlands Protection.** Protect the health and safety of the community by excluding development in environmentally sensitive areas which would result in a net loss of significant wetlands.

PC-14 **Wetland Areas North of East Third Avenue.** Pursue opportunities for enhancing or preserving existing wetland areas north of East Third Avenue and any significant habitat areas for endangered species.

PC-15 **Access to Existing Open Space.** Design open space already in public ownership to be more accessible to the public.

PC-16 **Open Space Access for Special Need Groups.** Design open space to be accessible to people with special needs such as elderly and handicapped persons.

PC-17 **Protection of Open Space Access.** Pursue public access to open space lands through the tentative map process, dedications, easements and other mechanisms.

PARKS AND OPEN SPACE PROGRAMS

PC-h **Existing Pedway Enhancement.** Enhance the existing pedway system by providing observation points, water fountains, additional and replacement landscaping, trash cans, additional paved access points with hand rails and additional benches along the pathways.

PC-k **Public Access.** Require dedication of open space lands or public access easements as a part of new development or redevelopment along the Bay or the Belmont Slough.

PC-l **Wetlands Enhancement.** Improve wetland areas in accordance with State and federal regulations to enhance the natural characteristics of the wetlands.

PC-n **Architectural Review**. Review all new development or improvement proposals through the City of Foster City's architectural review process for: (1) Impacts on access to sunlight on public areas; (2) provision of street furniture and attractive landscaping in public open spaces; and (3) impacts on waterfront views.

PC-s **Shoreline Band.** Work with the Bay Conservation Development Commission and the Association of Bay Area Governments to protect and enhance the 100-foot shoreline band for conservation and recreation.

PC-u **Leo J. Ryan Park and Boardwalk.** Complete the redesign and refurbishment of the park which includes landscaping, pathway repairs, park entry improvements and new restroom facilities.

PC-v **Bay Trail.** The City of Foster City shall work with the Bay Conservation Development Commission and all other applicable agencies to develop a Bay Trail System.

PC-cc **Maintenance of Lagoon Pathways.** The City of Foster City shall develop a program to identify which parties are responsible for maintenance of the areas adjacent to the lagoon.

CONSERVATION PROGRAMS

Protect and Conserve Natural Resources

C-g **Lagoon Views and Recreational Opportunities.** Conserve and protect the Foster City Lagoon System by maintaining accessibility for views and recreational opportunities.

C-x **Public Viewing Areas.** Expand public opportunities to learn about wetland areas and Protect and Conserve Natural Resources

C-y **Wetland Habitat.** Protect wetland habitat from human disturbance by posting signs prohibiting trespassing on vegetation typical of wetland areas.

C-aa **Projects in the Vicinity of Shoreline Band**. Strictly control development proposals in the vicinity of the shoreline band.

Foster City Zoning Ordinance

Title 17 of the City's Municipal Code establishes the City's zoning standards for future development. Chapter 17 establishes densities, height allowances, setbacks, and architectural design requirements for future development.

CHAPTER 17.58 - ARCHITECTURAL CONTROL AND SUPERVISION

Section 17.58.010 Intent and purpose.

A. It is the intent of the city council in enacting this chapter to protect the health, safety, and general welfare of the city by maintaining the high standards of architectural design that have distinguished Foster City as the first successful planned community created in California.

B. This chapter establishes procedures and criteria for review of proposed structures, buildings, and improvements to real property and modifications to such which are necessary in order to meet the following objectives:

1. To preserve the architectural character and scale of the neighborhoods and community;

2. To assure that development is well designed, in and of itself and in relation to surrounding properties, including that the height, facade length, roof form, colors, materials, and architectural details of a proposed building should be compatible with the

height, facade length, roof form, colors, materials, and architectural details of buildings in the immediate vicinity;

3. To prevent the erection of structures, additions or alterations or other property improvements which significantly impact the privacy of adjacent properties; cause a significant diminution of sunlight to the interior of an adjacent building or to the exterior of adjacent properties; cause undue glare or noise impacts to adjacent properties; and significantly block or limit existing views from the interior and exterior of adjacent properties, and that individual rights are weighed against the needs and requirements of the community;

4. To assure that developments enhance their sites and are harmonious with the highest standards of improvements in the surrounding area;

5. To promote and protect the health, safety and general welfare of the city;

6. To preserve views of and from the lagoons and waterways which provide a visual connecting link for adjacent lots and developments;

7. To enhance the residential and business property values within the city and in neighborhoods surrounding new or modified development;

8. To assure that each new development is designed to best comply with the intent and purpose of the zone in which the property is located and with the general plan of the city;

9. To encourage the maintenance, repair, replacement or improvement of surrounding properties. (Ord. 371 § 24 (part), 1989)

CHAPTER 17.68 - GENERAL PERFORMANCE STANDARDS

Section 17.68.080 Glare. No direct or reflected glare, whether produced by floodlight, high-temperature processes such as combustion or welding, or other processes, so as to be visible from any boundary line of property on which the same is produced, shall be permitted. Sky-reflected glare from buildings or portions thereof shall be so controlled by such reasonable means as are practical to the end that the sky-reflected glare will not inconvenience or annoy persons or interfere with the use and enjoyment of property in and about the area where it occurs. (Ord. 38 1 (part), 1972: prior code 10-406.508)

Foster City Standard Conditions of Approval

Foster City has adopted Standard Conditions of Approval (SCOAs) for large new and redevelopment projects. The following SCOAs related to Aesthetics and Visual Resources would apply to any proposed large new or redevelopment project:

SCOA 8.2: An exterior lighting plan including fixture and standard design, coverage and intensity, to be reviewed and approved by the Community Development Department and the Police Department. In its review of the lighting plan, the City shall ensure that any

outdoor night lighting proposed for the project is downward-facing, and shielded so as to minimize nighttime glare and lessen impacts to neighboring properties. The City shall also ensure that all development plans for the proposed project conform to the performance standards provided under Section 17.68.080 of the Foster City Municipal Code.

Foster City Architectural and Solar Guidelines

In order to promote a high quality of design for single-family development, the City of Foster City requires design review for public and private development proposals in the R-1 zoning district. Within this review process, the preservation of existing views to and from the City's lagoon and waterways is established. The Guidelines, as well as Zoning Ordinance Section 17.58.010, list a number of objectives. One of these objectives is "to preserve views of and from the lagoons and waterways which provide a visual connecting link for adjacent lots and developments." The applicant is required to consider the neighbors' views of the surrounding waterways and lagoons as part of the site planning process.

The site planning standards established by the Guidelines require that natural amenities such as the water, landscape, and views should be preserved and incorporated into site designs and that all exterior lighting should be functional, subtle, and architecturally integrated with the building style.

City of Foster City/Estero Municipal Improvement District Environmental Review Guidelines

The California Environmental Quality Act (CEQA) provides thresholds to determine the significance of environmental impacts as defined in Sections 21000-21177 of the Public Resources Code. The City will use these general, State-wide thresholds of significance as and when appropriate, depending on the type of project under review. The City of Foster City Thresholds of Local Significance are intended to augment the general, State-wide thresholds established in CEQA, based on important or sensitive local conditions, and Foster City community values.

Visual and Aesthetic Impacts. Projects that eliminate, limit, or significantly alter public views of the San Francisco Bay to persons using the levee/pedway, driving on or residing on Beach Park Blvd, between Teal Street and Foster City Blvd., shall be considered to have the potential to cause a significant adverse impact on the visual quality of the City and therefore shall require a visual impact analysis to be prepared by qualified experts and conducted as part of an overall environmental assessment on the project to be reviewed by the Planning Commission and/or City Council prior to approval of any land development permits. The visual impact analysis may consist of photomontage studies, computer simulations, or any other form of analysis approved by the Planning Commission or City Council.

Projects that propose the placement of residential, office, commercial, and/or retail land uses south of East Hillsdale Blvd., within established residential neighborhoods, in building configurations that are out-of-scale with immediately abutting properties or those within the neighborhood of the proposed project site, shall be considered to have the potential to cause a

significant adverse impact on the visual quality of the City and therefore shall require a visual impact analysis to be prepared by qualified experts and conducted as part of an overall environmental assessment on the project to be reviewed by the Planning Commission and/or City Council prior to approval of any land development permits. The visual impact analysis may consist of photomontage studies, computer simulations, or any other form of analysis approved by the Planning Commission or City Council.

3.12.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on aesthetics if it will:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings;
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

IMPACTS AND MITIGATION MEASURES

Impact 3.12-1: Project implementation could result in substantial adverse effects on visual character, including impacts to scenic vistas or scenic resources (Less than Significant)

While Foster City contains numerous areas and viewsheds with relatively high scenic value, there are no officially designated scenic vista points in Foster City. Additionally, as described above, there are no officially designated scenic highways located in Foster City. However, a number of areas in the City have been identified in the General Plan as an important scenic resource. These include views of the San Francisco Bay, Marina Lagoon, Belmont Slough, Foster City Lagoon and Canal System, and Vintage Park Lake.

Foster City is essentially a built-out community with distinct boundaries. New development will primarily come from redevelopment of underutilized infill sites at higher densities and intensities.

The introduction of new development into previously undisturbed areas may result in potentially significant impacts to scenic resources or result in the degradation of the City's visual character.

The adopted General Plan contains numerous policies and programs related to the preservation and enhancement of viewsheds. These applicable policies and programs are identified in the Regulatory Setting section of this chapter, and are summarized below.

- Policy PC-10 was established to protect open space areas by minimizing adverse impacts to habitats, including provision of a buffer to minimize human disturbances, views or other open space resources.
- Policy PC-12 provides for a continuous open space along San Francisco Bay and PC-13 and PC-14 protect the wetlands in the City.
- Policies PC-15, PC-16, and PC-17 consider accessibility of the wetlands for the public.
- Policy LU-B-1 provides for the preservation of waterfront views through the design review process.

The adopted General Plan also has many programs designed to protect scenic resources in the City.

- Programs PC-h, PC-I, and C-y call for the enhancement and protection of the existing pedway system and the City's wetlands.
- Program PC-C-x expands the public viewing areas in the City and Program PC-k require dedication of open space lands or public access for new development or redevelopment along the Bay or the Belmont Slough.
- Programs PC-s and C-aa discuss the protection and enhancement of the Shoreline Band.
- Program PC-v requires the City to work with the Bay Conservation Development Commission and all other applicable agencies to develop a Bay Trail System.
- Programs PC-cc and C-g require that the City develop a program to identify which parties are responsible for maintenance of the areas adjacent to the lagoon and conserve and protect the Foster City Lagoon System by maintaining accessibility for views and recreational opportunities.

In addition to those policies listed previously, the Land Use and Circulation Element Update, which is a component of the proposed project, includes new policies and programs related to the protection of visual and scenic resources in the City. Future development would be required to be consistent with the General Plan. A central theme of the General Plan is to preserve and protect the City's existing residential neighborhoods, and key scenic resources include waterways and the San Francisco Bay by concentrating new growth in and around existing urbanized areas, and protecting the existing visual character of the City.

The implementation of the policies and programs listed above that are currently in the adopted General Plan, as well as the policies and programs included in the proposed Land Use and Circulation Element Update would ensure that new development in Foster City is designed and implemented in such a way as to avoid, reduce, and minimize impacts to scenic resources in and around the city. Additionally, the implementation of the policies and actions proposed in the Land Use and Circulation Element would further ensure that new development is designed in a way that enhances the visual quality of the community, compliments the visual character of the city, and that adverse effects on public views are minimized. Any physical improvements to the built environment as a result of Climate Action Plan implementation would be subject to the same

design review and scenic resources protection requirements as any other project within the City. As such potential impacts of the proposed project on visual character, including scenic vistas and scenic resources, would be **less than significant**, and no mitigation is required.

GENERAL PLAN LAND USE AND CIRCULATION ELEMENT POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

***LUC-A**: **Preserve the Quality of the City's Residential Neighborhoods**. Preserve and strengthen the identity and qualities of Foster City's residential neighborhoods and assure that: (1) all new development, renovation or remodeling are harmoniously designed and operated to integrate with the existing neighborhood; (2) noise, traffic and other conflicts between residential and non-residential land uses are eliminated or minimized to the extent possible;(3) each residential neighborhood has access to a developed park or park-like recreational area within walking distance to most residents, and that park facilities are well maintained, diverse and adequate to meet the needs of residents; and (4) maintain availability of commercial and retail services.*

***LUC-A-2: Preservation of Views.** The City will use the design review process to balance the ability of the property owner to improve/expand their property with the desire of the owners of neighboring houses to continue to enjoy view of the San Francisco Bay or the Foster City Lagoon.*

LUC-A-3: Continue Code Enforcement Program.** The City will continue its code enforcement program to ensure that residential, commercial and industrial properties are maintained. This responsibility will include, but not be limited to, periodic spot checks of property throughout the City and follow-up investigation of property maintenance complaints. Property maintenance standards shall be enforced, including weed abatement, painting/staining of buildings, trash and debris removal from yards, **and planting and maintenance of landscaping.

***LUC-B: Promote Proper Site Planning, Architectural Design and Property Maintenance.** Ensure high quality site planning and architectural design for all new development, renovation or remodeling and require property maintenance to maintain the long- term health, safety, appearance and welfare of the community.*

***LUC-B-1: City Approach to Design (Architectural) Review.** The City will establish a continuing program of civic beautification, tree planting, maintenance of homes and streets, and other measures which will promote an aesthetically desirable environment in order that neighborhood areas appear attractive both within and without. The City will use a design review process (called Architectural Review) whereby the design of most public and private development proposals, including those for individual residences, are subject to review and approval by the City. The primary objective of this review is to preserve the character of the neighborhood and community regarding appropriate and acceptable design for property improvements. Design review shall address, among other things, the following issues:*

a. Preservation of the architectural character and scale of neighborhoods.

b. *That the development is well designed, in and of itself, and in relation to surrounding properties.*
c. *Preservation of waterfront views.*
d. *Minimizing impacts on the privacy and access to sunlight of adjacent properties.*
e. *Minimizing impacts due to excessive noise or undue glare.*
f. *Screening of unsightly uses including trash, loading docks/areas, roof top equipment, and special ventilating systems.*
g. *Use of setbacks, open space, and landscaping.*
h. *Exterior colors and materials.*

LUC-B-2: Residential Design Review Process. *The design review process shall be used to ensure compatibility of new residential projects, or property improvements, including room additions, with existing residential property, with the existing character of the neighborhoods in which they are located, and with respect to architectural style, scale, mass, bulk, color, materials, lot coverage and setbacks. Design review shall be used to ensure that new residential projects are protected from undesirable traffic, noise, or other intrusions, especially along arterial roads. Residential projects to be located near existing commercial or industrial land uses shall be appropriately designed to reduce noise, traffic, visual, and other potential conflicts.*

LUC-B-3: Architectural and Solar Guidelines and Related Policies. *In order to preserve the character of neighborhoods and the community and to ensure appropriate and acceptable design for property improvements, the Architectural and Solar Guidelines, as amended, the solar policy and other related policies adopted by the Planning Commission and City Council shall apply to the review of improvements in the R-1, Single-family Residential District.*

LUC-C-9: Parcels Adjacent to Waterways. *Development or redevelopment of parcels adjacent to waterways shall incorporate public open space or water-oriented design features into any development on these sites.*

LUC-D-9: Design Review of Commercial and Industrial Projects. *The City will use a design review process for commercial and industrial projects to ensure that basic land uses, density, access, internal circulation, visual characteristics, noise, odors, fire hazards, vibrations, smoke, discharge of wastes and nighttime lighting do not negatively affect adjacent or nearby residential land uses.*

LUC-H-5-a: Tree and Landscape Program. *Include requirements for tree and landscape planting in all new developments and redevelopment in design review and landscape guidelines.*

Impact 3.12-2: Project implementation could result in the creation of new sources of nighttime lighting and daytime glare (Less than Significant)

The primary sources of daytime glare are generally sunlight reflecting from structures and other reflective surfaces and windows. The primary sources of nighttime lighting are generally from exterior building lights, street lights and vehicle headlights. Exterior lighting around commercial and industrial areas may be present throughout the night to facilitate extended employee work hours, ensure worker safety, and to provide security lighting around structures and facilities. Nighttime lighting impacts would be most severe in areas that do not currently experience high levels of nighttime lighting. Increased nighttime lighting can reduce visibility of the night sky, resulting in fewer stars being visible and generally detracting from the quality of life in Foster City.

The City is almost fully built out. Future development in the City will involve redevelopment of currently developed areas and development of underutilized and infill sites. Future development has the potential to create new sources of nighttime lighting and daytime glare. Additionally, demolition and reconstruction and remodeling of building exteriors is allowed in the City. Implementation of the proposed project would potentially introduce new sources of daytime glare into areas of the City and increase the amount of daytime glare in existing neighborhoods.

Future development and redevelopment under the proposed General Plan Update and Climate Action Plan would be required to be consistent with the General Plan, as well as lighting requirements in the City Code. The proposed project contains policies and programs related to the regulation and reduction of daytime glare and nighttime lighting. Policy LUC-B-1 considers preservation of views of the San Francisco Bay and Foster City Lagoon through the design review process. Policy LUC-B-1 requires the minimization of daytime glare created by new development in the City.

Furthermore, Policies LUC-B-2 and LUC-D-9 require residential, industrial and commercial development to go through the Architectural Review process. These policies are implemented by Zoning Ordinance Chapter 17.58. Additionally, Zoning Ordinance Section 17.68.080 addresses potential glare and nighttime lighting issues within the City. The project includes policy LUC-B-3, which requires the City's architectural and solar guidelines to be used in evaluating development proposals.

Additionally, adopted Standard Conditions of Approval applied to development projects in the city, require protective standards to reduce impacts related to light and glare. Specifically, SCOA 8.2 requires an exterior lighting plan that includes fixture and standard design, coverage, and intensity to be reviewed and approved by the Community Development Department and the Police Department. In its review the City shall ensure that any outdoor night lighting proposed for the project is downward-facing, and shielded to minimize nighttime glare and lessen impacts to neighboring properties.

The guidelines stated above include standards to reduce impacts to nighttime lighting and glare through addressing lighting, use of metal materials, and design/placement of windows. Through the implementation of these policies required during the development review process, the City

can ensure that any adverse impacts resulting from the proposed project that are associated with daytime glare and nighttime lighting are reduced to a **less than significant** level.

GENERAL PLAN LAND USE AND CIRCULATION ELEMENT POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

LUC-B-3 **Architectural and Solar Guidelines and Related Policies.** In order to preserve the character of neighborhoods and the community and to ensure appropriate and acceptable design for property improvements, the Architectural and Solar Guidelines, as amended, the solar policy and other related policies adopted by the Planning Commission and City Council shall apply to the review of improvements in the R-1, Single-family Residential District.

LUC-B-1 **City Approach to Design (Architectural) Review.** The City will establish a continuing program of civic beautification, tree planting, maintenance of homes and streets, and other measures which will promote an aesthetically desirable environment in order that neighborhood areas appear attractive both within and without. The City will use a design review process (called Architectural Review) whereby the design of most public and private development proposals, including those for individual residences, are subject to review and approval by the City. The primary objective of this review is to preserve the character of the neighborhood and community regarding appropriate and acceptable design for property improvements. Design review shall address, among other things, the following issues:

a. Preservation of the architectural character and scale of neighborhoods.

b. That the development is well designed, in and of itself, and in relation to surrounding properties.

c. Preservation of waterfront views.

d. Minimizing impacts on the privacy and access to sunlight of adjacent properties.

e. Minimizing impacts due to excessive noise or undue glare.

f. Screening of unsightly uses including trash, loading docks/areas, roof top equipment, and special ventilating systems.

g. Use of setbacks, open space, and landscaping.

h. Exterior colors and materials.

LUC-B-2 **Residential Design Review Process.** The design review process shall be used to ensure compatibility of new residential projects, or property improvements, including room additions, with existing residential property, with the existing character of the neighborhoods in which they are located, and with respect to architectural style, scale,

mass, bulk, color, materials, lot coverage and setbacks. Design review shall be used to ensure that new residential projects are protected from undesirable traffic, noise, or other intrusions, especially along arterial roads. Residential projects to be located near existing commercial or industrial land uses shall be appropriately designed to reduce noise, traffic, visual, and other potential conflicts.

LUC-D-9 **Design Review of Commercial and Industrial Projects.** The City will use a design review process for commercial and industrial projects to ensure that basic land uses, density, access, internal circulation, visual characteristics, noise, odors, fire hazards, vibrations, smoke, discharge of wastes and nighttime lighting do not negatively affect adjacent or nearby residential land uses.

REFERENCES

The primary sources of data referenced for this section is derived from the following:

California Department of Transportation. 2012. California Scenic Highway Mapping System. http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm. Accessed September 30, 2012.

City of Foster City. 1989 reformatted 2001. Architectural and Solar Guidelines. Foster City, CA.

City of Foster City. 1993 revised 2009. General Plan. Foster City, CA.

City Of Foster City/Estero Municipal Improvement District. 2007. Environmental Review Guidelines. Foster City, CA.

City of Foster City, 2012. Title 17 of the Municipal Code as amended through September 24, 2012. Foster City, CA.

Metropolitan Planning Group. 2011. General Plan 2011 Update Snapshot Workbook. Foster City, CA.

This page left intentionally blank.

CEQA requires an EIR to evaluate a project's effects in relationship to broader changes occurring, or that are foreseeable to occur, in the surrounding environment. Accordingly, this chapter presents a detailed discussion, consistent with the requirements of CEQA, of the cumulative impacts, growth-inducing impacts, and significant and irreversible effects of the project, and growth inducement associated with the project.

4.1 CUMULATIVE IMPACTS

This Draft EIR provides an analysis of overall cumulative impacts of the project taken together with other past, present, and probable future projects producing related impacts, as required by Section 15130 of the California Environmental Quality Act Guidelines (State CEQA Guidelines). The goal of this analysis is twofold: first, to determine whether the overall long-term impacts of all such projects would be cumulatively significant; and second, to determine whether the project itself would cause a "cumulatively considerable" incremental contribution to any such cumulatively significant impacts. (See State CEQA Guidelines Sections 15130[a]-[b], Section 15355[b], Section 15064[h], Section 15065[c]; *Communities for a Better Environment v. California Resources Agency* [2002] 103 Ca1.App.4th 98, 120.) In other words, the required analysis intends to first create a broad context in which to assess the project's incremental contribution to anticipated cumulative impacts, viewed on a geographic scale well beyond the project area itself, and then to determine whether the project's incremental contribution to any significant cumulative impacts from all projects is itself significant (i.e., "cumulatively considerable" in CEQA parlance).

Pursuant to Section 15130(b) of the State CEQA Guidelines, "(t)he discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impacts to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact."

Section 3.0.2 in Chapter 3.0 of this Draft EIR provides a detailed description of the cumulative development assumptions used throughout this Draft EIR. Tables 3.0-1 and 3.0-2 identify the list of vacant buildings, approved but not yet constructed developments, and pending developments that were factored into the environmental analysis. Table 3.0-3 identifies population trends, including past and projected future population levels within the City. Table 3.0-4 identifies household trends, including the past and projected future numbers of households within the City. Table 3.0-5 identifies employment trends, including past and projected future employment numbers, based on information generated by the City.

CUMULATIVE EFFECTS OF THE PROJECT

Method of Analysis

Although the environmental effects of an individual project may not be significant when that project is considered separately, the combined effects of several projects may be significant when considered collectively. State CEQA Guidelines Section 15130 requires a reasonable analysis of a project's cumulative impacts, which are defined as "two or more individual effects which, when considered together are considerable or which compound or increase other environmental impacts." The cumulative impact that results from several closely related projects is: the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (State CEQA Guidelines 15355[b]). Cumulative impact analysis may be less detailed than the analysis of the project's individual effects (State CEQA Guidelines 15130[b]).

The State CEQA Guidelines Section 15130(b)(1) provides two approaches to analyzing cumulative impacts. The first is the list approach, which requires a listing of past, present, and reasonably anticipated future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency. The second is the plan approach, wherein the relevant projections contained in an adopted general plan or related planning document that is designed to evaluate regional or area-wide conditions contributing to the cumulative effect. For this Draft EIR, a combination of both the plan approach and the list approach been used to analyze cumulative impacts. The plan approach component assumes full buildout of the proposed Foster City General Plan and Land Use Map, as described in greater detail below. The list approach component assumes occupancy of vacant buildings, approved but not yet constructed developments, and pending developments.

Cumulative Impacts

Under CEQA, the discussion of cumulative impacts should focus on the severity of the impacts and the likelihood of their occurrence. The cumulative scenario for the proposed project includes growth planned for the City, as described in Chapter 3.0. Additionally, as described in Chapter 2.0, the proposed project would not approve or entitle any development projects in the City. The analysis of cumulative effects considered the cumulative projected General Plan buildout.

Cumulative impacts for most issue areas are not quantifiable and are therefore discussed in general terms as they pertain to development patterns in the surrounding region. In consideration of the cumulative scenario described above, the proposed project may result in the following cumulative impacts.

AIR QUALITY

Impact 4.1: Cumulative Impact on the Region's Air Quality (Less than Cumulatively Considerable)

Construction of the individual development projects allowed under the land use designations of the City's General Plan would lead to moderate increases in vehicle trips on local roadways, increases in energy consumption, and increases in air quality emissions from mobile stationary sources. The 2010 Clean Air Plan, prepared by the Bay Area Air Quality Management District, contains 55 control measures aimed at reducing air pollution in the Bay Area. Along with the traditional stationary, area, mobile source and transportation control measures, the 2010 Clean Air Plan contains a number of new control measures designed to protect the climate and promote mixed use, compact development to reduce vehicle emissions and exposure to pollutants from stationary and mobile sources.

The proposed project includes updates to the policies and programs in the City's Land Use and Circulation Element, as well as adoption of a Climate Action Plan. The Land Use and Circulation Element includes numerous strategies that promote the development of higher density mixed-use projects to reduce vehicle emissions throughout the City. The Climate Action Plan includes measures and programs that would achieve a 15 percent reduction in GHG emissions by the year 2020. The GHG reduction measures contained in the CAP would also serve to reduce emissions of other criteria air pollutants through the implementation of energy reduction measures, measures to reduce vehicle trips, and measures that reduce the generation of solid waste.

The BAAQMD CEQA Guidelines provides numerous policy recommendations that are intended to ensure consistency with the 2010 Clean Air Plan. As described in greater detail under Impact 3.1-1 in Chapter 3.1, the policies and actions included throughout the existing and proposed elements of the Foster City General Plan, most specifically within the 2003 Conservation Element and the proposed Land Use and Circulation Element, cover the breadth and intent of the air quality recommendations contained in the 2010 Clean Air Plan by promoting a compact and mixed-use development pattern that focuses new development at infill locations, prioritizes improvements to the bicycle and pedestrian network, and emphasizes the expansion of transit and alternative transportation options.

The addition of these new policies and programs, and the continued implementation of the existing policies and programs in the City's General Plan would ensure that future development projects and planning activities within the City comply with regional efforts to reduce air quality emissions throughout the Bay Area, which would reduce the project's contribution to cumulative air quality impacts to a **less than cumulatively considerable** level.

BIOLOGICAL RESOURCES

Impact 4.2: Cumulative Loss of Biological Resources Including Habitats and Special Status Species (Less than Cumulatively Considerable)

Cumulative development anticipated in the region may result in impacts to biological resources, including the permanent loss of habitat for special-status species, direct and indirect impacts to special-status species, and reduction and degradation of sensitive habitat. Subsequent projects implemented under the City's General Plan would be required to be consistent with the policies and programs of the General Plan. The Conservation Element of the General Plan establishes policies and programs that are designed to protect and conserve special status species and their habitat, as discussed in Chapter 3.2.

However, as discussed in Chapter 3.2, the City of Foster City is essentially a built-out community and new development will primarily come from in-fill sites or redevelopment of underutilized sites. New development would not occur within any of the significant biological features located in the City, and would not contribute the loss of biological resources or sensitive habitat in the region. As such, the project would have a **less than cumulatively considerable** impact on biological resources.

CULTURAL RESOURCES

Impact 4.3: Cumulative Impacts on Known and Undiscovered Cultural Resources (Less than Cumulatively Considerable)

Construction of the individual development projects allowed under the land use designations of the City's General Plan may result in the discovery and removal of cultural resources, including archaeological, paleontological, historical, and Native American resources and human remains. However, Foster City is largely built-out and future development would occur on limited in-fill sites or as redevelopment on developed but underutilized sites. As discussed in Section 3.3, future development would require project-specific surveys for potential resources and to evaluate any resources discovered during construction activities. Mitigation Measure 3.3-1 would update the City's General Plan Conservation Element to include additional policy requirements to ensure that all individual projects either avoid known cultural or historical resources, or take steps to implement amelioration methods to reduce impacts to known cultural or historical resources. Adherence to these policies, actions, and regulations will avoid and/or minimize a cumulative loss of these important resources if they are found during project-specific surveys or construction and would reduce impacts associated with cumulative development to a less than significant level. Therefore, the proposed project's incremental contribution to cumulative cultural resource impacts would be **less than cumulatively considerable**.

GEOLOGY AND SOILS

Impact 4.4: Cumulative Impacts related to Geology and Soils (Less than Cumulatively Considerable)

Construction of the individual development projects allowed under City's General Plan may result in risks associated with geology and soils. For example, there will always be a chance that a fault located anywhere in the state (or region) could rupture and cause seismic ground shaking, although the relative risk to safety from the potential ground shaking within most of the County is considered low. Additionally, grading, excavation, removal of vegetation cover, and loading activities associated with construction activities could temporarily increase runoff, erosion, and sedimentation. Other geologic risk such as liquefaction, landsliding, lateral spreading, and soil expansion are also geologic risks that are present.

While some cumulative impacts may occur in the region as individual projects are constructed, the City's General Plan policies and programs, as well as State and federal regulations (all of which are identified in Section 3.4.2 in Chapter 3.4), will reduce the risk to people in the region. Considering the protection granted by local, state, and federal agencies and their requirements for the seismic design, as discussed in Chapter 3.4, the overall cumulative impact would not be significant. By the same token, the proposed project's incremental contribution to cumulative geologic and soil impacts would be **less than cumulatively considerable**.

GREENHOUSE GASES AND CLIMATE CHANGE

Impact 4.5: Increased Greenhouse Gas Emissions May Contribute to Climate Change (Less than Cumulatively Considerable)

Impacts 3.5-1 and 3.5-2 in Chapter 3.5 provide a cumulative-level analysis of GHG emissions impacts and the proposed project's consistency with applicable plans, policies, and regulations adopted for the purpose of reducing the emissions of greenhouse gases. The City has taken extraordinary steps to develop a comprehensive and meaningful Climate Action Plan and updated Land Use and Circulation Element that will result in significant reductions in GHGs over the life of the General Plan. The proposed project represents a comprehensive effort to significantly reduce GHG emissions across a broad spectrum of community-wide and municipal emissions sectors. The City will have achieved compliance with AB 32 by adopting a CAP that meets the statewide reduction targets.

The CAP provides specific and concrete direction to the City and development community and includes numerous specific and enforceable measures that would apply to new development in order to reduce individual subsequent projects' contributions to climate change. Compliance with the CAP and implementation of applicable CAP measures would ensure that subsequent projects, which are consistent with the General Plan, would have a less than cumulatively considerable contribution to climate change and greenhouse gases. The analysis presented above demonstrates that the implementation of the CAP for all subsequent development projects would assist the City in meeting the projected business as usual reduction of more than 15 percent. Therefore, subsequent projects, including development projects, that are consistent with the

General Plan and implement applicable CAP measures, would not result in a significant or considerable cumulative contribution to climate change and the generation of GHGs. Therefore, this impact is **less than significant and less than cumulatively considerable**.

HAZARDS

Impact 4.6: Cumulative impacts from hazardous materials and human health risks. (Less than Cumulatively Considerable)

Construction of the individual development projects allowed under the land use designations of the General Plan may involve the transportation, use, and/or disposal of hazardous materials, which may involve the use of equipment that contains hazardous materials (e.g., solvents and fuels, diesel-fueled equipment), or the transportation of excavated soil and/or groundwater containing contaminants from areas that are identified as being contaminated. Furthermore, some will inevitably transport or use hazardous materials within ¼ mile of a school, or other sensitive receptors such as hospitals and residences.

While some cumulative impacts will occur in the region as individual projects are constructed, the City's General Plan policies and programs, as well as State and federal regulations, will reduce the risk to people in the region. Considering the protection granted by local, State, and federal agencies and their requirements for the use of hazardous materials in the region, as discussed in Section 3.6, the overall cumulative impact would be less than significant. By the same token, the proposed project's incremental contribution to cumulative hazards and human health impacts would be **less than cumulatively considerable**.

HYDROLOGY AND WATER QUALITY

Impact 4.7: Cumulative impacts related to Hydrology and Water Quality. (Less than Cumulatively Considerable)

Construction of the individual development projects allowed under the land use designations of the General Plan has the potential to have construction and dewatering related water quality impacts, impacts to groundwater recharge, and cause flooding, erosion, or siltation from the alteration of drainage patterns.

While some cumulative impacts will occur in the region as individual projects are constructed, the General Plan policies and programs, as well as State and federal regulations, will substantially reduce the impacts. Considering the protection granted by local, State, and federal agencies and their permit and monitoring requirements, as discussed in Section 3.7, the overall cumulative impact would not be significant. By the same token, the proposed project's incremental contribution to cumulative hydrology impacts would be **less than cumulatively considerable**.

LAND USE AND POPULATION

Impact 4.8: Cumulative Impact associated with Land Use Plans (Less than Considerable Contribution)

Cumulative land use and planning impacts, such as the potential for conflicts with adjacent land uses and consistency with adopted plans and regulations, are typically site- and project-specific. Under cumulative conditions, individual projects may require removal of homes and result in the displacement of people and housing; however, these effects are not cumulatively considerable because there is adequate replacement housing allowed under the General Plan.

New development and redevelopment projects would be designed to complement the character of existing communities and provide connectivity between existing development and new development within the cumulative analysis area. For example, proposed Land Use Element Goal LUC-A and implementing Policy LUC A-1 (formerly Policy LUC-7) address the preservation of the identify and qualities of the City's residential neighborhoods through assuring that all new development, renovation or remodeling are harmoniously designed and operated to integrate with the existing neighborhood. Future projects would be reviewed for consistency with adopted land use plans and regulations. It is anticipated that cumulative development under the General Plan would have a less than significant effect. The proposed Land Use and Circulation Element has been prepared to be consistent with other elements of the General Plan and carries forward policies from the adopted element that address adequate public facilities and services, visual resources, and open space. The changes to the Land Use and Circulation Element and the proposed Climate Action Plan would not conflict with the adopted General Plan, including policies and actions that have been adopted to address potential environmental impacts, nor would they conflict with other plan, policies, or regulations adopted to mitigate an environmental effect. The incremental contribution of the proposed Land Use and Circulation Element update and CAP would be **less than cumulatively considerable**.

NOISE

Impact 4.9: Cumulative Exposure of Noise-Sensitive Land Uses to Noise in Excess of Normally Acceptable Noise Levels or to Substantial Increases in Noise (Less than Cumulatively Considerable)

Construction of the individual development projects allowed under the land use designations of the City's General Plan may result in the generation of site-specific noise increases from stationary noise sources, and may contribute incrementally to noise from mobile sources. However, Foster City is largely built-out and future development would occur on limited in-fill sites or as redevelopment on developed but underutilized sites.

As discussed in Section 3.9, buildout of the updated General Plan would not contribute to an exceedance of the City's transportation noise standards and would not result in significant increases in traffic noise levels at existing sensitive receptors. Additionally, the existing 1993 General Plan includes policies and actions that are intended to reduce noise associated with

transportation and stationary noise sources. Specifically, policies N-1, N-3, N-4, N-5, N-6, N-7, N-8, N-9, N-10, N-13, and N-14 would reduce noise associated with transportation and stationary noise sources through a range of measures and approaches. These existing noise-related policies include requirements for the preparation of project-specific noise studies, compliance with adopted City standards and thresholds of interior and exterior noise level exposure, the use of mitigation measures and techniques to reduce noise exposure, and land use compatibility standards. Therefore, the proposed project's incremental contribution to cumulative noise impacts would be **less than cumulatively considerable**.

PUBLIC SERVICES AND UTILITIES

Impact 4.10: Cumulative Impact on Public Services and Recreation (Less than Cumulatively Considerable)

Cumulative growth that would occur over the life of the General Plan will result in increased demand for public services, including fire protection, law enforcement, schools, parks, libraries, and other public and governmental services. The service area for each of these utilities and services is considered the cumulative analysis area. As the demand for public services and recreation increases, there will likely be a need to increase staffing and equipment in order to maintain acceptable service ratios, response times, and other performance standards. New or expanded service structures (e.g., offices, maintenance and administrative buildings, schools, parks, fire departments, libraries, etc.) will be needed to provide for adequate staffing, equipment, and appropriate facilities to serve growth within the cumulative analysis area.

As described in Chapter 3.10, the General Plan includes a range of policies and programs that would ensure that public services are provided in a timely fashion, are adequately funded, and that new development funds its fair share of services. The General Plan includes policies to ensure that fire protection and law enforcement services keep pace with new development and that other governmental services are adequately planned and provided. The General Plan also includes an action to maintain a Capital Improvement Program to defray the cost of developing public facilities. With implementation of General Plan policies and programs, including those established by the proposed project, the proposed project's incremental contribution to cumulative public services and recreation impacts would be **less than cumulatively considerable**.

Impact 4.11: Cumulative Impact from Public Utilities (Less than Cumulatively Considerable)

Under buildout conditions, development allowed by the General Plan would increase the demand for water supply, wastewater conveyance and treatment, and solid waste disposal. Future development would be limited to in-fill projects and redevelopment of underutilized sites. Growth associated with buildout of the General Plan, as well as that associated with the proposed project, is summarized in Table 3.0-3.

Chapter 3.10 describes the water supply and wastewater treatment impacts associated with implementation of the proposed project. Under cumulative conditions, individual projects proposed within the EMID service area would be required to calculate precise water demands and

identify whether any additional facilities needed to provide adequate long-term water supply. EMID would continue to maintain its Urban Water Management Plan, as required by state law. Individual projects within the San Mateo/Foster City Wastewater Treatment Plan service area would be required to calculate precise wastewater generation and identify whether additional facilities would be needed to provide adequate long-term wastewater treatment. The General Plan includes policies and programs, as described in Chapter 3.10 under Impact 3.10-2, that ensure continued water conservation efforts and adequate planning and provision of public facilities, including water supply and wastewater treatment and conveyance, and methods to reduce solid waste generation. The policies and programs related to water supply contained in the General Plan and proposed Land Use and Circulation Element Update would reduce the proposed project's contribution to cumulative utilities impacts by encouraging water conservation, requiring on-going planning to ensure adequate water supply and wastewater treatment, including any necessary infrastructure, and to continue to reduce solid waste. As such, the proposed project's contribution to this impact is considered to be **less than cumulatively considerable.**

TRANSPORTATION AND CIRCULATION

Impact 4.12: Cumulative Impact on the Transportation Network (Less than Cumulatively Considerable)

The impact analyses in Chapter 3.11 of this EIR addressed potential impact's to the City's transportation network under cumulative, or General Plan buildout, conditions. As described in greater detail in Chapter 3.11, cumulative impacts were identified for those intersections that would degrade from an acceptable level to an unacceptable level and if the increase in delay was more than four seconds between Cumulative Plus Project and Cumulative No Project Conditions. No significant intersection impacts were identified. Additionally, the amount of added traffic to Southbound US 101, south of East Hillsdale Boulevard during the PM peak hour and Eastbound SR 92, between US 101 and Mariners Island Boulevard/Edgewater Boulevard during the PM peak hour due to the proposed project would be less than one percent of those segments' capacities. Therefore, the project's contribution to these cumulative impacts is less-than-significant and no mitigation is required. The proposed project would result in a **less than cumulatively considerable** impact to the local transportation network.

VISUAL RESOURCES

Impact 4.13 Cumulative Degradation of the Existing Visual Character of the Region (Less than Cumulatively Considerable)

As described in Chapter 3.12, Foster City is mostly built-out. Future development that could occur under cumulative conditions would be located on in-fill lots or would be redevelopment of underutilized sites. Future development allowed under the General Plan would not result in the conversion of any of the City's visual resources to residential, commercial, or other land uses. The General Plan contains numerous policies and programs related to the preservation and enhancement of viewsheds, the protection of scenic resources, and regulations to reduce potential increases in light and glare. Individual development projects would be required to be consistent with these General Plan policies and programs. The proposed project would further the

protection of scenic resources and maintain visual character as discussed under Impact 3.12-1. The proposed project would have a **less than cumulatively considerable** contribution to impacts to visual and scenic resources.

4.2 GROWTH-INDUCING EFFECTS

INTRODUCTION

Section 15126.2(d) of the CEQA Guidelines requires that an EIR evaluate the growth-inducing impacts of a proposed action. A growth-inducing impact is defined by the CEQA Guidelines as:

> *The way in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth…It is not assumed that growth in an area is necessarily beneficial, detrimental, or of little significance to the environment.*

Based on the State CEQA Guidelines, growth inducement is any growth that exceeds planned growth of an area and results in new development that would not have taken place without implementation of the project. A project can have direct and/or indirect growth inducement potential. Direct growth inducement would result if a project, for example, involved construction of new housing. A project would have indirect growth inducement potential if it established substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises) or if it would involve a construction effort with substantial short-term employment opportunities that would indirectly stimulate the need for additional housing and services to support the new employment demand *(Napa Citizens for Honest Government v. Napa County Board of Supervisors* (Cal. App. 1st Dist., 2001)). Similarly, a project would indirectly induce growth if it would remove an obstacle to additional growth and development, such as removing a constraint on a required public service. A project providing an increased water supply in an area where water service historically limited growth could be considered growth-inducing.

The State CEQA Guidelines further explain that the environmental effects of induced growth are considered indirect impacts of the proposed action. These indirect impacts or secondary effects of growth may result in significant, adverse environmental impacts. Potential secondary effects of growth include increased demand on other community and public services and infrastructure, increased traffic and noise, and adverse environmental impacts such as degradation of air and water quality, degradation or loss of plant and animal habitat, and conversion of agricultural and open space land to developed uses.

Growth inducement may constitute an adverse impact if the growth is not consistent with or accommodated by the land use plans and growth management plans and policies for the area affected. Local land use plans provide for land use development patterns and growth policies that allow for the orderly expansion of urban development supported by adequate urban public services, such as water supply, roadway infrastructure, sewer service, and solid waste service.

Components of Growth

The timing, magnitude, and location of land development and population growth in a region are based on various interrelated land use and economic variables. Key variables include regional economic trends, market demand for residential and non-residential uses, land availability and cost, the availability and quality of transportation facilities and public services, proximity to employment centers, the supply and cost of housing, and regulatory policies or conditions. Since the general plan of a community defines the location, type, and intensity of growth, it is the primary means of regulating development and growth in California.

GROWTH EFFECTS OF THE PROJECT

Population Growth

The primary factors that account for population growth are natural increase and net migration. In San Mateo County, the average annual birth rate was 1.3 percent in 2010 and 2011 as indicated by the DOF *Historical and Projected State and County Births, 1970-2021, with Actual and Projected Fertility Rates by Mother's Age and Race/Ethnicity, 2000-2021* and *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011 and 2012, with 2010 Benchmark* reports. Additionally, while San Mateo County represents approximately 1.9 percent of the statewide population, the County's immigration rate represents 2.4 percent of statewide immigration based on data from the DOF *Immigration by County, 1984-2011* report. Other factors that affect growth include the cost of housing, the location of jobs, the economy, the climate, and also, transportation. While these factors would likely result in growth in San Mateo County during the planning period of the Land Use and Circulation Element, the existing element and update to the element includes policies and actions designed to spur additional economic growth, which could result in additional population growth.

While the proposed project would change land use designations on two sites, these sites would be designated for parks uses, and would not accommodate any additional population growth. As discussed in Chapter 3.0 and Chapter 3.8, the Land Use and Circulation Element update does consider future growth associated with planned and approved projects and this EIR analysis identifies potential impacts associated with full buildout of the proposed General Plan.

Growth Effects Associated with the Proposed Project

The project would not directly result in population growth. The project does not propose nor entitle any development projects. The proposed Land Use and Circulation Element includes many policies and programs from the adopted element and would ensure that the City continues to plan for adequate transportation, public facilities, and services necessary to allow future growth. However, all of this growth could occur under the adopted Land Use and Circulation Element. The proposed project also includes a Climate Action Plan, which encourages energy efficiency and conservation in new and existing development, improved public transit and infrastructure to support alternative modes of travel, such as pedestrian and bicycle trips, these infrastructure improvements are not anticipated to result in increased population growth. Rather, these

improvements will accommodate planned population growth and will result in beneficial environmental effects related to growth.

Under cumulative conditions, growth associated with the General Plan, including the proposed Land Use and Circulation Element, may result in population, housing, and employment increases that exceed ABAG's population and housing projections for the City. As described in Chapter 3.0, upon full buildout of the proposed General Plan Land Use Map, the City's population may increase up to 33,900 persons, the City may have up to 12,950 households, employment may reach up to 27,560 jobs, and there may be up to 8,960,628 square feet of jobs-generating building space.

While the proposed project encourages continued re-use and redevelopment of sites within the City to provide for economic and population growth, the project is not anticipated to result in a significant population increase in the region, as indicated in Table 3.0-3. As previously identified, much of the cumulative growth that could occur in the City would be accommodated under the adopted General Plan and Land Use Map. Therefore, growth is anticipated to occur regardless of adoption of the proposed project as development and other growth projects could continue to be approved and implemented by the City and its neighboring communities. Growth will primarily occur as a result of external market forces, such as the availability of financing, the employment rate, and construction costs. The City's Housing Element and Land Use Map will accommodate future housing growth and will help to ensure that the City can accommodate its fair share of housing for all income groups. While the proposed project would not result in a significant increase in the amount of growth, it would encourage growth to be developed in an orderly fashion, ensure adequate infrastructure, and provide for methods to reduce vehicle trips and energy consumption associated with development and public services.

The environmental effects of cumulative growth, and the proposed project's contribution to such effects, are described under Impacts 4.1 through 4.12.

4.3 SIGNIFICANT IRREVERSIBLE EFFECTS

CEQA requires that EIRs prepared for the adoption of a plan, policy, or ordinance of a public agency must include a discussion of significant irreversible environmental changes as a result of project implementation. State CEQA Guidelines Section 15126.2(c) describes irreversible environmental changes as:

> *"Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified."*

Consumption of nonrenewable resources refers to the loss of physical features within the natural environment, including the conversion of agricultural lands, open space, sensitive habitats, and

nonrenewable energy use. The proposed project anticipates the development of infill sites and re-use of underutilized sites, which would conserve agricultural and other natural resources in the region. The proposed project does not propose to change the land use designations of the City's open spaces or waterways and, as a result, will minimize the potential for impacts to the nonrenewable resources, including biological resources and waterways

Non-renewable energy resources such as electricity, natural gas, propane, gasoline, and diesel would be consumed during the construction and operation of development allowed under the proposed project. The proposed project includes the Climate Action Plan, which would establish a variety of policies and programs that seek conserve, protect, and minimize the use of non-renewable energy sources and encourage use of renewable energy resources. These policies focus on energy efficiency in the design, materials, construction, and use of buildings, the use of alternative energy systems, and development of renewable energy sources.

Future development and infrastructure projects consistent with the proposed Land Use and Circulation Element update and Climate Action Plan would result in irretrievable commitments by accommodating development and infrastructure onto sites that are presently undeveloped. Development will physically change the environment in terms of aesthetics, air emission, noise, traffic, open space, and natural resources as discussed in Chapters 3.1 through 3.12. While these physical changes are not individually significant, these physical changes are irreversible after development occurs. Therefore, the proposed project would allow irreversible changes within the City that would involve permanent commitment of resources, including land and energy.

In summary, the General Plan and Climate Action Plan, including amendments associated with the proposed project, include an extensive policy framework that is designed to address land use and environmental issues to the greatest extent feasible while allowing growth and economic development for the City. However, even with the policies and actions that will serve to reduce potential significant impacts, implementation of the proposed project would result in significant irreversible changes, including the consumption of land and nonrenewable energy resources. However, given that all future development that may occur in Foster City would occur within the City limits on land that has been previously disturbed and developed, and that implementation of the Climate Action Plan would significantly reduce the consumption of non-renewable resources, this impact is considered a **less than significant** impact.

4.4 SIGNIFICANT AND UNAVOIDABLE IMPACTS

State CEQA Guidelines Section 15126.2(b) requires an EIR to discuss unavoidable significant environmental effects, including those that can be mitigated but not reduced to a level of insignificance. As discussed under Impact 3.7-7, project implementation may expose people or structures to a significant risk of loss, injury, or death involving flooding as a result of sea level rise, which is considered a significant and unavoidable impact. As discussed under Impact 3.9-4, Construction Noise would be significant and unavoidable. No other significant and unavoidable impacts have been identified in this EIR.

This page left intentionally blank

5.1 CEQA REQUIREMENTS

CEQA requires that an EIR analyze a reasonable range of feasible alternatives that meet most or all project objectives while reducing or avoiding one or more significant environmental effects of the project. The range of alternatives required in an EIR is governed by a "rule of reason" that requires an EIR to set forth only those alternatives necessary to permit a reasoned choice (CEQA Guidelines Section 15126.6[f]). Where a potential alternative was examined but not chosen as one of the range of alternatives, the CEQA Guidelines require that the EIR briefly discuss the reasons the alternative was dismissed.

Alternatives that are evaluated in the EIR must be potentially feasible alternatives. However, not all possible alternatives need to be analyzed. An EIR must "set forth only those alternatives necessary to permit a reasoned choice." (CEQA Guidelines, Section 15126.6(f).) The CEQA Guidelines provide a definition for a "range of reasonable alternatives" and, thus limit the number and type of alternatives that need to be evaluated in an EIR.

First and foremost, alternatives in an EIR must be potentially feasible. In the context of CEQA, "feasible" is defined as:

> *… capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors.* (CEQA Guidelines 15364)

The inclusion of an alternative in an EIR is not evidence that it is feasible as a matter of law, but rather reflects the judgment of lead agency staff that the alternative is potentially feasible. The final determination of feasibility will be made by the lead agency decision-making body through the adoption of CEQA Findings at the time of action on the project. (Mira Mar Mobile Community v. City of Oceanside (2004) 119 Cal.App.4th 477, 489 see also CEQA Guidelines, §§ 15091(a)) (3)(findings requirement, where alternatives can be rejected as infeasible); 15126.6 ([an EIR] must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation"). The following factors may be taken into consideration in the assessment of the feasibility of alternatives: site suitability, economic viability, availability of infrastructure, general plan consistency, other plan or regulatory limitations, jurisdictional boundaries, and the ability of the proponent to attain site control (Section 15126.6 (f) (1)).

Equally important to attaining the project objectives is the reduction of some or all significant impacts, particularly those that could not be mitigated to a less-than-significant level. As discussed under Impact 3.7-7, project implementation may expose people or structures to a significant risk of loss, injury, or death involving flooding as a result of sea level rise, which is considered a significant and unavoidable impact. As discussed under Impact 3.9-4, Construction Noise would be significant and unavoidable. No other significant and unavoidable impacts have been identified in this EIR.

The following analysis of alternatives focuses on significant impacts, including both those that can be mitigated to a less than significant level and those that would remain significant even if mitigation is applied or for which no feasible mitigation is available.

A Notice of Preparation and a Recirculated Notice of Preparation were circulated to the public to solicit recommendations for a reasonable range of alternatives to the project. No specific alternatives were recommended by commenting agencies or the general public during the NOP and Recirculated NOP public review process.

PROJECT OBJECTIVES

The alternatives to the project selected for analysis in the EIR were developed to minimize significant environmental impacts while fulfilling the basic objectives of the project. As described in Chapter 2, Project Description, the following objectives have been identified for the proposed project.

- Update the Land Use and Circulation Element to eliminate goals, policies, and programs that are no longer relevant and ensure the Element reflects the goals, policies, and programs needed to guide the development and growth of the City while maintaining and enhancing the quality of life of the citizens through 2025.
- Update the Land Use Map to reflect current development patterns and City plans for new parks and open space areas.
- Provide methods for reducing Foster City's greenhouse gas emissions consistent with the direction of the State of California through the Global Warming Solutions Act (AB 32), Governor's Order S-03-05, and Public Resources Code Section 21083.3.
- Create a programmatic tiering document that addresses the elements identified at CEQA Guidelines Section 15183.5(b)(1).
- Address new requirements of State law.

5.2 ALTERNATIVES CONSIDERED IN THIS EIR

Four alternatives to the project were considered based on the analysis performed to identify the environmental effects of the proposed project (No Project, Reduced Project, Alternative Location, and Revised Project). Due to the nature of the project, there are limited alternatives to evaluate. Two of the alternatives considered, the No Project Alternative and the Revised Project Alternative, were ultimately selected for detailed analysis. The planning horizon for the alternatives analysis is based on buildout of the General Plan.

ALTERNATIVES NOT SELECTED FOR FURTHER ANALYSIS

The following alternatives were considered, but not selected for further analysis for the reasons described below:

- Reduced Project Alternative – A project alternative consisting of solely the Land Use and Circulation Element or Climate Action Plan (CAP) was considered, but rejected as no significant environmental impacts would be avoided by limiting the scope of the project in this manner. Similarly, no reduction to the policy framework set forth in the Land Use and Circulation Element or to the measures included in the CAP was considered as no significant environmental impacts would be avoided by such an alternative.

- Alternative Location – A project alternative consisting of an alternative project location was not considered, as the Land Use and Circulation Element and CAP are applied on a city-wide basis.

ALTERNATIVES TO THE PROJECT

The alternatives analyzed in this EIR include the following:

- Alternative 1: No Project Alternative. Under Alternative 1, the City would not adopt the Land Use and Circulation Element or CAP. The General Plan would continue to be implemented and no changes to the General Plan, zoning, or City policies or programs associated with the project would occur.

- Alternative 2: Full General Plan Update Project Alternative. Alternative 2 would include a comprehensive update of all General Plan elements, rather than just the Land Use and Circulation Element. The CAP would also be adopted under this alternative. It is assumed that the proposed Land Use Map would remain unchanged under this alternative.

5.3 ENVIRONMENTAL ANALYSIS

The alternatives analysis provides a summary of the relative impact level of significance associated with each alternative for each of the environmental issue areas analyzed in this EIR. Following the analysis of each alternative, Table 5-1 summarizes the comparative effects of each alternative.

ALTERNATIVE 1- NO PROJECT ALTERNATIVE

Under Alternative 1, the City would continue to implement the adopted General Plan and no changes would be made to update the Land Use and Circulation Element, the Land Use Map, and the CAP would not be adopted. Alternative 1, like the proposed project, would not directly result in any new development nor grant any entitlements for development. New development

is anticipated to occur regardless of adoption of Alternative 1 as development and other projects could continue to be approved and implemented by the City.

Under Alternative 1, the City would not amend the Land Use and Circulation Element to: add new goals, policies, and actions to address sustainability, preservation of views, live/work housing units, encourage new development and redevelopment that meets the community's needs, encourage mixed use developments, and ensure that the City's transportation and circulation system meets the needs of the community and provides complete streets. The Land Use and Circulation Element would not be updated to reflect current codes, trends, design guidelines, master plans, and programs that have been initiated or adopted by the City since the last update. The Land Use and Circulation Element would not be updated to reflect existing conditions and to include improvements necessary to accommodate currently proposed, approved, and anticipated development.

The long-term benefits of the project associated with reductions in greenhouse gas emissions would not occur under this alternative, as the CAP would not be adopted, and the City would not establish a concrete plan to reduce projected GHG emissions by 15 percent by 2020.

Greenhouse Gases and Climate Change

Under the proposed project, impacts associated with greenhouse gases and climate change would be reduced to a less than significant level. The proposed CAP would assist the City in achieving a 15 percent reduction in GHG emissions by 2020, and would comply with the GHG reduction goals established by AB 32.

Under the No Project Alternative, implementation of the adopted General Plan would result in significant and unavoidable greenhouse gas and climate change impacts and no framework for mitigation, such as the CAP, would be in place to reduce these long-term and cumulative impacts. The City would not be in compliance with Assembly Bill 32 and would not contribute to regional and global efforts to address greenhouse gas emissions. Under Alternative 1, greenhouse gas and climate change impacts would be **worse** than the proposed project and would be significant and unavoidable.

Air Quality, Noise, and Transportation

Under the proposed project, impacts associated with air quality and transportation would be less than significant. Under the proposed project most noise-related impacts would be less than significant, however, construction-related noise impacts would be significant and unavoidable.

Under the No Project Alternative, future development could continue to occur in the City at the same intensity and in the same locations when compared to the proposed project. The primary difference would be that under the No Project Alternative the Land Use and Circulation Element Update would not occur, which would limit the City's ability to address sustainability, encourage live/work housing units, encourage new development and redevelopment that meets the community's needs, encourage mixed use developments, and ensure that the City's transportation and circulation system meets the needs of the community and provides

complete streets. Additionally, the CAP would not be adopted under this alternative, which would limit the City's ability to reduce air quality emissions.

The proposed project encourages construction of infrastructure improvements, such as bus stops and bike lanes, to encourage alternative modes of transportation and retrofitting of structures to improve energy efficiency and reduce traffic and air quality emissions. These types of improvements could occur under Alternative 1; however, such improvements may occur at a lesser rate since the proposed project includes specific measures to encourage these types of improvements. While temporary short-term air quality and traffic impacts associated with these types of improvements may be reduced, these impacts are not environmentally significant. Under Alternative 1, short-term construction-related noise impacts would remain significant and unavoidable. Further, under Alternative 1, measures to encourage alternative modes of transportation, improve energy efficiency, and a range of other measures that would provide long-term improvements to the environment, including air quality resources, noise, and transportation effects would not occur. Therefore, Alternative 1 would be **worse** than the proposed project, as there would be no long-term benefit related to air quality, noise, or transportation.

Biological Resources, Cultural Resources, Geology & Soils, Hazards, Hydrology & Water Quality, Public Services & Utilities, Visual Resources

Implementation of the proposed project would not result in significant impacts to biological resources, cultural resources, geology and soils, hazards, hydrology and water quality, public services and utilities, or visual resources. The one exception is impacts related to risks from sea level rise, which are addressed separately below.

Under both project and Alternative 1 scenarios, future development could continue to occur as previously described. It is anticipated that in-fill and underutilized sites would be developed and there would not be any significant change to the location or footprint of future development. Future projects would be required to implement General Plan policies and programs as well as federal, state, and local regulations related to biological resources, cultural resources, geology and soils, hazards, hydrology and water quality, public services and utilities, and visual resources as described in Chapters 3.2, 3.3, 3.4, 3.6, 3.7, 3.10, and 3.12. Impacts to these resource areas would be **comparable** to the project.

Sea Level Rise

As described under Impact 3.7-7, global warming could to result in a 16-inch (0.4 meters) sea level rise in San Francisco Bay by mid-century (2050). By the year 2100, the sea level could rise up to 55 inches (1.4 meters). As shown in Figure 3.7-5, nearly all of Foster City would be inundated in the event that such anticipated increases in sea level occur.

Under the No Project Alternative, development patterns in the City would be essentially the same as under the proposed project. Under this alternative, significant areas of the City would be subject to risks associated with sea level rise. However, under the No Project Alternative, the City would not adopt and implement the CAP, which would limit the City's ability to reduce

locally-generated GHGs, which would reduce regional and global efforts to combat climate change impacts that may lead to sea level rise. Additionally, under the No Project Alternative, Mitigation Measure 3.7-7 would not be implemented to update the Foster City General Plan Safety Element to incorporate a Sea Level Rise Response Strategy. Under the No Project Alternative, this impact would remain significant and unavoidable, and this impact would be **worse** when compared to the proposed project, given that this alternative would not include measures to reduce GHG emissions and prepare a Sea Level Rise Response Strategy.

Land Use & Population

Impacts associated with Land Use and Population would be less than significant under the proposed project. Under the No Project Alternative, development patterns in the City would remain essentially unchanged when compared to the proposed project. However, under Alternative 1 the Land Use and Circulation Element would not be updated to reflect current codes, trends, design guidelines, master plans, and programs that have been initiated or adopted by the City since the last update. The Land Use and Circulation Element would not be updated to reflect existing conditions and to include improvements necessary to accommodate currently proposed, approved, and anticipated development. While this impact would remain less than significant under the No Project Alternative, the No Project Alternative would be **worse** than the proposed project in the context of land use planning.

ALTERNATIVE 2- COMPREHENSIVE GENERAL PLAN UPDATE ALTERNATIVE

Alternative 2 would include a comprehensive update of all General Plan elements, rather than just the Land Use and Circulation Element. The CAP would also be adopted under this alternative. It is assumed that the proposed Land Use Map would remain unchanged under this alternative when compared to the proposed project.

This alternative would provide an opportunity for the City to update the existing General Plan Parks and Open Space Element, Noise Element, Safety Element, and Conservation Element. An update of the Housing Element is not included under this alternative, given that the City recently adopted an updated Housing Element in 2015. By updating the elements listed above, the City would have additional opportunities to incorporate sustainability measures into all elements of the General Plan, and ensure that the policies and programs contained in the proposed Land Use and Circulation Element are interwoven throughout the rest of the General Plan Elements.

No changes to the proposed Land Use Map and Climate Action Plan were assumed for this alternative.

Greenhouse Gases and Climate Change

Under the proposed project, impacts associated with greenhouse gases and climate change would be reduced to a less than significant level. The proposed CAP would assist the City in achieving a 15 percent reduction in GHG emissions by 2020, and would comply with the GHG reduction goals established by AB 32.

GHG emissions would be reduced at an equal level under Alternative 2, given that the CAP would still be adopted and implemented. However, under this Alternative, the City would also complete and update to the Conservation Element, which may provide additional opportunities to reduce GHG emissions and promote sustainability. Therefore, while this impact would remain less than significant under both the proposed project and Alternative 2 scenarios, additional opportunities to promote sustainability and reduce GHG emissions would be available under Alternative 2, and Alternative 2 would be **slightly better** than the proposed project with respect to greenhouse gases and climate change.

Air Quality, Noise, and Transportation

Under the proposed project, impacts associated with air quality and transportation would be less than significant. Under the proposed project most noise-related impacts would be less than significant, however, construction-related noise impacts would be significant and unavoidable.

Under Alternative 2, future development could continue to occur in the City at the same intensity and in the same locations when compared to the proposed project. However, under this alternative, the City would complete an update to the Noise Element, which would provide additional opportunities to incorporate noise reduction measures into City policy, and may provide opportunities to further examine and strengthen policies that limit construction-related noise impacts. Additionally, this alternative would provide opportunities to incorporate additional sustainability measures into the Conservation Element, which may have the effect of further reductions in emissions of criteria pollutants. Alternative 2 would be **slightly better** than the proposed project with respect to air quality and noise, and would be comparable with respect to transportation.

Biological Resources, Cultural Resources, Geology & Soils, Hazards, Hydrology & Water Quality, Public Services & Utilities, Visual Resources

Implementation of the proposed project would not result in significant impacts to biological resources, cultural resources, geology and soils, hazards, hydrology and water quality, public services and utilities, or visual resources. The one exception is impacts related to risks from sea level rise, which are addressed separately below.

Under both project and Alternative 2 scenarios, future development could continue to occur as previously described. It is anticipated that in-fill and underutilized sites would be developed and there would not be any significant change to the location or footprint of future development. Future projects would be required to implement General Plan policies and programs as well as federal, state, and local regulations related to biological resources, cultural resources, geology and soils, hazards, hydrology and water quality, public services and utilities, and visual resources as described in Chapters 3.2, 3.3, 3.4, 3.6, 3.7, 3.10, and 3.12.

However, under this alternative, the City would complete a comprehensive update to the Conservation Element, which would provide opportunities to incorporate additional cultural resources protection measures into the General Plan. Additionally, the City would have the opportunity to strengthen and modernize the local approach towards the protection of

biological resources and natural habitat. An update the Parks and Open Space Element may identify additional areas suitable for habitat protection and open space preservation. As such, this alternative would be **slightly better** than the proposed project.

Sea Level Rise

As described under Impact 3.7-7, global warming could to result in a 16-inch (0.4 meters) sea level rise in San Francisco Bay by mid-century (2050). By the year 2100, the sea level could rise up to 55 inches (1.4 meters). As shown in Figure 3.7-5, nearly all of Foster City would be inundated in the event that such anticipated increases in sea level occur.

Under Alternative 2, development patterns in the City would be essentially the same as under the proposed project. Under this alternative, significant areas of the City would be subject to risks associated with sea level rise. However, under Alternative 2, the City would update the General Plan Safety Element to incorporate a Sea Level Rise Response Strategy. However, given the tremendous amount of uncertainty surrounding potential impacts associated with sea level rise, and that the risks of sea level rise stem from several factors beyond the City's control, this impact would remain significant and unavoidable. However, this alternative would provide opportunities to address this issue in greater detail, and perhaps develop a comprehensive response and protection strategy that may incrementally reduce the risks associated with sea level rise. As such, this alternative would be **slightly better** than the proposed project.

Land Use & Population

Impacts associated with Land Use and Population would be less than significant under the proposed project. Under Alternative 2, development patterns in the City would remain essentially unchanged when compared to the proposed project. Issues related to population growth and land use planning are addressed in the proposed Land Use and Circulation Element update and the proposed Land Use Map. These project components would be identical under this alternative. As such, this alternative would be **comparable** to the proposed project.

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires that an environmentally superior alternative be identified among the alternatives that are analyzed in the EIR. If the No Project Alternative is the environmentally superior alternative, an EIR must also identify an environmentally superior alternative among the other alternatives (CEQA Guidelines Section 15126.6(e)(2)). The environmentally superior alternative is that alternative with the least adverse environmental impacts when compared to the proposed project.

As summarized in Table 5-1 below, Alternative 2 (Comprehensive General Plan Update) is the environmentally superior alternative because it provides the greatest reduction of potential impacts in comparison to the proposed project and the other alternatives. Alternative 1 (No Project) is worse than the project.

TABLE 5-1: COMPARISON OF ALTERNATIVES TO THE PROPOSED PROJECT

ENVIRONMENTAL ISSUE	*PROPOSED PROJECT*	*ALTERNATIVE 1 NO PROJECT*	*ALTERNATIVE 2 COMPREHENSIVE GENERAL PLAN UPDATE*
Air Quality	Same	Worse	Better
Biological Resources	Same	Same	Better
Cultural Resources	Same	Same	Better
Geology & Soils	Same	Same	Better
Greenhouse Gases, Climate Change, and Energy	Same	Worse	Better
Hazards	Same	Same	Better
Hydrology & Water Quality	Same	Same	Better
Sea Level Rise	Same	Worse	Better
Land Use and Population	Same	Worse	Similar
Public Services and Utilities	Same	Worse	Better
Transportation	Same	Worse	Better
Aesthetics	Same	Same	Better
Overall	**No Change**	**Worse**	**Better**

This page left intentionally blank